MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR, ENERGY, AND MINING DIVISION
MINING BUREAU- HARD ROCK MINING SECTION

RECORD OF DECISION

For Golden Sunlight Mines, Inc.
Amendment 017 to Operating Permit No. 00065
Jefferson County, Montana

September 2021

The Final Environmental Impact Statement (EIS) on Golden Sunlight Mines, Inc. proposed amendment to Operating Permit No. 00065 can be obtained by contacting DEQ MEPA Coordinator Craig Jones at 406.444.0514 or from DEQ's website (http://deq.mt.gov/public/eis). Additional printed or electronic copies of this Record of Decision (ROD) and the Final EIS are available upon request. The supporting project record is available for review at the Department of Environmental Quality, Mining Bureau, located at 1520 East Sixth Avenue, PO Box 200901, Helena, MT 59620-0901. For additional information concerning these decisions, contact Craig Jones, Director's Office, DEQ, 1520 East Sixth Avenue, Helena, MT, 59620 (406.444.0514).

9/13/2021

Christopher Dorrington, Director
State of Montana
Department of Environmental Quality

Date

SECTION 1 BACKGROUND

1.1 INTRODUCTION

Golden Sunlight Mines, Inc. (GSM) currently holds Operating Permit No. 00065 for the Golden Sunlight Mine, which was originally approved in 1975. The Golden Sunlight Mine is an open-pit and underground gold mine. Previous amendments and minor revisions were issued in 1981, 1983, 1984, 1987, 1989, 1990, 1997, 1998, 2007, 2010, 2014, and 2018. Mining and milling operations ceased in April 2019.

In March 2020, GSM submitted to the Department of Environmental Quality (DEQ) an application for Amendment 017 to Hard Rock Mining Operating Permit No. 00065 for the proposed Tailings Reprocessing Project. The permit amendment would allow GSM to excavate and reprocess tailings from the previously reclaimed Tailings Storage Facility 1 (TSF-1), construct a new Re-Pulping Plant, reprocess the tailings in a Flotation Plant to separate sulfur and gold, and dispose of the remaining tailings by partially backfilling the Mineral Hill Pit (Pit). The Amendment Application underwent deficiency reviews and revisions before DEQ determined that the application was complete and compliant with the substantive provisions of the Metal Mine Reclamation Act (MMRA). DEQ issued a draft amendment approval on October 26, 2020. Issuance of the draft amendment to the operating permit is a state action requiring DEQ to conduct an environmental review under the Montana Environmental Policy Act (MEPA).

The Draft Environmental Impact Statement (Draft EIS) was published on June 15, 2021, and the Final Environmental Impact Statement (Final EIS) was published on August 27, 2021. Alternatives analyzed included the No Action, Proposed Action, and DEQ Modified Alternatives.

1.2 PROJECT AREA DESCRIPTION

The Golden Sunlight Mine is an open-pit and underground gold mine located in Jefferson County, Montana. The mine and proposed tailings reprocessing project area are within portions of Sections 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33 of Township 2 North, Range 2 West; Sections 4, 5, and 6 in Township 1 North, Range 3 West; and Sections 13, 24, 25, and 36 in Township 2 North, Range 4 West (based on Montana Meridian system). The site is located 5 miles northeast of Whitehall, Montana, and is accessed via Interstate 90 and Highway 2. The mine is located on private and public Bureau of Land Management (BLM) land.

The open-pit mine has been in operation since 1975. The mine has a 3,399-acre permitted disturbance boundary in a total mine permit area of 6,205 acres. GSM also has an approved Plan of Operations with the BLM (MTM-82855).

The mine facilities include the Mineral Hill Pit, the East Area Pit, the milling and ore processing complex, two tailings storage facilities (TSF-1 and TSF-2), and five waste rock disposal areas.

TSF-1, the East Area Pit, and some waste rock disposal areas have been reclaimed. The permit amendment (or Proposed Action) would not increase the size of the mine permit boundary or the currently approved disturbance boundary. The activities covered by the permit amendment would occur over approximately 12 years. The produced concentrate would be transported to Barrick's existing mines in Nevada. After mine closure, TSF-1 and the Pit bottom area would be reclaimed in compliance with the MMRA.

1.3 DEQ's Responsibilities and Purpose of the Record of Decision

DEQ administers the MMRA, Title 82, chapter 4, part 3, Montana Code Annotated (MCA) and the administrative rules adopted under the MMRA. DEQ also administers the Montana Water Quality Act (WQA) and the administrative rules adopted under the WQA. MEPA (Section 75-1--101, *et seq.*, MCA) requires an environmental review of actions taken by the state of Montana that may significantly affect the quality of the human environment. The environmental review culminating in the issuance of the Final EIS on August 27, 2021, was conducted to fulfill the requirements of MEPA. DEQ identified the DEQ Modified Alternative (Micro-Topography of TSF-1 and Suitability of TSF-1 Capping Material) and the developed permit stipulations as its preferred alternative in the Final EIS.

The purpose of this Record of Decision (ROD) is to set forth DEQ's decision on GSM's application to amend its operating permit and the reason for the decision. The ROD serves as a public notice of the decision, the reasons for the decision, and any special conditions surrounding the decision or its implementation.

SECTION 2 PUBLIC INVOLVEMENT

2.1 Public Involvement

DEQ determined that GSM's Amendment Application was complete and compliant on October 26, 2020. On February 10, 2021, DEQ issued a press release seeking public scoping comments. The press release disclosed the time and location of the public scoping meeting, provided information regarding the EIS and permit application, and requested public comment on the Project until March 12, 2021. DEQ prepared a legal notice for the public scoping meeting. In addition to providing information regarding the public meeting, the notice described the purpose of the scoping meeting, provided a web link to access the permit application, and identified methods to submit EIS scoping comments. The notice was published in the *Whitehall Ledger* (a weekly newspaper) on February 10, 17, and 24, 2021, and March 3, 2021.

DEQ established a public comment scoping period from February 10, 2021, to March 12, 2021 (i.e., 31 calendar days). During this time, DEQ received several written and oral comments from the public that were submitted via email, mail, or during the public meeting. On March 4, 2021, a public scoping meeting was held virtually via Zoom. DEQ compiled the comments made at the meeting and received via postal mail or email and entered those comments into the Administrative Record.

The GSM Draft EIS was released to the public and the comment period for the EIS ran from June 15, 2021, through July 15, 2021 (i.e., 31 calendar days). DEQ issued a press release on June 15, 2021, and the Draft EIS was listed on DEQ's website (http:/www.deq.mt.gov). The notice of the Draft EIS and public meeting was published in the *Whitehall Ledger* on June 16, 23, and 30, 2021, and July 7, 2021. DEQ held a public meeting on June 29, 2021, at the Borden Building in Whitehall, Montana. Approximately 16 individuals attended the in-person meeting and 10 individuals attended online. DEQ received seven written comments and three oral comments on the Draft EIS and responded to the comments in the Final EIS.

2.2 Issues of Concern

Scoping comments focused on six issues of concern to be addressed through the alternatives analysis process for the Golden Sunlight Mine expansion plan: (1) the MCA requirements for tailings storage facilities that are applicable, (2) the appropriateness of reprocessed tailings as Pit backfill versus waste rock backfill, (3) consideration of alternatives or permit stipulations for water and stockpiles, (4) impacts on socioeconomics, (5) effects on ground water quality and quantity, and (6) evaluation of the water balance and the site's water usage impacts on surface water. These issues, along with other resources, were evaluated in detail to address impacts to resources and help determine reasonable alternatives for tailings reprocessing and facility reclamation, including the Proposed Action. The relevant issues are set forth on pages 1-10 to 1-14 of the Final EIS.

SECTION 3 ALTERNATIVES CONSIDERED

Chapter 2.0 of the Final EIS describes the alternatives analyzed and the alternatives considered but excluded from detailed analysis. The potential environmental impacts of the following alternatives were analyzed in detail in Chapter 3.0 of the Final EIS:

- No Action Alternative;
- Proposed Action; and
- DEQ Modified Alternative.

DEQ considered, but dismissed without considering in detail, the following alternatives:

- Alternative Tailings Excavation;
- Alternative Tailings Conveyance;
- Replace Re-Pulping Plant With High-Pressure Slurry Ablation Technology;
- Dispose Unprocessed Tailings in the Mineral Hill Pit;
- Dispose Reprocessed Tailings in an Alternate Location;
- Amend Tailings With Cement;
- Amend Tailings With EnviCore;
- Amend Tailings With Foam;
- No Growth Media Placement in the Mineral Hill Pit;
- Pit Perimeter Rockfall Catch Ditch;
- Improved Habitat Creation in the Mineral Hill Pit;
- Variable Water Management Near Tailings Storage Facility 1;
- Alternate Water Source; and
- Alternate Seed Mix of TSF-1 and the Pit.

The rationale for not considering these alternatives in detail is set forth on pages 2-33 through 2-47 of the Final EIS.

SECTION 4 DECISIONS AND RATIONALE FOR DECISION

DEQ may deny a proposed hard rock mining operating permit amendment application if the application fails to meet the requirements of the MMRA, the Montana Air or Water Quality acts, or the Montana Public Water Supply Act. DEQ may not withhold, deny, or impose conditions on any permit based on the provisions of MEPA. However, MEPA allows a permit applicant and DEQ to mutually develop measures that may be incorporated into a permit.

Pursuant to Section 82-4-337, MCA, DEQ determined that the GSM's permit Amendment Application was complete and compliant with the requirements of the MMRA, including compliance with the Montana Air and Water Quality acts. As a result, DEQ issued a draft permit. Issuance of the draft permit as a final permit is the proposed state action subject to an environmental review under MEPA. MMRA requires DEQ to consult with a permit applicant before placing stipulations in the draft or final permit. Permit stipulations in a draft or final permit may, unless the permit applicant consents, address only compliance issues within the

substantive requirements of the MMRA. GSM has reviewed and provided consent to comply with the details of the DEQ Modified Alternative and associated stipulations.

DEQ has selected the Proposed Action as modified by the DEQ Modified Alternative (Micro-Topography of TSF-1 Alternative and Suitability of TSF-1 Capping Material Alternative) and the developed permit stipulations as the Preferred Alternative. The primary differences for reclamation methods between the Proposed Action and the DEQ Modified Alternative are the verification methods for grading and recontouring the surface beneath TSF-1 and the testing of capping material prior to reclamation of the TSF-1 footprint.
Upon reviewing the Proposed Action, the final reclamation methods and design of TSF-1 could be improved to reduce visual and environmental impacts and increase vegetation diversity and wildlife habitat. As a result, DEQ developed the DEQ Modified Alternative to ensure that reclamation and long-term stability could be achieved. The Proposed Action returns the land to its predisturbance topography, but specific grading techniques are not detailed. Under the DEQ Modified Alternative, the density and location of small topographic changes of the native ground surface would be measured in the predisturbance imagery and topography and then used as criteria to confirm that the approximate original contour is restored as concurrent reclamation advances. TSF-1 reclamation would be modified to create a natural and stable geomorphic landform that recreates a natural drainage network. This design would better tie TSF-1 into the existing topography in the area and would be superior in terms of appearance and performance, with a more natural appearance that blends with the landscape. The environmental benefits from varying landforms at TSF-1 would create a mosaic vegetation pattern and microclimates that support multiple habitats for promoting greater vegetation and wildlife biodiversity even within the permitted seed mixture.

Under the Proposed Action, mixing between the tailings and the capping materials may occur during salvage, which could degrade the capping material quality and reduce its capacity to support plant life after replacement. The DEQ Modified Alternative would also include evaluating the suitability of the capping material to confirm that contaminants have not migrated into the capping material and ensure its capacity to support grass, forb, and shrub seeding and plantings on reclaimed areas.

While preparing the EIS, DEQ determined that the Proposed Action was related to additional permit approvals and impacted site plans. As a result, DEQ developed several permit stipulations which are included in the Preferred Alternative, along with the DEQ Modified Alternative described above.

> **Stipulation 1:** GSM shall obtain approval from the DEQ Air Quality Bureau for any necessary modifications to the existing Montana Air Quality Permit (MAQP) #1689-08.

Stipulation 2: GSM shall receive approval from BLM prior to the disturbance of the 1.4 acres of public land within the Pit. Approval would be required before backfilled tailings impact BLM lands at a filled elevation of approximately 5,060 ft.

Stipulation 3: GSM shall update the Operations and Reclamation Plan to include the changes approved through Amendment 017. An acceptable Operations and Reclamation Plan shall be submitted to DEQ and BLM no later than 180 days after the amendment authorization. GSM shall provide as-built drawings for the new facilities that would be constructed as part of Amendment 017. The final facility locations and construction details shall be provided to the DEQ and BLM within the updated Operations and Reclamation Plan.

Stipulation 4: GSM shall limit the volume of tailings stockpiles and duration of stockpiles located by the Re-Pulping Plant to ensure that stockpiled tailings or exposed TSF-1 tailings do not become a source of contamination during delays or shutdown. As soon as a shutdown or delay longer than 1 year is anticipated, or 1 year has lapsed since active tailings excavation and reprocessing, the proposed reclamation activities should begin. Stockpiled tailings would be removed and placed in lined TSF-2; under such a condition and assuming the Re-Pulping Plant is still mechanically functional, stockpiled tailings would be slurried in the Re-Pulping Plant and moved via the pipeline from the Plant to TSF-2.

Stipulation 5: GSM shall develop and implement a tailings sampling and analysis program to ensure the residual sulfide content of the flotation tailings meets the proposed design criteria (0.5 percent total sulfide) or the thickened tailings received adequate neutralization potential to meet the stated water quality objectives for the process solution pond in the Pit. Within 180 days after the amendment authorization, GSM will provide DEQ and BLM an acceptable tailings sampling and analysis program for the composition of residual tailings that would be disposed within the Pit, including sampling frequency, parameters for analysis, and reporting schedule. The monitoring results will be used to optimize the flotation system and the adjustment of lime addition rates at the thickening plant. The program shall include a response protocol or automated lime injection mechanism that adjusts the pH of the flotation tailings such that adequate neutralization potential is established, dependent on its sulfide content.

Stipulation 6:
As recommended in the Amendment Application, GSM shall update the existing Ground Control Management Plan to address the following topics and submit an acceptable plan to DEQ and BLM no more than 180 days after the amendment authorization:

- At the Pit, GSM shall revise the Ground Control Management Plan to include measures for protecting in-pit infrastructure (specifically the South Well) from rockfall impacts during and after the TRP.
- GSM shall update its Ground Control Management Plan for the TRP to include specific monitoring at the Flotation Plant, the Rattlesnake Earth Block

immediately upslope of TSF-1, and the Pit. If acceleration of the west wall failure is observed, tailings deposition in the Pit should be ceased until a root-cause analysis has been performed and a mitigation plan has been developed.

4.1 Montana Environmental Policy Act

The procedure for DEQ's review of an application for a major amendment to a hard rock mining operating permit is the same as that applicable to an application for an operating permit and is set forth in Section 82-4-337, MCA. Pursuant to Section 82-4-337(1)(d), MCA, when DEQ determines that an application is complete and compliant, DEQ is required to declare in writing that the application is complete and compliant and issue a draft permit amendment. Under Section 82-4-337(1)(f), MCA, a draft permit issued as a final permit is the proposed state action that is subject to review under MEPA. Section 82-4-337(2)(b), MCA, requires DEQ to consult with the applicant before placing stipulations in a draft or final permit. Permit stipulations in a draft or final permit may address only compliance issues within the substantive requirements of the MMRA unless the applicant consents to additional stipulations. For a stipulation imposed without the applicant's consent, DEQ is required to provide the applicant in writing the reason for the stipulation and, for a stipulation imposed in the final permit that was not contained in the draft permit, the reason that the stipulation was not contained in the draft permit. GSM has reviewed and provided consent to comply with the details of the DEQ Modified Alternative and associated stipulations.

On October 26, 2020, DEQ issued a written declaration that determined GSM's permit Amendment Application was complete and issued a draft permit amendment. As indicated above, Section 82-4-337(2), MCA gives DEQ the authority to include stipulations in a final permit that were not included in the draft permit. Pursuant to this authority, DEQ is selecting to include the DEQ Modified Alternative in the final permit, although provisions for the micro-topography reclamation of TSF-1 and capping material testing were not included in the draft permit.

DEQ may not approve a reclamation plan unless the plan is consistent with the requirements and standards set forth in Section 82-4-336, MCA. Within the exception of water management and water treatment components that are required to maintain Pit dewatering and sitewide water collection and treatment, reclamation would be completed within 2 years after cessation of mining (Section 82-4-336(3), MCA). GSM would reclaim the mine site to support grazing, recreation, and wildlife habitat.

Section 82-4-336 (2 and 8), MCA requires that the reclamation plan include erosion control and provide for vegetative cover. The Micro-Topography of TSF-1 Alternative design would allow the landform to convey storm water in a nonerosive, natural manner. The alternative design surface would be a stable and generally maintenance-free surface that behaves like a native

surface in flood events. Reclaimed topsoil erosion would be reduced, and slope stability would be increased without requiring long-term maintenance and repair.

The Pit has 258.4 disturbed acres. As required under Amendment 11 and the Supplemental EIS, the Pit sump is used to collect ground water for Pit dewatering to prevent a Pit lake from forming. Water is continually pumped to maintain a cone-of-depression around the Pit. Under Amendment 017, water from tailings draindown and ground water inflow would continue to be pumped from the underground sump to maintain a cone-of-depression within the Pit area. Ground water migration out of the Pit would be precluded by continued dewatering, which would also prevent the formation of a post-closure pond and the Pit would not become a source of stagnant water (Section 82-4- 336(5), MCA).

Per Section 82-4-336(7), MCA, final grading would be made with nonnoxious, nonflammable, and noncombustible solids. The composition of the reprocessed tailings used as Pit backfill would not cause an increase in acid, toxic, or pollutive solutions. The reclamation plan has provisions for stabilizing slopes and grading and revegetating TSF--1 and the Pit floor. All final grading would be performed using suitable soil material salvaged from the mine site (Section 82-4-336(6), MCA). A DEQ-approved seed mix would be used to revegetate the site (Section 82-4-336(8), MCA).

State requirements dictate that the Pit highwalls be structurally competent (Section 82--4--336(9), MCA). Backfilling as a reclamation measure is neither required nor prohibited in all cases. The Project would include partially backfilling the Pit using reprocessed tailings. The tailings mass would improve the geologic stability by limiting movement of the west highwall, and the reclamation and revegetation of consolidated tailings surface would provide additional wildlife habitat. Major accessible benches and the access road would be covered with growth media and seeded.

Under Section 82-4-336(10), MCA, all reclamation plans must provide sufficient measures to ensure public safety as well as prevent air and water pollution and the degradation of adjacent lands. During tailings draindown, the underground sump would need to manage the increased volume of water while continuing to maintain a cone-of-depression in the Pit area, with the total flow being within the sump's capacity. Thus, impacts to ground water or surface water outside the Pit are not anticipated because impacted ground water would be captured by the underground sump and not flow outward from the Pit. At TSF-1, the tailings source of contamination would be removed, although residual contaminants below the facility and in the ground water would continue to be captured by the TSF-1 pumpback wells. Therefore, the Project would not contribute to an increase of current ground water impacts and the removal of contaminants would likely improve long-term ground water quality.

4.2 Water Quality Act

A Montana Pollutant Discharge Elimination System Permit is required for all discharges to surface water. GSM operates under Multi -Sector General Permit Number MTR00498. The Project would not alter current outfalls or discharges, although GSM would need to submit an updated Notice of Intent to update Section F – Facility or Operation Description of the site's Storm Water Pollution Prevent Plan.

Ground water discharge may be authorized under an MMRA Permit; otherwise, a Montana Pollutant Discharge Elimination System Permit would be required. Project impacts to ground water include continued dewatering of the Pit to maintain a cone-of-depression, although the rate may decrease over 100 years as tailings drain. The Project is predicted to improve ground water quality around TSF-1 more rapidly after removing the tailings; however, the pump back systems would continue to operate.

4.3 Clean Air Act of Montana

GSM currently operates under Montana Air Quality Permit No. 1689-06, which was approved in August 2014. GSM submitted an application for modification to DEQ's Air Quality Bureau on February 25, 2021. The amended air quality application is directly associated with the Proposed Action and includes estimates of proposed emissions. Emissions sources noted in the application include fugitive dust from topsoil and other stockpiles, material handling and transfer, road dust, and emergency generator use. Approval of modifications to the Montana Air Quality Permit is not anticipated to have cumulative impacts to assessed resources separate from the Proposed Action. GSM is in compliance with the Clean Air Act of Montana and would continue to comply with its Montana Air Quality Permit requirements.

4.4 Montana Hard Rock Impact Act

The Golden Sunlight Mine was originally permitted in 1975 before legislature passed the Hard Rock Impact Act. Thus, GSM is not required to have a Hard Rock Impact Plan.

4.5 Montana Environmental Policy Act Cumulative Effects Assessment

Chapter 4.0 of the Final EIS provides a cumulative effects analysis. Cumulative impacts projects were directly associated with the tailings reprocessing Project and located in the same area. These three projects or actions include GSM's amendment to its BLM Plan of Operations, GSM's minor revision (MR21-004) to its DEQ Hard Rock Mining Operating Permit and the BLM Plan of Operations, and GSM's modifications to its Montana Air Quality Permit. No other local, state, or federal actions with the potential to have cumulative effects were identified. When considered in conjunction with past and present actions, cumulative impacts related to these future actions are unlikely to result in additional significant impacts. Should future actions be proposed that

have or may have cumulative effects, additional analysis pursuant to the applicable requirements of MEPA would be conducted.

4.6 Private Property Assessment Act

The DEQ Modified Alternative does not (1) result in a physical occupation of private property, (2) deprive GSM of all economically viable uses of its property, (3) deny GSM a fundamental attribute of property ownership, (4) require GSM to dedicate a portion of its property or grant an easement, (5) have a severe impact on the value of GSM's property, and (6) cause a physical disturbance with respect to GSM's property in excess of that sustained by the public generally. Therefore, the DEQ Modified Alternative does not have taking or damaging implications.

SECTION 5 APPEAL OF DEQ'S DECISION

This decision is subject to a court appeal by the applicant and other parties for 90 days after issuing the ROD under Section 82-4-349(1), MCA. Any action or proceeding challenging a final agency decision alleging failure by DEQ to comply with or inadequately comply with a requirement of MEPA must be brought within 60 days after issuing the ROD pursuant to Section 75-1-201(5)(a)(ii), MCA.