

October 27, 2021

1663241.072.L.REV1

Bob Brinkmann, RG

Oregon Department of Geology and Minerals Industries
229 Broadalbin St. SW
Albany, Oregon 97321

**ABBREVIATED OPERATING PERMIT APPLICATION – GRASSY MOUNTAIN BASALT BORROW QUARRY
REVISION 1**

Dear Mr. Brinkmann,

Golder Associates, Inc. (Golder) a member of WSP is pleased to submit this revised abbreviated Operating Permit Application (OPA) on behalf of Calico Resources USA Corp (Calico) for the basalt borrow quarry at the proposed Grassy Mountain Mine. Submittal of this abbreviated OPA was recommended by the Oregon Department of Geology and Minerals Industries (DOGAMI) because the basalt borrow quarry will be situated within the Division 37 permit area (Permit Area) for the proposed chemical process mine.

The information and responses provided in this abbreviated OPA are related to the basalt borrow quarry area and not the entirety of the Division 37 Permit Area. This permit application specifically relates to surface mining operations under Division 30 Rules. We understand that this abbreviated OPA will be reviewed by DOGAMI; however, a Division 30 permit will not be issued. This OPA will be submitted as an appendix of the Consolidated Division 37 Permit Application for the entire Grassy Mountain Mine Project.

If you have any questions or require additional information, please contact the undersigned.

Respectfully,

Golder Associates Inc.



Christopher J. MacMahon
Associate/ Senior Consultant



Tom Wythes
Associate, Senior Engineer

CJM/TW/kg

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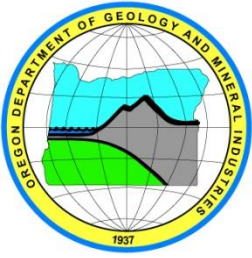
CC: Glen Van Treek (Calico)
Christopher J. MacMahon, PE (Golder)

Attachments: Operating Permit Application Form – Revision 1
Operating and Reclamation Plan Set (Figures 1-5)
Groundwater Supplemental Form
Wetland Supplemental Form

[https://golderassociates.sharepoint.com/sites/17031g/1663241 grassy mountain tsf/500_reporting/510_report/523_quarry opa update/final/1_formatted/1663241.072.l.rev1_opa_cover_letter.docx](https://golderassociates.sharepoint.com/sites/17031g/1663241%20grassy%20mountain%20tsf/500_reporting/510_report/523_quarry%20opa%20update/final/1_formatted/1663241.072.l.rev1_opa_cover_letter.docx)

Attachments

Operating Permit Application Form



Oregon Department of Geology and Mineral Industries
Mineral Land Regulation and Reclamation Program
229 Broadalbin Street SW
Albany, OR 97321-2246
(541) 967-2039
Fax (541) 967-2075

Operating Permit Application Form Division 30 & Division 35*

*DOGAMI may require additional information for Division 35 applications.

CONFIDENTIALITY NOTICE

Any production records, mineral assessments and trade secrets submitted by a mine operator or landowner to the State Department of Geology and Mineral Industries shall be confidential. [1999 c.492 §10 (enacted in lieu of ORS 517.900)]

Primary Point of Contact

To ensure effective communications and timely processing, a Primary Point of Contact (PPC) is recommended for this application. The PPC should be a representative of the applicant with signature authority or a designated agent. Documentation of signature authority and/or designated agent is required for all applicants registered to do business in the state of Oregon. DOGAMI specific Designated Agent and Signature Authority forms are available on our website.

Section 1: Contact Information

1a. Applicant / Proposed Permittee

Name of Applicant: **Calico Resources USA Corp**

Mailing Address: **665 Anderson Street** City: **Winnemucca** State: **NV** Zip: **89445**

Telephone: **775-625-3600** Fax: **N/A** Email: **glen@paramountnevada.com**

Preferred method of contact ☐ Telephone ☒ Email

1b. Primary Contact for the Application

Name: **Glen Van Treek - Paramount Gold Nevada**

Mailing Address: **665 Anderson Street** City: **Winnemucca** State: **NV** Zip: **89445**

Telephone: **775-625-3600** Fax: **N/A** Email: **glen@paramountnevada.com**

Preferred method of contact ☐ Telephone ☒ Email

1c. Application Prepared By

Name: **Tom Wythes - Golder Associates, Inc.**

Mailing Address: **9 Monroe Parkway, Suite 270** City: **Lake Oswego** State: **OR** Zip: **97035**

Telephone: **503-607-0786** Fax: **N/A** Email: **tom_wythes@golder.com**

Preferred method of contact ☐ Telephone ☒ Email

1d. Operator Information

Name: **Calico Resources USA Corp**

Mailing Address: **665 Anderson Street** City: **Winnemucca** State: **NV** Zip: **89445**

Telephone: **775-625-3600** Fax: **N/A** Email: **glen@paramountnevada.com**

1e. Contact Person for Field Visits

Name: **Michael McGinnis** Preferred method of contact ☐ Telephone ☒ Email

Telephone: **719-332-8253** Fax: **N/A** Email: **mmcginnis@paramountnevada.com**

1f. Landowner Information

Name of Landowner (1): **Bureau of Land Management, Vale District Office**

Mailing Address: **100 Oregon Street** City: **Vale** State: **OR** Zip: **89445**

Telephone: **541-473-3144** Fax: **N/A** Email: **blm_or_vl_mail@blm.gov**

Name of Landowner (2):

Mailing Address: City: State: Zip:

Telephone: Fax: Email:

1g. Mineral Estate Owner Information – If Split Estate

Name of Mineral Estate Owner (1): **See Division 37 Consolidated Permit Application for complete mineral estate ownership information**

Mailing Address: City: State: Zip:

Telephone: Fax: Email:

Name of Mineral Estate Owner (2):

Mailing Address: City: State: Zip:

Telephone: Fax: Email:

Section 2: Project Description

2a. Location Information

Address and/or highway and milepost of surface mine:

See attached Operating and Reclamation Plan Set for Site Location

Distance from the nearest named community: **22** mile(s) from **Vale, Oregon**

Directions to site (from the nearest town or major intersection):

See attached Operating and Reclamation Plan Set for Site Location

Legal Description:

County: **Malheur**

Township: **22S** Range: **44E** Section: **8** Tax Lot(s): _____

Township: _____ Range: _____ Section: _____ Tax Lot(s): _____

Township: _____ Range: _____ Section: _____ Tax Lot(s): _____

Township: _____ Range: _____ Section: _____ Tax Lot(s): _____

Latitude/Longitude: **43.669826/-117.351660**

Site Name: Grassy Mountain Basalt Borrow Quarry

Does this site have a current DOGAMI Operating Permit, Exploration Permit, Exclusion Certificate, or Grant of Limited Exemption, or has it been permitted in the past? ☐ yes ☒ no

If yes: Specify DOGAMI ID#

Is there an approved Limited Exemption Closure Plan on file with DOGAMI? ☐ yes ☒ no

2b. Application Type

Please indicate the purpose of this application:

☐ New Operating Permit – skip to 2c.

☐ Amendment to a current Operating Permit

If you are applying for an Amendment to a current Operating Permit, please describe in detail the intended modifications:

This is an abbreviated Operating Permit Application for the basalt borrow quarry at the Grassy Mountain project. The basalt borrow quarry will be situated within the Division 37 permit boundary (Permit Area); however, this permit application specifically relates to surface mine operations under Division 30 regulations. This abbreviated application and Operating and Reclamation Plan set will be submitted as an appendix of the Consolidated Division 37 Permit Application. The Division 37 Permit Area and location of the basalt borrow quarry are shown on Figure 1.

The information and responses provided in this abbreviated application are generally related to the basalt borrow quarry and not the entirety of the Division 37 Permit Area.

The Proposed Operating and Reclamation Plans in this Amendment will (check one):

☐ Replace the existing approved plan(s) on file with DOGAMI and apply to the entirety of the site upon completion of this Amendment. ☐ Pertain only to the Amendment area and are in addition to the existing approved plan(s) on file with DOGAMI.

2c. Third Party Permits and Approvals

Do you know of any state, federal or local government permits or approvals that will be required for this mining operation? ☒ yes ☐ no

If yes: Please list any state, federal or local government permits or approvals and describe the status:

This is and abbreviated permit application in support of the basalt borrow quarry for the Consolidated Division 37 Permit Application. This application will be submitted as an appendix to the Consolidated Division 37 Permit Application.

*Note: DOGAMI can only issue an Operating Permit if all required state, federal, and local government approvals have been obtained, otherwise a Provisional Operating Permit will be issued. POP's are not applicable to Operating Permit Amendment applications.

2d. Permit Acreage and Boundaries

Specify the approximate total number of acres to be covered under the Operating Permit	<u>Borrow Area only</u> <u>~50-acres</u> acres
Does the proposed permitted acreage coincide with the area approved by the local land use jurisdiction? ☒ yes ☐ no	
If no: Explain: The basalt borrow quarry is located solely on BLM land within the Division 37 Permit Area (Figure 1)	
Have the boundaries of the proposed permit area been marked on the ground with temporary or permanent boundary markers? ☐ yes ☒ no	
If yes: Describe boundary markers: Permit boundary to be established as part of Division 37 Permit Area (Figure 1)	
What is the total number of acres to be affected by mining related activities in the 12 months following permit issuance (include excavation, processing, stockpiling and land clearing)? Upon issue of Division 37 Permit 50 acres	

2e. Site Conditions

General Topography in the vicinity of the permit area (check all that apply):	
☒ mountains ☒ hills/buttes ☒ valleys ☐ plains ☐ badlands ☐ floodplain ☐ other: _____ ☐ other: _____	
Site Specific Topography (describe the topography within the permit area): The basalt borrow quarry is located in the semi-arid plateau of eastern Oregon and local landscape is typical of high mountain desert environment and rangeland. The terrain is gentle to moderate with relatively low relief. Elevation ranges from ~4,050 feet amsl at the southeastern corner of the quarry area to ~3,800 feet along western quarry area.	
Current Land Use(s) for all tax lots or parcels within the permit area (check all that apply):	
☒ range/open space ☐ forestry ☐ industrial ☐ wildlife/wetland ☐ recreation ☐ residential ☐ commercial ☐ agriculture ☒ other: <u>C-A2</u> <u>Exclusive Range Use</u> <u>(Malheur County)</u>	☐ other: _____
Structures, Facilities & Surface Disturbances:	
☐ none ☐ residential ☐ farm/ranch ☐ industrial/commercial ☒ roads ☐ overhead power lines or facilities ☐ underground utilities (e.g. electrical, fiber optic, water, sewer, etc.) ☐ oil/gas structures or pipelines ☐ other: _____	
Additional Description (optional): No structures currently present within the footprint of the basalt borrow quarry. Two-track dirt roads from resource evaluation are present (Figure 1).	

Vegetation (general description of the dominant grasses, forbs, shrubs and trees located within the permit area):

Terrestrial vegetation is cold desert type. Vegetation communities include big sagebrush/bunchgrass community, crested wheat grass/annual community, and annual grassland community. Invasive species such as cheatgrass and/or medusahead dominate most of the vegetation communities (*Terrestrial Vegetation Baseline Study, Grassy Mountain Exploration Project, Calico Resources USA Corp., Malheur County, Oregon prepared by EM Strategies, revised June 2018.*)

No wetlands occur in the vicinity of the basalt borrow quarry or within the Division 37 Permit Area (*See attached Wetland Supplemental Form*).

Listed sensitive, threatened or endangered fish and/or wildlife species (within the permit area and nearby water ways):

Wildlife species and encounters within the Study Area are discussed in the *Wildlife Resources Baseline Report, EM Strategies, Inc., revised October 2020.*

Surface Water Features within or near the permit area (includes features that may contain water at any time, including seasonal and stormwater runoff):

- | | | | |
|---|---|--|------------------------------------|
| ☐ none | ☐ river _____ | ☐ stream/creek _____ | ☐ spring |
| ☒ lake/pond | ☐ irrigation ditch/canal | ☒ ephemeral drainage | ☐ wetlands* |

***The DOGAMI Wetland Supplemental Form may be required to be submitted with this application package.
(See attached Wetland Supplemental Form)**

2f. Surrounding Area Conditions

Land Use(s) within 1,500 feet of the permit area (check all that apply):

- | | | | | |
|--|-------------------------------------|--------------------------------------|---|---------------------------------------|
| ☒ range/open space | ☐ forestry | ☐ industrial | ☐ wildlife/wetland | ☐ recreation |
| ☐ residential | ☐ commercial | ☐ agriculture | ☒ other: C-A2
Exclusive Range Use
(Malheur County) | ☐ other: _____ |

Structures, Facilities & Surface Disturbances within 1,500 feet of the permit area (check all that apply):

- | | | |
|---|--|---|
| ☐ none | ☐ residential | ☐ farm |
| ☐ industrial/commercial | ☒ roads | ☒ overhead power lines or facilities |
| ☐ underground utilities (e.g. electrical, fiber optic, water, sewer, etc.) | ☐ oil/gas structures or pipelines | ☒ other: Schweizer Reservoir
(Cattle Pond) |

What is the distance to the nearest structure not owned by the permittee? **~200' south of Division 37 Permit Area (overhead powerline right-of-way)** feet

Surface Water Features within 1,500 feet of the permit area (check all that apply):

- | | | | |
|---|---|--|------------------------------------|
| ☐ none | ☐ river _____ | ☐ stream/creek _____ | ☐ spring |
| ☒ lake/pond | ☐ irrigation ditch/canal | ☒ ephemeral drainage | ☐ wetlands* |

***The DOGAMI Wetland Supplemental Form may be required to be submitted with this application package.
(See attached Wetland Supplemental Form)**

Section 3: Proposed Operating Plan

3a. Development Plans & Equipment

What type of surface mine will be developed?

- ☐ single bench
 ☒ multiple bench
 ☒ sidehill cut
 ☐ hilltop removal
☐ open pit
 ☐ pond excavation
 ☐ other: _____
 ☐ other: _____

What is the primary commodity? (Select One)

- ☐ lava
 ☐ decomposed granite
 ☐ pumice
 ☐ topsoil
☒ borrow/fill
 ☐ diatomaceous earth
 ☐ sand and gravel
 ☐ bentonite
☐ cinder
 ☐ dredge tailings
 ☐ shale
 ☒ other: Cover and drainage material

What is the primary use? (Select One)

- ☐ asphalt aggregate
 ☐ concrete aggregate
 ☐ landscaping materials
 ☐ other: _____
☒ base rock aggregate
 ☒ construction fill
 ☐ rip rap

What is the general deposit type?

- ☒ bedrock
 ☐ river/floodplain (alluvial)*
 ☐ river channel terrace
☐ talus
 ☒ other: Basalt bedrock
☐ unknown

***The DOGAMI Floodplain Supplemental Form may be required to be submitted with this application package.**

Check all mining methods and on-site activities that apply:

- ☒ drilling and blasting
 ☐ ripping and loading
 ☒ crushing
 ☐ washing
 ☒ screening
☒ shovel/loader/scraper
 ☐ material recycling
 ☒ stockpiling
 ☐ other: _____
 ☐ other: _____

Equipment to be used for mining and processing includes (check all that apply):

- ☒ loaders
 ☒ dozers
 ☒ excavators
 ☒ trucks
 ☒ screeners
☒ crushers
 ☒ drilling equipment
 ☐ other: _____
 ☐ other: _____

Date to begin mining activities: **2021**

Expected duration (in years): **7**

3b. Water Management

Indicate the proposed use(s) of water (check all that apply):

- ☐ wash plant
 ☐ asphalt plant
 ☐ concrete batch plant
☒ dust control
 ☐ crusher
 ☐ other: _____

Note: A DEQ permit will be required for process water generated and stored on site.

If applicable: Is the water source within 300 feet of the permit area?

☐ yes ☒ no

If yes: Identify the source of water to be used and show its location on a map:

- ☐ irrigation ditch
 ☐ pond
 ☐ pit
 ☐ groundwater well
 ☐ other: _____

Note: A water right may be required by the Oregon Water Resource Department.

Will water be stored on site?

☐ yes ☒ no

If yes: What will the water be stored in?

- ☐ detention/retention pond
 ☐ lined detention/retention pond
 ☐ water storage tank
☐ other: _____

What is the approximate depth that groundwater is first encountered? No monitoring wells are constructed in the basalt resource or in the quarry area. Groundwater was encountered in basalt Boreholes B-2 and B-3 during resource evaluation. Groundwater levels were estimated by drillers at 126 feet bgs in B-2 (3,778 feet msl) and 143 feet bgs in B-3 (3,747 feet msl) as reported in the Revised Groundwater Resources Baseline Report and Comment Responses, Grassy Mountain Mine Project, prepared by SPF Engineering, LLC., revised September 2021. The groundwater was encountered in the chert pebble conglomerate/siltstone underlying the basalt bedrock and were not static water levels. The minimum proposed quarry floor elevation is 3,790 feet msl and will not extend below base of basalt. Quarry plan provides at least 5 feet of basalt to be left at the base of the quarry floor above the chert pebble

conglomerate/siltstone.

Depth to groundwater is about 94-97 feet below ground surface (bgs) in shallow aquifer wells ~350 feet west of the quarry (59760, 59761, 59772). Historic groundwater elevations in these wells range between 3,671 to 3,674 feet msl.

Groundwater monitoring well and basalt borrow area resource evaluation coreholes are shown on Figures 1 and 2. See attached *Groundwater Supplemental Form* for additional information.

feet below ground surface

What source or method was used to determine depth to groundwater? **Monitoring, Driller Observations**

Have monitoring wells been constructed on site or are monitoring wells proposed? ☒ yes ☐ no

Monitoring wells are installed in the Division 37 Permit Area (see Figures)

If yes: A DOGAMI Groundwater Supplemental Form must be submitted with this application.

(See attached *Groundwater Supplemental Form*)

Will excavation operations be conducted below groundwater level? ☐ yes ☒ no

Will dewatering be conducted at this site? ☐ yes ☒ no

If yes: A DOGAMI Groundwater Supplemental Form must be submitted with this application and a DEQ Permit may be required.

Has a DEQ water quality permit been obtained for the site? **A DEQ water quality permit will be obtained for the Division 37 Permit Area which will cover the basalt borrow quarry operations.**

If yes: DEQ Permit #

3c. Designated Setbacks

Will surface mining operations require crossing external property lines? ☐ yes ☒ no

What will be the minimum undisturbed property line setback for:

Excavation operations: 50 feet wide

Processing operations: 50 feet wide

Stockpiling operations: 50 feet wide

If proposing disturbances within the setbacks (such as visual berms or roads), explain: **Surface water diversion channels and surface water run-on diversion berms as shown in Figures 2 through 6. These features will be removed and reclaimed during final reclamation grading. Some reclamation grading may extend into the setback area during final reclamation.**

Specify the minimum undisturbed setback(s) between mining operations and:

Overhead utilities (poles or towers): _____ feet wide

Underground utilities (e.g. electrical, fiber optic, water, sewer, etc.): _____ feet wide

Right-of-Way/Easement Road: _____ feet wide

Other: _____ feet wide

☒ not applicable (none of the above-listed items are present within the proposed permit area)

Are setbacks shown on the attached map(s)? ☒ yes ☐ no

If no: Explain:

Have setbacks been marked on the ground with permanent or temporary boundary markers? ☐ yes ☒ no

If no: Explain: **Setbacks will be marked prior to commencement of mining operations. Mining setbacks will include minimum 50-foot setback from the Division 37 Permit Area (See attached *Operating and Reclamation Plan Set*).**

3d. Designated Buffers

Does a naturally vegetated area (buffer) exist along a river, stream or natural drainage? ☐ not applicable ☐ yes ☒ no

If no or not applicable, skip to 3e.

What are the minimum undisturbed buffers for the following:	
River (Ordinary High Water Line): _____ feet wide	
Stream (Ordinary High Water Line): _____ feet wide	
Natural drainage: _____ feet wide	
Riparian Vegetation: _____ feet wide	
Have the undisturbed buffers been marked on the ground with permanent or temporary boundary markers?	☐ yes ☒ no
Have conservation/protection buffers been established?	☒ not applicable ☐ yes ☐ no
If yes: check all that apply:	
☐ unstable slopes	☐ wildlife habitat ☐ water quality ☐ other: _____
Describe the nature and configuration of the conservation buffer(s):	

3e. Visual Screening	
Does a natural landform or vegetative screen currently exist?	
Along the permit boundary	☐ yes ☒ no
Within the permit boundary	☐ yes ☒ no
Along the property boundary	☐ yes ☒ no
Within the property boundary	☐ yes ☒ no
If yes to any of the above: Describe:	
Will a berm be constructed along the permit boundaries to develop a visual screen?	☐ yes ☒ no
If yes: The average height of the constructed screen/berm will be _____ feet tall and _____ feet wide.	
Will a vegetative screen be established along the permit boundaries to develop a visual screen?	☐ yes ☒ no
If yes: If planting trees, what is the estimated height at maturity? _____ feet tall	
Please describe (include species and planting densities):	
Will a fence be installed along the permit boundary for safety or visual screening?	☒ yes ☐ no
Will the screening/fencing/berm be maintained for the life of the surface mine?	☐ not applicable ☒ yes ☐ no
If no: Explain:	

3f. Vegetation	
Will vegetation be removed sequentially from areas to be mined to prevent unnecessary erosion?	☒ yes ☐ no
If no: Explain:	
Will small trees and other transplantable vegetation be salvaged for use in revegetating other phases?	☐ yes ☒ no
Wood and other organic debris will be (check all that apply):	
☐ recycled	☐ removed from site ☐ chipped ☐ burned ☐ buried
☒ piled and composted on site for growth medium or mulch	☐ other: _____ ☐ other: _____
Note: A DEQ permit is generally required for burial of debris and may be required for burning.	
Will coarse wood (logs, stumps) and other large debris be salvaged for fish and wildlife habitat?	☒ not applicable ☐ yes ☐ no

3g. Soil and Overburden Salvage and Stabilization

Identify and characterize the type(s) of soil present within the site area per NRCS Web Soil Survey:

NRCS Web Soil Survey data not available for Permit Area, data provided from *Geology and Soils Baseline Report, Mark J. Abrams, October 2018.*

The Farmell-Chartodon (extremely stony soil, 4-15% slopes) and Ruckles (very stony loam, 8-30% slopes) are present within the footprint of the basalt borrow quarry (*Geology and Soils Baseline Report, Mark J. Abrams, October 2018*).

Will growth medium and overburden materials be salvaged? ☒ yes ☐ no

Explain: **Per the Geology and Soil Baseline Report, the Farmell-Chartodon soil is considered unsuitable for use as growth medium and will only be salvaged for on-site construction use. The Ruckles soil is of marginal suitability for reclamation and only the upper 0.5 feet is reported to be suitable for salvage as growth medium. The remainder of the Ruckles material will be salvaged for on-site construction use.**

Based on the Final Quarry Grading Plan shown on Figure 2 and the Geology and Soils Baseline Report, there is approximately 8 acres of Ruckles soil, and 22 acres of Farmell-Chartodon soil within the quarry disturbance area. Growth medium and overburden salvage estimates noted below assume maximum thickness of soil overlying bedrock. Actual available salvage volumes are anticipated to be less.

Will growth medium and overburden materials be segregated and stored separately during stripping operations? ☒ yes ☐ no

Explain proposed stripping, handling, and storage of growth medium and overburden materials: **Areas will be stripped sequentially in advance of mining to reduce potential for erosion. Approximately 0.5 feet of the Ruckles loam will be stripped and stored as growth medium. The remainder of the overburden will be stripped and used for on-site construction use and is not planned to be stored. The growth medium stockpile area is shown on Figure 2.**

For the areas to be stripped:

Thickness of growth medium averages 0.5 ☐ inches ☒ feet

Thickness of overburden averages Less than 40 ☒ inches ☐ feet

Depth to bedrock is approximately Less than 40 ☒ inches ☐ feet (below ground surface).

Total volume of growth medium available within the permit area is 6,500 cubic yards.

Total volume of stored growth medium is 6,500 cubic yards and will require 0.5 acres for storage.

Total volume of stored overburden is 0 cubic yards and will require 0 acres for storage.

Will growth medium and overburden materials be moved directly to mined out portions of the site for concurrent reclamation? ☐ yes ☒ no

Will the storage areas be cleared of all vegetation and organic matter prior to stockpiling? ☒ yes ☐ no

If no: Explain:

Will subsurface drainage for the storage area be established prior to material placement? ☒ yes ☐ no

Explain: **Growth medium stockpile sites will be cleared of all vegetation and the growth medium placed in areas that allow natural drainage of water from stockpiles (Figure 2). Erosion control BMPs will be used as necessary to reduce erosion and sediment loss.**

Will growth medium and overburden materials be stabilized with vegetation to prevent water and wind erosion if stored for more than one season? ☒ yes ☐ no

If no: Explain:

Are the storage areas delineated on the attached map(s)? ☒ yes ☐ no

3h. Surface Mine Excavations

What is the total number of acres to be affected by mining related activities (include excavation, processing, stockpiling and land clearing)? Approximately 50 acres

What is the maximum vertical depth to be mined below the existing topographic grade? 125 feet

What will be the lowest elevation of the excavated mine relative to mean sea level? 3,800 feet

What will be the highest elevation of the excavated mine relative to mean sea level? 4,050 feet

Will benches be developed as mining operations advance? ☒ yes ☐ no

If yes: The average dimensions of the benches will be approximately:

40 foot vertical faces separated by 60 foot horizontal benches resulting in an interim sloping configuration of 1.5H: 1V (e.g. 1½H:1V, 2H:1V)

Quarry floor will be developed in single benches that will be flattened to 1.5H to 1V at reclamation (Figure 5). Total Quarry excavation volume: 3.16M cubic yards.

If no: The interim sloping configuration of the excavation slopes will be: _____ H: _____ V (e.g. 1½H:1V, 2H:1V).

Will excavation operations result in the creation of ponds/water-filled excavation areas? ☐ yes ☒ no

If yes: The interim sloping configuration of the in-water slopes will be _____ H: _____ V (e.g. 3H:1V).

Will oversize be generated on site? ☐ yes ☒ no

If yes: Specify the location for storage:

Will any waste products such as tailings or crusher fines be generated during mining? ☒ yes ☐ no

If yes: Specify the location for storage: Crusher fines will be used as construction material and not permanently stockpiled.

Are the storage/stockpile areas delineated on the attached map(s)? ☒ yes ☐ no

3i. Best Management Practices and Stormwater Controls

Will all stormwater runoff be contained on site? ☒ yes ☐ no

All stormwater will be managed under the Site-Wide Surface Water Management Plan for the Division 37 Permit Area.

A surface water diversion channel will be constructed along the eastern boundary of the quarry excavation to divert stormwater from entering the quarry area. Upgradient stormwater will be diverted to the north of the quarry and managed under the Site-Wide Surface Water Management Plan for the Division 37 Permit Area (Figure 2). A surface water run-on diversion berm will also be constructed along the eastern and southern quarry excavation boundaries to divert stormwater around the quarry. Precipitation that falls into the quarry footprint will be managed within the quarry using internal sloping, retention berms, and a stormwater management sump (Figure 2). Additional BMPs will be implemented to minimize erosion and sedimentation as noted below.

If no: A DEQ (NPDES) Permit may be required.

Methods to control erosion and minimize sedimentation within the permit area include (check all that apply):

- | | | |
|---|---|--|
| ☒ minimize the areas stripped | ☒ divert natural runoff around the site | ☒ graveled roads and working areas |
| ☒ internal sloping | ☒ conveyance ditches | ☒ rock check dams |
| ☐ water bars | ☐ settling/infiltration ponds | ☒ retention berms |
| ☒ seeding and mulching | ☐ other: _____ | ☐ other: _____ |

Section 4: Reclamation Plan

4a. Post-Mining Land Use

Subsequent Land Use(s) of the permit area (check all that apply):

- ☒ range/open space ☐ forestry ☐ industrial ☐ wildlife/wetland ☐ recreation
☐ residential ☐ commercial ☐ agriculture ☐ other: _____ ☐ other: _____

If more than one post-mining land use is selected provide a map delineating where each use is applicable.

What will be the average elevation of the reclaimed mine floor relative to mean sea level? **3,850** feet

Is the proposed post-mining land use compatible with the existing local land use jurisdiction? ☒ yes ☐ no

If no: Explain:

Is the final local land use approval for surface mining attached? ☐ yes ☒ no

If no: Explain: **BLM post-mining land use**

4b. Reclamation Schedule

Will reclamation activities be conducted concurrently with mining? ☐ yes ☒ no

If no: How many days after mining is completed will reclamation operations begin? **Per ORS 517.820(1), reclamation to begin no greater than 3 years after mining is complete.**

If yes: Has the permit area been divided into cells/phases for sequential mining? ☐ yes ☒ no

4c. Final Excavation Slopes

Will final excavation slopes be constructed using the benching method? ☒ yes ☐ no

If yes: The average dimensions of the final benches will be approximately **40** foot vertical faces separated by 60 foot horizontal benches resulting in an interim sloping configuration of **1.5 H: 1.0 V** (e.g. 1½H:1V, 2H:1V).

Will final slopes be constructed via a continuous slope? ☐ yes ☒ no

If yes: The completion of Section 4d is required.

Will reclamation blasting be used to reduce the entire highwall to a scree or rubble slope less than 2H:1V? ☐ yes ☒ no

If yes: Will access to benches be maintained for reclamation blasting? ☐ yes ☒ no

Will selective blasting will be used to remove benches and walls and to create chutes, buttresses, spurs, scree slopes, and rough cliff faces that appear natural or blend in with surrounding topography? ☐ yes ☒ no

Will final excavation slopes be steeper than 1½H:1V? ☐ yes ☒ no

If yes: The DOGAMI Slope Stability Supplemental Form must be submitted with this application.

Will small portions of benches or vertical faces be left to provide habitat for raptors and other cliff-dwelling birds? ☒ yes ☐ no

Will the final excavation slopes vary in steepness? ☐ yes ☒ no

If yes: Explain:

Are cross-sections of the final excavation slopes attached? (may be required) ☒ yes ☐ no

Will measures be taken to limit access to the top and bottom of hazardous slopes? ☒ yes ☐ no

Explain: **Fencing around perimeter of Permit Area (Figure 1,3).**

4d. Final Fill Slopes

Will above-water final fill slopes be constructed on site? ☐ yes ☒ no

If no: Skip to 4e.

Will final fill slopes be steeper than 2H:1V or exceed 100 lineal feet in length? ☐ yes ☐ no

What will be the final sloping configuration of fill slopes? _____ H: _____ V (e.g. 2H:1V)

If yes: The DOGAMI Slope Stability Supplemental Form must be submitted with this application.

Will the final fill slopes vary in steepness?	☐ yes ☐ no
If yes: Explain:	
Will fill slopes have a sinuous appearance in both profile and plan view?	☐ yes ☐ no
If no: Explain:	
Will the final grouser tracks of equipment be preserved and oriented to trap moisture, growth medium, and seeds, to encourage seed germination and inhibit erosion (track walking)?	☐ yes ☐ no

4e. Working Floors

Will flat working areas be formed into gently rolling hills to blend in with the surrounding area?	☒ yes ☐ no
If yes: Give details: Quarry Floor will be developed in single benches, and overall quarry slopes will be flattened to 1.5H:1V or flatter at reclamation. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of reclaimed quarry (Figures 3,6).	
Will the working floor be gently graded into sinuous drainage channels to preclude sheet-wash erosion during heavy rain events?	☒ yes ☐ no
If yes: Give details: Quarry Floor will be developed in single benches, and overall quarry slopes will be flattened to 1.5H:1V or flatter at reclamation. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of reclaimed quarry (Figures 3,6).	
Will the working floor and other compacted areas be, plowed, ripped, or blasted to decompact the upper surface prior to spreading growth mediums to foster revegetation?	☒ yes ☐ no
Explain (If yes, include depth of decompaction): Quarry floor will be ripped to a depth of at least 1 foot.	

4f. Imported Fill

Will imported materials be necessary to complete reclamation?	☒ yes ☐ no
If no: Skip to 4g.	
If yes: Give volumes needed to meet reclamation plan: 55,500 cubic yards	
Are the locations for fill stockpiling and permanent placement shown on the map(s)?	☒ yes ☐ no
How will the quality of imported fill be monitored to ensure it meets DEQ clean fill standards? closure borrow materials will be tested and inspected prior to placement in the quarry to verify materials meet DEQ clean fill standards. Refer to separate Operating Permit Application for Closure Cover Borrow materials.	
Will the backfill materials be mixed or screened to ensure uniformity for compaction and stability?	☒ yes ☐ no

4g. Backfilling Operations

Will an excavation area be located below natural grade requiring backfilling?	☐ yes ☒ no
If no: Skip to 4h	
What will be the total depth of backfilled materials? _____ feet.	
Will backfilling be conducted in lifts?	☐ yes ☐ no
If yes: Specify the average depth of the lifts: _____ feet.	
Will the backfilled slopes be compacted?	☐ yes ☐ no
Explain:	
Will compaction testing be conducted under supervision/direction of an Oregon Certified Engineering Geologist or Geotechnical Engineer to determine the compaction percentage? (may be required subject to post-mining land use)	☐ yes ☐ no
Will backfilling be completed utilizing on site overburden materials?	☐ yes ☐ no
If yes: Explain:	
Will you be backfilling into water?	☐ yes ☐ no
If no: Skip to 4h	

Will dewatering be necessary for the backfilling operations?	☐ yes ☐ no
If yes: A DOGAMI Groundwater Supplemental Form is required to be submitted with this application and a DEQ NPDES Permit may be required.	
Will backfilling be limited to the dry season or otherwise conducted under dry conditions?	☐ yes ☐ no
If no: A DOGAMI Slope Stability Supplemental Form may be required.	
Will the excavation pit/pond be <i>entirely</i> backfilled to natural ground surface elevation?	☐ yes ☐ no
If no: The completion of Section 4h is required for in-water sloping configurations.	

4h. Ponds and Wetlands
Will stormwater controls or excavation operations intersect the groundwater table resulting in the creation of ponds and/or wetlands? ☐ yes ☒ no If no: Go to Section 4i.
Specify the construction method and dimensions for each settling/infiltration pond to remain on site: Pond #1 will be approximately _____ acres in size and approximately _____ feet deep and constructed via: ☐ excavation ☐ retention berms ☐ combination of both Pond #2 will be approximately _____ acres in size and approximately _____ feet deep and constructed via: ☐ excavation ☐ retention berms ☐ combination of both
All in-water sloping configurations will be constructed at _____ H: _____ V or flatter to a minimum depth of _____ feet below the low-water level of the ponds(s). Per OAR 632-030-0027(5), all in-water sloping configurations must be established at 3H:1V or flatter from the ordinary high-water level to six feet below the ordinary low-water level for permanent water impoundments.
If not already present, will soils, silts, and clay-bearing materials be placed below water level to enhance revegetation for fish and wildlife habitat? ☐ yes ☐ no If yes: Give details:
Will wetlands be constructed on site? ☐ yes ☐ no If yes: Give details:
Will wildlife and fish habitat/enhancements be developed? ☐ yes ☐ no If yes: Check all that apply: ☐ varied water depths ☐ islands ☐ peninsulas ☐ fish structures ☐ shallow areas (<18 inches deep) ☐ sinuous/irregular shorelines ☐ other: _____ ☐ other: _____ What species are the habitat/enhancements intended to benefit?
Will final pond(s) be utilized for agriculture, forestry or supply water (impoundment)? ☐ yes ☐ no If no: Skip to 4i.
Has approval from other agencies with jurisdiction to regulate impoundment of water been obtained? ☐ yes ☐ no If yes: Attach written approval.
What measures will be taken to prevent seepage from the site from adversely affecting the stability of impoundments and adjacent slopes? (check all that apply): ☐ monitoring ☐ relief drains ☐ weep holes ☐ compaction ☐ grouting ☐ installing upstream blanket ☐ none Give details: What measures have been taken to design impoundments to resist seismic hazards?

4i. Growth Medium Replacement

Will the importation of growth medium be required to complete reclamation? ☒ yes ☐ no

Explain (if yes, describe source): **Topsoil stripped from Quarry footprint will be supplemented with material derived from closure cover borrow sites located within the Division 37 Permit area. Refer to separate Operating Permit Application for Closure Cover Borrows.**

Will growth medium materials be replaced on all above-water slopes and/or benches? ☐ yes ☒ no

If no: Explain: **Growth medium will be placed on quarry floor to allow for revegetation using seed mix and application rate provided in the Terrestrial Vegetation Baseline Report prepared by EM Strategies revised October 2018. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of reclaimed quarry (Figures 3,6).**

Will growth medium be distributed evenly over the site? ☐ yes ☒ no

If no: Specify: **Growth medium will be placed in nominal 12-inch thick continuous layer on quarry floor to allow for revegetation. Quarry floor will be graded to drain to re-established drainages and drainage swales before discharging to natural drainage (Tributary 2a) west of quarry (Figures 3,6).**

Soil will be replaced on the mine floor to an approximate depth of 1.0 ☐ inches ☒ feet

Soil will be replaced on established benches to an approximate depth of 0 ☒ inches ☐ feet

If growth medium is in short supply, will it be strategically placed to conserve moisture and promote revegetation? ☐ yes ☒ no

If no: Explain: **Sufficient topsoil will be available during reclamation. Topsoil stripped from Quarry footprint will be supplemented with material derived from closure cover borrow sites located within the Division 37 Permit area to provide a minimum 12-inch cover over the quarry floor. Refer to separate Operating Permit Application for Closure Cover Borrows.**

Will growth medium be moved when conditions are exceptionally wet or dry? ☐ not applicable ☐ yes ☒ no

If yes: Explain:

If applicable: will clay/silt from settling ponds be used to supplement the growth medium materials? ☐ yes ☒ no

Will any additional materials be utilized as a growth medium substitute to complete revegetation (e.g. reject fines)? ☐ not applicable ☐ yes ☒ no

If yes: Explain:

Will all growth medium be replaced with equipment that will minimize compaction, or will growth medium be plowed, disced, or ripped following placement? ☒ yes ☐ no

If no: Explain:

Will all replaced growth medium be stabilized in a timely manner with vegetation and/or mulch to prevent loss by erosion, slumping, or crusting? ☒ yes ☐ no

If no: Explain:

4j. Revegetation

The average precipitation on site is 9.7 inches (average of climate data [Grassy Mountain Climate Data, May 21, 2018, Golder Associates Inc.]) inches per year.

Will the site be revegetated? ☒ yes ☐ no

If no: The site will not be revegetated because:

☐ Demonstration plots and areas will be used to show that active revegetation is not necessary.

☐ Revegetation is inappropriate for the approved subsequent use of this surface mine.

Will revegetation activities start during the first proper growing season (e.g. fall for grasses, fall or late winter for trees and shrubs) following restoration of slopes? ☒ yes ☐ no

If yes: Give details: **Revegetation methods will be consistent with those provided in Section 5.7 of the *Terrestrial Vegetation Baseline report for the Grassy Mountain Mine Project* by EM Strategies, revised October 2018.** **If no:** Explain:

Will vegetation test plots be used to determine optimum vegetation plans? ☐ yes ☒ no

4k. Planting and/or Seeding Techniques and Specifications

Describe the method and time of year for planting and/or seeding: **Growth medium will be placed in a 1-foot thick continuous layer on the quarry floor. The seed will be broadcast and the surface will be lightly disced to improve the seed to soil contact.. Revegetation will occur in the fall.**

Give seeding details (lbs/acre of grass, legume, or forb mixture): **Seed mix and rates will be consistent with those provided in Section 5.7 of the *Terrestrial Vegetation Baseline report for the Grassy Mountain Mine Project* by EM Strategies, revised October 2018 with the following mixture and rates. Wyoming big sagebrush (0.10 pls/acre), Bluebunch wheatgrass (8.00 PLS/acre), Bottlebrush squirreltail (2.00 PLS/acre)**

Give planting details (stems/acre of trees and shrubs, size and type of plant stock): **N/A**

Additional planting/seeding techniques include:

- | | | |
|--|---|---|
| ☒ ripping, discing and/or tilling | ☐ blasting to create permeability | ☐ mulching |
| ☐ irrigation | ☐ fertilization | ☐ planting dormant trees and shrubs |
| ☐ importation of clay or organic-rich growth medium | ☐ other growth medium conditioners or amendments | ☒ seeds to be protected with growth medium or mulch |
| ☐ other: _____ | | |

Describe the noxious weed and invasive plant control measures: **Noxious weed and invasive plant control measures are described in the *Grassy Mountain Mine, Malheur County, Oregon, Noxious Weed Monitoring and Control Program*, prepared by EM Strategies, revised June 2021.**

4l. Drainage and Stormwater Controls

Will the reclaimed surface mine site be internally drained? ☒ yes ☐ no

Will natural runoff be directed to a natural drainage or safe outlet upon completion of reclamation? ☐ not applicable ☒ yes ☐ no

If applicable: Explain: **The surface water diversion channel will be decommissioned and revegetated during reclamation. Stormwater will be returned to re-established drainages and drainage swales prior to discharging to the natural drainage channel (Tributary 2a) west of the reclaimed quarry (Figures 3,6).**

Will the construction of ditches and channels be necessary to limit erosion and siltation? ☒ yes ☐ no

If applicable: Explain: **Drainage swales will be constructed on the floor of the reclaimed quarry to limit erosion and siltation prior to discharge of stormwater (Figures 3,6).**

Will conveyance ditches and channels be lined with vegetation or riprap? ☐ not applicable ☒ yes ☐ no

If applicable: Explain: **Ditches and swales will be lined with vegetation and/or riprap as necessary to control erosion.**

Will it be necessary to stabilize or rehabilitate stream channels or banks? ☐ yes ☒ no

If yes: Give details:

4m. Site Cleanup

Will all mining-related equipment be removed from the site? ☒ yes ☐ no

If no: Explain:

Will all structures and buildings be removed from the site? ☒ yes ☐ no

If no: Explain:

Will all visual and/or retention berms be removed from the site?	☒ yes ☐ no
If no: Explain:	
Will all debris, refuse, and/or hazardous material be removed from the site?	☒ yes ☐ no
If no: Explain:	
Will all stockpiles be sold, graded, and or removed from the site?	☒ yes ☐ no
If no: Explain:	
Will all oversize be sold, reduced, or removed from the site?	☒ yes ☐ no
If no: Explain:	

Signature Page

APPLICANT

I am applying for an Operating Permit under ORS 517.790. My signature below attests that the information provided in this application is accurate and true to the best of my knowledge. Any misrepresentation in these materials will be considered grounds for denial for an Operating Permit.

Glen van Treek

Applicant's Printed Name



Applicant's Signature

President

Title

12/15/2021

Date

PREPARED BY

I prepared this application for the applicant above. My signature below attests that the information provided in this application is accurate and true to the best of my knowledge. Any misrepresentation in these materials will be considered grounds for denial for an Operating Permit.

Christopher MacMahon

Preparer's Printed Name



Preparer's Signature

Associate and Senior Consultant

Title

12/15/2021

Date

LANDOWNER(S)

I have read, understand, and acknowledge receipt of all information provided in this application. By signing this form, I am granting consent to the mining activities as outlined in this application on my property.

Landowner (1) Printed Name

Title

Landowner (1) Signature

Date

Landowner (2) Printed Name

Title

Landowner (2) Signature

Date

MINERAL ESTATE OWNER(S)

I have read, understand, and acknowledge receipt of all information provided in this application. By signing this form, I am granting consent to the mining activities as outlined in this application on my property.

Mineral Estate Owner (1) Printed Name

Title

Mineral Estate Owner (1) Signature

Date

Mineral Estate Owner (2) Printed Name

Title

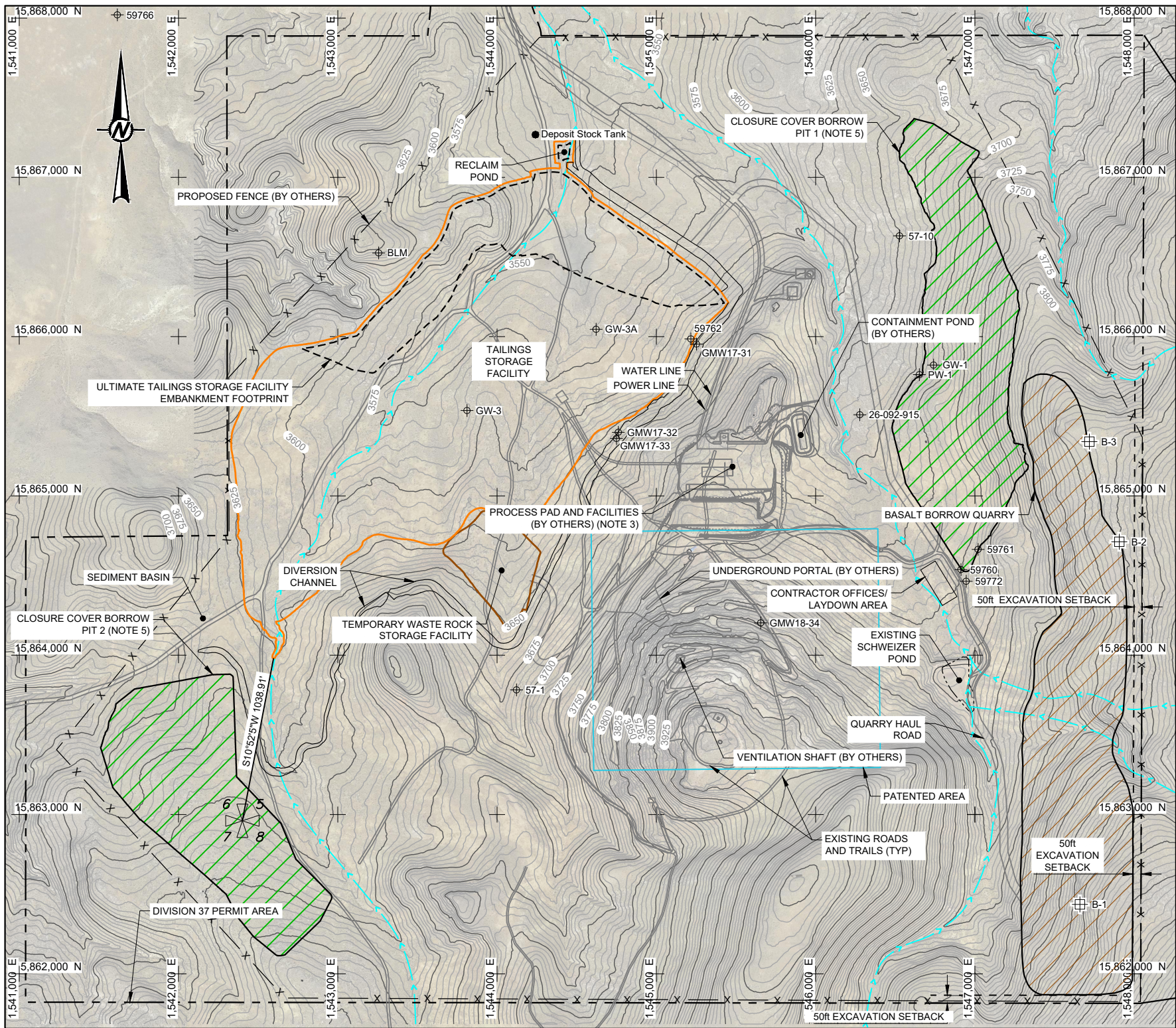
Mineral Estate Owner (2) Signature

Date

Attach additional signature pages as necessary

Operating and Reclamation Plan Set (Figures 1-5)

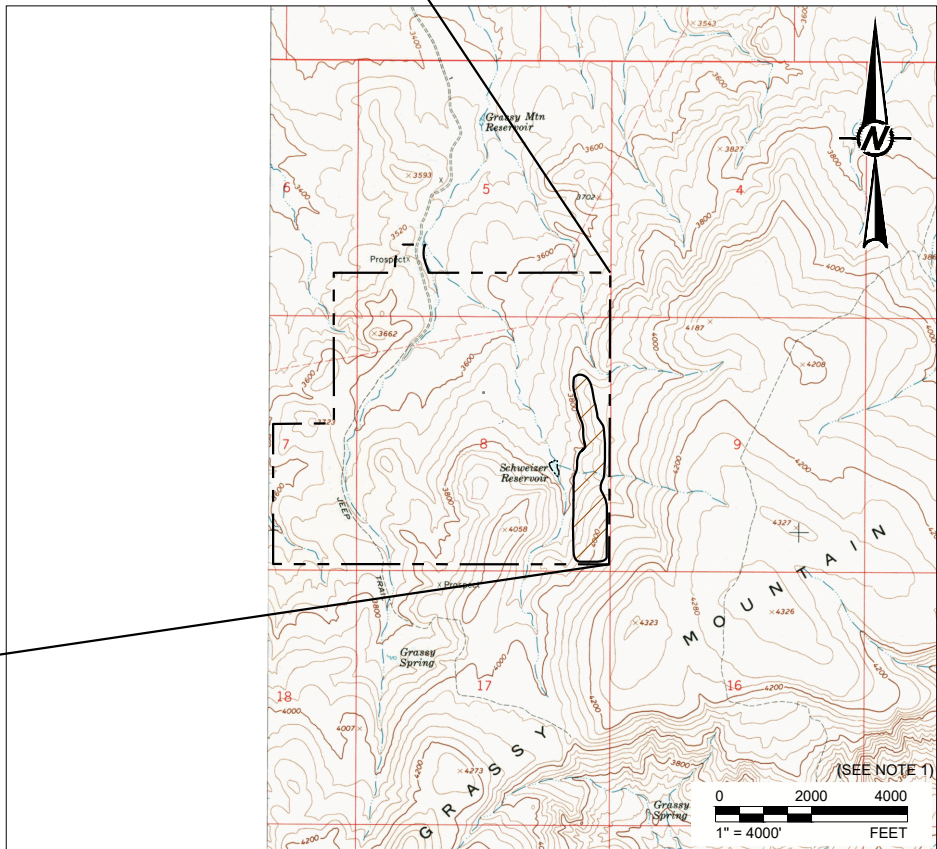
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NOT FOR CONSTRUCTION

- LEGEND**
- 4100 EXISTING GROUND TOPOGRAPHY (5-FOOT CONTOUR INTERVAL)
 - 50-FOOT EXCAVATION SETBACK (MINIMUM)
 - X PROPOSED FENCE (BY OTHERS)
 - EXISTING DRAINAGE
 - DIVISION 37 PERMIT AREA
 - PATENTED AREA
 - 59761 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
 - B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE
 - APPROXIMATE LIMITS OF BASALT BORROW QUARRY
 - APPROXIMATE LIMITS OF CLOSURE COVER BORROW PIT (NOTE 5)
 - APPROXIMATE LIMITS OF TEMPORARY WASTE ROCK STORAGE FACILITY
 - APPROXIMATE LIMITS OF TAILINGS STORAGE FACILITY
 - EXISTING ROAD
 - ULTIMATE TAILINGS STORAGE FACILITY EMBANKMENT FOOTPRINT

- NOTES**
- THE PERMIT AREA IS LOCATED IN PORTIONS OF SECTIONS 5, 6, 7, AND 8, TOWNSHIP 22 SOUTH, RANGE 44 EAST OF THE WILLAMETTE PRINCIPAL MERIDIAN. THE PROPOSED BORROW QUARRY IS LOCATED IN SECTION 8, TOWNSHIP 22 SOUTH, RANGE 44 EAST OF THE WILLAMETTE MERIDIAN.
 - GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
 - PROCESS FACILITIES LINWORK PROVIDED BY SLR INTERNATIONAL CORPORATION ON SEPTEMBER 2, 2021 IN AN ELECTRONIC FILE TITLED "Grassy GA Rev G 20210902.dwg".
 - USGS MAPS WERE DOWNLOADED FROM <https://ngmdb.usgs.gov/topoview/viewer/#12/43.6645/-117.3414>, AND ARE THE SOURDOUGH SPRINGS AND THE GRASSY MOUNTAIN 1967 24K SCALE TOPOGRAPHICAL MAPS.
 - SEE SEPARATE OPERATING PERMIT APPLICATION FOR THE CLOSURE COVER BORROW PIT DESIGN.



1	2021-09-15	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

PERMITTEE

CALICO
RESOURCES

CONSULTANT

GOLDER
MEMBER OF WSP

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

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595 DOUBLE EAGLE COURT, SUITE 1000
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[+1] (775) 828-9604
www.golder.com

PROJECT
GRASSY MOUNTAIN
BASALT BORROW QUARRY
OPERATING AND RECLAMATION PLAN

TITLE
SITE LAYOUT PLAN

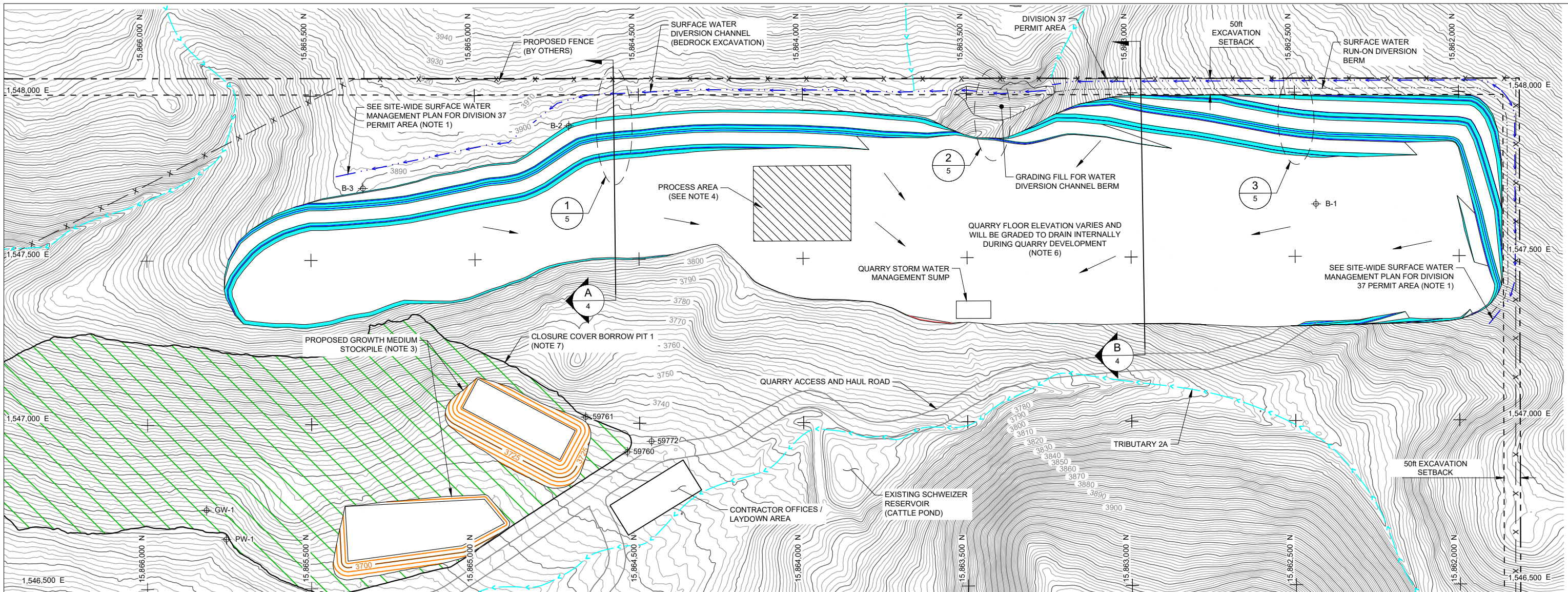
PROJECT NO.
1663241

REV.
1

1 of 6

FIGURE
1

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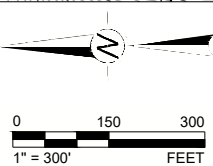


- LEGEND**
- 4100 EXISTING GROUND TOPOGRAPHY (5-FOOT CONTOUR INTERVAL)
 - 4100 PROPOSED BASALT BORROW QUARRY GRADING (5-FOOT CONTOUR INTERVAL)
 - 4100 PROPOSED GROWTH MEDIUM STOCKPILE GRADING (5-FOOT CONTOUR INTERVAL)
 - 50-FOOT EXCAVATION SETBACK (MINIMUM)
 - PROPOSED SURFACE WATER RUN-ON DIVERSION BERM
 - PROPOSED SURFACE WATER DIVERSION FLOW DIRECTION
 - EXISTING DRAINAGE
 - PROPOSED FENCE (BY OTHERS)
 - 59772 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
 - B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE
 - DIVISION 37 PERMIT AREA
 - APPROXIMATE LIMITS OF CLOSURE COVER BORROW PIT (NOTE 7)

- NOTES**
- STORMWATER RUN-ON WILL BE DIVERTED AROUND THE QUARRY FOOTPRINT USING THE SURFACE WATER DIVERSION CHANNEL AND BERMS. STORMWATER THAT ENTERS THE DIVISION 37 PERMIT AREA WILL BE MANAGED UNDER THE DIVISION 37 SITE-WIDE SURFACE WATER MANAGEMENT PLAN TO BE SUBMITTED WITH THE CONSOLIDATED PERMIT APPLICATION.
 - DURING OPERATIONS, PRECIPITATION THAT FALLS WITHIN THE QUARRY FOOTPRINT WILL BE MANAGED WITHIN THE QUARRY.
 - THE GROWTH MEDIUM STOCKPILE SLOPES WILL BE CONSTRUCTED WITH OUTSLOPE ANGLES THAT ALLOW REVEGETATION AND LIMITS EROSION AND SOIL LOSS, AS OPERATIONS ALLOW. BMPS WILL BE ESTABLISHED DOWNGRADIENT AT THE TOE OF THE STOCKPILE TO CONTROL SEDIMENT LOSS.
 - THE PROCESS AREA WILL BE ESTABLISHED WITHIN THE QUARRY FOOTPRINT AND WILL BE RELOCATED AS NECESSARY WITHIN THE QUARRY FOOTPRINT.
 - INTERNAL SLOPING, DIVERSION BERMS AND ROCK CHECK DAMS WILL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION. ACCESS ROAD AND LAYDOWN AREAS WILL BE GRAVELLED AS NECESSARY.
 - QUARRY FLOOR ELEVATION VARIES BASED ON RESOURCE THICKNESS. MINIMUM OF 5 FEET OF BASALT TO BE LEFT ON QUARRY FLOOR. FINAL QUARRY FLOOR WILL BE GRADED TO DRAIN INTERNALLY TO THE NORTH. MINIMUM QUARRY FLOOR ELEVATION 3,800 FT.
 - SEE SEPARATE OPERATING PERMIT APPLICATION FOR THE CLOSURE COVER BORROW PIT DESIGN.

- REFERENCE**
- GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
 - SITE LINWORK PROVIDED BY MINE DEVELOPMENT ASSOCIATES ON SEPTEMBER 2, 2021.

NOT FOR CONSTRUCTION



1	2021-09-15	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

PERMITTEE

CALICO
RESOURCES

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

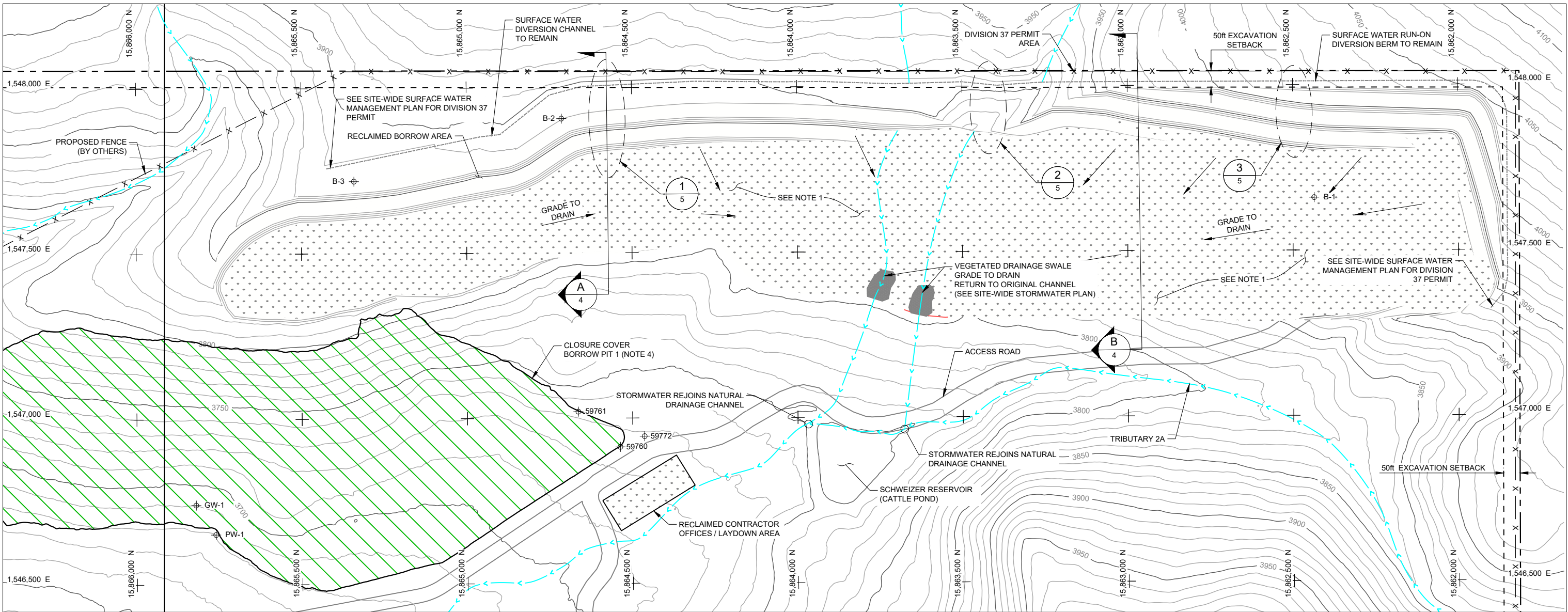
CONSULTANT

GOLDER
MEMBER OF WSP

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PROJECT	GRASSY MOUNTAIN BASALT BORROW QUARRY OPERATING AND RECLAMATION PLAN
TITLE	FINAL QUARRY GRADING PLAN
PROJECT NO.	1663241
REV.	1
2 of 6	FIGURE 2

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LEGEND

- 4100 — EXISTING GROUND TOPOGRAPHY (10-FOOT CONTOUR INTERVAL)
- 4100 — PROPOSED RECLAMATION GRADING (10-FOOT CONTOUR INTERVAL)
- - - - - 50-FOOT BUFFER OFFSET
- - - - - SURFACE WATER RUN-ON DIVERSION BERM TO REMAIN
- < — EXISTING DRAINAGE
- - - - - RE-ESTABLISHED DRAINAGE
- - - - - PROPOSED FENCE (BY OTHERS)
- - - - - DIVISION 37 PERMIT AREA
- • • • • QUARRY FLOOR AND LAYDOWN AREA REVEGETATION (NOTE 1)

- APPROXIMATE LIMITS OF CLOSURE COVER BORROW PIT (NOTE 4)
- 59761 GROUNDWATER MONITORING WELL / PIEZOMETER LOCATION
- B-1 BASALT BORROW RESOURCE EVALUATION COREHOLE

TABLE 1: SEED MIXTURE AND APPLICATION RATES

COMMON NAME	SCIENTIFIC NAME	PURE LIVE SEED (PLS) PER ACRE (lb/acre)
WYOMING BIG SAGEBRUSH	ARTEMISIA TRIDENTATA SSP. WYOMINGENSIS	0.10
BLUEBUNCH WHEATGRASS	PSEUDOROEGNERIA SPICATA	8.00
BOTTLEBRUSH SQUIRRELTAIL	ELYMUS ELYMOIDES	2.00
TOTAL APPLICATION RATE RATE (lb/acre)		10.10

NOTES

- GROWTH MEDIUM WILL BE PLACED IN A CONTINUOUS 1-FOOT THICK LAYER ON THE QUARRY FLOOR AND CONTRACTOR OFFICES/LAYDOWN AREA. REVEGETATION METHODS WILL BE CONSISTENT WITH THOSE PROVIDED IN THE TERRESTRIAL VEGETATION BASELINE REPORT FOR THE GRASSY MOUNTAIN MINE PROJECT BY EM STRATEGIES, REVISED OCTOBER 2018, UTILIZING THE PRELIMINARY SEED MIXTURE AND APPLICATION RATES PRESENTED IN TABLE 1.
- DURING RECLAMATION, NO AREAS OF PONDED WATER WILL BE PRESENT IN THE RECLAIMED QUARRY FLOOR AREA.
- SLOPED QUARRY FLOOR WILL BE DEVELOPED IN SINGLE BENCHES THAT WILL BE FLATTENED TO 1.5V:1V AT RECLAMATION.
- SEE SEPARATE OPERATING PERMIT APPLICATION FOR CLOSURE COVER BORROW PIT DETAILS.

REFERENCE

- GROUND TOPOGRAPHY SHOWN INCLUDES EXISTING GROUND TOPOGRAPHY PROVIDED BY MDA ON MARCH 29, 2017 IN AN ELECTRONIC FILE TITLED "contours_2ft_expanded_project_area.dxf" AND PROPOSED SURFACE WATER DIVERSION CHANNEL GRADES.
- SITE LINWORK PROVIDED BY MINE DEVELOPMENT ASSOCIATES ON SEPTEMBER 2, 2021.

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REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2021-09-15	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM

PERMITTEE



CONSULTANT



CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

GOLDER ASSOCIATES INC.
595 DOUBLE EAGLE COURT, SUITE 1000
RENO, NV 89521
USA
[+1] (775) 828-9604
www.golder.com

PROJECT

GRASSY MOUNTAIN
BASALT BORROW QUARRY
OPERATING AND RECLAMATION PLAN

TITLE

CONCEPTUAL QUARRY RECLAMATION PLAN

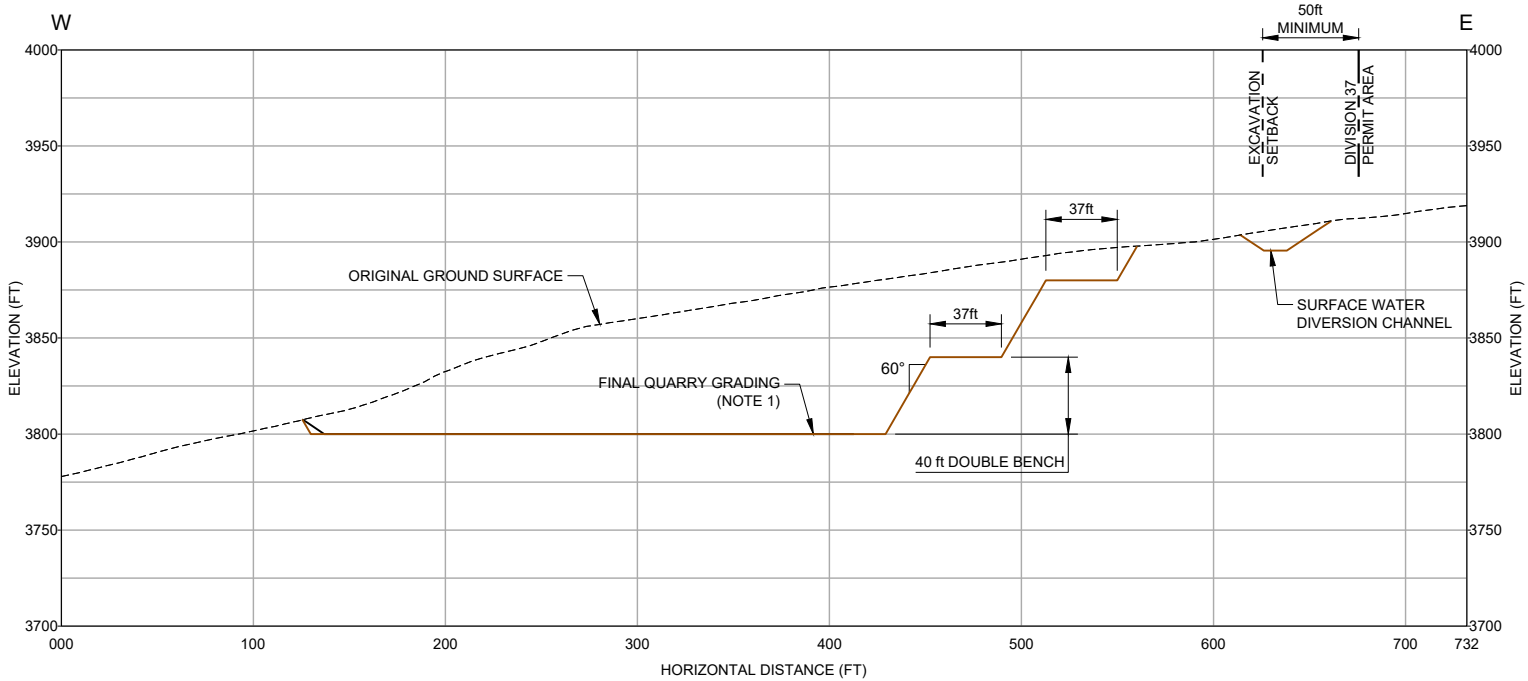
PROJECT NO.
1663241

REV.
1

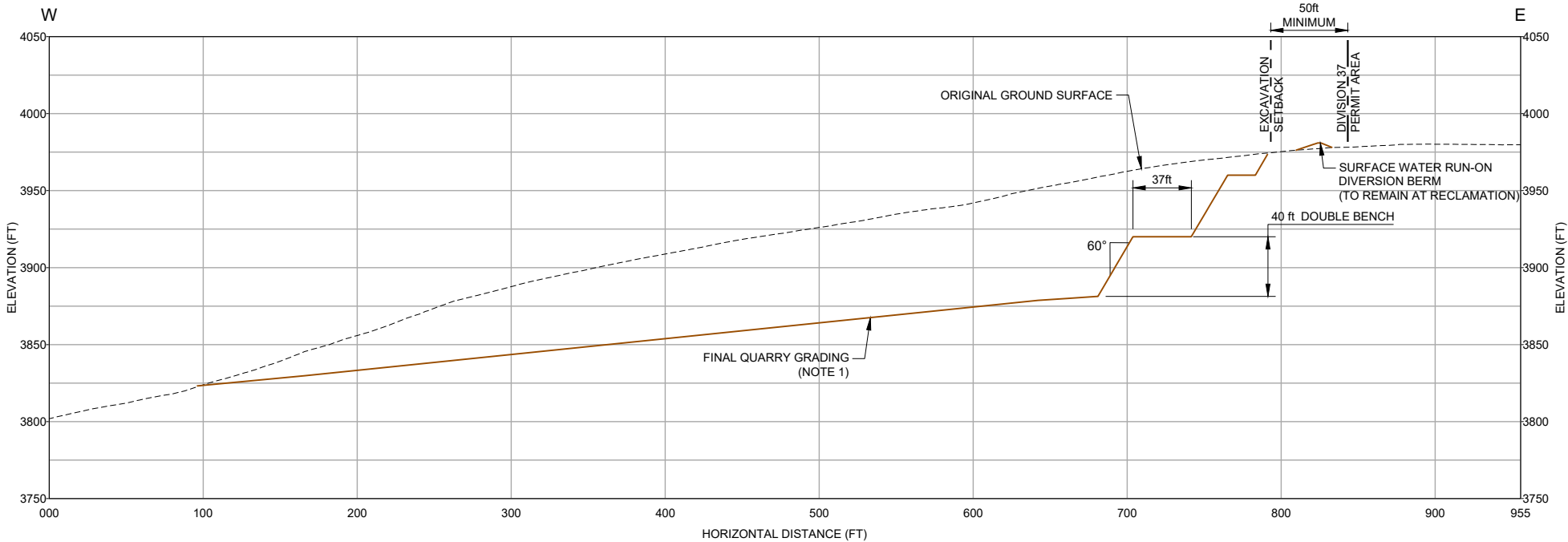
3 of 6

FIGURE
3

Path: \\golder-gds-complex\data\Office\Renov\Complex\Grassy Mountain\09_PROJECTS\1663241 - Grassy Mountain TSP\02_PRODUCTION\WGQUARRY - File Name: 011366-0100-0104.dwg | Last Edited By: jburitt | Date: 2021-12-21 Time: 1:34:30 AM | Printed By: jburitt | Date: 2021-12-21 Time: 1:57:57 AM



SCALE 1" = 100' **A** SECTION A
2 3



SCALE 1" = 100' **B** SECTION B
2 3

- LEGEND**
- ORIGINAL GROUND SURFACE
 - FINAL QUARRY GRADING (NOTE 1)
 - QUARRY RECLAMATION GRADING

- NOTE**
1. SLOPED QUARRY FLOOR WILL BE DEVELOPED IN SINGLE BENCHES THAT WILL BE FLATTENED TO 1.5H:1V AT RECLAMATION.

NOT FOR CONSTRUCTION



1	2021-09-15	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

PERMITTEE



CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT

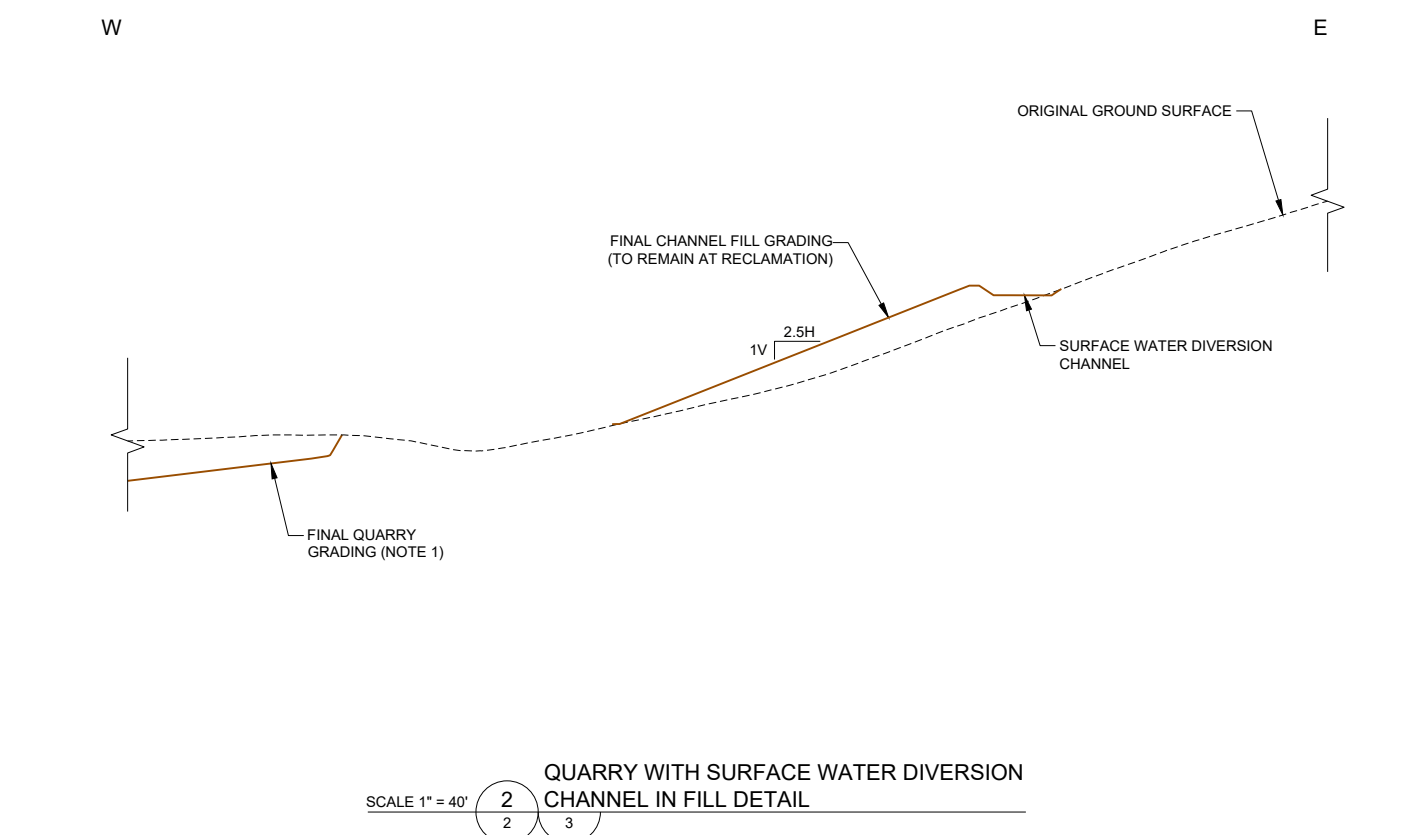
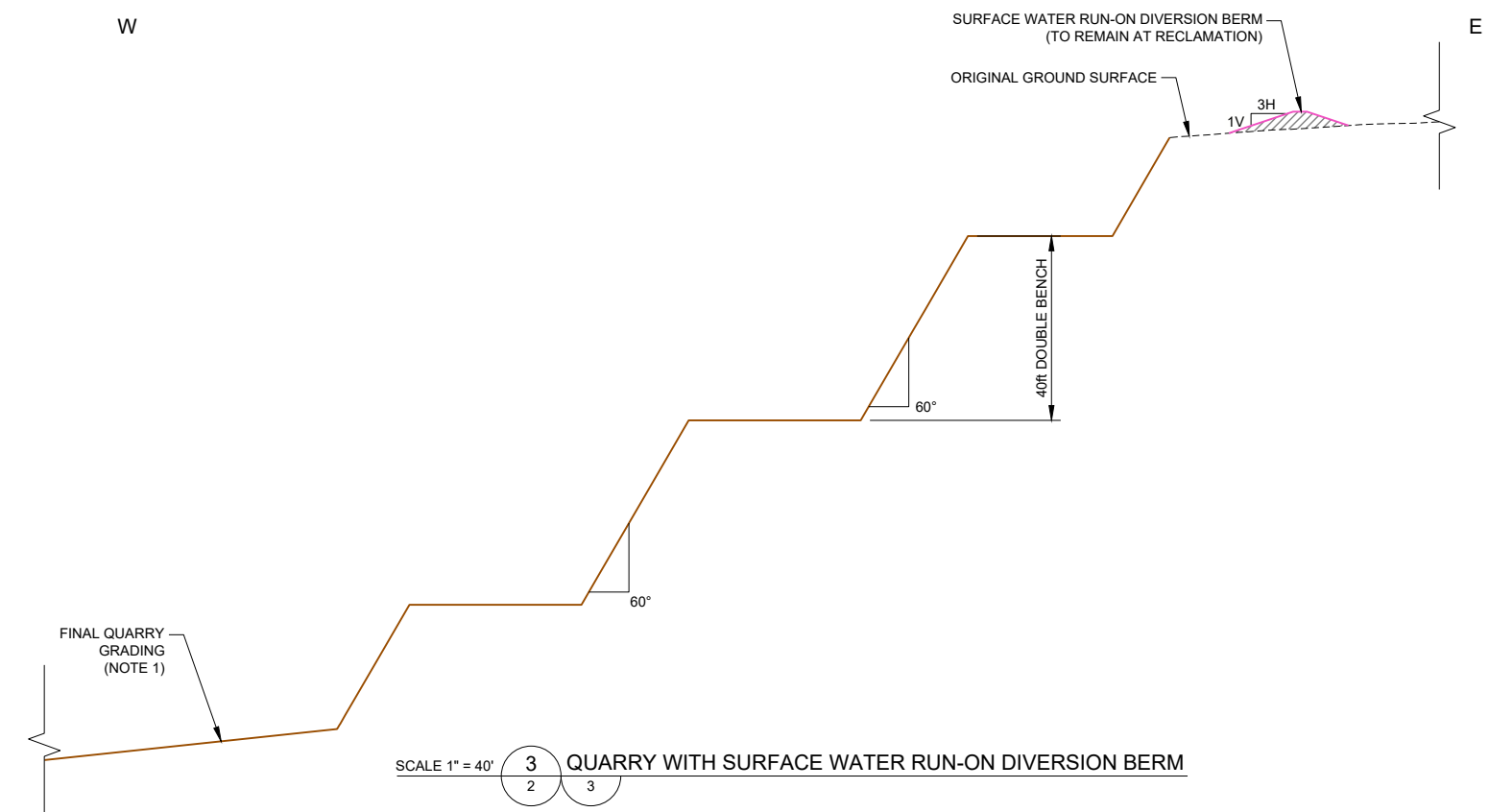
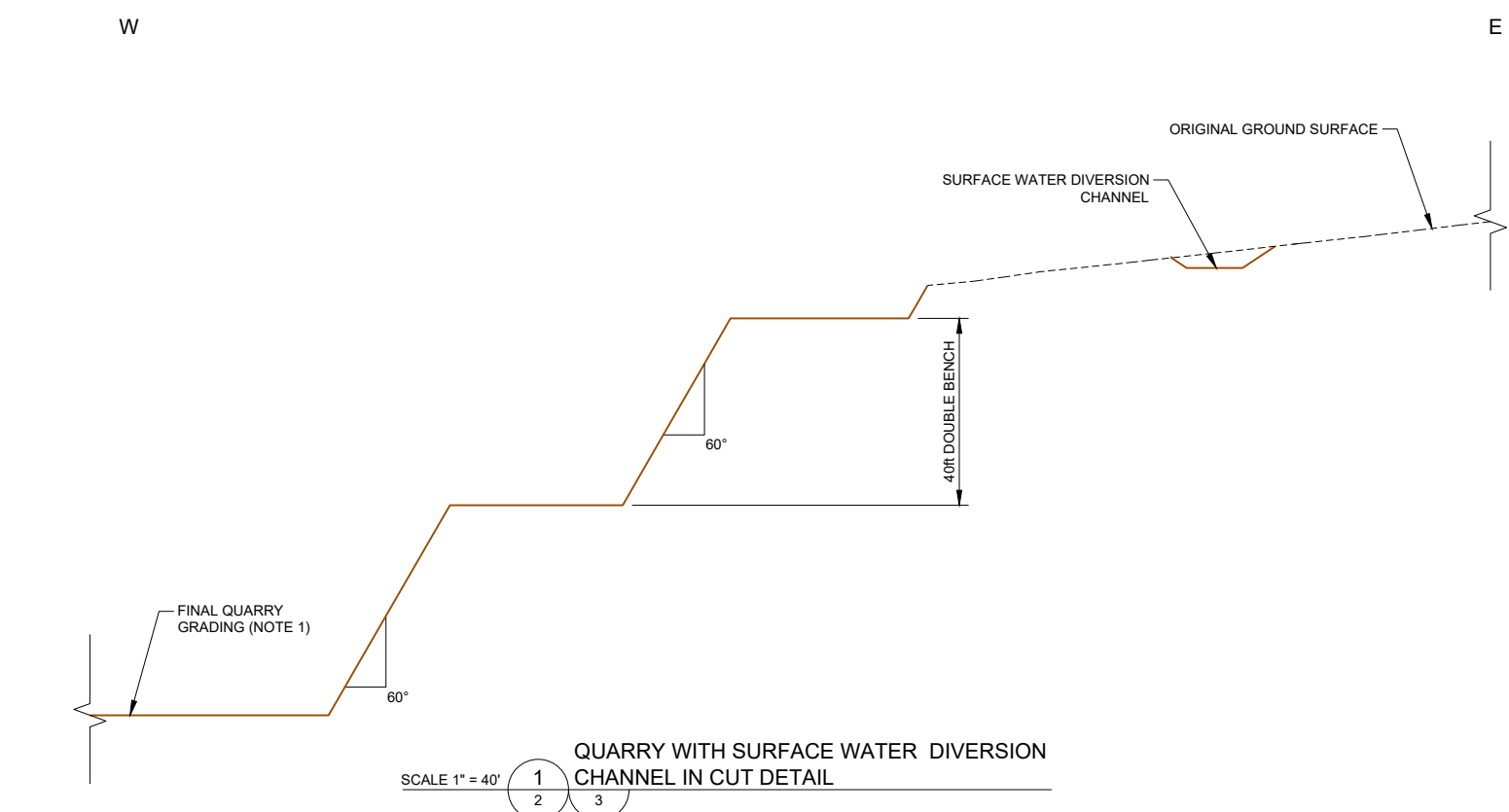


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PROJECT
GRASSY MOUNTAIN
BASALT BORROW QUARRY
OPERATING AND RECLAMATION PLAN

TITLE
**FINAL QUARRY GRADING AND CONCEPTUAL
RECLAMATION GRADING CROSS SECTIONS A AND B**

Path: \\golder-gds-complex-data\Office\Res\ComplexData\Grassy Mountain\09_PROJECTS\1663241 - Grassy Mountain TSP\02_PRODUCTION\WG\QUARRY.dwg | File Name: 011366-0100-0106.dwg | Last Edited By: jburitt | Date: 2021-12-21 Time: 1:40:08 AM | Printed By: jburitt | Date: 2021-12-21 Time: 1:58:37 AM



LEGEND

----- ORIGINAL GROUND SURFACE

----- FINAL QUARRY GRADING (NOTE 1)

- NOTES**
1. SLOPED QUARRY FLOOR WILL BE DEVELOPED IN SINGLE BENCHES THAT WILL BE FLATTENED TO 1.5H:1V AT RECLAMATION.

NOT FOR CONSTRUCTION



1	2021-09-15	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
0	2019-04-08	OPERATING AND RECLAMATION PLAN	LRC	MSW	JMJ	CJM
REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED

PERMITTEE



CALICO RESOURCES

CALICO RESOURCES USA CORP.
GRASSY MOUNTAIN PROJECT
MALHEUR COUNTY, OREGON

CONSULTANT



GOLDER
MEMBER OF WSP

GOLDER ASSOCIATES INC.
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USA
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PROJECT
GRASSY MOUNTAIN
BASALT BORROW QUARRY
OPERATING AND RECLAMATION PLAN

TITLE
FINAL QUARRY GRADING AND CONCEPTUAL RECLAMATION GRADING DETAILS

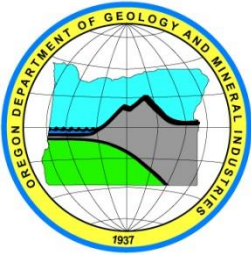
PROJECT NO.
1663241

REV.
1

5 of 6

FIGURE
5

Groundwater Supplemental Form



Oregon Department of Geology and Mineral Industries
Mineral Land Regulation and Reclamation Program
229 Broadalbin Street SW
Albany, OR 97321-2246
(541) 967-2039
Fax (541) 967-2075

Groundwater Supplemental Form

DOGAMI has a statutory directive to avoid or minimize adverse impacts to air, water, land, and wildlife resources from surface mining operations. Groundwater is a natural resource that can be affected by mining and as a result, dewatering is regulated by this department. Permittees should be aware that dewatering is generally allowed only if it is specified in their permit. DOGAMI defines dewatering to be the withdrawal of groundwater with a resultant decline in the water table or hydraulic head within an aquifer.

To ensure the protection of groundwater, it is necessary for permittees to consider certain issues prior to conducting this activity. These issues are both regulatory and technical in nature and include permitting, collection of baseline data, monitoring and/or modeling. This form is to be used as a component of a DOGAMI Operating Permit or Amendment application for proposed surface mining operations which will involve encountering and/or impacting groundwater resources.

Section 1: Contact & Site Information

1a. Applicant / Proposed Permittee

Name: **Calico Resources USA Corp**

Mailing Address: **665 Anderson Street**

City: **Winnemucca**

State: **NV**

Zip: **89445**

Telephone: **775-625-3600**

Fax: **N/A**

Email: **glen@paramountnevada.com**

Preferred method of contact ☐ Telephone ☒ Email

1c. Site Identifier

Legal Description

County: **Malheur**

Township: **22S**

Range: **44E**

Section: **8**

Tax Lot(s): _____

Township: _____

Range: _____

Section: _____

Tax Lot(s): _____

Site Name: **Grassy Mountain Basalt Borrow Quarry**

DOGAMI ID# This supplemental form is part of an abbreviated Operating Permit Application for the basalt borrow quarry at the Grassy Mountain mine. The basalt borrow quarry will be situated within the Division 37 permit boundary (Permit Area); however, this supplemental form specifically relates to surface mine operations under the Division 30 regulations. This supplemental form will be submitted with the abbreviated Operating Permit Application and Operating and Reclamation Plan set as an Appendix to the Consolidated Division 37 Permit Application. The Division 37 Permit Area and location of the basalt borrow quarry are shown on Figure 1.

The information and responses provided in this supplemental form are related to the basalt borrow quarry and not the entirety of the Division 37 Permit Area.

The groundwater level information provided in this supplemental form is based on information presented in the *Revised Groundwater Resources Baseline Report and Comment Responses, Grassy Mountain Mine Project*, prepared by SPF Engineering, LLC., revised September 2021 and observations made by drillers during basalt quarry resource evaluation. Based on the report, two aquifer zones are identified in the vicinity of the Grassy Mountain Mine; shallow and deep aquifer zones. These zones are pertinent in the context of well completion depth; the current groundwater conceptual model identifies a single heterogeneous and locally complex aquifer system. This aquifer system is characterized by various water-bearing zones, with water levels strongly influenced by vertical gradients. The groundwater level information provided herein is focused on the data available for the shallow wells near the basalt quarry as shown on Figure 1. The wells are screened at depths of less than 200 feet in a variety of lithologies.

There are no monitoring wells within the footprint of the proposed basalt borrow quarry. Three coreholes were advanced to a depth from 131 to 171 feet bgs in the footprint of the quarry in December 2018 as shown on Figure 1 and 2. Groundwater levels were estimated by drillers below the base of the basalt resource in Coreholes B-2 and B-3. Groundwater was not observed in Corehole B-1.

Groundwater is not anticipated to be encountered in the proposed basalt quarry excavation based on the resources reviewed.

Section 2: Groundwater Information

- The seasonal high water table is the highest level that water typically rises to each year.
- The seasonal low water table is the lowest level that water typically falls to each year.

The seasonal high water table level is: **3,674 (based on period of record for shallow aquifer wells nearest quarry [59760, 59761, and 59772])** feet

- ☒ relative to mean sea level ☐ below original ground surface
☐ unknown

The seasonal low water table level is: **3,671 (based on period of record for shallow aquifer wells near quarry [59760, 59761, and 59772])** feet

- ☒ relative to mean sea level ☐ below original ground surface
☐ unknown

Estimated annual fluctuation of water table is **3** feet from seasonal high to low

☐ unknown

Direction of groundwater flow: **Groundwater in the shallow aquifer generally follows surface topography and flows from topographical highs to lows. Overall flow direction is to the northwest.**

☐ unknown

How did you determine the seasonal high and low water table levels?

- ☐ well logs ☒ piezometer ☐ other _____
☐ field observation(s)-Describe:
☐ landowner observation(s)-Describe:

Have monitoring wells been constructed on-site?

☐ yes ☒ no

If yes: What is the average depth of static groundwater measured in the well? **No monitoring wells are constructed in the basalt quarry area. Depth to water measurements range from about 45 to 97 feet below top of casing (btoc) in shallow aquifer wells west of the quarry (59760, 59761, 59772, PW-1, GW-1, 57-10) as shown on Figures 1 and 2. These wells are screened in the shallow aquifer in different lithologies (fractured basalt, sandstone, gravel) and in an area with significant fault structures. Depth to water in piezometers nearest to the quarry (59760, 59761, and 59772) ranges from about 94 to 97 feet bgs or (3,671 to 3,674 feet msl).**

Groundwater was encountered in basalt Coreholes B-2 and B-3 during quarry resource evaluation. Groundwater levels were estimated by drillers at 126 feet bgs in B-2 (3,778 feet msl) and 143 feet bgs in B-3 (3,747 feet msl) during drilling. The groundwater was encountered in the chert pebble conglomerate/siltstone (Tis) underlying basalt bedrock (Tgb) and were not static or measured groundwater levels, only groundwater levels estimated during drilling. The minimum proposed quarry floor elevation is 3,790 feet msl and will not extend below base of bedrock. The mining plan provides at least 5 feet of basalt be left at the base of the quarry floor.

Are there off-site groundwater supply wells within 1,500-feet of the permit boundary?

☒ yes ☐ no

Prod-1 is located approximately 100 feet outside the Division 37 Permit Area. Supply wells PW-1 and BLM are located within the Division 37 Permit Area.

☐ not applicable ☒ yes ☐ no

If yes: Are well logs attached?

The proposed surface mine site is in or within one mile of a:

- ☐ critical aquifer recharge area ☐ sole source aquifer ☐ public water supply watershed
☐ wellhead protection area ☐ special protection area ☐ designated aquifer protection area
☐ critical groundwater area ☐ vulnerable groundwater quantity resource area
☐ classified groundwater restricted area ☐ other _____ ☒ none

The site is underlain by:

- ☒ multiple aquifers ☐ complex hydrogeology ☐ neither ☐ unknown

The shallowest aquifer is:

- ☐ confined ☒ unconfined ☐ unknown

Section 3: Mining Information

The maximum depth of proposed mining is: 3,790 feet ☒ relative to mean sea level ☐ below original ground surface
☐ unknown

The site will be mined: ☐ wet ☒ dry ☐ both

Describe mining method (e.g. drilling and blasting, ripping and loading, etc.): **Drill and blast**

Will mining/excavation operations be sequenced/phased? ☐ yes ☒ no

If yes: Please attach map.

Is dewatering necessary or proposed for the excavation operations? ☐ yes ☒ no

If yes: Groundwater will be conveyed or pumped to:

- | | | |
|---|--|---|
| ☐ on-site trench | ☐ on-site pond | ☐ on-site ditch |
| ☐ depleted cell | ☐ off-site location | ☐ waters of the state* |
| ☐ other: _____ | ☐ other: _____ | |

*** A DEQ National Pollution Discharge Elimination System (NPDES) Permit may be required.**

Is the area receiving dewatering water shown on a map? ☒ not applicable ☐ yes ☐ no

If yes: Please attach map.

Depth groundwater will be lowered to: _____ feet ☐ relative to mean sea level ☐ below original surface
☐ unknown ☒ not applicable

Has a Groundwater Study been completed? ☒ yes ☐ no

If yes: Please attach report.

Dewatering Plan

If the proposed surface mining operations have the potential to impact water quality and quantity through a resultant decline in the water table or hydraulic head within an aquifer a written dewatering plan may be needed. The scope of the required information will be based on site characteristics and project scale. Basic elements of a dewatering plan may include collection of baseline data and analysis, mine plan sequence, development and restrictions, groundwater modeling, on-site or off-site monitoring and/or mitigation that the planned activity will not adversely affect other groundwater users. Information required may include:

1. Identification, review and submittal of adjacent well logs.
2. Inventory of adjacent water rights and water use.
3. Measure static water levels in adjacent wells and survey in well head locations.
4. Determination of the current potentiometric surface.
5. Drilling data and completion of one or more monitoring wells.
6. Definition and/or delineation of presence/absence of confining bed(s).
7. A groundwater monitoring program during mining.
8. Development of an area groundwater budget and projection of mining impacts thereon.
9. Design and construction of a groundwater recharge structure (i.e. trench) following approval by the department.

Please note that DOGAMI will review the information presented in the completed form to determine if a written dewatering plan is required for the proposed surface mining operations.

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

Well 1 (PROD-1)

MAY 1989

WATER RESOURCES DEPT.

(START CARD) #

(1) OWNER: Well Number: SALEM, O.
Name Atlas Precious Metals
Address 743 Horizon Ct. Suite 202
City Grand Junction State Co Zip 81506

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☒ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☒ Other Auger

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes No Depth of Completed Well ft.

Explosives used Yes No Type Amount

HOLE		SEAL		Amount	
Diameter	From To	Material	From To	sacks or pounds	
12"	0	18			
10	18	425			
		Cement grout	0	26	19

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ft. to ft. Material Cement Grout

Gravel placed from 100 ft. to 245 ft. Size of gravel NO. 8

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	99	.250	☒	☐	☒	☐
	6"	+2	245	sch 80	☐	☒	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method
☒ Screens Type Aardark Material PVC sch 80

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
380	420	.020		6"		☐	☐
145	255	325-355				☐	☐
						☐	☐
						☐	☐
						☐	☐

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

☐ Pump ☐ Bailor ☒ Air ☐ Flowing

Yield gal/min Drawdown Drill stem at Time

100 40' 300 1 hr.

Temperature of water Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Malheur Latitude Longitude
Township 22S N or S, Range 44E E or W, WM.
Section 5 NW 1/4 NE 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(10) STATIC WATER LEVEL:

40' ft. below land surface. Date 12-8-88

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 40'

From	To	Estimated Flow Rate	SWL
140-255	255	30 gpm	
320	355	50 gpm	
380	415	150 gpm	

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
Overburden w/ boulders	0	17	0
Clay brown	17	140	0
Sandstone w/ blue clay	140	255	40
blue clay	255	320	40
Sandstone w/ blue clay	320	355	40
Blue clay	355	380	40
Fruited hard sandstone	380	415	40
Blue clay	415	425	40
=			
12-5-88 - 12-10-88			
+=====			

Redone surface seal to 26 feet
using method 2 referring to letter
sent January 9, 1989
Drilled around 10" casing to the
depth of 26' using method C
pumped 19 sacks of cement down hole

3-30-89 - 3-31-89

Incorporated to singel log per
state request

Date started 12-5-88 Completed 3-31-89

(unbonded) Water Well Constructor Certification:

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

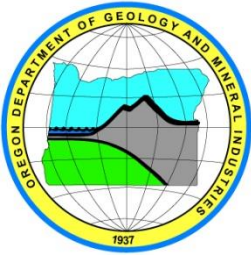
Signed Bob Doty WWC Number 1202 Date 4-15-89

(bonded) Water Well Constructor Certification:

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

Signed Bob Doty for Bill Doty WWC Number 335 Date 4/15/89

Wetland Supplemental Form



Oregon Department of Geology and Mineral Industries
Mineral Land Regulation and Reclamation Program
229 Broadalbin Street SW
Albany, OR 97321-2246
(541) 967-2039
Fax (541) 967-2075

Wetland Supplemental Form

DOGAMI has a statutory directive to avoid or minimize adverse impacts to air, water, land, and wildlife resources from surface mining operations. Wetlands are defined as areas where water covers the soil, or is present either at or near the surface of the soil all year or for varying periods of the year. Due to soil variations, topography, climate, hydrology, water chemistry, vegetation and other factors, including human disturbance, wetlands can vary widely. Non-tidal wetlands are most commonly found along rivers and streams, along the margins of ponds and lakes, within isolated depressions surrounded by dry land, or in other low-lying areas where the groundwater intercepts the soil surface or where precipitation saturates the soils.

Although many wetlands are seasonal and may only be wet periodically, the function of a wetland and its role in the environment is significant. Wetlands provide numerous benefits to both humans and the environment including improving water quality via filtering out pollutants and providing critical habitat for both terrestrial and aquatic wildlife species, some of which are adapted to breeding or living a portion of their life cycle exclusively in these environments. To ensure the protection of wetlands and any wildlife that reside or travel in those areas, it is necessary for applicants to consider certain issues prior to conducting surface mining activities within an area that may contain wetlands. These issues are both regulatory and technical in nature and include permitting, collection of baseline data, monitoring, mapping and/or mitigation. This form is to be used as a component of a DOGAMI Operating Permit or Amendment application for proposed surface mining operations which will involve any mining operations that contain wetlands.

Section 1: Contact & Site Information

1a. Applicant / Proposed Permittee

Name: **Calico Resources USA Corp**

Mailing Address: **665 Anderson Street**

City: **Winnemucca**

State: **NV**

Zip: **89445**

Telephone: **775-625-3600**

Fax: **N/A**

Email: **glen@paramountnevada.com**

Preferred method of contact ☐ Telephone ☒ Email

1c. Site Identifier

Legal Description

County: **Malheur**

Township: **22S**

Range: **44E**

Section: **8**

Tax Lot(s): _____

Township: _____

Range: _____

Section: _____

Tax Lot(s): _____

Site Name: **Grassy Mountain Basalt Borrow Quarry**

DOGAMI ID# **This supplemental form is part of an abbreviated Operating Permit Application for the basalt borrow quarry at the Grassy Mountain mine. The basalt borrow quarry will be situated within the Division 37 permit boundary (Permit Area); however, this supplemental form specifically relates to surface mine operations under the Division 30 Rules. This supplemental form will be submitted with the abbreviated Operating Permit Application and Operating and Reclamation Plan set as an Appendix to the Consolidated Division 37 Permit Application. The Division 37 Permit Area and location of the basalt borrow quarry are shown on Figure 1.**

The information and responses provided in this supplemental form are related to the basalt borrow quarry and not the entirety of the Division 37 Permit Area.

The wetland information provided in this supplemental form is based on information presented in the *Wetland Delineation Report for the Grassy Mountain Mine Project, Malheur County, EM Strategies, Inc.* and the *Department of State Lands (DSL) concurrence letter (WD #2018-0115) dated May 3, 2018.* Based on the letter, no wetlands are present within the vicinity of the basalt borrow quarry. Tributary 2a and the Schweizer Reservoir are within the vicinity of the basalt borrow quarry, but are exempt from OAR 141-085-0515(3 and 7) and are not subject to Removal-Fill requirements per the DSL concurrence letter.

No wetlands are present within the vicinity of the basalt borrow area, and therefore no impacts are anticipated.

Section 2: Wetland Information

The proposed surface mine site is located along, within, or adjacent to the following:

- | | | | |
|--|---|--|---|
| ☐ river or stream | ☐ margin of a lake or pond | ☐ floodplain* | ☐ marsh or wet meadow |
| ☐ swamp | ☐ none | ☒ other: <u>Tributary 2a</u> | ☒ other: <u>Schweizer Reservoir (cattle pond)</u> |

***A DOGAMI Floodplain Supplemental Form may be required to be submitted with this application.**

Are there any known wetlands or wetland like features present within or adjacent to the proposed permit boundary? ☐ unknown ☐ yes ☒ no

How did you evaluate the site or otherwise determine if the site may contain wetlands?

- | | | |
|---|---|--|
| ☐ National Wetland Inventory (NWI) Map | ☐ local wetland survey | ☒ wetland delineation |
| ☐ Environmental Impact Statement (EIS) | ☐ stream gage data | ☐ county soil surveys |
| ☐ FEMA flood insurance rate map | ☐ USGS quadrangle map | ☐ other topographic map of the area |
| ☐ local land use department | ☐ other: _____ | ☐ other: _____ |

What is the general type of wetland found within the site?

- | | | | |
|---------------------------------------|--|--|---------------------------------------|
| ☐ tidal | ☐ freshwater forested | ☐ shrub wetland | ☐ bog |
| ☐ fen | ☐ freshwater springs | ☐ freshwater emergent | ☐ swamp |
| ☐ geothermal | ☐ alpine | ☐ marsh | ☐ human made |
| ☐ other: _____ | ☐ other: _____ | ☒ none | ☐ vernal pools |

Section 3: Studies, Reports and Analyses

Has a Wetland Delineation been completed? ☒ yes ☐ no

If yes: A wetland delineation report including the following is attached:

- | | | | |
|--|---|--|--|
| ☐ topography | ☐ plant communities | ☐ soils mapped and found | ☐ hydrology information |
| ☐ existing wetland mapping | ☐ field data sheets | ☒ types of wetlands identified | ☒ aerial photography |
| ☐ data collection point map | ☒ evaluation area map | ☐ other: _____ | ☐ other: _____ |

Has the wetland delineation been submitted to Department of State Lands (DSL) for concurrence?	☒ yes ☐ no
If yes: Provide DSL Concurrence # WD #2018-0115	
If no: Explain:	
Has the wetland delineation been submitted to the Army Corps of Engineers for concurrence?	☐ yes ☒ no
If yes: Provide USACE Concurrence #	
If no: Explain: Not submitted to USACE (no federal jurisdiction)	
Will any streams, creeks, or drainages be excavated, filled or relocated?	☒ yes ☐ no
Is the planned surface mining operation proposing to impact jurisdictional wetlands?	☒ not applicable* ☐ yes ☐ no
If yes: Has a DSL permit been ☐ applied for ☐ obtained	☐ yes ☐ no
If yes: Please attach approved permit, application or File#.	
*No jurisdictional wetlands were identified during the delineation	

Section 4: Mapping

Is a high resolution topographic or lidar map of the existing conditions and surrounding lands at an appropriate scale available? If yes: Please attach	☒ yes ☐ no
Is a soil survey map delineating the hydric soils attached?	☒ not applicable (no wetlands were identified during the delineation) ☐ yes ☐ no
Has any of the following information been mapped? If yes: Please attach	☒ yes ☐ no
☐ plant communities ☐ soils mapped and found ☐ hydrology information ☐ existing wetland mapping ☐ field data sheets ☒ types of wetlands identified ☒ aerial photography ☐ data collection point map ☒ evaluation area map ☒ proposed permit boundary ☐ other: _____	

Section 5: Mining Information

The maximum depth of proposed mining is: 3,790 feet:	☒ relative to mean sea level ☐ below original ground surface	☐ unknown
The site will be mined:	☐ wet ☒ dry ☐ both	
Describe all proposed mining methods (e.g. drilling and blasting, ripping and loading, etc.): Drill and blast		
Will mining/excavation operations be sequenced/phased?	☐ yes ☒ no	
If yes: Attach map.		
Is dewatering necessary or proposed for the excavation operations?	☐ yes ☒ no	
If yes, a DOGAMI Groundwater Supplemental Form is required to be submitted with this application, and a DEQ National Pollution Discharge Elimination System (NPDES) Permit may be required.		
Check all proposed on-site activities that apply:		
☒ excavation ☒ crushing ☐ material recycling	☐ filling ☒ stockpiling ☐ other: _____	☒ grading ☐ washing ☐ other: _____
If applicable, will all interim and final <i>in-water</i> cut-slopes be constructed at sloping configurations of 3H:1V or flatter to a minimum depth of six feet below the low-water level of the pond(s)? If no: What will be the final sloping configuration of the <i>in-water</i> slopes? _____ H: _____ V (e.g. 5H:1V) Per ORS 632-030-0027(3)(f): final above-water fill slopes can only be placed over cut slopes that are 3H:1V, or flatter, unless the Department agrees in writing to a different ratio based on a determination that the flood potential is very low.	☐ yes ☐ no	

Wetland Assessments and Reports

The scope of information required by DOGAMI will be based on site specific characteristics, the scale and configuration of the proposed mining operation, and the proposed reclamation plan. It is important to note that many mining operations require other state and federal permits; therefore, DOGAMI highly recommends a pre-application consultation and site visit with the applicable natural resource agencies be conducted, if possible. DOGAMI can only issue an Operating Permit if all required state, federal, and local government approvals have been obtained, otherwise a Provisional Operating Permit will be issued. All data collection and analysis techniques should be coordinated in advance with DOGAMI's Floodplain Reclamationist (Vaughn Balzer 541-967-2082; vaughn.balzer@oregon.gov).

Please note that DOGAMI will review the information presented in the completed form above to determine if additional reports, studies, maps and/or analysis are required for the proposed surface mining operations. Information required may include:

1. Preliminary data collection and synthesis.
2. Historic aerial photographs and surveys, including topographic and inventory maps.
3. County soil survey maps and site specific hydric soil characteristics, profiles, and classifications.
4. Site hydrology; including annual groundwater fluctuations, inundated or saturated soil conditions, precipitation, stratigraphy, soil permeability, and plant cover.
5. A description of hydrophytic vegetation, including classification and prevalence.
6. Indicators of wetland hydrology, including drainage patterns, drift lines, sediment deposition, water marks, stream gage data, historic records, and visual observations.