



GRASSY MOUNTAIN MINE PROJECT

Reclamation Plan

Submitted to:

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

Prepared by:

Calico Resources USA Corp.
665 Anderson Street
Winnemucca, Nevada 89445

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EXECUTIVE SUMMARY

Calico Resources USA Corp. (Calico), a wholly-owned subsidiary of Paramount Gold Nevada Corp. (Paramount), owns and controls 100 percent of the mineral tenure of the unpatented mining claims, patented mining claims, and mining leases that comprise the Grassy Mountain Mine Project (Project). The Project consists of two claims groups that are situated near the western edge of the Snake River Plain in eastern Oregon, 22 miles south-southwest of Vale, Oregon, and about 70 miles west of Boise, Idaho.

Calico proposes to mine approximately 2.07 million short tons (US) (Mst) of mill-grade ore and 0.27 Mst of waste rock for a Mine life of approximately 7.8 years. The Tailings Storage Facility (TSF) has been designed to be constructed in three phases. Phase I has been designed to contain 0.98 Mst, Phase II has been designed to contain 2.04 Mst, and Phase III has been designed to contain 3.64 Mst. Phase II of the TSF design is adequate to meet the tailings storage needs for the proposed Mine plan; however, Phase III has been designed and is being permitted to allow for additional storage should additional reserves be identified.

The material (both ore and waste) will be extracted from the underground mine using conventional underground mining techniques, including drilling, blasting, mucking, loading, and hauling at a rate of approximately 1,200 short tons per day (stpd), four days per week. Calico will use hydraulic loaders to load the ore and waste into the haul trucks. The haul trucks will transport the waste rock to the Temporary Waste Rock Storage Facility (TWRSF) near the TSF and transport the ore to the ore stockpile adjacent to the crushing and milling facilities. The ore will be crushed and leached in a carbon-in-leach (CIL) processing plant at a rate of 750 stpd, seven days per week. The leached tailings will then be pumped in a slurry to the TSF, with supernatant solution recovered and pumped back to the Mill.

The key objectives of the Reclamation Plan are to satisfy the requirements of state and federal regulatory requirements by achieving the following:

- Provide a stable post-closure landscape that supports defined land uses of livestock grazing or range land, wildlife habitat, and recreational land, with opportunities to consider mineral exploration and development when feasible;
- Maintain existing access to private land;
- Minimize erosion damage and protect water resources through control of water runoff and stabilization of components;
- Establish post-closure surface soil conditions conducive to the regeneration of a stable plant community;
- Revegetate disturbed areas with appropriate plant species in order to establish long-term, stable plant communities compatible with existing land uses; and
- Maintain public safety by stabilizing or limiting access to landforms that could constitute a public hazard.

The Reclamation Cost Estimate (RCE) was developed in accordance with regulations at Subpart 43 Code of Federal Regulations (CFR) 3809.522, 3809.553, and Oregon Revised Statutes (ORS) 517.810. The Nevada Standardized Reclamation Cost Estimator (SRCE) was used to estimate the RCE. The SRCE model contains

standardized cost data to calculate reclamation bonding requirements for the reclamation of mine sites based on reclamation areas and volumes using geometry parameters defined by the user. The model uses a first-principals approach to reclamation cost estimating, using built-in worksheets with either fixed or user-defined labor and equipment rates for the calculation of reclamation activities that are specific to a mining project.

Calico will use a phased-bonding approach and will work out suitable milestone events with respect to Project development with the Bureau of Land Management (BLM) and Oregon Department of Geology and Mineral Industries (DOGAMI). Calico will provide a reclamation surety in accordance with regulations at 43 CFR 3809.522, 3809.553, and at ORS 517.810 based on the reclamation tasks at the cessation of mining. Calico will update the surety to reflect the actual disturbance and whatever additional disturbance is planned for the subsequent period. Any changes to equipment, consumable, and labor costs will also be incorporated during the updates.

A total reclamation cost of \$12,416,573 has been calculated, including indirect costs such as contingency and contractor profit utilizing the Nevada SRCE Beta Version 2.0. This reclamation cost is based on the completion of the Phase II TSF, which aligns with the current Mine plan and resources identified to support the 8-year Mine life presented.

During a June 1, 2022 meeting (SLR, 2022), the BLM requested that Calico present the reclamation cost estimate for a “fully built out” (FBO) scenario, which assumes the following:

- 135,000 tons of waste rock has been stockpiled in the TWRSF and will be excavated, hauled to the backfill plant located at the Portal Pad and placed underground as Cemented Rock Fill (CRF). 135,000 tons of waste rock is the maximum volume of waste rock planned to be stored on the TWRSF and is planned to occur in year one of operation; and
- 3,000 tons of ore in the Ore Stockpile has been stockpiled and will be excavated, hauled to the backfill plant located at the Portal Pad and placed underground as CRF. This is the maximum volume of ore planned to be stored in the Ore Stockpile and will occur routinely during operation.

The reclamation costs associated with the FBO scenario described results in an estimated reclamation cost of \$3,546,923.

The Reclamation Plan will be performed in the following five stages, with various activities and monitoring occurring at and in between each stage:

- Stage 1 begins immediately following the cessation of mining operations (closure year 1), with closure activities focused on facilities that are not related to the tailings underflow. This generally includes reclamation of the Underground Mine; TSF Embankment; TWRSF; Process Plant, including associated yards, infrastructure, and ancillary facilities (minus the administrative building and various support buildings and yards); Growth Medium Stockpiles 2 and 3; and select roads.
- Stage 2 (closure year 2) will commence once the flow rate from the tailings underflow can be actively managed on approximately 25 percent of the TSF Impoundment surface and the TSF Impoundment surface is suitable for construction activities (estimated to be one year). Stage 2

reclamation will generally include regrading the entirety of the TSF Impoundment surface, and reclaiming 75 percent of the TSF Impoundment surface and Growth Media Stockpile 1.

- Stage 3 (closure year 3) will commence once the flow rate from the tailings underflow can be passively managed within the Evaporation Cell (E-Cell), and the unreclaimed portion of the Tailings Impoundment surface is suitable for construction activities (estimated to be one year). Stage 3 reclamation will include reclaiming the remaining 25 percent of TSF Impoundment surface, Quarry, yards, Reclamation Borrow Areas, and remaining haul roads, and converting the Reclaim Pond to an E-cell.
- Stage 4 will commence upon completion of Stage 3 and will include the reclamation of the ancillary facilities, such as the power supply (power lines); water supply; other areas (including the perimeter fence, and meteorological monitoring station); and the administrative building in the Process Plant, including associated yards, infrastructure, and ancillary facilities.

Following Stage 4, all that will remain on site will be the E-cell, groundwater monitoring wells, and the Mine access road to allow for approximately 27 years of post-closure monitoring and inspections

- Stage 5 will commence approximately 29 years following cessation of mining, at the conclusion of post-closure monitoring for all mining facilities. Stage 5 reclamation will include reclaiming all groundwater monitoring wells and the Mine access road.

Post-closure monitoring will be undertaken in accordance with the detailed Post-closure Monitoring Plan submitted to the BLM and DOGAMI, and will begin immediately following cessation of mining and conclude following acceptance of closure.

ACRONYMS

bcy	bank cubic yards
BLM	Bureau of Land Management
BMP	best management practice
Calico	Calico Resources USA Corp.
CFR	Code of Federal Regulations
CIL	carbon-in-leach
CRF	cemented rock fill
cy	cubic yards
DOGAMI	Department of Geology and Mineral Industries
DST	double-sided textured
E-Cell	Evaporation Cell
EFU	Exclusive Farm Use
ERU	Exclusive Range Use
FBO	fully built out
ft	feet / foot
H:1V	horizontal to one vertical
kV	kilovolt
LLDPE	linear low-density polyethylene
MCC	Malheur County Code
MCE	maximum credible earthquake
Mst	million short tons (US)
NaCN	sodium cyanide
OAR	Oregon Administrative Rule
ODEQ	Oregon Department of Environmental Quality
ORS	Oregon Revised Statutes
OWRD	Oregon Water Resources Department
oz/yd ²	ounce per square yard
Paramount	Paramount Gold Nevada Corp.
Project	Grassy Mountain Mine Project

RCE	Reclamation Cost Estimate
RF	rock fill
SEORMP	Southeastern Oregon Resource Management Plan
stpd	short tons per day
SRCE	Standardized Reclamation Cost Estimate
TSF	Tailings Storage Facility
TWRSF	Temporary Waste Rock Storage Facility
U.S.C.	United States Code
WBS	Work Breakdown Structure
WPCF	Water Pollution Control Facility

1. INTRODUCTION

Calico Resources USA Corp. (Calico), a wholly-owned subsidiary of Paramount Gold Nevada Corp. (Paramount), owns and controls 100 percent of the mineral tenure of the unpatented mining claims, patented mining claims, and mining leases that comprise the Grassy Mountain Mine Project (Project). The Project consists of two claims groups that are situated near the western edge of the Snake River Plain in eastern Oregon, 22 miles south-southwest of Vale, Oregon, and about 70 miles west of Boise, Idaho. The Project location is presented in Figure 1.

Calico proposes to mine approximately 2.07 million short tons (US) (Mst) of mill-grade ore and 0.27 Mst of waste rock for a Mine life of approximately 7.8 years. The Tailings Storage Facility (TSF) has been designed to be constructed in three phases. Phase I has been designed to contain 0.98 Mst, Phase II has been designed to contain 2.04 Mst, and Phase III has been designed to contain 3.64 Mst. Phase II of the TSF design is adequate to meet the tailings storage needs for proposed Mine plan; however, Phase III has been designed and is being permitted to allow for additional storage should additional reserves be identified.

The material (both ore and waste) will be extracted from an underground mine using conventional underground mining techniques, including drilling, blasting, mucking, loading, and hauling at a rate of approximately 1,200 short tons per day (stpd), four days per week. Calico will use hydraulic loaders to load the ore and waste into haul trucks. The haul trucks will transport the waste rock to the Temporary Waste Rock Storage Facility (TWRSF) near the TSF and transport the ore to the ore stockpile adjacent to the crushing and milling facilities. The ore will be crushed and leached in a carbon-in-leach (CIL) processing plant at a rate of 750 stpd, seven days per week. The leached tailings will then be pumped in a slurry to the TSF, with supernatant solution recovered and pumped back to the Mill.

In general, the proposed mining and metal processing operations will consist of an underground mine and ore processing facilities, including a conventional mill and TSF, a TWRSF, and other support facilities. The Project will include the following major components:

- An underground mine, with Mine portal, decline, and ventilation shaft;
- TSF with Tailings Embankment, Tailings Impoundment, and Reclaim Pond;
- TWRSF;
- Process Plant area, which includes the Process Plant building, control room, crushing facilities, conveyors, ore bins, control rooms, CIL processing plant, reagent storage building (including chemical and reagent storage), gold room, and Collection Pond;
- Infrastructure and ancillary facilities that include Project site main gate and guard house, administration office and change house, assay laboratory and sample preparation area, truck workshop and warehouse, wash pads, Process Plant workshop and warehouse, meteorological station, explosive magazines, parking areas, ore stockpiles, solid and liquid hazardous waste storage, and fuel storage and dispensing area;
- Roads, including upgrades to the Twin Springs and Cow Hollow roads, and construction of the Mine access, internal access, and Mine haul roads;
- Yards and laydown areas;

- Growth Media Stockpiles;
- Water supply, including Production Wellfield, water pipeline, raw water storage tank, and Potable Water Treatment Plant;
- Power supply that includes a power substation, upgraded 14.4 kilovolt (kV) overland power transmission system, new 14.4 kV overland power transmission system, onsite power lines, and generators;
- Permanent and temporary stormwater diversion channels;
- Other areas, including the exploration areas, septic system, and perimeter fence;
- Quarry; and
- Reclamation Borrow Areas.

The general arrangements of the facilities during operations are shown in Figure 2.

1.1 PROJECT DESCRIPTION

Reclamation of disturbed areas resulting from activities outlined in this Reclamation Plan will be completed in accordance with the Bureau of Land Management (BLM), Oregon Department of Geology and Mineral Industries (DOGAMI), and Oregon Department of Environmental Quality (ODEQ) regulations. The purpose of Subpart 43 Code of Federal Regulations (CFR) 3809 - Surface Management is to prevent unnecessary or undue degradation of public lands by operations authorized by the mining laws. Anyone intending to develop mineral resources on public lands must prevent unnecessary or undue degradation of the land and reclaim disturbed areas. This subpart establishes procedures and standards to ensure that operators and mining claimants meet this responsibility and provide for the maximum possible coordination with appropriate state agencies to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands by operations authorized by the mining laws. The State of Oregon requires that a reclamation plan be developed for any new chemical mining project and for expansions of existing operations (Oregon Administrative Rules [OAR] 632-037-0070) and for the quarry (OAR 632-030-0027). The regulatory framework for the development of this Reclamation Plan is described in greater detail in Section 3.1.

The Project disturbance areas are summarized in Table 1. The areas proposed for disturbance is divided into the following:

- Underground Mine;
- TSF;
- TWRSF;
- Process Plant;
- Infrastructure and ancillary facilities;
- Roads;
- Yards and laydown areas;
- Growth Media Stockpiles;
- Water supply;
- Power supply;
- Stormwater diversion channels;
- Quarry;

- Reclamation Borrow Areas;
- Monitoring;
- Exploration; and
- Disturbed area.

Table 1. Project Disturbance Areas

Facility	Area (acres)
Underground Mine	6.7
Tailings Storage Facility	99.8
Temporary Waste Rock Storage Facility	5.7
Process Plant	2.5
Infrastructure & Ancillary Facilities	17.8
Roads	34.9
Yards & Laydown Areas	10.0
Growth Media Stockpiles	7.7
Water Supply	7.9
Power Supply	61.1
Stormwater Diversion Channels	11.8
Quarry	48.2
Reclamation Borrow Areas ¹	55.9
Monitoring	0.0
Exploration	10.0
Disturbed Area ²	107.8
Total	487.9

¹ The maximum available growth media identified at the two Reclamation Borrow Areas.

² Disturbed areas are 50-foot buffers along facilities such as roads, yards, and laydown areas, and the TSF that may be disturbed during construction. These areas will be reclaimed following construction activities are completed during operations.

Costs to support financial surety associated with this Reclamation Plan are provided in Section 8.

2. LAND USE

2.1 CURRENT

The Land Use Study Area is zoned Exclusive Range Use (ERU) and Exclusive Farm Use (EFU) in the Malheur County Code (MCC). Land in and near the Land Use Study Area is currently used for grazing and dispersed recreation and supports an existing road network that provides local access. Grazing is a farm use and is allowed by right in the Land Use Study Area. Most of the land is administered by the BLM; therefore, dispersed recreation, such as hiking and camping, is managed in accordance with BLM policies.

Mining and associated infrastructure proposed as part of the Project is an allowed use of BLM-administered land in and near the Land Use Study Area if the Project can be developed in a manner that protects other sensitive resources, per the Southeastern Oregon Resource Management Plan (SEORMP) energy and mineral resource objectives.

The Land Use Study Area does not support any areas of critical environmental concern, wild and scenic rivers, wilderness study areas, sage grouse lek sites, or riparian conservation areas. Information in the SEORMP indicates that portions of the Land Use Study Area are in or near areas that are open to mining but subject to operational timing limitations. Factors that would affect the operational timing limitations include proximity to occurrences of special status plants and mule deer winter range. Surveys of the Permit Area and a 2-mile radius did not locate any threatened or endangered species.

Malheur County approved the Conditional Use Permit to construct an underground gold and silver mine on private lands zoned for ERU on May 23, 2019, and issued the Land Use Compatibility Statement to Calico on July 30, 2019.

2.2 POST-CLOSURE

The proposed post-closure land uses for the Project are livestock grazing or range land, wildlife habitat, and recreational land, with opportunities to consider mineral exploration and development when feasible. Where practical, areas impacted by the Project will be returned to conditions that existed prior to mining and mineral processing and provide for the post-closure land uses described above. In some cases, habitat conditions may be improved from the pre-project conditions as a result of the monitoring and noxious weed control measures described in the Noxious Weed Monitoring and Control Plan. Post-closure land uses are in conformance with the BLM Vale District Management Plan and Malheur County Land Use Plans. This goal is achieved through the placement of adequate growth media and revegetation using a BLM-prescribed seed mix, that is intended to provide for wildlife habitat and forage.

3. LEGAL REQUIREMENTS AND OTHER REGULATORY FACTORS

3.1 REGULATORY FRAMEWORK

Reclamation of disturbed areas resulting from proposed mining activities outlined in this Reclamation Plan will be completed in accordance with the BLM and the State of Oregon DOGAMI and ODEQ regulations. The purpose of 43 CFR 3809 (Surface Management) is to prevent unnecessary or undue degradation of public lands by operations authorized by the mining laws. Anyone intending to develop mineral resources on public lands must prevent unnecessary or undue degradation of the land and reclaim disturbed areas. This subpart establishes procedures and standards to ensure that operators and mining claimants meet this responsibility and provide for the maximum possible coordination with appropriate state agencies to avoid duplication and to ensure that operators prevent unnecessary or undue degradation of public lands by operations authorized by the mining laws. The State of Oregon requires that a reclamation plan be developed for any new chemical mining project and for expansions of existing operations (OAR 632-037-0070) and for the quarry (OAR 632-030-0027).

Surface management regulations at 43 CFR 3809.420 establish the performance standards that apply to this Reclamation Plan. The State of Oregon has established mining, reclamation, water quality, and air quality regulations. The following measures, designed to prevent unnecessary or undue degradation, will be implemented during the design, construction, operation, and reclamation of the Project:

- All regulated components of the facility will be designed and constructed to meet or exceed design criteria approved by BLM, DOGAMI, ODEQ, and the State of Oregon Water Resources Department (OWRD).
- Mineral exploration and development drill holes, monitoring and observation wells, and production wells subject to State of Oregon regulations will be properly abandoned to prevent potential contamination of water resources in accordance with OAR 690-220.
- Roads will be constructed to the minimum necessary width.
- Regulated wastes will be managed according to applicable regulations.
- Surface disturbance will be minimized while optimizing the recovery of mineral resources.
- Fugitive dust and other air emissions from disturbed and exposed surfaces will be controlled in accordance with ODEQ regulations and permits.
- Calico will comply with applicable federal and state water quality standards, including the Federal Water Pollution Control Act, as amended (30 United States Code [U.S.C.] 1151 et seq.).
- Through successful revegetation utilizing the seed mix provided by the BLM and recontouring of the topography to mimic the surrounding environment, wildlife habitat will be rehabilitated pursuant to requirements at 43 CFR 3809.401(b)(3)(v) and 43 CFR 3809.420(b)(3)(iii)(E).
- Surface water drainage control will be accomplished by diverting stormwater, isolating facility runoff, and minimizing erosion.
- Where suitable, surface soils and alluvium will be managed as a growth media resource and removed, stockpiled, and replaced during reclamation.

- A reclamation plan will be implemented that addresses earthwork and re-contouring; re-vegetation and stabilization; detoxification and disposal; and monitoring operations necessary to satisfactorily reclaim the proposed disturbance, including roads, ponds, tailings facilities, stockpiles, buildings, and equipment.

3.2 REGULATORY REQUIREMENTS

This Reclamation Plan was developed to satisfy the requirements of the following state and federal regulatory requirements:

- OAR 632-037-0070, Consolidated Permitting of Mining Operations Reclamation and Closure Plan;
- OAR 340-043-0080, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: General Provisions;
- OAR 340-043-0090, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: Control of Surface Water Run-On and Run-Off;
- OAR 340-043-0100, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: Physical Stability of Retaining Structures and Emplaced Mine Materials;
- OAR 340-043-0110, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: Protection of Wildlife;
- OAR 340-043-0130, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: Guidelines for Disposal of Mill Tailings;
- OAR 340-043-0150, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: Guidelines for Heap-Leach and Tailings Disposal Facility Closure;
- OAR 340-043-0160, Guidelines for the Design, Construction, Operation and Closure of Chemical Mining Operations: Post-Closure Monitoring;
- OAR 632-030-0027, Minimum Standards for a Reclamation Plan (Applicable to the Quarry);
- 43 CFR 3809.420(3), Reclamation; and
- Other state and federal permits required for the operation of the Project.

The regulatory requirements are provided in Appendix A.

4. RECLAMATION OBJECTIVES

4.1 OBJECTIVES

The key objectives of the Reclamation Plan are to satisfy the requirements of state and federal regulatory requirements (Section 3.2 and Appendix A) and establish a sustainable ecosystem similar to pre-mining conditions, by achieving the following:

- Provide a stable post-closure landscape that supports defined land uses of livestock grazing or range land, wildlife habitat, and recreational land, with opportunities to consider mineral exploration and development when feasible;
- Maintain existing access to private land;
- Minimize erosion damage and protect water resources through control of water runoff and stabilization of components;
- Establish post-closure surface soil conditions conducive to the regeneration of a stable plant community;
- Revegetate disturbed areas with appropriate plant species in order to establish long-term, stable plant communities compatible with existing land uses; and
- Maintain public safety by stabilizing or limiting access to landforms that could constitute a public hazard.

4.2 PURPOSE AND APPROACH

Generally, the proposed reclamation activities are intended to promote the establishment of a self-sustaining ecosystem consistent with the biotic communities consistent with the surrounding area, with consideration of the specific conditions that currently exist at the Project. Reclaimed areas will support a self-sustaining ecosystem dominated by local plant species, and mitigate long-term impacts on regional water resources. The reclaimed Project will be accessible to the public; however, public access to unsafe areas will be restricted. Post-closure monitoring and maintenance will follow reclamation to ensure success of the program and compliance with performance criteria as defined by the BLM and the State of Oregon.

This Reclamation Plan incorporates the following approaches and engineering design to address the following key concerns:

- **Access.** While single-lane access will be needed to monitor the water quality at the Evaporation Cell (E-Cell), the Reclamation Plan will limit access to mining features such as the E-Cell and the top of the Quarry to minimize exposure and corresponding risk. Access to potentially unsafe areas will be impeded by safety fences for the E-Cell and the berm/diversion ditch at the top of the Quarry.
- **Physical Stability.** The Reclamation Plan will provide for the long-term, physical stability of the post-closure landforms that will remain, specifically the TSF and the Quarry. This includes demonstrating that the tailings facilities will be physically stable for the maximum credible

earthquake (MCE) event and that the Quarry high walls are reclaimed to comply with OAR 532-030-0027.

Pending confirmation of competent foundation soils, the design slopes of 2.5 horizontal to 1 vertical (2.5H:1V) will be adequate for reclamation stability for the TSF, and 1.5H:1V for the Quarry, both of which will be constructed at the final stable slope as part of construction/operations.

- **Erosional Stability.** The post-closure landforms will be designed to be stable and respond to erosive forces in a similar manner to equivalent naturally occurring landforms composed of similar rock and soil types. This applies to the reclaimed TSF, TWRSF, roads, former building locations, yards, and Quarry areas.
- **Revegetation.** The Reclamation Plan will return the Project to pre-mining land uses, including potential recreational uses, livestock grazing, wildlife habitat, and/or mineral exploration. To the extent practicable, and in accordance with the applicable regulations and guidelines, the portions of the Project used for mining and mineral processing will be revegetated to a condition similar to the surrounding area using local native species appropriate for the area. The established vegetative cover will be self-sustaining and show progression towards the surrounding undisturbed vegetation in terms of species diversity and plant density.
- **Water Management.** The approach to water management during and following reclamation will be to minimize environmental impacts to groundwater and to achieve passive surface water and stormwater drainage across the Project. The planned water management ponds for operations will be decommissioned, with the exception of the Reclaim Pond, which will be converted to an E-Cell for the management of tailings underflow from the reclaimed TSF; although, the timing of decommissioning will be contingent on the evaporative potential of the E-Cell.

All permanent stormwater diversion channels will remain in place following reclamation and have been designed to safely convey runoff from the reclaimed facilities to the natural drainages while controlling erosion.

- **Water Quality** (surface water and groundwater). The Reclamation Plan will ensure that the mining facilities will not contribute to groundwater degradation or contamination during and following reclamation.

A low permeability cover will be installed over the tailings in the TSF to impede infiltration into the tailings material and reduce the tailings underflow reporting to the Reclaim Pond. The tailings cover configuration is discussed in Section 6.2.2.

- **Compliance.** The Reclamation Plan will be in compliance with state and federal requirements, stakeholder commitments, and internal Calico requirements, and will be approved prior to implementation.

5. RECLAMATION IMPLEMENTATION

5.1 METHODOLOGY

The Reclamation Plan will generally consist of the following activities:

- **Demolition and Salvage.** Generally, buildings will be torn down, reduced to rubble, and the debris disposed of offsite in accordance with applicable local, state, and federal regulatory requirements. Because most buildings onsite will be constructed on concrete slab foundations, the slabs will be broken and buried, covered with growth media, and revegetated. If economically feasible, salvage companies will be encouraged to recycle the re-usable construction materials, such as steel I-beams, galvanized siding, pipes, electrical gear, and some lumber.
- **Chemicals, Reagents, and Petroleum Products.** All chemicals, reagents, and petroleum products, such as diesel fuel, lubricants, and gasoline, will be sold, used at another site, recycled where possible, or be disposed of offsite in accordance with applicable local, state, and federal regulatory requirements. Storage tanks and pipelines will be removed and salvaged, or disposed of offsite in accordance with applicable local, state, and federal regulatory requirements.
- **Regrading and Recontouring.** The disturbed surfaces within the Project will generally be regraded and recontoured to provide long-term stability, mimic adjacent landforms, facilitate revegetation, control drainage, and minimize erosion. This will be accomplished by reshaping the disturbed areas to achieve overall desired slope angles and recontouring specific areas, as needed, to promote natural drainage. Where practicable, the natural pre-mining drainage patterns will be re-established. Where the post-closure landform does not allow for the re-establishment of pre-mining drainage patterns, drainage will be engineered so that natural drainage is complemented.

To facilitate revegetation and to improve aesthetics, steep slopes will be recontoured to achieve the desired slope reduction that will provide for a structurally and erosionally stable surface for revegetation.

- **Growth Media Salvage.** As outlined in Table 2, there are 17 soil map units. Each map unit description provides basic information about the map unit, such as predominant soil or soils of the unit, slope, and rock fragment content.

Table 2. Soil Survey Map Unit Descriptions

Map Unit ¹	Name - Description
1	Farmell-Rock outcrop complex, 8% to 30% slopes
2	Farmell-Chardoton very cobbly soil, 15% to 30% slopes
3	Farmell-Chardoton very cobbly soil, 4% to 15% slopes
4	Farmell-Chardoton extremely stony soil, 4% to 15% slopes
5	Farmell-Chardoton soil, 8% to 15% slopes
6	Ruckles very stony loam, 8% to 30% slopes
7	Shano silt loam, 2% to 6% slopes
8	Soil A extremely gravelly sandy loam, 15% to 30% slope
9	Virtue loam, 2% to 8% slopes
10	Xeric Torriorthents, 8% to 30% slopes
11	Soil B very gravelly sandy loam, 8% to 30% slopes
12	Nyssa silt loam, 2% to 6% slopes
13	Drewsey very fine sandy loam, 2% to 6% slopes
14	Ruclick cobbly loam, 4% to 15% slopes
15	Drewsey-Quincy-Solarview Complex, 8% to 30% slopes
16	Owsel silt loam, 2% to 6% slopes
17	Powder silt loam, 0 to 3% slopes
¹ Map units 1-11 were obtained from IMS report (IMS, Inc., 1989, 1991)	

Table 3 provides further details on the taxonomic classification of the soil units.

Table 3. Taxonomic Classification of Soil Series

Series	Family
Chardoton ¹	Fine, montmorillontic, mesic Xerollic Paleargids
Farmell ¹	Fine, montmorillontic, mesic Xerollic Haplargids
Ruckles ¹	Clayey-skeletal, montmorillontic, mesic lithic Argixerolls
Shano ¹	Coarse-silty, mixed, mesic Xerollic Camborthids
Soil A ¹	fine-loamy, mixed mesic Xerollic Haplargids
Soil B ¹	Clayey-skeletal, montmorillontic, mesic Xerollic Durargids
Virtue ¹	Fine-silty, mixed, Xerollic Duragids
	Xeric Torriorthents ¹
Nyssa	Coarse-silty, mixed, mesic Xeric Haplodurids
Drewsey	Coarse-loamy, mixed, mesic Xeric Haplocambids
Ruclick	Clayey-skeletal, smectitic, mesic Aridic Argixerolls
Owsel	Fine-silty, mixed, mesic Durinodic Xeric Haplargids
Powder	Coarse-silty, mixed, mesic Cumulic Haploxerolls
Source: IMS, Inc., 1989, 1991	
¹ Soil Series data obtained from IMS report (IMS Inc., 1989, 1991)	

Soil found on the ridges is typically less than 30 inches deep and is high in rock fragments throughout the profile. Farmell and Chardoton soil, with high amounts of clay in the sub-soil and varying amounts of surficial rock fragments, is found throughout the Mine and Process Area. The moderately fine textured Virtue soil has a hard silica and carbonate hard pan layer at about 20 to 30 inches below the surface. Deep, coarse-textured Shano soil is found along drainage channels. Ruckles soil is typically found over areas where the underlying bedrock is basalt. Soils A and B have high percentages of surficial rock fragments. Soil A is found on slopes of 15 to 30 percent. Soil B is found in areas with slopes of approximately 8 percent.

The soils located in the valleys consist predominately of alluvium, loess (wind-blown silt) and eolian (wind-blown) sand. These soils belong to the Drewsey, Shano, Power, and Owsel series. The Drewsey series is a deep, coarse-textured soil with a weakly-developed subsoil. The Owsel series is a deep, finer soil with a well-developed subsoil. The Shano series is similar to the Owsel series but lacks a well-developed subsoil. Nyssa soil, encountered sporadically, are generally silty throughout the profile and exhibit a cemented silica and carbonate layer between 25 to 30 inches. Soils located on and along ridges were formed from the underlying bedrock, which generally consisted of conglomerate sandstone and basalt. The soils underlain by basalt were predominantly the Rucklick series, a moderately deep, fine-textured soil. These soils exhibited many surficial and subsurface coarse fragments. The soils underlain by conglomerate sandstone were the Drewsey and the Drewsey-Quincy-Solarview complex. These soils were generally deeper to rock and coarser-textured. Soils further south along Twin Springs Road generally consist of the Shano series and Farnell-Chardoton complex. The Farnell-Chardoton complex exhibited high amounts of clay and rock throughout the profile. The map unit characteristics of these soils are listed in Table 3. Suitability for reclamation is also included in the table.

Salvageable growth media from the Project surface disturbance will be stockpiled at three centralized Growth Medium Stockpiles, as shown on Figure 2. Growth media will be salvaged for reclamation activities at the commencement of construction of each Project component. Stockpiled growth media will be characterized prior to use as growth media to identify the viability of the material and determine if soil amendments are required. Soil on slope at 15 percent or less will be salvaged up to a depth of 2 feet (ft). Soils on slopes greater than 15 percent will be salvaged up to a depth of 1 ft. Growth media will consist of soils and alluvium stripped prior to surface disturbance activities.

As outlined in Table 4, approximately 1,089,000 bank cubic yards (bcy) of growth media will be salvaged from the footprints of the Project facilities and available for borrow from the Reclamation Borrow Areas. Facilities that will not have growth media salvaged include the water wells and pipeline, fence, Growth Media Stockpiles, and exploration areas, because these facilities are on the ground surface or are near surface within the soil horizon. This volume could change based on actual field conditions encountered during growth media salvage. On sloped terrain, some soil may be salvaged by pushing available natural growth media cover downhill with a dozer to construct toe berms to prevent rocks from scattering on the hillside below the stockpile toes.

Based on the soil survey completed in the Project area, the following amounts of growth media, as outlined in Table 4, are available and will be salvaged from various Mine components prior to component construction.

Table 4. Growth Media Salvaged and Available

Facility	Area (acres)	Growth Media Depth (ft) ¹	Volume (cy ²)
Underground Mine	6.7	0	-
TSF	99.8	0.5	80,528
TWRSF	5.7	0.5	4,611
Process Plant	2.5	0	-
Infrastructure & Ancillary Facilities	17.8		-
Roads	34.9	0.5	28,190
Yards & Laydown Areas	10.0	0	-
Growth Media Stockpiles	7.7	0	-
Water Supply	7.9	0	-
Power Supply	61.1	0	-
Stormwater Diversion Channels	11.8	0.5	9,521
Quarry	48.2	0.5	38,842
Reclamation Borrow Areas	55.9	Variable (8 to 15)	1,220,002
Monitoring	0.0	0	-
Exploration	10.0	0	-
Disturbed Areas	107.8	0	-
Total	487.9	-	1,381,694

¹ The growth media depth on the perimeter fence, water tank, water wells and pipeline, Growth Media Stockpiles, and the exploration is set at zero because the construction of these facilities will incorporate the soils into the construction and reclamation, and there will be no growth media applied. The diversion ditches and sediment basins and the borrow pit will be permanent features, and no growth media will be applied. Any remaining waste rock in the TWRSF would be moved to the TSF as part of reclamation and the Site reclaimed at the original grade.

² The maximum available growth media identified at the two Reclamation Borrow Areas.

Any growth media remaining in the stockpiles for one or more planting seasons will be seeded with an interim seed mix to stabilize the material to reduce erosion and minimize the establishment of undesirable weeds. The interim seed mix, application rate, and application method will be the same that is currently being utilized for the reclamation of disturbances associated with exploration and the same as proposed for long-term reclamation and is presented in Table 5.

Erosion berms or swaddles will be placed around the growth medial stockpiles to prevent erosion and the Growth Media Stockpiles will be periodically inspected to monitor, and if necessary, improve the stabilization measures taken.

- **Growth Media Placement.** Growth media will be obtained from onsite sources and will be placed on disturbed areas, such as the final TSF cover layer and the Quarry floor, to facilitate the establishment of a sustainable native ecosystem and an erosionally stable surface.
- **Revegetation.** Revegetation will consist of scarifying the ground surface or growth media surface and the application of a site-specific, native, seed mix to promote the establishment of a self-sustaining native ecosystem. Seed will be applied with either a rangeland drill or with a mechanical broadcaster and harrow, depending on accessibility. Seedbed preparation and

seeding will take place in the fall after grading and growth media application to the reclaimed areas.

Reclamation seed mixtures and application rates are based on BLM requirements. This mixture will provide forage and cover species similar to the pre-disturbance conditions, facilitating the post-closure land uses of livestock grazing and wildlife habitat. In addition, the seed mix has been determined according to the species' effectiveness in providing erosion protection, the ability to grow within the constraints of the low annual precipitation experienced in the region, suitability for site aspect, and the elevation and soil type. The proposed seed mixture for the Project is provided in Table 5.

Table 5. Estimate of Closure Materials Needed

Species Common Name (Species Scientific Name)¹	Pounds / Acre (PLS)²
Shrubs	
Wyoming Big Sagebrush	0.1
Grasses	
Bluebunch wheatgrass	8.0
Bottlebrush squirreltail	2.0
Sandbergs Bluegrass	1.0

¹ Early contemporaneous re-vegetation will be monitored, and final seed mixtures will be evaluated and modified depending on monitoring results, in consultation with the BLM.

² Pure live seed. The proposed seed mixture and application rates are subject to modification by the BLM. The actual seed mixture and application rates will be determined prior to reseeding based on the results of reclamation in other areas of the Mine, concurrent reclamation, or changes by the BLM in its seed mix requirements.

6. RECLAMATION PLAN

6.1 UNDERGROUND MINE

6.1.1 MINE PORTAL

The Mine portal will be reclaimed as follows:

- The Mine portal will be plugged with rock approximately 100 ft inside the portal entrance, using the material that was used to construct the portal pad (i.e., local material or Basalt from the Quarry).
- The slopes in the vicinity of the portal area (portal pad) will be returned to near original grade with cover material to promote natural drainage or regraded to a maximum 2.5H:1V.
- The final regraded surface will be covered with 12 inches of growth media and revegetated.

6.1.2 VENTILATION SHAFT

The Ventilation Shaft will be reclaimed as follows:

- The shaft will be sealed with a reinforced concrete plug.
- The shaft will be covered with 12 inches of cover material, followed by 12 inches of growth media, and revegetated.

6.1.3 DECLINE

Removal of underground facilities and equipment will consist of the following steps:

- Underground piping, pumps, tanks, and pumping equipment will be removed and salvaged, or disposed of in an approved offsite solid waste disposal facility.
- Fans, motors, pumps, compressors, power supply, electrical distribution equipment, ventilation curtains and ducts, and other equipment will be removed, as practicable, and salvaged for use at another facility or disposed of in an approved offsite solid waste disposal facility.
- Remaining fuel, lubricants, and explosives will be removed from the underground workings and transported to other sites or disposed of offsite according to federal and state standards and regulations.

All salvageable equipment, instrumentation, and unused petroleum products and chemicals, and solid wastes from the underground mine will be used or recycled if possible. Examples include piping, pumps, diesel, and lubricating fluids. Used and waste petroleum products and chemicals will be disposed of at a Class I landfill. Non-hazardous solid wastes will be disposed of at an offsite landfill.

6.2 TAILINGS STORAGE FACILITY

The Reclamation Plan presented in this section will apply to Phase III of the TSF, if realized.

6.2.1 TAILINGS EMBANKMENT

The Tailings Embankment will be constructed at the final slope configuration, with slopes no steeper than 2.5H:1V on the embankment face to provide for long-term stability. The embankment face will be covered with 12 inches of growth media and revegetated.

6.2.2 TAILINGS IMPOUNDMENT

The tailings distribution pipeline will be drained to the TSF and the tailings reclaim water pipeline will be drained to the Reclaim Pond prior to pipelines the removal and disposal of the pipelines offsite.

After approximately one year, the tailings are expected to consolidate sufficiently to allow for the Tailings Impoundment surface regrading and cover placement to begin, and the tailings underflow reporting from the TSF to the Reclaim Pond reduced such that it can be managed within the footprint of Reclaim Pond/E-Cell.

The Tailings Impoundment surface will be regraded to relocate the low point of the surface from the eastern edge of the Tailings Impoundment to the northeast corner of the Tailings Impoundment where the spillway will be constructed. The Tailings Impoundment surface will provide positive drainage, with a slope between 1.5 percent and 2 percent. Upon completion of grading the Tailings Impoundment surface, the Tailings Impoundment cover will be installed, which will consist of the following (from bottom to top):

- Prepared tailings surface,
- 60 mil double-sided textured (DST) linear low-density polyethylene (LLDPE) geomembrane,
- 12 inches of a granular drainage layer,
- 12 ounce per square yard (oz/yd²) non-woven geotextile, and
- 12 inches of growth media.

The surface of the growth media will be revegetated.

6.2.3 RECLAIM POND / E-CELL

Upon completion of mining operations, active deposition into the TSF will cease. The tailings underflow will be managed by a regime of passive evaporation within the supernatant pool, the pumping of solution from the Reclaim Pond to the Tailings Impoundment for passive evaporation, and finally passive evaporation with the Reclaim Pond, which will be converted to an E-Cell. As the tailings underflow is removed from inventory through evaporation and the flow rate of tailings underflow into the Reclaim Pond can be passively evaporated within the Reclaim Pond footprint, the Tailings Impoundment surface will be reclaimed and covered as described in Section 6.2.2. This approach acknowledges the initially higher flow rates from the tailings underflow and the need to prevent release from the system, while effectively reducing, and ultimately eliminating, underflow inventory.

To address the long-term tailings underflow discharge, and pursuant to the requirements of ODEQ OAR 340-043-130, the Reclaim Pond will be converted to an E-Cell by covering the geomembrane-lined pond with 12 inches of growth media and revegetated.

The fence surrounding the Reclaim Pond, now converted to an E-Cell, will remain to restrict access to the E-Cell. The E-Cell will be maintained until the TSF is fully drained and there are no tailings underflow. For the purpose of the development of this Reclamation Plan, E-Cell maintenance is estimated to be 20 years.

6.3 TEMPORARY WASTE ROCK STORAGE FACILITY

The waste rock generated from the underground mining operations will be used as rock fill (RF), amended with cement, and placed back underground as CRF during operations. Therefore, no waste rock is planned to be present on the TWRSF at closure. Should this occur, any remaining waste rock in the TWRSF will be excavated, hauled to the backfill plant located at the Portal Pad and utilized as CRF.

The TWRSF lining system will be cut, removed, and disposed of offsite. The underdrain and Leakage Collection and Recovery System will be drained, removed, and disposed of offsite. The embankment will be utilized to regrade the ground surface beneath the TWRSF to prevent ponding, promote natural drainage to the reclaimed TSF, generally match native ground, and to promote vegetation growth. After regrading, 12 inches of growth media will be placed over the regraded surface and revegetated.

6.4 PROCESS PLANT

6.4.1 BUILDINGS AND ANCILLARY FACILITIES DEMOLITION AND REMOVAL

The buildings and structures erected during the mining operation will be decommissioned and dismantled, and materials will be salvaged, sold, used elsewhere, or removed and disposed of offsite in an authorized landfill. These buildings and structures include:

- Administrative building,
- Plant and Mine offices,
- Change house,
- Assay laboratory and sample preparation area,
- Truck workshop and warehouse,
- Wash pads,
- Process Plant workshop and warehouse,
- Process Plant building,
- Control room,
- Crushing facilities,
- Conveyors,
- Ore bins,
- Control rooms,
- CIL processing plant,
- Reagent storage building (including chemical and reagent storage), and

- Gold room.

The administration building and parking lot area will remain for Calico and contractor staff during reclamation and initial stages of post-closure monitoring. The administration building and parking lot area will be reclaimed at Stage 4 as described above.

6.4.2 FOUNDATIONS AND CONCRETE

After buildings and ancillary facilities are removed, the concrete foundations and slabs will be broken using a trackhoe-mounted hydraulic hammer, or similar methods, and buried in place under approximately 36 inches of material in such a manner to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. After demolition and salvage operations are complete, the disturbed areas will be covered with 12 inches of growth media and revegetated.

6.4.3 HAZARDOUS WASTE DISPOSAL (CHEMICALS AND REAGENTS)

All chemicals and reagents (including sodium cyanide), petroleum products, solvents, and other hazardous or toxic materials in the mill, not salvaged, will be removed from the Project and either reused or disposed of offsite in accordance with federal and state regulations.

Chemical and reagent containment and conveyance (i.e., tanks, piping, etc.) will be removed and disposed of offsite in accordance with federal and state regulations. Concrete that may be contaminated through exposure to chemicals and reagents will be characterized, excavated, and disposed of offsite in accordance with federal and state regulations.

6.4.4 COLLECTION POND

The Collection Pond lining system will be folded in on itself and buried in place. The ground surface will be regraded to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. After regrading, 12 inches of growth media will be placed over the regraded surface and revegetated.

6.4.5 SEPTIC SYSTEM

The septic system will be closed by a qualified contractor by first having the vault pumped to remove any remaining sanitary waste. The vault will then be filled with a lean sand to the top of the openings. The buried drain field will be closed by leaving it in place, in accordance with OAR 340-071-0185.

6.5 INFRASTRUCTURE AND ANCILLARY FACILITIES

6.5.1 BUILDINGS AND ANCILLARY FACILITIES DEMOLITION AND REMOVAL

The buildings and structures erected during the mining operation will be decommissioned, dismantled and materials will be salvaged, sold, used elsewhere, or removed and disposed of offsite in an authorized landfill. These buildings and structures include:

- Main gate and guard house, and
- Meteorological station.

6.5.2 FOUNDATIONS AND CONCRETE

After buildings and ancillary facilities are removed, the concrete foundations and slabs will be broken using a trackhoe-mounted hydraulic hammer, or similar methods, and buried in place under approximately 36 inches of material in such a manner to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. After demolition and salvage operations are complete, the disturbed areas will be covered with 12 inches of growth media and revegetated.

6.5.3 PERIMETER FENCE

A perimeter fence road will be constructed for the fence construction. Growth media will be windrowed during construction and a fence that consists of an 8-ft-high chain link fence with a 0.5-inch galvanized hardware cloth mesh that extended a minimum of 18 inches below the ground surface and 30 inches above the ground surface (total height 48 inches).

Upon completion of the Mine closure construction, the perimeter fence will be removed and disposed of offsite, and the perimeter fence road will be ripped, revegetated and reclaimed.

A fence will be installed around the perimeter of the Reclaim Pond and E-Cell. The E-Cell and corresponding fence will be maintained until the flow rate from the tailings underflow poses no risk to water resources, wildlife, or livestock. Upon state acceptance of the Mine closure and the cessation of operation of the E-Cell, the fence will be removed and disposed of offsite.

6.5.4 PARKING AREAS

Reclamation will consist of regrading to prevent ponding, promote natural drainage, generally match native ground and to promote vegetation growth. Where the area is located on fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. After regrading, it was assumed that 25 percent of the area will be covered with 12 inches of growth media from the Reclamation Borrow Areas and revegetated. It was also assumed that 75 percent of the Parking Areas will be covered with 12 inches of growth media from the berms and other material generated during regrading. Any compacted surface will be ripped prior to regrading, covered with 12 inches of growth media and revegetated.

6.5.5 ORE STOCKPILES

There is no plan to stockpile ore at closure because ore stockpiles will be used during operations. Should this occur, any remaining ore will be removed and placed on the TSF surface prior to closure of the TSF. If necessary, the waste rock may be amended with lime to address any pH issues.

Reclamation will consist of regrading the stockpile foundation area to prevent ponding, promote natural drainage, generally match native ground and to promote vegetation growth. Where the area is located on fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. Any compacted surface will be ripped and covered with 12 inches of growth media and revegetated.

6.5.6 HAZARDOUS WASTE DISPOSAL

All chemical reagents, petroleum products, solvents, and other hazardous or toxic materials that have not been used during operations will be removed and either reused or disposed offsite in accordance with federal and state regulations.

Hazardous waste containment and conveyance (i.e., tanks, piping, etc.) will be removed and disposed of offsite in accordance with federal and state regulations. Concrete that may be contaminated through exposure to chemicals and reagents will be characterized, excavated and disposed of offsite in accordance with federal and state regulations.

6.5.7 FUEL STORAGE AND DISPENSING AREA

Remaining fuel and lubricants will be transported to other sites for reuse or disposed of offsite according to federal and state standards and regulations.

Fuel tanks to be decommissioned and salvaged or will be disposed of offsite according to federal and state standards and regulations.

6.6 ROADS

The reclamation of the roads at the Project will occur in a phases based on the use of the road for reclamation and post-closure monitoring activities.

6.6.1 COW HOLLOW ROAD AND TWIN SPRINGS ROAD

The Cow Hollow and Twin Springs roads, including all improvements and upgrades, will be transferred to Malheur County and will not be reclaimed.

6.6.2 MINE ACCESS ROAD

The Mine access road, which connects the Twin Springs Road to the Mine, will remain in place during reclamation to allow for contractor access. Upon reclamation of the TSF and Quarry, which are the final

two major facilities to be reclaimed, the Mine access road will be reclaimed from a two-way gravel road to a one-way primitive road to allow for the post-closure monitoring of the Project. The Mine access road will be completely removed and reclaimed at the completion of the groundwater and E-Cell post-closure monitoring activities.

Reclamation will consist of regrading to prevent ponding, promote natural drainage, generally match native ground and to promote vegetation growth. Where the road is located on fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. Finished slopes will be relatively similar to the surrounding topography. Compacted road surfaces will be ripped and revegetated.

6.6.3 INTERNAL ACCESS ROADS, HAUL ROADS, AND PERIMETER FENCE ROAD

Internal access and haul roads that are not required for reclamation activities will be reclaimed immediately following cessation of operations upon reclamation of the TSF and Quarry, which are the final two major facilities to be reclaimed.

Reclamation will consist of regrading to prevent ponding, promote natural drainage, generally match native ground and to promote vegetation growth. Where the road is located on fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. Finished slopes will be relatively similar to the surrounding topography. Compacted road surfaces will be ripped and revegetated. The perimeter fence road will be ripped and revegetated with no growth media placed due to the inactivity of the road.

6.7 YARDS, LAYDOWN AREAS, AND STOCKPILES

6.7.1 YARDS AND LAYDOWN AREAS

All yard features, including parking areas, will be reclaimed concurrently as they are no longer required for reclamation activities.

Reclamation will consist of regrading to prevent ponding, promote natural drainage, generally match native ground and to promote vegetation growth. Where the yards are located in fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. Finished slopes will be relatively similar to the surrounding topography. The surface will be ripped, covered with 12 inches of growth media, and revegetated.

6.7.2 GROWTH MEDIA STOCKPILES

The reclaimed growth media surface will be completed at a slope to prevent ponding, promote natural drainage, generally match native ground and to promote vegetation growth. The native soils beneath the stockpiled growth media will be characterized prior to ripping and revegetation to identify the viability of the material and determine if soil amendments are required. Following removal of growth media the area will be ripped and revegetated.

6.7.3 PRODUCTION WELLFIELD

Water supply wells will be permanently abandoned in such a manner that vertical movement of water within the well bore, including vertical movement of water within the annular space surrounding the well casing, is effectively and permanently prevented, per OAR 690-220-0030. If a dry or non-producing water supply well is to be permanently abandoned, it shall be abandoned in accordance with these standards. All permanent water supply well abandonments shall be performed by a licensed Water Supply Well Constructor.

Perimeter fences will be constructed around the production wells that consists of an 8-ft-high chain link fence with a 0.5-inch galvanized hardware cloth mesh that extended a minimum of 18 inches below the ground surface and 30 inches above the ground surface (total height 48 inches). During water supply well abandonment, the fences will be removed and disposed of offsite.

6.7.4 WATER PIPELINES

Any surface water pipelines will be removed and salvaged or disposed of offsite. Buried water pipelines will be drained, ends cut and capped a minimum of 12 inches below grade, covered with 12 inches of growth media and revegetated.

6.7.5 RAW WATER STORAGE TANK

The raw water storage tank will be decommissioned and dismantled, and materials will be salvaged, sold, used elsewhere, or removed and disposed of offsite in an authorized landfill. Any concrete foundations and slabs will be broken using a trackhoe-mounted hydraulic hammer, or similar methods, and buried in place under approximately 36 inches of material in such a manner to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. After demolition and salvage operations are complete, the disturbed areas will be covered with 12 inches of growth media and revegetated.

6.7.6 POTABLE WATER TREATMENT

The potable water treatment unit will be decommissioned and dismantled, and materials will be salvaged, sold, used elsewhere, or removed and disposed of offsite in an authorized landfill.

6.8 POWER SUPPLY

6.8.1 SUBSTATION AND UPGRADED TRANSMISSION LINE

The substation and upgraded transmission line, including all improvements and upgrades, will be transferred to the local power authority and will not be reclaimed.

6.8.2 NEW TRANSMISSION LINE, ONSITE POWER LINES, AND GENERATORS

The new 14.4 kV overland power transmission system and onsite power lines constructed for the operation of the Mine will be demolished and disposed of offsite. Power poles will be cut off at the ground surface and disposed of offsite. The areas where disturbances occur due to the removal of the transmission lines will be revegetated.

The two onsite generators will be salvaged, sold, used elsewhere, or removed for offsite disposal.

6.9 STORMWATER MANAGEMENT FACILITIES

6.9.1 PERMANENT STORMWATER DIVERSION CHANNELS

The two permanent diversion channels, i.e., the TSF stormwater diversion channel and the Quarry stormwater diversion channel, will not be reclaimed and will remain to promote natural drainage and act as a deterrent to the public from the Quarry highwalls.

6.9.2 TEMPORARY STORMWATER DIVERSION CHANNELS

Any temporary diversion channels are generally considered within the footprint of a road, yard, stockpile, etc., and will be reclaimed as part of the reclamation activities for those facilities described previously in Section 6.7.

6.9.3 SEDIMENT AND COLLECTION BASINS

The reclamation of the Collection Pond will be in accordance with the Water Pollution Control Facility (WPCF) permit, as required by the ODEQ, WPCF, and Stormwater Management Plan. The Collection Pond will be pumped dry, backfilled assuming 25 percent of the pond capacity is filled with sediment, graded to promote positive drainage, covered with 12 inches of growth media, and revegetated.

6.10 QUARRY

The Quarry floor will be developed in single benches during operations (approximately 60-degree-high walls with 37-ft-wide benches), resulting in overall Quarry slopes no steeper than 1.5H:1V during operation and at reclamation in compliance with OAR 632-030-0027. No growth media or vegetation will be placed on the side slopes.

The Quarry floor will be excavated during operations to promote positive drainage to prevent ponding, promote natural drainage, and will generally match native ground at the low point of the Quarry floor. At reclamation, 12 inches of growth media will be placed over the Quarry floor and revegetated.

The Quarry stormwater diversion channel berm and surface water run-on diversion berms will remain in place. An earth berm will be constructed along the perimeter of the high walls to reduce access. During operations, large boulders and rock that are not used for development and maintenance of the Project

will be placed along the Quarry stormwater diversion channel and berm to provide long-term wildlife habitat and act as a public access deterrent following reclamation. Large boulders will also be stockpiled within the Quarry during operation and be placed along the access points at the bottom of the Quarry to deter public access to the Quarry post-closure.

6.11 RECLAMATION BORROW AREAS

The slopes will be graded during reclamation (excavation of borrow material) to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. The side slopes will be constructed to be no steeper than 2.5H:1V. The entire disturbed footprint will be ripped and revegetated.

6.12 MONITORING

Groundwater monitoring wells subject to OWRD regulations will be abandoned in accordance with applicable rules and regulations (OAR 690-220-0005 through 690-220-0140). Drill holes will be sealed to prevent cross contamination between aquifers, and the required shallow seal will be placed to prevent contamination by surface access.

Roads and pads associated with the groundwater monitoring wells will be reclaimed and regraded to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. Where the road is located on fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. Finished slopes will be relatively similar to the surrounding topography. Compacted road surfaces and drill pads will be ripped, covered with approximately 12 inches of growth media from the safety berms or road fill, and revegetated.

6.13 EXPLORATION

Mineral exploration drillholes subject to OWRD regulations will be abandoned in accordance with applicable rules and regulations (OAR 690-220-0005 through 690-220-0140). Drill holes will be sealed to prevent cross contamination between aquifers, and the required shallow seal will be placed to prevent contamination by surface access.

Roads and pads associated with the exploration will be reclaimed and regraded to prevent ponding, promote natural drainage, generally match native ground, and to promote vegetation growth. Where the road is located on fill, the side slopes will be rounded and regraded to no steeper than 2.5H:1V. Finished slopes will be relatively similar to the surrounding topography. Compacted road surfaces and drill pads will be ripped, covered with approximately 12 inches of growth media from the safety berms or road fill, and revegetated.

7. POST-CLOSURE CARE AND MONITORING

7.1 INSTRUMENTATION AND MONITORING

Monitoring that will be performed post-reclamation includes the following and is based on the *Monitoring Proposal for Groundwater and Facilities* in [Appendix D5](#) of the Mine Plan of Operations:

- Groundwater monitoring will consist of 15 groundwater monitoring wells, including seven existing wells and eight proposed wells to be constructed. The new wells to be constructed to include one monitoring well upgradient of the facility, six monitoring wells downgradient of the TSF, and one monitoring well downgradient of the Collection Pond;
- Underflow and leakage detection flow rate to the Reclaim Pond/E-Cell monitoring; and
- Revegetation success.

A detailed post-closure monitoring plan, including monitoring methodology, parameters, and frequencies, will be submitted to the BLM and DOGAMI prior to execution.

7.2 POST-CLOSURE MONITORING

Post-closure monitoring and maintenance performed by Calico will include the following:

- The fence surrounding the E-Cell will be inspected routinely during the post-closure monitoring period. Maintenance may consist of repairs to the fence and fence posts. This activity will be conducted until closure has been approved and the bond released.
- Vegetation monitoring of the reclaimed facilities will be conducted at the various mining facilities at the Project 5 years after revegetation activities have been completed. The monitoring will involve photo-documentation and be conducted during the “peak green” spring season. This program will be coordinated with the BLM and DOGAMI to facilitate coordination between the agencies. Reclaimed areas not meeting regulatory standards would be evaluated and corrective actions implemented. These measures could include, if necessary, additional soil amendments, reseeding, and installation of erosion control measures, followed by monitoring consistent with what was conducted previously. This obligation will cease when the reclamation goals and requirements have been achieved and upon release of all related reclamation bonds.
- The flow rate of the tailings underflow from the TSF to the Reclaim Pond/E-Cell will be routinely monitored.
- Groundwater quality will be routinely collected, tested, and reported to respective regulatory agencies to demonstrate reclamation compliance in the 15 monitoring wells according to the requirements established by the ODEQ upon approval of the Chemical Mining Permit. This activity will be conducted until closure has been approved and the bond released, estimated to be a period of 30 years. Groundwater monitoring will be conducted in three phases:
 - Phase 1 includes quarterly monitoring for a period of 5 years.
 - Phase 2 includes semi-annual monitoring for a period of 10 years.
 - Phase 3 includes annual monitoring for a period of 15 years.

- Noxious weed monitoring and control will be implemented during operations and for a period of 5 years following the cessation of operation.
- Stormwater diversion channels will be inspected during the reclamation monitoring period to ensure that sediment has not accumulated and that the lining in the channels (riprap, concrete, etc.) has not been compromised, thereby reducing the design capacity of the structure.
- Stormwater samples from the permitted outfalls will be collected, tested, and reported to respective regulatory agencies to demonstrate reclamation compliance where necessary.

8. RECLAMATION COST ESTIMATE

8.1 PURPOSE OF ESTIMATE

The Reclamation Cost Estimate (RCE) was developed in accordance with regulations at 43 CFR 3809.522, 3809.553, and ORS 517.810. The Nevada SRCE Version 2.0 was used to estimate the RCE. The reclamation cost estimate was calculated for the Phase II TSF. If the Phase III of the TSF is realized, the bond will be updated accordingly. The SRCE model contains standardized cost data to calculate reclamation bonding requirements for the reclamation of mine sites based on reclamation areas and volumes using geometry parameters defined by the user. The model uses a first-principals approach to reclamation cost estimating, using built-in worksheets with either fixed or user-defined labor and equipment rates for the calculation of reclamation activities that are specific to a mining project.

8.2 UNITS OF MEASUREMENT

All units are imperial, unless otherwise noted.

8.3 KEY ASSUMPTIONS

The SRCE model assumed the following:

- The TSF will be constructed to Phase II;
- The seed mix for revegetation is presented in Section 5.1;
- The model assumed an average operator, working 50 minutes per hour;
- Unit costs were user-defined for the following categories, based on northern Nevada rates:
 - Labor rates,
 - Equipment rates,
 - Material costs,
 - Miscellaneous unit costs, and
 - Indirect costs.

The RCE was modeled at the end of the Project, or at the cessation of planned mining conditions, assuming no concurrent reclamation has been performed during operations (i.e., the Tailings Embankment was reclaimed during the reclamation period and not during operations). However, during a June 1, 2022 meeting (SLR, 2022), the BLM requested that Calico present the reclamation cost estimate for a “fully built out” (FBO) scenario, which assumes the following:

- 135,000 tons of waste rock in the TWRSF has been stockpiled and will be excavated, hauled to the backfill plant located at the Portal Pad and placed underground as CRF. 135,000 tons of waste rock is the maximum volume of waste rock planned to be stored on the TWRSF and is planned to occur in year one of operation; and

- 3,000 tons of ore in the Ore Stockpile has been stockpiled and will be excavated, hauled to the backfill plant located at the Portal Pad and placed underground as CRF. This is the maximum volume of ore planned to be stored in the Ore Stockpile and will occur routinely during operation.

The reclamation costs associated with the FBO scenario described above are included in the SRCE model as Stage 0.

8.4 TAKE-OFF PROCEDURE, ALLOWANCES, AND FACTORS

Reclamation costs were estimated assuming SRCE-defined crews and fleets to perform the closure activities. The model uses several different sources and methods for calculating equipment productivities. The primary source is the Caterpillar® Performance Handbook (CAT Handbook). Other sources include the R.S. Means Heavy Construction Cost Data (R.S. Means, 2006), equipment and material suppliers, and local contractors. In some instances, such as exploration roads, and drill hole and well abandonment, productivity data was collated from actual work performed in the field and used to adjust the calculated numbers to reflect actual data.

The compositions and productivities of crews included in the SRCE calculations were derived from the R.S. Means Heavy Construction Cost Data (R.S. Means, 2006). These are used to calculate task-specific unit rates utilizing labor, equipment, and material rates defined for the Project. The cost data date for the SRCE model was October 6, 2021.

8.5 INDIRECT COSTS

The indirect costs calculations were revised to reflect cost categories, percentages and calculation methods provided in the Guidelines. The following indirect costs are included in the RCE:

- Engineering Design: \$400,000
- Contractor Overhead and Profit: Calculated as 10 percent of the total Direct Costs
- Contract Administration: Calculated as 8 percent of the total Direct Costs

8.5.1 CONTINGENCY

Contingency is defined as an allowance to cover unforeseeable items within the scope of this estimate. Contingency can arise due to currently undefined items of work or equipment, lack of site-specific geotechnical data, or uncertainty in the estimated quantities and unit prices for labor, equipment, and materials. Contingency does not cover scope changes, nor the Project exclusions noted.

The contingency was calculated as 8 percent of the total direct costs.

8.6 WORK BREAKDOWN STRUCTURE

A Work Breakdown Structure (WBS) for the reclamation activities was developed, and the areas are summarized below and are shown in Figure 2 and presented in Table 1.

- Underground Mine,
- TSF,
- TWRSF,
- Process Plant,
- Infrastructure and Ancillary Facilities,
- Roads,
- Yards and Laydown Areas,
- Growth Media Stockpiles,
- Water Supply,
- Power Supply,
- Stormwater Diversion Channels,
- Quarry,
- Reclamation Borrow Areas, and
- Monitoring.

8.7 RECLAMATION COST WORKSHEETS

The following SRCE worksheets were used to generate the RCE:

- Waste Rock Dumps SRCE worksheet was used to estimate the placement of growth media and revegetate the TWRSF footprint following removal and disposal of the liner, underdrain system, and Leakage Collection and Recovery System.
- Tailings SRCE worksheet was used to estimate the regarding, placement of the drainage layer, placement of the growth media and revegetate the embankment and top of the TSF.
- Solutions Management SRCE worksheet was used to estimate the pumping of seepage from the Reclaim Pond to the TSF during Stage 1 and Stage 2 of the Reclamation Plan.
- Quarries & Borrow Pits SRCE worksheet was used to estimate the regrading, placement of growth media and revegetate the Quarry and Borrow Pits.
- Underground Openings SRCE worksheet was used to estimate the backfilling and plugging of the portal and the Ventilation Shaft.
- Roads SRCE worksheet was used to estimate the regarding, placement of growth media and revegetate the Mine Access Road, internal roads and haul roads.
- Process Ponds SRCE worksheet was used to estimate the conversion of the Reclaim Pond to the E-Cell and the liner cutting, backfilling, growth media placement, and revegetate the Collection Pond.
- Yards, Etc. SRCE worksheet was used to estimate the regrading, placement of growth media, and revegetate the yards and parking lots.
- Foundations & Buildings SRCE worksheet was used to estimate the demolition of the Process Plant and other buildings, including the breaking of foundations, regrading, placement of cover material, placement of growth media, and revegetate.
- Other Demo & Equip Removal SRCE worksheet was used to estimate the removal of the TWRSF liner, underdrain system, and Leakage Collection and Recovery System, removal of the water tank, removal of the oil water separator, removal of the backup generators, and removal of the fuel tank.

- Well Abandonment SRCE worksheet was used to estimate the abandonment of the planned production wells and new monitoring wells.
- Waste Disposal SRCE worksheet was used to estimate the offsite disposal of the TWRSF liner and Leakage Collection System, Process Plant demolition waste, solid and liquid hazardous waste offsite disposal, and miscellaneous Site cleanup.
- Misc. Costs SRCE worksheet was used to estimate the removal of the Perimeter Fence and other fences associated with the Project, removal of culverts and removal of the power lines and power poles.
- Exploration SRCE worksheet was used to estimate the abandonment of future exploration drillholes.
- Expl. Roads & Pads SRCE worksheet was used to estimate the regrading, placement of growth media, and revegetate the roads associated with future exploration.
- Monitoring SRCE worksheet was used to estimate the post-closure reclamation monitoring and groundwater monitoring.
- Recl. Maint SRCE worksheet was used to estimate the potential maintenance of revegetation and cover.
- Constr. Mgmt SRCE worksheet was used to estimate the management of construction for all stages of reclamation and the maintenance of roads during and post-closure.
- Other User SRCE worksheet was used to estimate the placement of the liner and geotextile on the TSF, drilling and blasting for the generation of the drainage layer for the TSF, spillway construction for the TSF, and spillway construction for the TWRSF.
- Mobilization SRCE worksheet was used to estimate the mobilization and demobilization costs for each stage, based on the equipment estimated in the Equip Use worksheet.
- LOM Schedule SRCE worksheet was used to estimate the indirect costs, including engineering, design and construction planning, contingency, contractor overhead and profit, and contract administration.
- Acct Codes worksheet was used to summarize the cost by facility, in addition to the contingency, contractor overhead and profit, and contract administration costs.

8.8 RECLAMATION COST ESTIMATE

Calico will use a phased-bonding approach and will work out suitable milestone events with respect to Project development with the BLM and the DOGAMI. Calico will provide a reclamation surety in accordance with regulations at 43 CFR 3809.522, 3809.553, and at ORS 517.810 based on the reclamation tasks at the cessation of mining. Calico will update the surety to reflect the actual disturbance and whatever additional disturbance is planned for the subsequent period. Any changes to equipment, consumable, and labor costs will also be incorporated during the updates.

A total reclamation cost of \$12,416,573 has been calculated at cessation of planned mining, including contingency, with a summary presented in Table 6. Files generated from the SRCE model presenting quantities, unit rates, etc. are provided in Appendix B.

Table 6. Reclamation Cost Estimate

Closure Items	Total
Underground Mine	\$84,600
Tailings Storage Facility	\$5,023,500
Temporary Waste Rock Storage Facility	\$195,215
Process Plant	\$605,480
Infrastructure & Ancillary Facilities	\$86,097
Roads	\$136,108
Yards & Laydown Areas	\$53,381
Growth Media Stockpiles	\$42,088
Water Supply	\$111,026
Power Supply	\$1,179,503
Stormwater Diversion Channels	\$0
Exploration	\$7,914
Quarry	\$180,161
Reclamation Borrow Areas	\$34,024
Post-closure Monitoring	\$1,960,409
Mobilization / Demobilization	\$154,918
Subtotal	\$9,854,424
Indirect Costs	\$2,562,149
Total	\$12,416,573
FBO Conditions (Direct)	\$2,815,019
FBO Conditions (Indirects)	\$731,904
Total and FBO Reclamation Costs	\$15,963,496

8.9 GROWTH MEDIA MASS BALANCE

Growth media for the reclamation of the Project facilities will be sourced from the Growth Media Stockpiles and the Reclamation Borrow Areas during construction (Figure 2). The Growth Media Stockpiles during construction will be supplemented as needed by the Reclamation Borrow Areas. A growth media balance for the Project, provided in Table 7, indicates approximately 242,124 bcy of material will be required to establish growth media on the Project facilities to the depths specified, depending on the facility component.

Table 7. Estimate of Growth Media Needed and Available

Facility	Area (acres)	Growth Media Depth Needed (inches)	Volume Needed (bcy)	Volume Available (cy)
Underground Mine	6.7	12	10,270	
TSF	99.8	12	124,856	80,528
TWRSF	5.7	12	9,680	4,611
Process Plant	2.5	12	8,497	
Infrastructure & Ancillary Facilities	17.8	12	-	
Roads	34.9	0	-	28,190
Yards & Laydown Areas	10.0	12	9,437	
Growth Media Stockpiles	7.7	0	-	
Water Supply	7.9	12	733	
Power Supply	61.1	12	81	
Stormwater Diversion Channels	11.8	0	-	9,521
Quarry	48.2	12	77,440	38,842
Reclamation Borrow Areas	55.9	0	-	
Monitoring	0.0	0	-	
Exploration	10.0	12	1,130	
Disturbed Areas	107.8	0	-	
Total	487.9	-	242,124	
Growth Media Stockpile No. 1	-	-		85,103
Growth Media Stockpile No. 2	-	-		38,881
Growth Media Stockpile No. 3	-	-		7,018
Reclamation Borrow Area No. 1	-	-	-	451,000
Reclamation Borrow Area No. 2	-	-	-	638,000
Total	-	-	-	1,220,002
Net Excess	-	-	-	977,878

For the purpose of reclamation cost estimation, Calico assumed that each of the Reclamation Borrow Areas would be excavated to the limits shown on the figures, and the plans for the Reclamation Borrow Areas will be adjusted prior to reclamation. For example, should the growth media excavated and stockpiled during construction be less than planned, the Reclamation Borrow Areas will be excavated deeper to obtain additional growth media; or should the growth media excavated and stockpiled during construction be greater than planned, the footprint of the Reclamation Borrow Areas may be reduced.

Following growth media stripping during construction of the Project (TSF, Quarry, Process Plant area, etc.), growth media will be stockpiled in one of three Growth Media Stockpiles for use at reclamation. The Growth Media Stockpiles will generally be located adjacent to the facilities, as such that they will not be disturbed by mining operations. The surfaces of the stockpiles will be graded with slopes no steeper than 2.5H:1V to reduce erosion. To further minimize wind and water erosion, Growth Media Stockpiles will be vegetated after grading. Temporary stormwater diversion channels and/or berms will be constructed

around the stockpiles, as needed, to prevent erosion from overland runoff. Best Management Practices (BMPs), such as silt fences or staked weed-free straw bales, will be used as necessary to contain sediment in runoff and prevent the loss of stockpiled growth media.

9. RECLAMATION SCHEDULE

9.1 RECLAMATION SCHEDULE AND CONSTRUCTION SEQUENCING

The Reclamation Plan will be performed in five stages, with various activities and monitoring occurring at and in between each stage. A description of activities for each stage is presented below as follows:

- Stage 0 (Closure Year -1) was developed for the FBO scenario per a BLM request, but was not incorporated into the overall reclamation schedule:
 - Removal of 135,000 tons of waste rock from the TWRSF and placed underground as CRF; and
 - Removal of 3,000 tons of ore in the Ore Stockpile and placed underground as CRF.
- Stage 1 (Closure Year 1) begins immediately following the cessation of mining operations, with activities being performed in this general sequence development:
 - Cessation of ore processing and placement of tailings;
 - Removal of underground mine equipment and chemicals and reagents;
 - Closure of the Ventilation Shaft;
 - Closure of the Mine Portal;
 - TSF underflow passive evaporation on the surface of the TSF (12-month period);
 - Placement of growth media and revegetation of the TSF Embankment;
 - If present, removal of waste rock from the TWRSF;
 - Closure of the TWRSF and overflow spillway;
 - Closure of the ore stockpiles;
 - Removal and disposal of hazardous waste, chemicals, and reagents;
 - Closure of the fuel storage and dispensing area;
 - Closure of the Process Plant buildings and ancillary facilities, including foundations and offsite disposal (except some of the support buildings and yards that will be reclaimed in Stage 3 and the administration building that will be reclaimed in Stage 4);
 - Closure of the Collection Pond;
 - Closure of the parking areas (except the parking lot adjacent to the administration building, which will remain through Stage 4); and
 - Closure of the internal access and haul roads not required for Stage 2 and Stage 3 reclamation activities.
- Stage 2 (Closure Year 2) will commence approximately one year following Stage 1, at the time when the surface of the TSF is suitable for construction activities. The following activities will be performed in this general sequence:
 - Regrading of the entirety of the TSF surface;
 - Closure of approximately 75 percent of the surface of the TSF (the remaining 25 percent will be utilized for evaporation of seepage collected in the Reclaim Pond); and
 - TSF underflow passive evaporation on the surface of the TSF (12-month period).

- Stage 3 (Closure Year 3) will commence approximately 2 years following Stage 1, at the time when the flow rate from the tailings underflow can be passively managed within the E-Cell, resulting in the final closure of the TSF. The following activities will be performed in this general sequence:
 - Closure of the remaining 25 percent of the surface of the TSF, and construction of the overflow spillway;
 - Conversion of the Reclaim Pond to the E-Cell;
 - Closure of the Quarry;
 - Closure of the remaining internal Mine roads;
 - Closure of the structures and yards for the visitor parking, security, contractor laydown, contractor office and weather station areas; and
 - Closure of the Growth Media Stockpiles and Reclamation Borrow Areas.
- Stage 4 (Closure Year 4) will commence approximately 3 years following Stage 1, and upon the completion of Stage 3. The following activities will be performed in this general sequence:
 - Closure of the Perimeter Fence;
 - Closure of the administration building and adjacent parking lot;
 - Closure of the Water Supply, including the Wellfield and associated pipelines, and well houses, fences and pads, raw water storage tank, septic tank, and potable water treatment unit;
 - Closure of the Power Supply, including generator, overhead lines and poles;
 - Reduction of Mine Access Road from two lanes to one lane with the exception of the county road that will remain.

Upon completion of Stage 4, there will be approximately 27 years of post-closure monitoring and inspections.

- Stage 5 (Closure Year 30) will commence approximately 29 years following the completion of Stage 1, at the conclusion of post-closure monitoring for all mining facilities. The following activities will be performed in this general sequence:
 - Closure of the groundwater monitoring wells,
 - Closure of the final Growth Media Stockpile; and
 - Closure of the Mine Access Road.

The sequencing of the facility reclamation is presented in Figure 3 through Figure 9.

10. REFERENCES

Caterpillar® Performance Handbook (CAT Handbook).

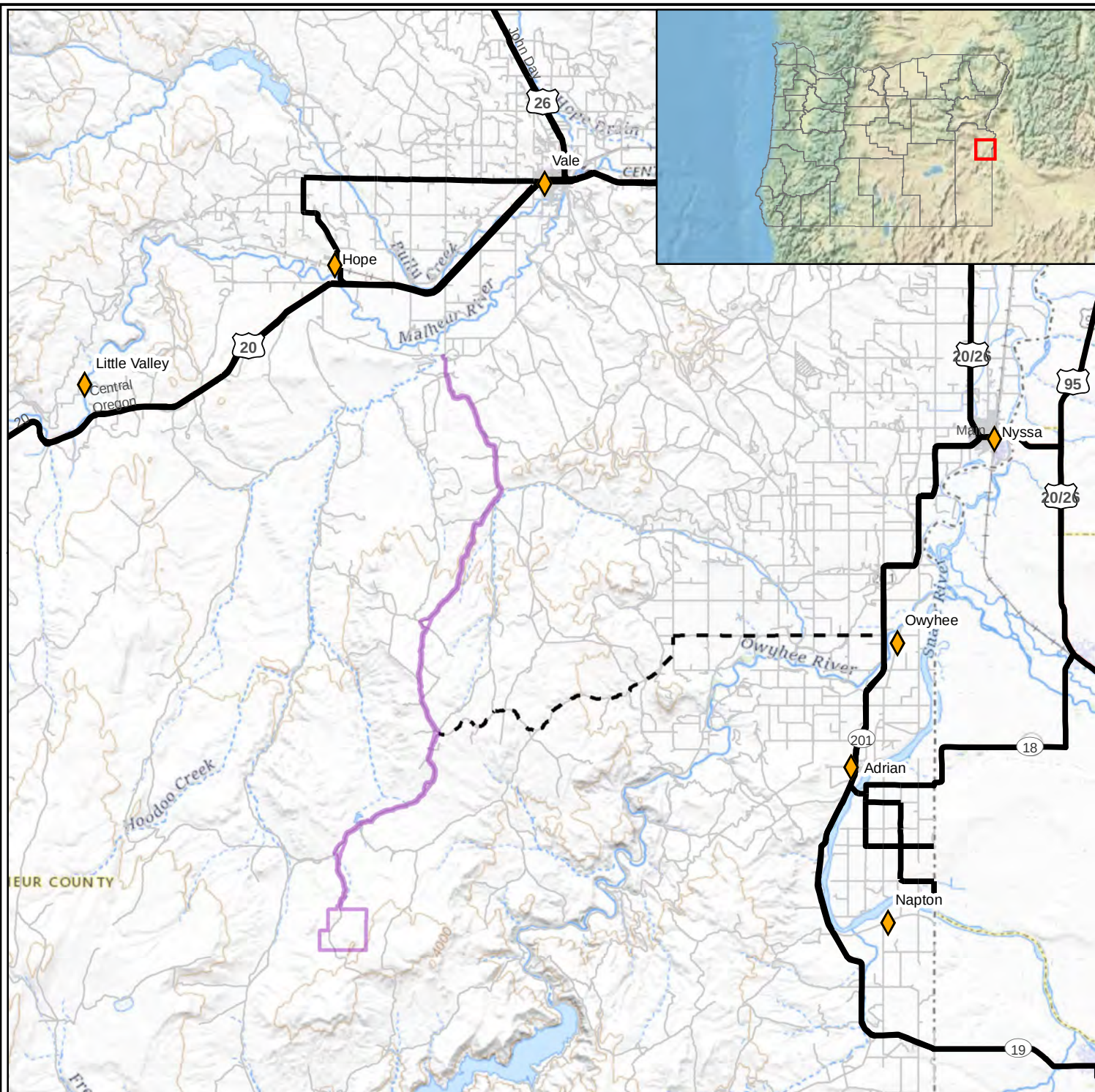
IMS, Inc. (IMS). 1991. *Soils Resources of the Grassy Mountain Area*. April 1991.

_____. 1989. *Final Report: Soil, Vegetation and Wildlife Resources of the Grassy Mountain Project Area*. December 1989.

Means, R.S. 2006. R.S. Means Heavy Construction Data.

Nevada Standardized Reclamation Cost Estimator (SRCE) version 2.0.

FIGURES



Legend

-  PoO Boundary
-  Emergency Access Road
-  Roads

1":4 Miles

0 1 2 4Miles

Scale as shown when plotted at 8.5"x11".



Notes:

1. Figure references 1983 UTM zone 11N datum.
2. Road and highway system were referenced from the Bureau of land Management.

Site/Report:

**Calico Resources USA Corp.
Grassy Mountain Mine**

Reclamation Plan

Figure:

Location Map



Date: December, 2021

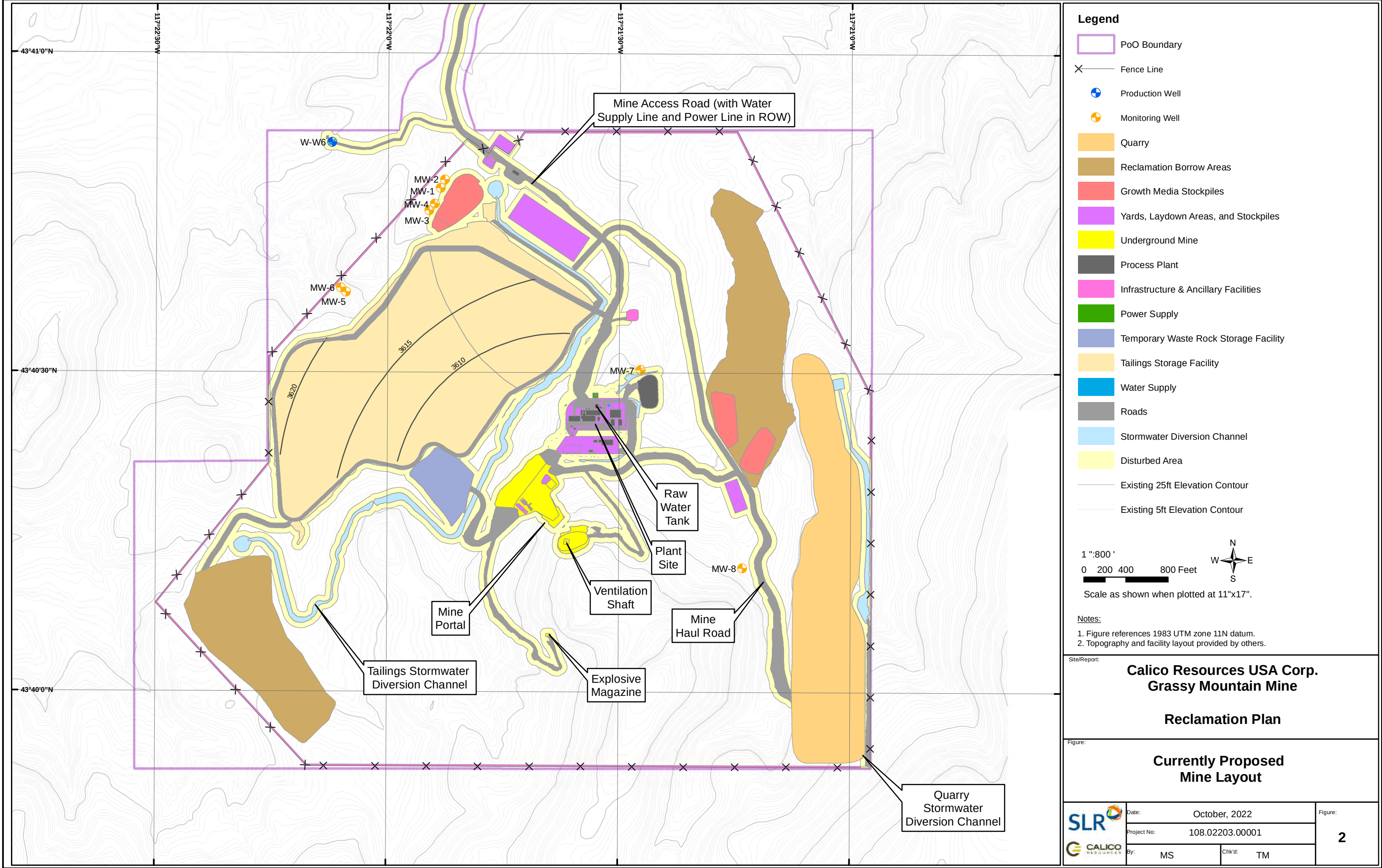
Project No: 108.02203.00001

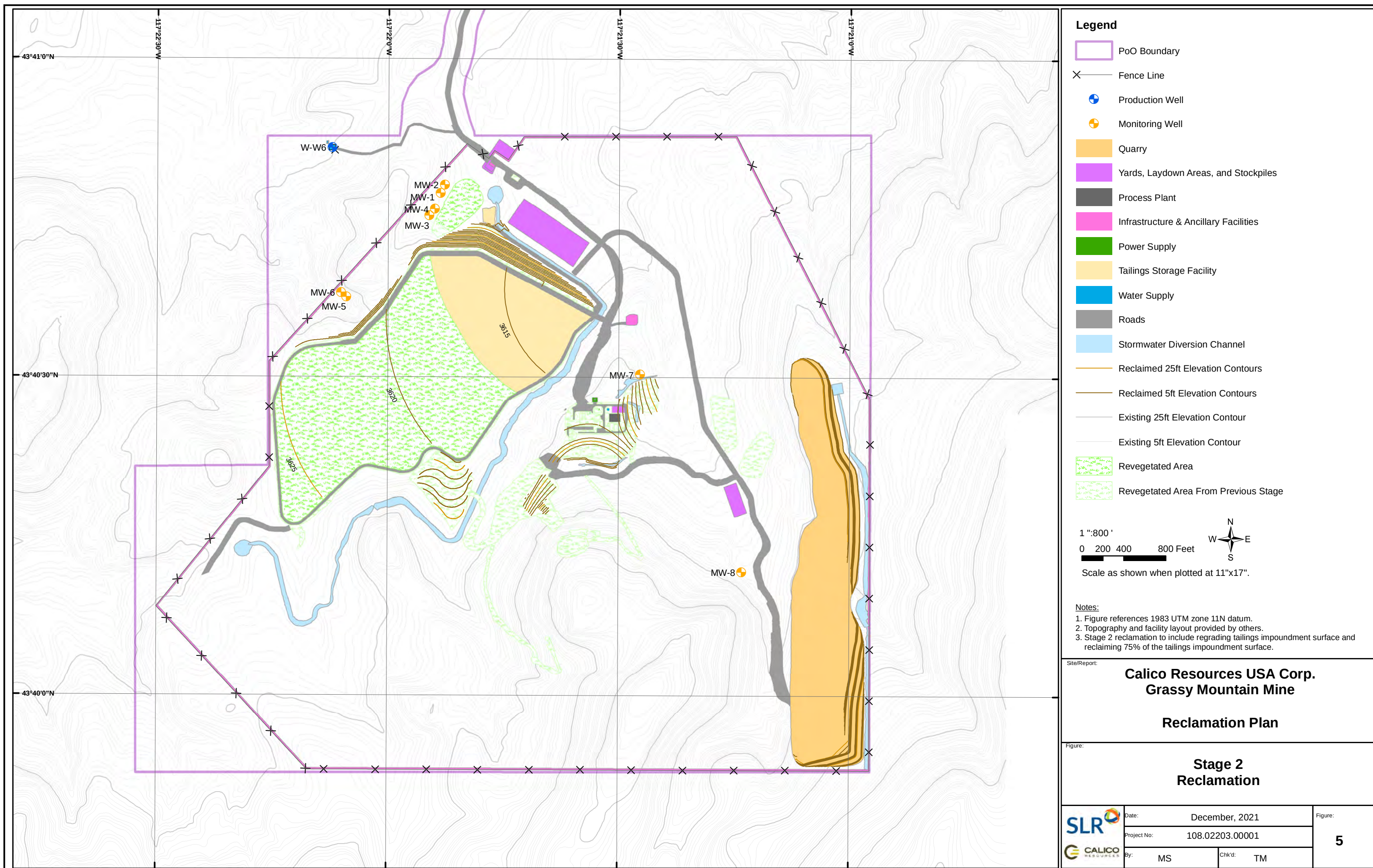
By: MS

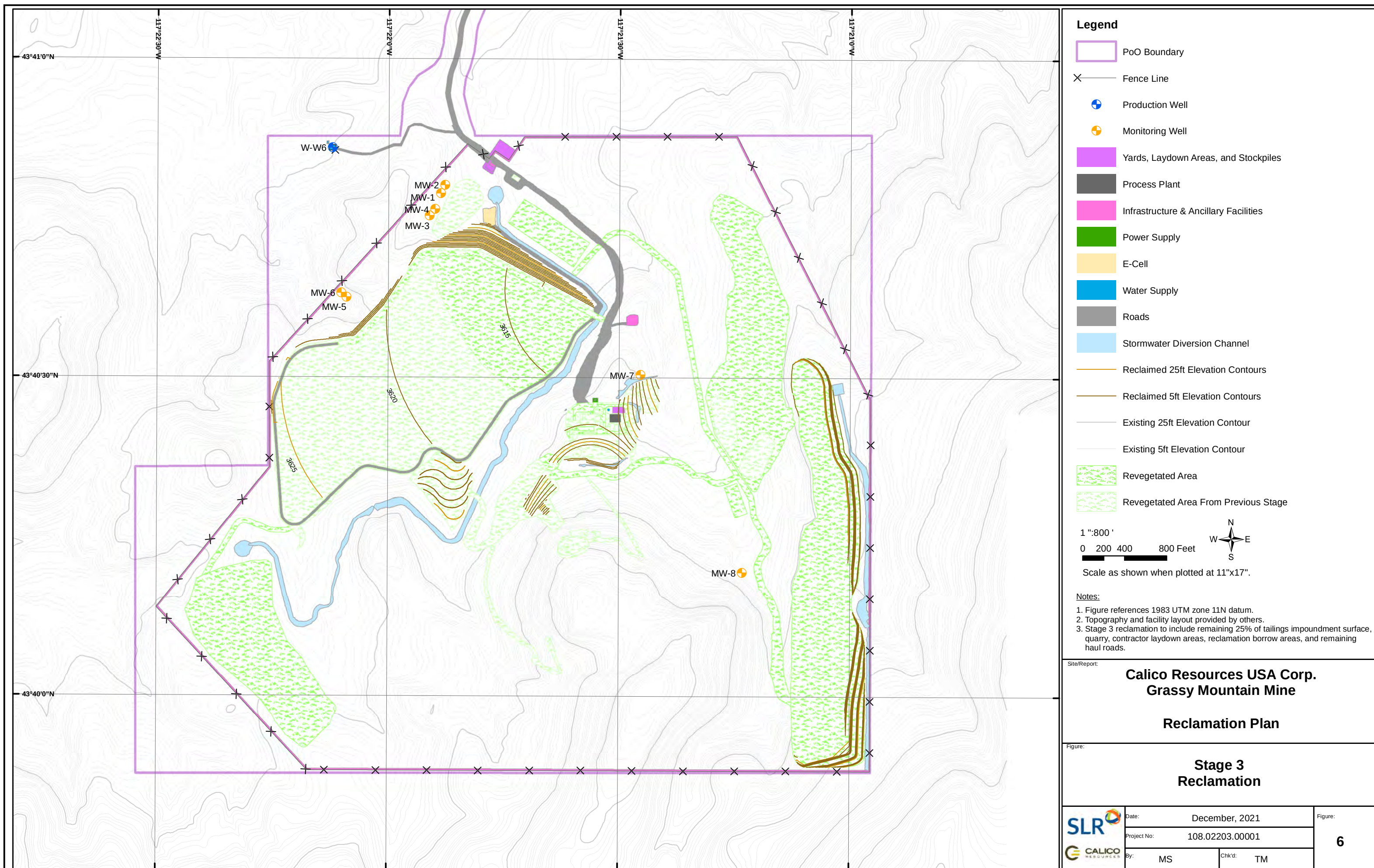
Chk'd: TM

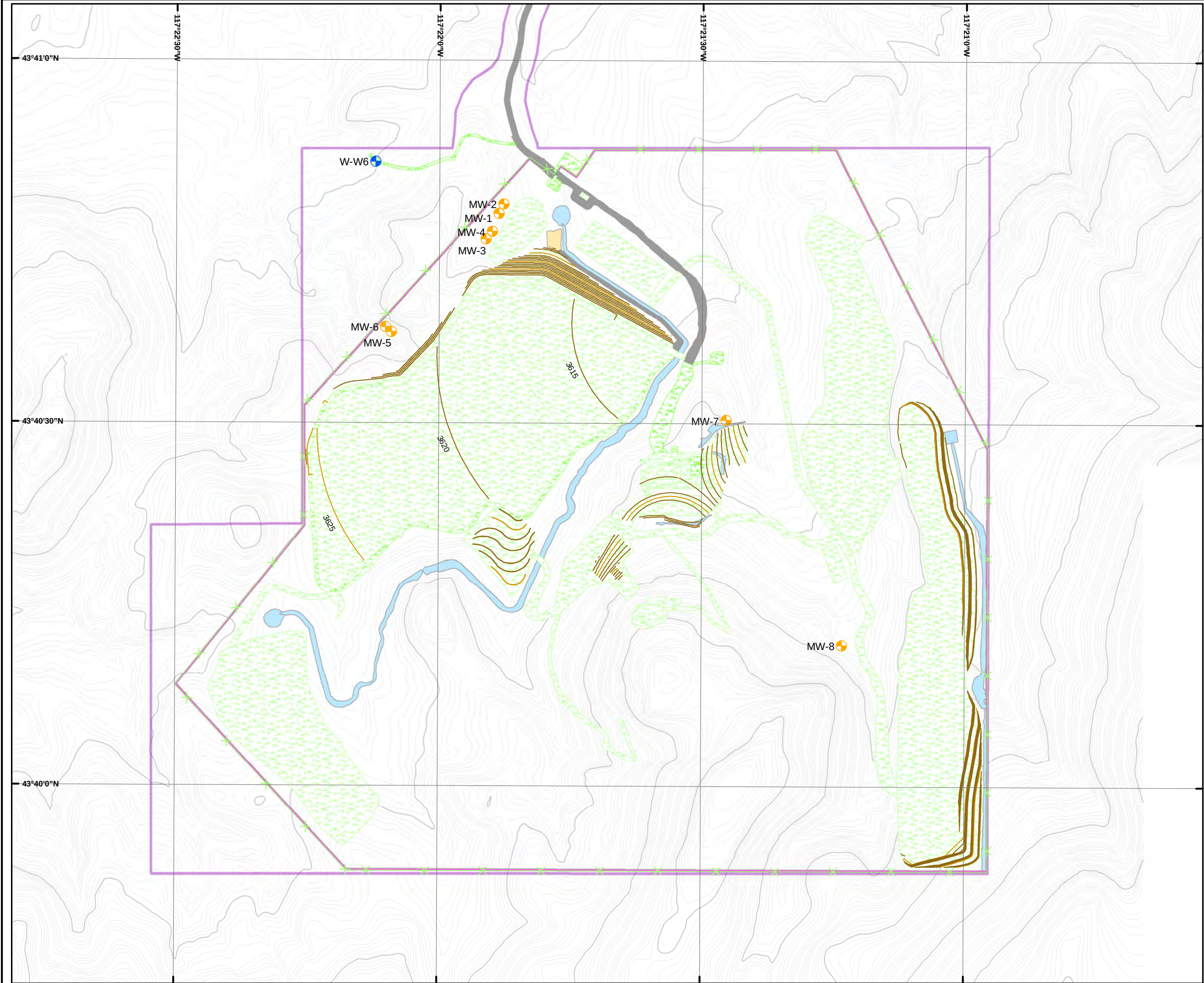
Figure:

1









Legend

- PoO Boundary
- Production Well
- Monitoring Well
- E-Cell
- Infrastructure & Ancillary Facilities
- Roads
- Stormwater Diversion Channel
- Reclaimed 25ft Elevation Contours
- Reclaimed 5ft Elevation Contours
- Existing 25ft Elevation Contour
- Existing 5ft Elevation Contour
- Revegetated Area
- Revegetated Area From Previous Stage

1 " : 800 '
0 200 400 800 Feet
Scale as shown when plotted at 11"x17".

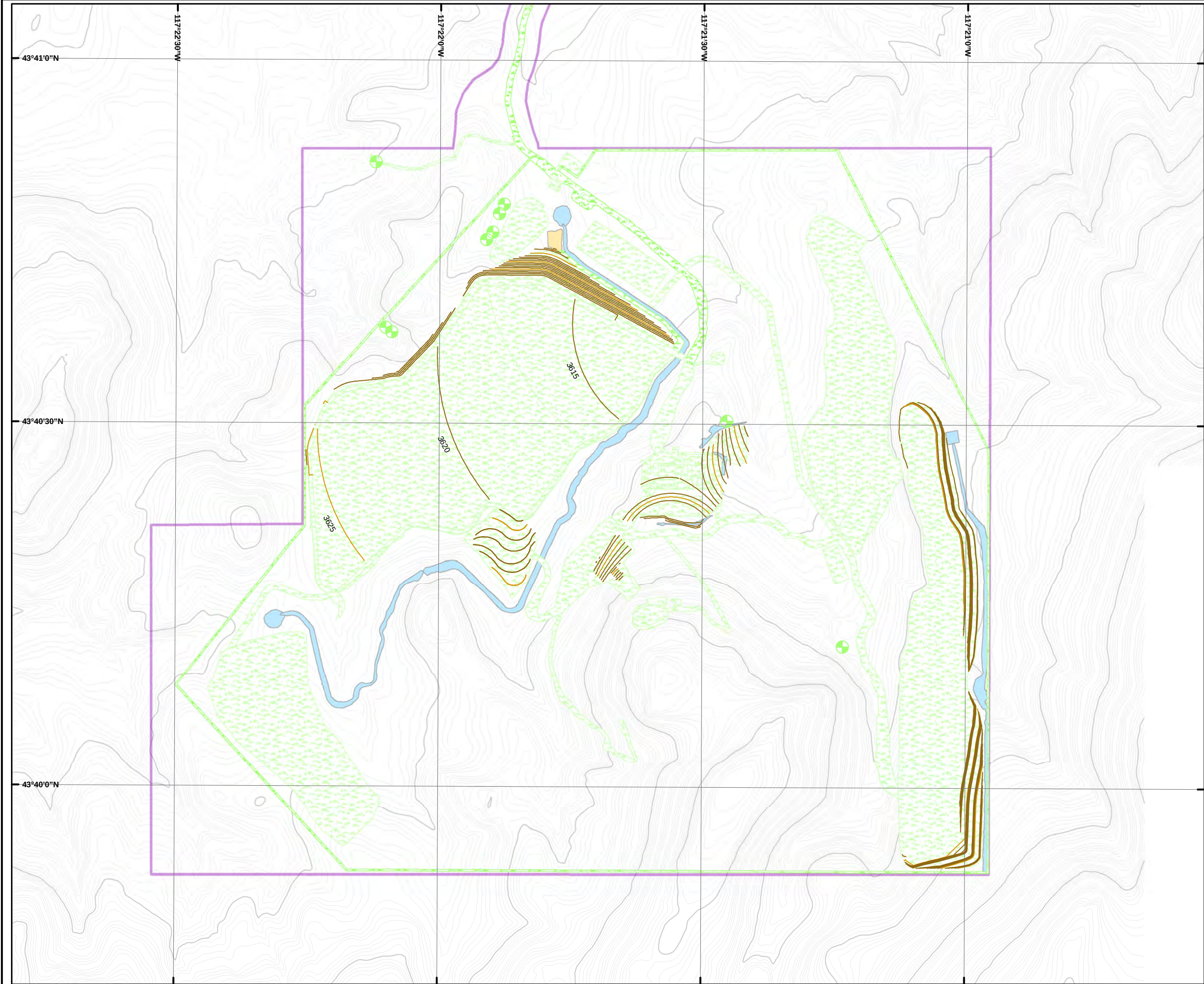


- Notes:
- Figure references 1983 UTM zone 11N datum.
 - Topography and facility layout provided by others.
 - Stage 4 reclamation to include powerlines, water supply, fence, meteorological station, and administrative building (some facilities not shown in figure).

Site/Report:
**Calico Resources USA Corp.
Grassy Mountain Mine**
Reclamation Plan

Figure:
**Stage 4
Reclamation**

 	Date:	December, 2021	
	Project No:	108.02203.00001	
	By:	MS	Chk'd:



Legend

- PoO Boundary
- Revegetated Area
- E-Cell
- Stormwater Diversion Channel
- Reclaimed 25ft Elevation Contours
- Reclaimed 5ft Elevation Contours
- Existing 25ft Elevation Contour
- Existing 5ft Elevation Contour
- Revegetated Area
- Revegetated Area From Previous Stage

1 " : 800 '
 0 200 400 800 Feet
 Scale as shown when plotted at 11"x17".

N
W
E
S

Notes:

- 1. Figure references 1983 UTM zone 11N datum.
- 2. Topography and facility layout provided by others.
- 3. Stage 5 reclamation to include all monitoring wells and mine access road (some facilities not shown in figure).

Site/Report:

**Calico Resources USA Corp.
Grassy Mountain Mine**

Reclamation Plan

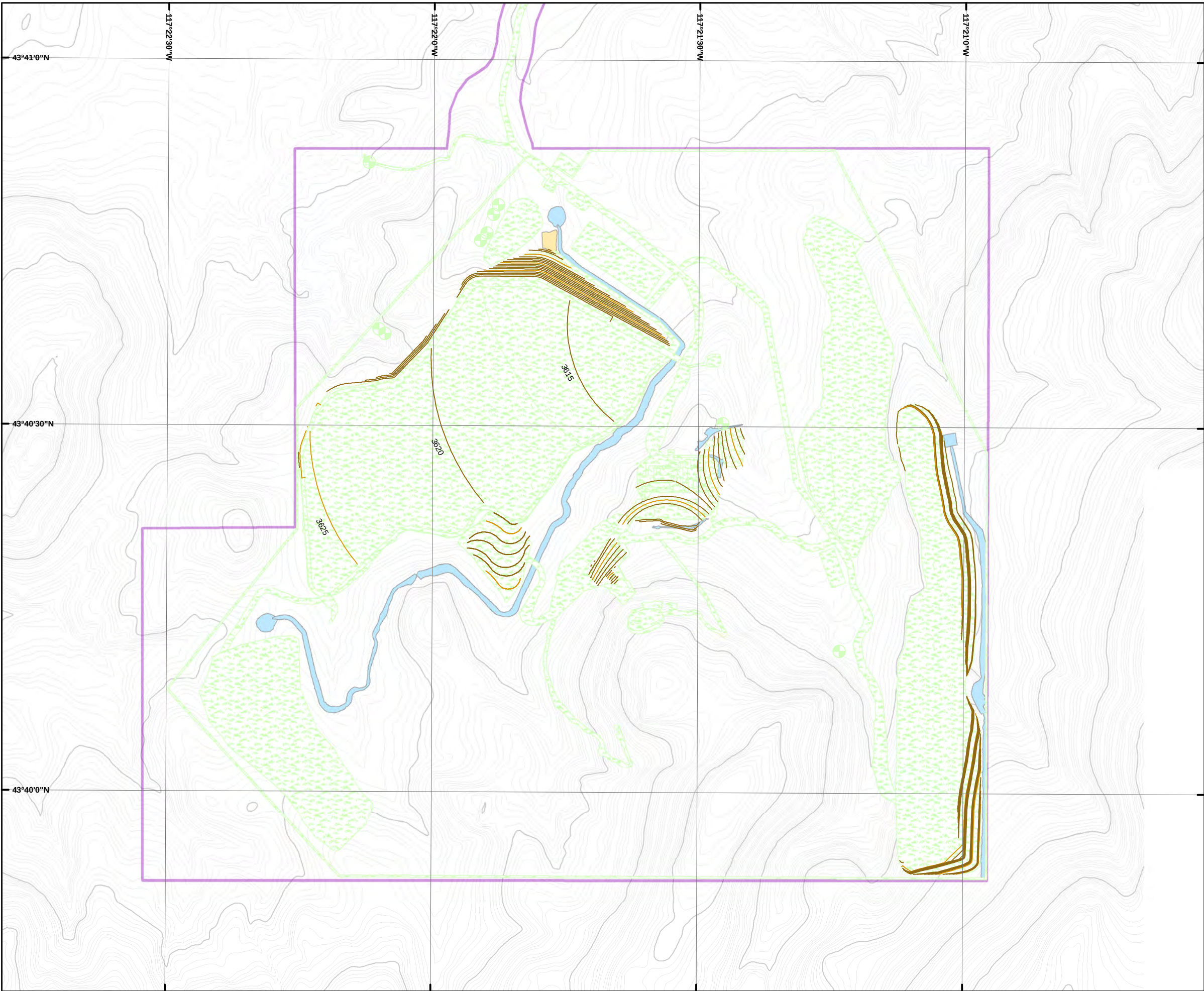
Figure:

**Stage 5
Reclamation**

SLR

CALICO RESOURCES

Date:	December, 2021	Figure: 8
Project No:	108.02203.00001	
By: MS	Chk'd: TM	



Legend

- PoO Boundary
- Revegetated Area
- E-Cell
- Stormwater Diversion Channel
- Reclaimed 25ft Elevation Contours
- Reclaimed 5ft Elevation Contours
- Existing 25ft Elevation Contour
- Existing 5ft Elevation Contour
- Revegetated Area

1"=800'
0 200 400 800 Feet
Scale as shown when plotted at 11"x17".



- Notes:
- Figure references 1983 UTM zone 11N datum.
 - Topography and facility layout provided by others.

Site/Report:

Calico Resources USA Corp.
Grassy Mountain Mine

Reclamation Plan

Figure:

Post Mining
Reclamation

 	Date:	December, 2021		Figure: 9	
	Project No:	108.02203.00001			
	By:	MS	Chk'd:		TM

APPENDIX A

REGULATORY REQUIREMENTS

**OAR 340-043-0080 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF
CHEMICAL MINING OPERATIONS: GENERAL PROVISIONS**

- (1) Facilities permitted under either a WPCF or NPDES permit shall not discharge wastewater or process solutions to surface water, groundwater or soils, except as expressly allowed by the permit.
- (2) Facilities subject to these rules shall not be sited in 100-year floodplains or wetlands. A buffer zone (a minimum of 200 feet wide) shall be established between waste disposal facilities and surface waters.
- (3) All chemical conveyances (ditches, troughs, pipes, etc.) shall be equipped with secondary containment and leak detection means for preventing and detecting release of chemicals to surface water, groundwater or soils.
- (4) Acid water accumulation in open pits resulting from the mining operation must be prevented by appropriate mining practices, by measures taken in the closure process, or be treated to control pH and toxicity, for the life of the pit.
- (5) Construction of surface impoundment liner systems shall conform generally to the principles and practices described in EPA/600/2-88/052, Lining of Waste Containment and Other Impoundment Facilities, September 1988.
- (6) The Department may require the permittee to hire a third-party contractor to perform the functions set forth below. Selection of the contractor shall be subject to Department approval:
 - (a) Review and evaluate the design and construction specifications of all mined-materials disposal facilities permitted under this Division for functional adequacy and conformance with Department requirements. The Department shall not approve construction of the disposal facilities until the design and construction specifications have been evaluated;
 - (b) Monitor the course of construction of all mined-materials facilities for compliance with the approved design and construction specifications. The third-party contractor shall regularly document the progress of construction and the Department shall require the permittee to take corrective action if construction does not satisfactorily conform to the approved design and construction specifications;
 - (c) Provide on-site inspections during ongoing operations, including but not limited to the loading of the heap, to assure protection of the integrity of the liner system and other environmental protection measures.

OAR 340-043-0090 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF CHEMICAL MINING OPERATIONS: CONTROL OF SURFACE WATER RUN-ON AND RUN-OFF

- (1) Surface water run-on and run-off shall be controlled such that it will not endanger the facility or become contaminated by contact with process materials or loaded with sediment. The control systems shall be designed to accommodate a 100-year, 24-hour storm event, or any other defined climatic event that is more appropriate to the site, and be placed so as to allow for restoration of the natural drainage network, to the maximum extent practicable, upon facility closure.
- (2) All mined materials shall be properly placed and protected from surface water and precipitation so as not to be eroded and contribute sediment to site stormwater run-off or to otherwise contaminate surface water.

OAR 340-043-0100 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF CHEMICAL MINING OPERATIONS: PHYSICAL STABILITY OF RETAINING STRUCTURES AND EMPLACED MINE MATERIALS

- (1) Permit applicants must demonstrate to the Department that the design of chemical processing facilities and waste disposal facilities is adequate to ensure the stability of all structural components of the facilities during operation, closure and post closure.
- (2) Retaining structures, foundations and mine materials emplacements shall be designed by a qualified, registered professional and be constructed for long-term stability under anticipated loading and seismic conditions.
- (3) Temporary structures and materials emplacements may, with written approval from the Department, be constructed to a lesser standard if it can be shown that they pose no, or minimal, threat to public safety or the environment.

OAR 340-043-0110 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF CHEMICAL MINING OPERATIONS: PROTECTION OF WILDLIFE

- (1) Wildlife shall be positively excluded from contact with chemical processing solutions and wastewaters containing chemicals.
- (2) The Department may waive the positive exclusion requirement if the Oregon Department of Fish and Wildlife (ODF&W) certifies to the Department that the project is designed such that it will adequately protect wildlife.

OAR 340-043-0130 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF CHEMICAL MINING OPERATIONS: GUIDELINES FOR DISPOSAL OF MILL TAILINGS

- (1) Mill tailings shall be treated by cyanide removal, reuse, or destruction prior to disposal to reduce the amount of cyanide introduced into the tailings pond to the lowest practicable level. The permittee shall

conduct laboratory column tests on mill tailings to determine the lowest practicable concentration to which the WAD cyanide (weak-acid dissociable cyanide as measured by ASTM Method D2036-82 C) can be reduced. In no event, shall the permitted WAD cyanide concentration in the liquid fraction of the tailings be greater than 30 ppm.

(2) The permittee shall determine the potential for acid-water formation from the tailings by means of acid-base accounting and other suitable laboratory static and dynamic tests. If acid formation can occur, basic materials shall be added to the tailings in the amount of three (3) times the acid formation potential or to give a net neutralization potential of at least 20 tons of CaCO₃ per 1,000 tons of tailings, whichever is greater, before placing tailings in the disposal facility.

(3) The disposal facility shall be lined with a composite double liner consisting of a flexible-membrane synthetic top liner in tight contact with an engineered, stable, soil/clay bottom liner (maximum coefficient of permeability of 10⁻⁷ cm/sec) having a minimum thickness of 36 inches. Construction of the liner shall generally follow the principles and practices contained in EPA/600/2-88/052, Lining of Waste Containment and Other Impoundment Facilities, September, 1988.

(4) The disposal facility shall be provided with a leachate collection system above the liner suitable for monitoring, collecting and treating potential acid drainage.

OAR 340-043-0150 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF CHEMICAL MINING OPERATIONS: GUIDELINES FOR HEAP-LEACH AND TAILINGS DISPOSAL FACILITY CLOSURE

(1) The waste disposal facilities shall be closed under these rules in conjunction with the reclamation requirements of DOGAMI (Oregon Department of Geology and Mineral Industries).

(2) An updated closure plan and post-closure monitoring and maintenance plan shall be submitted to the Department by the permittee at least 180 days prior to beginning closure operations or making any substantial changes to the operation. The closure plan must be compatible with DOGAMI's reclamation plan and may be part of it.

(3) Chemical conveyances (ditches, troughs, pipes, etc.) not necessary for post-closure monitoring shall be removed. The secondary containment systems shall be checked before closure for process-chemical contamination, and contaminated soil or other materials, if any, shall be removed to an acceptable disposal facility.

(4) Closure of the heap-leach facility:

(a) The heap shall be detoxified over a suitable period of time prior to closure, using rinse/rest cycles of rinsing and chemical oxidation, if necessary. The WAD cyanide concentration in the rinsate shall be no greater than 0.2 ppm;

(b) Following detoxification as defined in subsection (a) of this section, the heap shall be closed in place on the pad by covering the heap with a cover designed to prevent water and air infiltration. The cover should consist, at a minimum, of a low-permeability layer and suitable drainage and soil layers to prevent erosion and damage by animals and to sustain vegetation growth, in accordance with DOGAMI's reclamation rules;

(c) The ponds associated with the heap shall be closed by folding in the synthetic liners and filling and contouring the pits with inert material. Residual sludge may be disposed of in one of the on-site waste disposal facilities, provided it meets the criteria for such wastes in these guidelines. The process chemical collection system of the heap shall be maintained in operative condition so that it can be used to monitor the amount and quality of infiltrated water, if any, draining from the heap.

(5) The tailings disposal facility shall be closed by covering with a composite cover designed to prevent water and air infiltration and be environmentally stable for an indefinite period of time. Maximum effort shall be made to isolate the tailings from the environment. Construction of the cover shall generally follow the principles and practices contained in EPA/530-SW-89-047. Technical Guidance Document — Final Covers on Hazardous Waste Landfills and Surface Impoundments.

OAR 340-043-0160 GUIDELINES FOR THE DESIGN, CONSTRUCTION, OPERATION AND CLOSURE OF CHEMICAL MINING OPERATIONS: POST-CLOSURE MONITORING

(1) The Department may continue its permit in force for thirty (30) years after closure of the operation and will include permit requirements for periodic monitoring to determine if release of pollutants is occurring.

(2) Monitoring data will be reviewed regularly by the Department to determine the effectiveness of closure of the disposal facilities. The Department will consult with DOGAMI on release of security funds that would otherwise be needed to correct problems resulting from ineffective closure.

OAR 632-037-0070 RECLAMATION AND CLOSURE PLAN FOR CHEMICAL PROCESSING MINING

The Reclamation and Closure Plan section of a consolidated application shall include, but not be limited to the following provisions for the protection of public health, safety, and the environment:

(1) Procedures for the salvage, storage and replacement of topsoil or acceptable substitute.

(2) Provisions for recontouring, stabilization and topsoil replacement of all disturbed areas, where appropriate.

(3) Provisions for the revegetation of all disturbed areas consistent with the establishment of a self-sustaining ecosystem, comparable to undamaged ecosystems in the area of the mine. This shall include but not be limited to seedbed preparation, mulching, fertilizing, species selection, seeding planting rates and schedules. If applicable, the applicant shall include a plan for control of noxious weeds as identified by the Department of Agriculture.

- (4) Characterization and management plan for all wastes, including quantity and quality.
- (5) Provisions for specifying adequate setbacks from adjacent property boundaries and from surface waters or other resources when necessary to ensure compliance with environmental standards.
- (6) Procedures for all impacted or reconstructed stream channels, riparian area vegetation and stream banks to be rehabilitated or restored so as to maximize water retention and to minimize bank erosion, channel scour, siltation, and increased water temperatures.
- (7) Provisions for prevention of stagnant water may be required by the Department.
- (8) Provisions for the establishment of required slopes, including reclaimed highwalls and in-water slopes.
- (9) Provisions for visual screening of proposed operation if the permit area is visible from a public highway or residential area. Techniques for visual screening include but are not limited to vegetation, fencing or berms.
- (10) Procedures for the removal or disposal of all equipment, refuse, structures and foundations from the permit area.
- (11) Provisions to maintain access to utilities when a utility company right-of-way exists.
- (12) Procedures or information for decommissioning mine facilities including but not limited to:
 - (a) Procedures for ore storage sites to meet decommissioning performance standards for protection of air quality, surface and ground water quantity and quality and living resources and to achieve reclamation requirements;
 - (b) Procedures for tailing disposal facility to meet decommissioning performance standards for long-term stability, protection of air quality, surface and ground water quantity and quality and living resources and to provide for attainment of reclamation objectives;
 - (c) Removal of all process chemicals;
 - (d) Appropriate isolation or removal of waste material; and
 - (e) Monitoring systems by which the success of the proposed reclamation and closure can be measured for bond release.
- (13) An estimate of the total cost of reclamation consistent with the standards imposed under ORS 517.750 to 517.955.

OAR 632-030-0027 MINING STANDARDS FOR A RECLAMATION PLAN FOR THE QUARRY

OAR 632-030-0027 is applicable to the quarry at the site and is not applicable to the other mining features, which fall under OAR 632-037-0070.

A reclamation plan submitted under 632-030-0025 (Requirements for an Operating Permit and Reclamation Plan) must meet the following minimum standards:

(1) Final slopes must be stable. Reclaimed cutbanks may not have slopes exceeding 1-1/2 horizontal to 1 vertical (1-1/2H:1V). Final slopes may be blasted or sculpted to blend into adjacent landforms or for creation of habitat. The Department may require the submission of a reclamation blast plan to assure stable slopes will be created and adjacent property will be protected. The Department may also grant exceptions for slopes steeper than 1-1/2H:1V when the applicant can document that the slopes will be stable and if the steeper slopes:

- (a) Blend into the adjacent terrain;
- (b) Existed prior to mining; or
- (c) Are consistent with the approved subsequent beneficial use.

(2) Interim and final above-water cutslopes for sites located within the boundaries of a 100-year floodplain can be no steeper than 3H:1V.

(3) Slope requirements.

- (a) Fill slopes must be 2 horizontal to 1 vertical (2H:1V) or flatter.
- (b) Fill slopes steeper than 2H:1V may be approved if technical data supporting slope stability is approved by the Department.
- (c) In unconsolidated material or when slope length exceeds 100 lineal feet, 3H:1V slopes or flatter may be required to assure long-term stability.
- (d) Complex slope formations may be necessary to enhance habitat and post-mine landscape diversity.
- (e) Flatter slopes (5H:1V to 10H:1V) will be needed where wetland creation is proposed.
- (f) For sites within the 100-year floodplain, final above-water fill slopes can only be placed over cutslopes 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.

(4) Generally, final revegetation with native species of all disturbed areas consistent with future use is required unless the Department finds it unreasonable. The Department will, in most instances, consider revegetation successful if it provides a similar plant density in terms of ground or canopy cover and it is comparable to undisturbed areas in similar landscape positions. In arid or semi-arid regions, the Department may allow three years of growth prior to a revegetation evaluation. Otherwise, revegetation will be evaluated after one growing season. Vegetation test plots may be required to ensure establishment feasibility and/or long-term habitat goals in the reclamation plan. Vegetation monitoring may also be required to insure success of the approved plan.

(5) Establishment of 3H:1V slopes from ordinary high-water level extending to six feet below ordinary low-water level for permanent water impoundments is required. In addition to the 3H:1V slopes, the Department may approve other sloping configurations where horizontal benches are incorporated as habitat features.

(a) Other above- and below-water bank sloping may be approved for constructed alcoves or other habitat features or projects.

(b) Establishment of a stable slope angle or benching for below-water slopes to insure an adequate foundation for the proposed in-water and above-water slopes or fills is required.

(c) A geotechnical study may be required to address slope stability.

(6) All stream channels and stream banks must be rehabilitated using procedures that minimize bank erosion, channel scour, and sedimentation; and maximize habitat.

(7) Reclamation must be completed in a timely manner. If there is no production at a mine site for a period of five or more consecutive years, the permittee shall submit a report to the Department on the remaining reserves. The report must include an estimate of the quantity of the remaining mineral reserves. The report must be signed by a professional geologist or include drill logs or other quantitative analysis acceptable to the Department. If the submission of such data poses a financial hardship to the permittee, the Department will attempt to work with the permittee to provide the necessary geologic expertise as Department staff resources allow or the Department may waive this requirement. Any waiver provided by the Department must be in writing and must specify the duration for which the requirement is waived.

(8) If the Department determines that the reserves are insignificant or the operator is unlikely to be able to economically mine the site in the reasonably foreseeable future, the Department will order reclamation and may establish a reasonable period for its completion.

43 CFR 3809.420(3)

Components of reclamation include, where applicable:

(1) Isolation, control, or removal of acid-forming, toxic, or deleterious substances;

(2) Regrading and reshaping to conform with adjacent landforms, facilitate revegetation, control drainage, and minimize erosion;

(3) Rehabilitation of fisheries or wildlife habitat;

(4) Placement of growth medium and establishment of self-sustaining revegetation;

(5) Removal or stabilization of buildings, structures, or other support facilities;

(6) Plugging of drill holes and closure of underground workings; and

(7) Providing for post-mining monitoring, maintenance, or treatment.

ADDITIONAL STATE AND FEDERAL REGULATORY REQUIREMENTS

Additional state and federal permits are required for the operation of the Site that include requirements for reclamation including:

- (1) Fill and removal permits required under ORS 196.600 to 196.665 and 196.800 to 196.900.
- (2) Permits to appropriate surface water or ground water under ORS 537.130 and 537.615, to store water under ORS 537.400 and impoundment structure approval under ORS 540.350 to 540.390.
- (3) National Pollutant Discharge Elimination System permit under ORS 468.740.
- (4) Water pollution control facility permit under ORS 468.740.
- (5) Air contaminant discharge permit under ORS 468.310 to 468.330.
- (6) Solid waste disposal permit under ORS 459.205.
- (7) Permit for use of power driven machinery on forestland under ORS 477.625.
- (8) Permit to clear right of way on forestland where clearing constitutes a fire hazard under ORS 477.685.
- (9) Permit for placing explosives or harmful substances in waters of the state under ORS 509.140.
- (10) Hazardous waste storage permit under ORS 466.005 to 466.385.
- (11) Land use permit, if applicable consistent with the Department's state agency coordination agreement, including relevant sections of OAR chapter 632, division 001.
- (12) Any other state permit required for the proposed mining operation.

APPENDIX B

STANDARDIZED RECLAMATION COST ESTIMATE EXPORTED FILES

Closure Cost Estimate
Property Information

STANDARDIZED RECLAMATION COST ESTIMATOR

Version 2.0
Build - Beta 01j

COST DATA FILE INFORMATION		
File Name:	SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm	
Cost Data File:	SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm	
Cost Data Date:	October 6, 2021	
Cost Data Basis:	User Data	Data Cost Units: Imperial
Author/Source:	2018 Nevada Division of Environmental Protection (NDEP) & NV BLM-inflated	
PROJECT INFORMATION		
Property/Mine Name:	Grassy Mountain	Property Code:
Project Name:	Grassy Mountain Mine	
Date of Submittal:	October 2022	Average Elevation 3700 ft.
Units of Measure:	☐ Metric (m, km, ha, etc.) ☒ Imperial (ft, mi, acres, etc.)	
Currency Symbol:	Dollar (US)	
Project Type:	Mine Operations Plan	
Land Type:	Public + Private Land	
Cost Basis Category:	Northern Nevada - Imperial Units	
Cost Basis Description:	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	

Closure Cost Estimate
Acct Codes

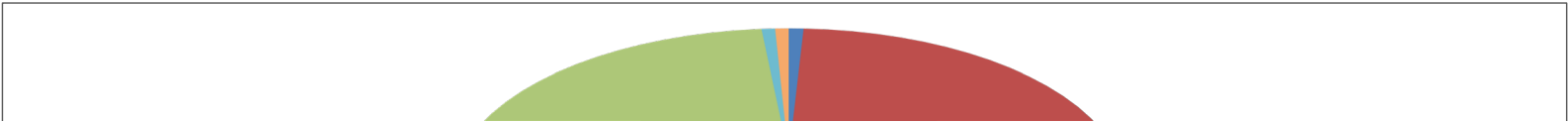
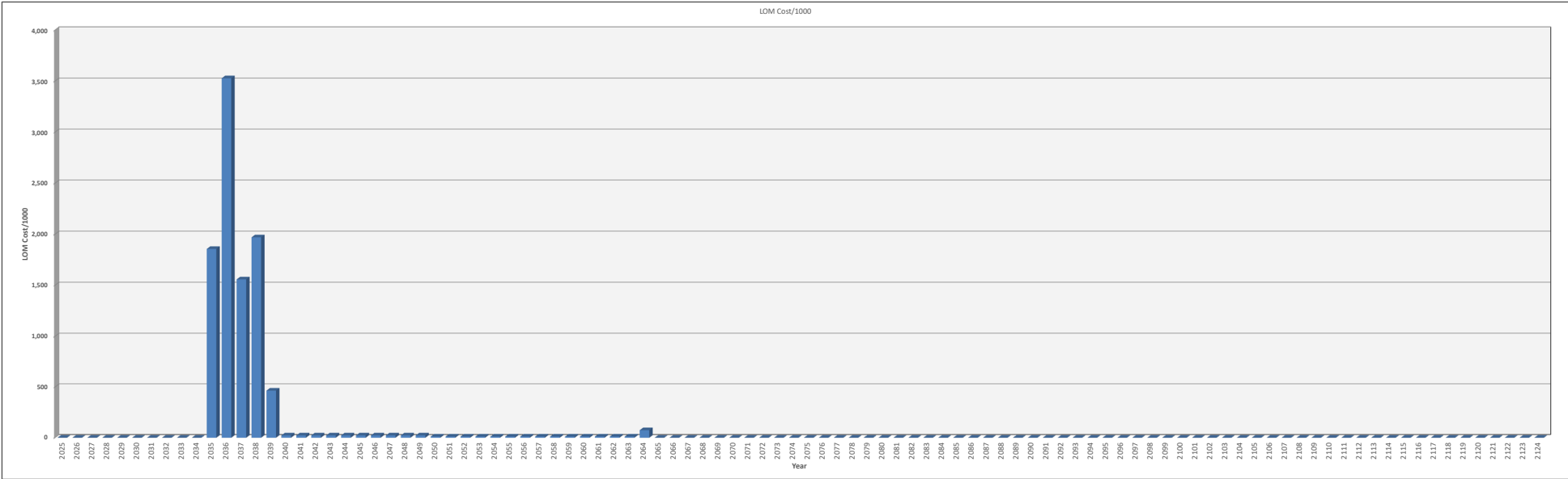
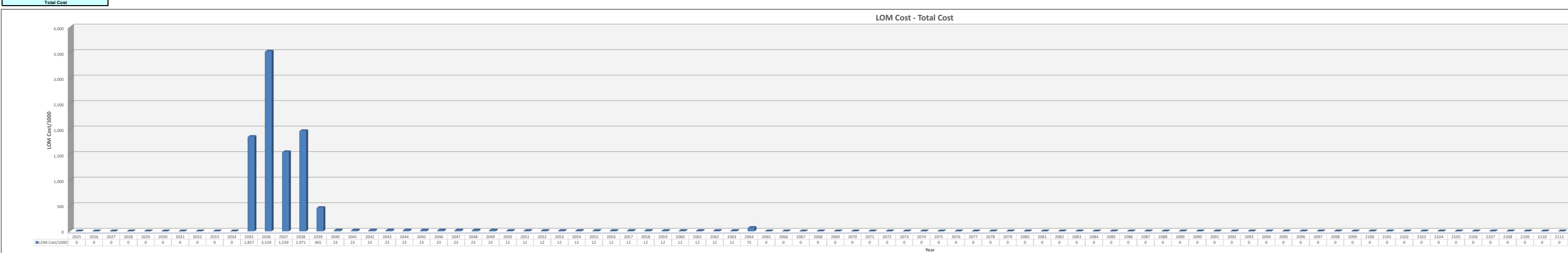
Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM - Cost Basis: Northern Nevada - Imperial Units

[illegible]

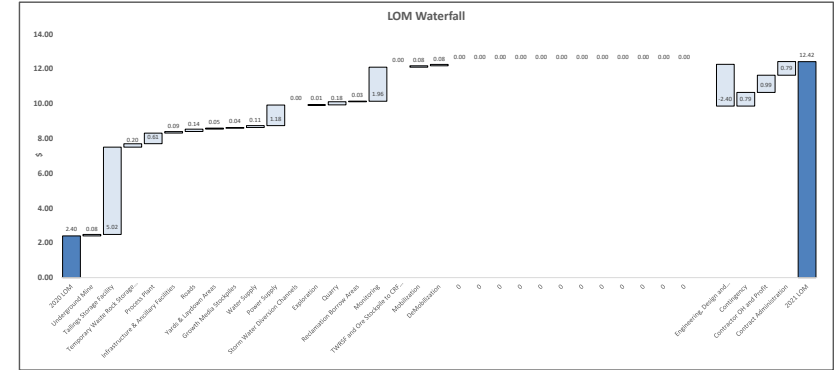
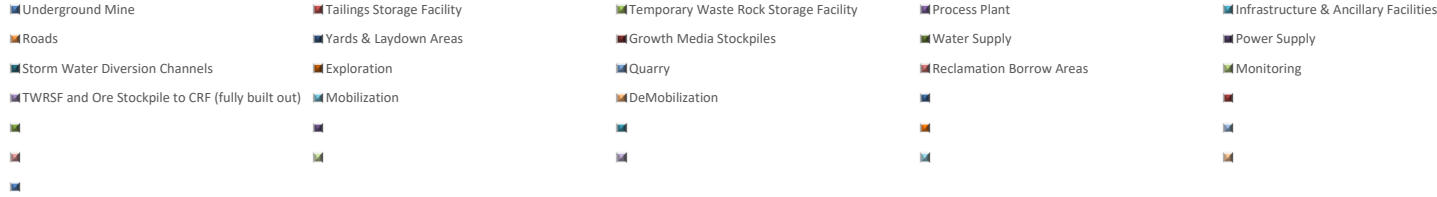
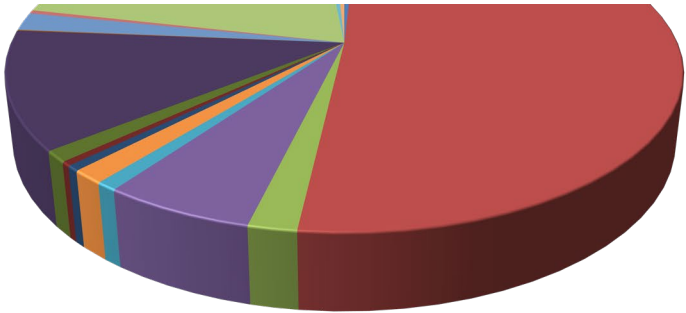
	Disco
	NPV:
Calculation Check:	-17.76
Difference:	-0.00014%

*red indicates total less than shown in Schedule sheet

Select Costs to Graph



Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units



Closure Cost Estimate
Filters

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Phases		
	Description	Phases Code (used in detail sheets)
1	Stage 1	Stg1
2	Stage 2	Stg2
3	Stage 3	Stg3
4	Stage 4	Stg4
5	Stage 5	Stg5
6	Stage 0	Stg0

Stg1 - Closure year for 12 months
Stg2- (+1) - 12 months i.e 1st year after closure
Stg3 - 12 months i.e 2nd year after closure
Stg4 - 12 months i.e 3rd year after closure; Stg5 - from 3rd year after closure to another 27 years; Stg 0 i

Locations		
	Description	Locations Code (used in detail sheets)

Properties		
	Description	Properties Code (used in detail sheets)

Closure Cost Estimate Waste Rock Dumps

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data_USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Waste Rock Dumps - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	4,666	14,899	N/A	19,565
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	4,666	14,899		19,565
Revegetation Cost	622	237	1,882	2,741
TOTALS	5,288	15,136	1,882	22,306

Waste Rock Dumps - User Input																														
Facility Description									Physical - MANDATORY									Cover 1				Cover 2				Growth Media				
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Ground Slope at Toe % Grade	Ungraded Slope _H:1V	Final Slope _H:1V	Final Top Slope % Grade	Lift (dump) Height ft	Mid-Bench Length ft	Average Long Dimension (ripping distance) ft	Final (Regraded) Footprint acres	Regrade Volume (1) (If calculated elsewhere) cy	Cover Thickness Slopes in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Cover Thickness Slopes in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Slope Growth Media Thickness in	Flat Area Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade	
1	Waste Rock Dump Area	WD01	2035	Temporary Waste Rock Stg1				LOM							756	5.72											12.0	12.0	4.103	1.3

Notes:

1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. Input distance from crusher to placement location if material to be crushed and/or screened.
3. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet 1.1.1.1).

Mix1 used for Revegetation

[illegible]

Notes:

1. Input distance to crusher if material to be crushed
2. if distance from borrow <820 ft (250 m) must select loader fleet

Waste Rock Dumps - User Input (Cont.)																										
You must fill in ALL green cells and relevant blue cells in this section for each dump, lift or dump category																										
		Grading				Cover 1			Cover 2				Growth Media				Revegetation									
Description (required)		Dozing Material Override Fleet (select)	Material Type (select)	Grading Equipment Fleet (select)	Slot/Side-by-Side (select)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix Slopes (select)	Seed Mix Flat Rip? Areas (select)	Mulch Slopes (select)	Mulch Flat Areas (select)	Fertilizer Slopes (select)	Fertilizer Flat (select)	Slope Scarify/ Rip? (select)	Flat Area Scarify/ (select)	Scarify Ripping Fleet (select)
1	Waste Rock Dump Area	1												Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	No	No	Small Dozer

Notes:

1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Waste Rock Dumps - Assumptions & Calculations
Regrading Push Distance Calculation
dozing distance: based on 2/3 final cut slope + 2/3 final fill slope (minimum = 50 ft)
Ripping/Scarifying Calculations
Minimum 1 hr ripping/scarifying time per dump
Slopes: Number of passes = Final slope length ÷ Grader width Travel distance = Number of passes x Mid-bench length Total hours = (Travel distance ÷ Grader productivity) × (Number of passes x Grader maneuver time) Minimum 1 hr
Flat Areas: Flat area width = Final flat area ÷ Average long dimensions Number of passes = Flat area width × Grader width Travel distance = Number of passes x Average long dimensions Total hours = (Travel distance ÷ Grader productivity) × (Number of passes x Grader maneuver time)
Revegetation: Minimum 1 acre revegetation crew time per area

Waste Rock Dumps - Regrading Costs														
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side) x (Altitude Deration)														
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Grade Correction	Dozing Material	Density Correction	Side-by-Side or Slot Dozing	Total Hourly Productivity cy/hr	Total Dozer Hours	Total Labor Cost \$	Total Equipment Cost \$	Total Regrading Cost \$
1	Waste Rock Dump Area	0									0	0	0	0
		0									0	0	0	0

[illegible]

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening

Waste Rock Dumps - Cover 2 Costs

Closure Cost Estimate
Waste Rock Dumps

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Waste Rock Dumps - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	4,666	14,899	N/A	19,565
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	4,666	14,899		19,565
Revegetation Cost	622	237	1,882	2,741
TOTALS	5,288	15,136	1,882	22,306

		Material Volumes		Haul to Crusher					Haul to Placement					Haul to Crusher			Crush	Compact			Haul to Placement			Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
1	Waste Rock Dump Area	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Waste Rock Dumps - Growth Media Costs										
Growth Media Placement										
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity BCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
1	Waste Rock Dump Area	9,680	740C/988K/D7E	8.4	3	476	20	4,666	14,899	19,565
		9,680					20	4,666	14,899	19,565

Waste Rock Dumps - Scarify/Revegetation Costs																
										Scarifying Costs			Revegetation Costs			
	Description (required)	Slope Area acres	Flat Area acres	Total Surface Area acres	Final Slope Length ft	Average Long Dimension (ripping distance) ft	Ripping/ Scarifying Fleet	Slope Scarifying/ Ripping Hours hrs	Flat Area Scarifying/ Ripping Hours	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
1	Waste Rock Dump Area	0.10	6.00	6.10				0	0	0	0	0	622	237	1,882	2,741
		0.10	6.00	6.10				0	0	0	0	0	622	237	1,882	2,741

Notes:

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - User Input																														
Facility Description									You must fill in ALL green cells and relevant blue cells in this section for each tailings impoundment																					
									Physical - MANDATORY										Cover 1				Cover 2				Growth Media			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Ground Slope at Toe % Grade	Ungraded Slope _H:1V	Final Slope _H:1V	Embankment Height ft	Final (Regraded) Cover Footprint acres	Mid-Embankment Length ft	Average Long Dimension (ripping distance) ft	Slope Regrade Volume (1) (if calculated elsewhere) cy	Final Tailings Surface Area acres	Surface Regrade Volume (calculated elsewhere) cy	Embankment Cover Thickness in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Embankment Cover Thickness in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Embankment Growth Media Thickness in	Tailings Surface Growth Media Thickness in	Haul Distance to Placement Location ft	
1	Phase II TSF - Stage 1 - Embankment Revegetation	T02	2035	Tailings Storage Facility	Stg1			LOM					8.10	1,625														12.0	12.0	2,220
2	Phase II TSF - Stage 2 - 100 % Regrade	T01	2036	Tailings Storage Facility	Stg2			LOM	5.0	2.5	2.5	70		1,625	3,147		69.12	226,938												
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)	T01	2036	Tailings Storage Facility	Stg2			LOM									48.73				12.0	10,500	4.0						12.0	2,220
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)	T01	2036	Tailings Storage Facility	Stg2			LOM									3.11				12.0	10,500	4.0						12.0	5,720
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)	T01	2037	Tailings Storage Facility	Stg3			LOM									17.28				12.0	10,500	4.0						12.0	3,833

Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. Input distance from crusher to placement location if material to be crushed, screened or compacted
3. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Mix1 used for Revegetation
Stg1 - is Embankment
Stg2 - 100% Regrading; 75% Cover & GM;
Stg3 - 25% Cover & GM

Embankment thickness does not work; hence accomodated in Tailings Surface thickness
Broken into Phase II and Phase III to demonstrate bonding savings if Phase III TSF is not realized (approximateley 1.637 M USD).

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - User Input (Cont.)																					
Facility Description		Cover 1 - Crushing & Screening										Cover 2 - Crushing & Screening									
	Description (required)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Cover Borrow % grade	Haul to Crusher Fleet (2) (select)	Compact Slopes After Placement? (select)	Compact Flat After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Cover Borrow % grade	Haul to Crusher Fleet (2) (select)	Compact Slopes After Placement? (select)	Compact Flat After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)
1	Phase II TSF - Stage 1 - Embankment Revegetation																				
2	Phase II TSF - Stage 2 - 100 % Regrade	Yes	Yes	10%		0.0	Small Truck	No	No												
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)	Yes	Yes	10%	1,850	0.0	Small Truck	No	No												
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)	Yes	Yes	10%	1,850	0.0	Small Truck	No	No												
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)	Yes	Yes	10%	1,850	0.0	Small Truck	No	No												

Notes:
1. Input distance to crusher if material to be crushed
2. If distance from borrow <820 ft (250 m) must select loader fleet

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - User Input (cont.)																										
You must fill in ALL green cells and relevant blue cells in this section for each tailings impoundment																										
Grading					Cover 1				Cover 2				Growth Media				Revegetation									
	Description (required)	Dozing Material Condition (select)	Embankment Material Type (select)	Grading Equipment Fleet (select)	Slot/Side-by- Side (select)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix Embankment Slope (select)	Seed Mix Tailings Surface (select)	Mulch Embankment Slopes (select)	Mulch Tailings Surface (select)	Fertilizer Embankment Slopes (select)	Fertilizer Tailing Surface (select)	Embankment Slope Scarify/ Rip? (select)	Tailings Surface Scarify/ Rip? (select)	Scarifying/ Ripping Fleet (select)
1	Phase II TSF - Stage 1 - Embankment Revegetation													Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	No	No	Small Dozer
2	Phase II TSF - Stage 2 - 100 % Regrade	1.2	Gravel	Med	No	Limestone - br	Small Truck																			
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)					Limestone - br	Small Truck							Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	No	No	Small Dozer
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)					Limestone - br	Small Truck							Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	No	No	Small Dozer
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)					Limestone - br	Small Truck							Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	No	No	Small Dozer

Notes:
1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Tailings - Assumptions & Calculations

Surface Area Calculations

Top Surface Area provided by user

Grading Calculations

Grading assumed on impoundment surface only, not embankment
Average push distance assumed to be 2/3 of the 600 feet maximum from Catepillar Handbook or 400 feet
Material assumed to be loose stockile (1.2 productivity factor)
Dozing density correction based on dry sand = 2300/2400 = 0.96
Slope assumed to be 0 to 5% (1.0 productivity factor)

Ripping/Scarifying/Revegetation Calculation

Minimum 1 hr ripping/scarifying per area
Minimum 1 acre revegetation crew time per area

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - Embankment Regrading Costs														
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side) x (Altitude Deration)														
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Grade Correction	Dozing Material Condition	Density Correction	Side-by-Side or Slot Dozing	Total Hourly Productivity cy/hr	Total Dozer Hours hrs	Total Labor Cost	Total Equipment Cost	Total Regrading Cost
1	Phase II TSF - Stage 1 - Embankment Revegetation										0	0	0	0
2	Phase II TSF - Stage 2 - 100 % Regrade	0									0	0	0	0
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)										0	0	0	0
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)										0	0	0	0
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)										0	0	0	0
		0									0	0	0	0

Tailings - Surface Regrading Costs														
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side) x (Altitude Deration)														
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Grade Correction	Density Correction	Dozing Material	Side-by-Side or Slot Dozing	Total Hourly Productivity cy/hr	Total Dozer Hours hrs	Total Labor Cost	Total Equipment Cost	Total Regrading Cost
1	Phase II TSF - Stage 1 - Embankment Revegetation										0	0	0	0
2	Phase II TSF - Stage 2 - 100 % Regrade	226,938	400	D9T	334	1.00	0.96	1.20	1.00	240	946	55,682	193,816	249,498
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)										0	0	0	0
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)										0	0	0	0
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)										0	0	0	0
		226,938									946	55,682	193,816	249,498

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - Cover 1 Costs																									
		Material Volumes		Haul to Crusher					Haul to Placement					Haul to Crusher			Crush	Compact			Haul to Placement				Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$	
1	Phase II TSF - Stage 1 - Embankment Revegetation	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0	
2	Phase II TSF - Stage 2 - 100 % Regrade	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0	
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)	87,353	78,618	740C/988K/988K	6.04	2	442	442	740C/988K/D7E	15.1	6	528	149	38,915	136,945	175,860	89,100	0	0	0	51,782	177,973	229,755	494,715	
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)	5,574	5,017	740C/988K/988K	6.04	2	442	442	740C/988K/D7E	15.1	6	528	10	2,555	8,991	11,546	5,685	0	0	0	3,475	11,945	15,420	32,651	
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)	30,976	27,878	740C/988K/988K	6.04	2	442	442	740C/988K/D7E	15.1	6	528	53	13,758	48,415	62,173	31,596	0	0	0	18,419	63,306	81,725	175,494	
		123,903	111,513					1,326					212	55,228	194,351	249,579	126,381	0	0	0	73,676	253,224	326,900	702,860	

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - Cover 2 Costs																								
		Material Volumes		Haul to Crusher				Haul to Placement				Haul to Crusher			Crush	Compact			Haul to Placement			Total		
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
1	Phase II TSF - Stage 1 - Embankment Revegetation	0	0										0	0	0	0	0	0	0	0	0	0	0	0
2	Phase II TSF - Stage 2 - 100 % Regrade	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Closure Cost Estimate
Tailings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,878	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - Growth Media Costs										
		Growth Media Placement								
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity BCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
1	Phase II TSF - Stage 1 - Embankment Revegetation	13,068	740C/988K/D7E	6.42	2	415	31	6,052	18,448	24,500
2	Phase II TSF - Stage 2 - 100 % Regrade	0					Haul Info	0	0	0
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)	78,618	740C/988K/D7E	6.42	2	415	189	36,895	112,472	149,367
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)	5,017	740C/988K/D7E	10.1	4	528	10	2,714	8,948	11,662
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)	27,878	740C/988K/D7E	8.12	3	493	57	13,298	42,461	55,759
		124,581					287	58,959	182,329	241,288

Closure Cost Estimate
Tailings

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Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Tailings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Embankment Regrading Cost	0	0	N/A	0
Tailings Surface Grading Cost	55,682	193,816	N/A	249,498
Cover 1 Placement Cost	128,904	573,956	N/A	702,860
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	58,959	182,329	N/A	241,288
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	243,545	950,101		1,193,646
Revegetation Cost	7,876	2,994	2,499	13,369
TOTALS	251,421	953,095	2,499	1,207,015

Tailings - Scarify/Revegetation Costs																	
											Scarifying Costs			Revegetation Costs			
	Description (required)	Embankment Slope Area acres	Embankment Flat Area acres	Total Embankment Surface Area acres	Total Tailings Surface Area	Final Slope Length ft	Average Long Dimension (ripping distance) ft	Ripping/ Scarifying Fleet	Slope Scarifying/ Ripping Hours hrs	Flat Area Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	
1	Phase II TSF - Stage 1 - Embankment Revegetation	0.00	8.10	8.10	0.00				0	0	0	0	0	0	826	314	2,499
2	Phase II TSF - Stage 2 - 100 % Regrade		0.00		69.12	188			0	0	0	0	0	0	0	0	0
3	Phase II TSF - Stage 2 - 75% Cover & GM (GM1)		0.00		48.73				0	0	0	0	0	0	4,970	1,889	0
4	Phase II TSF - Stage 2 - 75% Cover & GM (GM2)		0.00		3.11				0	0	0	0	0	0	317	121	0
5	Phase II TSF - Stage 3 - 25% Cover & GM (BM1)		0.00		17.28				0	0	0	0	0	0	1,763	670	0
		0.00	8.10	8.10	138.24				0	0	0	0	0	0	7,876	2,994	2,499

Notes: 1) Minimum total ripping hours = 1 (i.e. If total ripping hrs (slope + flat) < 1, then one hour of fleet time is assumed, regardless of acres shown in in scarifying table.)

Closure Cost Estimate
Heap Leach

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Heap Leach Pads - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Drain Installation	0	0	0	0
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsail Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	0	0	0	0
Revegetation Cost	0	0	0	0
TOTALS	0	0	0	0

Heap Leach Pads - User Input																													
You must fill in ALL green cells and relevant blue cells in this section for each heap, lift or heap category																													
Facility Description									Physical (1) - MANDATORY									Cover 1				Cover 2				Growth Media			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Ground Slope at Toe % grade	Ungraded Slope _H:1V	Final Slope _H:1V	Final Top Slope % grade	Lift (heap) Height ft	Mid-Bench Length ft	Average Flat Area Long Dimension (ripping distance) ft	Final (Regraded) Heap Footprint acres	Regrade Volume (if calculated elsewhere) cy	Cover Thickness Slopes in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Cover Thickness Slopes in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope from Dump to Cover Borrow % grade	Slope Growth Media Thickness in	Flat Area Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade

- Notes:
- All Physical parameters must be input even if manual overrides for volume or area are used.
 - Input distance from crusher to placement location if material to be crushed, screened or compacted
 - If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Heap Leach - User Input (Cont.)																					
Facility Description			Cover 1 - Crushing & Screening									Cover 2 - Crushing & Screening									
	Description (required)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Source % grade	Haul to Crusher Fleet (2) (select)	Compact Slopes After Placement? (select)	Compact Flat After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Source % grade	Haul to Crusher Fleet (2) (select)	Compact Slopes After Placement? (select)	Compact Flat After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)

- Notes:
- Input distance from crusher to placement location if material to be crushed, screened or compacted
 - If distance from borrow <820 ft (250 m) must select loader fleet

Heap Leach Pads - User Input (cont.)																										
You must fill in ALL green cells and relevant blue cells in this section for each heap, lift or heap category																										
		Grading				Cover 1				Cover 2				Growth Media				Revegetation								
	Description (required)	Dozing Material Condition (select)	Heap Material Type (select)	Grading Equipment Fleet (select)	Slot/ Side-by-Side (select)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix Slopes (select)	Seed Mix Flat Areas (select)	Mulch Slopes (select)	Mulch Flat Areas (select)	Fertilizer Slopes (select)	Fertilizer Flat Areas (select)	Slope Scarify/ Rip? (select)	Flat Area Scarify/ Rip? (select)	Scarifying/ Ripping Fleet (select)

- Notes:
- Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Heap Leach Pads - User Input (cont.)												
		Solution Collection Ditch Fill							Piping			
	Description (required)	Collection Ditch Length ft	Collection Ditch Top Width ft	Collection Ditch Depth ft	Volume (if calculated elsewhere) cy	Distance from Borrow ft	Slope to Borrow % grade	Drain Rock Equipment Fleet (select)	Solid Pipe Length ft	Solid Pipe Type (select)	Drainage Pipe Length ft	Drainage Pipe Type (select)

Notes:

Heap Leach - Assumptions & Calculations
Regrading Push Distance Calculation dozing distance: based on 2/3 final cut slope + 2/3 final fill slope (minimum = 50 ft)
Ripping/Scarifying Calculations Minimum 1 hr ripping/scarifying per area Slopes: Number of passes = Final slope length + Grader width Travel distance = Number of passes x Mid-bench length Total hours = (Travel distance + Grader productivity) + (Number of passes x Grader maneuver time) Flat Areas: Flat area width = Final flat area + Average long dimensions Number of passes = Flat area width + Grader width Travel distance = Number of passes x Average long dimensions Total hours = (Travel distance + Grader productivity) + (Number of passes x Grader maneuver time) Revegetation: Minimum 1 acre revegetation crew time per area
Solution Collection Ditch Calculations Use when existing heap material is not suitable drain rock Assume to be constructed in existing solution channels Assume 2H:1V ditch sideslopes Drain rock assumed to be Gravel - Dry at 2,550 lb/cy (1,510 kg/m3) from CAT Handbook 35th Ed.

Heap Leach Pad - Drainage Channel Fill & Drainage Pipe Installation															
		Drain Rock Placement								Drainpipe Installation					
	Description (required)	Drain Rock Volume cy	Drain Rock Fleet	Fleet Productivity LCY/hr	Number of Trucks/ Scrapers	Total Fleet Hours hrs	Drainage Labor Cost \$	Drainage Equipment Cost \$	Total Drainage Cost \$	Piping Crew Hours hrs	Piping Labor Cost \$	Piping Equipment Cost \$	Piping Material Cost \$	Total Pipe Installation Cost \$	Total Drainage Cost \$

Closure Cost Estimate Heap Leach

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phill_TSF_Updated_no_STGO.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Heap Leach Pads - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Totals \$	
Drain Installation	0	0	0	0	0
Grading Costs	0	0	N/A	0	0
Cover 1 Placement Cost	0	0	N/A	0	0
Cover 2 Placement Cost	0	0	N/A	0	0
Topsoil Placement Cost	0	0	N/A	0	0
Ripping/Scarifying Cost	0	0	N/A	0	0
Subtotal Earthworks	0	0	0	0	0
Revegetation Cost	0	0	0	0	0
TOTALS	0	0	0	0	0

[illegible]

Heap Leach Pad - Regrading Costs														
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side) x (Altitude Deration)														
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Grade Correction	Dozing Material	Density Correction	Side-by-Side or Slot Dozing	Total Hourly Productivity cy/hr	Total Dozer Hours hr	Total Labor Cost \$	Total Equipment Cost \$	Total Regrading Cost \$
		0									0	0	0	0

[illegible]

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

[illegible]

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Heap Leach - Growth Media Costs										
		Growth Media Placement								
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity BCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
		0					0	0	0	0

[illegible]

Notes: 1) Minimum total ripping hours = 1 (i.e. If total ripping hrs (slope + flat) < 1, then one hour of fleet time is assumed, regardless of acres shown in in scarifying table.)
2) Assumes 50 min/hr equipment availability

Closure Cost Estimate
Solution Mgmt

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost CostType Type: LOM Cost Basis: Northern Nevada - Imperial Units

Solution/Water Management - LOM Cost Summary					
	Labor \$	Equipment + Operating + Power \$	Materials \$	Capital \$	Totals \$
Pumping	160,963	516,970	N/A	0	677,933
Forced Evaporation	0	0	N/A	0	0
Water Treatment	0	0	0	0	0
Decontamination	0	0	N/A	0	0
TOTALS	160,963	516,970	0	0	677,933

Solution/Water Management - User Input - Pumping																								
																		Operating Period			User Overrides			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Water Type (select)	Management Type (select)	Capital Cost \$	Flow (Q) gpm	Pipeline Length ft	Static Head ft	Pipe Diameter (ID) ⁽¹⁾ in	Pipe Material (select)	Pump Efficiency %	Total Concentrated Losses ⁽²⁾	Hrs/Day	Days/ Month	Number of Months	Crew Size ⁽³⁾	Power Cost (\$/kWh)	
1	Pumping - Stage 1 TSF evaporation		2035	Tailings Storage Facility	Stg1			LOM	Seepage	Passive		28.00	1,500	87.0	4	HDPE	85	8	24.0	30.0	12	0.25	0.06	
2	Pumping - Stage 2 TSF evaporation		2036	Tailings Storage Facility	Stg2			LOM	Seepage	Passive		51.00	1,500	87.0	4	HDPE	85	8	24.0	30.0	12	0.25	0.06	

Notes: 1. Inside Diameter (ID) depends on nominal diameter and the pipewall thickness.
 2. k (total of all losses related to valves, restrictions, etc.). Typically 8 -20. Not significant for longer pipes.
 3. Default crew assumes crew of two laborers required during pumping hours

Crew - 0.5 used for 2 years (Stg1 & Stg2 together)
Power Rate based on FS, check numbers

Solution/Water Management - User Input - Enhanced Evaporation																									
																			Operating Period			User Overrides			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Water Type (select)	Management Type (select)	Forced Evaporation Method (select)	Capital Cost \$	Flow (Q) gpm	Pipeline Length ft	Static Head ft	Pipe Diameter (ID) in	Pipe Material (select)	Pump Efficiency %	Total Concentrated Losses ⁽¹⁾	Required Pressure at Outlet psi	Hrs/Day	Days/Month	Number of Months	Crew Size	Power Cost (\$/kWh)

Notes: 1. Default crew assumes crew of two laborers required during pumping hours
 3. Assumes 1-1.5 ton truck for every 2 laborers

Solution/Water Management - Water Treatment																		
																	Operating Period	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Water Type (select)	Treatment Type (select)	Treatment Method	Montly Quantity gal	Treatment Labor Crew Size per Shift	Capital Cost \$	Consumable Cost/ gal \$	Treatment Operating Cost/gal \$	Number of Months	Hours per Day

Notes:
1. Use pumping section (above) to calculate pumping costs (including groundwater pumping).
2. Include initial materials (e.g. chemicals, organic substrate, etc.) in capital cost.
3. Treatment crew includes 1 foreman (crew defined by user above), 1 light truck if crew size > 0
4. Assumes active treatment crew works 8 hr/day, 365 days/year.
5. Assumes 1 truck per each two employees per shift

Solution/Water Management - User Input - Decontamination																							
																				Operating Period		User Overrides	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Management Type (select)	Type	Disposal Location	Capital Cost \$	Pumping Flow (Q) gpm	Pipeline Length ft	Static Head ft	Pipe Diameter (ID) in	Pipe Material (select)	Pump Efficiency %	Total Concentated Losses ⁽¹⁾	Number of Work Days days	Pumping Hrs/Day	Crew Size	Power Cost (\$/kWh)

Notes:
1. Assumes triple rinse of all piping, tanks and vessels requiring decontamination
2. Standard crew includes 2 laborers and 1 foreman
3. Assumes 1-1.5 ton truck for every 2 laborers
4. Assumes crew works 8 hr/day

Solution Mgmt - Assumptions & Calculations																	
<table><tr><th colspan="2">Manning's Roughness Coefficient</th></tr><tr><th>Pipe material</th><th>Manning n</th></tr><tr><td>HDPE</td><td></td></tr><tr><td>ID < 4" (100 mm)</td><td>0.011</td></tr><tr><td>ID ≥ 4 in (100 mm) < 10 in (250 mm)</td><td>0.01</td></tr><tr><td>ID ≥ 10 in (250 mm)</td><td>0.009</td></tr></table>	Manning's Roughness Coefficient		Pipe material	Manning n	HDPE		ID < 4" (100 mm)	0.011	ID ≥ 4 in (100 mm) < 10 in (250 mm)	0.01	ID ≥ 10 in (250 mm)	0.009	<table><tr><th>Water Treatment Costs</th></tr><tr><td>Water treatment cost = CapEx + Labor Cost + Equipment Cost (includes Operating Cost)</td></tr><tr><td>CapEx = User Entered Value</td></tr><tr><td>Consumable costs = cost of treatment chemicals or materials based quantity treated</td></tr></table>	Water Treatment Costs	Water treatment cost = CapEx + Labor Cost + Equipment Cost (includes Operating Cost)	CapEx = User Entered Value	Consumable costs = cost of treatment chemicals or materials based quantity treated
Manning's Roughness Coefficient																	
Pipe material	Manning n																
HDPE																	
ID < 4" (100 mm)	0.011																
ID ≥ 4 in (100 mm) < 10 in (250 mm)	0.01																
ID ≥ 10 in (250 mm)	0.009																
Water Treatment Costs																	
Water treatment cost = CapEx + Labor Cost + Equipment Cost (includes Operating Cost)																	
CapEx = User Entered Value																	
Consumable costs = cost of treatment chemicals or materials based quantity treated																	

Closure Cost Estimate
Solution Mgmt

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost CostType Type: LOM Cost Basis: Northern Nevada - Imperial Units

Solution/Water Management - LOM Cost Summary					
	Labor \$	Equipment + Operating + Power \$	Materials \$	Capital \$	Totals \$
Pumping	160,963	516,970	N/A	0	677,933
Forced Evaporation	0	0	N/A	0	0
Water Treatment	0	0	0	0	0
Decontamination	0	0	N/A	0	0
TOTALS	160,963	516,970	0	0	677,933

PVC		Labor Cost = No. Months x Days/mo. x [(Supervisor Cost x 8 hrs) + (Laborer Cost x Crew Size x Hours/day)] Operating Cost = Fuel, power, maintenance or other costs calculated based on quantity treated Equipment Cost = No. Months x Days/mo. x [(Supervisor Truck Cost x 8 hrs) + (Labor Truck Cost x No. Crew Trucks x Hours/day)] No. Crew Trucks = 1 per each two laborers per shift
ID < 4" (100 mm)	0.011	
ID ≥ 4 in (100 mm) < 10 in (250 mm)	0.01	
ID ≥ 10 in (250 mm)	0.009	
Brass	0.011	
Cast Iron	0.013	
Smooth Steel	0.012	
Asbestos Cement	0.011	

Solution/Water Management - Pumping																	
	Description (required)	Flow gpm	Manning n (see above)	Losses k	Velocity(2) ft/sec	Friction Head ft	Total Dynamic Head ft	Pump Efficiency %	Power Required kW	Horsepower Required HP	Monthly Operating Hours hrs	Pump Capital Cost \$	Total Operating Cost \$	Total Labor Cost \$	Total Crew Equipment Cost \$	Total Cost \$	Cost/gal \$
1	Pumping - Stage 1 TSF evaporation	28.00	0.010	8	0.711	1	88	85	0.55	0.80	720	0	288	80,482	258,077	338,846	6.15
2	Pumping - Stage 2 TSF evaporation	51.00	0.010	8	1.293	3	90	85	1.02	1.40	720	0	528	80,482	258,077	339,086	3.39
											1,440	0	816	160,963	516,154	677,933	

Notes:
1. Assumes 2 man labor crew unless user overrides default.
2. Maintaining pipe flow velocity between 1.0 m/s (3.28 ft/sec) and 3.0 m/s (9.84 ft/sec) is generally accepted piping practice. This range is dictated by economic considerations, allows for maintaining stable flow regime and precludes excessive friction losses, noise, vibration, wear and transient overpressures in the pipeline.
Please revise pipe internal diameter if the calculated velocity is outside of the recommended range.

Solution/Water Management - Enhanced Evaporation																	
	Description (required)	Flow gpm	Manning n (see above)	Losses k	Velocity(2) ft/sec	Friction Head ft	Total Dynamic Head ft	Pump Efficiency %	Power Required kW	Horsepower Required HP	Annual Operating Hours hrs	Evaporator/ Pump Capital Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Power Cost \$	Total Cost \$	Cost/gal \$
												0	0	0	0	0	0

Notes:
1. Assumes 2 man labor crew unless user overrides default.
2. Maintaining pipe flow velocity between 1.0 m/s (3.28 ft/sec) and 3.0 m/s (9.84 ft/sec) is generally accepted piping practice. This range is dictated by economic considerations, allows for maintaining stable flow regime and precludes excessive friction losses, noise, vibration, wear and transient overpressures in the pipeline.
Please revise pipe internal diameter if the calculated velocity is outside of the recommended range.

Solution/Water Management - Water Treatment								
	Description (required)	Total Quantity Treated gal	Capital Cost \$	Total Consumables Cost \$	Total Labor Cost \$	Total Equipment + Operating Cost \$	Total Treatment Cost \$	Cost/gal \$
			0	0	0	0	0	

Solution/Water Management - Decontamination																
	Description (required)	Flow gpm	Manning n (see above)	Losses k	Velocity(1) ft/sec	Friction Head ft	Total Dynamic Head ft	Pump Efficiency %	Power Required kW	Horsepower Required HP	Total Operating Hours hrs	Pump Capital Cost \$	Total Operating Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Cost \$
												0	0	0	0	0

Closure Cost Estimate
Pits

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Pits - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Safety Berm Construction Cost	0	0	N/A	0
Safety Berm Revegetation Cost	0	0	0	0
TOTALS	0	0	0	0

Pits - User Input																							
Facility Description									Pit Berms					Berm Construction			Hauling (if selected method)				Revegetation		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Berm (or Highwall) Length ft	Berm Height ft	Berm Base Width ft	Berm Sideslope Angle _H:1V	Volume (if calculated elsewhere) cy	Berm Construction Method (select)	Berm Material Type (select)	Berm Construction Fleet (select)	Haul Distance to Placement Location ft	Slope to Placement Location % grade	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)

- Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
 2. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)
 3. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Safety Berm Volume Calculation

Cross Sectional Area = (a+b)/2 x h
Berm Volume = Berm Length x Crossectional Area x No. Sides

Dozer productivity assumes push distance of:
100ft

Dozer:
Length x (Berm Base Width + Dozer Push Distance) - accounts for disturbance created in borrow area

Excavator:
Length x (Berm Base Width + (2 x Excavator Track Width) - accounts for disturbance created in borrow area

Haul & Place:
Length x Berm Base Width - if necessary use Yards sheet to account for disturbance created in borrow area

Revegetation Calculations

Minimum 1 acre revegetation crew time per area

Pits - Safety Berm Construction Costs										
		Safety Berm								
	Description (required)	Safety Berm Volume cy	Selected Fleet	Cycle Time min	Haul Fleet Size	Corrected Fleet Productivity cy/hr	Total Hours hrs	Safety Berm Labor Cost \$	Safety Berm Equipment Cost \$	Total Safety Berm Cost \$
		0					0	0	0	0

Pits - Safety Berms - Revegetation Costs						
	Description (required)	Flat Area acres	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
		0.00	0	0	0	0

Closure Cost Estimate
Quarries & Borrow Pits

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Quarries and Borrow Areas - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	36,906	121,689	N/A	158,595
Ripping/Scarifying Cost	3,296	5,568	N/A	8,864
Safety Berm Construction Cost	0	0	N/A	0
Subtotal Earthwork	40,202	127,257		167,459
Revegetation Cost	10,608	4,030	32,088	46,726
Safety Berm Revegetation Cost	0	0	0	0
	10,608	4,030	32,088	46,726
TOTALS	50,810	131,287	32,088	214,185

Quarries & Borrow Pits - User Input									You must fill in ALL green cells in this section for each dump, lift or dump category																					
Facility Description									Physical - MANDATORY										Cover 1				Cover 2				Growth Media			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Ground Slope at Toe % Grade	Ungraded Slope _H:1V	Final Slope _H:1V	Final Top Slope % Grade	Bench or Highwall Height ft	Mid-Bench Length ft	Average Flat Area Long Dimension (ripping distance)	Final (Regraded) Footprint	Regrade Volume (1) (if calculated elsewhere) cy	Cover Thickness Slopes in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Cover Thickness Slopes in	Cover Thickness Flat Areas in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Slope Growth Media Thickness in	Flat Area Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade	
1	Quarry 1	QP01	2037	Quarry	Stg3			LOM	22.0	1.3	1.5				3,748	48.15												12.0	5,050	2.0
2	Borrow Pit 2	BP02	2037	Reclamation Borrow Area	Stg3			LOM	17.0	1.3	1.5				2,435	28.29														
3	Borrow Pit 3	BP03	2037	Reclamation Borrow Area	Stg3			LOM	6.0	1.3	1.5				1,814	27.63														

Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. Input distance from crusher to placement location if material to be crushed, screened or compacted
3. If Slope from facility to borrow source is >20°, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Quarries & Borrow Pits - User Input (Cont.)																						
Facility Description		Cover 1 - Crushing & Screening											Cover 2 - Crushing & Screening									
	Description (required)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope to Crusher % grade	Haul to Crusher Fleet (2) (select)	Compact Slopes After Placement? (select)	Compact Flat After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope to Crusher % grade	Haul to Crusher Fleet (2) (select)	Compact Slopes After Placement? (select)	Compact Flat After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	
1	Quarry 1																					
2	Borrow Pit 2																					
3	Borrow Pit 3																					

Notes:
1. Input distance from crusher to placement location if material to be crushed, screened or compacted
2. If distance from borrow <820 ft (250 m) must select loader fleet

Quarries & Borrow Pits - User Input (cont.)																										
You must fill in ALL green cells and relevant blue cells in this section for each dump, lift or dump category																										
		Grading				Cover 1				Cover 2				Growth Media				Revegetation								
	Description (required)	Dozing Material Condition (select)	Highwall Material Type (select)	Grading Equipment Fleet (select)	Slot/Side-by-Side (select)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix Slopes (select)	Seed Mix Flat Areas (select)	Mulch Slopes (select)	Mulch Flat Areas (select)	Fertilizer Slopes (select)	Fertilizer Flat Areas (select)	Slope Scarify/ Rip? (select)	Flat Area Scarify/ Rip? (select)	Scarify/ Ripping Fleet (select)
1	Quarry 1													Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	No	No	Small Dozer
2	Borrow Pit 2													Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	Yes	Yes	Small Dozer
3	Borrow Pit 3													Alluvium	Small Truck			Mix 1	Mix 1	None	None	None	None	Yes	Yes	Small Dozer

Notes:
1. Material Types are used for density correction based on material densiltes in Caterpillar Performance Handbook material density table

Quarries & Borrow Pits - User Input (cont.)																	
Facility Description		Highwall Berms					Berm Construction			Hauling (if selected method)				Revegetation			
	Description (required)	Berm (or Highwall) Length ft	Berm Height ft	Berm Base Width ft	Berm Sideslope Angle _H:1V	Volume (if calculated elsewhere) cy	Berm Construction Method (select)	Berm Material Type (select)	Berm Construction Fleet (select)	Distance to Borrow Source ft	Slope to Borrow Source % grade	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)	
1	Quarry 1																
2	Borrow Pit 2																
3	Borrow Pit 3																

Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. If Slope from facility to borrow source is >20°, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)
3. Material Types are used for density correction based on material densiltes in Caterpillar Performance Handbook material density table

Quarries & Borrow Pits - Assumptions & Calculations	
Regrading Push Distance Calculation	
dozing distance: based on 2/3 final cut slope + 2/3 final fill slope (minimum = 50 ft)	
Safety Berm Volume Calculation	
Dozer productivity assumes push distance of: 100 ft	
Dozer: Length x (Berm Base Width + Dozer Push Distance) - accounts for disturbance created in borrow area	
Excavator: Length x (Berm Base Width + (2 x Excavator Track Width) - accounts for disturbance created in borrow area	
Haul & Place: Length x Berm Base Width - if necessary use Yards sheet to account for disturbance created in borrow area	

Closure Cost Estimate
Quarries & Borrow Pits

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Quarries and Borrow Areas - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	36,906	121,689	N/A	158,595
Ripping/Scarifying Cost	3,296	5,568	N/A	8,864
Safety Berm Construction Cost	0	0	N/A	0
Subtotal Earthwork	40,202	127,257		167,459
Revegetation Cost	10,608	4,030	32,088	46,726
Safety Berm Revegetation Cost	0	0	0	0
	10,608	4,030	32,088	46,726
TOTALS	50,810	131,287	32,088	214,185

Ripping/Scarifying Calculations	
Minimum 1 hr ripping/scarifying time per dump	
Slopes: Number of passes = Final slope length ÷ Grader width Travel distance = Number of passes x Mid-bench length Total hours = (Travel distance ÷ Grader productivity) + (Number of passes x Grader maneuver time) Minimum 1 hr	
Flat Areas: Flat area width = Final flat area ÷ Average long dimensions Number of passes = Flat area width ÷ Grader width Travel distance = Number of passes x Average long dimensions Total hours = (Travel distance ÷ Grader productivity) + (Number of passes x Grader maneuver time)	
Revegetation: Minimum 1 acre revegetation crew time per area	

Quarries & Borrow Pits - Regrading Costs														
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side) x (Altitude Deration)														
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Grade Correction	Dozing Material	Density Correction	Side-by-Side or Slot Dozing	Total Hourly Productivity cy/hr	Total Dozer Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Regrading Cost \$
1	Quarry 1			Select Fleet							0	0	0	0
2	Borrow Pit 2			Select Fleet							0	0	0	0
3	Borrow Pit 3			Select Fleet							0	0	0	0
		0									0	0	0	0

Quarries & Borrow Pits - Cover 1 Costs																								
		Material Volumes		Haul to Crusher					Haul to Placement					Haul to Crusher			Crush	Compact			Haul to Placement			Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
1	Quarry 1	0	0					0					0			0	0	0	0	0	0	0	0	0
2	Borrow Pit 2	0	0					0					0			0	0	0	0	0	0	0	0	0
3	Borrow Pit 3	0	0					0					0			0	0	0	0	0	0	0	0	0
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Quarries & Borrow Pits - Cover 2 Costs																								
		Material Volumes		Haul to Crusher					Haul to Placement					Haul to Crusher			Crush	Compact			Haul to Placement			Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
1	Quarry 1	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
2	Borrow Pit 2	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
3	Borrow Pit 3	0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Quarries & Borrow Pits - Growth Media Costs									
Growth Media Placement									
	Description (required)	Growth Media Volume cy	Growth Media Replacement Fleet	Cycle Time min	Fleet Productivity BCY/hr	Haul Fleet Size	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$
1	Quarry 1	77,440	740C/988K/D7E	9.38	568	4	136	36,906	121,689
2	Borrow Pit 2							0	0
3	Borrow Pit 3							0	0
		77,440					136	36,906	121,689

Quarries & Borrow Pits - Scarifying/Revegetation Costs																
										Scarifying Costs			Revegetation Costs			
	Description (required)	Slope Area acres	Flat Area acres	Total Surface Area acres	Final Slope Length ft	Average Long Dimension (ripping distance) ft	Ripping/ Scarifying Fleet	Slope Scarifying/ Ripping Hours hrs	Flat Area Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
1	Quarry 1	0.00	48.00	48.00			D7E	0	0	0	0	0	4,896	1,860	14,810	21,566
2	Borrow Pit 2	0.00	28.00	28.00		2,435	D7E	0	28	1,648	4,432	2,856	1,085	8,639	12,580	
3	Borrow Pit 3	0.00	28.00	28.00		1,814	D7E	0	28	1,648	2,784	4,432	2,856	1,085	8,639	12,580
		0.00	104.00	104.00				0	56	3,296	5,568	8,864	10,608	4,030	32,088	46,726

Notes: 1) Minimum total ripping hours = 1 (i.e. If total ripping hrs (slope + flat) < 1, then one hour of fleet time is assumed, regardless of acres shown in in scarifying table.)
2) Assumes 50min/hr equipment availability

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Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Quarries and Borrow Areas - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	36,906	121,689	N/A	158,595
Ripping/Scarifying Cost	3,296	5,568	N/A	8,864
Safety Berm Construction Cost	0	0	N/A	0
Subtotal Earthwork	40,202	127,257		167,459
Revegetation Cost	10,608	4,030	32,088	46,726
Safety Berm Revegetation Cost	0	0	0	0
	10,608	4,030	32,088	46,726
TOTALS	50,810	131,287	32,088	214,185

Quarries & Borrow Pits - Safety Berm Construction Costs										
Safety Berm										
	Description (required)	Safety Berm Volume cy	Selected Fleet	Cycle Time min	Haul Fleet Size	Corrected Fleet Productivity cy/hr	Total Hours hrs	Safety Berm Labor Cost \$	Safety Berm Equipment Cost \$	Total Safety Berm Cost \$
1	Quarry 1						0	0	0	0
2	Borrow Pit 2						0	0	0	0
3	Borrow Pit 3						0	0	0	0
		0					0	0	0	0

Quarries & Borrow Pits - Safety Berms - Revegetation Costs						
	Description (required)	Flat Area acres	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
1	Quarry 1	0.00	0	0	0	0
2	Borrow Pit 2	0.00	0	0	0	0
3	Borrow Pit 3	0.00	0	0	0	0
		0.00	0	0	0	0

Closure Cost Estimate
Underground Openings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
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Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Underground Openings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Adits, Portals & Declines Plugging	120	392	0	512
Subtotal Adits	120	392	0	512
Shaft Backfill/Cover	233	745	N/A	978
Shaft Capping	1,943	267	1,183	3,393
Subtotal Shafts	2,176	1,012	1,183	4,371
TOTALS	2,296	1,404	1,183	4,883

Adits, Portals & Declines - User Input																		
Facility Description									Physical Characteristics				Backfill Material					
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Height ft	Width ft	Backfill/ Plug Type	Distance to Bulkhead ft	Backfill Method (select)	Backfill Fleet (select)	Backfill Material Condition (select)	Backfill Material Type (select)	Haul Distance to Placement Location ft	Slope to Placement Location % grade
1	Portal	U01	2035	Underground Mine	Stg1			LOM	15.0	15.0	Rock Backfill	100	Loader	Small Loader	1	Limestone - br	500	0.0

Notes: 1) Foam (adit) option is for smaller openings that can be plugged with simple forms and a 5 ft thick plug.
2) Foam (production) option is for larger production openings (declines, etc.) and requires larger form construction and minimum 10 ft thick plug.
3) All foam plugs include minimum 15ft of backfill from opening to plug.
4) Bat gate option is for small openings and the material cost is the same for any size opening.
5) Backfilling assumes that small dozer will push material from nearby stockpile or dump
6) Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table
7) Loaders for Backfill Fleet use Crusher/Tramming loaders in Fleets(Crews) sheet

Shaft Openings - User Input																		
You must fill in ALL green cells and relevant blue cells in this section for each shaft																		
Facility Description									Physical Characteristics			Backfill or Foundation Cover						
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Diameter ⁽¹⁾ ft	Shaft Depth (for backfill method) ft	Backfill/ Plug Type (select)	Backfill Material Type (select)	Cover/ Backfill Fleet (select)	Thickness (if not complete backfill) ft	Haul Distance to Placement Location ft	Slope to Placement Location % grade	Cycle Time Override (user override)	Maximum Fleet Size (user override)
1	Vent Shaft #1	U02	2035	Underground Mine	Stg1			LOM	9.0	10	Concrete Cap	Limestone - broken	Small Truck		3,852	15.5		

Notes:
1. Diameter should include overlap to seat cap on bedrock or shaft collar
2. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)
3. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Underground Openings - Assumptions & Calculations	
Concrete Cover/Bulkhead Volume Calculation Using Means Heavy Construction Cost Data (2004) Estimage cover/bulkhead thickness Assumes that all concrete works are reinforced Productivity for crew from Means Heavy Construction Cost Data (2004) adjusted for supervision (addressed in Misc. Costs) and Davis-Bacon Wage Rates Assumes 18 in thick slab	
Backfill Calculations Uses 1 large and 1 small dozer for adit backfill Assumes max 400 foot push Assumes average operator and 50 min/hr availability Uses truck & loader load, haul place fleets for shafts Concrete cap will be 1.5 feet thick, reinforced, structually supported. If concrete cap is used, assume 10 feet of rock backfill on top of cap. Assumes that all concrete works are reinforced If backfill is used, assume overfill by 5 feet Carpenter rate incl Fringe: 0 per hour	

Adits, Portals & Declines Plugging																		
Uses RS Means Heavy Construction Cost Data for bulkhead production rate, material costs and crews																		
									Bulkhead Construction			Backfill or Foam (1)			Bat Gate or Culvert (2,3,4)			Total Costs

Closure Cost Estimate
Underground Openings

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Underground Openings - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Adits, Portals & Declines Plugging	120	392	0	512
Subtotal Adits	120	392	0	512
Shaft Backfill/Cover	233	745	N/A	978
Shaft Capping	1,943	267	1,183	3,393
Subtotal Shafts	2,176	1,012	1,183	4,371
TOTALS	2,296	1,404	1,183	4,883

	Description (required)	Bulkhead Volume cy	Backfill (rock) Volume cy	Backfill Fleet	Cycle Time min	Fleet Productivity LCY/hr	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Bulkhead Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material (Foam) Cost \$	Total Backfill Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Bat Gate Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Cost \$
1	Portal		833	988K			0	0	0	0	0	120	392	0	512	0	0	0	0	120	392	0	512
		0	833				0	0	0	0	0	120	392	0	512	0	0	0	0	120	392	0	512

Notes:
1) Foam costs include 1 hour move to and setup + 1 hr. minimum crew time
2) Assumes 1 hr walk-in/walk-out time for equipment
3) Batgate assumes 8 hr install time each
4) Bat culvert backfill costs based on one 8-hr day (i.e. backfilling hours = 8 hrs).

Shaft Plugging																			
		Cover/Cap											Backfill/Cover			Total Costs			
	Description (required)	Cover Area ft2	Backfill or Cover Volume cy	Placement Fleet	Cycle Time min	Fleet Productivity LCY/hr	Haul Fleet Size	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Shaft Cap Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Backfill Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Cost \$
1	Vent Shaft #1	64	0	740C/988K/D7E	7.02	570	3	1	1,943	267	1,183	3,393	233	745	978	2,176	1,012	1,183	4,371
		64	0					1	1,943	267	1,183	3,393	233	745	978	2,176	1,012	1,183	4,371

Closure Cost Estimate
Roads

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Roads - LOM Cost Summary				
	Labor	Equipment	Materials	Totals
Grading Costs	12,024	19,162	N/A	31,186
Cover Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	2,827	4,769	N/A	7,596
Subtotal Earthworks	14,851	23,931		38,782
Revegetation Cost	4,770	1,814	13,020	19,604
TOTALS	19,621	25,745	13,020	58,386

Roads - User Input																			
Facility Description									Physical (1) - MANDATORY						User Overrides		Growth Media		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Ground Slope at Toe % grade	Ungraded Slope _H:1V	Cut Slope degrees	Road Width ft	Road Length ft	Slope Replacement Percent %	Regrade Volume (if calculated elsewhere) cy	Disturbed Area (if calculated elsewhere) acres	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade
1	Access Road	R01	2038	Roads	Stg4			LOM	12.0	1.5	0.0	25.0	3,457	100%		6.09			
2	Plant Road	R02	2037	Roads	Stg3			LOM	6.0	1.5	0.0	24.0	2,479	100%		1.37			
3	Mine Road	R03	2035	Roads	Stg1			LOM	6.0	1.5	0.0	38.0	524	100%		0.79			
4	Mine Road	R04	2037	Roads	Stg3			LOM	5.0	1.5	0.0	50.0	9,119	100%		7.68			
5	Mine Road	R05	2064	Roads	Stg5			LOM	4.0	1.5	0.0	30.0	1,374	100%		1.05			
6	Mine Road	R06	2035	Roads	Stg1			LOM	12.0	1.5	34.0	14.0	100	100%		0.10			
7	Mine Road	R07	2037	Roads	Stg3			LOM	15.0	1.5	34.0	20.0	144	100%		0.07			
8	Mine Road	R08	2035	Roads	Stg1			LOM	6.0	1.5	0.0	20.0	183	100%		0.25			
9	Mine Road	R09	2035	Roads	Stg1			LOM	37.0	1.5	0.0	20.0	1,890	100%		1.46			
10	Mine Road	R10	2035	Roads	Stg1			LOM	21.0	1.5	34.0	20.0	1,511	100%		1.05			
11	Mine Road	R11	2038	Roads	Stg4			LOM	15.0	1.5	34.0	14.0	1,290	100%		0.59			
12	Mine Road	R12	2038	Roads	Stg4			LOM	0.0	1.5	0.0	14.0	475	100%		0.15			
13	Perimeter Fence Road	R13	2038	Roads	Stg4			LOM	15.0	1.5	0.0	15.0	22,178	100%		7.28			
14	Haul Road	HR01	2035	Roads	Stg1			LOM	6.0	1.5	0.0	51.0	146	100%		0.48			
15	Haul Road	HR02	2037	Roads	Stg3			LOM	16.0	1.5	34.0	50.0	4,221	100%		6.59			
16	Haul Road	HR03	2035	Roads	Stg1			LOM	16.0	1.5	34.0	40.0	1,159	100%		2.34			
17	Haul Road	HR04	2037	Roads	Stg3			LOM	8.0	1.5	0.0	42.0	3,262	100%		3.66			
18	Haul Road	HR05	2037	Roads	Stg3			LOM	5.0	1.5	0.0	42.0	1,132	100%		1.20			

- Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
 2. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)
 3. Because the work required for building roads with a dozer is similar to that required to regrade a road with a dozer, this sheet could be used to provide a rough estimate of road construction costs if a dozer is selected as the grading fleet.

Growth media for HR05 will be stored locally in the road berms.

Roads - User Input (cont.)						
Haul Road Safety Berms						
	Description (required)	Berm Length ft	Berm Height ft	Berm Base Width ft	Berm Sideslope Angle _H:1V	Number of Berms (2) (1 or 2 sides)
1	Access Road					
2	Plant Road					
3	Mine Road	524.0	4.0	12.0	1.5	2
4	Mine Road	9,119.0	2.0	6.0	1.5	2
5	Mine Road	1,374.0	2.0	6.0	1.5	2
6	Mine Road	100.4	2.0	6.0	1.5	2
7	Mine Road	144.4	2.0	6.0	1.5	2
8	Mine Road	183.5	2.0	6.0	1.5	2
9	Mine Road	1,890.4	2.0	6.0	1.5	1
10	Mine Road	1,511.0	2.0	6.0	1.5	1
11	Mine Road	1,289.8	2.0	6.0	1.5	1
12	Mine Road					
13	Perimeter Fence Road					
14	Haul Road	146.1	4.0	12.0	1.5	2
15	Haul Road	4,220.9	4.0	12.0	1.5	2
16	Haul Road	1,158.7	4.0	12.0	1.5	2
17	Haul Road	3,262.0	4.0	12.0	1.5	2
18	Haul Road	1,132.1	4.0	12.0	1.5	2

Closure Cost Estimate
Roads

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Roads - LOM Cost Summary				
	Labor	Equipment	Materials	Totals
Grading Costs	12,024	19,162	N/A	31,186
Cover Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	2,827	4,769	N/A	7,596
Subtotal Earthworks	14,851	23,931		38,782
Revegetation Cost	4,770	1,814	13,020	19,604
TOTALS	19,621	25,745	13,020	58,386

(2) Enter 1 if berm on only one side of road, 2 if both sides of road are bermed.

Roads - User Input (cont.) You must fill in ALL green cells and relevant blue cells in this section for each road														
		Grading				Growth Media				Revegetation				
	Description (required)	Dozing Material Condition (select)	Cut Material Type (select)	Recontouring Equipment Fleet ⁽²⁾ (select)	No. of Excavators if grade >30% (select)	Growth Media Material Type (select)	Growth Media Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)	Scarifying/ Ripping? (select)	Ripping Fleet (select)
1	Access Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
2	Plant Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
3	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
4	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
5	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
6	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
7	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
8	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
9	Mine Road	1	Alluvium	Small Excavator	1	Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
10	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
11	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
12	Mine Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
13	Perimeter Fence Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
14	Haul Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
15	Haul Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
16	Haul Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
17	Haul Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
18	Haul Road	1	Alluvium	Small Excavator		Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer

- Notes:
- Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table
 - If original slope >30% only excavators are allowed.

Roads - Assumptions & Calculations
Regrading Volume and Footprint Volume Will not allow dozer for slopes greater than 30% For dozer regrading push distance = road width Assumes dozer push is uphill Assumes minimum push distance of 100 ft
Ripping/Scarifying Calculations Minimum 1 hr ripping/scarifying time per area Number of passes = Final slope length ÷ Grader width Travel distance = Number of passes x Road length Total hours = (Travel distance ÷ Grader productivity) + (Number of passes x Grader maneuver time) For dozer regrading assumes push distance = 3 x road width
Revegetation Calculations Minimum of 1 acre crew time per area
Safety Berm Volume Calculation Cross Sectional Area = (a+b)/2 x h Berm Volume = Berm Length x Crossectional Area x No. Sides Total berm volume doubled if both sides of road are bermed.

Closure Cost Estimate
Roads

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Roads - LOM Cost Summary				
	Labor	Equipment	Materials	Totals
Grading Costs	12,024	19,162	N/A	31,186
Cover Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	2,827	4,769	N/A	7,596
Subtotal Earthworks	14,851	23,931		38,782
Revegetation Cost	4,770	1,814	13,020	19,604
TOTALS	19,621	25,745	13,020	58,386

If length of berm on each side of road is different, input total length of both berms
and input 1 for number of sides

Roads - Regrading Costs									
	Description (required)	Regrading Volume cy	Recontouring Fleet	Number of Excavators	Fleet Productivity cy/hr	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Regrading Cost \$
1	Access Road	0				0	0	0	0
2	Plant Road	0				0	0	0	0
3	Mine Road	932	325F	1	398	2	238	379	617
4	Mine Road	4,054	325F	1	398	10	1,191	1,897	3,088
5	Mine Road	611	325F	1	398	2	238	379	617
6	Mine Road	60	325F	1	398	1	119	190	309
7	Mine Road	120	325F	1	398	1	119	190	309
8	Mine Road	82	325F	1	398	1	119	190	309
9	Mine Road	420	325F	1	398	1	119	190	309
10	Mine Road	1,271	325F	1	398	3	357	569	926
11	Mine Road	534	325F	1	398	1	119	190	309
12	Mine Road	0				0	0	0	0
13	Perimeter Fence Road	1	325F	1	398	1	119	190	309
14	Haul Road	260	325F	1	398	1	119	190	309
15	Haul Road	18,728	325F	1	398	47	5,595	8,916	14,511
16	Haul Road	4,032	325F	1	398	10	1,191	1,897	3,088
17	Haul Road	5,800	325F	1	398	15	1,786	2,846	4,632
18	Haul Road	2,013	325F	1	398	5	595	949	1,544
		38,918				101	12,024	19,162	31,186

Roads - Growth Media Costs										
	Description (required)	Volume cy	Replacement Fleet	Cycle Time min	Fleet Productivity LCY/hr	Haul Fleet Size	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Topsoiling Cost \$
1	Access Road	0					0	0	0	
2	Plant Road	0					0	0	0	
3	Mine Road	0					0	0	0	
4	Mine Road	0					0	0	0	
5	Mine Road	0					0	0	0	
6	Mine Road	0					0	0	0	
7	Mine Road	0					0	0	0	
8	Mine Road	0					0	0	0	
9	Mine Road	0					0	0	0	
10	Mine Road	0					0	0	0	
11	Mine Road	0					0	0	0	
12	Mine Road	0					0	0	0	
13	Perimeter Fence Road	0					0	0	0	
14	Haul Road	0					0	0	0	
15	Haul Road	0					0	0	0	
16	Haul Road	0					0	0	0	
17	Haul Road	0					0	0	0	
18	Haul Road	0					0	0	0	
		0					0	0	0	0

Roads - Scarifying/Revegetation Costs		
	Scarifying Costs	Revegetation Costs

Closure Cost Estimate
Roads

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhlI_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Roads - LOM Cost Summary				
	Labor	Equipment	Materials	Totals
Grading Costs	12,024	19,162	N/A	31,186
Cover Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	2,827	4,769	N/A	7,596
Subtotal Earthworks	14,851	23,931		38,782
Revegetation Cost	4,770	1,814	13,020	19,604
TOTALS	19,621	25,745	13,020	58,386

	Description (required)	Total Surface Area acres	Final Slope Length ft	Ripping/ Scarifying Fleet	Ripping Hours hrs	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revgetation Material Cost \$	Total Revegetation Cost \$
1	Access Road	6.09	77	D7E	6	353	597	950	621	236	1,879	2,736
2	Plant Road	1.37	24	D7E	1	59	99	158	140	53	423	616
3	Mine Road	0.79	66	D7E	1	59	99	158	102	39	244	385
4	Mine Road	7.68	37	D7E	7	412	696	1,108	783	298	2,370	3,451
5	Mine Road	1.05	33	D7E	1	59	99	158	107	41	324	472
6	Mine Road	0.10	43	D7E	1	59	99	158	102	39	31	172
7	Mine Road	0.07	21	D7E	1	59	99	158	102	39	22	163
8	Mine Road	0.25	59	D7E	1	59	99	158	102	39	77	218
9	Mine Road	1.46	34	D7E	2	118	199	317	149	57	450	656
10	Mine Road	1.05	30	D7E	1	59	99	158	107	41	324	472
11	Mine Road	0.59	20	D7E	1	59	99	158	102	39	182	323
12	Mine Road	0.15	14	D7E	1	59	99	158	102	39	46	187
13	Perimeter Fence Road	7.28	14	D7E	9	530	895	1,425	743	282	2,246	3,271
14	Haul Road	0.48	143	D7E	1	59	99	158	102	39	148	289
15	Haul Road	6.59	68	D7E	7	412	696	1,108	672	255	2,033	2,960
16	Haul Road	2.34	88	D7E	2	118	199	317	239	91	722	1,052
17	Haul Road	3.66	49	D7E	4	235	398	633	373	142	1,129	1,644
18	Haul Road	1.20	46	D7E	1	59	99	158	122	47	370	539
		42.20			48	2,827	4,769	7,596	4,770	1,814	13,020	19,604

Closure Cost Estimate
Process Ponds

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Process Ponds - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Markup \$	Totals \$
Liner Cutting & Folding Costs	4,041	2,708	N/A	N/A	6,749
Backfill 1 Costs	1,633	5,215	N/A	N/A	6,848
Backfill 2 Costs	0	0	N/A	N/A	0
Growth Media Placement Costs	661	2,085	N/A	N/A	2,746
Subtotal Earthworks	6,335	10,008	0		16,343
Revegetation Costs	204	78	247	N/A	529
Evaporation/Evapotranspiration Cell Lining	0	0	0	0	0
Evaporation/Evapotranspiration Cell Piping	0	0	0	0	0
Subtotal Evaporation/Evapotranspiration Cells	0	0	0	0	0
TOTALS	6,539	10,086	247	0	16,872

Process Ponds - User Input																										
Facility Description									Pond Dimensions (1)					Backfill 1				Backfill 2				Growth Media				
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Pond Length ft	Pond Width ft	Pond Depth ft	Pond Sideslope Angle H:1V	Disturbed Area (if calculated elsewhere) acres	Percent Backfill (0% if blank)	Distance to Placement (2)(3) ft	Slope to Placement Location % grade	Volume (if calculated elsewhere) cy	Percent Backfill (0% if blank)	Distance to Placement (2) ft	Slope to Placement Location % grade	Volume (if calculated elsewhere) cy	Growth Media Thickness in	Distance to Placement ft	Slope to Placement Location % grade	Volume (if calculated elsewhere) cy	
1	Reclaim Pond	PP01	2037	Tailings Storage Facility	Stg3			LOM	96.6	77	8.0	2.5										12	5,720	3%		
2	Collection Pond	CP01	2035	Process Plant	Stg1			LOM	246.9	97	9.0	3.0		75%	2,992	-1.7						12	2,080	-1.7		

Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. Input distance from crusher to placement location if material to be crushed, screened or compacted
3. If pond will be filled by pushing berm into pond with bulldozer, enter 0 for Distance to Placement. Volume will be adjusted to 50% of the percent backfill to account for cut-to-fill pond construction. Dozer push distance assumed to be 2/3 the width of the pond.
4. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Reclaim pond will be converted to an E cell when no longer needed for solution management and will remain post mine.
Collection Pond will be backfilled assuming 3/4 total depth of material. Borrow source is BP02.

Process Ponds - User Input (Cont.)																			
		Backfill 1 - Crushing & Screening								Backfill 2 - Crushing & Screening									
	Description (required)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope to Crusher % grade	Haul to Crusher Fleet (select)	Compact After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope to Crusher % grade	Haul to Crusher Fleet (select)	Compact After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)
1	Reclaim Pond																		
2	Collection Pond																		

Notes:
1. Input distance from crusher to placement location if material to be crushed, screened or compacted
2. If distance from borrow <820 ft (250 m) must select loader fleet

Process Ponds - User Input (Cont.)																	
		Remove Liner	Backfill 1				Backfill 2				Growth Media				Revegetation		
	Description (required)	Crew Cut & Fold Time ⁽²⁾ hrs	Backfill Material Type (select)	Backfill Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Backfill Material Type (select)	Backfill Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)
1	Reclaim Pond										Alluvium	Small Truck			Mix 1	None	None
2	Collection Pond	30.0	Alluvium	Small Truck							Alluvium	Small Truck			Mix 1	None	None

Notes:
1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table
(2) Pond liner removal crew (2Clab + excavator) = 2 General Laborers + 325C Excavator

Process Ponds - User Input (Cont.)														
		E/ET-Cell Construction												
	Description (required)	Add/Replace Liner (1) (select)	Liner Thickness (select)	Install Leak Detection/ Recovery System (select)	Add/Replace Geonet (select)	Number of Geotextile Layer(s)	Drain pipe spacing in cell (3) ft	Pipe Size (select)	Total Length of Cell Pipe ft	Additional Pipe Between Facility and Cell ft	Pipe Size (select)	Length of Drainfield Pipe ft	Pipe Size (select)	Mark up (4) %
1	Reclaim Pond													
2	Collection Pond													

Notes:
1. If single liner is installed, no drainage layer is included. If liner is repaired, assumes 10% of liner surface area is replaced.
2. Geomembrane layers are in addition to any required liner installation.
3. Spacing between drainpipes used to distribute water in E/ET-cell
4. Premium for misc. costs (e.g., inflow sampling port, low distribution box, drain rock and geotextile for draindown distribution system, dosing tank (where required), backfill monitoring port, transducer and telemetry (where required), LCRS sump construction)

Process Ponds - Assumptions & Calculations
Revegetation Calculations Minimum 1 acre revegetation crew time per area Evaporation/Evapotranspiration Distribution header pipe assumed to be length of pond Area of additional geosynthetic layers assumed to be Minimum 1 acre revegetation crew time per area Minimum 1 acre revegetation crew time per area

Process Ponds - Liner Removal Costs

Closure Cost Estimate Process Ponds

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phill_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Process Ponds - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Markup \$	Totals \$
Liner Cutting & Folding Costs	4,041	2,708	N/A	N/A	6,749
Backfill 1 Costs	1,633	5,215	N/A	N/A	6,848
Backfill 2 Costs	0	0	N/A	N/A	0
Growth Media Placement Costs	861	2,085	N/A	N/A	2,746
Subtotal Earthworks	6,335	10,008	0	0	16,343
Revegetation Costs	204	78	247	N/A	529
Evaporation/Evapotranspiration Cell Lining	0	0	0	0	0
Evaporation/Evapotranspiration Cell Piping	0	0	0	0	0
Subtotal Evaporation/Evapotranspiration Cells	0	0	0	0	0
TOTALS	6,539	10,086	247	0	16,872

	Description (required)	Crew Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Cover Cost \$
1	Reclaim Pond	0	0	0	0
2	Collection Pond	30	4,041	2,708	6,749
		30	4,041	2,708	6,749

Process Ponds - Backfill 1 Costs																								
		Material Volumes		Haul to Crusher					Backfill Placement					Haul to Crusher			Crush	Compact			Haul to Placement			Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume (1,2) cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
1	Reclaim Pond	0	0										0	0	0	0	0	0	0	0	0	0	0	0
2	Collection Pond	0	3,867						740C/988K/D7E	7.24	3	553	7	0	0	0	0	0	0	0	1,633	5,215	6,848	6,848
		0	3,867					0					7	0	0	0	0	0	0	0	1,633	5,215	6,848	6,848

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)
2. If pond backfilled by dozing berm into pond, backfill volume will be 50% of the backfill volume to account for cut-to-fit construction

[illegible]

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)
2. If pond backfilled by dozing berm into pond, backfill volume will be 50% of the backfill volume to account for cut-to-fit construction

Process Ponds - Growth Media Costs										
		Growth Media Placement								
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity BCY/hr	hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
1	Reclaim Pond	275	740C/988K/D7E	10.1	4	528	1	271	895	1,166
2	Collection Pond	889	740C/988K/D7E	6.28	2	425	2	390	1,190	1,580
		1,164					3	661	2,085	2,746

Process Ponds - Revegetation Costs						
	Description (required)	Surface Area acres	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
1	Reclaim Pond	0.20	102	39	62	203
2	Collection Pond	0.60	102	39	185	326
		0.80	204	78	247	529

[illegible][illegible]

Closure Cost Estimation Process Ponds

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Process Ponds - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Markup \$	Totals \$
Liner Cutting & Folding Costs	4,041	2,708	N/A	N/A	6,749
Backfill 1 Costs	1,633	5,215	N/A	N/A	6,848
Backfill 2 Costs	0	0	N/A	N/A	0
Growth Media Placement Costs	661	2,085	N/A	N/A	2,746
Subtotal Earthworks	6,335	10,008	0	0	16,343
Revegetation Costs	204	78	247	N/A	529
Evaporation/Evapotranspiration Cell Lining	0	0	0	0	0
Evaporation/Evapotranspiration Cell Piping	0	0	0	0	0
Subtotal Evaporation/Evapotranspiration Cells	0	0	0	0	0
TOTALS	6,539	10,086	247	0	16,872

[illegible]

Closure Cost Estimate
Yards, Etc.

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Yards, Etc. - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Regrading Cost	43,911	74,172	N/A	118,083
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Growth Media Placement Cost	14,572	46,790	N/A	61,362
Ripping/Scarifying Cost	3,651	6,160	N/A	9,811
Subtotal Earthworks	62,134	127,122		189,256
Revegetation Cost	4,068	1,544	12,305	17,917
TOTALS	66,202	128,666	12,305	207,173

Yards, Etc. - User Input																					
Facility Description									You must fill in ALL green cells and relevant blue cells in this section for each building or facility												
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type		Physical			Cover 1			Cover 2			Growth Media		
									Area acres	Average Flat Area Long Dimension (ripping distance) ft	Regrade Volume (calculated elsewhere) cy	Cover Thickness in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Cover Thickness in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade	
1	Upper Process Plant Bench	Y01	2035	Process Plant	Stg1			LOM	3.18	1,096	8,586							12	2,080	-0.4	
2	Substation	Y02	2038	Power Supply	Stg4			LOM	0.05	50	135							12	3,880	-0.4	
3	Admin Building Parking Lot	Y03	2038	Process Plant	Stg4			LOM	0.18	122	486							12	14,227	-0.4	
4	Portal Pad	Y04	2035	Underground Mine	Stg1			LOM	4.84	400	13,068							12	2,721	-1.2	
5	Visitor Security Parking Lot	Y05	2037	Infrastructure & Ancillary	Stg3			LOM	0.50	181	1,350							12	4,572	1.4	
6	Security Yard	Y06	2037	Infrastructure & Ancillary	Stg3			LOM	0.20	116	540							12	5,050	2.9	
7	Contractor Laydown Yard	Y07	2037	Yards & Laydown Areas	Stg3			LOM	4.73	750	12,771							12	3,880	-3.0	
8	Contractor Office Laydown	Y08	2037	Yards & Laydown Areas	Stg3			LOM	0.86	300	2,322							12	14,227	0.0	
9	Weather Station	Y09	2037	Yards & Laydown Areas	Stg3			LOM	0.26	128	702							12	4,572	-4.4	
10	Vent Shaft #1 Pad	Y10	2035	Underground Mine	Stg1			LOM	1.32	296	3,564							12	2,721	-4.8	
11	Explosive Magazine	Y11	2035	Underground Mine	Stg1			LOM	0.03	40	81							12	2,721	-2.9	
12	Well Pad	Y12	2038	Water Supply	Stg4			LOM	0.08	60	216							12	14,227	-1.9	
13	Well Pad	Y13	2038	Water Supply	Stg4			LOM	0.09	60	243							12	4,572	-1.9	
14	Well Pad	Y14	2038	Water Supply	Stg4			LOM	0.08	60	216							12	5,050	-1.9	
15	Well Pad	Y15	2038	Water Supply	Stg4			LOM	0.09	60	243							12	0	-1.9	
16	Well Pad	Y16	2038	Water Supply	Stg4			LOM	0.08	60	216							12	0	0.0	
17	Growth Media Stockpile	GM01	2064	Growth Media Stockpiles	Stg5			LOM	3.38	623	9,126										
18	Growth Media Stockpile	GM02	2035	Growth Media Stockpiles	Stg1			LOM	2.27	528	6,129										
19	Growth Media Stockpile	GM03	2035	Growth Media Stockpiles	Stg1			LOM	2.06	452	5,562										
20	UG Backfill Aggregate Stockpile	SP01	2035	Underground Mine	Stg1			LOM	0.11	95	297										
21	Power line revegetation (5 ft x 25.1 miles)	PL05	2038	Power Supply	Stg4			LOM	15.21	40	0										
22	ROM Stockpile	SP02	2035	Process Plant	Stg1			LOM	0.28	170	756										

Notes:

- All Physical parameters must be input even if manual overrides for volume or area are used.
- Input distance from crusher to placement location if material to be crushed, screened or compacted
- If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

UG Backfill reclaimed under Portal Pad
ROM Stockpile reclaimed under Upper Process Plant Bench
Regrade volumes based on a 2.5% slope per acre = 3700 cy/acre
25% cover material due to use of berms and other ripping of native material

Yards, Etc. - User Input (Cont.)																			
Facility Description				Cover 1 - Crushing & Screening							Cover 2 - Crushing & Screening								
	Description (required)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Cover Borrow % grade	Haul to Crusher Fleet (2) (select)	Compact After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Cover Borrow % grade	Haul to Crusher Fleet (2) (select)	Compact After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)
1	Upper Process Plant Bench																		
2	Substation																		
3	Admin Building Parking Lot																		
4	Portal Pad																		
5	Visitor Security Parking Lot																		
6	Security Yard																		
7	Contractor Laydown Yard																		
8	Contractor Office Laydown																		
9	Weather Station																		
10	Vent Shaft #1 Pad																		
11	Explosive Magazine																		
12	Well Pad																		
13	Well Pad																		
14	Well Pad																		
15	Well Pad																		
16	Well Pad																		
17	Growth Media Stockpile																		
18	Growth Media Stockpile																		
19	Growth Media Stockpile																		
20	UG Backfill Aggregate Stockpile																		
21	Power line revegetation (5 ft x 25.1 miles)																		
22	ROM Stockpile																		

Notes:

- Input distance to crusher if material to be crushed
- if distance from borrow <820 ft (250 m) must select loader fleet

Closure Cost Estimate
Yards, Etc.

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Yards, Etc. - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Regrading Cost	43,911	74,172	N/A	118,083
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Growth Media Placement Cost	14,572	46,790	N/A	61,362
Ripping/Scarifying Cost	3,651	6,160	N/A	9,811
Subtotal Earthworks	62,134	127,122		189,256
Revegetation Cost	4,068	1,544	12,305	17,917
TOTALS	66,202	128,666	12,305	207,173

Yards, Etc. - User Input (Cont.)																					
You must fill in ALL green cells and relevant blue cells in this section for each building or facility																					
		Grading			Cover 1				Cover 2				Growth Media				Revegetation				
	Description (required)	Dozing Material Condition (select)	Dozing Material Type (select)	Grading Equipment Fleet (select)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)	Scarify/ Rip? (select)	Ripping Fleet (select)
1	Upper Process Plant Bench	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
2	Substation	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
3	Admin Building Parking Lot	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
4	Portal Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
5	Visitor Security Parking Lot	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
6	Security Yard	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
7	Contractor Laydown Yard	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
8	Contractor Office Laydown	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
9	Weather Station	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
10	Vent Shaft #1 Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
11	Explosive Magazine	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
12	Well Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
13	Well Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
14	Well Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
15	Well Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
16	Well Pad	1	Alluvium	Small									Alluvium	Small Truck			Mix 1	None	None	Yes	Small Dozer
17	Growth Media Stockpile	1	Alluvium	Small													Mix 1	None	None	Yes	Small Dozer
18	Growth Media Stockpile	1	Alluvium	Small													Mix 1	None	None	Yes	Small Dozer
19	Growth Media Stockpile	1	Alluvium	Small													Mix 1	None	None	Yes	Small Dozer
20	UG Backfill Aggregate Stockpile	1	Alluvium	Small													Mix 1	None	None	No	
21	Power line revegetation (5 ft x 25.1 miles)	1	Alluvium	Small													Mix 1	None	None	Yes	Small Dozer
22	ROM Stockpile	1	Alluvium	Small													Mix 1	None	None	No	

Notes:
1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Yards, Etc. - Assumptions & Calculations
Grading Calculations Average push distance assumed to be 2/3 of the 600 feet maximum from Catepillar Handbook or 400 feet Material assumed to be loose stockpile (1.2 productivity factor) Slope assumed to be 0 to 5% (1.0 productivity factor)
Cover Volume Calculation Yard area x cover thickness
Ripping/Scarifying Calculations Flat area width = Final flat area ÷ Average long dimensions Number of passes = Flat area width ÷ Grader width Travel distance = Number of passes x Average long dimensions Total hours = (Travel distance ÷ Grader productivity) ÷ (Number of passes x Grader maneuver time) Minimum 1 hr ripping/scarifying per area
Revegetation Minimum 1 acre revegetation crew time per area

Yards, Etc. - Regrading Costs													
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side)													
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Grade Correction	Dozing Material	Density Correction	Total Hourly Productivity cy/hr	Total Dozer Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Regrading Cost \$
1	Upper Process Plant Bench	8,586	400	D7E	180	1.0	1.0	0.79	89	96	5,651	9,545	15,196
2	Substation	135	400	D7E	180	1.0	1.0	0.79	89	2	118	199	317
3	Admin Building Parking Lot	486	400	D7E	180	1.0	1.0	0.79	89	5	294	497	791
4	Portal Pad	13,068	400	D7E	180	1.0	1.0	0.79	89	147	8,652	14,616	23,268
5	Visitor Security Parking Lot	1,350	400	D7E	180	1.0	1.0	0.79	89	15	883	1,491	2,374
6	Security Yard	540	400	D7E	180	1.0	1.0	0.79	89	6	353	597	950
7	Contractor Laydown Yard	12,771	400	D7E	180	1.0	1.0	0.79	89	143	8,417	14,218	22,635

Closure Cost Estimate
Yards, Etc.

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_Phl_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Yards, Etc. - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Regrading Cost	43,911	74,172	N/A	118,083
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Growth Media Placement Cost	14,572	46,790	N/A	61,362
Ripping/Scarifying Cost	3,651	6,160	N/A	9,811
Subtotal Earthworks	62,134	127,122		189,256
Revegetation Cost	4,068	1,544	12,305	17,917
TOTALS	66,202	128,666	12,305	207,173

8	Contractor Office Laydown	2,322	400	D7E	180	1.0	1.0	0.79	89	26	1,530	2,585	4,115
9	Weather Station	702	400	D7E	180	1.0	1.0	0.79	89	8	471	795	1,266
10	Vent Shaft #1 Pad	3,564	400	D7E	180	1.0	1.0	0.79	89	40	2,354	3,977	6,331
11	Explosive Magazine	81	400	D7E	180	1.0	1.0	0.79	89	1	59	99	158
12	Well Pad	216	400	D7E	180	1.0	1.0	0.79	89	2	118	199	317
13	Well Pad	243	400	D7E	180	1.0	1.0	0.79	89	3	177	298	475
14	Well Pad	216	400	D7E	180	1.0	1.0	0.79	89	2	118	199	317
15	Well Pad	243	400	D7E	180	1.0	1.0	0.79	89	3	177	298	475
16	Well Pad	216	400	D7E	180	1.0	1.0	0.79	89	2	118	199	317
17	Growth Media Stockpile	9,126	400	D7E	180	1.0	1.0	0.79	89	103	6,063	10,241	16,304
18	Growth Media Stockpile	6,129	400	D7E	180	1.0	1.0	0.79	89	69	4,061	6,861	10,922
19	Growth Media Stockpile	5,562	400	D7E	180	1.0	1.0	0.79	89	62	3,649	6,165	9,814
20	UG Backfill Aggregate Stockpile	297	400	D7E	180	1.0	1.0	0.79	89	3	177	298	475
21	Power line revegetation (5 ft x 25.1 miles)			D7E					0	0	0	0	0
22	ROM Stockpile	756	400	D7E	180	1.0	1.0	0.79	89	8	471	795	1,266
		66,609								746	43,911	74,172	118,083

[illegible]

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

[illegible]

**Closure Cost Estimate
Yards, Etc.**

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Yards, Etc. - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Regrading Cost	43,911	74,172	N/A	118,083
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Growth Media Placement Cost	14,572	46,790	N/A	61,362
Ripping/Scarifying Cost	3,651	6,160	N/A	9,811
Subtotal Earthworks	62,134	127,122		189,256
Revegetation Cost	4,068	1,544	12,305	17,917
TOTALS	66,202	128,666	12,305	207,173

[illegible]

Notes:

1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Yards, Etc. - Growth Media Costs										
		Growth Media Placement								
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity BCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
1	Upper Process Plant Bench	5,130	740C/988K/D7E	6.28	2	425	12	2,343	7,141	9,484
2	Substation	81	740C/988K/D7E	8.16	3	491	0	233	745	978
3	Admin Building Parking Lot	290	740C/988K/D7E	19	8	564	1	424	1,494	1,918
4	Portal Pad	7,809	740C/988K/D7E	6.94	3	578	14	3,266	10,429	13,695
5	Visitor Security Parking Lot	807	740C/988K/D7E	8.88	3	451	2	467	1,490	1,957
6	Security Yard	323	740C/988K/D7E	9.38	4	568	1	271	895	1,166
7	Contractor Laydown Yard	7,631	740C/988K/D7E	8.69	3	461	17	3,966	12,664	16,630
8	Contractor Office Laydown	1,387	740C/988K/D7E	19	8	564	2	847	2,988	3,835
9	Weather Station	419	740C/988K/D7E	10.55	4	505	1	271	895	1,166
10	Vent Shaft #1 Pad	2,130	740C/988K/D7E	7.94	3	505	4	933	2,980	3,913
11	Explosive Magazine	48	740C/988K/D7E	7.32	3	548	0	233	745	978
12	Well Pad	129	740C/988K/D7E	19	8	564	0	424	1,494	1,918
13	Well Pad	145	740C/988K/D7E	8.88	3	451	0	233	745	978
14	Well Pad	129	740C/988K/D7E	9.38	4	568	0	271	895	1,166
15	Well Pad	145	740C/988K/D7E	4.1	2	651	0	195	595	790
16	Well Pad	129	740C/988K/D7E	4.1	2	651	0	195	595	790
17	Growth Media Stockpile						0	0	0	0
18	Growth Media Stockpile						0	0	0	0
19	Growth Media Stockpile						0	0	0	0
20	UG Backfill Aggregate Stockpile						0	0	0	0
21	Power line revegetation (5 ft x 25.1 miles)						0	0	0	0
22	ROM Stockpile						0	0	0	0
		26,732					54	14,572	46,790	61,362

Yards, Etc. - Scarify/Revegetation Costs												
					Scarifying Costs				Revegetation Costs			
	Description (required)	Total Surface Area acres	Average Long Dimension (ripping distance) ft	Ripping/Scarifying Fleet	Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
1	Upper Process Plant Bench	3.18	1,096	D7E	4	235	398	633	324	123	981	1,428
2	Substation	0.05	50	D7E	1	59	99	158	5	2	15	22
3	Admin Building Parking Lot	0.18	122	D7E	1	59	99	158	18	7	56	81
4	Portal Pad	4.84	400	D7E	6	353	597	950	494	188	1,493	2,175
5	Visitor Security Parking Lot	0.50	181	D7E	1	59	99	158	51	19	154	224
6	Security Yard	0.20	116	D7E	1	59	99	158	20	8	62	90
7	Contractor Laydown Yard	4.73	750	D7E	5	294	497	791	482	183	1,459	2,124
8	Contractor Office Laydown	0.86	300	D7E	1	59	99	158	88	33	265	386
9	Weather Station	0.26	128	D7E	1	59	99	158	27	10	80	117
10	Vent Shaft #1 Pad	1.32	296	D7E	2	118	199	317	135	51	407	593
11	Explosive Magazine	0.03	40	D7E	1	59	99	158	3	1	9	13
12	Well Pad	0.08	60	D7E	1	59	99	158	8	3	25	36
13	Well Pad	0.09	60	D7E	1	59	99	158	9	3	28	40
14	Well Pad	0.08	60	D7E	1	59	99	158	8	3	25	36
15	Well Pad	0.09	60	D7E	1	59	99	158	9	3	28	40
16	Well Pad	0.08	60	D7E	1	59	99	158	8	3	25	36
17	Growth Media Stockpile	3.38	623	D7E	4	235	398	633	345	131	1,043	1,519
18	Growth Media Stockpile	2.27	528	D7E	3	177	298	475	232	88	700	1,020
19	Growth Media Stockpile	2.06	452	D7E	3	177	298	475	210	80	636	926
20	UG Backfill Aggregate Stockpile	0.11			0	0	0	0	11	4	34	49
21	Power line revegetation (5 ft x 25.1 miles)	15.21	40	D7E	23	1,354	2,287	3,641	1,552	590	4,694	6,836
22	ROM Stockpile	0.28			0	0	0	0	29	11	86	126
		39.88			62	3,651	6,160	9,811	4,068	1,544	12,305	17,917

Closure Cost Estimate
Yards, Etc.

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Yards, Etc. - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Regrading Cost	43,911	74,172	N/A	118,083
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Growth Media Placement Cost	14,572	46,790	N/A	61,362
Ripping/Scarifying Cost	3,651	6,160	N/A	9,811
Subtotal Earthworks	62,134	127,122		189,256
Revegetation Cost	4,068	1,544	12,305	17,917
TOTALS	66,202	128,666	12,305	207,173

Notes: 1) Minimum total ripping hours = 1 (i.e. If total ripping hrs (slope + flat) < 1, then one hour of fleet time is assumed, regardless of acres shown in in scarifying table.)
2) Assumes 50 min/hr equipment availability

Closure Cost Estimate
Landfills

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Landfills - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	0	0		0
Revegetation Cost	0	0	0	0
TOTALS	0	0	0	0

Landfills - User Input																				
Facility Description									Physical			Cover 1			Cover 2			Growth Media		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Area acres	Average Flat Area Long Dimension (ripping distance) ft	Regrade Volume (calculated elsewhere) cy	Cover Thickness in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Cover Thickness in	Haul Distance to Placement Location (2) ft	Slope to Placement Location % grade	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade

- Notes:
- All Physical parameters must be input even if manual overrides for volume or area are used.
 - Input distance from crusher to placement location if material to be crushed, screened or compacted
 - If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Landfills - User Input (Cont.)																			
Facility Description		Cover 1 - Crushing & Screening								Cover 2 - Crushing & Screening									
	Description (required)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Cover Borrow % grade	Haul to Crusher Fleet (2) (select)	Compact After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Crush Material (select)	Screen Material (select)	Loss to Crushing/ Screening %	Haul Distance to Crusher (1) ft	Slope from Cover Borrow % grade	Haul to Crusher Fleet (2) (select)	Compact After Placement? (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)

- Notes:
- Input distance to crusher if material to be crushed
 - If distance from borrow <820 ft (250 m) must select loader fleet

Landfills - User Input (Cont.)																					
You must fill in ALL green cells and relevant blue cells in this section for each building or facility																					
		Grading			Cover 1				Cover 2				Growth Media				Revegetation				
	Description (required)	Dozing Material Condition (select)	Dozing Material Type (select)	Grading Equipment Fleet (select)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)	Scarify/ Rip? (select)	Ripping Fleet (select)

- Notes:
- Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Landfills - Assumptions & Calculations	
Dozing, Ripping/Scarifying & Revegetation Calculations Dozing: Dozing distance = 2/3 of the 600 feet maximum from Catepillar Handbook or 400 feet Assumes flat push (grade correction factor = 1) Minimum 1 hr per area Ripping: Flat area width = Final flat area + Average long dimensions Number of passes = Flat area width + Grader width Travel distance = Number of passes x Average long dimensions Total hours = (Travel distance + Grader productivity) + (Number of passes x Grader maneuver time) Minimum 1 hr per area Revegetation: Minimum 1 acre revegetation crew time per area	

Landfills - Regrading Costs												
Productivity = Dozer Productivity x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83) x (Slot/Side-by-Side)												
	Description (required)	Regrading Volume cy	Dozing Distance (see above) ft	Regrading Fleet	Uncorrected Dozer Productivity cy/hr	Dozing Material	Density Correction	Fleet Productivity LCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
		0							0	0	0	0

Landfills - Cover 1 Costs								
	Material Volumes	Haul to Crusher	Haul to Placement	Haul to Crusher	Crush	Compact	Haul to Placement	Total

Closure Cost Estimate
Landfills

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Landfills - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	0	0	N/A	0
Cover 1 Placement Cost	0	0	N/A	0
Cover 2 Placement Cost	0	0	N/A	0
Topsoil Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	0	0		0
Revegetation Cost	0	0	0	0
TOTALS	0	0	0	0

	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Landfills - Cover 2 Costs																								
		Material Volumes		Haul to Crusher					Haul to Placement					Haul to Crusher			Crush	Compact			Haul to Placement			Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCM/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	No. of Trucks/ Scrapers	Fleet Productivity LCM/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes:
1. If crushed or screened, Cover Volume = volume delivered to crusher - amount loss to crushing/screening)

Landfills - Growth Media Costs										
		Growth Media Placement								
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity BCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
		0					0	0	0	0

Landfills - Scarify/Revegetation Costs												
					Scarifying Costs			Revegetation Costs				
	Description (required)	Total Surface Area acres	Average Long Dimension (ripping distance) ft	Ripping/Scarifying Fleet	Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Costs	Scarifying/ Ripping Equipment Cost	Total Scarifying/ Ripping Costs	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
		0.00			0	0	0	0	0	0	0	0

Notes: 1) Minimum total ripping hours = 1 (i.e. If total ripping hrs (slope + flat) < 1, then one hour of fleet time is assumed, regardless of acres shown in in scarifying table.)
2) Assumes 50 min/hr equipment availability

Closure Cost Estimate
Haul Material

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Generic Material Hauling - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Hauling/Crush/Screen/Compact	0	0	N/A	0
Cover Placement Cost	0	0	N/A	0
Topsoil Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	0	0		0
Revegetation Cost	0	0		0
TOTALS	0	0	0	0

Generic Material Hauling - User Input																								
Facility Description									Physical			Haul to Crusher		Crushing & Screening			Haul to Placement		Cover Thickness			Growth Media		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Final Surface Area acres	Average Ripping Distance ft	Material Volume Required cy	Haul Distance to Crusher (1) ft	Slope to Crusher % grade	Crush Material	Screen Material	Loss to Crushing/ Screening %	Haul Distance to Placement Location (2) ft	Slope to Placement Area % grade	Cover Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade
1																								
2																								

Notes:
1. Input distance to crusher if material to be crushed
2. Assumed to be 0% if material will be crushed and source is within 250 m of crusher
3. If Slope is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Generic Material Hauling - User Input (cont.)																						
		Hauling Material								Cover				Growth Media				Revegetation				
	Description (required)	Haul Material Type (select)	Crusher Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Placement Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Compact After Placement?	Material Type (select)	Placement Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Material Type (select)	Placement Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch Type (select)	Fertilizer Type (select)	Scarify/ Rip? (select)	Scarifying/ Ripping Fleet (select)
1																						
2																						

Notes:
1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table
2. If distance between borrow source is <250 m, haul fleet assumed be wheeled loaders

Generic Material Hauling - Load, Haul, Place and Grade																								
		Material Volumes		Haul to Crusher					Haul to Placement					Haul to Crusher			Crush	Compact			Haul to Placement			Total
	Description (required)	Material Volume to Crusher cy	Final Material Volume cy	Crusher Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCY/hr	Fleet Hours hrs	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Crush/ Screen Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Labor Cost \$	Equipment Cost \$	Total Cost \$	Total Cover Cost \$
1		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
2		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0
		0	0					0					0	0	0	0	0	0	0	0	0	0	0	0

Notes: Final Material Volume includes allowance for additional material hauled to crushing/screening plant based on Loss to Crushing/Screening input above.

Generic Material Hauling - Cover and Growth Media Costs																			
		Cover Placement									Growth Media Placement								
	Description (required)	Final Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCY/hr	Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Cover Placement Cost \$	Final Material Volume cy	Placement Fleet	Cycle Time min	No. of Trucks/ Scrapers	Fleet Productivity LCY/hr	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Total Cost \$
1							0	0	0	0							0	0	0
2							0	0	0	0							0	0	0
		0					0	0	0	0	0					0	0	0	0

Generic Material Hauling - Scarifying/Revegetation Costs											
				Scarifying Costs				Revegetation Costs			
	Description (required)	Total Surface Area acres	Ripping/ Scarifying Fleet	Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Cost \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Cost \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegetation Material Cost \$	Total Revegetation Cost \$
1				0	0	0	0	0	0	0	0
2				0	0	0	0	0	0	0	0
		0.00		0	0	0	0	0	0	0	0

Closure Cost Estimate
Foundations & Buildings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Buildings & Foundation Demolition - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Building Demolition Cost	100,678	92,931	N/A	193,609
Wall Demolition Cost	19,149	0	N/A	19,149
Slab Demolition	9,044	25,612	N/A	34,656
Subtotal Demolition	128,871	118,543	0	247,414
Cover Placement Cost	8,970	27,370	N/A	36,340
Growth Media Placement Cost	9,530	30,080	N/A	39,610
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	18,500	57,450	0	75,950
Revegetation Cost	4,488	1,705	1,488	7,681
TOTALS	151,859	177,698	1,488	331,045

Buildings & Foundation - User Input									You must fill in ALL green cells and relevant blue cells in this section for each building or facility																	
Facility Description									Physical - MANDATORY								Foundation Cover (1)			Growth Media (1) (entire footprint)						
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Length ft	Width ft	Eave Height ft	Slab Thickness in	Foundation Wall Thickness in	Foundation Wall Height ft	Average Flat Area Long Dimension (ripping distance) ft	Building Area Footprint (including surrounding facilities) acres	Foundation Cover Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade				
1	Administration Building	FB01	2038	Process Plant	Stg4			LOM	110	80	10	6	6	1	110	0.20	36	100	2.5	12	2,080	4.7				
2	Assy Lab	FB02	2035	Process Plant	Stg1			LOM	66	41	10	6	6	1	66	0.06	36	100	2.5	12	2,080	-1.7				
3	Crusher Area Electrical Room	FB03	2035	Process Plant	Stg1			LOM	32	23	10	6	6	1	32	0.02	36	100	2.5	12	2,080	-1.7				
4	Crusher Wall	FB04	2035	Process Plant	Stg1			LOM	77	1	10	6	8	20	77	0.00	36	100	2.5	12	2,080	-1.7				
5	Fine Ore Bin	FB05	2035	Process Plant	Stg1			LOM	25	25	10	6	6	1	25	0.01	36	100	2.5	12	2,080	-1.7				
6	Gold Room	FB06	2035	Process Plant	Stg1			LOM	41	25	10	6	6	1	41	0.02	36	100	2.5	12	2,080	-1.7				
7	Security Guard House	FB07	2037	Infrastructure & Ancillary	Stg3			LOM	54	26	10	6	6	1	54	0.03	36	100	2.5	12	2,080	0.0				
8	Leach & CIL Circuit	FB08	2035	Process Plant	Stg1			LOM	139	62	20	6	6	1	139	0.20	36	100	2.5	12	2,080	-1.7				
9	Plant Services Grinding	FB09	2035	Process Plant	Stg1			LOM	142	51	10	6	6	1	142	0.17	36	100	2.5	12	2,080	-1.7				
10	Plant Workshop and Warehouse	FB10	2035	Process Plant	Stg1			LOM	64	41	10	6	6	1	64	0.06	36	100	2.5	12	2,080	-1.7				
11	Process Plant Electrical Room	FB11	2035	Process Plant	Stg1			LOM	52	46	10	6	6	1	52	0.06	36	100	2.5	12	2,080	-1.7				
12	Septic Tank	FB12	2038	Process Plant	Stg4			LOM	21	8	10	6	6	1	21	0.00	36	100	2.5	12	2,080	4.7				
13	Truck Scale	FB13	2035	Process Plant	Stg1			LOM	75	36	10	6	6	1	75	0.06	36	100	2.5	12	2,080	-1.7				
14	Truck Workshop and Warehouse	FB14	2035	Process Plant	Stg1			LOM	128	55	10	6	6	1	128	0.16	36	100	2.5	12	2,080	-1.7				
15	Well #3 Well House	FB15	2038	Water Supply	Stg4			LOM	17	10	10	6	6	1	17	0.00	36	100	2.5	12	14,227	-1.9				
16	Well #4 Well House	FB16	2038	Water Supply	Stg4			LOM	17	10	10	6	6	1	17	0.00	36	100	2.5	12	14,227	-1.9				
17	Well #5 Well House	FB17	2038	Water Supply	Stg4			LOM	17	10	10	6	6	1	17	0.00	36	100	2.5	12	14,227	-1.9				
18	Well #6 Well House	FB18	2038	Water Supply	Stg4			LOM	17	10	10	6	6	1	17	0.00	36	100	2.5	12	14,227	-1.9				
19	Well #7 Well House	FB19	2038	Water Supply	Stg4			LOM	17	10	10	6	6	1	17	0.00	36	100	2.5	12	14,227	-1.9				
20	15 kV circuit breaker	PD01	2038	Power Supply	Stg4			LOM	15	15	10	6	6	1	15	0.01	36	100	2.5	12	2,080	4.7				
21	Bag House	PD02	2035	Process Plant	Stg1			LOM	9	9	10	6	6	1	9	0.00	36	100	2.5	12	2,080	-1.7				
22	Chiller	PD03	2035	Process Plant	Stg1			LOM	6	3	10	6	6	1	6	0.00	36	100	2.5	12	2,080	-1.7				
23	Concrete Pad	PD04	2035	Process Plant	Stg1			LOM	10	7	10	6	6	1	10	0.00	36	100	2.5	12	2,080	-1.7				
24	Concrete Pad	PD05	2035	Process Plant	Stg1			LOM	20	8	10	6	6	1	20	0.00	36	100	2.5	12	2,080	-1.7				
25	Crusher Pad	PD06a	2035	Process Plant	Stg1			LOM	44	11	10	6	6	1	44	0.01	36	100	2.5	12	2,080	-1.7				
26	Crusher Pad	PD06b	2035	Process Plant	Stg1			LOM	31	13	10	6	6	1	31	0.01	36	100	2.5	12	2,080	-1.7				
27	Crusher Pad	PD06c	2035	Process Plant	Stg1			LOM	12	8	10	6	6	1	12	0.00	36	100	2.5	12	2,080	-1.7				
28	Cyanide Storage Tank	PD07	2035	Process Plant	Stg1			LOM	28	24	10	6	6	1	28	0.02	36	100	2.5	12	2,080	-1.7				
29	Cyanide Unloading Pad	PD08	2035	Process Plant	Stg1			LOM	56	21	10	6	6	1	56	0.03	36	100	2.5	12	2,080	-1.7				
30	Emergency Power Generator	PD09	2038	Process Plant	Stg4			LOM	16	10	10	6	6	1	16	0.00	36	100	2.5	12	2,080	4.7				
31	Fuel Storage Pad	PD10a	2035	Process Plant	Stg1			LOM	40	6	10	6	6	1	40	0.01	36	100	2.5	12	2,080	-1.7				
32	Fuel Storage Pad	PD10b	2035	Process Plant	Stg1			LOM	42	17	10	6	6	1	42	0.02	36	100	2.5	12	2,080	-1.7				
33	Lime Silo	PD11	2035	Process Plant	Stg1			LOM	18	18	10	6	6	1	18	0.01	36	100	2.5	12	2,080	-1.7				
34	Potable Water Treatment Plant	PD12	2038	Water Supply	Stg4			LOM	20	8	10	6	6	1	20	0.00	36	100	2.5	12	2,080	-1.7				
35	Ramp	PD13	2035	Process Plant	Stg1			LOM	15	7	10	6	6	1	15	0.00	36	100	2.5	12	2,080	-1.7				
36	Ramp	PD14	2035	Process Plant	Stg1			LOM	11	7	10	6	6	1	11	0.00	36	100	2.5	12	2,080	-1.7				
37	Ramp	PD15	2035	Process Plant	Stg1			LOM	10	7	10	6	6	1	10	0.00	36	100	2.5	12	2,080	-1.7				
38	Reagent Storage	PD16	2035	Process Plant	Stg1			LOM	117	55	10	6	6	1	117	0.15	36	100	2.5	12	2,080	-1.7				
39	Truck Wash	PD17	2035	Process Plant	Stg1			LOM	40	28	10	6	6	1	40	0.03	36	100	2.5	12	2,080	-1.7				
40	UG Backfill Plant	PD18	2035	Underground Mine	Stg1			LOM	75	70	10	6	6	1	75	0.12	36	100	2.5	12	2,080	-1.7				
41	Vent Shaft #1 Foundation	PD19	2035	Underground Mine	Stg1			LOM	50	50	10	6	6	1	50	0.06	36	100	2.5	12	2,080	-1.7				
42	Wet Scrubber	PD20	2035	Process Plant	Stg1			LOM	8	5	10	6	6	1	8	0.00	36	100	2.5	12	2,080	-1.7				
43	Water Tank	WT01	2038	Water Supply	Stg4			LOM	30	30	10	6	6	1	30	0.02	36	100	2.5	12	2,080	4.7				
44	Process Water Tank	WT02	2035	Process Plant	Stg1			LOM	19	19	10	6	6	1	19	0.01	36	100	2.5	12	2,080	-1.7				

- Notes:
- Foundation cover only calculated to cover slab. Growth media estimated over entire footprint area
 - If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)

Chase down Septic Tank
Source of this information?

Buildings & Foundation - User Input (cont.)																			
		Construction Materials		Slab Demolition		Foundation Cover				Growth Media				Revegetation					
	Description (required)	Building Type	Foundation Wall Type	Slab Demo Method	Slab Breaking Equipment Fleet	Cover Material Type	Cover Placement Equipment Fleet	Cycle Time Override	Maximum Fleet Size	Growth Media Material Type	Growth Media Placement Equipment Fleet	Cycle Time Override	Maximum Fleet Size	Seed Mix	Mulch	Fertilizer	Scarify/ Rip?	Ripping Fleet	

Closure Cost Estimate
Foundations & Buildings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Buildings & Foundation Demolition - LOM Cost Summary																		
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Wall Demolition Cost	19,149	0	N/A	19,149														
Slab Demolition	9,044	25,612	N/A	34,656														
Subtotal Demolition	128,871	118,543	0	247,414														
Cover Placement Cost	8,970	27,370	N/A	36,340														
Growth Media Placement Cost	9,530	30,080	N/A	39,610														
Ripping/Scarifying Cost	0	0	N/A	0														
Subtotal Earthworks	18,500	57,450	0	75,950														
Revegetation Cost	4,488	1,705	1,488	7,681														
TOTALS	151,859	177,698	1,488	331,045														
	(select)	(select)	(select)	(select)	(select)	(select)	(user override)	(user override)	(select)	(select)	(user override)	(user override)	(select)	(select)	(select)	(select)	(select)	(select)
1 Administration Building	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
2 Assy Lab	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
3 Crusher Area Electrical Room	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
4 Crusher Wall	Lg. steel	Block 8 in (200 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
5 Fine Ore Bin	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
6 Gold Room	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
7 Security Guard House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
8 Leach & CIL Circuit	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
9 Plant Services Grinding	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
10 Plant Workshop and Warehouse	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
11 Process Plant Electrical Room	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
12 Septic Tank	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
13 Truck Scale	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
14 Truck Workshop and Warehouse	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
15 Well #3 Well House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
16 Well #4 Well House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
17 Well #5 Well House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
18 Well #6 Well House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
19 Well #7 Well House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
20 15 kV circuit breaker	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
21 Bag House	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
22 Chiller	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
23 Concrete Pad	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
24 Concrete Pad	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
25 Crusher Pad	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
26 Crusher Pad	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
27 Crusher Pad	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
28 Cyanide Storage Tank	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
29 Cyanide Unloading Pad	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
30 Emergency Power Generator	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
31 Fuel Storage Pad	Lg. steel	Block 4 in (100 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
32 Fuel Storage Pad	Lg. steel	Block 4 in (100 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
33 Lime Silo	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
34 Potable Water Treatment Plant	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
35 Ramp	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
36 Ramp	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
37 Ramp	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
38 Reagent Storage	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
39 Truck Wash	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
40 UG Backfill Plant	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
41 Vent Shaft #1 Foundation	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
42 Wet Scrubber	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
43 Water Tank	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		
44 Process Water Tank	Lg. steel	Block 6 in (150 mm) thick	Break & bury	Sm Excavator	Alluvium	Small Truck			Alluvium	Small Truck			Mix 1	None	None	No		

Notes:
1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Foundations & Buildings - Assumptions & Calculations
Building Volume Calculations Using Means Heavy Construction Cost Data (2004) calculates cubic feet from building dimensions Estimage slab thickness and wall thickness if not known Assumes that all concrete slabs are reinforced Productivity for crew from Means Heavy Construction Cost Data (2004) adjusted for supervision (addressed in Misc. Costs) and Davis-Bacon Wage Rates Demolition costs do not include hauling or disposing if debris - Use Waste Disposal module
Slab Demolition Calculations Minimum 1 hr excavator time for slab demolition
Cover Volume Calculation Foundation area x cover thickness If "Bury in Place" is selected as slab demolition method, cover thickness is adjusted such that total cover (cover + growth media) equals value entered in "Minimum thickness of cover over unbroken slab" cell above
Ripping/Scarifying Calculations Flat area width = Final flat area + Average long dimensions

Closure Cost Estimate
Foundations & Buildings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Buildings & Foundation Demolition - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Building Demolition Cost	100,678	92,931	N/A	193,609
Wall Demolition Cost	19,149	0	N/A	19,149
Slab Demolition	9,044	25,612	N/A	34,656
Subtotal Demolition	128,871	118,543	0	247,414
Cover Placement Cost	8,970	27,370	N/A	36,340
Growth Media Placement Cost	9,530	30,080	N/A	39,610
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	18,500	57,450	0	75,950
Revegetation Cost	4,488	1,705	1,488	7,681
TOTALS	151,859	177,698	1,488	331,045

Number of passes = Flat area width ÷ Grader width
Travel distance = Number of passes x Average long dimensions
Total hours = (Travel distance ÷ Grader productivity) + (Number of passes x Grader maneuver time)

Revegetation

Minimum 1 acre revegetation crew time per area

Closure Cost Estimate
Foundations & Buildings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

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Subtotal Demolition	128,871	118,543	0	247,414
Cover Placement Cost	8,970	27,370	N/A	36,340
Growth Media Placement Cost	9,530	30,080	N/A	39,610
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	18,500	57,450	0	75,950
Revegetation Cost	4,488	1,705	1,488	7,681
TOTALS	151,859	177,698	1,488	331,045

Building & Foundation Demolition Costs																							
Uses RS Means Heavy Construction Cost Data for building and wall demolition cost calculations. Uses CAT Handbook for slab breaking production.																							
	Description (required)	Building Footprint (slab area) sqft	Building Volume cu ft	Building Demolition Fleet	Building Demolition Hours hrs	Wall Length ft	Wall Area sq ft	Wall Demolition Hours hrs	Slab Volume cy	Slab Demolition Fleet	Slab Demolition Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Building Demolition Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Wall Demolition Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Slab Breaking Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Demolition Costs \$
1	Administration Building	8,800	88,000	930M/20 Ton Crane/Dump	33	380	380	18	163	325F	7	11,440	10,560	22,000	798	0	798	833	2,359	3,192	13,071	12,919	25,990
2	Assy Lab	2,706	27,060	930M/20 Ton Crane/Dump	10	214	214	10	50	325F	2	3,518	3,247	6,765	449	0	449	238	674	912	4,205	3,921	8,126
3	Crusher Area Electrical Room	736	7,360	930M/20 Ton Crane/Dump	3	110	110	5	14	325F	1	957	883	1,840	231	0	231	119	337	456	1,307	1,220	2,527
4	Crusher Wall	54	539	930M/20 Ton Crane/Dump	0	155	3,100	165	1	325F	1	70	65	135	7,409	0	7,409	119	337	456	7,598	402	8,000
5	Fine Ore Bin	625	6,250	930M/20 Ton Crane/Dump	2	100	100	5	12	325F	1	813	750	1,563	210	0	210	119	337	456	1,142	1,087	2,229
6	Gold Room	1,025	10,250	930M/20 Ton Crane/Dump	4	132	132	6	19	325F	1	1,333	1,230	2,563	277	0	277	119	337	456	1,729	1,567	3,296
7	Security Guard House	1,404	14,040	930M/20 Ton Crane/Dump	5	160	160	8	26	325F	1	1,825	1,685	3,510	336	0	336	119	337	456	2,280	2,022	4,302
8	Leach & CIL Circuit	8,618	172,360	930M/20 Ton Crane/Dump	64	402	402	19	160	325F	7	22,407	20,683	43,090	844	0	844	833	2,359	3,192	24,084	23,042	47,126
9	Plant Services Grinding	7,242	72,420	930M/20 Ton Crane/Dump	27	386	386	18	134	325F	6	9,415	8,690	18,105	811	0	811	714	2,022	2,736	10,940	10,712	21,652
10	Plant Workshop and Warehouse	2,624	26,240	930M/20 Ton Crane/Dump	10	210	210	10	49	325F	2	3,411	3,149	6,560	441	0	441	238	674	912	4,090	3,823	7,913
11	Process Plant Electrical Room	2,392	23,920	930M/20 Ton Crane/Dump	9	196	196	9	44	325F	2	3,110	2,870	5,980	412	0	412	238	674	912	3,760	3,544	7,304
12	Septic Tank	168	1,680	930M/20 Ton Crane/Dump	1	58	58	3	3	325F	1	218	202	420	122	0	122	119	337	456	459	539	998
13	Truck Scale	2,700	27,000	930M/20 Ton Crane/Dump	10	222	222	10	50	325F	2	3,510	3,240	6,750	466	0	466	238	674	912	4,214	3,914	8,128
14	Truck Workshop and Warehouse	7,040	70,400	930M/20 Ton Crane/Dump	26	366	366	17	130	325F	5	9,152	8,448	17,600	769	0	769	595	1,685	2,280	10,516	10,133	20,649
15	Well #3 Well House	170	1,700	930M/20 Ton Crane/Dump	1	54	54	3	3	325F	1	221	204	425	113	0	113	119	337	456	453	541	994
16	Well #4 Well House	170	1,700	930M/20 Ton Crane/Dump	1	54	54	3	3	325F	1	221	204	425	113	0	113	119	337	456	453	541	994
17	Well #5 Well House	170	1,700	930M/20 Ton Crane/Dump	1	54	54	3	3	325F	1	221	204	425	113	0	113	119	337	456	453	541	994
18	Well #6 Well House	170	1,700	930M/20 Ton Crane/Dump	1	54	54	3	3	325F	1	221	204	425	113	0	113	119	337	456	453	541	994
19	Well #7 Well House	170	1,700	930M/20 Ton Crane/Dump	1	54	54	3	3	325F	1	221	204	425	113	0	113	119	337	456	453	541	994
20	15 kV circuit breaker	225	2,250	930M/20 Ton Crane/Dump	1	60	60	3	4	325F	1	293	270	563	126	0	126	119	337	456	538	607	1,145
21	Bag House	81	810	930M/20 Ton Crane/Dump	0	36	36	2	2	325F	1	105	97	202	76	0	76	119	337	456	300	434	734
22	Chiller	18	180	930M/20 Ton Crane/Dump	0	18	18	1	0		0	23	22	45	38	0	38	0	0	0	61	22	83
23	Concrete Pad	70	700	930M/20 Ton Crane/Dump	0	34	34	2	1	325F	1	91	84	175	71	0	71	119	337	456	281	421	702
24	Concrete Pad	160	1,600	930M/20 Ton Crane/Dump	1	56	56	3	3	325F	1	208	192	400	118	0	118	119	337	456	445	529	974
25	Crusher Pad	484	4,840	930M/20 Ton Crane/Dump	2	110	110	5	9	325F	1	629	581	1,210	231	0	231	119	337	456	979	918	1,897
26	Crusher Pad	403	4,030	930M/20 Ton Crane/Dump	1	88	88	4	7	325F	1	524	484	1,008	185	0	185	119	337	456	828	821	1,649
27	Crusher Pad	96	960	930M/20 Ton Crane/Dump	0	40	960	2	2	325F	1	125	115	240	84	0	84	119	337	456	328	452	780
28	Cyanide Storage Tank	672	6,720	930M/20 Ton Crane/Dump	3	104	104	5	12	325F	1	874	806	1,680	218	0	218	119	337	456	1,211	1,143	2,354
29	Cyanide Unloading Pad	1,176	11,760	930M/20 Ton Crane/Dump	4	154	154	7	22	325F	1	1,529	1,411	2,940	323	0	323	119	337	456	1,971	1,748	3,719
30	Emergency Power Generator	160	1,600	930M/20 Ton Crane/Dump	1	52	52	2	3	325F	1	208	192	400	109	0	109	119	337	456	436	529	965
31	Fuel Storage Pad	240	2,400	930M/20 Ton Crane/Dump	1	92	92	4	4	325F	1	312	288	600	183	0	183	119	337	456	614	625	1,239
32	Fuel Storage Pad	714	7,140	930M/20 Ton Crane/Dump	3	118	118	5	13	325F	1	928	857	1,785	235	0	235	119	337	456	1,282	1,194	2,476
33	Lime Silo	324	3,240	930M/20 Ton Crane/Dump	1	72	72	3	6	325F	1	421	389	810	151	0	151	119	337	456	691	726	1,417
34	Potable Water Treatment Plant	160	1,600	930M/20 Ton Crane/Dump	1	56	56	3	3	325F	1	208	192	400	118	0	118	119	337	456	445	529	974
35	Ramp	105	1,050	930M/20 Ton Crane/Dump	0	44	44	2	2	325F	1	137	126	263	92	0	92	119	337	456	348	463	811
36	Ramp	77	770	930M/20 Ton Crane/Dump	0	36	36	2	1	325F	1	100	92	192	76	0	76	119	337	456	295	429	724
37	Ramp	70	700	930M/20 Ton Crane/Dump	0	34	34	2	1	325F	1	91	84	175	71	0	71	119	337	456	281	421	702
38	Reagent Storage	6,435	64,350	930M/20 Ton Crane/Dump	24	344	344	16	119	325F	5	8,366	7,722	16,088	722	0	722	595	1,685	2,280	9,683	9,407	19,090
39	Truck Wash	1,120	11,200	930M/20 Ton Crane/Dump	4	136	136	6	21	325F	1	1,456	1,344	2,800	286	0	286	119	337	456	1,861	1,681	3,542
40	UG Backfill Plant	5,250	52,500	930M/20 Ton Crane/Dump	20	290	290	14	97	325F	4	6,825	6,300	13,125	609	0	609	476	1,348	1,824	7,910	7,648	15,558
41	Vent Shaft #1 Foundation	2,500	25,000	930M/20 Ton Crane/Dump	9	200	200	9	46	325F	2	3,250	3,000	6,250	420	0	420	238	674	912	3,908	3,674	7,582
42	Wet Scrubber	40	400	930M/20 Ton Crane/Dump	0	26	26	1	1	325F	1	52	48	100	55	0	55	119	337	456	226	385	611
43	Water Tank	900	9,000	930M/20 Ton Crane/Dump	3	120	120	6	17	325F	1	1,170	1,080	2,250	252	0	252	119	337	456	1,541	1,417	2,958
44	Process Water Tank	361	3,610	930M/20 Ton Crane/Dump	1	76	76	4	7	325F	1	469	433	902	160	0	160	119	337	456	748	770	1,518
			774,429						1,273		76	100,678	92,931	193,609	19,149	0	19,149	9,044	25,612	34,656	128,871	118,543	247,414

Building & Foundation - Foundation Cover and Growth Media Costs																						
		Foundation Cover									Growth Media									Total Cover & Growth Media Costs		
	Description (required)	Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCY/hr	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Cover Cost \$	Material Volume cy	Placement Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCY/hr	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Costs \$
1	Administration Building	978	740C/988K/D7E	4.2	2	636	2	390	1,190	1,580	326	740C/988K/D7E	6.28	2	425	1	195	595	790	585	1,785	2,370
2	Assy Lab	301	740C/988K/D7E	4.2	2	636	1	195	595	790	103	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
3	Crusher Area Electrical Room	82	740C/988K/D7E	4.2	2	636	1	195	595	790	26	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
4	Crusher Wall	6	740C/988K/D7E	4.2	2	636	1	195	595	790	5	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
5	Fine Ore Bin	69	740C/988K/D7E	4.2	2	636	1	195	595	790	18	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
6	Gold Room	114	740C/988K/D7E	4.2	2	636	1	195	595	790	39	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
7	Security Guard House	156	740C/988K/D7E	4.2	2	636	1	195	595	790	53	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
8	Leach & CIL Circuit	958	740C/988K/D7E	4.2	2	636	2	390	1,190	1,580	318	740C/988K/D7E	6.28	2	425	1	195	595	790	585	1,785	2,370
9	Plant Services Grinding	805	740C/988K/D7E	4.2	2	636	1	195	595	790	268	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
10	Plant Workshop and Warehouse	292	740C/988K/D7E	4.2	2	636	1	195	595	790	97	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580

Closure Cost Estimate
Foundations & Buildings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Buildings & Foundation Demolition - LOM Cost Summary																						
		Labor \$	Equipment \$	Materials \$	Totals \$																	
Building Demolition Cost		100,678	92,931	N/A	193,609																	
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Subtotal Demolition		128,871	118,543	0	247,414																	
Cover Placement Cost		8,970	27,370	N/A	36,340																	
Growth Media Placement Cost		9,530	30,080	N/A	39,610																	
Ripping/Scarifying Cost		0	0	N/A	0																	
Subtotal Earthworks		18,500	57,450	0	75,950																	
Revegetation Cost		4,488	1,705	1,488	7,681																	
TOTALS		151,859	177,698	1,488	331,045																	
11	Process Plant Electrical Room	266	740C/988K/D7E	4.2	2	636	1	195	595	790	89	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
12	Septic Tank	19	740C/988K/D7E	4.2	2	636	1	195	595	790	5	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
13	Truck Scale	300	740C/988K/D7E	4.2	2	636	1	195	595	790	98	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
14	Truck Workshop and Warehouse	782	740C/988K/D7E	4.2	2	636	1	195	595	790	257	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
15	Well #3 Well House	19	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	19	8	564	1	424	1,494	1,918	619	2,089	2,708
16	Well #4 Well House	19	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	19	8	564	1	424	1,494	1,918	619	2,089	2,708
17	Well #5 Well House	19	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	19	8	564	1	424	1,494	1,918	619	2,089	2,708
18	Well #6 Well House	19	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	19	8	564	1	424	1,494	1,918	619	2,089	2,708
19	Well #7 Well House	19	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	19	8	564	1	424	1,494	1,918	619	2,089	2,708
20	15 kV circuit breaker	25	740C/988K/D7E	4.2	2	636	1	195	595	790	8	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
21	Bag House	9	740C/988K/D7E	4.2	2	636	1	195	595	790	3	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
22	Chiller	2	740C/988K/D7E	4.2	2	636	1	195	595	790						0	0	0	0	195	595	790
23	Concrete Pad	8	740C/988K/D7E	4.2	2	636	1	195	595	790	3	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
24	Concrete Pad	18	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
25	Crusher Pad	54	740C/988K/D7E	4.2	2	636	1	195	595	790	16	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
26	Crusher Pad	45	740C/988K/D7E	4.2	2	636	1	195	595	790	15	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
27	Crusher Pad	11	740C/988K/D7E	4.2	2	636	1	195	595	790	3	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
28	Cyanide Storage Tank	75	740C/988K/D7E	4.2	2	636	1	195	595	790	26	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
29	Cyanide Unloading Pad	131	740C/988K/D7E	4.2	2	636	1	195	595	790	44	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
30	Emergency Power Generator	18	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
31	Fuel Storage Pad	27	740C/988K/D7E	4.2	2	636	1	195	595	790	10	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
32	Fuel Storage Pad	79	740C/988K/D7E	4.2	2	636	1	195	595	790	26	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
33	Lime Silo	36	740C/988K/D7E	4.2	2	636	1	195	595	790	13	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
34	Potable Water Treatment Plant	18	740C/988K/D7E	4.2	2	636	1	195	595	790	6	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
35	Ramp	12	740C/988K/D7E	4.2	2	636	1	195	595	790	3	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
36	Ramp	9	740C/988K/D7E	4.2	2	636	1	195	595	790	3	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
37	Ramp	8	740C/988K/D7E	4.2	2	636	1	195	595	790	3	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
38	Reagent Storage	715	740C/988K/D7E	4.2	2	636	1	195	595	790	237	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
39	Truck Wash	124	740C/988K/D7E	4.2	2	636	1	195	595	790	42	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
40	UG Backfill Plant	583	740C/988K/D7E	4.2	2	636	1	195	595	790	194	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
41	Vent Shaft #1 Foundation	278	740C/988K/D7E	4.2	2	636	1	195	595	790	89	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
42	Wet Scrubber	4	740C/988K/D7E	4.2	2	636	1	195	595	790	2	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
43	Water Tank	100	740C/988K/D7E	4.2	2	636	1	195	595	790	26	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
44	Process Water Tank	40	740C/988K/D7E	4.2	2	636	1	195	595	790	11	740C/988K/D7E	6.28	2	425	1	195	595	790	390	1,190	1,580
		7,652					46	8,970	27,370	36,340	2,527					43	9,530	30,080	39,610	18,500	57,450	75,950

Building & Foundation - Scarifying/Revegetation Costs																	
						Scarifying/Ripping			Revegetation				Total Scarify & Revegation Costs				
	Description (required)	Flat Area acres	Average Long Dimension (ripping distance) ft	Ripping/ Scarifying Fleet	Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revetgation Material Cost \$	Total Revegetation Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Costs \$	
1	Administration Building	0.20			0	0	0	0	102	39	62	203	102	39	62	203	
2	Assy Lab	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
3	Crusher Area Electrical Room	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
4	Crusher Wall	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
5	Fine Ore Bin	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
6	Gold Room	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
7	Security Guard House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
8	Leach & CIL Circuit	0.20			0	0	0	0	102	39	62	203	102	39	62	203	
9	Plant Services Grinding	0.20			0	0	0	0	102	39	62	203	102	39	62	203	
10	Plant Workshop and Warehouse	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
11	Process Plant Electrical Room	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
12	Septic Tank	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
13	Truck Scale	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
14	Truck Workshshop and Warehouse	0.20			0	0	0	0	102	39	62	203	102	39	62	203	
15	Well #3 Well House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
16	Well #4 Well House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
17	Well #5 Well House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
18	Well #6 Well House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
19	Well #7 Well House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
20	15 kV circuit breaker	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
21	Bag House	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
22	Chiller	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
23	Concrete Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
24	Concrete Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
25	Crusher Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
26	Crusher Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
27	Crusher Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
28	Cyanide Storage Tank	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
29	Cyanide Unloading Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	

Closure Cost Estimate
Foundations & Buildings

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Buildings & Foundation Demolition - LOM Cost Summary																	
		Labor \$	Equipment \$	Materials \$	Totals \$												
Building Demolition Cost		100,678	92,931	N/A	193,609												
Wall Demolition Cost		19,149	0	N/A	19,149												
Slab Demolition		9,044	25,612	N/A	34,656												
Subtotal Demolition		128,871	118,543	0	247,414												
Cover Placement Cost		8,970	27,370	N/A	36,340												
Growth Media Placement Cost		9,530	30,080	N/A	39,610												
Ripping/Scarifying Cost		0	0	N/A	0												
Subtotal Earthworks		18,500	57,450	0	75,950												
Revegetation Cost		4,488	1,705	1,488	7,681												
TOTALS		151,859	177,698	1,488	331,045												
30	Emergency Power Generator	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
31	Fuel Storage Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
32	Fuel Storage Pad	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
33	Lime Silo	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
34	Potable Water Treatment Plant	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
35	Ramp	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
36	Ramp	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
37	Ramp	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
38	Reagent Storage	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
39	Truck Wash	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
40	UG Backfill Plant	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
41	Vent Shaft #1 Foundation	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
42	Wet Scrubber	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
43	Water Tank	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
44	Process Water Tank	0.10			0	0	0	0	102	39	31	172	102	39	31	172	
		4.80			0	0	0	0	4,488	1,705	1,488	7,681	4,488	1,705	1,488	7,681	

Closure Cost Estimate
Other Demo & Equip Removal

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Other Demolition and Equipment Removal - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Other Demolition	0	0	0	0
Equipment Removal	0	0	0	0
TOTALS	0	0	0	0

Other Demolition																	
Facility Description																	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Quantity	Units	Labor Unit Cost \$	Equipment Unit Cost \$	Material Unit Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Cost \$
														0	0	0	0

Notes:

Equipment & Material Removal																		
Facility Description																		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Quantity	Units	Labor Unit Cost \$	Equipment Unit Cost \$	Material Unit Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Cost \$	
1	Water Tank removal	WT01	2038	Water Supply	Stg4			LOM	6	Hours	\$47.69	\$37.39		286	224	0	510	
2	TWRSF - Closure(Leakage Detection Removal)	WD01	2035	Temporary Waste Rock Storage	Stg1			LOM	100	Hours	\$60.19	90.28		6,019	9,028	0	15,047	
3	TWRSF - Closure(HDPE Liner Removal , OffSite Disposal- in Waste Disposal tab)	WD01	2035	Temporary Waste Rock Storage	Stg1			LOM	400	Hours	\$37.26	29.87		14,904	11,948	0	26,852	
4	Oil-Water Separator	PD17	2035	Process Plant	Stg1			LOM	8	Hours	\$47.69	\$37.39		382	299	0	681	
5	Generator removal (2)		2038	Process Plant	Stg4			LOM	8	Hours	\$47.69	\$37.39		382	299	0	681	
6	Fuel Tank removal	PD10a	2035	Process Plant	Stg1			LOM	6	Hours	\$47.69	\$37.39		286	224	0	510	
7	Stockpile 1 (from TWRSF)	ST01	2034	TWRSF and Ore Stockpile to CR	Stg0			LOM						0	0	0	0	
8	Stockpile 2 (Ore Stockpile)	ST02	2034	TWRSF and Ore Stockpile to CR	Stg0			LOM						0	0	0	0	
												22,258	22,023	0	22,258	22,023	0	44,281

Notes: \$19.04/ton of CRF as provided by Ausenco applied to the the waste rock and ore stockpile cost for use as CRF.

Closure Cost Estimate
Sediment & Drainage Control

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Drainage Control - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Diversion Ditch Construction	0	0	N/A	0
Diversion Ditch Liner	0	0	0	0
Diversion Ditch Rip-Rap	0	0	0	0
Diversion Ditch Revegetation	0	0	0	0
Subtotal Diversion Ditches	0	0	0	0
Liner Installation	0	0	0	0
Sed Pond Construct/Regrade	0	0	N/A	0
Sed Pond Growth Media	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Sediment Pond Revegetation	0	0	0	0
Subtotal Sediment Ponds	0	0	0	0
TOTALS	0	0	0	0

Diversion Ditches - User Input																						
Facility Description									Diversions Ditches							Revegetation			Liner and Rip-Rap Installation			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Diversion Length ft	Diversion Depth ft	Ditch Bottom Width ft	Ditch Sideslope Angle _H:1V	Excavate Volume (if calculated elsewhere) cy	Excavating Material Condition (select)	Excavating Equipment Fleet (select)	Seed Mix (select)	Mulch (select)	Fertilizer (select)	Liner Area S.Y.	Liner Type (select)	Rip-Rap Area S.Y.	Rip-Rap Type (select)

Notes:
Diversion channels and sediment basins will remain post reclamation for stormwater control.
Diversion ditches at the Process Plant will be reclaimed during the ripping and recontouring of the main yard (Y01).

Sediment/Evaporation Pond Construction/Removal - User Input																			
									Sediment Ponds								Growth Media		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Pond Width ft	Pond/Berm Length ft	Berm Height ft	Crest Width ft	Sideslope Angle _H:1V	Final Area (if calculated elsewhere) acres	Regrade Volume (if calculated elsewhere) cy	Cover Volume (if calculated elsewhere) cy	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade

Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivty Sheet)
3. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Sediment/Evaporation Pond Construction/Removal - User Input (cont.)														
		Sediment Ponds				Growth Media				Revegetation			Ripping/Scarifying	
	Description (required)	Excavating Material Condition (select)	Material Type (select)	Excavating Equipment Fleet (select)	Liner Type (select)	Growth Media Material Type (select)	Growth Media Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)	Scarify/ Rip? (select)	Scarify/ Ripping Fleet (select)

Notes:
1. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Sediment & Drainage Control - Assumptions & Calculations
Diversion Ditch Volume Calculation 1) Assume 20% swell for excavations 2) Assumes heavy duty trenching bucket is used Sediment/Evaporation Pond Construction Calculation Cut = Fill Push distance = pond width up to 2/3 max push distance (400 ft) 1) Assume balanced cut-to-fill for berm construction 2) Include cost for liner, if required. 3) Include line items for removal, if necessary. 4) Assume 20% swell for excavations 5) Minimum 1 hr ripping/scarifying per area 6) Minimum 1 acre revegetation crew time per area

Diversion Ditches - Excavation Costs		
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Closure Cost Estimate
Sediment & Drainage Control

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Drainage Control - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Diversion Ditch Construction	0	0	N/A	0
Diversion Ditch Liner	0	0	0	0
Diversion Ditch Rip-Rap	0	0	0	0
Diversion Ditch Revegetation	0	0	0	0
Subtotal Diversion Ditches	0	0	0	0
Liner Installation	0	0	0	0
Sed Pond Construct/Regrade	0	0	N/A	0
Sed Pond Growth Media	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Sediment Pond Revegetation	0	0	0	0
Subtotal Sediment Ponds	0	0	0	0
TOTALS	0	0	0	0

									Liner Installation (2)				Rip-Rap Installation			
	Description (required)	Diversion Ditch Volume (1) LCY	Diversion Ditch Equipment	Corrected Excavator Productivity LCY/hr	Total Hours hrs	Diversion Ditch Labor Cost \$	Diversion Ditch Equipment Cost \$	Total Diversion Ditch Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Liner Cost \$	Labor Cost \$	Equipment Cost \$	Material Cost \$	Total Cost \$
		0			0	0	0	0	0	0	0	0	0	0	0	0

Notes: (1) LCM assumes 20% swell from ditch volume
(2) includes finish grading and compaction

Diversion Ditches - Revegetation Costs						
	Description (required)	Surface Area acres	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegation Material \$	Total Revegetation Cost \$
		0.00	0	0	0	0

Sediment/Evaporation Ponds - Construction/Regrading Costs																		
Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83)											Earthwork			Liner (1)				
	Description (required)	Regrading Volume cy	Sed/Evap Pond Equipment	Dozing Distance (see above) ft	Uncorrected Dozer Productivity LCY/hr	Grade Correction	Density Correction	Excavating Material	Corrected Productivity LCY/hr	Total Dozer Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Constr/ Regrading Cost \$	Liner Area ft2	Total Labor Cost \$	Total Equipment Cost \$	Total Material Cost \$	Total Liner Cost \$
		0								0	0	0	0		0	0	0	0

Notes: 1. Includes costs for finish grading and compaction (see Misc. Unit Costs)

Sediment/Evaporation Ponds - Growth Media Costs										
Growth Media										
	Description (required)	Growth Media Volume cy	Growth Media Fleet	Cycle Time min	Haul Fleet Size	Fleet Productivity LCY/hr	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Cover Placement Cost \$
		0					0	0	0	0

Sediment/Evaporation Ponds - Revegetation Costs													
						Scarifying Costs				Revegetation Costs			
	Description (required)	Surface Area acres	Average Long Dimension (ripping distance) ft	Area Width ft	Ripping/ Scarifying Fleet	Scarifying/ Ripping Hours hrs	Scarifying/ Ripping Labor Costs \$	Scarifying/ Ripping Equipment Cost \$	Total Scarifying/ Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revegation Material Cost \$	Total Revegetation Cost \$
		0.00				0	0	0	0	0	0	0	0

Closure Cost Estimate
Well Abandonment

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phll_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Well Abandonment - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Production, Dewatering, Infiltration Wells	18,148	51,472	1,976	71,596
Monitoring Wells	4,381	12,836	112	17,329
TOTALS	22,529	64,308	2,088	88,925

Well seal thickness: 20 ft
Minimum seal above groundwater table: 50 ft

Production, Dewatering and Infiltration Well Closure																																		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Number of Holes	Casing Diam in	Average Depth ⁽¹⁾ ft bgs	Depth to First Water ft bgs	Original Static Water Level ft bgs	Top of Slotted Casing ⁽²⁾ ft bgs	Blank Casing Below Top of Screen ⁽²⁾ ft	Type of Pump (if any) (select)	Depth to Pump ft bgs	Hole Plug Method (select)	Casing Volume per ft cf	Perforation Length ft	Grout Volume per Hole ^(4,5) cy	Cement Volume per Hole ⁽⁶⁾ cy	Inert Media Volume per Hole ⁽⁷⁾ cy	Pump Removal Labor Cost \$	Pump Removal Equip Cost \$	Perf Labor Cost \$	Perf Equip Cost ⁽⁸⁾ \$	Grout + Cement Labor Cost ⁽⁹⁾ \$	Grout + Cement Equip Cost ⁽⁹⁾ \$	Grout + Cement Material Cost \$	Inert Media Labor Cost ⁽¹⁰⁾ \$	Inert Media Equip Cost ⁽⁹⁾ \$	Total Cost \$	
1	Production Well 4	W-W4	2038	Water Supply	Stg4			LOM	1	10.0	500	270	270	270	140	Submersible	480	Grout + Back	0.550	190	11.40	0.40	3.50	2,957	7,956	782	2,794	701	2,079	494	97	39	17,899	
2	Production Well 5	W-W5	2038	Water Supply	Stg4			LOM	1	10.0	500	270	270	270	140	Submersible	480	Grout + Back	0.550	190	11.40	0.40	3.50	2,957	7,956	782	2,794	701	2,079	494	97	39	17,899	
3	Production Well 6 (Alt)	W-W6	2038	Water Supply	Stg4			LOM	1	10.0	500	270	270	270	140	Submersible	480	Grout + Back	0.550	190	11.40	0.40	3.50	2,957	7,956	782	2,794	701	2,079	494	97	39	17,899	
4	Production Well 7 (Alt)	W-W7	2038	Water Supply	Stg4			LOM	1	10.0	500	270	270	270	140	Submersible	480	Grout + Back	0.550	190	11.40	0.40	3.50	2,957	7,956	782	2,794	701	2,079	494	97	39	17,899	
																									11,828	31,824	3,128	11,176	2,804	8,316	1,976	388	156	71,596

- (1) For previously abandoned holes enter "0" for depth
(2) Wells abandoned per Nevada Administrative Code (NAC 534.420). Hole grouted and perforated from bottom to 50 feet (15.24m) above the top of the screen, or first water encountered or original static water level, depending on vertical hydraulic gradient and well construction parameters. Inert media (cuttings or alluvium) used from top of grout to top seal.
(3) Perforation length = amount of blank casing below first water (for confined aquifers) or predicted recovered water table (unconfined aquifers) + 50 feet (15.24m) of blank casing above water table
(4) Assumes 50' (15.24m) sanitary seal at top of hole. Therefore, perforation and grouting only required to bottom of sanitary seal.
(5) Assumes 100% loss to formation for grout (abandonite) for screened and perforated sections.
(6) Assumes 10' (3m) top seal of cement in casing only. See note 4.
(7) Inert material is cuttings or alluvium sourced locally.
(8) Includes perforation tool wear cost/ft of perforation (see Productivity Sheet).
(9) See Productivity Sheet for hourly production. Minimum 1 hr per hole + fixed hours per hole for move and setup. If no perforation required, use standard drill rig.
(10) See Productivity Sheet for hourly production. Minimum 1 hr per hole.

Notes:
Well 3 are pre-existing wells and will remain post-mine.
Wells 4-7 have not been drilled yet. Numbers are from the conceptual designs.

Monitoring Well/Piezometer Closure																									
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Number of Holes	Casing Diam in	Average Depth ft bgs	Top of Screen ⁽¹⁾ ft bgs	Hole Plug Method (select)	Casing Volume per ft ft3	Grout Volume/ Well ^(2,3) cy	Cement Volume per Hole ⁽⁴⁾ cy	Inert Backfill Volume per Hole ⁽⁶⁾ cy	Total Grouting Hours/ Hole hrs	Total Inert Media Hours/ Hole hrs	Grout + Cement Labor Cost ⁽⁶⁾ \$	Grout + Cement Equip Cost ⁽⁶⁾ \$	Grout + Cement Material Cost \$	Inert Material Labor Cost ⁽⁷⁾ \$	Inert Material Equip Cost ⁽⁷⁾ \$	Total Cost \$
1	GMW19-1	MW-1	2064	Monitoring	Stg5			LOM	1	4.0	100	80	Grout + Back	0.090	0.29	0.08	0.03	3.2	3.0	431	1,264	15	135	395	2,240
2	GMW19-2	MW-2	2064	Monitoring	Stg5			LOM	1	4.0	30	20	Grout + Back	0.090	0.04	0.08		3.1	0.0	418	1,224	5	0	0	1,647
3	GMW19-3	MW-3	2064	Monitoring	Stg5			LOM	1	4.0	200	180	Grout + Back	0.090	0.29	0.08	0.37	3.4	3.0	458	1,343	15	135	395	2,346
4	GMW19-4	MW-4	2064	Monitoring	Stg5			LOM	1	4.0	600	550	Grout + Back	0.090	0.42	0.08	1.60	4.2	3.0	566	1,659	21	135	395	2,776
5	GMW19-5	MW-5	2064	Monitoring	Stg5			LOM	1	4.0	30	20	Grout + Back	0.090	0.04	0.08		3.1	0.0	418	1,224	5	0	0	1,647
6	GMW19-6	MW-6	2064	Monitoring	Stg5			LOM	1	4.0	100	80	Grout + Back	0.090	0.29	0.08	0.03	3.2	3.0	431	1,264	15	135	395	2,240
7	GMW19-7	MW-7	2064	Monitoring	Stg5			LOM	1	4.0	50	30	Grout + Back	0.090	0.29	0.08		3.1	0.0	418	1,224	15	0	0	1,657
8	GMW19-8	MW-8	2064	Monitoring	Stg5			LOM	1	4.0	600	550	Grout + Back	0.090	0.42	0.08	1.60	4.2	3.0	566	1,659	21	135	395	2,776
																				3,706	10,861	112	675	1,975	17,329

- Wells abandoned per NAC 534.420 with bentonite grout placed to 50 feet above the top of the screen (see note 1).
(1) Assumes top of screen is at or above the static water level (in unconfined aquifers) or the depth of first water encountered (in confined aquifers).
(2) Assumes 25% loss to formation for grouting
(3) Grouting only required to 50' (15.24m) above the top of screen because monitor wells are constructed with a seal in the annular space.
(4) Assumes top 10' (3m) plugged with cement.
(5) Assumes hole plugged with inert material (cuttings or alluvium) above grout up to cement surface plug.
(6) See Productivity Sheet for hourly production. Minimum 1 hr per hole + fixed hours per hole for move and setup (see Productivity Sheet).
(7) See Productivity Sheet for hourly production. Minimum 1 hr per hole.

Notes:
Based on the monitoring plan
8 new wells to be drilled and abandoned. 7 existing wells to remain after release of the bond

Closure Cost Estimate
Waste Disposal

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Waste Disposal - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Fees \$	Totals \$
Solid Waste - On Site	0	0	N/A	N/A	0
Solid Waste - Off Site	N/A	290,567	N/A	N/A	290,567
Solid Waste Total	0	290,567	0		290,567
Hazardous Materials	N/A	N/A	N/A	73,264	73,264
Hydrocarbon Contaminated Soils	0	0	N/A	4,419	4,419
TOTALS	0	290,567	0	77,683	368,250

Waste Disposal - User Input - Solid Waste															
												Landfill (Bulk) Disposal		Dumpster	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Waste Type (select)	Disposal Method (select)	Quantity cy	Distance to Landfill ft	Slope to Landfill % grade	Number of Trucks (user override)	Months Dumpster Rental months
1	Misc. Site Clean-Up		2035	Process Plant	Stg1			LOM	Waste Mgmt & Disposal	Dumpster	5	34.4			3
2	TWRSF - Solid Disposal	WD01	2035	Temporary Waste Rock Storage	Stg1			LOM	Waste Mgmt & Disposal	Dumpster	2,500	34.4			1
3	Process Plant Site Off-site Disposal following Demo		2035	Process Plant	Stg1			LOM	Waste Mgmt & Disposal	Dumpster	5,737	34.4			3

- Notes:
- All Physical parameters must be input even if manual overrides for volume or area are used.
 - If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivty Sheet)

Waste Disposal - User Input - Hazardous Materials															
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Waste Type (select)	Container Type (select)	Vacuum Truck Size (select)	Liquid Quantity gallons	Soild Quantity cy	One Way Travel Distance to Disposal Site mi	One Way Travel Time to Disposal Site hr
1	Misc. Solid Hazardous Waste		2035	Process Plant	Stg1			LOM	Waste Mgmt & Disposal	Solid Bulk			22	250	5.0
2	Misc. Liquid Hazardous Waste		2035	Process Plant	Stg1			LOM	Waste Mgmt & Disposal	Liquid Bulk	Small (2,200 ga	26,671		250	5.0

- Notes:
- Use Other Demo & Equip Removal Sheet for tank removal
- Hazard Waste based on total storage capacity at site assuming all full at time of closure

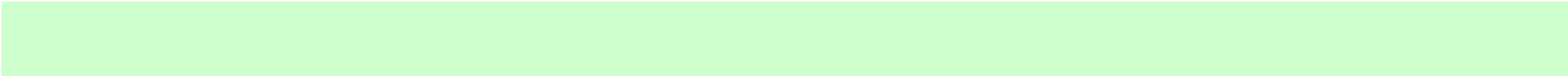
Waste Disposal - User Input - Hydrocarbon Contaminated Soils												
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Waste Type (select)	Disposal Method (select)	Quantity cy	Travel Distance to Offsite Disposal mi
1	Misc. Hydrocarbon Contaminated Soils		2035	Process Plant	Stg1			LOM	Waste Mgmt & Disposal	Off site	5	250

- Notes:
- Use Yards or Landfills Sheets for bioremediation facility reclamation

Closure Cost Estimate
Waste Disposal

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Waste Disposal - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Fees \$	Totals \$
Solid Waste - On Site	0	0	N/A	N/A	0
Solid Waste - Off Site	N/A	290,567	N/A	N/A	290,567
Solid Waste Total	0	290,567	0		290,567
Hazardous Materials	N/A	N/A	N/A	73,264	73,264
Hydrocarbon Contaminated Soils	0	0	N/A	4,419	4,419
TOTALS	0	290,567	0	77,683	368,250



Waste Disposal - Assumptions & Calculations	
Solid Waste Disposal Off site disposal assumes use of average rolloff dumpster [30 cy (m3), 10 ton (tonne)] On site disposal assumes use of small loader/truck fleet for haulage Average density for on site disposal = 2,600 lb/cy (1,540 kg/m3) For on site disposal only 1 truck is required unless total truck hours > 8, only 2 trucks unless total truck hours are > 16	
Hazardous Materials Disposal Assumes all hazardous materials are known Enter EITHER solid or liquid quantity each line. If container type = 55 gallon (200 liter) drum then solid waste hauling costs apply Average density for solids assumed to be 2,600 lb/cy (1,540 kg/m3) Vacuum truck sizes: small = 2,200 gal (~8,300 litres), large = 5,000 gal (~19,000 litres) Vacuum truck on site for 4 hours for each load	
Hydrocarbon Contaminated Soils Disposal Assumes all hazardous materials are known On site disposal assumes biopad treatment Exavation productivity =45 cy./hr (35 m3/hr) (Means Heavy Construction, 2006: 02315-424-0360)	

Waste Disposal - Solid Waste Disposal											
								Off-Site	On-Site		
	Description (required)	Waste Volume cy	Number of Off Site Dumpster Loads	Landfill Fleet Equipment	Landfill Fleet Productivity LCY/hr	Number of Trucks	Total Fleet Hours hrs	Total Dumpster Cost \$	Total Labor Cost \$	Total Equipment Cost \$	Total Waste Disposal Cost \$
1	Misc. Site Clean-Up	5	1				0	1,086	0	0	1,086
2	TWRSF - Solid Disposal	2,500	84				0	81,010	0	0	81,010
3	Process Plant Site Off-site Disposal following Demo	5,737	192				0	208,471	0	0	208,471
		8,242					0	290,567	0	0	290,567

Waste Disposal - Hazardous Materials Disposal	

Closure Cost Estimate
Waste Disposal

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Waste Disposal - LOM Cost Summary					
	Labor \$	Equipment \$	Materials \$	Fees \$	Totals \$
Solid Waste - On Site	0	0	N/A	N/A	0
Solid Waste - Off Site	N/A	290,567	N/A	N/A	290,567
Solid Waste Total	0	290,567	0		290,567
Hazardous Materials	N/A	N/A	N/A	73,264	73,264
Hydrocarbon Contaminated Soils	0	0	N/A	4,419	4,419
TOTALS	0	290,567	0	77,683	368,250

	Description (required)	Liquid Waste Volume gallons	Solid Waste Volume cy	Number of Truck Loads	Tons of Waste Tons	Pick-up Fees \$	Transport Fees \$	Disposal Fees \$	Total Hazardous Material Cost \$
1	Misc. Solid Hazardous Waste		22	2	28	0	2,582	8,668	11,250
2	Misc. Liquid Hazardous Waste	26,671		13	111	0	28,217	33,796	62,013
		26,671	22		139	0	30,799	42,464	73,264

Waste Disposal - Hydrocarbon Contaminated Soils									
	Description (required)	Quantity cy	Total Fleet Hours hrs	Treatment Cost \$	Transport Fees \$	Disposal Fees \$	Total Labor Cost \$	Total Equipment Cost \$	Total Waste Disposal Cost \$
1	Misc. Hydrocarbon Contaminated Soils	5	0	0	2,948	1,471	0	0	4,419
		5	0	0	2,948	1,471	0	0	4,419

Closure Cost Estimate
Misc. Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Fence Removal													
Costs													
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Length ft	Type (select type)	Labor Cost \$	Equipment Cost \$	Total Cost \$
1	Project Perimeter Fence	F01	2038	Infrastructure & Ancillary Facilities	Stg4			LOM	22,178	Chain link 8 ft -10 ft Removal	53,449	19,517	72,966
2	Gold Room Fence	F02	2035	Process Plant	Stg1			LOM	146	Chain link 8 ft -10 ft Removal	352	128	480
3	Substation Fence	F03	2035	Process Plant	Stg1			LOM	200	Chain link 8 ft -10 ft Removal	482	176	658
4	Well #3 Fence	F04	2038	Water Supply	Stg4			LOM	212	Chain link 8 ft -10 ft Removal	511	187	698
5	Well #4 Fence	F05	2038	Water Supply	Stg4			LOM	220	Chain link 8 ft -10 ft Removal	530	194	724
6	Well #5 Fence	F06	2038	Water Supply	Stg4			LOM	220	Chain link 8 ft -10 ft Removal	530	194	724
7	Well #6 Fence	F07	2038	Water Supply	Stg4			LOM	220	Chain link 8 ft -10 ft Removal	530	194	724
8	Well #7 Fence	F08	2038	Water Supply	Stg4			LOM	220	Chain link 8 ft -10 ft Removal	530	194	724
											56,914	20,784	77,698

Notes:

Fence Installation														
									Input		Costs			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Length ft	Type (select type)	Labor Cost \$	Equipment Cost \$	Material Cost \$	Total Cost \$
											0	0	0	0

Notes:

Culvert & Buried Pipe Removal														
									Input			Costs		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Length ft	Type (select type)	Location (select)	Labor Cost \$	Equipment Cost \$	Total Cost \$
1	Culvert 5	C05	2064	Roads	Stg5			LOM	50	24 in (600 mm) Diameter	On site	448	164	612
2	Culvert 6	C06	2064	Roads	Stg5			LOM	64	24 in (600 mm) Diameter	On site	573	210	783
3	Culvert 7	C07	2035	Roads	Stg1			LOM	26	24 in (600 mm) Diameter	On site	233	85	318
4	Culvert 8	C08	2035	Roads	Stg1			LOM	23	24 in (600 mm) Diameter	On site	206	75	281
5	Culvert 9	C09	2037	Roads	Stg3			LOM	59	24 in (600 mm) Diameter	On site	528	194	722
6	Culvert 10	C10	2037	Roads	Stg3			LOM	68	24 in (600 mm) Diameter	On site	609	223	832
7	Culvert 11	C11	2037	Roads	Stg3			LOM	65	24 in (600 mm) Diameter	On site	582	213	795
												3,179	1,164	4,343

Notes: All water supply and infrastructure pad pipelines are 18-inches deep and will be capped and abandoned in place.
Culverts 1-4, AND 12 will be left in place for stormwater control.

Surface Pipe Removal														
									Input			Costs		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Length ft	Type (select type)	Location (select)	Labor Cost \$	Equipment Cost \$	Total Cost \$

Closure Cost Estimate
Misc. Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

0	0	0
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Notes: All surface pipes, very minimal, are removed during Process Plant reclamation

Power Line and Substation Removal																	
									Input				Costs			Cost Breakdown	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phase	Location	Property	Cost Type	Power Line Length miles	Power Line Type (select)	Number of Substations #	Location (select)	Power Line Removal \$	Substation Removal \$	Total Cost \$	Labor Cost \$	Equipment Cost \$
1	Power Line 1	PL01	2038	Power Supply	Stg4			LOM	0.178574	Single Pole Powerlines	1	On site	7,694	30,880	38,574	7,715	30,859
2	Power Line 2	PL02	2038	Power Supply	Stg4			LOM	0.441504	Single Pole Powerlines		On site	19,023	0	19,023	3,805	15,218
3	Power Line 3	PL03	2038	Power Supply	Stg4			LOM	0.632075	Single Pole Powerlines		On site	27,235	0	27,235	5,447	21,788
4	Main Power Line (Overhead Transmission Line)	PL04	2038	Power Supply	Stg4			LOM	25.1	Single Pole Powerlines		On site	1,079,822	0	1,079,822	215,964	863,858
													1,133,774	30,880	1,164,654	232,931	931,723

Notes: If substation owned by operator, use Other Demo & Equipment Removal sheet
User may need to add line items in Foundations & Buildings for substation slab demolition and fence removal
Labor/Equipment costs assume approximately 80% of cost are equipment and 20% are labor related costs

Rip-Rap & Rock Lining															
									Input			Costs			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Area S.Y.	Type (select type)	Crew (select type)	Labor Cost \$	Equipment Cost \$	Material Cost \$	Total Cost \$
												0	0	0	0

Notes: Spillways not included in Rip-Rap due to lack of details. Best engineering estimate used in User Tab

Closure Cost Estimate
Exploration

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Exploration - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Hole Abandonment Costs	291	118	4	413
Subtotal Drillhole	291	118	4	413
Trench Backfilling Costs	0	0	N/A	0
Trench Revegetation Costs	0	0	0	0
Subtotal Trench	0	0	0	0
TOTALS	291	118	4	413

Exploration Drillhole Abandonment - User Input																
Facility Description									Hole Plugging							
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Hole Type (select)	Diameter in	Total Number of Holes	Max Holes Open at One Time	Casing to Remove ft	Average Depth of Hole ⁽¹⁾ ft bgs	Depth to Water ft bgs	Hole Plug Method (select)
1	Drill Holes		2035	Exploration	Stg1			LOM	Core	3.0	20.0	1.0	0.0	100.0	500.0	Grout + Backfill

Notes:
1. If core holes are pre-drilled, use length of hole below pre-drilled length
2. If Top Plug is selected, assumes maximum 1/2hr laborer time to place plug and backfill with cuttings/soil (including move-to/set up time).
Drilling depth will range between 40 -100 feet bgs.

Exploration Trenches - User Input																					
Facility Description									Trench Parameters					Backfill					Revegetation		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Trench Length ft	Trench Depth ft	Trench Bottom Width ft	Trench Sideslope Angle degrees	Additional Hrs for Walk-in ⁽¹⁾ hr	Backfill Material (select)	Cut Material Type (select)	Backfilling Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Seed Mix (select)	Mulch (select)	Fertilizer (select)

Notes:
1. Include one-way hours necessary to walk equipment in from drop-off point to work area
2. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Exploration Drillhole Abandonment														
	Description (required)	Vol/foot of depth ft3	Hole Plugging Material ⁽¹⁾	Total Grout Volume ⁽²⁾ cy	Total Cuttings Volume cy	Total Top Seal Volume ^(3,4) cy	Total Drillhole Abandon. Hours ^(6,7) hrs	Casing Removal Labor Cost ⁽⁵⁾ \$	Casing Removal Equipment Cost \$	Plugging Labor Cost \$	Plugging Equipment Cost \$	Plugging Material Cost \$	Top Seal Material Cost ^(2,3) \$	Total Cost ^(6,7) \$
1	Drill Holes	0.050	Cuttings	0.00	0.15	0.05	3	0	0	291	118	2	2	413
				0.0	0.2	0.1	3	0	0	291	118	2	2	413

Notes:
1. Assumes grout backfill from bottom of hole to 50' (15.24m) above static water level, up to 10' (3m) from top of hole
2. Assumes 25% loss to formation for grout backfill
3. If "Top Plug" hole plug method is used, assumes physical plug installed without backfill, grout or cement. Not available option for Nevada projects
4. Assumes top 10' (3 m) of hole is plugged with cement if "Grout Only", "Backfill + Grout", or "Cement Plug" hole plug method are chosen.
5. Assumes that a) casing is not cemented entire length, b) does not include temporary surface casing
6. Assumes minimum 1 hr per hole for abandonment (excluding move-to and casing removal)
7. Assumes fixed hours per hole for setup & tear-down and moving between holes (see Productivty Sheet) per drill hole (includes rig time if grouting required, labor crew only if cuttings backfill only)

Exploration - Assumptions & Calculations	
Dozing & Ripping/Scarifying Calculations	
Dozing: Dozing distance = 1/2 trench length or 400 ft (max push) whichever is less Assumes flat push (grade correction factor = 1)	
Revegetation: 10 ft added to trench width to account for revegetation under spoil pile	

Closure Cost Estimate
Exploration

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Exploration - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Hole Abandonment Costs	291	118	4	413
Subtotal Drillhole	291	118	4	413
Trench Backfilling Costs	0	0	N/A	0
Trench Revegetation Costs	0	0	0	0
Subtotal Trench	0	0	0	0
TOTALS	291	118	4	413

Productivity = Dozer Productivity x Grade Correction x Density Correction x Operator (0.75) x Material x Visibility x Job Efficiency (0.83)												
	Description (required)	Trench Backfill Volume LCY (BCY+30%)	Dozer Push Distance ft	Equipment Productivity yd3/hr	Dozing Material	Density Correction	Backfilling Fleet	Corrected Hourly Productivity yd3/hr	Total Dozer Hours hrs	Trench Backfill Labor Cost \$	Trench Backfill Equipment Cost \$	Total Trench Backfill Cost \$
		0							0	0	0	0

Exploration Trenches Revegetation Costs						
	Description (required)	Surface Area acres	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revgetation Material Cost \$	Total Revegetation Cost \$
		0.00	0	0	0	0

Closure Cost Estimate
Expl. Roads & Pads

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Exploration Roads & Pads - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	1,118	1,889	N/A	3,007
Cover Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	1,118	1,889		3,007
Revegetation Cost	1,020	388	3,086	4,494
TOTALS	2,138	2,277	3,086	7,501

Maximum grade allowed for dozer: 30 %
Maximum grade allowed for grader: 10 %

Exploration Roads & Pads - User Input																								
Facility Description									Physical (1) - MANDATORY										User Overrides		Growth Media			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Ground Slope at Toe % grade	Ungraded Slope _H:1V	Cut Slope degrees	Road + Drill Pad Length ft	Road Width ft	Number of Drill Pads	Individual Sump Volume cy	Drill Pad Width ft	Drill Pad Length ft	Slope Replacement Percent %	Regrade Volume (if calculated elsewhere) cy	Disturbed Area (if calculated elsewhere) acres	Growth Media Thickness in	Haul Distance to Placement Location ft	Slope to Placement Location % grade	
1	Exploration Surface Disturbance		2035	Exploration	Stg1			LOM	5.0	1.3	53.0	10,560	12.0	65	60	30.0	30	100%		10.00	12	100	0.0	

Notes:
1. All Physical parameters must be input even if manual overrides for volume or area are used.
2. Slope replacement refers to the percentage of cut volume replaced during regrading.
3. If Slope from facility to borrow source is >20, downhill travel time may be underestimated due to limitation of uphill travel time curves and downhill speed tables from CAT Handbook (see Productivity Sheet)
4. Sump volume will be applied to all roads on slopes <20%. On slopes >20% pad width (i.e. cut volume) should be adequate to account for sump volume.
Growth media will be used to cover, but it will be sourced from the berms and local disturbance for the drilling effort.

Exploration Roads & Pads - User Input (cont.)															
You must fill in ALL green cells and relevant blue cells in this section for each road															
		Grading				Growth Media					Revegetation				
	Description (required)	Regrade Material Condition (select)	Cut Material Type (select)	Recontouring Equipment Fleet (select)	Additional Hrs for Walk-in ⁽¹⁾	Growth Media Material Type (select)	Growth Media Placement Equipment Fleet (select)	Cycle Time Override (user override)	Maximum Fleet Size (user override)	Additional Hrs for Walk-in ⁽¹⁾	Seed Mix (select)	Mulch (select)	Fertilizer (select)	Scarifying/ Ripping? (select)	Ripping Fleet (select)
1	Exploration Surface Disturbance	1	Alluvium	Small Dozer							Mix 1	None	None	No	Small Dozer

Notes:
1. Include one-way hours necessary to walk equipment in from drop-off point to work area
2. Material Types are used for density correction based on material densities in Caterpillar Performance Handbook material density table

Expl. Roads & Pads - Assumptions & Calculations	
Regrading Volume and Footprint Volume	
Will not allow dozer for slopes greater than 30% For dozer regrading push distance = road width Assumes dozer push is uphill Assumes minimum push distance of 100 ft	
Swell Factor: 1.2	
Ripping/Scarifying Calculations	
Minimum 1 hr ripping/scarifying time per area Number of passes = Final slope length + Grader width Travel distance = Number of passes x Road length Total hours = (Travel distance ÷ Grader productivity) + (Number of passes x Grader maneuver time) For dozer regrading assumes push distance = 3 x road width	
Revegetation Calculations	
Minimum of 1 acre crew time per area	

Exploration Roads & Pads - Regrading Costs										
	Description (required)	Total Road Length ft	Total Drill Pad Length ft	Regrading Volume cy	Recontouring Fleet	Equipment Productivity cy/hr	Total Equipment Hours ⁽¹⁾ hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Regrading Cost \$
1	Exploration Surface Disturbance	8,610	1,950	4,699	D7E	110	19	1,118	1,889	3,007
		8,610	1,950	4,699			19	1,118	1,889	3,007

(1) Includes walk-in time based on distance and travel speed (see Productivity sheet for speeds)

Closure Cost Estimate
Expl. Roads & Pads

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Exploration Roads & Pads - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Grading Costs	1,118	1,889	N/A	3,007
Cover Placement Cost	0	0	N/A	0
Ripping/Scarifying Cost	0	0	N/A	0
Subtotal Earthworks	1,118	1,889		3,007
Revegetation Cost	1,020	388	3,086	4,494
TOTALS	2,138	2,277	3,086	7,501

Exploration Roads & Pads - Growth Media Costs									
	Description (required)	Growth Media Volume cy	Growth Media Replacement Fleet	Fleet Productivity LCY/hr	Number of Trucks/ Scrapers	Total Fleet Hours hrs	Total Labor Cost \$	Total Equipment Cost \$	Total Growth Media Cost \$
1	Exploration Surface Disturbance	5,994	Material Type!	Material Type!	Material Type!	Material Type!	0	0	0
		5,994				0	0	0	0

Expl. Roads & Pads - Scarify/Revegetation Costs											
	Description (required)	Surface Area acres	Ripping/ Scarifying Fleet	Ripping Hours hrs	Ripping Labor Costs \$	Ripping Equipment Cost \$	Total Ripping Costs \$	Revegetation Labor Cost \$	Revegetation Equipment Cost \$	Revgetation Material Cost \$	Total Revegetation Cost \$
1	Exploration Surface Disturbance	10.00		0	0	0	0	1,020	388	3,086	4,494
		10.00		0	0	0	0	1,020	388	3,086	4,494

Closure Cost Estimate
Monitoring

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Reclamation Monitoring & Maintenance - LOM Cost Summary				
	Labor \$	Equipment \$	Lab & Materials \$	Totals \$
Reclamation Monitoring	719,477	47,346	N/A	766,823
Water Quality Monitoring	266,792	26,572	350,805	644,168
Pump Costs	N/A	0	N/A	0
TOTAL	986,269	73,917	350,805	1,410,991

Reclamation Monitoring														
	Description (required)	Staff	ID Code	Construction Year ⁽¹⁾	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Number of Staff	Number of Trucks	Hrs/Day	Days/Year	Number of Years
1	Fieldwork	Field Geologist/Engineer		2039	Monitoring	Stg4			LOM	2	1	12	14	7
2	Reporting	Field Geologist/Engineer		2039	Monitoring	Stg4			LOM	2	1	12	14	7

- Notes:
1. Reclamation monitoring of covers.

2. Vegetation monitoring, 2 weeks per trip, includes noxious weed monitoring

3. Post closure vegetation monitoring consists of three consecutive years immediately following construction, and one final inspection five years after construction. Vegetation monitoring to occur closure years 2, 3, 4, 5, 6, 7 and 8 (total of seven years).

Water and Rock Sample Analysis																		
	Description (required)	Analysis Type	ID Code	Construction Year ⁽¹⁾	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Samples #	Events/Year #	No. Years #	First Sample Year closure year	No. of Samplers #	Days/Event #	Hrs/Day #	Reporting Hours/Event #	Comments
1	NDEP Profile I Water (Frist 5 years)	Water Analysis (Profile I) (1)		2035	Monitoring	Stg4			LOM	15	4	5	1	1	2	12	12	Quarterly sampling of 2 GW monitoring wells to be conducted for 30 years post-closure
2	NDEP Profile I Water (Year 6-15 years)	Water Analysis (Profile I) (1)		2040	Monitoring	Stg4			LOM	15	2	10	6	1	2	12	12	Semi-annual sampling year 6-15
3	NDEP Profile I Water (Year 16-30 years)	Water Analysis (Profile I) (1)		2050	Monitoring	Stg4			LOM	15	1	15	16	1	2	12	12	Annual sampling for final 15 years

- Notes:
- (1) This is the first year that the monitoring commitment is made (e.g. included in permit or approved monitoring plan)

(2) Monitoring may not extend beyond the maximum number of schedule years (100)

(3) First Sample Year can not be before first closure year shown in schedule (~10).

This includes routine inspection of E-Cell and perimeter fence while facilities remain.
Staged sampling, quarterly first 5 years, semi-annual last 25 years

Groundwater Monitoring Pump Costs															
	Description (required)	ID Code	Construction Year ⁽¹⁾	Facility/Activity Type	Phases	Locations	Properties	Cost Type	No. of units	Replacement period (1) (yrs)	Replacement Period Start Year (closure year)	Replacement Period End Year (closure year)	Pump Cost	# Monitor Yrs in Schedule	Total \$

- Notes:
- (1) Replacement period = frequency of pump replacement

Reclamation Monitoring						
	Description (required)	Labor Rate \$/hr	Equipment Rate \$/hr	Labor Cost \$	Equipment Cost \$	Total \$
1	Fieldwork	152.95	20.13	359,738	23,673	383,411
2	Reporting	152.95	20.13	359,738	23,673	383,411
				719,477	47,346	766,823

Water and Rock Sample Analysis									
	Description (required)	Analysis Cost \$/sample	Supplies \$/sample	Labor Cost \$	Equipment Cost \$	Material Cost \$	Lab Cost \$	Reporting Cost \$	Total \$
1	NDEP Profile I Water (Frist 5 years)	419.22	6.00	60,307	9,662	1,799	125,766	36,708	234,243
2	NDEP Profile I Water (Year 6-15 years)	419.22	6.00	60,307	9,662	1,799	125,766	36,708	234,243
3	NDEP Profile I Water (Year 16-30 years)	419.22	6.00	45,230	7,247	1,349	94,325	27,531	175,682
				165,845	26,572	4,948	345,857	100,947	644,168

Closure Cost Estimate
Recl. Maint

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Reclamation Maintenance - Cost Summary				
	Labor	Equipment	Lab & Materials	Totals
Revegetation Maintenance	4,396	1,671	13,299	19,366
Cover Maintenance	0	0	N/A	0
Growth Media Maintenance	30,281	90,842	N/A	121,123
TOTAL	34,677	92,513	13,299	140,489

Revegetation Maintenance																		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Revegetation Surface Area (user override)	% Area Requiring Reseeding	Seed Mix (select)	Area Requiring Reseeding acres	Seed \$/acres	Labor \$/acres	Equipment \$/acres	Labor Cost \$	Equipment Cost \$	Material Cost \$
1	Revegetation Maintenance		2035	Monitoring	Stg1			LOM	431	10%	Mix 1	43.1	308.55	102.00	38.76	4,396	1,671	13,299
Total Revegetation Matinenance																4,396	1,671	13,299

Notes: 1) Calculated based on cost type and current filters - (See Reclamation Quantities sheet)
2) Will use values from Reclamation Quantities sheet if user does not override
3) Surface area is NOT the same as footprint disturbance area typically used for permitting purposes.

	Total Cover Volume cy	Average Placement Cost \$/cy
Information from Reclamation Quantities Sheet:	119,165	6.20

Cover Maintenance																	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Total Cover Volume (1) (user override)	% Volume Requiring Maintenance	Average Placement Cost (1) (user override)	Volume Requiring Replacement cy	Labor (assume: 25%) \$/cy	Equipment (assume: 75%) \$/cy	Labor Cost \$	Equipment Cost \$	Total \$
Total Cover Maintenance															0	0	0

Notes: 1) Will use values from Reclamation Quantities sheet if user does not override

	Total GM Volume cy	Average Placement Cost \$/cy
Information from Reclamation Quantities Sheet:	242,124	2.16

Growth Media Maintenance																	
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Total Volume (user override)	% Volume Requiring Maintenance	Average Placement Cost (user override)	Volume Requiring Replacement cy	Labor (assume: 25%) \$/cy	Equipment (assume: 75%) \$/cy	Labor Cost \$	Equipment Cost \$	Total \$
1	Erosion Maintenance		2035	Monitoring	Stg1			LOM	627581	10%	1.93	62,758	0.48	1.45	30,281	90,842	121,123
Total Growth Media Maintenance															30,281	90,842	121,123

Notes: 1) Will use values from Reclamation Quantities sheet if user does not override

Closure Cost Estimate
Constr. Mgmt

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Construction Management & Road Maintenance - LOM Cost Summary				
	Labor \$	Equipment \$	Materials \$	Totals \$
Construction Management	320,742	70,858	N/A	391,600
Road Maintenance	23,002	50,377	N/A	73,379
Water Fees	N/A	N/A	0	0
TOTAL	343,744	121,235	0	464,979

Construction Management														
									Construction Management Staff			Construction Support		
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Duration mo.	Hours/ Month hrs	Number of Supervisors	Temporary Office Units	Temporary Toilet Units	First Construction Year closure year
1	Stage 1 Construction Management		2035	Monitoring	Stg1			LOM	6	160	1	0	0	2,035
2	Stage 2 Construction Management		2036	Monitoring	Stg2			LOM	6	160	1	0	0	2,036
3	Stage 3 Construction Management		2037	Monitoring	Stg3			LOM	6	160	1	0	0	2,037
4	Stage 4 Construction Management		2038	Monitoring	Stg4			LOM	3	160	1	0	0	2,038
5	Stage 5 Construction Management		2064	Monitoring	Stg5			LOM	1	160	1	0	0	2,039

Notes:

Road Maintenance																			
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Water Truck (select)	Grader (select)	Fleet Size number	Duration mo.	First Maintenance Year closure year	Hours/ Month hrs	Equipment Fleet	Fleet Hours hrs	Labor Cost \$	Equipment Cost \$	Totals \$
1	Stage 1 Road Maintenance		2035	Roads	Stg1			LOM		Small	1	12	2,025	8	14M	96	5,750	12,594	18,345
2	Stage 2 Road Maintenance		2036	Roads	Stg2			LOM		Small	1	12	2,026	8	14M	96	5,750	12,594	18,345
3	Stage 3 Road Maintenance		2037	Roads	Stg3			LOM		Small	1	12	2,027	8	14M	96	5,750	12,594	18,345
4	Stage 4 Road Maintenance		2038	Roads	Stg4			LOM		Small	1	12	2,028	8	14M	96	5,750	12,594	18,345
																	23,002	50,377	73,379

Notes:

Water Fees														
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Gallons/Day	Days/ Month	Duration mo.	First Year closure year	Cost/ Gallon \$	Totals \$
														0

Notes:

Construction Management										
		Construction Management Staff				Construction Support				
	Description (required)	Supervisor Rate \$/hr	Labor Cost \$	Equipment Cost ⁽¹⁾ \$	Total \$	Office Rental Rate \$/mo	Toilet Rental Rate \$/mo	Generator Cost \$/mo	Total \$	Totals Construction Mgmt \$
1	Stage 1 Construction Management	91.12	87,475	19,325	106,800	0	0	0	0	106,800
2	Stage 2 Construction Management	91.12	87,475	19,325	106,800	0	0	0	0	106,800
3	Stage 3 Construction Management	91.12	87,475	19,325	106,800	0	0	0	0	106,800
4	Stage 4 Construction Management	91.12	43,738	9,662	53,400	0	0	0	0	53,400
5	Stage 5 Construction Management	91.12	14,579	3,221	17,800	0	0	0	0	17,800
		456	320,742	70,858	391,600					391,600

Closure Cost Estimate
Constr. Mgmt

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
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Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Notes: Office rental assumes only 1 generator required for every 4 trailers

Closure Cost Estimate
Closure Planning

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Closure Plan Management - LOM Cost Summary	
	Totals
	\$
Technical Studies	150,000
Engineering	150,000
Permitting	100,000
TOTALS	400,000

Closure Plan Studies and Reporting											
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Type (select type)	Total Cost \$	Comments
1	Closure Planning		2035	Tailings Storage Facility	Stg1			LOM		150,000	
										150,000	

Notes:

Closure Plan Engineering											
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Type (select type)	Total Cost \$	Comments
1	Closure Design		2035	Tailings Storage Facility	Stg1			LOM		150,000	
										150,000	

Notes:

Closure Plan Permitting											
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Type (select type)	Total Cost \$	Comments
1	Closure Permitting		2035	Tailings Storage Facility	Stg1			LOM		100,000	
										100,000	

Notes:

Closure Cost Estimate
G & A

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
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Model Version: Version 2.0
Cost Data: User Data
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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

General & Administration - LOM Cost Summary	
	Totals
	\$
Property Holding Costs	0
Security & Maintenance	0
Administration	0
TOTALS	0

Property Holding Costs														
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Type (select type)	Frequency (select type)	Cost/ Payment \$	Number of Payments	Total Cost \$	Comments

Notes:

Security and Maintenance														
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Type (select type)	Frequency (select type)	Cost/ Payment \$	Number of Payments	Total Cost \$	Comments

Notes:

Administration														
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Type (select type)	Frequency (select type)	Cost/ Payment \$	Number of Payments	Total Cost \$	Comments

Notes:

Closure Cost Estimate
Other User

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
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Cost Data: User Data
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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Other Cost Items Calculated Elsewhere																
	Description (required)	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Quantity	Units	Total Capital Cost \$	Material Unit Cost \$	Labor Unit Cost \$	Equipment/ Operating Unit Cost \$	Total Cost \$	Comments
1	Phase II TSF - 60 mil double-sided textured LLDPE geomembran	T01	2036	Tailings Storage Facility	Stg2			LOM	2,258,150	square feet		0.40	0.14	0.02	1,257,790	Costs obtained from Agru Cost Sheet
2	Phase II TSF - 12 oz/yd^2 non-woven geotextile Stg2	T01	2036	Tailings Storage Facility	Stg2			LOM	2,258,150	square feet		0.20	0.03	0.04	609,701	Costs obtained from Agru Cost Sheet
3	Phase II Drill&Blast - Cover 1 (TSF Purposes) Stg2	T01	2036	Tailings Storage Facility	Stg2			LOM	100,361	yd^3				1.10	110,397	0.94/t as provided by RESPEC
4	Phase II TSF - 60 mil double-sided textured LLDPE geomembran	T01	2037	Tailings Storage Facility	Stg3			LOM	752,717	square feet		0.40	0.14	0.02	419,263	Costs obtained from Agru Cost Sheet
5	Phase II TSF - 12 oz/yd^2 non-woven geotextile Stg3	T01	2037	Tailings Storage Facility	Stg3			LOM	752,717	square feet		0.20	0.03	0.04	203,234	Costs obtained from Agru Cost Sheet
6	Phase II Drill&Blast - Cover 1 (TSF Purposes) Stg3	T01	2037	Tailings Storage Facility	Stg3			LOM	33,454	yd^3				1.10	36,799	0.94/t as provided by RESPEC
7	Spillway for TSF	T01	2037	Tailings Storage Facility	Stg3			LOM			100,000				100,000	Estimate
8	Spillway for TWRSF	WD01	2035	Temporary Waste Rock St	Stg1			LOM			50,000				50,000	Estimate
											150,000	1,806,520	517,869	312,794	2,787,184	

Notes:
Capital cost is lump sum (i.e. not multiplied by the quantity).
Material, Labor and Equipment/Operating costs are unit costs (i.e. multiplied by the quantity).
Costs for Drained Gravel and Drainage Layer do not include crushing/screening equipment costs.
Material costs for the drainage layer is assumed to be the same as the drained gravel.
Spillway for TSF - Estimate of \$100K included as Capital Cost
Spillway for TWRSF - Estimate of \$25K included as Capital Cost

Closure Cost Estimate
Human Resources

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Human Resources - LOM Cost Summary	
	Totals
	\$
Salaries & Benefits	0
Severance & Relocation	0
TOTALS	0

Human Resources - Salary & Benefits																							
	Job Description (required)	Avg. Annual Salary (incl. benefits) \$	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Closure Year -10 #	Closure Year -9 #	Closure Year -8 #	Closure Year -7 #	Closure Year -6 #	Closure Year -5 #	Closure Year -4 #	Closure Year -3 #	Closure Year -2 #	Closure Year -1 #	Closure Year 1 #	Closure Year 2 #	Closure Year 3 #	Closure Year 4 #
SUBTOTAL (\$)										-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

Human Resources - Severance & Outplacement Benefits																							
	Job Description	Severance & Outplacement Cost \$	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Closure Year -10 #	Closure Year -9 #	Closure Year -8 #	Closure Year -7 #	Closure Year -6 #	Closure Year -5 #	Closure Year -4 #	Closure Year -3 #	Closure Year -2 #	Closure Year -1 #	Closure Year 1 #	Closure Year 2 #	Closure Year 3 #	Closure Year 4 #
SUBTOTAL (\$)										0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Notes:

1. Assumes Severance + Outplacement

Closure Cost Estimate
Mobilization

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Mobilization - LOM Cost Summary				
	Labor \$	Equipment \$	Misc. & Transport \$	Totals \$
Mobilization	104,146	19,772	185,918	309,836

Cost type: LOM

Budget Year:	2021
First Year of Operation:	2009
Closure Year 1:	2035
Closure Period:	4 years
Post Closure Period:	26 years

Last Equipment Use update:
07-Sep-2022 15:54 (to update, go to Equip Use sheet and select Refresh Schedule button)

Mobilization/Demobilization																										
	Equipment	ID Code	Construction Year	Facility/Activity Type	Phases	Locations	Properties	Cost Type	Total LOM Hours hrs	Minimum hrs/yr	Maximum hrs/yr	Available Use hrs/yr	Actual Use (if less than available) hrs/yr	Minimum units/year	Maximum units/year	Units Mobilized #	Transport Method (select)	Total Load/ Secure Unload/ Secure Time hrs	Assembly/ Disassembly ⁽¹⁾ Total \$	Assembly/ Disassembly Override Total \$	Equipment Weight tons	Road Distance (return trip) mi	Ship/Barge Distance (return trip) mi	Rail Distance (return trip) mi	Air Distance (return trip) mi	Comments
1	D7E		2035	Mobilization	Stg1			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
2	D7E		2035	DeMobilization	Stg1			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
3	D7E		2036	Mobilization	Stg2			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
4	D7E		2036	DeMobilization	Stg2			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
5	D7E		2037	Mobilization	Stg3			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
6	D7E		2037	DeMobilization	Stg3			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
7	D7E		2038	Mobilization	Stg4			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
8	D7E		2038	DeMobilization	Stg4			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
9	D7E		2064	Mobilization	Stg5			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
10	D7E		2064	DeMobilization	Stg5			LOM	2,578	90	891	1,920		1	1	1	Road only	16.00	0		28.3	200				
11	D9T		2036	Mobilization	Stg2			LOM	946	946	946	1,920		1	1	1	Road only	16.00	0		52.5	200				
12	D9T		2036	DeMobilization	Stg2			LOM	946	946	946	1,920		1	1	1	Road only	16.00	0		52.5	200				
13	14M		2035	Mobilization	Stg1			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
14	14M		2035	DeMobilization	Stg1			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
15	14M		2036	Mobilization	Stg2			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
16	14M		2036	DeMobilization	Stg2			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
17	14M		2037	Mobilization	Stg3			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
18	14M		2037	DeMobilization	Stg3			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
19	14M		2038	Mobilization	Stg4			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
20	14M		2038	DeMobilization	Stg4			LOM	384	96	96	1,920		1	1	1	Road only	16.00	0		26.4	200				
21	325F		2035	Mobilization	Stg1			LOM	6,046	398	2,844	1,920		1	2	2	Road only	32.00	0		28.2	200				
22	325F		2035	DeMobilization	Stg1			LOM	6,046	398	2,844	1,920		1	2	2	Road only	32.00	0		28.2	200				
23	325F		2037	Mobilization	Stg3			LOM	6,046	398	2,844	1,920		1	2	1	Road only	16.00	0		28.2	200				
24	325F		2037	DeMobilization	Stg3			LOM	6,046	398	2,844	1,920		1	2	1	Road only	16.00	0		28.2	200				
25	325F		2038	Mobilization	Stg4			LOM	6,046	398	2,844	1,920		1	2	1	Road only	16.00	0		28.2	200				
26	325F		2038	DeMobilization	Stg4			LOM	6,046	398	2,844	1,920		1	2	1	Road only	16.00	0		28.2	200				
27	325F		2064	Mobilization	Stg5			LOM	6,046	398	2,844	1,920		1	2	1	Road only	16.00	0		28.2	200				
28	325F		2064	DeMobilization	Stg5			LOM	6,046	398	2,844	1,920		1	2	1	Road only	16.00	0		28.2	200				
29	988K		2035	Mobilization	Stg1			LOM	11,652	84	7,092	1,920		1	4	1	Road only	64.00	0		55.6	200				
30	988K		2035	DeMobilization	Stg1			LOM	11,652	84	7,092	1,920		1	4	1	Road only	64.00	0		55.6	200				
31	988K		2036	Mobilization	Stg2			LOM	11,652	84	7,092	1,920		1	4	4	Road only	64.00	0		55.6	200				
32	988K		2036	DeMobilization	Stg2			LOM	11,652	84	7,092	1,920		1	4	4	Road only	64.00	0		55.6	200				
33	988K		2037	Mobilization	Stg3			LOM	11,652	84	7,092	1,920		1	4	2	Road only	64.00	0		55.6	200				
34	988K		2037	DeMobilization	Stg3			LOM	11,652	84	7,092	1,920		1	4	2	Road only	64.00	0		55.6	200				
35	988K		2038	Mobilization	Stg4			LOM	11,652	84	7,092	1,920		1	4	1	Road only	64.00	0		55.6	200				
36	988K		2038	DeMobilization	Stg4			LOM	11,652	84	7,092	1,920		1	4	1	Road only	64.00	0		55.6	200				
37	740C		2036	Mobilization	Stg1			LOM	11,652	84	7,092	1,920		1	4	1	Road only	64.00	0		39.2	200				
38	740C		2035	DeMobilization	Stg1			LOM	11,652	84	7,092	1,920		1	4	1	Road only	64.00	0		39.2	200				
39	740C		2036	Mobilization	Stg2			LOM	11,652	84	7,092	1,920		1	4	4	Road only	16.00	0		39.2	200				
40	740C		2036	DeMobilization	Stg2			LOM	11,652	84	7,092	1,920		1	4	4	Road only	16.00	0		39.2	200				
41	740C		2037	Mobilization	Stg3			LOM	11,652	84	7,092	1,920		1	4	2	Road only	32.00	0		39.2	200				
42	740C		2037	DeMobilization	Stg3			LOM	11,652	84	7,092	1,920		1	4	2	Road only	32.00	0		39.2	200				
43	740C		2038	Mobilization	Stg4			LOM	11,652	84	7,092	1,920		1	4	1	Road only	16.00	0		39.2	200				
44	740C		2038	DeMobilization	Stg4			LOM	11,652	84	7,092	1,920		1	4	1	Road only	16.00	0		39.2	200				

Equipment Information Sources: CAT Performance Handbook ed. 46; CAT website (http://www.cat.com/en_US/products/new/) (as of June 2017)
Komatsu Equipment Company (<http://www.komatsuamerica.com/equipment/>)
Hitachi Construction Machinery Company (<https://www.hitachiconstruction.com/>)
Liebherr (<https://www.liebherr.com/en/nld/products/mobile-and-crawler-cranes/mobile-cranes/ltm-mobile-cranes/>)
Tadano Ltd. (<https://www.tadano.com/products/productstypes/C/>)

NOTES:

(1) Only demobilization required for Shovels and Trucks larger than 777.

USER NOTES:

(1) Haul distance is from Bosie, ID to site, which is approximately 100 miles each way

(2) SLR assumed that the miscellaneous and transport costs in cell E12 should be \$0.

(3) SLR assumed an additional \$500 miscellaneous cost per piece of equipment mobilized to account for additional support equipment and facilities

Minimum number of road lanes (one direction) on route:	

Road Transportation - Haulers and Escort Vehicles									One-way road transport costs										Total Transport Costs					
Equipment	Road Transport Method	Units Mobilized #	Required Number of Haulers per Piece #	Required Number of Pilot Cars per Hauler #	Pilot Car Override #	Hours of travel @ 80 mph hrs	Deadhead Distance mi	Miscellaneous Costs per Hauler ¹ \$	Load/Secure Unload/Secure Labor Cost \$	Escort Vehicle Labor Cost \$	Hauler Labor Cost \$	Load/Secure Unload/Secure Equipment Cost \$	Escort Vehicle Equipment Cost \$	Hauler Equipment Cost \$	Total Labor Costs \$	Total Equipment Costs \$	Total Miscellaneous Costs \$	Total Costs \$	Total Assembly/ Disassembly Cost \$	Road Transport Cost \$	Ship/Barge Transport (cost/lb/mi)	Rail Transport (cost/lb/mi)	Air Transport (cost/lb/mi)	Total Mobilization/ Demobilization Cost \$
1 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
2 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
3 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
4 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
5 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
6 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
7 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
8 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
9 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
10 D7E	hauler	1	1	0		1.25	100	500	942	0	0	99	0	169	942	268	500	1,710	0	1,710	0	0	0	1,710
11 D9T	hauler	1	1	0		1.25	100	500	942	0	0	205	0	192	942	397	500	1,839	0	1,839	0	0	0	

Closure Cost Estimate
Mobilization

20	14M	hauler	1	1	0		1.25	100	500	958	0	0	131	0	169	958	300	500	1,758	0	1,758	0	0	0	1,758
21	325F	hauler	2	1	0		1.25	100	500	3,852	0	0	181	0	337	3,852	518	1,000	5,370	0	5,370	0	0	0	5,370
22	325F	hauler	2	1	0		1.25	100	500	3,852	0	0	181	0	337	3,852	518	1,000	5,370	0	5,370	0	0	0	5,370
23	325F	hauler	1	1	0		1.25	100	500	963	0	0	90	0	169	963	259	500	1,722	0	1,722	0	0	0	1,722
24	325F	hauler	1	1	0		1.25	100	500	963	0	0	90	0	169	963	259	500	1,722	0	1,722	0	0	0	1,722
25	325F	hauler	1	1	0		1.25	100	500	963	0	0	90	0	169	963	259	500	1,722	0	1,722	0	0	0	1,722
26	325F	hauler	1	1	0		1.25	100	500	963	0	0	90	0	169	963	259	500	1,722	0	1,722	0	0	0	1,722
27	325F	hauler	1	1	0		1.25	100	500	963	0	0	90	0	169	963	259	500	1,722	0	1,722	0	0	0	1,722
28	325F	hauler	1	1	0		1.25	100	500	963	0	0	90	0	169	963	259	500	1,722	0	1,722	0	0	0	1,722
29	988K	hauler	1	1	0		1.25	100	500	963	0	0	196	0	192	963	388	500	1,851	0	1,851	0	0	0	1,851
30	988K	hauler	1	1	0		1.25	100	500	963	0	0	196	0	192	963	388	500	1,851	0	1,851	0	0	0	1,851
31	988K	hauler	4	1	0		1.25	100	500	15,409	0	0	784	0	769	15,409	1,553	2,000	18,962	0	18,962	0	0	0	18,962
32	988K	hauler	4	1	0		1.25	100	500	15,409	0	0	784	0	769	15,409	1,553	2,000	18,962	0	18,962	0	0	0	18,962
33	988K	hauler	2	1	0		1.25	100	500	7,704	0	0	392	0	385	7,704	777	1,000	9,481	0	9,481	0	0	0	9,481
34	988K	hauler	2	1	0		1.25	100	500	7,704	0	0	392	0	385	7,704	777	1,000	9,481	0	9,481	0	0	0	9,481
35	988K	hauler	1	1	0		1.25	100	500	3,852	0	0	196	0	192	3,852	388	500	4,740	0	4,740	0	0	0	4,740
36	988K	hauler	1	1	0		1.25	100	500	3,852	0	0	196	0	192	3,852	388	500	4,740	0	4,740	0	0	0	4,740
37	740C	hauler	1	1	0		1.25	100	500	2,437	0	0	150	0	169	2,437	319	500	3,256	0	3,256	0	0	0	3,256
38	740C	hauler	1	1	0		1.25	100	500	2,437	0	0	150	0	169	2,437	319	500	3,256	0	3,256	0	0	0	3,256
39	740C	hauler	4	1	0		1.25	100	500	2,437	0	0	599	0	674	2,437	1,273	2,000	5,710	0	5,710	0	0	0	5,710
40	740C	hauler	4	1	0		1.25	100	500	2,437	0	0	599	0	674	2,437	1,273	2,000	5,710	0	5,710	0	0	0	5,710
41	740C	hauler	2	1	0		1.25	100	500	2,437	0	0	300	0	337	2,437	637	1,000	4,074	0	4,074	0	0	0	4,074
42	740C	hauler	2	1	0		1.25	100	500	2,437	0	0	300	0	337	2,437	637	1,000	4,074	0	4,074	0	0	0	4,074
43	740C	hauler	1	1	0		1.25	100	500	609	0	0	150	0	169	609	319	500	1,428	0	1,428	0	0	0	1,428
44	740C	hauler	1	1	0		1.25	100	500	609	0	0	150	0	169	609	319	500	1,428	0	1,428	0	0	0	1,428
TOTAL																								154,918	

NOTES:
(1) Only demobilization required for Shovels and Trucks larger than 777.
(2) Miscellaneous costs could include, fees, permits, ancillary equipment, etc.)

Default Escort Car Requirements (based on trailer width)	
Exceeds 12 feet (on 2 and 3 lane roads)	1 Front
Exceeds 14 feet (on 2 and 3 lane roads)	1 Front/1 Rear
Exceeds 16 feet (on 2 and 3 lane roads)	2 Front/1 Rear
Exceeds 14 feet (on 4 or more lane roads)	1 Rear
Exceeds 16 feet (on 4 or more lane roads)	1 Front/1 Rear

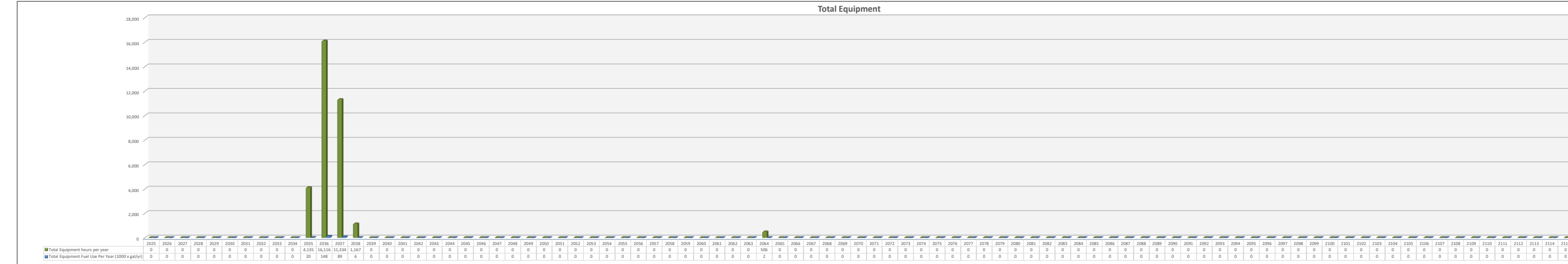
Source: Nevada Department of Transportation (<https://www.nevadadot.com/doing-business/commercial-vehicles/commercial-vehicle-permits/escort-information-and-guidelines>)

Assembly/Disassembly Source:	N/A
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Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Cost type:	LQM
Budget Year:	2021
First Year of Operation:	2025
Closure Year 1:	2035
Closure Period:	4
Post Closure Period:	26

ID Code Filter:	
FacilityType Filter:	
Phase Filter:	
Location Filter:	
Property Filter:	

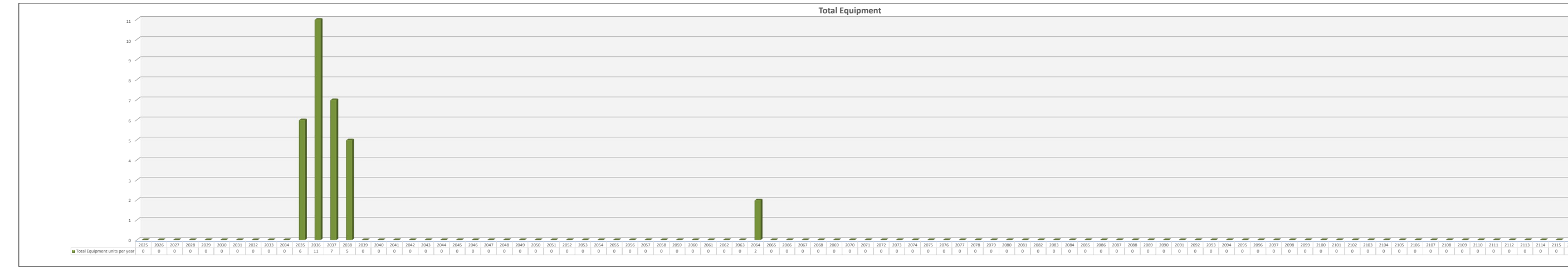
[illegible][illegible]

Duesen	LCM Equipment	Maximum Hull Fleet Size	Plan Year		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
			Closure Year		-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
			Calendar Year		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377																																																																																																																																																																																																																																											
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Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Cost type:	LQM
Budget Year:	2021
First Year of Operation:	2025
Closure Year 1:	2035
Closure Period:	4
Post Closure Period:	26

ID Code Filter:	
FacilityType Filter:	
Phase Filter:	
Location Filter:	
Property Filter:	

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Closure Cost Estimate
Reclamation Quantities

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Reclamation Quantity Summary - LOM																									
																Unit Costs									
	Description	Total Regrade or Haul Volume cy	Total Regrade or Haul Cost \$	Total Backfill/Berm Volume cy	Backfill Cost \$	Total Cover Volume cy	Cover Placement Cost \$	Total Growth Media Volume cy	Growth Media Placement Cost \$	Revegetation Surface Area acres	Total Scarify Cost \$	Total Revetation Cost \$	Geosynthetics ft2	Geosynthetics Cost \$	TOTALS \$	Regrade Unit Cost \$/CY	Backfill or Berm Construction Unit Cost \$/CY	Material Haul Unit Cost \$/CY	Cover Unit Cost \$/CY	Growth Media Unit Cost \$/CY	Scarify Unit Cost \$/ac	Revegetation Unit Cost \$/ac	Geosynthetics \$/ft2	Area Unit Cost \$/acres	
1	Waste Rock Dumps	-	0			-	0	9,680	19,565	6.10	0	2,741			22,306		N/A	N/A		2.02	0.00	449.34	N/A	3,656.72	
2	Tailings Impoundments	226,938	249,498			111,513	702,860	124,581	241,288	8.10	0	13,369			1,207,015	1.10	N/A	N/A	6.30	1.94	0.00	1,650.49	N/A	149,014.20	
3	Heap Leach Pads	-	0	-	0	-	0	-	0	-	0	0			0			N/A					N/A		
4	Open Pits			-	0					-		0			0	N/A			N/A	N/A	N/A	N/A		N/A	
5	Quarries & Borrow Pits	-	0	-	0	-	0	77,440	158,595	104.00	8,864	46,726			214,185			N/A		2.05	85.23	449.29	N/A	2,059.47	
6	Roads	38,918	31,186					-	0	42.20	7,596	19,604			58,386	0.80	N/A	N/A	N/A		180.00	464.56	N/A	1,383.56	
7	Ponds			3,867	6,848			1,164	2,746	0.80		529	30	6,749	16,872	N/A	1.77	N/A	N/A	N/A	2.36	N/A	660.65	224.97	21,089.40
8	Yards	66,609	118,083			-	0	26,732	61,362	39.88	9,811	17,917			207,173	1.77	N/A	N/A		2.30	246.00	449.25	N/A	5,194.63	
9	Landfills	-	0			-	0	-	0	-	0	0			0			N/A	N/A				N/A		
10	Generic Haulage/Backfill	-	0			-	0	-	0	-	0	0			0	N/A		N/A					N/A		
11	Buildings	-	0			7,652	36,340	2,527	39,610	4.80	0	7,681			83,631		N/A	N/A	4.75	15.67	0.00	1,600.30		17,423.22	
12	Diversion Ditches	-	0							-		0	-	0	0				N/A						
13	Sediment Ponds	-	0					-	0	-	0	0	-	0	0				N/A						
14	Exploration Roads	4,699	3,007					-	0	10.00	0	4,494			7,501	0.64	N/A	N/A			0.00	449.40		750.10	
15	Exploration Trenches	-	0							-		0			0			N/A							
16	Adit/Decline Backfilling1			833	512										512	N/A	0.61	N/A	N/A	N/A	N/A	N/A			
17	Shaft Backfilling			-	4,371										4,371	N/A		N/A	N/A	N/A	N/A	N/A			
TOTALS		337,164	401,774	4,700	11,731	119,165	739,200	242,124	523,166	215.88	26,271	113,061	30	6,749	1,821,953										
Average Costs		per CY	1.19	per CY	2.50	per CY	6.20	per CY	2.16	per acre	121.69	4.30	per CY	224.97	8,440	per acre									

Closure Cost Estimate
Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
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Program Constant (can override)	Alternate Input
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ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
EQUIPMENT TYPE (1) OR JOB DESCRIPTION	Labor Group	Base Rate \$/hr	Zone Adjustment \$/hr	Hourly Wage \$/hr	Fringe \$/hr	Retirement/ Medicare \$/hr	Unemployment Insurance \$/hr	Workman's Compensation \$/hr	Other Indirect Costs \$/hr	Additional User Markups to Base Rate†			Total \$/hr
										\$/hr	%	\$/hr	
Equipment Operators (2)													
Bulldozers													
D6T	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
D6R w/ Winch	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
D7E	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
D8T	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
D9T	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
D10T2	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
D11T	Group 8	49.66	0.00	49.66	0.00	3.88	1.52	3.80	0.00			0	58.86
Wheeled Dozers													
824K	Group 10a	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90

Closure Cost Estimate
Labor Rates

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ZONE ADJUSTMENTS			
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Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
834K	Group 10a	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
844K	Group 10a	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
854K	Group 10a	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
Motor Graders													
12M2	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
14M	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
16M3	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
24M	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
Track Excavators													
312F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
320F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
325F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
330F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
349F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
374F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
390F	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19

Closure Cost Estimate
Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
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File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
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ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
Scrapers													
631K	Group 10	50.35	0.00	50.35	0.00	3.93	1.54	3.85	0.00			0	59.67
637K	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
Wheeled Loaders													
926M	Group 10	50.35	0.00	50.35	0.00	3.93	1.54	3.85	0.00			0	59.67
930M	Group 10	50.35	0.00	50.35	0.00	3.93	1.54	3.85	0.00			0	59.67
950M	Group 10	50.35	0.00	50.35	0.00	3.93	1.54	3.85	0.00			0	59.67
966M	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
972M	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
980M	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
988K	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
990K	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
992K	Group 11A	52.46	0.00	52.46	0.00	4.09	1.61	4.01	0.00			0	62.17
994K	Group 11A	52.46	0.00	52.46	0.00	4.09	1.61	4.01	0.00			0	62.17
L2350	Group 11A	52.46	0.00	52.46	0.00	4.09	1.61	4.01	0.00			0	62.17

Closure Cost Estimate

Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
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Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

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Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

Hourly Labor Rate Table													
Shovels/Excavators													
PC2000					0.00							0	0.00
PC3000					0.00							0	0.00
PC4000					0.00							0	0.00
PC5500					0.00							0	0.00
PC8000					0.00							0	0.00
EX2500					0.00							0	0.00
Hydraulic Hammers													
H120Es (fits 325)													
H160Es (fits 349)													
H180Es (fits 374/390)													
Demolition Shears													
S3050 (fits 320/325/330)													
S3070 (fits 330/349)													
S3090 (fits 374/390)													

Closure Cost Estimate
Labor Rates

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ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
Demolition Grapples													
G315B (fits 320/325)													
G320B (fits 325/330)													
G330 (fits 349/374)													
Other Equipment													
420F2	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
430F2	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
CS54B	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
CS64B	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
CP54B	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
CP68B	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
Light Truck - 1.5 Ton	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
Supervisor's Truck	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
Flatbed Truck	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
Air Compressor + tools	Group 3	47.57	0.00	47.57	0.00	3.71	1.46	3.64	0.00			0	56.38
Welding Equipment	Group 9	49.99	0.00	49.99	0.00	3.90	1.53	3.82	0.00			0	59.24

Closure Cost Estimate

Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
User Input - Direct Input	Direct Input
User Input - Pull Down List	Pull Down Selection
Program Constant (can override)	Alternate Input
Program Calculated Value	Locked Cell - Formula or Reference

ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

Hourly Labor Rate Table													
Heavy Duty Drill Rig	Group 10	50.35	0.00	50.35	0.00	3.93	1.54	3.85	0.00			0	59.67
Pump (plugging) Drill Rig	Group 10	50.35	0.00	50.35	0.00	3.93	1.54	3.85	0.00			0	59.67
Concrete Pump					0.00							0	
Gas Engine Vibrator	Group 6	48.81	0.00	48.81	0.00	3.81	1.49	3.73	0.00			0	57.84
Generator 5KW					0.00							0	
HDEP Welder (pipe or liner)					0.00							0	
5 Ton Crane	Group 10A	50.54	0.00	50.54	0.00	3.94	1.55	3.87	0.00			0	59.90
20 Ton Crane	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
50 Ton Crane	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
120 Ton Crane	Group 11	50.79	0.00	50.79	0.00	3.96	1.55	3.89	0.00			0	60.19
Notes:													
(1) Equipment Type:	Catepillar model or equivalent, LeTourneau												
(2) Equipment Operator Source:	D-B NV180038 05/05/2018												
(3) Zone Basis:	From Washoe Co. Courthouse												

Closure Cost Estimate
Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
User Input - Direct Input	Direct Input
User Input - Pull Down List	Pull Down Selection
Program Constant (can override)	Alternate Input
Program Calculated Value	Locked Cell - Formula or Reference

ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
Truck Drivers (4)													
725C2	ruck Driver > 25 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
730C2	ruck Driver > 25 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
735C	ruck Driver > 25 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
740C	ruck Driver > 25 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
770G	ruck Driver > 25 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
773G	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
777G	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
785D	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
789D	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
793F	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
797F	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
613E (5,000 gal)	ter Truck > 2,500 gal	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
621E (8,000 gal)	ter Truck > 2,500 gal	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
777G H2O Truck	ruck Driver > 60 yds	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08

Closure Cost Estimate
Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phill_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
User Input - Direct Input	Direct Input
User Input - Pull Down List	Pull Down Selection
Program Constant (can override)	Alternate Input
Program Calculated Value	Locked Cell - Formula or Reference

ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
785D H2O Truck	Truck Driver > 60 yds <	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
Dump Truck (10-12 yd3)	Truck Driver > 8 yds <	32.13	0.00	32.13	0.00	2.51	0.98	2.46	0.00			0	38.08
Tractor/Trailer (20 ton)					0.00							0	0.00
Tractor/Trailer (50 ton)					0.00							0	0.00
Tractor/Trailer (80 ton)					0.00							0	0.00
NOTES:													
(4) Truck Driver Source:	D-B SUNV2014-014 9/8/2016												
(5) Zone Basis:	From Washoe Co. Courthouse												
Laborers (6,7)													
General Laborer	Group 1	31.44	0.00	31.44	0.00	2.45	0.96	2.40	0.00			0	37.26
Skilled Laborer	Group 4	31.95	0.00	31.95	0.00	2.49	0.98	2.44	0.00			0	37.86
Driller's Helper	Group 3	31.69	0.00	31.69	0.00	2.47	0.97	2.42	0.00			0	37.56
Rodmen (reinforcing concrete)	Group 2	31.54	0.00	31.54	0.00	2.46	0.97	2.41	0.00			0	37.38
Cement finisher	Group 3	31.69	0.00	31.69	0.00	2.47	0.97	2.42	0.00			0	37.56

Closure Cost Estimate
Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
User Input - Direct Input	Direct Input
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ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE													
Carpenter		39.58	0.00	39.58	0.00	3.09	1.21	3.03	0.00			0	46.90
NOTES:													
(6) Laborer Source:	D-B NV120038 1/6/2012												
(7) Carpenter Source:	D-B NV120038 1/6/2012												
(8) Zone Basis:	From Washoe Co. Courthouse												
Project Management and Technical Labor (9)													
Project Manager		76.88	0.00	76.88	0.00	6.00	2.35	5.88	0.00			0	91.12
Foreman		71.72	0.00	71.72	0.00	5.60	2.19	5.49	0.00			0	85.00
Field Geologist/Engineer		129.06	0.00	129.06	0.00	10.07	3.95	9.87	0.00			0	152.95
Field Tech/Sampler		106.01	0.00	106.01	0.00	8.27	3.24	8.11	0.00			0	125.64
Range Scientist		117.99	0.00	117.99	0.00	9.21	3.61	9.03	0.00			0	139.84
Senior Planning Engineer					0.00								
Project Engineer					0.00								
Mechanic/Fitter					0.00								

Closure Cost Estimate

Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
User Input - Direct Input	Direct Input
User Input - Pull Down List	Pull Down Selection
Program Constant (can override)	Alternate Input
Program Calculated Value	Locked Cell - Formula or Reference

ZONE ADJUSTMENTS

Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	

INDIRECT COSTS	
1. Indirect materials	
2. Indirect labor	
3. Manufacturing overhead	
4. Total indirect costs	

Unemployment (%)	3.06%	
Retirement/SS/Medicare (%)	7.80%	
Workman's Compensation (%)	7.65%	

Other Indirects

State Payroll Tax (13),(15),(17),(18)		
Total Other Indirects	0.00%	

HOURLY LABOR RATE TABLE

[illegible]

NOTES:	
(9) Project Manager:	R.S.Means 2018 Q2 (01 31 1320 0200 Total Incl.O&P-10%) Adjusted for Elko, NV
(9) Foreman Source:	R.S.Means 2018 Q2 (01 31 1320 0200 Total Incl.O&P-10%) Adjusted for Elko, NV
(9) Technical Labor Source:	SRK Consulting 2018 (Total Incl. O&P-10%) Adjusted for Zone,Tax and Ins.

Closure Cost Estimate
Labor Rates

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Color Code Key	
User Input - Direct Input	Direct Input
User Input - Pull Down List	Pull Down Selection
Program Constant (can override)	Alternate Input
Program Calculated Value	Locked Cell - Formula or Reference

ZONE ADJUSTMENTS			
Cost Basis/Project Region	Northern Nevada - Imperial Units	Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, and White Pine Counties- Inflated 2%	
Power Equipment Operators	< 50 miles	0.00	
Truck Drivers	< 50 miles	0.00	
Laborers	< 50 miles	0.00	
INDIRECT COSTS			
Unemployment (%)	3.06%		
Retirement/SS/Medicare (%)	7.80%		
Workman's Compensation (%)	7.65%		
Other Indirects			
State Payroll Tax (13),(15),(17),(18)			
Total Other Indirects	0.00%		

HOURLY LABOR RATE TABLE			
Other Labor Source:			
Other Labor Source:			
†Additional User Markups			
(These are added by the user to the			
base rate to account for site-specific			
conditions or corporate requirements)			

Closure Cost Estimate
Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Monthly Rental Basis: 160 hrs month
Wet Rates? No

EQUIPMENT RENTAL RATE TABLE				
EQUIPMENT TYPE (1)	Monthly Owner/Rental Rate \$/mo	Equipment Hourly Rate \$/hr	Fuel/Lube/ Wear \$/hr	Total Rate \$/hr
Bulldozers				
D6T	10,608.00	66.30	28.43	94.73
D6R w/ Winch	10,608.00	66.30	28.43	94.73
D7E	11,577.00	72.36	27.07	99.43
D8T	19,380.00	121.13	43.36	164.48
D9T	23,562.00	147.26	57.62	204.88
D10T2	32,640.00	204.00	78.21	282.21
D11T	65,280.00	408.00	111.01	519.01
Wheeled Dozers				
824K			27.89	27.89
834K			32.71	32.71
844K			37.03	37.03
854K			46.90	46.90
Motor Graders				
12M2	9,792.00	61.20	28.51	89.71
14M	14,790.00	92.44	38.75	131.19
16M3	21,420.00	133.88	49.46	183.34
24M	23,562.00	147.26	66.44	213.70
Track Excavators				
312F	5,523.30	34.52	13.27	47.79
320F	6,834.00	42.71	17.99	60.71
325F	11,322.00	70.76	19.52	90.28
330F	11,016.00	68.85	25.73	94.58
349F	14,565.60	91.04	38.05	129.09
374F	18,757.80	117.24	42.24	159.48
390F	22,950.00	143.44	48.66	192.10
Scrapers				
631K	18,360.00	114.75	62.38	177.13
637K	35,700.00	223.13	92.24	315.36
Wheeled Loaders				
926M	5,100.00	31.88	15.04	46.92
930M	5,304.00	33.15	16.02	49.17
950M	7,752.00	48.45	25.30	73.75
966M	11,118.00	69.49	31.77	101.26
972M	14,076.00	87.98	36.28	124.25
980M	14,076.00	87.98	39.96	127.93
988K	21,420.00	133.88	62.11	195.98

Closure Cost Estimate

Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

990K	41,310.00	258.19	96.63	354.82
992K	61,200.00	382.50	126.72	509.22
994K	67,320.00	420.75	179.13	599.88
L2350			162.91	162.91
Shovels				
PC2000			91.33	91.33
PC3000			123.42	123.42
PC4000			172.79	172.79
PC5500			293.74	293.74
PC8000			367.79	367.79
EX2500			125.89	125.89
Hydraulic Hammers				
H120Es (fits 325)	5,814.00	36.34	5.55	41.89
H160Es (fits 349)	12,240.00	76.50	10.58	87.08
H180Es (fits 374/390)	16,524.00	103.28	12.53	115.81
Demolition Shears				
S3050 (fits 320/325/330)				0.00
S3070 (fits 330/349)				0.00
S3090 (fits 374/390)				0.00
Demolition Grapples				
G315B (fits 320/325)				0.00
G320B (fits 325/330)				0.00
G330 (fits 349/374)				0.00
Other Equipment				
420F2	3,264.00	20.40	19.02	39.42
430F2	4,080.00	25.50	19.90	45.40
CS54B	8,639.40	54.00	8.27	62.27
CS64B	8,639.40	54.00	8.27	62.27
CP54B	8,639.40	54.00	8.27	62.27
CP68B	8,639.40	54.00	8.89	62.88
Light Truck - 1.5 Ton	4,155.89	25.97	3.89	29.87
Supervisor's Truck	2,796.02	17.48	2.66	20.13
Flatbed Truck	4,155.89	25.97	12.65	38.63
Air Compressor + tools	4,431.90	27.70	2.47	30.17
Welding Equipment	2,165.46	13.53	4.94	18.47
Heavy Duty Drill Rig	59,241.60	370.26	29.62	399.88
Pump (plugging) Drill Rig	59,241.60	370.26	24.68	394.94
Concrete Pump	19,365.72	121.04	24.68	145.72
Gas Engine Vibrator	564.59	3.53	2.47	6.00
Generator 5KW	781.36	4.88	3.70	8.59
HDEP Welder (pipe or liner)	9,379.92	58.62	4.94	63.56
5 Ton Crane	5,722.20	35.76	7.41	43.17
20 Ton Crane	13,037.64	81.49	9.87	91.36
50 Ton Crane	13,037.64	81.49	11.60	93.09
120 Ton Crane	14,341.40	89.63	12.84	102.47

Closure Cost Estimate
Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

Trucks				
725C2	15,300.00	95.63	37.92	133.54
730C2	15,300.00	95.63	38.78	134.41
735C	15,300.00	95.63	50.93	146.56
740C	15,300.00	95.63	54.21	149.84
770G	21,420.00	133.88	26.16	160.04
773G	33,660.00	210.38	40.94	251.31
777G	55,080.00	344.25	64.74	408.99
785D	60,588.00	378.68	100.80	479.47
789D	66,606.00	416.29	100.80	517.08
793F	73,236.00	457.73	157.46	615.18
797F	80,580.00	503.63	218.70	722.32
613E (5,000 gal)	6,120.00	38.25	24.38	62.63
621E (8,000 gal)	11,220.00	70.13	39.93	110.06
777G H2O Truck	55,080.00	344.25	64.74	408.99
785D H2O Truck	60,588.00	378.68	100.80	479.47
Dump Truck (10-12 yd3)	11,960.52	74.75	13.68	88.44
Tractor/Trailer (20 ton)	13,156.57	82.23	34.56	116.79
Tractor/Trailer (50 ton)	14,472.23	90.45	44.43	134.88
Tractor/Trailer (80 ton)	15,919.45	99.50	54.30	153.80
NOTES:				
Power Equipment Source:	Cashman Equipment Company (July 2018) unless noted			
Power Equipment Type:	Catepillar model or equivalent, LeTourneau loader, Komatsu shovels			
Drilling Equipment Source:	RS Means Heavy Construction (2018 Q2)			
Other Equipment Source:	RS Means Heavy Construction (2018 Q2)			
Note: Drill rig includes support (pipe) truck				

Closure Cost Estimate
Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

FUEL, LUBE AND WEAR CALCULATIONS						
EQUIPMENT TYPE	PM Cost ⁽¹⁾ \$/hr	Under carriage or Tires \$/hr	G.E.T Consumption ⁽²⁾ \$/hr	Fuel Use Rate gal/hr (3)	Fuel Cost@ 2.47/gal	Total Hourly Equipment Cost \$/hr
Bulldozers						
D6T	7.33		5.17	6.45	15.92	28.43
D6R w/ Winch	7.33		5.17	6.45	15.92	28.43
D7E	7.33		5.17	5.90	14.56	27.07
D8T	7.74		9.95	10.40	25.67	43.36
D9T	8.82		15.47	13.50	33.32	57.62
D10T2	10.38		21.66	18.70	46.16	78.21
D11T	14.15		32.19	26.20	64.67	111.01
Wheeled Dozers						
824K		0.00		11.30	27.89	27.89
834K		0.00		13.25	32.71	32.71
844K		0.00		15.00	37.03	37.03
854K		0.00		19.00	46.90	46.90
Motor Graders						
12M2	4.46	3.87	10.68	3.85	9.50	28.51
14M	5.56	5.29	15.43	5.05	12.47	38.75
16M3	5.80	7.16	21.07	6.25	15.43	49.46
24M	6.38	7.87	23.18	11.75	29.00	66.44
Track Excavators						
312F	4.19		4.02	2.05	5.06	13.27
320F	4.47		4.64	3.60	8.89	17.99
325F	4.53		5.85	3.70	9.13	19.52
330F	6.57		6.45	5.15	12.71	25.73
349F	7.40		6.59	9.75	24.07	38.05
374F	6.78		10.04	10.30	25.42	42.24
390F	6.17		13.48	11.75	29.00	48.66
Scrapers						
631K	7.45	9.17	8.44	15.12	37.32	62.38
637K	12.37	9.17	10.60	24.35	60.09	92.24
Wheeled Loaders						
926M	3.40	2.77	4.44	1.80	4.44	15.04
930M	3.98	2.77	4.59	1.90	4.69	16.02
950M	4.95	4.17	8.54	3.10	7.65	25.30
966M	5.16	6.63	10.72	3.75	9.26	31.77
972M	5.83	6.63	13.57	4.15	10.24	36.28
980M	5.83	6.98	13.57	5.50	13.58	39.96
988K	10.93	10.97	14.54	10.40	25.67	62.11
990K	11.52	17.71	23.96	17.60	43.44	96.63
992K	12.11	24.45	33.38	23.00	56.77	126.72
994K	13.32	26.90	36.72	41.40	102.19	179.13

Closure Cost Estimate
Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm

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Cost Data: User Data

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L2350				66.00	162.91	162.91
Shovels						
PC2000				37.00	91.33	91.33
PC3000				50.00	123.42	123.42
PC4000				70.00	172.79	172.79
PC5500				119.00	293.74	293.74
PC8000				149.00	367.79	367.79
EX2500				51.00	125.89	125.89
Hydraulic Hammers						
H120Es (fits 325)	N/A		5.55			5.55
H160Es (fits 349)	N/A		10.58			10.58
H180Es (fits 374/390)	N/A		12.53			12.53
Demolition Shears						
S3050 (fits 320/325/330)	N/A					0.00
S3070 (fits 330/349)	N/A					0.00
S3090 (fits 374/390)	N/A					0.00
Demolition Grapples						
G315B (fits 320/325)	N/A					0.00
G320B (fits 325/330)	N/A					0.00
G330 (fits 349/374)	N/A					0.00
Other Equipment						
420F2	4.12	0.71	3.57	4.30	10.61	19.02
430F2	3.91	0.71	3.68	4.70	11.60	19.90
CS54B			N/A	3.35	8.27	8.27
CS64B			N/A	3.35	8.27	8.27
CP54B			N/A	3.35	8.27	8.27
CP68B			N/A	3.60	8.89	8.89
Light Truck - 1.5 Ton		0.19	N/A	1.50	3.70	3.89
Supervisor's Truck		0.19	N/A	1.00	2.47	2.66
Flatbed Truck		1.05	N/A	4.70	11.60	12.65
Air Compressor + tools			N/A	1.00	2.47	2.47
Welding Equipment			N/A	2.00	4.94	4.94
Heavy Duty Drill Rig			N/A	12.00	29.62	29.62
Pump (plugging) Drill Rig			N/A	10.00	24.68	24.68
Concrete Pump			N/A	10.00	24.68	24.68
Gas Engine Vibrator			N/A	1.00	2.47	2.47
Generator 5KW			N/A	1.50	3.70	3.70
HDEP Welder (pipe or liner)			N/A	2.00	4.94	4.94
5 Ton Crane			N/A	3.00	7.41	7.41
20 Ton Crane			N/A	4.00	9.87	9.87
50 Ton Crane			N/A	4.70	11.60	11.60
120 Ton Crane			N/A	5.20	12.84	12.84
Trucks						
725C2	8.20	14.06	3.19	5.05	12.47	37.92
730C2	8.20	14.06	3.19	5.40	13.33	38.78

Closure Cost Estimate
Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

735C	8.20	22.38	3.19	6.95	17.16	50.93
740C	8.20	23.57	3.19	7.80	19.25	54.21
770G	6.08	4.29	3.57	4.95	12.22	26.16
773G	7.52	9.04	4.02	8.25	20.36	40.94
777G	10.76	16.05	4.49	13.55	33.45	64.74
785D	11.84	22.07	4.94	25.10	61.96	100.80
789D	13.03	24.27	5.43	36.85	90.96	133.69
793F	14.33	26.70	5.97	44.75	110.46	157.46
797F	15.77	29.37	6.57	67.65	166.99	218.70
613E (5,000 gal)	5.87	3.71	0.00	6.00	14.81	24.38
621E (8,000 gal)	6.23	7.16	0.00	10.75	26.54	39.93
777G H2O Truck	10.76	16.05	4.49	13.55	33.45	64.74
785D H2O Truck	11.84	22.07	4.94	25.10	61.96	100.80
Dump Truck (10-12 yd3)	N/A	0.85	N/A	5.20	12.84	13.68
Tractor/Trailer (20 ton)	N/A		N/A	14.00	34.56	34.56
Tractor/Trailer (50 ton)	N/A		N/A	18.00	44.43	44.43
Tractor/Trailer (80 ton)	N/A		N/A	22.00	54.30	54.30
Notes:						
(1) PM Source:						
(2) G.E.T. Source:						
(3) Fuel Use Source:	Caterpillar Handbook, Edition 46, Ch. 20; or estimated average for smaller vehicles					

Closure Cost Estimate
Equipment Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
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Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

TIRE COST TABLES						
Equipment	Tire Size	# of Tires Per Piece of Equipment	Cost Per Tire	Tire Cost ⁽¹⁾⁽²⁾ \$	Life Expectency Hours (Low/Zone A) ⁽³⁾	Tire Cost per Hour \$/hr
Bulldozers						
D6T			N/A			
D6R w/ Winch			N/A			
D7E			N/A			
D8T			N/A			
D9T			N/A			
D10T2			N/A			
D11T			N/A			
Wheeled Dozers						
824K	29.5R25	4		0	3,500	0.00
834K	35/65-R33	4		0	3,500	0.00
844K	45/65-R39	4		0	3,500	0.00
854K	45/65-R45	4		0	3,500	0.00
Motor Graders						
12M2	13PR24	6	2,255	13,529	3,500	3.87
14M	20.5R25	6	3,087	18,520	3,500	5.29
16M3	23.5R25	6	4,175	25,053	3,500	7.16
24M	23.5R25	6	4,593	27,558	3,500	7.87
Track Excavators						
312F			N/A			
320F			N/A			
325F			N/A			
330F			N/A			
349F			N/A			
374F			N/A			
390F			N/A			
Scrapers						
631K	37.25R35	4	9,171	36,686	4,000	9.17
637K	37.25R35	4	9,171	36,686	4,000	9.17
Wheeled Loaders						
926M	17.5R25	4	3,111	12,443	4,500	2.77
930M	17.5R25	4	3,111	12,443	4,500	2.77
950M	26.5R25	4	4,686	18,746	4,500	4.17
966M	26.5R25	4	7,462	29,846	4,500	6.63
972M	26.5R25	4	7,462	29,846	4,500	6.63
980M	29.5R25	4	7,855	31,420	4,500	6.98
988K	35/65-33	4	12,336	49,344	4,500	10.97
990K	41.25/70-39	4	19,921	79,686	4,500	17.71
992K	45/65R45	4	27,507	110,028	4,500	24.45

Closure Cost Estimate
Equipment Costs

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994K	55/85R57	4	30,258	121,031	4,500	26.90
L2350	55/85R57	4		0	4,500	
Shovels						
PC2000			N/A			
PC3000			N/A			
PC4000			N/A			
PC5500			N/A			
PC8000			N/A			
EX2500			N/A			
Hydraulic Hammers						
H120Es (fits 325)			N/A			
H160Es (fits 349)			N/A			
H180Es (fits 374/390)			N/A			
Demolition Shears						
S3050 (fits 320/325/330)			N/A			
S3070 (fits 330/349)			N/A			
S3090 (fits 374/390)			N/A			
Demolition Grapples						
G315B (fits 320/325)			N/A			
G320B (fits 325/330)			N/A			
G330 (fits 349/374)			N/A			
Other Equipment						
420F2	340/80R18-19.5LR24	2	1,067	2,134	3,000	0.71
430F2	340/80R18-16.9R28	2	1,067	2,134	3,000	0.71
CS54B			N/A			
CS64B			N/A			
CP54B			N/A			
CP68B			N/A			
Light Truck - 1.5 Ton		4	144	574	3,000	0.19
Supervisor's Truck		4	144	574	3,000	0.19
Flatbed Truck		22	144	3,158	3,000	1.05
Air Compressor + tools			N/A			
Welding Equipment			N/A			
Heavy Duty Drill Rig		4		0	3,000	
Pump (plugging) Drill Rig		4		0	3,000	
Concrete Pump			N/A			
Gas Engine Vibrator			N/A			
Generator 5KW			N/A			
HDEP Welder (pipe or liner)			N/A			
5 Ton Crane		4		0	3,000	
20 Ton Crane		4		0	3,000	
50 Ton Crane		6		0	3,000	
120 Ton Crane		6		0	3,000	
Trucks						
725C2	23.5R25	6	4,686	28,119	2,000	14.06

Closure Cost Estimate
Equipment Costs

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Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

730C2	23.5R25	6	4,686	28,119	2,000	14.06
735C	26.5R25	6	7,462	44,769	2,000	22.38
740C	29.5R25	6	7,855	47,131	2,000	23.57
770G	18.00R33	6	4,294	25,766	6,000	4.29
773G	24.00R35	6	7,532	45,189	5,000	9.04
777G	27.00R49	6	13,374	80,242	5,000	16.05
785D	33.00R51	6	14,711	88,266	4,000	22.07
789D	40.00R57	6	16,182	97,092	4,000	24.27
793F	40.00R57	6	17,800	106,802	4,000	26.70
797F	40.00R57	6	19,580	117,482	4,000	29.37
613E (5,000 gal)	23.5R25	6	3,709	22,254	6,000	3.71
621E (8,000 gal)	33.25R29	6	9,551	57,307	8,000	7.16
777G H2O Truck	27.00R49	6	13,374	80,242	5,000	16.05
785D H2O Truck	33.00R51	6	14,711	88,266	4,000	22.07
Dump Truck (10-12 yd3)		10	508	5,078	6,000	0.85
Tractor/Trailer (20 ton)			N/A			
Tractor/Trailer (50 ton)			N/A			
Tractor/Trailer (80 ton)			N/A			
Notes:						
(1) Unit Cost Basis:						
(2) Cost Basis:	Cost per set					
(3) Tire Cost Source:	Total cost for all required tires.					
(4) Tire Wear Source:	Purecell Tire Quote: July 2018					

Closure Cost Estimate
Material Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
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File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Revegetation Materials			
Seed Mixes			
Seed Mix	Description		Cost \$/acres
None			
Mix 1	Basins		308.55
Mix 2	Low Hills		339.41
Mix 3	Uplands		370.26
Mix 4	Riparian or Custom		401.12
User Mix 1	Permit Approved Seed Mix		\$750.67
User Mix 2			
User Mix 3			
User Mix 4			
	Cost/lb	lbs/Acre	Cost/Acre
User Mix 5 (from Seed Mix sheet)	9.94	27.21	270.48
Notes:			
Mulch			
Item	Cost/lb	lbs/Acre	Cost \$/acres
None			
Straw Mulch	0.17	10	1.65
Hydro Mulch	0.26	10	2.55
Timber Mulch		10	
		10	
Notes:			
	Granite Seed \$500 per Ton in 50 lb bag Wood (Hydro) Mulch (		
Amendments			
Item	Cost/lb	lbs/Acre	Cost

Closure Cost Estimate
Material Costs

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

			\$/acres
None			
Organic Matter	0.71	10	7.14
Treated Sludge		10	
Chemical	0.60	10	6.02
		10	
Notes:	Western Nevada Supply \$29.34 per 50 lb. bag 15-15-15 (June 2018)		

Well Abandonment Materials			
Description	Cost/50lb bag	Units	Cost*
			\$/unit
Cement	7.72	cy	36.77
Grout (Low Grade Bentonite)	8.82	cy	42.01
Inert Material/Cuttings		cy	
(1) Jentech Drilling Supply quote (June 2018) Type I,II Cement at \$14.24 per 94 lb. bag			
(2) Jentech Drilling Supply (June 2018) 3/8 in. Chunk Bentonite Hole Plug at \$8.65 per 50 lb. bag (5.75 cf/bag at 4			
* Assumes 1 bag mixes with water to make 0.21 y3 or 0.16 m3 of grout/cement slurry.			

Monitoring Costs		
Description	Units	Cost
		\$/unit
Monitor Well Pump	ea.	2,567.02
Sampling Supplies	ea.	6.00
Water Analysis (Profile I) (1)	ea.	419.22
Leach Test (MWMP) w/ analysis	ea.	492.66
ABA + S speciation	ea.	153.00

Closure Cost Estimate

Material Costs

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File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610
Cost Estimate Type: LOM **Cost Basis:** Northern Nevada - Imperial Units

WAD Cyanide in water	ea.	57.12
Water Analysis (Profile II) (1)	ea.	470.22
	ea.	
	ea.	
	ea.	
	ea.	
	ea.	
	ea.	
	ea.	
	ea.	
	ea.	
	ea.	
Cyanide - Total Water	ea.	\$41.32
Water Analysis (Complete) (1)	ea.	\$515.81
(1) WET Lab, Reno, Nevada (June 2018)		
Well pump and Sample supply costs adjusted to 2018.		
Original source unknown.		

[illegible]

Closure Cost Estimate
Material Costs

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

(1) Source: Oil Price Infomration Service , average annual cost including freight to Nevada (July 2018).			
Source: Federal Government Vehicle Allowance Rate 2018			
Source: NV Energy (July 2018) \$0.07856			
A Munt email 14th July 2017			

Closure Cost Estimate
Material Costs

Revegetation Method				
Slopes				
Disturbance Type	Seed Application Method	Labor \$/acres	Equipment \$/acres	Total \$/acres
Waste Rock Dumps	Mechanical Broadcast	102.00	38.76	140.76
Heap Leach	Mechanical Broadcast	102.00	38.76	140.76
Tailings	Mechanical Broadcast	102.00	38.76	140.76
Quarries & Borrow Pits	Mechanical Broadcast	102.00	38.76	140.76
Flat Areas and Undifferentiated				
Disturbance Type	Seed Application Method	Labor \$/acres	Equipment \$/acres	Total \$/acres
Exploration Trenches	Mechanical Broadcast	102.00	38.76	140.76
Exploration Roads	Mechanical Broadcast	102.00	38.76	140.76
Waste Rock Dumps	Mechanical Broadcast	102.00	38.76	140.76
Heap Leach	Mechanical Broadcast	102.00	38.76	140.76
Tailings	Mechanical Broadcast	102.00	38.76	140.76
Quarries & Borrow Pits	Mechanical Broadcast	102.00	38.76	140.76
Roads	Mechanical Broadcast	102.00	38.76	140.76
Pits	Mechanical Broadcast	102.00	38.76	140.76
Haul Material	Mechanical Broadcast	102.00	38.76	140.76
Foundations & Buildings	Mechanical Broadcast	102.00	38.76	140.76
Sediment & Drainage Control	Mechanical Broadcast	102.00	38.76	140.76
Process Ponds	Mechanical Broadcast	102.00	38.76	140.76
Landfills	Mechanical Broadcast	102.00	38.76	140.76
Yards, Etc.	Mechanical Broadcast	102.00	38.76	140.76
Revegetation Maintenance	Mechanical Broadcast	102.00	38.76	140.76

Closure Cost Estimate
Misc. Unit Costs

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Revegetation										
	Means Number	Unit	Crew	Daily Output	Daily Output User	Materials	Labor	Equipment	Total	Notes
Seeding - Broadcast Manual		acres					142.80	51.00	193.80	
Seeding - Broadcast Mechanical		acres					102.00	38.76	140.76	
Seeding - Drill		acres		365			142.80	102.00	244.80	
Seeding - Hydroseeding				365			255.00	127.50	382.50	
Shrub Planting - bare root 6-10 in (150- 250mm)	02910-400-0561	ea.	1 Clab	365			0.82	0.00	0.82	
Tree Planting - bare root 11-16 in (270- 400mm)	02910-400-0562	ea.	1 Clab	260			1.15	0.00	1.15	
Cactus Planting		ea.	1 Clab						0.00	
NOTES:										
Seeding Source:	Source: Kelley Erosion Control (June 2018).									
Shrub Source:										
Tree Source:										
Cactus Source:										
Building and Wall Demolition										
Hourly productivity rates and crew composition from Means Heavy Construction 2005 Edition by permission of R.S.Means/Reed Construction Data . All equipment, labor and material unit costs are from Labor Costs, Equipment Costs and Material Costs spreadsheets										
	Means Number	Unit	Crew	Daily Output	Daily Output User	Labor	Equipment	Premium	Total	Notes
Building Demolition										
Lg. steel	02220-110-0012	C.F.	B-8	21500		0.13	0.12		0.25	
Lg. concrete	02220-110-0050	C.F.	B-8	15300		0.19	0.17		0.36	
Lg. masonry	02220-110-0080	C.F.	B-8	20100		0.14	0.13		0.27	
Lg. mixed	02220-110-0100	C.F.	B-8	20100		0.14	0.13		0.27	
Sm. steel	02220-110-0500	C.F.	B-3	14800		0.16	0.12		0.28	
Sm. concrete	02220-110-0600	C.F.	B-3	11300		0.21	0.16		0.37	
Sm. masonry	02220-110-0650	C.F.	B-3	14800		0.16	0.12		0.28	
Sm. wood	02220-110-0700	C.F.	B-3	14800		0.16	0.12		0.28	
Wall Demolition										
Block 4 in (100 mm) thick	02220-130-2000	S.F.	1 Clab	180		1.66	0.00	20%	1.99	
Block 6 in (150 mm) thick	02220-130-2040	S.F.	1 Clab	170		1.75	0.00	20%	2.10	
Block 8 in (200 mm) thick	02220-130-2080	S.F.	1 Clab	150		1.99	0.00	20%	2.39	
Block 12 in (300 mm) thick	02220-130-2100	S.F.	1 Clab	150		1.99	0.00	20%	2.39	
Conc 6 in (150 mm) thick	02220-130-2400	S.F.	B-9	160		1.86	1.51	10%	3.71	
Conc 8 in (200 mm) thick	02220-130-2420	S.F.	B-9	140		2.13	1.72	10%	4.24	
Conc 10 in (250 mm) thick	02220-130-2440	S.F.	B-9	120		2.48	2.01	10%	4.94	

Closure Cost Estimate
Misc. Unit Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Conc 12 in (300 mm) thick		02220-130-2500	S.F.	B-9	100		2.98	2.41	10%	5.93	
Waste Disposal											
Unit rates from Means Heavy Construction 2006 Edition by permission of R.S.Means/Reed Construction Data .											
	Means Number	Unit	Crew	Daily Output	Materials	Labor	Equipment		Total	Notes	
Rubbish Handling											
Dumpster delivery (average for all sizes)	02220-350-0910	ea.			57.12				57.12		
Haul (average for all sizes)	02220-350-0920	ea.			178.50				178.50		
Rent per month (average for all sizes)	02220-350-0940	ea.			60.69				60.69		
Disposal fee per ton (tonne) (average for all sizes)	02220-350-0950	ton			66.81				66.81		
NOTES:											
Dumpster Cost Source:	R.S. Means Heavy Construction (2018 Q2).										
Disposal Fee Source:	R.S. Means Heavy Construction (2018 Q2).										
Hazardous Material Handling - Solids (+ Liquids in drums)											
Pickup fees 55 gal. drums	02110-300-1100	ea.			264.18				264.18		
Bulk material (average)	02110-300-1220/1230	ton			431.46				431.46		
Transport - truck load (80 drums, 25 cy (m3), 18 tons)	02110-300-1260/1270	mile			5.90				5.90		
Dump site disposal fee	02110-300-6000/6020	ton			304.47				304.47		
NOTES:											
Solid Handling Cost Source:	R.S. Means Heavy Construction (2016, Q2).										
Solid Disposal Fee Source:	2016, Q2 R.S. Means Heavy Const. ave. 02 81										
Hazardous Material Handling - Liquids											
Vacuum Truck Pickup (2200 gal or 9,700 litres)	02110-300-3110	hr.			155.04				155.04		
Vacuum Truck Pickup (5000 gal or 2,000 litres)	02110-300-3120	hr.			224.40				224.40		
Dump site disposal fee	02110-300-6000/6020	ton			304.47				304.47		
NOTES:											
Liquid Handling Cost Source:	R.S. Means Heavy Construction (2018 Q2).										
Liquid Disposal Fee Source:	2018 Q2 R.S. Means Heavy Const. ave. 02 81										
Hydrocarbon Contaminated Soils (HCS)											
Insitu Biotreatment	02115-200-2020/2021	C.Y.			19.09				19.09		
HCS disposal fee	02115-200-2050/2055	C.Y.			294.27				294.27		
NOTES:											
Insitu Treatement Cost Source:	2018 Q2 R.S. Means Heavy Const., ave. 02 65										
HCS Disposal Fee Source:	2018 Q2 R.S. Means Heavy Const., ave. 02 65										
Concrete Structure Installation											
Weekly dumpster rental rates from Means Heavy Construction 2005 Edition with permission by R.S.Means/Reed Construction Data .											
Weekly dumpster rental rates include haul to off-site disposal site and disposal fees											
				Daily							

Closure Cost Estimate
Misc. Unit Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

	Means Number	Unit	Crew	Output	Materials	Labor	Equipment	Premium	Total	Notes
Reinforced Concrete Bulkheads and Shaft Covers										
Grade walls - 15 in thick, 8 ft high	03310-240-4300	C.Y.	C-14D	80.02	170.34	123.14	17.18		310.66	includes reinforcing
Grade walls - 15 in thick, 12 ft high	03310-240-4350	C.Y.	C-14D	26.2	170.34	376.10	52.47		598.91	includes reinforcing
Elevated conc, 1-way beam & slab - 15ft span	03310-240-2700	C.Y.	C-14B	20.59	295.80	485.77	66.77		848.34	includes reinforcing
Elevated conc, 1-way beam & slab - 25ft span	03310-240-2750	C.Y.	C-14B	28.36	281.52	352.68	48.48		682.68	includes reinforcing
Bat Gate/Foam Plug Installation										
Bat Gate		ea.			3,100.23					materials \$/ea. Installed
Culvert Gate		ea.			6,200.45					materials \$/ea. Installed
Adit Foam Plug		ea./C.Y.			310.02					materials \$/cy placed
Production Opening Foam Plug		ea./C.Y.			310.02					materials \$/cy placed
NOTES:										
Bat Gate Source:	NV BLM, 2/2006: 8 hr + 1hr mob/demob + 1hr setup per gate (adjusted to 2018)									
Foam Plug Source:	NV BLM, 2/2006: 8 hr+ 1hr mob/demob + 1hr setup per adit; 16 hrs per production opening (adjusted to 2018)									
Misc. Linear Projects										
Hourly productivity rates and crew composition from Means Heavy Construction 2005 Edition by permission of R.S.Means/Reed Construction Data . All equipment, labor and material unit costs are from Labor Costs, Equipment Costs and Material Costs spreadsheets										
	Means Number	Unit	Crew	Daily Output	Materials	Labor	Equipment	Premium	Total	Notes
Fencing Installation										
Barbed 3-strand	02820-170-1650	L.F.	B-80A	760	0.49	1.79	0.31		2.59	
Barbed 4-strand	extrapolated	L.F.	B-80A	570	0.65	2.38	0.42		3.45	
Barbed 5-strand	02820-130-0920	L.F.	B-80A	456	0.82	2.98	0.52		4.32	
Chain link 8 ft -10 ft Install	02820-130-0920	L.F.	B-80C	180	39.78	7.54	1.33		48.65	
Wood stockade fence 6 ft high - Install	02820-510-1240	L.F.	B-80C	150	16.27	9.05	1.59		26.91	
	user	L.F.							0.00	
	user	L.F.							0.00	
	user	L.F.							0.00	
	user	L.F.							0.00	
Fencing Removal										
Barbed 3-strand Removal	02220-220-1600	L.F.	2 Clab	430		2.46	0.56		3.02	
Barbed 4-strand Removal	extrapolated	L.F.	2 Clab	355		2.98	0.67		3.65	
Barbed 5-strand Removal	02220-220-1650	L.F.	2 Clab	280		3.78	0.85		4.63	
Chain link 8 ft -10 ft Removal	02220-220-1700	L.F.	B-6	445		2.41	0.88		3.29	
Wood, all types 4 ft -6 ft high Removal	02220-220-1775	L.F.	2 Clab	430		2.46	0.56		3.02	
	user	L.F.								
	user	L.F.							0.00	
	user	L.F.							0.00	
	user	L.F.							0.00	

Misc. Unit Costs

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_Phl_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE Cost data-USR v2.0 Imperial Metric GrassyMountain 20210610.xlsm

Cost Estimate Type: LOM **Cost Basis: Northern Nevada - Imperial Units**

Culvert Removal											
12 in (300 mm) Diameter	02220-220-2900	L.F.	B-6	175		6.13	2.25		8.38		
18 in (450 mm) Diameter	02220-220-2930	L.F.	B-6	150		7.16	2.62		9.78		
24 in (600 mm) Diameter	02220-220-2960	L.F.	B-6	120		8.95	3.28		12.23		
36 in (1m) Diameter	02220-220-3000	L.F.	B-6	90		11.93	4.37		16.30		
Pipeline Removal											
Plastic Pipe 3/4 in (mm) - 4 in (100 mm) diameter	02220-381-1600	L.F.	B-20	700		2.49	0.34		2.83		
6 in (150 mm) - 8 in (200 mm)	02220-381-1700	L.F.	B-20	500		3.49	0.48		3.97		
10 in (250 mm) - 18 in (450 mm)	02220-381-1800	L.F.	B-20	300		5.81	0.80		6.61		
20 in (500 mm) - 36 in (1 m)	02220-381-1900	L.F.	B-20	200		8.72	1.19		9.91		
Pipe and Drainpipe Installation											
Water 4in (100mm) 40ft (12m) length, welded HDPE	02510-760-0100	L.F.	B-22A	400	2.24	5.78	4.82		12.84		
Water 6in (150mm) 40ft (12m) length, welded HDPE	02510-760-0200	L.F.	B-22A	380	5.07	6.08	5.07		16.22		
Water 12in (300mm) 40ft (12m) length, welded HDPE	02510-760-0500	L.F.	B-22A	260		8.89	7.41		16.30		
Drain 4in (100mm) perforated PVC	02620-630-2100	L.F.	B-14	315	1.47	8.93	1.76		12.16		
Drain 6in (150mm) perforated PVC	02620-630-2110	L.F.	B-14	300	3.13	9.38	1.85		14.36		
Drain 4in (100mm) corrugated, perf or plain	02620-660-0040	L.F.	2 Clab	1200	0.66	0.88	0.20		1.74		
Drain 6in (150mm) corrugated., perf or plain	02620-660-0060	L.F.	2 Clab	900	1.68	1.18	0.27		3.13		
Note: HDPE Water Pipe in 40ft (12m) lengths, welded											
Drain Rock Preparation											
Crushing		C.Y.							0.51		
Screening		C.Y.							0.51		
TOTAL									1.02		
Misc.											
Backhoe work	02210-700-0120	C.Y.	B-11M	28		17.11	11.26		28.37		
Powerline and Transformer Removal											
Single Pole Powerlines		mile							43,087.58		
Double Pole Powerlines		mile							49,242.95		
Substation		ea.							30,879.58		
NOTES:											
Single Pole Source:	NV Energy estimate (2009) Adjusted to 2018										
Double Pole Source:	NV Energy estimate (2009) Adjusted to 2018										
Transformer Source:	Sierra PacificPower Company estimate (2004) adjusted to 2018 +2% inflation (2019)										
Erosion and Sedimentation Control											
Hourly productivity rates and crew composition from Means Heavy Construction 2005 Edition by permission of R.S.Means/Reed Construction Data .											
All equipment, labor and material unit costs are from Labor Costs, Equipment Costs and Material Costs spreadsheets											
* some crews modified to reflect actual crews used for riprap placement at mine sites											

Closure Cost Estimate
Misc. Unit Costs

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

	Means Number	Unit	Crew	Means Daily Output	Materials	Labor	Equipment	User Daily Output	Total	Notes
Rip-Rap & Rock Lining										
Rip-Rap 3/8 to 1/4 CY pieces, grouted	02370-450-0110	S.Y.	B-13	80	29.07	29.42	9.31		67.80	assumes on-site source of rip-rap
Rip-Rap 18-inch min thick, no grout	02370-450-0200	S.Y.	B-13	53	8.93	44.41	14.05		67.39	assumes on-site source of rip-rap
Rip-Rap 3/8 to 1/4 CY pieces, grouted	02370-450-0110*	S.Y.	B-12G	80	29.07	17.82	22.14		69.03	assumes on-site source of rip-rap
Rip-Rap 18-inch min thick, no grout	02370-450-0200*	S.Y.	B-12G	53	8.93	26.90	33.42		69.25	assumes on-site source of rip-rap
Gabions, 6 in (150 mm) deep	02370-450-0400	S.Y.	B-13	200	8.82	11.77	3.72		24.31	assumes on-site source rock fill for gabions
Gabions, 9 in (250 mm) deep	02370-450-0500	S.Y.	B-13	163	10.91	14.44	4.57		29.92	assumes on-site source rock fill for gabions
Gabions, 12 in (300 mm) deep	02370-450-0200	S.Y.	B-13	153	14.64	15.38	4.87		34.89	assumes on-site source rock fill for gabions
Gabions, 18 in (450 mm) deep	02370-450-0200	S.Y.	B-13	102	20.91	23.08	7.30		51.29	assumes on-site source rock fill for gabions
Gabions, 36 in (1m) deep	02370-450-0200	S.Y.	B-13	60	35.19	39.23	12.41		86.83	assumes on-site source rock fill for gabions
HDEP Liner Installation										
Finish grading large area	2310-100-0100	S.F.	B-11L	54000		0.01	0.02		0.03	
Compaction-riding, vibrating roller - 12in (300mm) lifts	2315-310-5100	C.Y.	B-10Y	2600		0.29	0.19		0.48	
Geotextile	2660-610-0010	S.F.	3 Skwk	1600		0.87	0.51		1.38	
Geonet	2660-610-0010	S.F.	3 Skwk	1600		0.87	0.51		1.38	
Geogrid	2660-610-0010	S.F.	3 Skwk	1600		0.87	0.51		1.38	
60 mil HDPE	2660-610-0010	S.F.	3 Skwk	1600	0.44	0.87	0.51		1.82	
80 mil HDPE	user	S.F.	3 Skwk	149	\$9.00	9.31	5.53		23.84	
40 mil VLDPE	user	S.F.	3 Skwk	150	\$7.00	9.25	5.49		21.74	
	user	S.F.	3 Skwk						0.00	
	user	S.F.	3 Skwk						0.00	
Transport Costs										
Ship/Barge Transport Cost		cost/lb/mi								
Rail Transport Cost		cost/lb/mi								
Air Transport Cost		cost/lb/mi								
Escort Vehicle Deadhead Rate (\$/mi)		cost/lb/mi								
Construction Management Support										
Office Trailer, Furnished, no hook-ups	0150-500-0250	mo.			211.14				211.14	
Toilet Portable, chemical	1590-400-6410	mo.			220.12				220.12	
TOTAL					431.26				431.26	
Pump and Casing Removal										
	Pump Type	Measurement	Unit				Labor	Equipment	Total	Notes
Pump Removal										
Submersible			L.F.				6.16	16.58	22.74	

Closure Cost Estimate
Misc. Unit Costs

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

Cost Estimate Type: LOM **Cost Basis: Northern Nevada - Imperial Units**

Line Shaft	L.F.				6.16	16.58		22.74	
NOTES:									
Pump Removal Source:	Boart Longyear Quote: June 2018								

Closure Cost Estimate
Seed Mixture

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Seed Mixture						
Common Name	Scientific Name	Species Number of Seeds / lb	Species % in Mix	PLS/acre	Cost/Lb	Cost/Acre
Grasses						
Ephraim Crested Wheatgrass	<i>Agropyron Cristatum var. Ephraim</i>			1.24	1.87	2.32
Thickspike Wheatgrass	<i>Agropyron dasystrachyum</i>	154,000	4.40	1.24	2.40	2.98
Bluebunch Wheatgrass	<i>Agropyron spicatum</i>	117,000	23.42	8.65	6.60	57.09
Great Basin Wildrye	<i>Elymus cinereus</i>	95,000	8.15	6.18	10.20	63.04
Big Bluegrass	<i>Poa ampla</i>	917,000	13.11	0.62	2.47	1.53
Indian Ricegrass	<i>Oryzopsis hymenoides</i>	188,000	5.38	1.24	7.80	9.67
Sandberg Bluegrass	<i>Poa secunda</i>	925,000	13.23	0.62	6.00	3.72
Forbs						
Blue Flax				0.62		
Small Burnet	<i>Sanguisorba minor</i>	55,000	1.57	1.24		
Forage Kochia	<i>Kochia prostrata var. Immigrant</i>	407,700	2.33	0.25		
Palmer Penstemon	<i>Penstemon palmeri</i>	610,000	3.49	0.25		
Shrubs						
Fourwing Saltbush	<i>Atriplex canescens</i>	52,000	5.95	1.85	9.60	17.76
Antelope Bitterbrush	<i>Purshia tridentate</i>	15,000	0.43	2.47	33.60	82.99
Winterfat	<i>Eurotia lanata</i>	111,000	1.59	0.62	34.62	21.46
Wyoming Big Sagebrush	<i>Artemesia tridentata wyomingensis</i>	2,500,000	7.15	0.12	66.00	7.92
Total				27.21		270.48

Source:

Notes:

Closure Cost Estimate
Fleets (Crews)

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
RIPPING						
Rip road Waste rock dumps, heaps, tails - rip flat surfaces Surface preparation Scarify						
Small Dozer w/ multi-shank						
D7E				99.43	58.86	158.29
Totals				99.43	58.86	158.29
Medium Dozer w/ multi-shank						
D9T				204.88	58.86	263.74
Totals				204.88	58.86	263.74
Large Dozer w/ multi-shank						
D10T2				282.21	58.86	341.07
Totals				282.21	58.86	341.07
Grader w/ multi-shank						
16M3				183.34	59.90	243.24
Totals				183.34	59.90	243.24
GRADING						
Grading storage and structure areas Grading waste rock dumps and heaps Grading landfills Constructing pit safety berms						
Small Dozer Fleet						
D7E				99.43	58.86	158.29
Totals				99.43	58.86	158.29
Medium Dozer Fleet						
D9T				204.88	58.86	263.74
Totals				204.88	58.86	263.74
Large Dozer Fleet						
D10T2				282.21	58.86	341.07
Totals				282.21	58.86	341.07
EXPLORATION GRADING						
Backfilling and grading exploration trenches Grading flat exploration roads						
Small Dozer Fleet						
D7E				99.43	58.86	158.29
Totals				99.43	58.86	158.29
Medium Dozer Fleet						
D9T				204.88	58.86	263.74
Totals				204.88	58.86	263.74
Large Dozer Fleet						
D10T2				282.21	58.86	341.07
Totals				282.21	58.86	341.07
EXCAVATING						
Earthen Berms Diversion ditch excavation and backfill Underground openings backfill - excavate and place Pit berm construction (excavator option)						
Small Excavator						
325F				90.28	60.19	150.47
Totals				90.28	60.19	150.47
Medium Excavator						
349F				129.09	60.19	189.28

Fleets (Crews)

Cost Estimate Type: LOM **Cost Basis: Northern Nevada - Imperial Units**

EQUIPMENT FLEETS						
ACTIVITY AND FLEET			User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
	Totals			129.09	60.19	189.28
Large Excavator						
390F				192.10	60.19	252.29
Totals				192.10	60.19	252.29
EXCAVATE AND RECONTOUR						
Recontour large roads (haul roads, access roads, etc.) Ponds - Excavate and pull liner and bury						
Small Excavator + Dozer						
325F				90.28	60.19	150.47
D7E				99.43	58.86	158.29
Total Equipment				189.71	119.05	308.76
Medium Excavator + Dozer						
349F				129.09	60.19	189.28
D9T				204.88	58.86	263.74
Totals				333.97	119.05	453.02
Large Excavator + Dozer						
390F				192.10	60.19	252.29
D10T2				282.21	58.86	341.07
Totals				474.31	119.05	593.36
EXPLORATION ROAD/PAD RECONTOUR						
Recontour small roads (exploration roads, service roads, etc.) Cut and Fill reclamation on slopes Drill pad recountour Drill sump backfill						
Small Dozer						
D7E				99.43	58.86	158.29
Totals				99.43	58.86	158.29
Large Dozer						
D10T2				282.21	58.86	341.07
Totals				282.21	58.86	341.07
Grader						
14M				131.19	59.90	191.09
Totals				131.19	59.90	191.09
Small Excavator						
320F				60.71	60.19	120.90
Totals				60.71	60.19	120.90
Medium Excavator						
349F				129.09	60.19	189.28
Totals				129.09	60.19	189.28
LOAD CRUSHER/TRAM BACKFILL						
Load crusher with wheeled loader Tram backfill into portals						
Small Crusher Loader Fleet						
988K		1		195.98	60.19	256.17
Totals				195.98	60.19	256.17
Medium Crusher Loader Fleet						
990K		1		354.82	60.19	415.01
Totals				354.82	60.19	415.01
Large Crusher Loader Fleet						
992K		1		509.22	62.17	571.39
Totals				509.22	62.17	571.39
Extra Large Crusher Loader Fleet						

Closure Cost Estimate
Fleets (Crews)

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
994K		1		599.88	62.17	662.05
Totals				599.88	62.17	662.05
COMPACT COVER						
From Means Heavy Construction - Costs in Misc. Unit Costs. Assumes compaction-riding, vibrating roller - 12in (300mm) lifts						
Compactor						
CS54B		1		62.27	57.84	120.11
Totals				62.27	57.84	120.11
LOAD, HAUL AND PLACE MATERIAL						
Rock placement Haul overburden for backfill Haul borrow for backfill Haul cover or growth media						
Small Truck/Loader Fleet						
740C				149.84	38.08	187.92
988K	Loader			195.98	60.19	256.17
D7E		1		99.43	58.86	158.29
Totals				445.25	157.13	602.38
Medium Truck/Loader Fleet						
785D				479.47	38.08	517.55
992K	Loader			509.22	62.17	571.39
D8T		1		164.48	58.86	223.34
Totals				1,153.17	159.11	1,312.28
Large Truck/Loader Fleet						
777G				408.99	38.08	447.07
992K	Loader			509.22	62.17	571.39
D9T		1		204.88	58.86	263.74
Totals				1,123.09	159.11	1,282.20
Extra Large Truck/Loader Fleet						
789D				517.08	38.08	555.16
994K	Loader			599.88	62.17	662.05
D11T		1		519.01	58.86	577.87
Totals				1,635.97	159.11	1,795.08
Scraper/Dozer Fleet						
631K				177.13	59.67	236.80
D10T2				282.21	58.86	341.07
D10T2		1		282.21	58.86	341.07
Totals				741.55	177.39	918.94
Tandem Scraper Fleet						
637K				315.36	60.19	375.55
D7E		1		99.43	58.86	158.29
Totals				414.79	119.05	533.84
MISC. LOAD AND HAUL AND EARTHWORKS						
Sludge removal Drainage controls						
Misc. - Cat 325B Excavator / 10-12 yd3 Truck						
325F				90.28	60.19	150.47
Dump Truck (10-12 yd3)				88.44	38.08	126.52
Totals				178.72	98.27	276.99
Misc. - Cat D9R Dozer/ Loader (5 yd3) / 10-12 yd3 Truck						
D9T				204.88	58.86	263.74
966M				101.26	60.19	161.45
Dump Truck (10-12 yd3)				88.44	38.08	126.52
Totals				394.58	157.13	551.71
Misc. - Cat D6 Dozer / Cat 966 Loader / 10-12 yd3 Truck						
D6T				94.73	58.86	153.59
966M				101.26	60.19	161.45

Closure Cost Estimate
Fleets (Crews)

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
Dump Truck (10-12 yd3)				88.44	38.08	126.52
Totals				284.43	157.13	441.56
LINER REMOVAL						
Liner removal						
Small - Cat 325B Excavator w/ H140D s Hammer						
325F				90.28	60.19	150.47
General Laborer		2		0.00	74.52	74.52
Totals				90.28	134.71	224.99
CONCRETE BREAKING						
Slab demolition Footing demolition Wall demolition						
Small - Cat 325F Excavator w/ H120E s Hammer						
325F				90.28	60.19	150.47
H120Es (fits 325)				41.89	0.00	41.89
D9T				204.88	58.86	263.74
Totals				337.05	119.05	456.10
Medium - Cat 349F Excavator w/ H160E s Hammer						
349F				129.09	60.19	189.28
H160Es (fits 349)				87.08	0.00	87.08
D9T				204.88	58.86	263.74
Totals				421.05	119.05	540.10
Large - Cat 374F Excavator w/ H180E s Hammer						
374F				159.48	60.19	219.67
H180Es (fits 374/390)				115.81	0.00	115.81
D9T				204.88	58.86	263.74
Totals				480.17	119.05	599.22
DRILL HOLE ABANDONMENT						
Drill Hole - Grout or Cement						
Pump (plugging) Drill Rig				394.94	59.67	454.61
Driller's Helper		2		0.00	75.12	75.12
Totals				394.94	134.79	529.73
Drill Hole - Inert Media (Means Crew B-11M+ 1 Laborer)						
420F2				39.42	59.90	99.32
General Laborer		1		0.00	37.26	37.26
Totals				39.42	97.16	136.58
Drill Hole - Casing Perforation or Removal						
Heavy Duty Drill Rig				399.88	59.67	459.55
Driller's Helper		2		0.00	75.12	75.12
Totals				399.88	134.79	534.67
MAINTENANCE FLEET						
Road Grading, Dust Suppression, Clean Up						
Maintenance - Small Water Truck and Cat 14G Grader						
621E (8,000 gal)				110.06	38.08	148.14
14M				131.19	59.90	191.09
Totals				241.25	97.98	339.23
Maintenance - Medium Water Truck and Cat 16G Grader						
777G H2O Truck				408.99	38.08	447.07
16M3				183.34	59.90	243.24
Totals				592.33	97.98	690.31
Maintenance - Large Water Truck and Cat 16G Grader						
785D H2O Truck				479.47	38.08	517.55
24M				213.70	59.90	273.60
Totals				693.17	97.98	791.15
PROJECT SUPERVISION						
Foreman		1		0.00	85.00	85.00

Closure Cost Estimate
Fleets (Crews)

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
Supervisor's Truck		1		20.13	57.84	77.97
Totals				20.13	142.84	162.97
MEANS CREW DEFINITIONS						
Crew composition from Means Heavy Construction 2005 Edition by permission of R.S.Means/Reed Construction Data . For use with misc. unit costs where Means is the source for productivity						
1 Clab - Seedling Planting/Block Wall Demolition						
General Laborer		1		0.00	37.26	37.26
Totals				0.00	37.26	37.26
2 Clab - Barbed Wire/Wood Fence Removal, Drainpipe Installation, Pumping, Evaporation						
General Laborer		2		0.00	74.52	74.52
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				29.87	132.36	162.23
2 Clab + Excavator - Pond Liner Cut and Fold						
General Laborer		2		0.00	74.52	74.52
325F				90.28	60.19	150.47
Totals				90.28	134.71	224.99
2 Clab + Welder - Bat Gates						
General Laborer		2		0.00	74.52	74.52
Welding Equipment				18.47	59.24	77.71
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				48.34	191.60	239.94
3 Clab - Foam Adit Plugs						
General Laborer		2		0.00	74.52	74.52
420F2				39.42	59.90	99.32
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				69.29	192.26	261.55
3 Clab + Welder - Culvert Bat Gate						
General Laborer		2		0.00	74.52	74.52
Welding Equipment				18.47	59.24	77.71
420F2				39.42	59.90	99.32
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				87.76	251.50	339.26
3 Clab D - 3 Laborers + Foreman - Decontamination						
General Laborer		3		0.00	111.78	111.78
Foreman		1		0.00	85.00	85.00
Supervisor's Truck		1		20.13	57.84	77.97
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				50.00	312.46	362.46
3 SKWK - Liner Installation						
Skilled Laborer		3		0.00	113.58	113.58
HDEP Welder (pipe or liner)		1		63.56	0.00	63.56
420F2		1		39.42	59.90	99.32
				0.00		0.00
				0.00		0.00
				0.00		0.00
Totals				102.98	173.48	276.46
B-3 - Small Building Demoltion						
LABOR						
General Laborer		2		0.00	74.52	74.52
Foreman		1		0.00	85.00	85.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
EQUIPMENT						
930M		1		49.17	59.67	108.84
Dump Truck (10-12 yd3)		2		176.88	76.16	253.04
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00

Closure Cost Estimate
Fleets (Crews)

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
				0.00		0.00
				0.00		0.00
				0.00		0.00
Totals				226.05	295.35	521.40
B-6 - Chain Link Fence/Culvert Removal						
General Laborer		2		0.00	74.52	74.52
930M		1		49.17	59.67	108.84
Totals				49.17	134.19	183.36
B-8 - Large Building Demolition						
LABOR						
General Laborer		2		0.00	74.52	74.52
Foreman		1		0.00	85.00	85.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
EQUIPMENT						
930M		1		49.17	59.67	108.84
20 Ton Crane		1		91.36	60.19	151.55
Dump Truck (10-12 yd3)		2		176.88	76.16	253.04
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
				0.00		0.00
Totals				317.41	355.54	672.95
B-9 - Concrete Wall Demolition						
General Laborer		4		0.00	149.04	149.04
Foreman		1		0.00	85.00	85.00
Air Compressor + tools				30.17	56.38	86.55
Totals				30.17	290.42	320.59
B-10Y - General Compaction						
General Laborer		1		0.00	37.26	37.26
CS54B		1		62.27	57.84	120.11
Totals				62.27	95.10	157.37
B-11L - Fine Grading for Evaporation Pond Liner Base						
General Laborer		1		0.00	37.26	37.26
14M		1		131.19	59.90	191.09
Totals				131.19	97.16	228.35
B-11M - Backhoe Work						
420F2		1		39.42	59.90	99.32
Totals				39.42	59.90	99.32
B-12G - Rip-Rap Machine Placed (Modified)						
General Laborer		2		0.00	74.52	74.52
966M		1		101.26	60.19	161.45
325F		1		90.28	60.19	150.47
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				221.41	178.22	399.63
B-13 - Grouted Rip-Rap & Gabion Baskets						
General Laborer		4		0.00	149.04	149.04
Foreman		1		0.00	85.00	85.00
50 Ton Crane		1		93.09	60.19	153.28
Totals				93.09	294.23	387.32
B-14 PVC Drain Pipe Installation						
Foreman		1		0.00	85.00	85.00
General Laborer		4		0.00	149.04	149.04
420F2		1		39.42	59.90	99.32

Closure Cost Estimate
Fleets (Crews)

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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				69.29	351.78	421.07
B-20 - Remove Pipelines						
Foreman		1		0.00	85.00	85.00
Skilled Laborer		1		0.00	37.86	37.86
General Laborer		1		0.00	37.26	37.26
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				29.87	217.96	247.83
B-22A - HDEP Installation - Pipe or Liner						
Skilled Laborer		1		0.00	37.86	37.86
General Laborer		2		0.00	74.52	74.52
D7E		1		99.43	58.86	158.29
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
420F2		1		39.42	59.90	99.32
Generator 5KW		1		8.59	0.00	8.59
HDEP Welder (pipe or liner)		1		63.56	0.00	63.56
Totals				240.87	288.98	529.85
B-34N - Equipment Mobilization (40-ton)						
Skilled Laborer		1		0.00	37.86	37.86
General Laborer		2		0.00	74.52	74.52
D7E		1		99.43	58.86	158.29
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
420F2		1		39.42	59.90	99.32
Generator 5KW		1		8.59	0.00	8.59
HDEP Welder (pipe or liner)		1		63.56	0.00	63.56
Totals				240.87	288.98	529.85
B-34U - Equipment Mobilization (20-ton)						
Skilled Laborer		1		0.00	37.86	37.86
General Laborer		2		0.00	74.52	74.52
D7E		1		99.43	58.86	158.29
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
420F2		1		39.42	59.90	99.32
Generator 5KW		1		8.59	0.00	8.59
HDEP Welder (pipe or liner)		1		63.56	0.00	63.56
Totals				240.87	288.98	529.85
B-34V - Equipment Mobilization (50-ton)						
Skilled Laborer		1		0.00	37.86	37.86
General Laborer		2		0.00	74.52	74.52
D7E		1		99.43	58.86	158.29
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
420F2		1		39.42	59.90	99.32
Generator 5KW		1		8.59	0.00	8.59
HDEP Welder (pipe or liner)		1		63.56	0.00	63.56
Totals				240.87	288.98	529.85
B-80A - Install Barbed Wire Fence						
General Laborer		3		0.00	111.78	111.78
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				29.87	169.62	199.49
B-80C - Install Chain Link Fence (Flatbed truck has small crane)						
General Laborer		3		0.00	111.78	111.78
Light Truck - 1.5 Ton		1		29.87	57.84	87.71
Totals				29.87	169.62	199.49
C-14B - Elevated Concrete Slabs (Reinforced Concrete Shaft Covers)						
Foreman		1		0.00	85.00	85.00
Supervisor's Truck		1		20.13	57.84	77.97
Carpenter		16		0.00	750.40	750.40
General Laborer		2		0.00	74.52	74.52
Rodmen (reinforcing concrete)		4		0.00	149.52	149.52
Cement finisher		2		0.00	75.12	75.12
Gas Engine Vibrator		1		6.00	57.84	63.84
Concrete Pump		1		145.72	0.00	145.72
Totals				171.85	1,250.24	1,422.09

Closure Cost Estimate
Fleets (Crews)

Project Name: Grassy Mountain Mine - Reclamation Plan
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Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

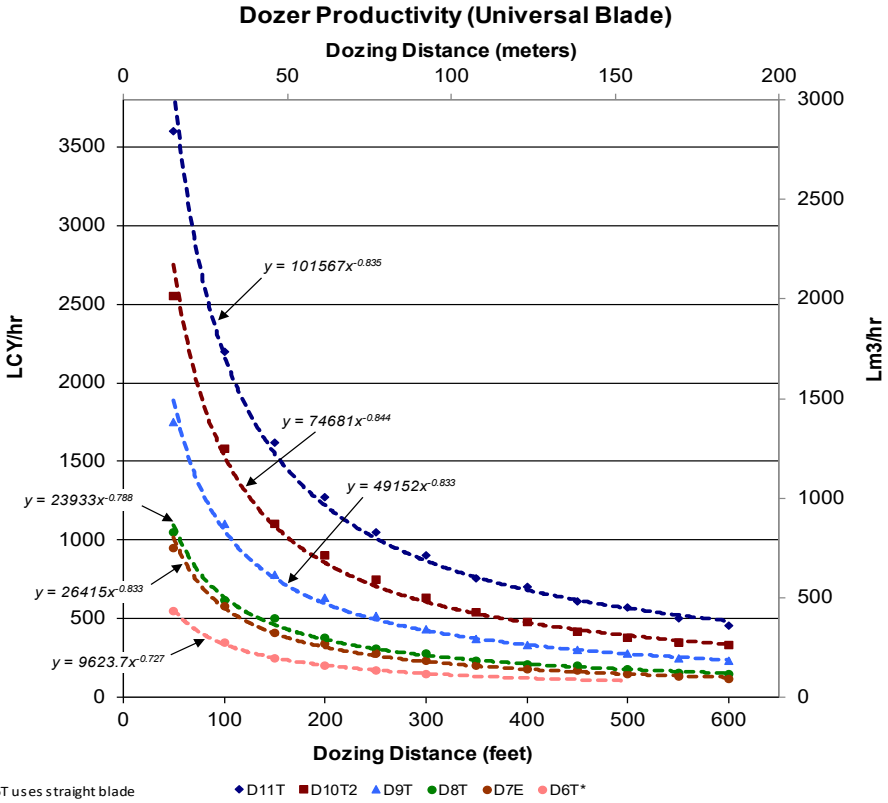
EQUIPMENT FLEETS						
ACTIVITY AND FLEET		Standard Labor Crew	User Defined Labor Crew	EQUIPMENT UNIT COST (Hourly)	TOTAL LABOR UNIT COST (Hourly)	TOTAL COST (Hourly)
C-14D - Concrete Walls Formed in Place (Reinforced Concrete Adit Bulkheads)						
Foreman		1		0.00	85.00	85.00
Supervisor's Truck		1		20.13	57.84	77.97
Carpenter		18		0.00	844.20	844.20
General Laborer		2		0.00	74.52	74.52
Rodmen (reinforcing concrete)		2		0.00	74.76	74.76
Cement finisher		1		0.00	37.56	37.56
Gas Engine Vibrator		1		6.00	57.84	63.84
Concrete Pump		1		145.72	0.00	145.72
Totals				171.85	1,231.72	1,403.57

Closure Cost Estimate
Productivity

Productivity - Bulldozers

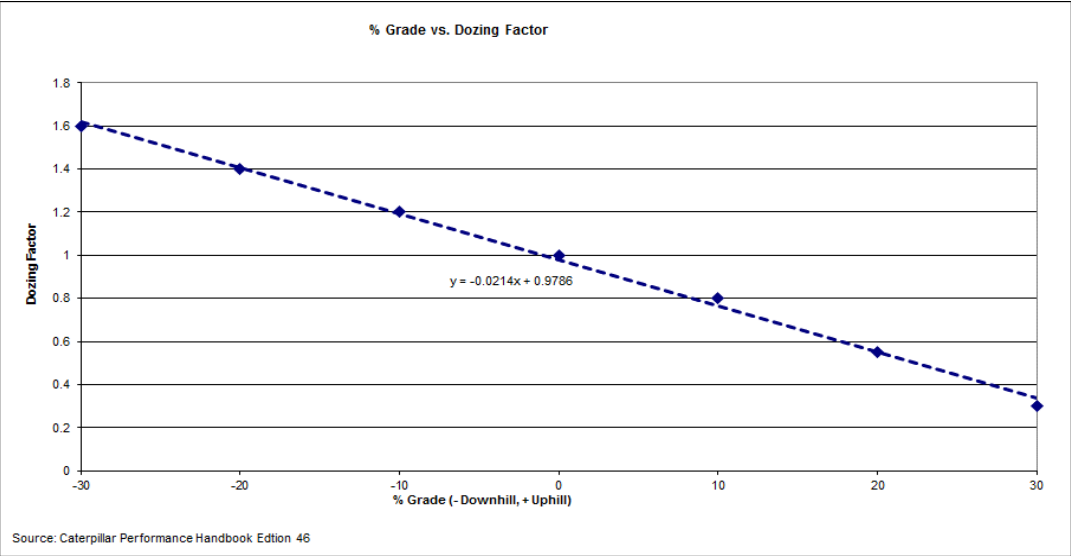
Dozer Specifications						
Description	D6T	D7E	D8T	D9T	D10T2	D11T
Blade Width (SU) (ft)	10.67	12.17	12.92	14.08	16.25	18.33
Shank Guage (3 shanks) (ft)	6.58	5.92	7.08	7.67	8.67	9.83
Pocket Spacing (ft)	3.25	2.92	3.58	3.86	4.33	4.92
Ripping Width (Ripper + 1 Pocket) (ft)	9.83	8.84	10.66	11.53	13	14.75
Ripping Speed (mph)	1	1	1	1	1	1
Ripping Maneuver (turn) Time (min)	0.25	0.25	0.25	0.25	0.25	0.25
Altitude Deration Factor	1	1	1	1	1	1
Ripping Hourly Production (excluding maneuvering time) (ft)	5,280	5,016	5,280	5,280	5,280	4,541
Source: Caterpillar Performance Handbook Edition 47						

Dozer Productivity vs. Grading Distance						
Average Dozing Distance (feet)	Production (LCY/hr)					
	D6T	D7E	D8T	D9T	D10T2	D11T
50	550	950	1,050	1,750	2,550	3,600
100	350	580	620	1,100	1,580	2,200
200	205	340	380	630	900	1,270
300	150	230	280	430	630	900
400		180	210	330	480	700
500		150	180	280	380	570
600		120	150	230	330	460
Source: Caterpillar Performance Handbook Edition 47						
dozer productivity = k x Dozing Distance ^p (see graph)						
k =	9623.7	26451	23933	49152	74681	101567
p =	-0.727	-0.833	-0.788	-0.833	-0.844	-0.835



Productivity - Bulldozers (cont.)

% Grade vs. Dozing Factor	
% Grade	Dozing Factor
-30	1.6
-20	1.4
-10	1.2
0	1
10	0.8
20	0.55
30	0.3
Source: Caterpillar Performance Handbook Edition 47	
% Grade Dozing Factor = $-0.0214x + 0.9786$ (see graph)	



Job Condition Correction Factors - Bulldozers	
OPERATOR	
Average	0.75
MATERIAL ⁽¹⁾	
Loose stockpile	1.2
Normal	1
Hard to cut; frozen — with tilt cylinder	0.8
Hard to drift; “dead” (dry,non-cohesive material) or very sticky material	0.8
Rock, ripped or blasted	0.6
SLOT DOZING OR SIDE BY SIDE (1)	1.2
VISIBILITY	
Good conditions	1
OPERATOR SKILL	
Average	0.75
JOB EFFICIENCY	
50 min/hr	0.83
(1) Selected in facility worksheets. Other factors included as standard factors.	

Closure Cost Estimate
Productivity

Source: Caterpillar Performance Handbook Edition 47

Material Densities(1)	
Material	lb/yd3
Alluvium	2,900
Basalt	3,300
Clay - Dry	2,500
Granite - broken	2,800
Gravel	2,550
Limestone - broken	2,600
Limestone - crushed	2,600
Sandstone	2,550
Shale	2,100
Stone - crushed	2,700
Tailings - Coarse (dry, loose sand)	2,400
Tailings - Slimes (loose sand & clay)	2,700
Topsoil	1,600

Note: uses Sand & Gravel - Dry from Caterpillar Handbook

(1) Source: Caterpillar Performance Handbook Edition 47

Productivity - Scrapers

Scraper Specifications		
Description	631K	637K
Empty Weight (lb)	102,750	112,760
Payload Capacity (yd3)		
Struck	24	24
Heaped	34	34
Average	29	29
Loaded by	One D10	Self*
Load Time (min)	0.50	0.50
Maneuver and Spread (min)	0.70	0.60
Operator Skill	1.00	1.00
Job Efficiency	0.83	0.83
Rolling Resistance**	2.50	2.50
Altitude Deration Factor	1	1
* Requires pair		
**A firm, smooth, rolling roadway with dirt or light surfacing, flexing slightly under load or		

Source: Caterpillar Performance Handbook Edition 47

Weight of Materials			Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)																			
			631K										637K PP									
Material	lb/yd3	Scraper Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2
Alluvium	2,900	84,100	186,850	8	8	8	8	10.6	14.3	19.2	26	35	196,860	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Basalt	3,300	95,700	198,450	8	8	8	8	10.6	14.3	19.2	26	35	208,460	8	10.6	10.6	10.6	14.2	19.2	19.2	35	35
Clay - Dry	2,500	72,500	175,250	8	8	8	10.6	10.6	14.3	19.2	26	35	185,260	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Granite - broken	2,800	81,200	183,950	8	8	8	8	10.6	14.3	19.2	26	35	193,960	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Gravel	2,550	73,950	176,700	8	8	8	10.6	10.6	14.3	19.2	26	35	186,710	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Limestone - broken	2,600	75,400	178,150	8	8	8	8	10.6	14.3	19.2	26	35	188,160	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Limestone - crushed	2,600	75,400	178,150	8	8	8	8	10.6	14.3	19.2	26	35	188,160	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Sandstone	2,550	73,950	176,700	8	8	8	10.6	10.6	14.3	19.2	26	35	186,710	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Shale	2,100	60,900	163,650	8	8	8	10.6	10.6	14.3	19.2	35	35	173,660	10.6	10.6	10.6	14.2	19.2	19.2	35	35	35
Stone - crushed	2,700	78,300	181,050	8	8	8	8	10.6	14.3	19.2	26	35	191,060	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Tailings - Coarse (dry, loose sand)	2,400	69,600	172,350	8	8	8	10.6	10.6	14.3	19.2	35	35	182,360	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Tailings - Slimes (loose sand & clay)	2,700	78,300	181,050	8	8	8	8	10.6	14.3	19.2	26	35	191,060	10.6	10.6	10.6	10.6	19.2	19.2	26	35	35
Topsoil	1,600	46,400	149,150	8	8	10.6	10.6	14.3	19.2	26	35	35	159,160	10.6	10.6	10.6	19.2	19.2	19.2	35	35	35
assumes medium compression breaking			Empty	14.3	14.3	14.3	14.3	19.2	19.2	26	35	35	Empty	14.2	19.2	19.2	19.2	19.2	35	35	35	35

Source: Caterpillar Performance Handbook Edition 46

Weight of Materials			Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)																			
			631K										637K PP									
Material	lb/yd3	Scraper Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2
Alluvium	2,900	84,100	186,850	4	5.5	6.5	7.4	9	11.2	15	22.3	33.2	196,860	6.7	7.6	8.7	9.4	12	15.2	20.5	29.8	35
Basalt	3,300	95,700	198,450	3.9	4.1	6.1	7	8.5	11	14	22.3	32	208,460	6.5	6.9	8.3	9.2	11.5	14.2	19.1	28.8	35
Clay - Dry	2,500	72,500	175,250	4.1	6.1	6.9	8.2	9.2	12	16.2	23	33	185,260	6.9	8.2	9	10.7	12.5	15.9	21.6	31	35
Granite - broken	2,800	81,200	183,950	4.1	6	6.6	7.8	9	11.5	15.9	23	32	193,960	6.8	7.8	8.8	9.6	12	15.3	20.9	30.2	35
Gravel	2,550	73,950	176,700	4.2	6.1	6.8	8.8	9.2	11.9	16	23.2	33	186,710	6.9	8.2	9	10.6	12.5	15.8	21.5	30.8	35
Limestone - broken	2,600	75,400	178,150	4.1	6	6.7	8.2	9	11.8	15.8	23	32	188,160	6.9	8.1	9	10.4	12.5	15.7	21.3	30.8	35
Limestone - crushed	2,600	75,400	178,150	4.1	6	6.7	8.2	9	11.8	15.8	23	32	188,160	6.9	8.1	9	10.4	12.5	15.7	21.3	30.8	35
Sandstone	2,550	73,950	176,700	4.2	6.1	6.8	8.8	9.2	11.9	16	23.2	33	186,710	6.9	8.2	9	10.6	12.5	15.8	21.5	30.8	35
Shale	2,100	60,900	163,650	5.8	6.5	7	8.8	9.5	12.5	16.6	26	34	173,660	7.8	8.7	9.3	11.4	13.5	16.6	22.6	31.6	35
Stone - crushed	2,700	78,300	181,050	4.2	6	6.6	8	9	11.4	15.5	22.5	33	191,060	6.8	8	8.9	10	12	15.5	21.1	30.4	35
Tailings - Coarse (dry, loose sand)	2,400	69,600	172,350	4.3	6.2	6.8	8.3	9.5	11.8	16	25	34	182,360	7	8.4	9.1	10.8	12.5	16	21.9	31.2	35
Tailings - Slimes (loose sand & clay)	2,700	78,300	181,050	4.2	6	6.6	8	9	11.4	15.5	22.5	33	191,060	6.8	8	8.9	10	12	15.5	21.1	30.4	35
Topsoil	1,600	46,400	149,150	6.3	6.9	8.4	9.2	11.2	14	19.6	24	34	159,160	8.5	9.1	10.7	12.2	15	18.3	25	32.4	35
			Empty	9	9.4	11.5	12.6	16	17.5	18.5	25	35	Empty	12.5	14.7	16.3	19.7	22.7	29.1	32.7	34.6	35

Closure Cost Estimate
Productivity

Source: Caterpillar Performance Handbook Edition 47

Productivity - Haul Trucks

Haul Truck Specifications							
Description	770G	773G	777G	785D	789D	793F	797F
Chassis Weight (lb)	56,144	77,582	115,171	180,827	222,233	269,006	472,880
Body Weight (lb)	17,103	24,358	35,429	50,700	58,656	59,289	97,610
Standard Liner Weight (lb)	6,195	8,218	12,555	17,886	21,367	13,688	16,870
Total Truck Weight (lb)	79,442	110,158	163,155	249,413	302,256	341,983	587,360
Payload Capacity (yd3)							
Struck	24	34.5	54.6	77	106	173	315
Heaped	33.9	46	78.6	102	141	230	350
Average	28.7	40.25	66.6	89.5	123.5	201.5	332.5
Maneuver to Load Time (min)	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Maneuver and Dump Time (min)	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Operator Skill	1	1	1	1	1	1	1
Job Efficiency	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Rolling Resistance**	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Altitude Deration Factor	1	1	1	1	1	1	1
**A firm, smooth, rolling roadway with dirt or light surfacing, flexing slightly under load or undulating, maintained fairly regularly, watered							
Source: Caterpillar Performance Handbook Edition 47							

Weight of Materials				Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)																					
				770G											773G										
Material	lb/yd3	Truck 770G Load (lb)	Truck 773G Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0
Alluvium	2,900	83,230	116,725	162,672	7	10	10	13.5	18	18	25	35	35	35	226,883	10.6	10.6	10.6	10.6	19.2	19.2	19.2	35	35	35
Basalt	3,300	94,710	132,825	174,152	7	7	10	10	13.5	18	25	35	35	35	242,983	10.6	10.6	10.6	10.6	14.2	19.2	19.2	35	35	35
Clay - Dry	2,500	71,750	100,625	151,192	10	10	10	13.5	18	25	33.5	35	35	35	210,783	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Granite - broken	2,800	80,360	112,700	159,802	7	10	10	13.5	18	18	25	35	35	35	222,858	10.6	10.6	10.6	10.6	19.2	19.2	19.2	35	35	35
Gravel	2,550	73,185	102,638	152,627	10	10	10	13.5	18	25	33.5	35	35	35	212,796	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Limestone - broken	2,600	74,620	104,650	154,062	7	10	10	13.5	18	25	33.5	35	35	35	214,808	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Limestone - crushed	2,600	74,620	104,650	154,062	7	10	10	13.5	18	25	33.5	35	35	35	214,808	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Sandstone	2,550	73,185	102,638	152,627	10	10	10	13.5	18	25	33.5	35	35	35	212,796	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Shale	2,100	60,270	84,525	139,712	10	10	13.5	18	18	25	33.5	35	35	35	194,683	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Stone - crushed	2,700	77,490	108,675	156,932	10	10	10	13.5	18	25	33.5	35	35	35	218,833	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Tailings - Coarse (dry, loose sand)	2,400	68,880	96,600	148,322	10	10	10	13.5	18	25	33.5	35	35	35	206,758	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Tailings - Slimes (loose sand & clay)	2,700	77,490	108,675	156,932	10	10	10	13.5	18	25	33.5	35	35	35	218,833	10.6	10.6	10.6	10.6	19.2	19.2	25.9	35	35	35
Topsoil	1,600	45,920	64,400	125,362	10	13.5	13.5	18	25	25	33.5	35	35	35	174,558	10.6	10.6	10.6	14.2	19.2	19.2	35	35	35	35
				Empty	18	25	33.5	33.5	33.5	35	35	35	35	35	Empty	14.2	19.2	19.2	19.2	25.9	35	35	35	35	35
Source: Caterpillar Performance Handbook Edition 47																									

Weight of Materials				Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)																					
				777G											785D										
Material	lb/yd3	Truck 777G Load (lb)	Truck 785D Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0
Alluvium	2,900	193,140	259,550	356,295	8	9	9	9	13	16.8	16.8	22.8	35	35	508,963	7.8	7.8	7.8	10.5	10.5	14.2	19.2	35	35	35
Basalt	3,300	219,780	295,350	382,935	8	9	9	13	13	16.8	22.8	35	35	35	544,763	7.8	7.8	7.8	10.5	10.5	14.2	19.2	26.1	35	35
Clay - Dry	2,500	166,500	223,750	329,655	9	9	13	13	17	22.8	30.6	35	35	35	473,163	7.8	7.8	10.5	10.5	14.2	14.2	19.2	35	35	35
Granite - broken	2,800	186,480	250,600	349,635	9	9	9	13	17	16.8	22.8	35	35	35	500,013	7.8	7.8	7.8	10.5	10.5	14.2	19.2	35	35	35
Gravel	2,550	169,830	228,225	332,985	9	9	13	13	17	22.8	30.6	35	35	35	477,638	7.8	7.8	10.5	10.5	14.2	14.2	19.2	35	35	35
Limestone - broken	2,600	173,160	232,700	336,315	9	9	9	13	17	22.8	30.6	35	35	35	482,113	7.8	7.8	7.8	10.5	14.2	14.2	19.2	35	35	35
Limestone - crushed	2,600	173,160	232,700	336,315	9	9	9	13	17	22.8	30.6	35	35	35	482,113	7.8	7.8	7.8	10.5	14.2	14.2	19.2	35	35	35
Sandstone	2,550	169,830	228,225	332,985	9	9	13	13	17	22.8	30.6	35	35	35	477,638	7.8	7.8	10.5	10.5	14.2	14.2	19.2	35	35	35
Shale	2,100	139,860	187,950	303,015	9	9	13	17	17	22.8	30.6	35	35	35	437,363	7.8	7.8	10.5	10.5	14.2	19.2	26.1	35	35	35
Stone - crushed	2,700	179,820	241,650	342,975	9	9	9	13	17	16.8	22.8	35	35	35	491,063	7.8	7.8	7.8	10.5	10.5	14.2	19.2	35	35	35
Tailings - Coarse (dry, loose sand)	2,400	159,840	214,800	322,995	9	9	13	13	17	22.8	30.6	35	35	35	464,213	7.8	7.8	10.5	10.5	14.2	19.2	19.2	35	35	35
Tailings - Slimes (loose sand & clay)	2,700	179,820	241,650	342,975	9	9	9	13	17	16.8	22.8	35	35	35	491,063	7.8	7.8	10.5	10.5	14.2	14.2	19.2	35	35	35
Topsoil	1,600	106,560	143,200	269,715	9	12.5	12.5	16.8	22.8	22.8	30.6	35	35	35	392,613	7.8	10.5	10.5	14.2	14.2	19.2	26.1	35	35	35
				Empty	22.8	22.8	22.8	30.6	35	35	35	35	35	35	Empty	14.2	14.2	19.2	19.2	26.1	35	35	35	35	35
Source: Caterpillar Performance Handbook Edition 47																									

Weight of Materials				Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)																					
				789D												793F									
Material	lb/yd3	Truck 789D Load (lb)	Truck 793F Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0
Alluvium	2,900	358,150	584,350	660,406	7.8	7.8	7.8	7.8	10.5	10.5	19.2	26.1	35	35	926,333	8.1	8.1	10.9	10.9	14.8	20	26.1	35	35	35
Basalt	3,300	407,550	664,950	709,806	7.8	7.8	7.8	7.8	10.5	10.5	14.4	26.1	35	35	1,006,933	8.1	8.1	8.1	8.1	10.9	14.8	20	26.1	35	35
Clay - Dry	2,500	308,750	503,750	611,006	7.8	7.8	7.8	10.5	10.5	14.4	19.2	26.1	35	35	845,733	8.1	8.1	8.1	10.9	0	14.8	20	35	35	35
Granite - broken	2,800	345,800	564,200	648,056	7.8	7.8	7.8	7.8	10.5	14.4	19.2	26.1	35	35	906,183	8.1	8.1	8.1	10.9	10.9	14.8	20	26.1	35	35
Gravel	2,550	314,925	513,825	617,181	7.8	7.8	7.8	10.5	10.5	14.4	19.2	26.1	35	35	855,808	8.1	8.1	8.1	10.9	0	14.8	20	35	35	35
Limestone - broken	2,600	321,100	523,900	623,356	7.8	7.8	7.8	10.5	10.5	14.4	19.2	26.1	35	35	865,883	8.1	8.1	8.1	10.9	10.9	14.8	20	35	35	35
Limestone - crushed	2,600	321,100	523,900	623,356	7.8	7.8	7.8	10.5	10.5	14.4	19.2	26.1	35	35	865,883	8.1	8.1	8.1	10.9	10.9	14.8	20	35	35	35
Sandstone	2,550	314,925	513,825	617,181	7.8	7.8	7.8	10.5	10.5	14.4	19.2	26.1	35	35	855,808	8.1	8.1	8.1	10.9	0	14.8	20	35	35	35
Shale	2,100	259,350	423,150	561,606	7.8	7.8	7.8	10.5	10.5	14.4	19.2	35	35	35	765,133	8.1	8.1	10.9	10.9	14.8	20	26.1	35	35	35
Stone - crushed	2,700	333,450	544,050	635,706	7.8	7.8	7.8	7.8	10.5	14.4	19.2	26.1	35	35	886,033	8.1	8.1	8.1	10.9	10.9	14.8	20	35	35	35

Closure Cost Estimate
Productivity

Tailings - Coarse (dry, loose sand)	2,400	296,400	483,600	598,656	7.8	7.8	7.8	10.5	10.5	14.4	19.2	26.1	35	35	825,583	8.1	8.1	8.1	10.9	14.8	14.8	20	35	35	35
Tailings - Slimes (loose sand & clay)	2,700	333,450	544,050	635,706	7.8	7.8	7.8	7.8	10.5	14.4	19.2	26.1	35	35	886,033	8.1	8.1	8.1	10.9	10.9	14.8	20	35	35	35
Topsoil	1,600	197,600	322,400	499,856	7.8	7.8	10.5	10.5	14.4	19.2	19.2	35	35	35	664,383	8.1	10.9	10.9	14.8	14.8	20	26.1	35	35	35
				Empty	10.5	14.4	14.4	19.2	19.2	26.1	35	35	35	35	Empty	14.8	20	20	26.1	26.1	35	35	35	35	35

Source: Caterpillar Performance Handbook Edition 47

Weight of Materials			Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)										
			797F										
Material	lb/yd3	Truck 797F Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0
Alluvium	2,900	964,250	1,551,610	5.4	6.8	7.2	8.7	9.6	13.8	17.3	23.2	35	35
Basalt	3,300	1,097,250	1,684,610	5.4	5.4	7.2	7.2	9.6	12.9	17.2	23.4	35	35
Clay - Dry	2,500	831,250	1,418,610	6.3	7.2	7.5	9.6	11.4	12.9	17.2	23.4	35	35
Granite - broken	2,800	931,000	1,518,360	5.4	6.9	7.2	9	9.6	12.9	17.2	23.4	35	35
Gravel	2,550	847,875	1,435,235	6.3	7.2	7.2	9.6	11.2	12.9	17.2	23.4	35	35
Limestone - broken	2,600	864,500	1,451,860	6	7.2	7.2	9.6	10.7	12.9	17.2	23.4	35	35
Limestone - crushed	2,600	864,500	1,451,860	6	7.2	7.2	9.6	10.7	12.9	17.2	23.4	35	35
Sandstone	2,550	847,875	1,435,235	6.3	7.2	7.2	9.6	11.2	12.9	17.2	23.4	35	35
Shale	2,100	698,250	1,285,610	7.2	7.2	9.6	9.6	12.9	15	19.8	31.5	35	35
Stone - crushed	2,700	897,750	1,485,110	6.8	7.2	7.2	9.6	10	12.9	17.2	23.4	35	35
Tailings - Coarse (dry, loose sand)	2,400	798,000	1,385,360	6.6	7.2	8	9.6	11.8	12.9	17.2	26	35	35
Tailings - Slimes (loose sand & clay)	2,700	897,750	1,485,110	6.8	7.2	7.2	9.6	10	12.9	17.2	23.4	35	35
Topsoil	1,600	532,000	1,119,360	6.5	9.6	9.6	12.9	12.9	17.2	23.4	31.5	35	35
			Empty	13.8	17.3	17.3	23.2	23.3	31.4	35	35	35	35

Source: Caterpillar Performance Handbook Edition 47

Weight of Materials				Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)																			
				770G										773G									
Material	lb/yd3	Truck 770G Load (lb)	Truck 773G Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2
Alluvium	2,900	83,230	116,725	162,672	4	5	6.3	7.5	8.9	11.3	15.2	22.3	35	226,883	5.6	6.6	7.4	8.7	10.4	13.2	17.5	25.7	35
Basalt	3,300	94,710	132,825	174,152	4	4.4	5.9	6.8	8.5	10.6	14.6	21.6	35	242,983	5.3	6	7	8	9.8	12.2	16.2	24.3	35
Clay - Dry	2,500	71,750	100,625	151,192	4.8	6	6.8	8.4	9.5	12.1	16.4	24.8	35	210,783	6.2	7.1	8	9.5	10.9	14	18.7	28	35
Granite - broken	2,800	80,360	112,700	159,802	4.2	5.3	6.5	12.8	14	11.6	15.5	22.5	35	222,858	5.9	6.8	7.7	8.9	10.5	13.3	17.9	26.6	35
Gravel	2,550	73,185	102,638	152,627	4.5	6	6.8	8.3	9.5	12	16.2	23.4	35	212,796	6.2	7.1	7.9	9.4	10.8	13.9	18.5	27.4	35
Limestone - broken	2,600	74,620	104,650	154,062	4.3	5.8	6.7	8.2	9.3	12	16	24.5	35	214,808	6	7	7.9	9.2	10.8	13.7	18.3	27.4	35
Limestone - crushed	2,600	74,620	104,650	154,062	4.3	5.8	6.7	8.2	9.3	12	16	24.5	35	214,808	6	7	7.9	9.2	10.8	13.7	18.3	27.4	35
Sandstone	2,550	73,185	102,638	152,627	4.5	6	6.8	8.3	9.5	12	16.2	23.4	35	212,796	6.2	7.1	7.9	9.4	10.8	13.9	18.5	27.4	35
Shale	2,100	60,270	84,525	139,712	5.3	6.5	7.5	8.7	10.5	12.5	16.8	27	35	194,683	6.8	7.6	8.8	10.2	12	15.2	19.9	30.8	35
Stone - crushed	2,700	77,490	108,675	156,932	4.3	5.5	6.6	8	9.2	11.8	15.8	23.1	35	218,833	6	7.8	7.8	9	10.6	13.6	18	26.7	35
Tailings - Coarse (dry, loose sand)	2,400	68,880	96,600	148,322	4.9	6.2	7.1	8.5	10	12.3	16.5	25.7	35	206,758	6.4	7.3	8.1	9.7	11.5	14.2	18.9	28.6	35
Tailings - Slimes (loose sand & clay)	2,700	77,490	108,675	156,932	4.3	5.5	6.6	8	9.2	11.8	15.8	23.1	35	218,833	6	7.8	7.8	9	10.6	13.6	18	26.7	35
Topsoil	1,600	45,920	64,400	125,362	6.5	7.5	8.5	9.8	11.8	15	20.2	29.5	35	174,558	7.5	8.2	9.5	10.8	13.3	16.7	22.3	33.4	35
				Empty	11.4	12.5	15	17	21.2	26	34.7	35	35	Empty	13.1	14.5	16.7	19.2	23	29.4	35	35	35

Source: Caterpillar Performance Handbook Edition 47

Weight of Materials				Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)																			
				777G										785D									
Material	lb/yd3	Truck 777G Load (lb)	Truck 785D Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2
Alluvium	2,900	193,140	259,550	356,295	4	5	6	7	8	10.5	14.2	20.5	35	508,963	4	4.4	6.4	7.1	8.8	11	14.6	21.8	33.6
Basalt	3,300	219,780	295,350	382,935	4	5	6	7	8	10	13.2	19.6	35	544,763	3.6	4.2	5.8	6.8	8.2	9.6	13	20.6	33.2
Clay - Dry	2,500	166,500	223,750	329,655	5	6	7	8	9	11	14.8	23.3	35	473,163	4.3	6	6.8	7.7	9.4	11.8	15.9	23.3	34
Granite - broken	2,800	186,480	250,600	349,635	4	5	6	7	8	10.6	14.3	21.5	35	500,013	4	4.5	6.5	7.2	9	11.2	14.8	22.4	33.8
Gravel	2,550	169,830	228,225	332,985	5	6	6	8	9	11	14.9	23	35	477,638	4.2	5.8	6.7	7.7	9.4	11.8	15.8	23.1	33.9
Limestone - broken	2,600	173,160	232,700	336,315	5	6	6	8	9	11	14.6	22.9	35	482,113	4.2	5.7	6.7	7.4	9.2	11.6	15.6	23	33.9
Limestone - crushed	2,600	173,160	232,700	336,315	5	6	6	8	9	11	14.6	22.9	35	482,113	4.2	5.7	6.7	7.4	9.2	11.6	15.6	23	33.9
Sandstone	2,550	169,830	228,225	332,985	5	6	6	8	9	11	14.9	23	35	477,638	4.2	5.8	6.7	7.7	9.4	11.8	15.8	23.1	33.9
Shale	2,100	139,860	187,950	303,015	6	6	7	8	10	12.5	16.4	25.1	35	437,363	5.3	6.5	7.2	8.6	9.6	12.7	16.9	23.6	34
Stone - crushed	2,700	179,820	241,650	342,975	5	6	6	8	9	10.8	14.6	22.2	35	491,063	4.1	5.4	6.6	7.2	9	11.4	15.2	22.5	33.7
Tailings - Coarse (dry, loose sand)	2,400	159,840	214,800	322,995	5	6	7	8	9	10.2	15.1	23.9	35	464,213	4.2	6.1	6.9	8	9.5	12.1	16.1	23.4	34
Tailings - Slimes (loose sand & clay)	2,700	179,820	241,650	342,975	5	6	6	8	9	10.8	14.6	22.2	35	491,063	4.1	5.4	6.6	7.2	9	11.4	15.2	22.5	33.7
Topsoil	1,600	106,560	143,200	269,715	6	7	8	9.3	10.8	13.8	18.6	27.4	35	392,613	6.5	7.1	8.2	9.2	11.4	13.2	17.6	28.5	34.6
				Empty	10.8	12.5	14.2	16.6	19.6	25	33	35	35	Empty	9.6	11	13.5	14.8	17.3	22.2	29.4	33.2	35

Source: Caterpillar Performance Handbook Edition 47

Weight of Materials				Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)																			
				789D										793F									
Material	lb/yd3	Truck 789D Load (lb)	Truck 793F Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2
Alluvium	2,900	358,150	584,350	660,406	5	6.4	7	8.6	9.8	12.7	16.8	24.2	34.7	926,333	3.3	4	6.5	7.2	9	11	14.4	22.6	34.8
Basalt	3,300	407,550	664,950	709,806	4.6	5.8	6.7	7.3	9.4	11.8	15.7	23.6	34.3	1,006,933	2.8	3.5	5.8	7	8.2	9.8	13.3	20	34.1
Clay - Dry	2,500	308,750	503,750	611,006	6.2	7	7.3	9.3	10.5	13.2	17.7	28	34.9	845,733	3.9	6.1	7.1	8	9.7	12.3	16.5	24	35
Granite - broken	2,800	345,800	564,200	648,056	5.4	6.6	7.2	8.7	9.8	12.8	17	24.3	34.7	906,183	3.2	4	6.6	7.2	9.3	11.3	15	22.7	34.9
Gravel	2,550	314,925	513,825	617,181	6.1	6.9	7.2	9.1	10.4	13.2	17.6	27.7	34.8	855,808	4.8	6	7	7.9	9.7	12.3	16.4	24	35
Limestone - broken	2,600	321,100	523,900	623,356	5.9	6.8	7.2	9	10.1	13.1	17.4	26.9	34.8	865,883	4.6	5.8	7	7.8	9.6	12.2	16	23.9	35
Limestone - crushed	2,600	321,100	523,900	623,356	5.9	6.8	7.2	9	10.1	13.1	17.4	26.9	34.8	865,883	4.6	5.8	7	7.8	9.6	12.2	16	23.9	35
Sandstone	2,550	314,925	513,825	617,181	6.1	6.9	7.2	9.1	10.4	13.2	17.6	27.7	34.8	855,808	4.8	6	7	7.9	9.7	12.3	16.4	24	35
Shale	2,100	259,350	423,150	561,606	6.7	7.2	8.6	9.6	11.8	14.4	19.5	30.6	35	765,133	5.9	6.9	7.6	9.2	10.4	13.3	17.9	25.9	35
Stone - crushed	2,700	333,450	544,050	635,706	5.6	6.7	7.2	8.8	9.8	12.8	17.3	25.1	34.7	886,033	3.5	5.6	6.8	7.4	9.4	11.6	15.4	23.4	35
Tailings - Coarse (dry, loose sand)	2,400	296,400	483,600	598,656	6.4	6	7.9	9	11.1	13.2	17.8	28.6	35	825,583	3.9	6.3	7.2	8.4	9.8	12.7	17	24.4	35

Closure Cost Estimate
Productivity

Tailings - Slimes (loose sand & clay)	2,700	333,450	544,050	635,706	5.6	6.7	7.2	8.8	9.8	12.8	17.3	25.1	34.7	886,033	3.5	5.6	6.8	7.4	9.4	11.6	15.4	23.4	35
Topsoil	1,600	197,600	322,400	499,856	7.2	8.4	9.4	11.1	13	16.7	22.2	32.5	35	664,383	7	7.4	9.1	9.8	12.6	15.4	20.8	30.6	35
				Empty	12	13	15.4	17.8	21.6	27	33	35	35	Empty	13	13.8	16.7	18.2	23.1	28.5	34.7	35	35

Source: Caterpillar Performance Handbook Edition 47

Weight of Materials			Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)									
			797F									
Material	lb/yd3	Truck 797F Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2
Alluvium	2,900	964,250	1,551,610	4	5	6.1	6.6	8.5	10.5	13.6	20.9	35
Basalt	3,300	1,097,250	1,684,610	3.2	4	5.8	6.5	7.8	9	12	19.4	35
Clay - Dry	2,500	831,250	1,418,610	4.1	6	6.5	7.8	8.8	11.2	15	21.2	35
Granite - broken	2,800	931,000	1,518,360	4	5.5	6.2	7	8.6	10.9	14.4	21	35
Gravel	2,550	847,875	1,435,235	4	5.9	6.5	7.5	8.8	11.2	15	21	35
Limestone - broken	2,600	864,500	1,451,860	4	5.6	6.5	7.5	8.8	11.1	14.9	21	35
Limestone - crushed	2,600	864,500	1,451,860	4	5.6	6.5	7.5	8.8	11.1	14.9	21	35
Sandstone	2,550	847,875	1,435,235	4	5.9	6.5	7.5	8.8	11.2	15	21	35
Shale	2,100	698,250	1,285,610	5.8	6.4	7	8.5	10	11.8	15.8	25.7	35
Stone - crushed	2,700	897,750	1,485,110	4	5.5	6.4	7.1	8.8	11	14.2	21	35
Tailings - Coarse (dry, loose sand)	2,400	798,000	1,385,360	5	6	6.5	7.9	8.8	11.5	15.4	23	35
Tailings - Slimes (loose sand & clay)	2,700	897,750	1,485,110	4	5.5	6.4	7.1	8.8	11	14.2	21	35
Topsoil	1,600	532,000	1,119,360	6.5	7	8.2	9.4	11.5	14.5	19.5	28.2	35
			Empty	10.8	13.2	15.2	17	21	26.3	33.3	35	35
			Source: Caterpillar Performance Handbook Edition 47									

Productivity - Articulated Trucks

Articulated Truck Specifications				
Description	725C2	730C2	735C	740C
Empty Weight (lb)	50,795	53,131	69,446	79,366
Payload Capacity (yd3)				
Struck	14.4	17.4	19.6	23.5
Heaped	19.6	23	26.8	30.1
Average	17	20.2	23.2	26.8
Maneuver to Load Time (min)	0.7	0.7	0.7	0.7
Maneuver and Dump Time (min)	1.1	1.1	1.1	1.1
Operator Skill	1	1	1	1
Job Efficiency	0.83	0.83	0.83	0.83
Rolling Resistance**	2.5	2.5	2.5	2.5
Altitude Deration Factor	1	1	1	1
**A firm, smooth, rolling roadway with dirt or light surfacing, flexing slightly under load or undulating, maintained fairly regularly, watered				
Source: Caterpillar Performance Handbook Edition 47				

Weight of Materials				Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)																						
				725C2											730C2											
Material	lb/yd3	Truck 725C2 Load (lb)	Truck 730C2 Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0	
Alluvium	2,900	49,300	58,580	100,095	6	7	8	9	11	13.5	18	25.5	34	34	111,711	5	10	10	10	15	23	23	35	35	35	
Basalt	3,300	56,100	66,660	106,895	6	7	8	9	11	13	17	25.5	34	34	119,791	5	10	10	10	15	15	23	35	35	35	
Clay - Dry	2,500	42,500	50,500	93,295	6	8	8	10	12	14.5	20	27	34	34	103,631	10	10	10	15	15	23	30	35	35	35	
Granite - broken	2,800	47,600	56,560	98,395	6	7	8	9	11	14	17.8	27.3	34	34	109,691	10	10	10	15	15	23	31	35	35	35	
Gravel	2,550	43,350	51,510	94,145	6	7	10	10	12	14.5	18.5	27	34	34	104,641	10	15	10	15	15	23	30	35	35	35	
Limestone - broken	2,600	44,200	52,520	94,995	6	7	8	9	11	14.5	18.5	27.5	34	34	105,651	10	15	10	15	15	23	30	35	35	35	
Limestone - crushed	2,600	44,200	52,520	94,995	6	7	8	9	11	14.5	18.5	27.5	34	34	105,651	10	15	10	15	15	23	30	35	35	35	
Sandstone	2,550	43,350	51,510	94,145	6	7	10	10	12	14.5	18.5	27	34	34	104,641	10	15	10	15	15	23	30	35	35	35	
Shale	2,100	35,700	42,420	86,495	7	8	9	10	13	15.5	20	29.5	34	34	95,551	10	15	15	15	23	23	35	35	35	35	
Stone - crushed	2,700	45,900	54,540	96,695	6	7	8	10	11	14.3	18	28	34	34	107,671	10	10	10	15	15	23	31	35	35	35	
Tailings - Coarse (dry, loose sand)	2,400	40,800	48,480	91,595	7	8	9	10	12	14.8	19	28.5	34	34	101,611	10	10	10	15	15	23	29	35	35	35	
Tailings - Slimes (loose sand & clay)	2,700	45,900	54,540	96,695	6	7	8	10	11	14.3	18	28	34	34	107,671	10	10	10	15	15	23	31	35	35	35	
Topsoil	1,600	27,200	32,320	77,995	8	9	10	12	14.3	19.5	24	34	34	34	85,451	10	15	15	15	23	23	33	35	35	35	
assumes medium compression breaking				Empty	12	13.8	15	18	21.5	34	34	34	34	34	Empty	15	15	15	15	23	35	35	35	35	35	
				Source: Caterpillar Performance Handbook Edition 47																						

Weight of Materials				Downhill Speed (mph) - Grade Retarding vs. Effective Grade (%Grade - Rolling Resistance)																					
				735C											740C										
Material	lb/yd3	Truck 735C Load (lb)	Truck 740C Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	0
Alluvium	2,900	67,280	77,720	136,726	9	12	12	15	20	24.3	30.8	35	35	35	157,086	9	9	12	15	15	20.8	25	35	35	35
Basalt	3,300	76,560	88,440	146,006	9	9	12	15	15	20.3	32.5	35	35	35	167,806	9	9	12	15	15	20.8	25	35	35	35
Clay - Dry	2,500	58,000	67,000	127,446	12	12	15	15	20	24.3	35	35	35	35	146,366	9	12	15	15	21	25	25	35	35	35
Granite - broken	2,800	64,960	75,040	134,406	9	12	12	15	20	20	30	35	35	35	154,406	9	9	12	15	15	20.8	25	35	35	35
Gravel	2,550	59,160	68,340	128,606	9	12	15	15	20	24.3	35	35	35	35	147,706	9	12	15	15	21	25	33	35	35	35
Limestone - broken	2,600	60,320	69,680	129,766	9	12	15	15	20	24.3	29	35	35	35	149,046	9	12	15	15	21	25	33	35	35	35

Closure Cost Estimate
Productivity

Limestone - crushed	2,600	60,320	69,680	129,766	9	12	15	15	20	24.3	29	35	35	35	149,046	9	12	15	15	21	25	33	35	35	35
Sandstone	2,550	59,160	68,340	128,606	9	12	15	15	20	24.3	35	35	35	35	147,706	9	12	15	15	21	25	33	35	35	35
Shale	2,100	48,720	56,280	118,166	12	12	15	15	20	24.3	35	35	35	35	135,646	12	12	15	15	21	25	35	35	35	35
Stone - crushed	2,700	62,640	72,360	132,086	9	12	15	15	20	24.3	29.5	35	35	35	151,726	9	12	15	15	21	25	33.5	35	35	35
Tailings - Coarse (dry, loose sand)	2,400	55,680	64,320	125,126	12	12	15	15	20	24.3	35	35	35	35	143,686	9	12	15	15	21	25	32	35	35	35
Tailings - Slimes (loose sand & clay)	2,700	62,640	72,360	132,086	9	12	15	15	20	24.3	29.5	35	35	35	151,726	9	12	15	15	21	25	33.5	35	35	35
Topsoil	1,600	37,120	42,880	106,566	12	14.8	14.8	20	24.3	24.3	35	35	35	35	122,246	12	15	15	20.8	25	25	35	35	35	35
assumes medium compression breaking				Empty	14.8	20	24.3	24.3	35	35	35	35	35	35	Empty	20.8	25	25	25	35	35	35	35	35	35
Source: Caterpillar Performance Handbook Edition 47																									

Weight of Materials				Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)																				
				725C2										730C2										
Material	lb/yd3	Truck 725C2 Load (lb)	Truck 730C2 Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	
Alluvium	2,900	49,300	58,580	100,095	5.2	6.1	6.9	8	9.5	11.6	15.1	20.5	31.9	111,711	6	6.7	7.6	8.8	10.5	13.2	17	23.2	33.3	
Basalt	3,300	56,100	66,660	106,895	4.6	5.7	6.5	7.6	8.9	10.9	14.1	19.6	31.1	119,791	5.7	6.3	7.1	8.2	9.8	12.3	16.1	22.1	32.7	
Clay - Dry	2,500	42,500	50,500	93,295	5.8	6.6	7.4	8.4	10.2	12.2	16.1	21.8	32.7	103,631	6.5	7.2	8.2	9.4	11.2	14.2	18.1	24.4	33.8	
Granite - broken	2,800	47,600	56,560	98,395	5.3	6.2	7.1	8.1	9.7	11.8	15.3	20.6	32.2	109,691	6.1	6.8	7.7	8.9	10.7	13.4	17.3	23.5	33.4	
Gravel	2,550	43,350	51,510	94,145	5.7	6.5	7.4	8.3	10.1	12.1	16	21.5	32.7	104,641	6.5	7.1	8.2	9.3	11.1	14	18	24.2	33.8	
Limestone - broken	2,600	44,200	52,520	94,995	5.7	6.4	7.3	8.3	10	12.1	15.9	21.5	32.8	105,651	6.4	7.1	8.1	9.2	11	13.9	17.9	24.1	33.7	
Limestone - crushed	2,600	44,200	52,520	94,995	5.7	6.4	7.3	8.3	10	12.1	15.9	21.5	32.8	105,651	6.4	7.1	8.1	9.2	11	13.9	17.9	24.1	33.7	
Sandstone	2,550	43,350	51,510	94,145	5.7	6.5	7.4	8.3	10.1	12.1	16	21.5	32.7	104,641	6.5	7.1	8.2	9.3	11.1	14	18	24.2	33.8	
Shale	2,100	35,700	42,420	86,495	6.3	7.1	7.9	9.1	10.9	12.9	17	23	33.3	95,551	7	7.8	8.9	10.2	12.3	15.3	19.2	25.9	34.4	
Stone - crushed	2,700	45,900	54,540	96,695	5.5	6.3	7.2	8.2	9.8	11.9	15.6	21.2	32.4	107,671	6.3	7	7.9	9.1	10.8	13.6	17.6	23.8	33.6	
Tailings - Coarse (dry, loose sand)	2,400	40,800	48,480	91,595	5.9	6.7	7.6	8.5	10.4	12.4	16.4	22	33	101,611	6.6	7.3	8.4	9.6	11.4	14.5	18.4	24.8	34	
Tailings - Slimes (loose sand & clay)	2,700	45,900	54,540	96,695	5.5	6.3	7.2	8.2	9.8	11.9	15.6	21.2	32.4	107,671	6.3	7	7.9	9.1	10.8	13.6	17.6	23.8	33.6	
Topsoil	1,600	27,200	32,320	77,995	6.9	7.8	8.5	10.1	12	14.7	18.5	24.6	33.9	85,451	7.8	8.7	9.9	11.3	13.7	16.7	20.9	27.9	34.9	
				Empty	10.4	11.6	12.7	14.9	17.8	20.4	25.2	31.7	35	Empty	12.6	14	15.9	17.8	20.4	24	29.2	33.7	35	
Source: Caterpillar Performance Handbook Edition 47																								

Weight of Materials				Uphill Speed (mph) - Rimpull vs. Total Resistance (%Grade + Rolling Resistance)																				
				735C										740C										
Material	lb/yd3	Truck 735C Load (lb)	Truck 740C Load (lb)	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	Loaded Weight (lb)	18	16	14	12	10	8	6	4	2	
Alluvium	2,900	67,280	77,720	136,726	5.4	6.6	7.4	9	10.2	12.4	18	24	33	157,086	5.6	6.2	7.4	8.7	10.4	12.8	17.2	24	34	
Basalt	3,300	76,560	88,440	146,006	5.1	5.8	6	8.2	9.8	12.1	16.8	22	32.8	167,806	5.2	5.8	7	8	10	12.2	16	22.4	34	
Clay - Dry	2,500	58,000	67,000	127,446	6	7.1	8.9	9.6	11.2	13.5	19.2	26.8	33.2	146,366	6	7	7.9	9.6	11.1	13.4	19.3	25.7	34	
Granite - broken	2,800	64,960	75,040	134,406	5.8	6.8	7.5	9.1	10.4	12.7	18.5	25.5	32.8	154,406	5.7	6.6	7.5	9	10.6	12.8	17.3	22.9	34	
Gravel	2,550	59,160	68,340	128,606	6	7	8.9	9.5	11.2	13	19	26.7	33.2	147,706	5.9	7	7.8	9.5	11	13.3	19.2	25.7	34	
Limestone - broken	2,600	60,320	69,680	129,766	5.9	6.8	7.8	9.5	11	13	19.2	24.5	33	149,046	5.8	6.8	7.8	9.5	10.9	13.2	19.2	25.7	34	
Limestone - crushed	2,600	60,320	69,680	129,766	5.9	6.8	7.8	9.5	11	13	19.2	24.5	33	149,046	5.8	6.8	7.8	9.5	10.9	13.2	19.2	25.7	34	
Sandstone	2,550	59,160	68,340	128,606	6	7	8.9	9.5	11.2	13	19	26.7	33.2	147,706	5.9	7	7.8	9.5	11	13.3	19.2	25.7	34	
Shale	2,100	48,720	56,280	118,166	6.7	7.4	9.1	10.2	11.8	15.4	20.5	27.5	33.5	135,646	6.4	7.4	8.6	10.2	11.9	14.3	20.2	28.4	34	
Stone - crushed	2,700	62,640	72,360	132,086	5.4	6.8	7.4	9.2	10.6	12.7	18.5	25	33	151,726	5.7	6.7	7.7	9.3	10.8	13	18.3	25.6	34	
Tailings - Coarse (dry, loose sand)	2,400	55,680	64,320	125,126	6.1	7	8.2	9.6	11.3	14.6	19.6	27	33.2	143,686	6	7.2	8	9.8	11.1	13.8	19.3	27	34	
Tailings - Slimes (loose sand & clay)	2,700	62,640	72,360	132,086	5.4	6.8	7.4	9.2	10.6	12.7	18.5	25	33	151,726	5.7	6.7	7.7	9.3	10.8	13	18.3	25.6	34	
Topsoil	1,600	37,120	42,880	106,566	7.3	8.6	9.7	11	12.6	17.2	21.2	29	33.5	122,246	7.4	8.2	9.7	11	12.8	16.4	21.5	29.3	34	
				Empty	11.5	12.4	15.2	17.8	20.3	24.6	30.3	33	33.5	Empty	11.3	12.5	14	16.6	20.8	23	29.5	33.8	34	
Source: Caterpillar Performance Handbook Edition 47																								

Productivity - Wheel Loaders

Wheel Loader Specifications															
Description	926M	930M	950M	966M	972M	972M (2)	980M	988K	988K (2)	990K	992K	992K (2)	994K	994K (2)	L2350
Payload Capacity (yd3)															
Struck	2.2	2.5	3.5	4.3	4.7	4.7	6	6.9	6.9	9.5	12.4	12.4	18.3	18.3	
Heaped	2.7	3	4.1	5	5.6	5.6	7.1	8.33	8.33	11.25	15	15	22.5	22.5	
Average	2.45	2.75	3.8	4.65	5.15	5.15	6.55	7.62	7.62	10.38	13.7	13.7	20.4	20.4	53
Matched Truck	N/A	N/A	N/A	725C2	730C2	735C	N/A	740C	770G	773G	777G	785D	789D	793F	797F
Average Cycle Time (min)	0.475	0.475	0.475	0.525	0.525	0.525	0.525	0.575	0.575	0.575	0.575	0.65	0.65	0.65	0.75
Passes to Fill Truck	N/A	N/A	N/A	4	4	5	N/A	4	4	4	5	7	10	10	6
Altitude Deration Factor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Operator Skill	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Job Efficiency	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Time to Fill Truck	N/A	N/A	N/A	2.1	2.1	2.63	N/A	2.3	2.3	2.3	2.88	4.55	6.5	6.5	4.5
Rolling Resistance**	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Loader matched to small truck fleet															
Loader matched to medium truck fleet															
Loader matched to large truck fleet															
Loader matched to extra large truck fleet															
**A firm, smooth, rolling roadway with dirt or light surfacing, flexing slightly under load or undulating, maintained fairly regularly, watered															
992K (2) - can be used to load 785 with 6 passes															
Source: Caterpillar Performance Handbook Edition 47; LeTourneau/actual Chilean mine operating data for L2350.															

Matched Wheeled Loader Buckets		
	General Purpose	Heavy Duty Rock

Closure Cost Estimate
Productivity

Wheeled Loaders	yd3	yd3
930M	2.85	-
950M	4.25	-
966M	5.5	-
972M	6	-
980M	7.88	-
988K	-	8.3
990K	-	11.25
992K	-	14
994K	-	26.5

note: capacities are 2:1 heaped, SAE standards

NOTES: Buckets for both Track Excavators and Wheel Loaders are offered by CECO & available for the rental rates quoted. Bucket sizes and capacities obtained from CATERPILLAR PERFORMANCE HANDBOOK, ED 47; Section 23, Wheel Loader

Bucket capacity and width dictated by material weight and configuration, ie., shot, loose, tight bank, stockpile, rock, etc. Typical Nevada applications were used to determine above bucket capacities as related to materials & densities. Job site specifics may alter specific bucket requirements. (Cashman Equipment, Elko, Nevada)

Productivity - Shovels

Shovel/Excavator Specifications (Komatsu or Hitachi equivalent)						
Description	PC2000	PC3000	PC4000	PC5500	PC8000	EX2500
Payload Capacity (yd3)						
Struck	10.46	18.84	26.16	33.48	47.09	
Heaped	14.39	25.9	35.97	46.04	64.75	
Average	12.43	22.37	31.07	39.76	55.92	19.63
Matched Truck	740	777D	785C	793C	797B	789C
Average Cycle Time (min)	0.49	0.49	0.59	0.59	0.69	0.68
Passes to Fill Truck	2.05	2.84	3.38	4.69	5.11	6
Altitude Deration Factor	1	1	1	1	1	1
Operator Skill	1	1	1	1	1	1
Job Efficiency	0.83	0.83	0.83	0.83	0.83	0.83
Time to Fill Truck	1.68	2.33	3.32	4.61	5.86	6.08
Rolling Resistance**	2.5	2.5	2.5	2.5	2.5	2.5

Shovel matched to small truck fleet

Shovel matched to medium truck fleet

Shovel matched to large truck fleet

Shovel matched to extra large truck fleet

**A firm, smooth, rolling roadway with dirt or light surfacing, flexing slightly under load or undulating, maintained fairly regularly, watered

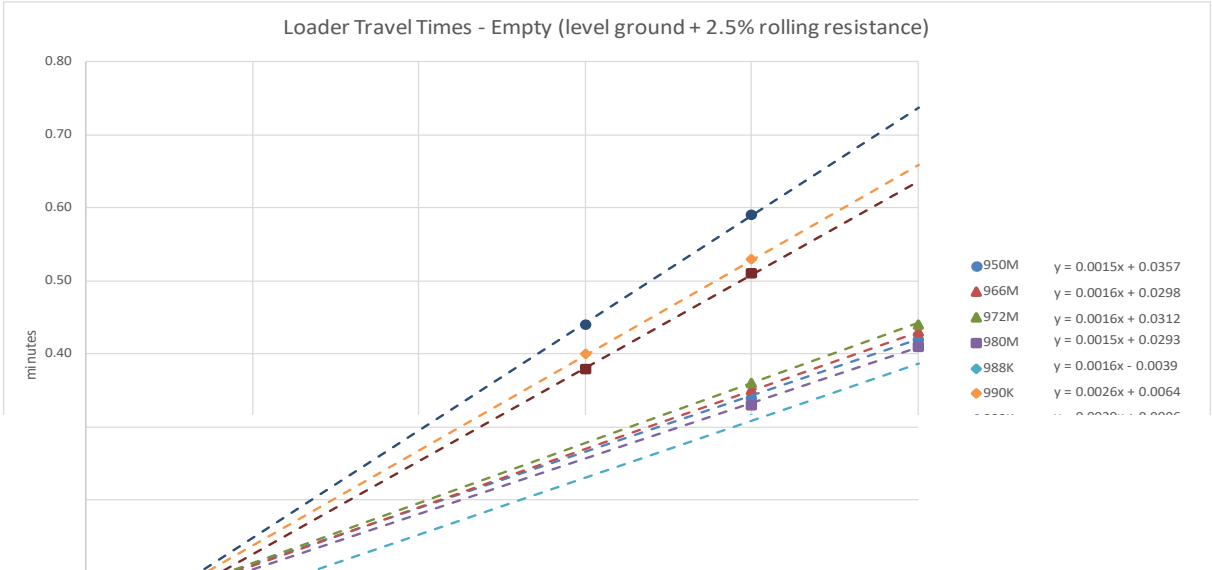
Source: Caterpillar Performance Handbook Edition 46; Komatsu actual Peruvian mine (Lagunas Norte) operating data for PC4000.

Loader Travel Times - Empty											
Loader Model	Distance (ft)									a	b
	16.4041995	32.808399	65.616798	114.829397	164.041995	328.08399	492.125985	656.16798	820.209975		
950M	0.04	0.05	0.07	0.09	0.12	0.19	0.27	0.34	0.42	0.0015	0.0357
966M	0.04	0.05	0.06	0.08	0.11	0.19	0.27	0.35	0.43	0.0016	0.0298
972M	0.04	0.05	0.06	0.08	0.12	0.20	0.28	0.36	0.44	0.0016	0.0312
980M	0.03	0.05	0.06	0.08	0.11	0.18	0.26	0.33	0.41	0.0015	0.0293
988K	0.01	0.01	0.03	0.05	0.07	0.15	0.23	0.31		0.0016	0.0039
990K	0.02	0.03	0.06	0.10	0.14	0.26	0.40	0.53		0.0026	0.0064
992K	0.02	0.03	0.06	0.10	0.15	0.30	0.44	0.59		0.0029	0.0006
994K	0.01	0.02	0.05	0.09	0.13	0.25	0.38	0.51		0.0026	-0.002

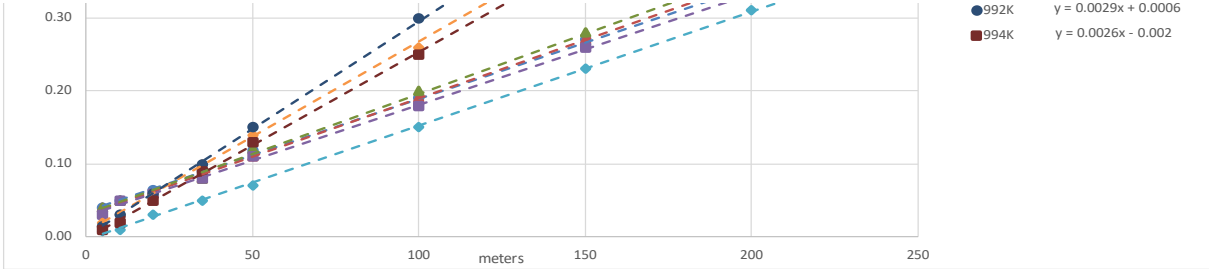
Travel Time (min) =

a(distance) + b

Source: Caterpillar Performance Handbook Edition 47

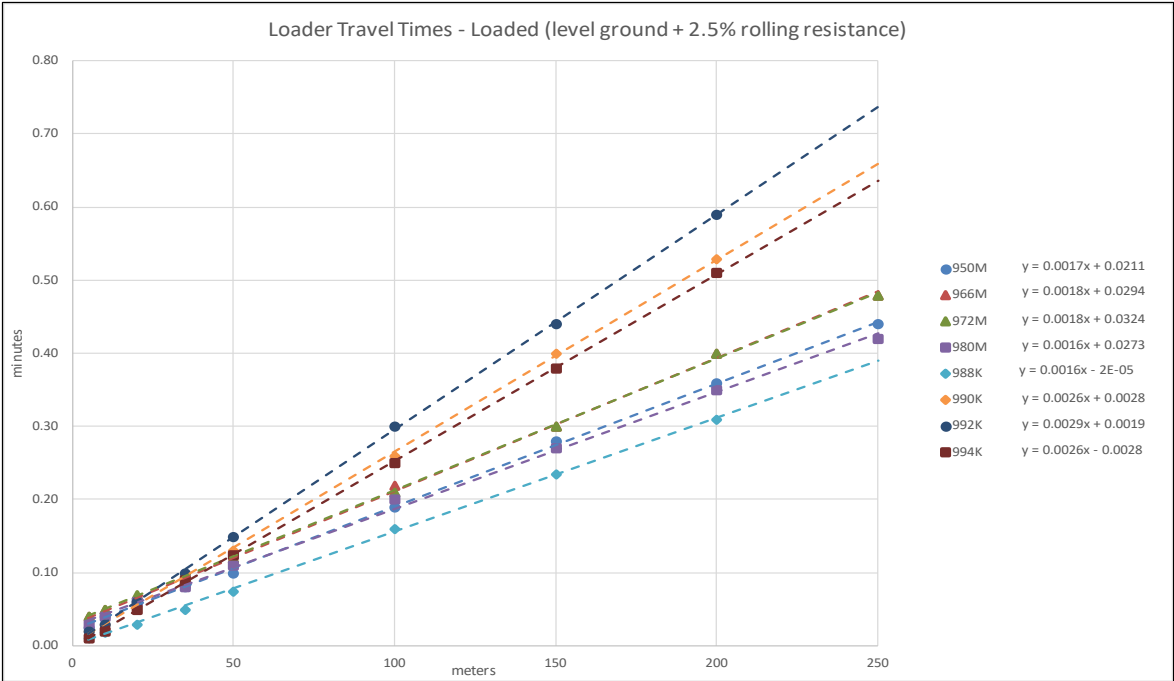


Closure Cost Estimate
Productivity



Loader Travel Times - Loaded											
Loader Model	Distance (ft)									a	b
	16.4041995	32.808399	65.616798	114.829397	164.041995	328.08399	492.125985	656.16798	820.209975		
950M	0.03	0.04	0.06	0.08	0.10	0.19	0.28	0.36	0.44	0.0017	0.0211
966M	0.04	0.05	0.06	0.09	0.12	0.22	0.30	0.40	0.48	0.0018	0.0294
972M	0.04	0.05	0.07	0.10	0.12	0.21	0.30	0.40	0.48	0.0018	0.0324
980M	0.03	0.04	0.06	0.08	0.11	0.20	0.27	0.35	0.42	0.0016	0.0273
988K	0.01	0.02	0.03	0.05	0.08	0.16	0.24	0.31		0.0016	-0.00002
990K	0.02	0.03	0.06	0.09	0.13	0.26	0.40	0.53		0.0026	0.0028
992K	0.02	0.03	0.06	0.10	0.15	0.30	0.44	0.59		0.0029	0.0019
994K	0.01	0.02	0.05	0.09	0.13	0.25	0.38	0.51		0.0026	-0.0028
Travel Time (min) =	a(distance) + b										

Source: Caterpillar Performance Handbook Edition 47



Productivity - Motor Graders

Motor Grader Specifications				
Description	12M2	14M	16M3	24M
Grader Width (ft)	8.25	9.2	11.2	14
Blade Width (ft)	12	14	16	24
Number of Shanks	5	7	7	7
Ripper Width (7 shanks) (ft)	7.6	8.5	9.75	12.83
Road Maintenance Speed (mph)				
Minimum	3	3	3	3
Maximum	9.5	9.5	9.5	9.5
Average	6.25	6.25	6.25	6.25
Hourly Production (ft)	33,000	33,000	33,000	33,000
Ripping Speed (mph)				
Minimum	1	1	1	1
Maximum	0	0	0	0
Average	3	3	3	3
Altitude Deration Factor	1.5	1.5	1.5	1.5
Ripping Hourly Production (with job efficiency correction & altitude deration factors) (excluding manuever time) (ft)	1	1	1	1

Closure Cost Estimate
Productivity

Maneuver time per pass (min)	0.5	0.5	0.5	0.5
Operator Skill	1	1	1	1
Job Efficiency	0.83	0.83	0.83	0.83
Source: Caterpillar Performance Handbook Edition 47				

Productivity - Excavators

Track Excavator Specifications							
Description	312F	320F	325F	330F	349F	374F	390F
Bucket Capacity (yd3)	0.68	1.57	2.22	2.22	3.00	4.60	7.30
Fill Factor	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Average Bucket Load (yd3)	0.612	1.413	1.998	1.998	2.7	4.14	6.57
Soil Type	packed earth	hard clay	hard clay	hard clay	hard clay	hard clay	hard clay
Job Condition	med-hard	med-hard	med-hard	med-hard	med-hard	med-hard	med-hard
Cycle Times (minutes) - based on hard clay							
Load Bucket	0.07	0.09	0.09	0.09	0.13	0.1	0.19
Swing Loaded	0.06	0.06	0.06	0.07	0.07	0.09	0.06
Dump Bucket	0.03	0.03	0.04	0.04	0.02	0.04	0.03
Swing Empty	0.05	0.05	0.06	0.07	0.06	0.07	0.07
Total Cycle Time	0.21	0.23	0.25	0.27	0.28	0.3	0.35
Job Efficiency	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Operator Skill	1	1	1	1	1	1	1
Altitude Deration Factor	1	1	1	1	1	1	1
Corrected Productivity (LCY/hr)	145	306	398	369	480	687	935
Exploration Road Cycle Time ⁽¹⁾ (min)	N/A	0.38	0.4	N/A	0.42	N/A	N/A
Exploration Road Corr Prod (LCY/hr)	N/A	185	249	N/A	320	N/A	N/A
Track Width (ft)	8.17	9.17	9.83	10.5	11.42	11.5	11.5
Source: Caterpillar Performance Handbook Edition 47							

Concrete Breaking Production

Track Excavator w/Hammer Specifications			
Description	320F	349F	374F
Hydraulic Hammer	H120Es	H160Es	H180Es
Material	reinforced concrete		
Min Shift Production (yd3/8hr)	160	300	385
Max Shift Production (yd3/8hr)	300	850	1,705
Avg Shift Production (8hr)	230	575	1,045
Job Efficiency	0.83	0.83	0.83
Altitude Deration Factor	1	1	1
Source: Caterpillar Performance Handbook Edition 47			

Drill Hole Plugging Productivity

Drill Hole Plugging Productivity		
Description	Drill Rig	Pump Rig
Move-to-hole, set-up, tear-down ⁽¹⁾	2 hrs	2 hrs
Trip in tremmie pipe (1) (ft/hr)	500	
Pulling casing (threaded, not cemented) (1) (ft/hr)	200	
FALSE	Productivity (all passes) (2) (ft/hr)	Passes
4	60	4
6	60	4
8	50	4
12	45	6
18	40	9
24	28	12
Perforation setup,trip in/out,tear-down	2 hrs	
Perforation tool cost (wear cost) ⁽³⁾	2.5 hrs	
Inert Material Placement (backfill)		
Grouting/Cement ⁽⁴⁾ (cy/hr)		5.33
Cuttings (see below) (cy/hr)		3.5
1. Drillers daily logs from Newmont, Barrick, New West Gold, Agnico Eagle, Idaho General Mines Inc.		
Sources:		

Closure Cost Estimate

Productivity

2. Drillers daily logs from Newmont, Barrick, Target Minerals
3. Drillers daily logs from Newmont
4. WDC Exploration, Dec 2005

Source: WDC Exploration, Dec 2005

Cuttings Placement Productivity

Shift productivity (Means 02210-700-0120; Crew B11M)

28 (yd3/shift)

Shift length

3.5 (yd³/hr)

Altitude Deration Table

	Elevation											
	0-760 m (0-2500')		760-1500 m (2500-5000')		1500-2300 m (5000-7000')		2300-3000 m (7500-10,000')		3000-3800 m (10,000-12,000')		3800-4600 m (12,500-15,000')	
MODEL	CAT	User	CAT	User	CAT	User	CAT	User	CAT	User	CAT	User
Bulldozers												
D6T	100		100		100		100		100		100	
D6R w/ Winch	100		100		100		100		100		100	
D7E	100		100		100		100		99		95	
D8T	100		100		100		100		100		100	
D9T	100		100		100		100		100		100	
D10T2	100		100		100		100		100		100	
D11T	100		100		100		100		100		86	
Wheeled Dozers												
824K	100		100		100		100		92		84	
834K	100		100		100		100		98		85	
844K	100		100		100		98		93		83	
854K	100		100		100		98		93		79	
Graders												
12M2	100		100		100		100		100		99	
14M	100		100		100		100		100		100	
16M3	100		100		100		100		100		100	
24M	100		100		100		100		91		86	
Excavators												
312F	100		100		100		83		78		73	
320F	100		100		100		87		83		76	
325F	100		100		100		100		100		100	
330F	100		100		100		100		100		100	
349F	100		100		100		100		93		93	
374F	100		100		100		100		100		95.5	
390F	100		100		100		100		100		95.5	
Scrapers												
631K	100		100		100		100		97		90	
637K	100		100		100		98		80		64	
Loaders												
926M	100		100		100		100		92		81	
930M	100		100		100		100		90		77	
950M	100		100		100		100		97		91	
966M	100		100		100		99		91		79	
972M	100		100		100		99		89		79	
980M	100		100		100		100		100		88	
988K	100		100		100		100		98		85	
990K	100		100		100		98		93		83	
992K	100		100		100		98		93		79	
994K	100		100		100		100		99		97	
L2350	100		100		100		100		96		90	
Shovels												
PC2000	100		100		100		100		96		90	
PC3000	100		100		100		100		96		90	
PC4000	100		100		100		100		96		90	
PC5500	100		100		100		100		96		90	
PC8000	100		100		100		100		96		90	
EX2500	100		100		100		100		96		90	
Other Equipment												
H120Es (fits 325)	99		97		95		91		91		91	
H160Es (fits 349)	99		97		95		91		91		91	
H180Es (fits 374/390)	100		100		98		95		91		86	

Closure Cost Estimate
Productivity

Light Truck - 1.5 Ton												
Supervisor's Truck												
Flatbed Truck												
Trucks												
725C2	100		100		100		100		100		95	
730C2	100		100		100		100		100		95	
735C	100		100		100		100		99		91	
740C	100		100		100		100		99		91	
770G	100		100		100		99		96.5		89	
773G	100		100		100		100		100		100	
777G	100		100		100		100		100		100	
785D	100		100		100		100		100		98.5	
789D	100		100		100		98.5		93		86	
793F	100		100		100		100		100		100	
797F	100		100		100		100		100		100	
613E (5,000 gal)	100		100		100		100		95		87	
621E (8,000 gal)	100		100		100		100		97		90	
777G H2O Truck	100		100		100		100		93		87	
785D H2O Truck	100		100		100		93		86		80	
Notes:												
User entered deration value will override values from CAT Performance Handbook (Ed. 47), except L2350 Loader: data from actual mine performance in Chile. Komatsu altitude deration assumed from LeTourneau L2350												

Fuel Use

EQUIPMENT TYPE (1)	Fuel Use (1) gal/hr	User Override	Fuel Use (1) gal/hr
Bulldozers			
D6T	6.45		6.45
D6R w/ Winch	6.45		6.45
D7E	5.9		5.90
D8T	10.4		10.40
D9T	13.5		13.50
D10T2	18.7		18.70
D11T	26.2		26.20
Wheeled Dozers			
824K	11.3		11.30
834K	13.25		13.25
844K	15		15.00
854K	19		19.00
Motor Graders			
12M2	3.85		3.85
14M	5.05		5.05
16M3	6.25		6.25
24M	11.75		11.75
Track Excavators			
312F	2.05		2.05
320F	3.6		3.60
325F	3.7		3.70
330F	5.15		5.15
349F	9.75		9.75
374F	10.3		10.30
390F	11.75		11.75
Scrapers			
631K	15.12		15.12
637K	24.345		24.35
Wheeled Loaders			
926M	1.8		1.80
930M	1.9		1.90
950M	3.1		3.10
966M	3.75		3.75
972M	4.15		4.15
980M	5.5		5.50
988K	10.4		10.40
990K	17.6		17.60
992K	23		23.00
994K	41.4		41.40
L2350	66		66.00
Shovels			
PC2000	37		37.00
PC3000	50		50.00
PC4000	70		70.00
PC5500	119		119.00
PC8000	149		149.00
EX2500	51		51.00
Hydraulic Hammers			
H120Es (fits 325)	N/A		
H160Es (fits 349)	N/A		
H180Es (fits 374/390)	N/A		
Demolition Shears			
S3050 (fits 320/325/330)	N/A		

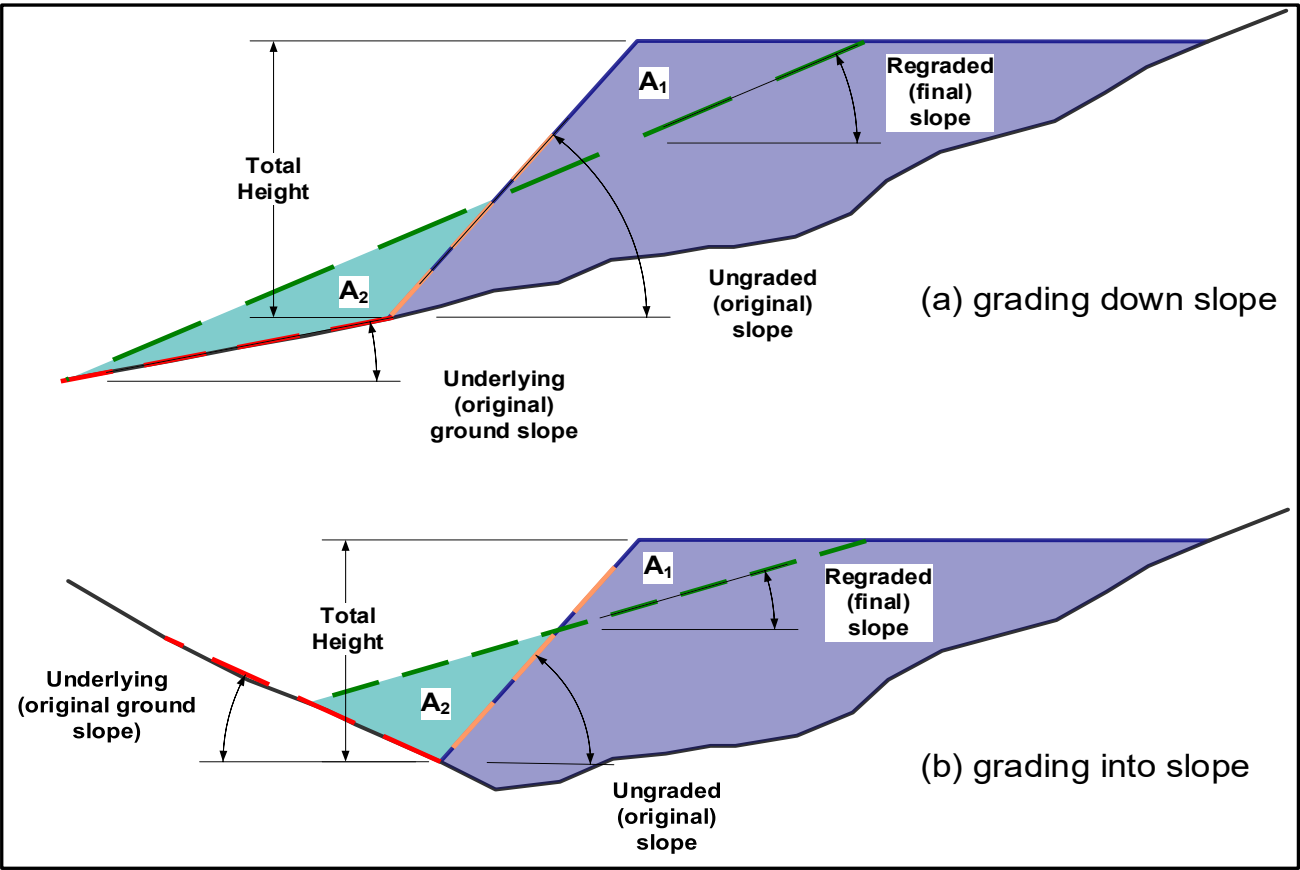
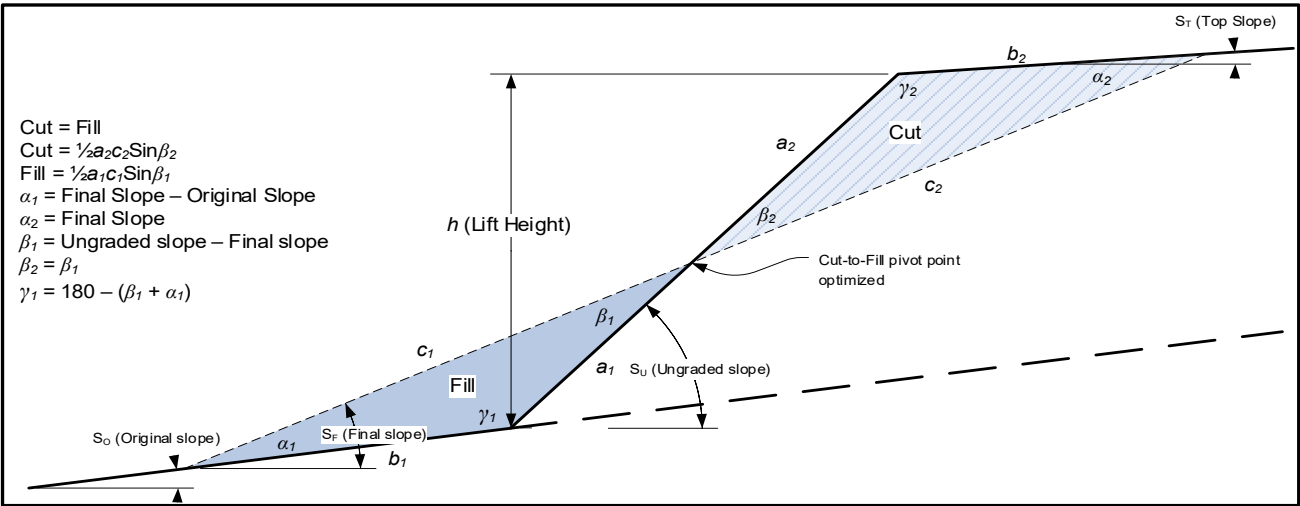
Closure Cost Estimate
Productivity

S3070 (fits 330/349)	N/A		
S3090 (fits 374/390)	N/A		
Demolition Grapples			
G315B (fits 320/325)	N/A		
G320B (fits 325/330)	N/A		
G330 (fits 349/374)	N/A		
Other Equipment			
420F2	4.3		4.30
430F2	4.7		4.70
CS54B	3.35		3.35
CS64B	3.35		3.35
CP54B	3.35		3.35
CP68B	3.6		3.60
Light Truck - 1.5 Ton	1.5		1.50
Supervisor's Truck	1		1.00
Flatbed Truck	4.7		4.70
Air Compressor + tools	1		1.00
Welding Equipment	2		2.00
Heavy Duty Drill Rig	12		12.00
Pump (plugging) Drill Rig	10		10.00
Concrete Pump	10		10.00
Gas Engine Vibrator	1		1.00
Generator 5KW	1.5		1.50
HDEP Welder (pipe or liner)	2		2.00
5 Ton Crane	3		3.00
20 Ton Crane	4		4.00
50 Ton Crane	4.7		4.70
120 Ton Crane	5.2		5.20
Trucks			
725C2	5.05		5.05
730C2	5.4		5.40
735C	6.95		6.95
740C	7.8		7.80
770G	4.95		4.95
773G	8.25		8.25
777G	13.55		13.55
785D	25.1		25.10
789D	36.85		36.85
793F	44.75		44.75
797F	67.65		67.65
613E (5,000 gal)	6		6.00
621E (8,000 gal)	10.75		10.75
777G H2O Truck	13.55		13.55
785D H2O Truck	25.1		25.10
Dump Truck (10-12 yd3)	5.2		5.20
Tractor/Trailer (20 ton)	14		14.00
Tractor/Trailer (50 ton)	18		18.00
Tractor/Trailer (80 ton)	22		22.00
NOTES: (1) Fuel use Source: Caterpillar Performance Handbook (Ed. 47) (2) assumes 24 hr tank			

FIGURES

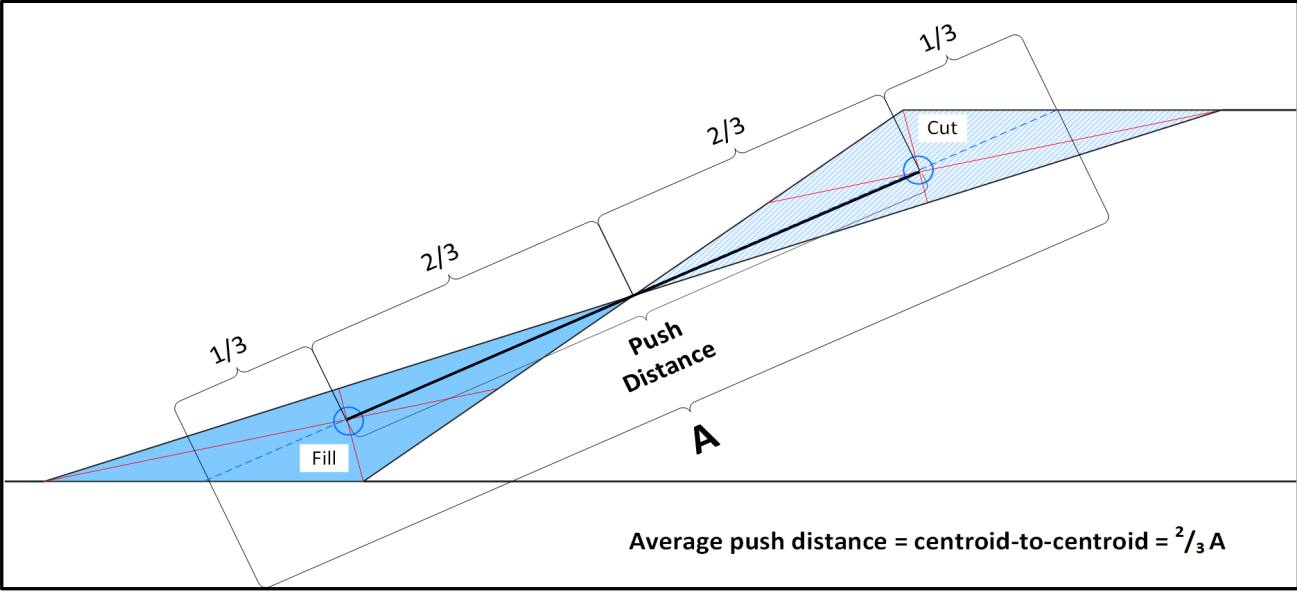
These figures show key inputs to the model and important calculations used by the model

Slope Regrading Volumes

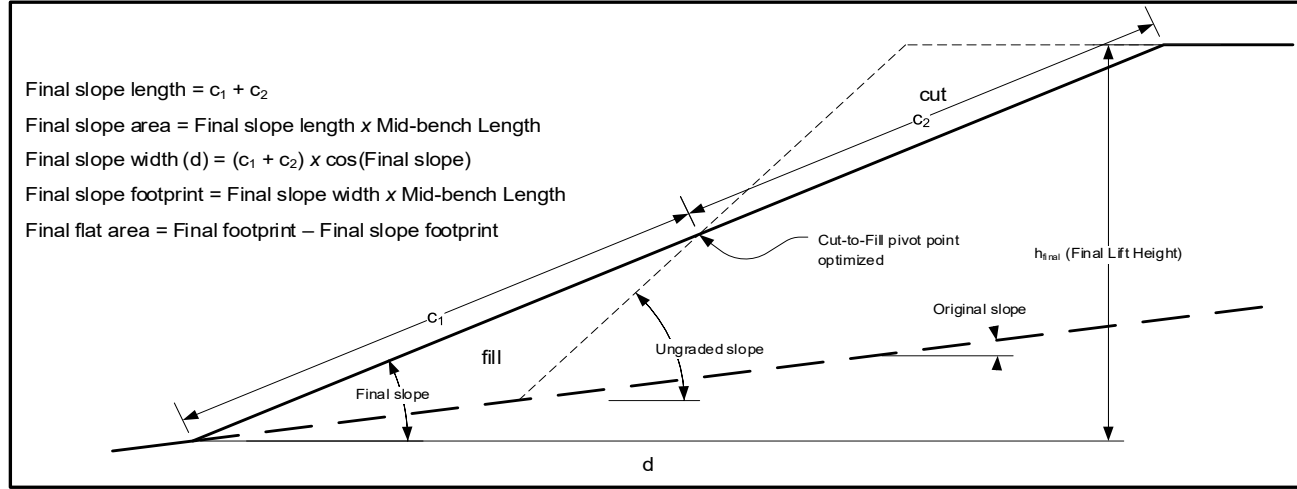


Closure Cost Estimate
Figures

Slope Regrading Push Distance

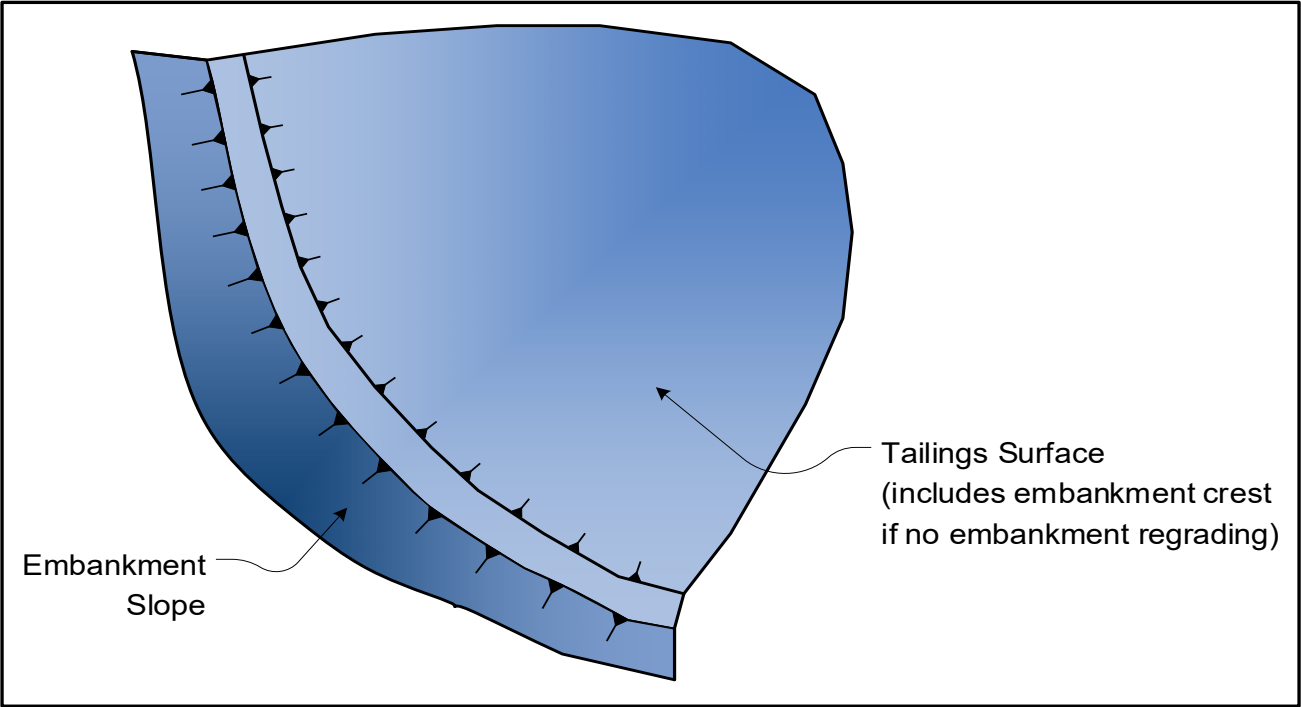


Slope/Flat Area Calculations

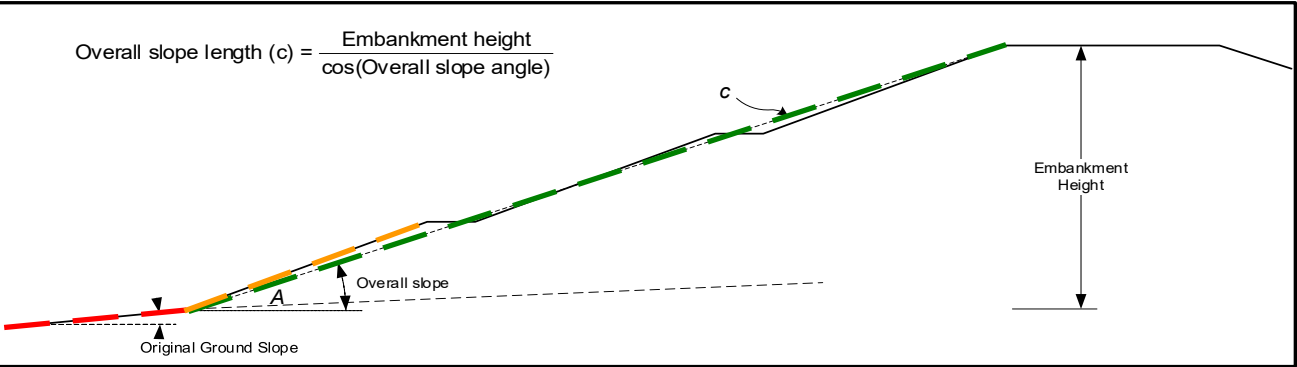


Tailings Impoundments

Closure Cost Estimate
Figures

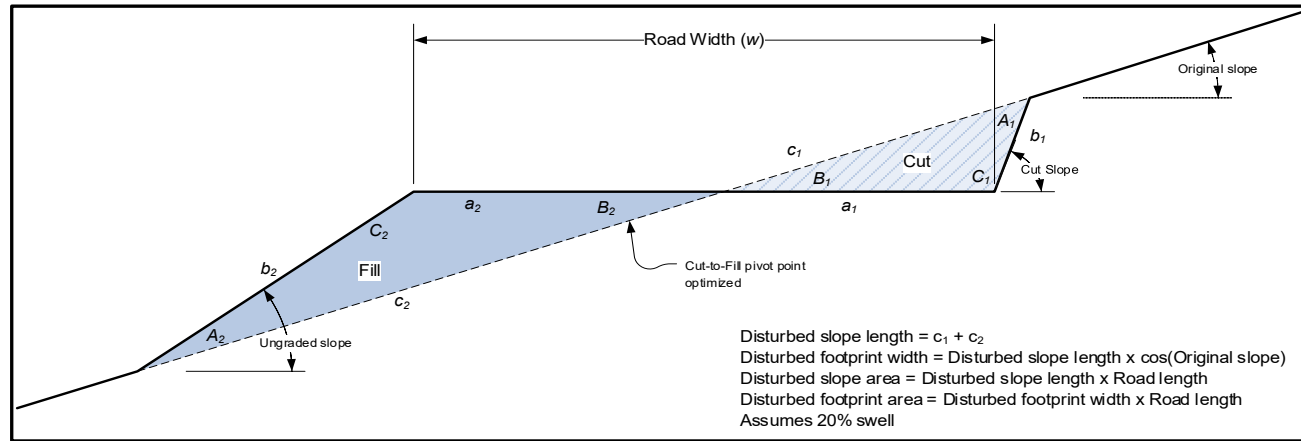


Tailings Embankments

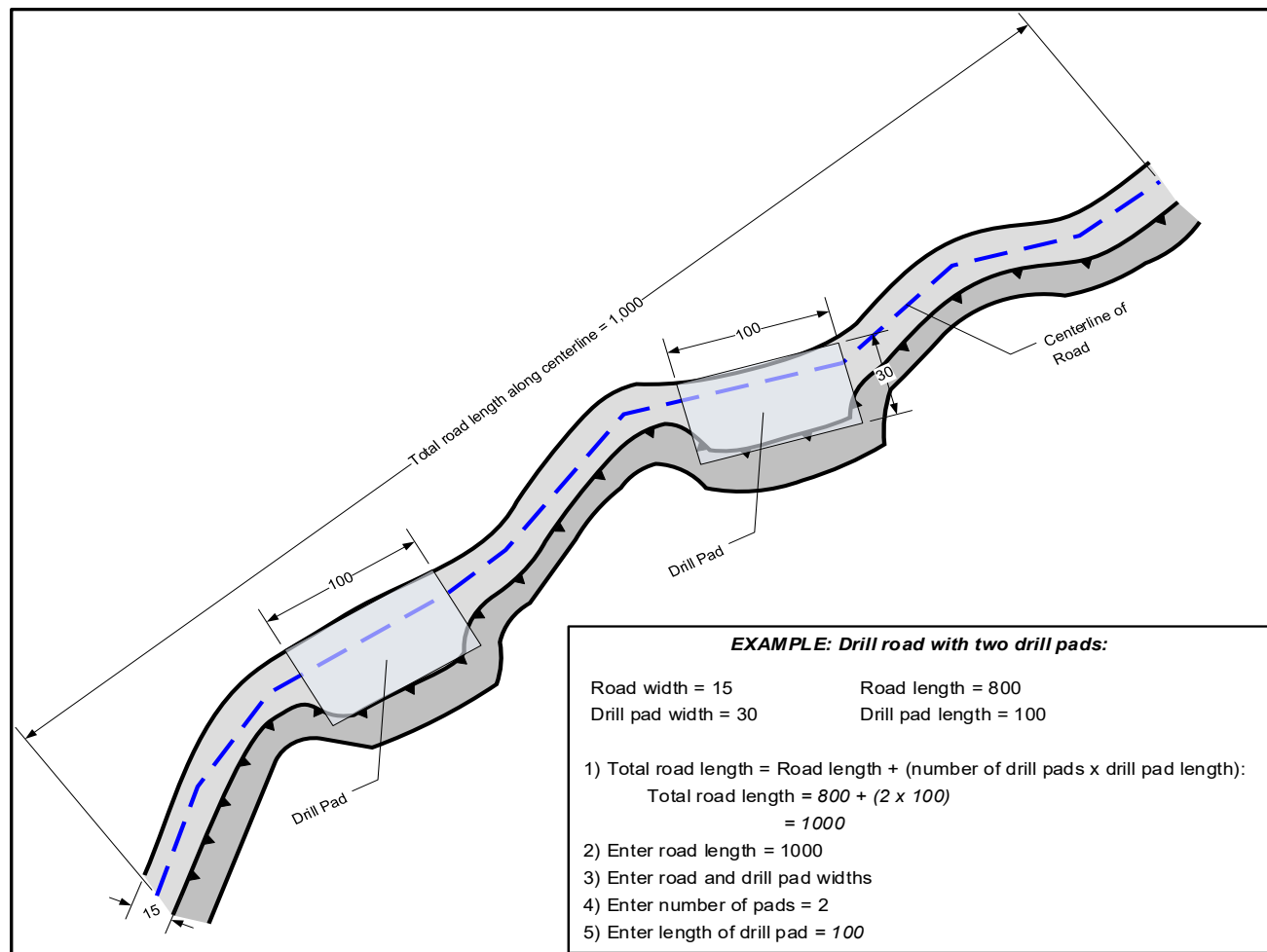


Road Regrading Volume Calculations

Closure Cost Estimate Figures

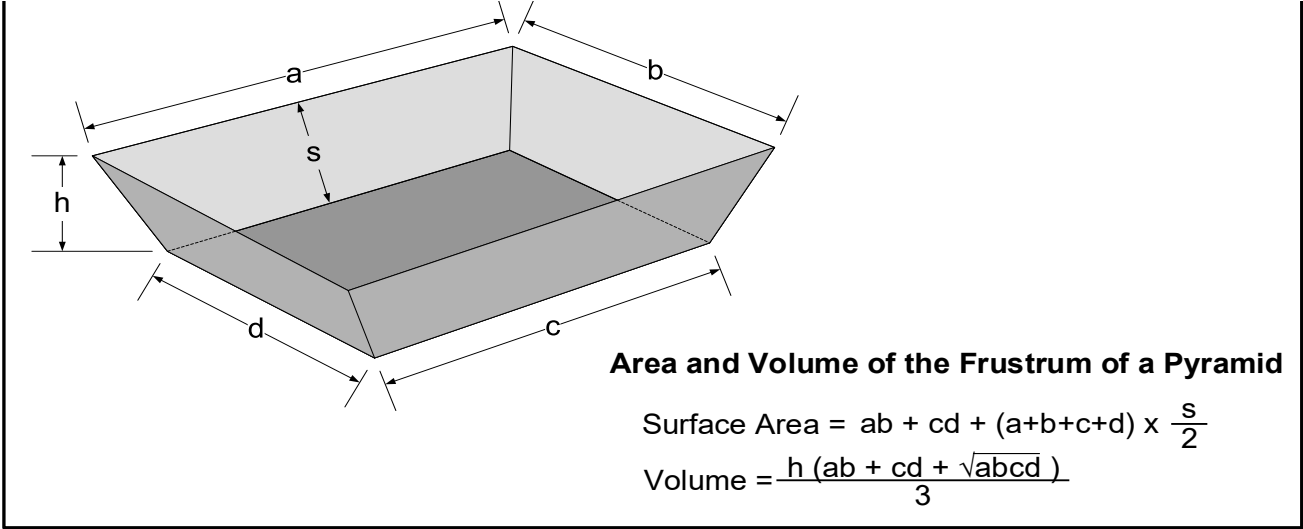


Exploration Road Calculations

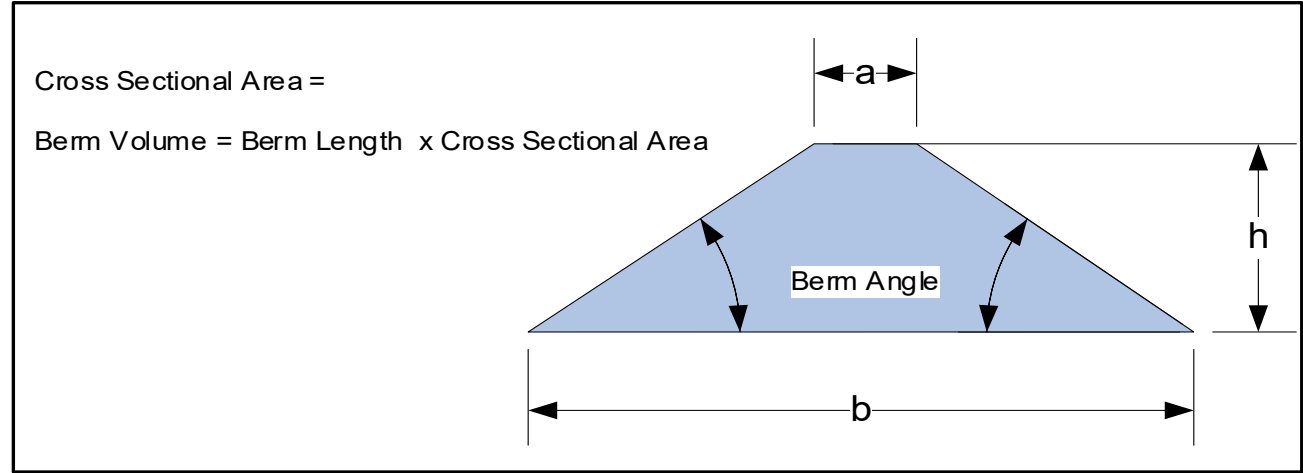


Pond Volume Calculations

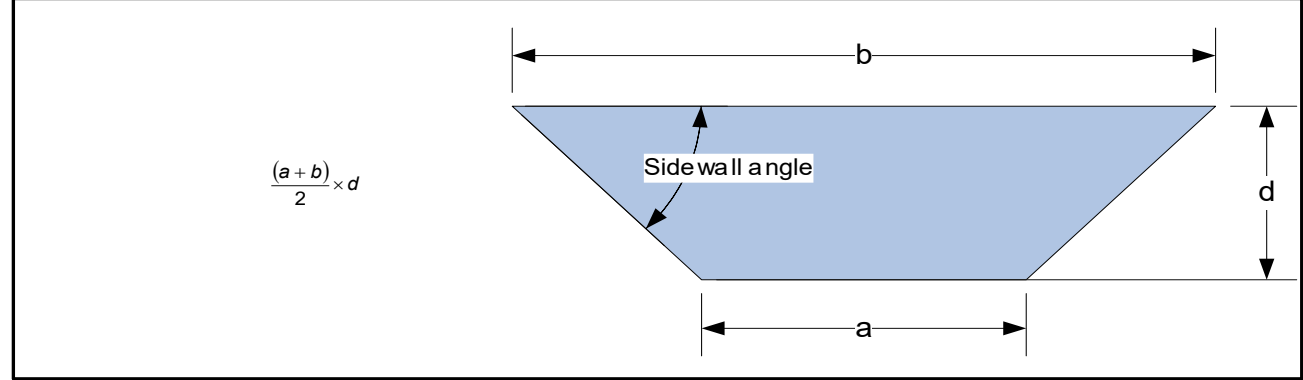
Closure Cost Estimate
Figures



Berm Volume Calculations

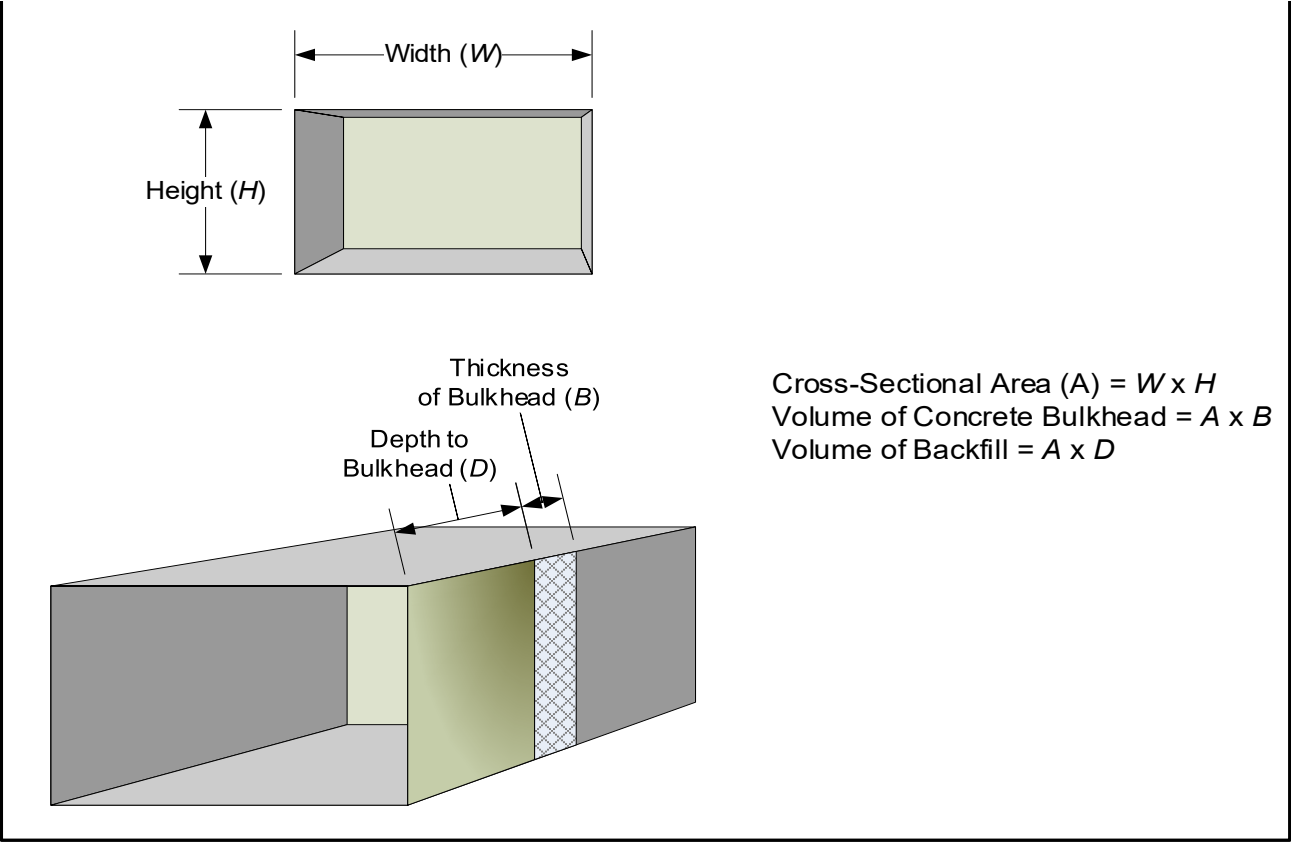


Ditch Volume Calculations

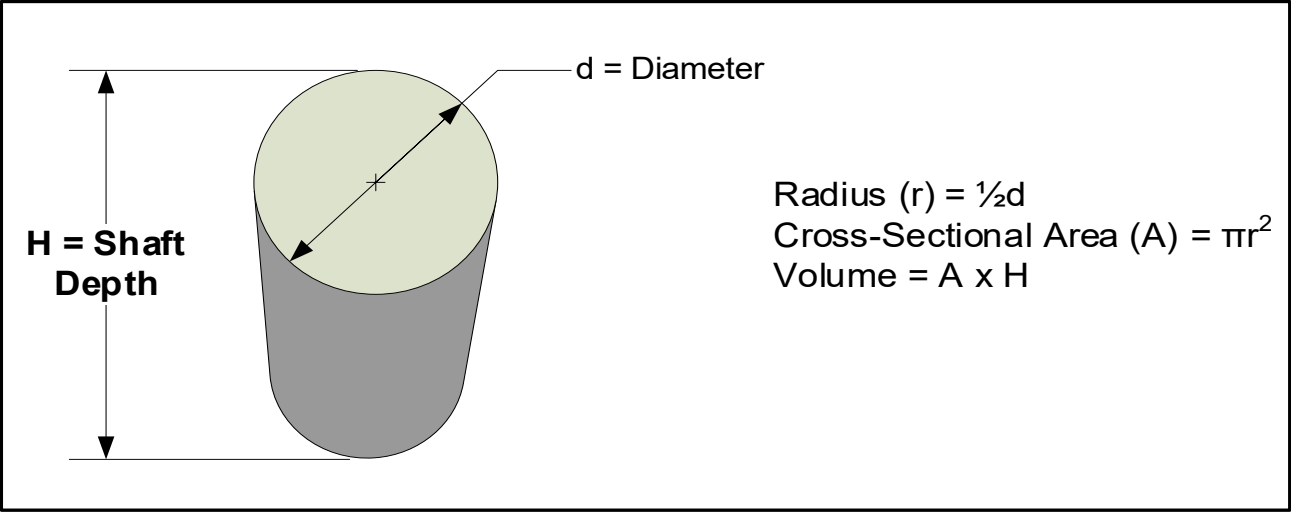


Portal/Adit Measurements

Closure Cost Estimate
Figures



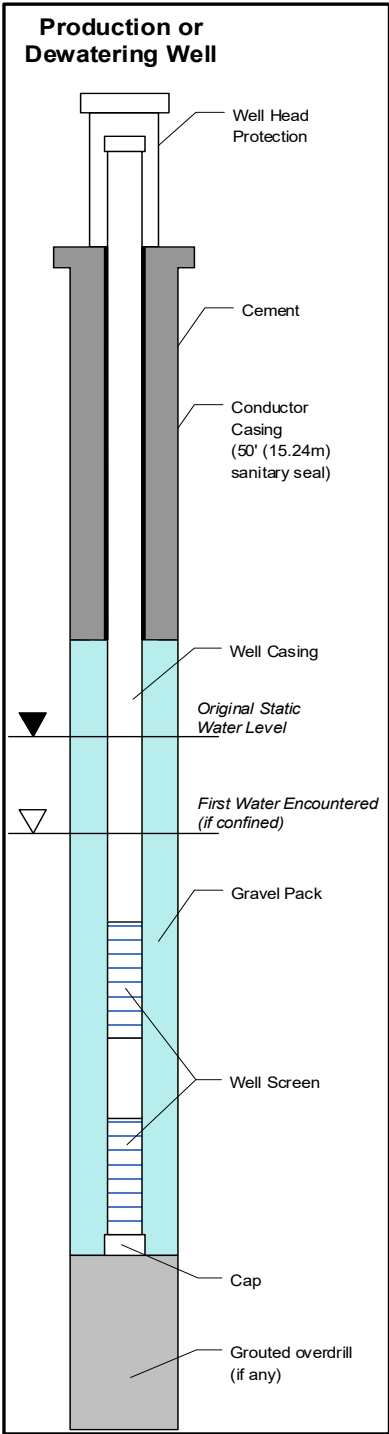
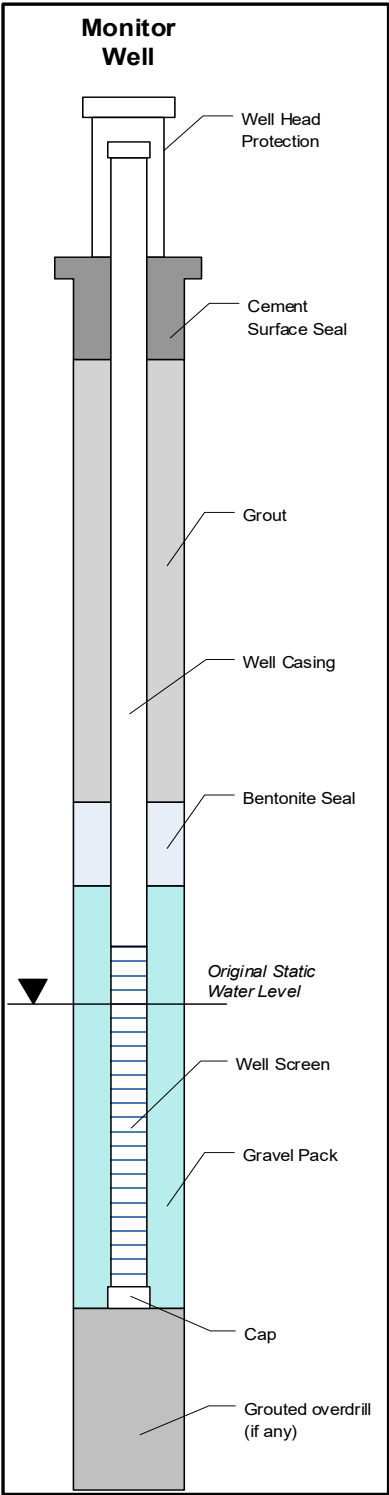
Shaft Measurements



Production Well

Monitor Well

Closure Cost Estimate
Figures



STANDARDIZED RECLAMATION COST
ESTIMATOR
User Settings
Version 2 - Beta 01

Cost Estimate Type	Alias*
Life-of-Mine	LOM
Financial Assurance	FA
Asset Retirement Obligation	ARO

Note: Aliases **cannot** use any of the following characters: \ / * ? : []

Other Settings	
Road Transport Speed (mph)	80
Site Speed limit (mph) (determines maximum speed for all haul fleets)	35.0
Maximum Loader Haul to Crusher (ft)	200.0

Set Recalculation Options

Several of the actions in the worksheet will recalculate the entire workbook when completed. This can reduce the efficiency of the model. The options below allow the user to determine which of these actions will include a recalculation command at the end of the action.

For example, when adding numerous facilities to different sheets, it is best to turnoff recalculation for the Add Facility action by selecting FALSE below.

These options are only active if MANUAL is selected on the Formulas/Calculation Options menu. If FALSE is selected, then recalculation will not occur and must be requested manually, by entering Ctrl-Shift-W (recalculates current worksheet), Ctrl-Shift-R (recalculates entire model).

Note: Pressing the F9 key or selecting CALCULATE NOW from the Formulas/Calculation Options menu will recalculate all open workbooks.

Action	Recalc?
Add Facility	FALSE
Delete Facility	FALSE
Import User Data	FALSE

STANDARDIZED RECLAMATION COST ESTIMATOR
User Tools

Version 2.0 - Beta 01

These tools allow easy access to some useful VBA routines and macros that are include in this Model Version

Keyboard Shortcuts	
SHORTCUT KEYS	ACTION
Ctrl-Shift-C	Go to Table of <u>C</u> ontents
Ctrl-Shift-H	<u>H</u> ide/Unhide Sheets
Ctrl-Shift-I	Go to Property <u>I</u> nformation Sheet
Ctrl-Shift-O	Open Toe <u>O</u> ffset Calculator
Ctrl-Shift-P	<u>P</u> rint Multiple Sheets
Ctrl-Shift-R	<u>R</u> ecalculate Entire Model (but only this workbook)
Ctrl-Shift-S	Show <u>S</u> lope Conversion Table
Ctrl-Shift-T	Go to <u>T</u> ools Sheet
Ctrl-Shift-W	Recalculate Current Sheet
Ctrl-Shift-Z	Paste Formulas - First Use Ctrl-C to copy a range, then use the mouse (or keyboard) to select the paste range and then use this shortcut to paste formulas only from the copy range to the paste range. Equivalent to the Paste Special/Formulas command.

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J.G.GrassyMountain_BestM3_Ph4_T04_updated_v0_5702.xlsx
Model Version: Version 2.0
Cost Data File: BRCE_Cost_Data_V05_v0.2_Import_Mount_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: BestM3_BestM3_Imported.xlsx
Sheet Name: Costs

[illegible]

Closure Cost Estimate
User 03 Growth Media Volumes

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta05_PhII_TSF_Updated_no_STG0.xlsm
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name: Growth Media Volumes

Growth Media Quantities	Quantity
Location	(cy)
Growth Media No. 1	85,103
Growth Media No. 2	38,881
Growth Media No. 3	7,018
Borrow No. 1	451,000
Borrow No. 2	638,000
total	1,220,002

Growth Media Requirements	Quantity	Growth Media Source				
		Growth Media No. 1	Growth Media No. 2	Growth Media No. 3	Borrow No. 1	Borrow No. 2
Location	(cy)	(cy)	(cy)	(cy)	(cy)	(cy)
Underground Mine	10,270		10,270			
Tailings Storage Facility	124,856	90,586	20,371		61,635	
Temporary Waste Rock Storage Facility	9,680			9,680		
Process Plant	8,497		4,433		4,064	
Infrastructure & Ancillary Facilities						
Roads	-					
Yards & Laydown Areas	9,437		2,360		7,077	
Growth Media Stockpiles	-					
Water Supply	733			733		
Power Supply	81			81		
Storm Water Diversion Channels	-					
Exploration	1,130			435	695	
Quarry	77,440					77,440
Reclamation Borrow Areas	-					
Monitoring	-					
Total Required	242,124	90,586	37,434	10,929	73,471	77,440
Total Available	1,220,002	85,103	38,881	7,018	451,000	638,000
Delta Volume	977,878	(5,483)	1,447	(3,911)	377,529	560,560

Closure Cost Estimate
User 04

Project Name: Grassy Mountain Mine - Reclamation Plan

Date of Submittal: October 2022

File Name: SRCE_2.0_GrassyMountain_Beta05_Phil_TSF_Updated_no_STG0.xlsm

Model Version: Version 2.0

Cost Data: User Data

Cost Data File: SRCE_Cost_data-USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm

Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submittal: October 2022
File Name: SRCE_2.0_GrassyMountain_Beta06_Phil_TSF_Updated_no_STGS.xlsm
Model Version: Version 2.0
Cost Data User Data
Cost Data File: SRCE_Cost_data_USR_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_8702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V18_v1.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Estimate: Surface Reclamation - Import/Build
Sheet Name: LOM - Cost Estimate: Surface Reclamation - Import/Build

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_5752.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V15_v1.2_Import_Mine_GrassyMountain_20210410.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_8702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V18_v1.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J.E_GrassyMountain_BestM0_Prel_TSF_updated_v0_8702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V08_v0.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Greasy Mountain Mine - Reclamation Plan
Date of Schedule: October 2022
File Name: BRCE_2.0_GreasyMountain_Restore_P10_T30_Update4_v01_27122.xlsx
Model Version: Version 2.0
Cost Data: User Data
Cost Data File: BRCE_Cost_data-1026_v2.0_Imported_Metric_GreasyMountain_20210519.xlsx
Cost Estimate Type: L06 - Cost Data: Reclamation Schedule - Importer Data
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v0_5702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V05_v0.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_P15_updated_v0_5702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V05_v0.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_8702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V18_v1.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bond0_Pnt_15F_updated_v0_5702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V05_v0.2_Import_Mgmt_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import/Build
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_5702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V15_v1.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_5752.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V15_v1.2_Import_Mine_GrassyMountain_20214018.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_Bench_P14_T14_updated_v1_8702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V18_v1.2_Import_Mgmt_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import/Build
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J.E_GrassyMountain_BestM3_P14_T14_updated_v0_5702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V05_v0.2_Import_Mine_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCE_J & GrassyMountain_BestMgmt_Plan_TSP_updated_v0_5702.xlsx
Model Version: Version 2.0
Cost Data Year: 2020
Cost Data File: BRCE_Cost_Data_V05_v0.2_Import_Mgmt_GrassyMountain_20210408.xlsx
Cost Estimate Type: LOM - Cost Data: Southern Nevada - Import Data
Sheet Name: LOM - Cost Data

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato_PHS_TSF_Updated_v11_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato_PHS_TSF_Updated_v11_ST00.xlam
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_Data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlam
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_Data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato5_PHS_TSF_Updated_v1s_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Greasy Mountain Mine - Reclamation Plan
Date of Submission: October 2022
File Name: BRCC_2.6_GreasyMountain_Reclam_P16_TSP_Update_no_STG.xlsx
Model Version: Version 2.6
Cost Data User Data
Cost Data File: BRCC_Cost_data_USER_v2.6_Imperial_Mine_GreasyMountain_20210910.xlsx
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

Project Name: Grassy Mountain Mine - Reclamation Plan
Date of Estimate: October 2022
File Name: BRCE_P2_GrassyMountain_Botato_PHS_TSF_Updated_v11_STG01.xlsm
Model Version: Version 2.0
Cost Date: User Data
Cost Data File: BRCE_Cost_data-USD_v2.0_Imperial_Metric_GrassyMountain_20210610.xlsm
Cost Estimate Type: LOM Cost Basis: Northern Nevada - Imperial Units
Sheet Name:

BREAK LINKS TO OTHER EXCEL FILES

INSTRUCTIONS TO CHANGE INTERNAL AND EXTERNAL FILE LINKS

Do Not Delete Text Below

This sheet is unprotected to facilitate breaking or changing the source of links. This issue occurs when importing a model file that has internal links to other sheets or external links to other Excel workbooks.

For example, internal links occur if you create calculations in a User sheet and then reference those results in a formula in another sheet. If you then import that model into an empty file, the internal links will include the full path name of the original file, converting the internal links to external links. This means that the new model will be referring to the original file, not the User sheet in your current model.

External links are created when you reference another Excel workbook in a formula. External links from the imported file will also be copied to the new model file.

In theory, the Import User Data function should change all internal links to the current file name, but if that fails for some reason, or you want to change external file links, this sheet is where you do it.

To change the locations of these source files you need to change the source of the link to the new file (or other file as desired). To do that you need a completely unprotected sheet like this one.

To remove the links from an imported file do the following:

- 1) Save this file with a new name.
- 2) activate this sheet (make it the active sheet on the screen, which you have already done)
- 3) On the File menu select "Links". If the "Links" option does not appear, there are no links.
- 4) The name of the original file will appear in the list of linked files. Select it.
- 5) Select "Choose" from the options. A Windows Explorer window will open.
- 6) Use the window to locate the file you wish to reference (this file if you want to change internal links to the current model) and select it.

APPENDIX C

ONSITE CHEMICALS TO BE REMOVED AS PART OF RECLAMATION

Chemicals Stored Onsite

Chemical and Purpose	Agency Classification as Toxic or Hazardous Substance	Onsite Storage Capacity
Ammonium nitrate fuel oil (ANFO) as blasting agent	OSHA (see SDS)	Seven 2,800-lb totes stored in explosive magazine
	DOT Div 1.1, 1.2, 1.3, 1.5 (Explosive)	
	Oregon RQ (500 lbs)	
Carbon - Dry, Sulfide-impregnated	DOT Class 4.2 (Spontaneous Combustible)	Forty 50-lb sacks
	Oregon RQ (500 lbs)	
Copper Sulfate Pentahydrate, 98% by weight as catalyst for cyanide detoxification	OSHA (see SDS)	One 2000-lb bulk bag
	DOT Class 9	
	CERCLA (RQ 10 lbs)	
	Oregon RQ (10 lbs)	
Diesel	OSHA (see SDS)	8,250 gallons
	DOT Class 3 (Combustible)	
	Oregon RQ (500 gallons)	
Hydrochloric Acid (HCL) - Liquid 32% in the elution circuit to Reagent Grade in the assay and metallurgy laboratory	CERCLA (RQ 5000 lbs)	3,000 gallons storage. Shipped in 265-gallon totes.
	OSHA (see SDS)	Four 1 gallon containers (Reagent Grade)
	DOT Class 8 (Corrosive)	
	Oregon RQ (500 gallons)	
Hydrogen Peroxide to provide oxygen to the intensive-leach reactor	EHS – EPCRA (RQ/TPQ 1000 lbs)	One 265-gallon tote
	OSHA (see SDS)	
	DOT Class 5.1 (Oxidizer)	
	Oregon EHS RQ (5 gallons)	
Lead Nitrate (PbNO3)- Dry	CERCLA (RQ 10 lbs)	One 20-lb bag
	OSHA (see SDS)	
	DOT Class 5.1 (Oxidizer)	
	Oregon EHS RQ (10 lbs)	
Lime/Calcium Oxide (CaO)- Dry pebble 90% for leaching and detoxification pH control	OSHA (see SDS)	One 25-ton truckload
	DOT Class 8 (Corrosive)	
	Oregon RQ (500 lbs)	
Mercury	CERCLA (RQ 1 lb)	One 80-lb flask

Chemical and Purpose	Agency Classification as Toxic or Hazardous Substance	Onsite Storage Capacity
	OSHA (see SDS)	
	DOT Class 8 (Corrosive), Class 6.1 (Poison)	
	Oregon EHS RQ (10 lbs)	
Sodium Cyanide (NaCN) – Mixed to 30% in leaching as a lixiviant and in elution as a carbon stripping aid	OSHA (see SDS)	Eight 1-ton bulk bags. Dissolved in water, transferred to 10,000 gallon storage tank
	EHS - EPCRA (RQ 10 lbs, TPQ 100 lbs)	
	CERCLA (RQ 10 lbs)	
	DOT Class 6.1 (Poison)	
Sodium Cyanide, Reagent Grade (Solid)	Oregon EHS RQ (10 lbs)	Ten 5-lb boxes
Sodium Hydroxide (NaOH) Caustic Soda- - Liquid 50% in intensive cyanidation as a pH modifier and in elution circuit to prepare the stripping solution to recover gold from loaded carbon	OSHA (see SDS)	One 265-gallon tote
	CERCLA (RQ 1000 lbs)	4,887-gallon tank
	OSHA (see SDS)	
	DOT Class 8 (Corrosive)	
	Oregon RQ (500 gallons)	
Sodium Metabisulfite (SMBS) is the source for SO ₂ in the cyanide detoxification circuit	OSHA (see SDS)	One 1.1-ton bag to supply SMBS at 20% strength in storage tank
	Transport – Not regulated	
	Oregon RQ (500 lbs)	
Acetylene	OSHA (see SDS)	Eighteen Size 45 industrial Acetylene Cylinders
	DOT Class 2.1 (Flammable Gas)	
	Oregon RQ (500 cubic feet)	
Buffer Solution (Acetate) Reagent Grade - Dry	OSHA (see SDS)	Ten 5-lb boxes
	CERCLA RQ 5000 lbs (as Acetic Acid)	
	Oregon RQ (500 lbs)	
Feldspar - Dry	OSHA (see SDS)	Five 50-lb sacks
	Oregon RQ (500 lbs)	
Hydrofluoric Acid (HFI) Reagent Grade	EHS - EPCRA (RQ/TPQ 100 lbs)	Two 1 gallon containers
	CERCLA (RQ 100 lbs)	
	OSHA (see SDS)	
	DOT Class 8 (Corrosive)	
	Oregon EHS RQ (5 gallons)	

Chemical and Purpose	Agency Classification as Toxic or Hazardous Substance	Onsite Storage Capacity
Lead Oxide- Reagent Grade	OSHA (see SDS)	One 80-lb pail
	DOT Class 5.1 (Oxidizer)	
	Oregon RQ (500 lbs)	
Methyl Ethyl Ketone (MEK)	CERCLA (RQ 5000 lbs)	One 5-gallon pail
	OSHA (see SDS)	
	DOT Class 3 (Explosive)	
	Oregon RQ (500 gallons)	
Nitric Acid (HNO ₃) Reagent Grade	EHS - EPCRA (RQ/TPQ 1000 lbs)	Ten 1 gallon containers
	CERCLA (RQ 1000 lbs)	
	OSHA (see SDS)	
	DOT Class 8 (Corrosive)	
	Oregon EHS RQ (5 gallons)	
Potassium Nitrate (Niter) (NaNO ₃) - Dry	OSHA (see SDS)	Five 50-lb sacks
	DOT Class 5.1 (Oxidizer)	
	Oregon RQ (500 lbs)	
Silica (SiO ₂) - Dry	OSHA (see SDS)	Ten 50-lb sacks
	Oregon RQ (500 lbs)	
Sulfuric Acid (H ₂ SO ₄) Reagent Grade	EHS - EPCRA (RQ/TPQ 1000 lbs)	Six 1 gallon containers
	CERCLA (RQ 1000 lbs)	
	OSHA (see SDS)	
	DOT Class 8 (Corrosive)	
	Oregon EHS RQ (5 gallons)	