Mt. Hope/Eureka Moly Appeal

SUPPLEMENTAL ATTACHMENT TO FORM 3:

PERMIT (NEV2008106) ISSUED PURSUANT TO FINAL DECISION

Submitted by: Appellee, Great Basin Resource Watch

STATE OF NEVADA

Department of Conservation and Natural Resources

Division of Environmental Protection

Bureau of Mining Regulation and Reclamation

Water Pollution Control Permit

Permittee: **Eureka Moly, LLC**
Mount Hope Project
1726 Cole Blvd, Ste 115
Lakewood, Co 80401

Permit Number: **NEV2008106**
Review Type/Year/Revision: **Renewal 2018, Revision 00**

Pursuant to Nevada Revised Statutes (NRS) 445A.300 through 445A.730, inclusive, and regulations promulgated thereunder by the State Environmental Commission and implemented by the Division of Environmental Protection (the Division), this Permit authorizes the Permittee to construct, operate, and close the **Mount Hope Project**, in accordance with the limitations, requirements, and other conditions set forth in this Permit. The Permittee is authorized to process up to **29 million tons** of ore per year.

The facility is located in Eureka County, within Sections 5, 8, 9, 16, 21, 26-28, 34, 35, and 36, Township 20 North (T20N), Range 52 East (R52E); Sections 31-35, T20N, R53E; Section 2, T20½N, R51E; Sections 1, 4-9, 12, 18-20, 29, and 32, T21N, R51; Sections 7, 18-20, 29 and 32 T21N, R52E; Sections 4-6, T21½N, R52E; Section 1, T21½N, R51½E; Sections 1, 2, 11-14, 23-27, and 36, T22N, R51E; Sections 1, 12, 13, 24, 25, and 36, T22N, R51½E; Sections 6-8, 17-20, 29, 30, 31, and 32, T22N, R52E; Sections 25, 35, and 36, T23N, R51E; and Section 31, T23N, R52E, Mount Diablo Baseline and Meridian, approximately 24 miles northwest of the town of Eureka, Nevada.

The Permittee must comply with all terms and conditions of this Permit and all applicable statutes and regulations.

This Permit is based on the assumption that the information submitted in the applications of 11 July 2008, 09 November 2009, and 20 August 2012, as modified by subsequent approved amendments, is accurate and that the facility has been constructed and is being operated as specified in the application. The Permittee must inform the Division of any deviation from, or changes in, the information in the application, which may affect the ability of the Permittee to comply with applicable regulations or Permit conditions.

This Permit is effective as of **21 November 2018**, and shall remain in effect until **12 December 2022**, unless modified, suspended, or revoked.

Signed this 2nd day of **November, 2018.**

Joseph Sawyer, P.E.
Chief, Bureau of Mining Regulation and Reclamation

I. Specific Facility Conditions and Limitations

A. In accordance with operating plans and facility design plans reviewed and approved by the Division the Permittee shall:

1. Construct, operate, and close the facility in accordance with those plans;
2. Contain within the fluid management system all process fluids including all meteoric waters which enter the system as a result of the 25-year, 24-hour storm event; and
3. Not release or discharge any process or non-process contaminants from the fluid management system.

B. Schedule of Compliance:

1. Within 30 days after the Permittee initiates a Project construction schedule, the Permittee shall submit a work plan to install nine groundwater monitoring wells screened in the uppermost reliable zone of saturation. The work plan must include a schedule for completion of monitoring well installation that will ensure sufficient time to establish baseline groundwater elevations and water quality before the commissioning of associated process components, or portions of process components, and prior to mine dewatering, as appropriate. During future dewatering, replacement wells may be required.

   Unless otherwise approved, the monitoring wells must be installed in the following three groups, with Group 1 being installed first and Group 3 being installed last: Group 1 - previously proposed well SCP-1 and one additional well (PAG-1) downgradient of the Potentially Acid Generating (PAG) Waste-Rock Disposal Facility (WRDF); Group 2 - previously proposed well P-1, one well (Mill-1) immediately downgradient of the Tailing Thickener Emergency Overflow Pond (TTEOP) and Tailing Thickeners, one well (STSF-3) on the west side of the South Tailing Storage Facility (South TSF), north of monitoring well TM-1B, and one well (STSF-4) on the south side of the South TSF, east of monitoring well TM-1B; and Group 3 - two additional wells (STSF-1 and STSF-2) on the west side of the South TSF, north of STSF-3, one additional well (STSF-5) on the south side of the South TSF, east of STSF-4, and one additional downgradient non-PAG WRDF monitoring well to the east of IGM-157 and to the south of IGM-154. The work plan must include a map(s) showing mine facilities, updated groundwater potentiometric surface contours, and proposed well locations, plus proposed well parameters and a provision for drill oversight and field screen depth determination by a qualified geologist or hydrologist.

2. Within 90 days after the Permittee initiates a Project construction schedule, the Permittee shall submit an application for a Permit modification to construct a cover test facility that includes large-scale drainage lysimeters to determine the design specifications for future cover material for the PAG WRDF, and the Low Grade Ore (LGO) Stockpile in the event it remains at closure, such that constituents are stabilized and degradation of waters of the State is prevented. The approved cover test facility shall be constructed within eight months of Division approval of the modification.

3. At least thirty 30 days prior to initiating construction of any future portion or ancillary component of the approved South TSF, the Permittee shall submit written notice to the Division of its intent to construct. Such notice shall clearly identify the proposed construction. Material changes to, or departures from, the approved design may require additional engineering review and payment of additional Permit modification fees. The Permittee shall submit a quality assurance/quality control report, as-built drawings, and updated operating plans for the authorized construction, as completed in accordance with the Nevada Administrative Code (NAC).

4. Within 180 days after the Permittee initiates a Project construction schedule, a revised Waste Rock Management Plan (WRMP) shall be submitted to the Division for review and approval. This updated WRMP will include a characterization plan that outlines sampling and analytical procedures for portions of the final pit wall that have not been characterized. This plan shall include cross-sections displaying previous sample locations and testing types, major lithology, rock, and alteration types, and the proposed locations of collected samples during the progression of mining.

5. Prior to the Permittee beginning operations at the permitted facility, the Permittee shall schedule a reasonable time for the Division to conduct a site inspection to ascertain compliance of the constructed facility with the approved design, this Permit, and applicable regulations. Any non-compliance items noted shall be addressed and Division approval obtained prior to commencing operations. Material changes to or departure from the approved designs may require additional engineering review, modification of the Permit, and payment of Permit modification fees.

6. Within 180 days after the Permittee initiates a Project Construction Schedule, the Permittee shall submit for review and approval updated operating plans, pursuant to Nevada Administrative Code (NAC) 445A.398 and 445A.427, which are revised, as warranted, to reflect the requirements in this Permit and any associated as-built reports.

7. Within 180 days after the Permittee initiates a Project Construction Schedule, the Permittee shall submit and engineering design change for a revised design of the SP-7 conveyance pipeline. This design change shall address the potential collapse of the pipeline and provide alternative designs to ensure that the spring will be conveyed to the toe of the non-PAG WRDF.

The schedule of compliance items above are not considered completed until approved in writing by the Division.

C. The fluid management system covered by this Permit consists of the following process components:

1. The Coarse Ore Stockpile (COS), single 60-mil high-density polyethylene (HDPE) liner, crushed rock protective overliner layer, COS Reclaim Tunnel and Emergency Tunnel, and all other related containment, collection, and conveyance systems;

2. COS Pond (also known as Pond 2), single 60-mil HDPE liner, and solution evacuation system;
3. LGO Stockpile, compacted 1-foot-thick low permeability soil subgrade, foundation drains, containment berms, and associated pipelines and conveyance systems;
4. Collection Channel No. 1 (CC-1) and Collection Channel No. 2 (CC-2) with single 60-mil textured HDPE liner;
5. Stormwater Diversion Channel (SDC) with either single 60-mil textured HDPE liner or geotextile and riprap protective layers, as applicable;
6. Phase 1 Stormwater Collection Pond (PAG-P1) and Phase 2 Stormwater Collection Pond (PAG-P2) with single 80-mil HDPE liner and solution evacuation systems;
7. PAG WRDF, compacted 1-foot thick low permeability soil subgrade, foundation drains, 5-foot thick non-PAG crushed rock protective layer, containment berms, and associated pipelines and conveyance systems;
8. Non-PAG WRDF, rock berms, four sediment control structures, and stilling basins;
9. Spring SP-7 foundation drain, 60-mil HDPE lined collection gallery and fluid collection pipeline system, and fluid conveyance pipeline;
10. Mill building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
11. Flotation and regrind circuit building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
12. Concentrate filtration/drying/leaching building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
13. Roaster building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
14. Ferro molybdenum plant building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
15. Rougher tailing launder and distribution box containment trench, 60-mil HDPE liners and leakage collection pipes;
16. South Tailing Thickener 001 (TT1) and North Tailing Thickener 002 (TT2), 60-mil linear low density polyethylene (LLDPE) liners and leakage collection and recovery systems (LCRS), Tailing Thickener Overflow Tank, reinforced concrete Tailing Thickener Tunnel, and all conveyance pipelines;

17. TTEOP, single 80-mil HDPE liner, and solution evacuation system;
18. Plant Area Stormwater Pond (also known as Pond 1), unlined, and solution evacuation system;
19. Underflow pump house building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
20. Two single-wall steel tailing slurry conveyance pipelines and one single-wall steel or HDPE reclaim water return pipeline with secondary containment pipelines at the transect beneath the Pony Express Trail, unlined Collection Trench for pipeline containment, three Emergency Containment Ponds (ECP) with unlined 18-inch-thick compacted soil subgrade, and pond solution level sensors and video camera monitoring systems;
21. Cyclone Station building and associated containment including, but not limited to, all tanks, basins, sumps, pumps, and piping necessary to interconnect the components within the building;
22. South TSF random fill starter and cycloned sand main embankments with double-textured 60-mil LLDPE liner, select drainage blanket, solution collection and conveyance pipeline systems, and vibrating wire piezometers;
23. South TSF basin with smooth 60-mil LLDPE liner, basin drainage blanket, solution collection and conveyance pipeline system, and vibrating wire piezometers;
24. South TSF basin reclaim trench with 40-mil HDPE retarding layer over the basin drainage blanket and below the supernatant pool area;
25. South TSF Phase 1 and Phase 2 underdrain collection ponds (UCP-1 and UCP-2) and reclaim solution sump (RSS), smooth 80-mil HDPE primary and secondary liners, LCRS, and associated pipelines, valves, and pumps used in conveyance, control or detection of process fluids;
26. Booster Station reinforced concrete containment pad and associated containment including, but not limited to, all tanks, basins, sumps, pipelines, valves, and pumps used in conveyance, control or detection of process fluids;
27. Process Water Tank, reinforced concrete containment pad, and all basins, sumps, and pipelines used in conveyance, control or detection of process fluids;
28. Reagent Storage and Mixing building and adjacent reinforced concrete containment pad, including but not limited to all tanks, basins, sumps, pipelines, valves, and pumps used in conveyance, control or detection of process fluids; and
29. Transfer pipes, valves, and pumps used in conveyance, control or detection of process fluids between process components.

D. Monitoring Requirements

Identification	**Parameter**	**Frequency**
1. Make-up Water Supply Process Water Tank (WS)	Profile I-R[1,14]	Annually[17]
2. Leak Detection [sump capacity] Tailing Launder Box (TLB-LD) Tailing Distribution Box (TDB-LD)	Average daily flow or accumulation (gpd);	Weekly[2];
2. Leak Detection [sump capacity] (continued) *Tailing Thickeners:* South Thickener (001): TT1-LD1, TT1-LD2, TT1-LD3, TT1-LD4, TT1-LD5, TT1-LD6 *Tailings Thickeners:* North Thickener (002): TT2-LD1, TT2-LD2, TT2-LD3, TT2-LD4, TT2-LD5, TT2-LD6 *South TSF:* Phase 1 Underdrain Collection Pond (UCP1-LCRS) [x,xxx gal; to be added with as-built approval] Phase 2 Underdrain Collection Pond (UCP2-LCRS) [x,xxx gal] Reclaim Solution Pump Sump (RSPS-LCRS) [x,xxx gal]	Average daily flow or accumulation (gpd)	Weekly[2]
3. Foundation Drains LGO Stockpile: LGO-1, LGO-2, LGO-3, LGO-4, LGO-5 PAG WRDF: PAG-1, PAG-2, PAG-3, PAG-4, PAG-5, PAG-6, PAG-7;	Flow (gpd)/No Flow; Profile I-R[1,14] if flowing;	Weekly; Quarterly;
Spring SP-7 (SP-7)	Flow (gpd)/No Flow; Profile I-R[1,14] if flowing	Weekly; Quarterly

Identification	Parameter	Frequency
4. Tails Pipeline Corridor Monitoring		
Emergency Containment Ponds: ECP-1 (north), ECP-2 (middle), ECP-3 (south);	Inspection, Test level alarm and video, Report solution/sediment removal date and volume[16];	Weekly, Monthly, Quarterly;
Tailing pipeline leakage monitors: SPLDM-1 through SPLDM-5	Inspection, Monitor function test	Weekly, Monthly
5. Channels and Settling Basins		
Collection Channel (CC) Stormwater Diversion Channel (SDC) Sediment Control Structures: SCS-A through SCS-D Stilling Basins	Inspect, clear debris and sediment, and repair to design specification as necessary	Monthly and after any major storm event
6. South TSF Monitoring		
Barge Operating Depth (STSF-BOD);	Supernatant pool depth (feet) at barge;	Weekly;
Underdrainage Flow (STSF-UF)	Inflow to Underdrain Collection Pond (gpm)	Weekly
7. South TSF Piezometers (paired odd/even vibrating wire)		
Starter Embankment Downstream Crest Select Drainage Blanket: C-1/C-2 through C-15/C-16 Basin Drainage Blanket: B-1/B-2 through B-13/B-14 Embankment Downstream Select Drainage Blanket: E-1/E-2 through E-51/E-52	Hydraulic head (feet)	Weekly

Identification	Parameter	Frequency
8. Process Solution Pond 2 (COS-P2) Phase 1 Stormwater Collection Pond (PAG-P1) Phase 2 Stormwater Collection Pond (PAG-P2) Phase 1 Underdrain Collection Pond (UCP-1) Phase 2 Underdrain Collection Pond (UCP-2) Reclaim solution at Booster Station (RS) Tailing slurry liquid fraction (TSL)	Profile I-R[1,14]	Quarterly
9. Mined Materials Low Grade Ore (LGO) Coarse Ore Stockpile (COS) PAG WRDF (PAG-WR) Non-PAG WRDF (NPAG-WR) Cyclone underflow coarse fraction (CY-C) Cyclone overflow fine 'slimes' fraction (CY-F)	MWMP[3] -Profile I-R[1,14] and ANP/AGP[4,5]; For LGO, COS, PAG-WR, and NPAG-WR, tons placed	Monthly for any quarter generated; Quarterly
10. Site Monitoring Wells *Non-PAG WRDF:* Upgradient GMI-PDT-2 Downgradient IGM-154 Downgradient IGM-157 *LGO Stockpile:* Downgradient SCP-1 Downgradient IGMI-232P Downgradient IGMI-233P Downgradient IGMI-226P Downgradient IGMI-227P *PAG WRDF:* Downgradient IGM-152 Downgradient PAG-1 *Mill Facilities:* Upgradient (Mill) IGM-155 Upgradient (Mill) IGMI-MH-177P Downgradient (Mill) P-1 Upgradient (COS) IGM-231P	Profile I-R[1,14], water and collar elevation (feet AMSL). Report 'dry' if no fluid is present;	Quarterly;

Identification	Parameter	Frequency
10. Site Monitoring Wells (Continued) *Mill Facilities:* Downgradient (Process Water Tank) GMI-PDT-4 Downgradient (Scrubber and Roaster) IGMI-228P Downgradient (TTEOP and Tailing Thickeners) Mill-1 *South TSF Upgradient:* North TM-D (IGMI-237P) Northeast TM-A (IGMI-234P Northeast TSF-2 (STFF-1) East TM-C (IGMI-236P) *South TSF Downgradient:* Southeast TM-B (IGMI-235P) Southwest TM-1B (GMI-TM1B) Downgradient STSF-1 Downgradient STSF-2 Downgradient STSF-3 Downgradient STSF-4 Downgradient STSF-5	Profile I-R[1,14], water and collar elevation (feet AMSL). Report 'dry' if no fluid is present	Quarterly
11. Pit Lake Monitoring		
Mount Hope Pit;	Presence of Water[7];	Quarterly;
General Monitoring – each pit lake;	Photograph, lake surface elevation (ft AMSL), maximum lake depth (ft), lake area (acres);	Monthly;
Water Column Monitoring[8] – each pit lake;	Continuous field temperature (°F)[9] and specific conductance (µS/cm)[9] with depth (ft);	Monthly;
Surface Samples[10] – each pit lake;	Field pH (SU)[9], field Eh (mV)[9];	Monthly;
	Profile III[12];	Quarterly;
Depth Samples[11] – each pit lake that is >25 feet deep or has an outflow to groundwater	Field pH (SU)[13], field Eh (mV)[9], depth below surface (ft);	Monthly;
	Profile I-R[1,14], depth below surface (ft)	Quarterly

Identification	Parameter	Frequency
12. Waste Rock Storage Facilities Non-PAG WRDF, PAG WRDF, LGO Stockpile	Physical stability, presence of water[15];	Semi-Annually (Q2 and Q4);
Each seep that is flowing	Profile I-R[1,14], photograph, field pH (SU), field specific conductance (µS/cm)	Semi-Annually, when flowing (Q2 and Q4)

The Permittee may request a reduction in the number of elements and frequency of analyses after four quarters of complete monitoring based on justification other than cost. Such reductions may be considered formal modifications to the Permit.

Abbreviations and Definitions:

AMSL = above mean sea level; ANP/AGP = Acid Neutralizing Potential:Acid Generation Potential ratio; ASTM = American Society for Testing and Materials; $CaCO_3$ = calcium carbonate; Eh = chemical reduction potential; EPA = U.S. Environmental Protection Agency; epilimnion = the uppermost layer in a stratified lake; gpd = gallons per day; gpm = gallons per minute; hypolimnion = a lower layer in a thermally stratified lake below the metalimnion; metalimnion = a middle layer in a thermally stratified lake characterized by a temperature decrease with depth; mg/L = milligrams per liter; monimolimnion = the lower layer in a chemically stratified lake that does not mix with other layers; mV = millivolts; MWMP = Meteoric Water Mobility Procedure; N = nitrogen; NAC = Nevada Administrative Code; NDEP = Nevada Division of Environmental Protection; P = phosphorous; pCi/L = picocuries per liter; pH = the negative of the base 10 logarithm of the activity of the hydrogen ion; Q = calendar quarter of the year; stratified = a pit lake that has distinct chemical and/or temperature layers; SU = standard units for pH measurement; > = greater than; ≥ = greater than or equal to; < = less than; °F = degrees Fahrenheit; µg/L = micrograms per liter; µS/cm = microSiemens per centimeter; mph = miles per hour; % = percent; kW/m^2 = kilowatt per square meter; mm Hg = millimeters of mercury

Footnotes:

(1) Profile I-R:

Alkalinity (as $CaCO_3$)	Calcium	Mercury	Thallium
Bicarbonate	Chloride	Nitrate + Nitrite (as N)	Total Dissolved Solids
Total	Chromium	Nitrogen, Total (as N)	Zinc
Aluminum	Copper	pH (± 0.1 SU) [13]	Gross Alpha (pCi/L)[14]
Antimony	Fluoride	Potassium	Radium-226 + Radium-228 (pCi/L)[14]
Arsenic	Iron	Selenium	
Barium	Lead	Silver	Uranium (mg/L)[14]

Beryllium	Magnesium	Sodium	Thorium-230 (pCi/L)[18]
Cadmium	Manganese	Sulfate	-

(2) The sump must be inspected and evacuated on a more frequent basis than weekly if the fluid level is above the top of the sump or the invert of any pipe which discharges into the sump, whichever level is lower, or if the potential exists to exceed the sump capacity. Records are required documenting volume, date, and time of extraction to show that sumps are maintained in this condition.

(3) The Meteoric Water Mobility Procedure (MWMP) shall be performed by a Nevada-approved laboratory, in accordance with ASTM Method E 2242 (or the most current method).

(4) When static testing[5] characterization of Mined Materials shows the potential for acid generation as set forth in the current version of the Division guidance document "Waste Rock, Overburden, and Ore Evaluation," the Permittee shall, as applicable, notify the Division in writing and initiate kinetic testing[6] within 10 days.

If the kinetic test results indicate acid generation conditions exist, the Permittee shall submit in writing, within 30 days, the methods proposed for providing containment of these materials and the anticipated impact this acid generation potential may have on final stabilization of all components affected as defined in Nevada Administrative Code (NAC) 445A.359.

(5) Acid Neutralizing Potential/Acid Generating Potential (ANP/AGP, also known as static testing or acid-base accounting) shall be performed by a Nevada-approved laboratory, using a LECO-type analysis, with full sulfur speciation if ANP/AGP < 1.2, in accordance with the most current update of the Nevada Modified Sobek Procedure.

(6) Kinetic testing (humidity cell testing) shall be performed by a Nevada-approved laboratory, in accordance with ASTM Method D 5744-07 Option 'A' (or the most current approved method); tests shall be run for a minimum of 20 weeks and for a longer duration if warranted or recommended by the analytical laboratory or required by the Division; samples shall be collected weekly (all weeks) and measurements shall be recorded for redox potential, pH, specific conductance (µS/cm), acidity and/or alkalinity (as deemed appropriate by the laboratory), sulfate, iron (total, plus ferric and ferrous speciation if total iron > 0.6 mg/L and pH < 5 SU), and dissolved calcium and magnesium; weekly filtered extracts per the method will be digested and analyzed for total recoverable concentrations during week 0, 1, 2, 4, 8, 12, 16, and 20; 4-week extracts thereafter (i.e., week 24, 28, 32, etc.) shall be analyzed by a Nevada-certified analytical laboratory for Profile I[1] parameters, and specific conductance (µS/cm) and acidity and/or alkalinity shall be recorded as recommended by the analytical laboratory; final results reported shall include initial and final static test results[5], a Profile I[1]

analysis of the final leachate, all kinetic test results above, and any additional analyses required by the Division.

(7) For presence of water, state whether the pit surface is dry, damp, or wet (ponded or flowing water). If ponded water has been present for at least one year, the Permittee shall perform the required monitoring for pit lakes.

(8) A continuous temperature-conductivity profile shall be completed for the entire water column at the deepest location in each pit lake.

(9) Field measurements (e.g., temperature, specific conductance, pH, Eh, etc.) shall be made at the Project site concurrent with the monitoring activity using a calibrated instrument, and do not require analysis by a laboratory certified or approved by the State of Nevada as otherwise specified in Part II.E.5. Field measurements must be accompanied by appropriate calibration information.

(10) The surface samples must be collected less than 10 feet below the surface of the pit lake.

(11) Depth sampling shall be performed at the deepest location in each pit lake. The number and depth of samples shall be determined based on the temperature-conductivity profile of the water column at the time of sampling. If the lake is stratified, collect a separate depth sample from each distinct layer in the water column (e.g., from the epilimnion, metalimnion, hypolimnion, and monimolimnion, as applicable; however, note that the quarterly sample from the surface layer [epilimnion] must be analyzed for Profile III constituents per the surface sample requirements whereas the quarterly depth samples from all other layers are analyzed for Profile I constituents). If the lake is unstratified and between 25 and 50 feet deep, collect one depth sample from the lower half of the water column. If the lake is unstratified and greater than 50 feet deep, collect two depth samples consisting of an intermediate sample from the middle third of the water column and a deep sample from the lower third of the water column. If the lake is less than 25 feet deep but includes an outflow to groundwater (i.e., it is a hydrologic flow-through pit lake), collect a quarterly Profile I surface sample in addition to the quarterly Profile III surface sample.

(12) Profile III:

Alkalinity (as $CaCO_3$)	Calcium	Mercury	Strontium
Bicarbonate	Chloride	Molybdenum	Sulfate
Total	Chromium	Nickel	Thallium
Aluminum	Copper	Nitrate + Nitrite (as N)	Tin
Antimony	Fluoride	Nitrogen, Total (as N)	Total Dissolved Solids
Arsenic	Iron	pH (± 0.1 SU) (13)	Total Suspended Solids
Barium	Lead	Phosphorus	Uranium
Beryllium	Lithium	Potassium	Vanadium

Boron	Magnesium	Selenium	Zinc
Cadmium	Manganese	Sodium	-

(13) All sample analyses resulting in a pH value less than or equal to 5.0 SU shall also be analyzed for acidity (mg/L, as $CaCO_3$ equivalent).

(14) Profile I-R reference values for radionuclides are: 15 pCi/L for Gross Alpha, 5 pCi/L for Combined Radium, and 0.03 mg/L for Uranium.

(15) Provide a visual evaluation of each waste rock storage facility for physical stability (e.g., stable, unstable, or slope failure), presence of water, and seepage. If visibly unstable, or slope failure, describe. For presence of water, identify whether the surface and toes of the waste rock storage facility are dry, damp, or wet (ponded or flowing water). If seepage is emanating from any portion of a waste rock storage facility, the Permittee shall perform the required monitoring for seeps.

(16) The Emergency Containment Pond subgrade must be tested and reconditioned as necessary to meet the design specification of an 18-inch-thick layer compacted to 95% maximum Standard Proctor dry density (ASTM D698) following any event or correction of conditions that could result in degradation of the subgrade compaction.

(17) Per Division correspondence dated 30 July 2015, water quality monitoring requirements are suspended during the hiatus in construction of the permitted facility until the facility receives confirmation of funding. The Permittee shall obtain at least four quarters of monitoring data prior to the commissioning of the process components. All other monitoring and reporting requirements in Parts I.D, II.B.1, and II.B.2 shall remain in effect and are not subject to this suspension.

(18) Thorium-230 shall be analyzed by alpha-particle spectroscopy, utilizing one of the following methods: EPA 053917 p.33 EMSL LV or ASTM D3972-97 or other radio-chemical analysis methods approved by the Division.

E. Quarterly and annual monitoring reports and release reporting shall be in accordance with Part II.B.

F. All sampling and analytical accuracy shall be in accordance with Part II.E.

G. Permit Limitations

1. The daily accumulation or flow shall not exceed 150 gallons per day averaged over the quarter in the leak detection systems identified in Part I.D.2.

2. The daily accumulation or flow shall not exceed 50 gallons per day averaged over the year in the leak detection systems identified in Part I.D.2.

3. Failure to meet a Schedule of Compliance date or requirement.

4. The hydraulic head on the piezometers located in the South TSF basin drainage blanket, identified in Part I.D.7, shall not exceed 10 feet.

5. The maximum embankment crest elevation for the South TSF is 6,710 feet AMSL.

6. Two or more adjacent South TSF embankment piezometers, identified in Part I.D.7, shall not concurrently exceed the following hydraulic head readings: 10 feet of hydraulic head for C-series piezometers; 7.5 feet of hydraulic head for E-series piezometers E-1 through E-26; and 5 feet of hydraulic head for E-series piezometers E-27 through E-52. Exceedances shall be reported and a geotechnical engineer shall be consulted.

7. An adequate barge operating depth shall be maintained within the Reclaim Trench to prevent damage to the HDPE retarding layer.

8. After the South TSF supernatant pool elevation exceeds the crest elevation of the starter embankment (6,418 feet AMSL), the pool shall be confined within the limits of the Reclaim Trench and a minimum 1,500 feet from the upstream embankment face.

9. Except during active construction when the South TSF basin liner is exposed, flows greater than 8,000 gpm reporting to the underdrainage ponds shall be reported to the Division and require inspection for damage to the HDPE retarding layer and the underdrainage collection pipelines within the Reclaim Trench.

10. The COS Pond, Phase 1 Stormwater Collection Pond, Phase 2 Stormwater Collection Pond, TTEOP, or any other single-lined pond must be evacuated within 20 days whenever it contains process solution.

11. Except as otherwise required by this Permit, a minimum 2-foot freeboard must be maintained in UCP-1 and UCP-2, and a minimum 3-foot freeboard must be maintained in all other ponds.

12. The Non-PAG and PAG WRDFs shall be constructed with maximum 100-foot lifts with interlift bench widths sufficient to maintain an overall slope angle of 2.7H:1V; the LGO Stockpile shall be constructed with maximum 150-foot lifts with interlift bench widths sufficient to maintain an overall slope angle of 2.5H:1V.

13. The Permittee shall provide the Division written notification no more than 30 days after the Mount Hope Pit bottom passes below the predicted post-mining groundwater elevation.

14. Reclaim or other process solution shall not be stored in the Fire Water Tank.

15. The Permittee shall not place LGO material in any area that is not underlain by a 12-inch thick prepared subgrade that exhibits a maximum coefficient of permeability of 1×10^{-6} cm/sec.

16. The facility shall not degrade waters of the State to the extent that applicable water quality standards or reference values, and background concentrations, are exceeded.

Exceedances of these limitations may be Permit violations and shall be reported as specified in Part II.B.4.

H. The facility shall maintain one or more, as determined by the Division, automated or manual calibrated meteorological station, which shall be monitored at least daily, to record precipitation (inches of water), including snowfall water values, temperature minimums and maximums (°F), relative humidity minimums and maximums (%), solar irradiation (kW/m^2), maximum and minimum wind speed (mph) and direction, and barometric pressure (mm Hg). A written and/or electronic record of daily accumulations of precipitation shall be maintained on site.

I. The Permittee shall inspect all control devices, systems and facilities weekly, and during (when possible) and after major storm events. These inspections are performed to detect evidence of:

1. Deterioration, malfunction, or improper operation of control or monitoring systems;
2. Sudden changes in the data from any monitoring device;
3. The presence of liquids in leak detection systems; and
4. Severe erosion or other signs of deterioration in dikes, diversions, closure covers, or other containment devices.

J. Prior to initiating permanent closure activities at the facility, or any process component within the facility, the Permittee must have an approved final permanent closure plan.

K. The Permittee shall remit an annual review and services fee in accordance with NAC 445A.232 starting July 1 after the effective date of this Permit and every year thereafter until the Permit is terminated or the facility has received final closure certification from the Division.

L. The Permittee shall not dispose of or treat Petroleum-Contaminated Soil (PCS) on the mine site without first obtaining from the Division approval of a PCS Management Plan.

M. When performing dust suppression activities, the Permittee shall use best management practices and appropriate selection of water source and additives to prevent degradation of waters of the State. If a dust suppressant exceeds a water quality standard and the corresponding natural background water concentration in the area where dust suppression will occur, the Permittee shall demonstrate no potential to degrade waters of the State.

N. Continuing Investigations:

1. The Permittee shall submit to the Division for review and approval an updated groundwater flow model and pit lake study with each Permit renewal and with any application to modify the Permit that could affect the pit lake predictive model. The submittal shall also include an ecological risk assessment if the predictive pit lake model indicates the potential for exceedance of a Division Profile III reference value, unless the constituent concentration for each predicted Profile III exceedance is no greater than the concentration evaluated in a previous Division-approved ecological risk assessment for the Project.

These studies and assessments shall address, at a minimum, the requirements of NAC 445A.429, and shall include all available data, alternative pit lake or backfill scenarios, and mitigations to reduce ecological risk and the potential to degrade groundwater, as applicable. Approval may require modification of the Permit and payment of modification fees.

2. The Permittee shall submit to the Division for review and approval an updated waste rock management plan (WRMP) with each Permit renewal and with any application to modify the Permit that could affect the WRMP. A revised WRMP must also be approved prior to initiating mining or in-pit backfill activities not previously approved. The WRMP must include representative characterization data for all anticipated waste rock and overburden in accordance with the current version of the Division guidance document "Waste Rock, Overburden, and Ore Evaluation," in addition to a detailed description of how, when, and where the materials will be managed and monitored, and appropriate controls to eliminate any potential to degrade waters of the State, if applicable. Approval may require modification of the Permit and payment of modification fees.

3. Within 180 days after the Permittee initiates a Project construction schedule, the Permittee shall submit a plan and schedule for the implementation of a study to directly measure wallrock fracturing and oxygen transport through the pit walls of the Mount Hope Pit. The collected information from this study will then be utilized to update the Pit Lake Study with more site specific data.

II. General Facility Conditions and Limitations

A. General Requirements

1. The Permittee shall achieve compliance with the conditions, limitations, and requirements of the Permit upon commencement of each relevant activity. The Administrator may, upon the request of the Permittee and after public notice (if required), revise or modify a Schedule of Compliance in an issued Permit if he or she determines good and valid cause (such as an act of God, a labor strike, materials shortage or other event over which Permittee has little or no control) exists for such revision.

2. The Permittee shall at all times maintain in good working order and operate as efficiently as possible, all devices, facilities, or systems installed or used by the Permittee to achieve compliance with the terms and conditions of this Permit.

3. Whenever the Permittee becomes aware that he or she failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application or in any report to the Administrator, the Permittee shall promptly submit such facts or correct information. Any inaccuracies found in this information may be grounds for revocation or modification of this Permit and appropriate enforcement action.

B. Reporting Requirements

1. The Permittee shall submit quarterly reports, in both hard copy and a Division-approved electronic format, which are due to the Division on or before the 28th day of the month following the quarter and must contain the following:

   a. Monitoring results from the leak detection sumps or piezometers identified in Part I.D.2 and I.D.7, reported on NDEP Form 0590 or equivalent;

   b. A table of flow monitoring results for the foundation drains identified in Part I.D.3;

   c. A table of depth and flow rate for the monitoring locations identified in Part I.D.6;

   d. Analytical results of the solution collected from monitoring locations identified in Parts I.D.3, I.D.8, and I.D.10, and I.D.12 (as applicable) reported on NDEP Form 0190 or equivalent;

   e. Water and collar elevations for site monitoring wells identified in Part I.D.10;

   f. Analytical results of the MWMP-Profile I-R and ANP/AGP testing for the materials identified in Part I.D.9, reported on NDEP Form 0190 or equivalent;

   g. A table of the tonnages placed during the quarter for the respective materials identified in Part I.D.9;

   h. A summary of the inspection and testing results and any actions taken at the monitoring locations identified in Parts I.D.4 and I.D.5;

   i. Analytical results for Pit Lakes identified in Part I.D.11, reported on NDEP Form 0290 and NDEP Form 0190 or equivalent, as applicable;

   j. Other monitoring results for pit lakes identified in Part I.D.11;

   k. A record of releases, and the remedial actions taken in accordance with the approved Emergency Response Plan on NDEP Form 0490 or equivalent; and

   l. For any kinetic test initiated, continued, or terminated with Division approval during the quarter, provide a brief report of the test status and an evaluation of the results to date, which shall include all analytical data generated from the date testing was initiated through the reporting quarter.

   Facilities which have not initiated mining or construction, must submit a quarterly report identifying the status of mining or construction. Subsequent to any noncompliance or any facility expansion which provides increased capacity, the Division may require an accelerated monitoring frequency.

2. The Permittee shall submit an annual report, in both hard copy and a Division approved electronic format, by February 28th of each year, for the preceding calendar year, which contains the following:

a. Analytical results of the water quality sample collected from the water supply wells identified in Part I.D.1, reported on NDEP Form 0190 or equivalent;

b. A synopsis of releases on NDEP Form 0390 or equivalent;

c. A brief summary of site operations, including the number of tons of ore milled during the year, the total tonnage of material contained in the LGO Stockpile, PAG WRDF, Non-PAG WRDF, and South TSF, respectively, and the crest elevation of the South TSF, at calendar year end, construction and expansion activities and major problems with the fluid management system;

d. A table of total monthly precipitation amounts and additional information recorded in accordance with Part I.H, including snowfall water values, temperature minimums and maximums, relative humidity minimums and maximums, solar radiation, and average daily wind speed and direction, reported for the five-year history previous to the date of submittal;

e. An updated version of the facility monitoring and sampling procedures and protocols;

f. An updated evaluation of the closure plans using specific characterization data for each process component with respect to achieving stabilization; and

g. Graphs of leak detection flow rates, pH, total dissolved solids (TDS), sulfate as SO_4, chloride, nitrate + nitrite (Total as N), boron, bismuth, fluoride, zinc, and antimony concentration (as applicable), versus time for all fluid sampling points. These graphs shall display either a five-year history previous to the date of submittal or the history since initial Permit issuance, whichever is shorter. Additional parameters may be required by the Division if deemed necessary.

3. Release Reporting Requirements: The following applies to facilities with an approved Emergency Response Plan. If a site does not have an approved Emergency Response Plan, then all releases must be reported as per NAC 445A.347 or NAC 445A.3473, as appropriate.

   a. A release of any quantity of hazardous substance, as defined at NAC 445A.3454, to surface water, or that threatens a vulnerable resource, as defined at NAC 445A.3459, must be reported to the Division as soon as practicable after knowledge of the release, and after the Permittee notifies any emergency response agencies, if required, and initiates any action required to prevent or abate any imminent danger to the environment or the health or safety of persons. An oral report shall be made by telephone to (888) 331-6337 for in-State callers or (775) 687-9485 for out-of-State callers, and a written report shall be provided within 10 days in accordance with Part II.B.4.b.

   b. A release of a hazardous substance in a quantity equal to or greater than that which is required to be reported to the National Response Center

pursuant to 40 Code of Federal Regulations (CFR) Part 302 must be reported as required by NAC 445A.3473 and Part II.B.3.a.

c. A release of a non-petroleum hazardous substance not subject to Parts II.B.3.a. or II.B.3.b., released to soil or other surfaces of land, and the total quantity is equal to or exceeds 500 gallons or 4,000 pounds, or that is discovered in or on groundwater in any quantity, shall be reported to the Division no later than 5:00 P.M. of the first working day after knowledge of the release. An oral report shall be made by telephone to (888) 331-6337 for in-State callers or (775) 687-9485 for out-of-State callers, and a written report shall be provided within 10 days in accordance with Part II.B.4.b. Smaller releases, with total quantity greater than 25 gallons or 200 pounds and less than 500 gallons or 4,000 pounds, released to soil or other surfaces of land, or discovered in at least 3 cubic yards of soil, shall be reported quarterly on NDEP Form 0390 or equivalent.

d. Petroleum Products and Coolants: If a release is subject to Parts II.B.3.a. or II.B.3.b., report as specified in Part II.B.3.a. Otherwise, if a release of any quantity is discovered on or in groundwater, or if the total quantity is equal to or greater than 100 gallons released to soil or other surfaces of land, report as specified in Part II.B.3.c. Smaller releases, with total quantity greater than 25 gallons but less than 100 gallons, released to soil or other surfaces of land, or if discovered in at least 3 cubic yards of soil, shall be reported quarterly on NDEP Form 0390 or equivalent.

4. The Permittee shall report to the Administrator any noncompliance with the Permit.

a. Each such event shall be reported orally by telephone to (775) 687-9400, not later than 5:00 PM of the next regular work day from the time the Permittee has knowledge of the circumstances. This report shall include the following:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident, condition, or circumstance;

iv. If reportable hazardous substances were released, identify material and report total gallons and quantity of contaminant;

v. Human and animal mortality or injury;

vi. An assessment of actual or potential hazard to human health and the environment outside the facility; and

vii. If applicable, the estimated quantity of material that will be disposed and the disposal location.

b. A written summary shall be provided within 10 days of the time the Permittee makes the oral report. The written summary shall contain:

i. A description of the incident and its cause;

ii. The periods of the incident (including exact dates and times);

iii. If reportable hazardous substances were released, the steps taken and planned to complete, as soon as reasonably practicable, an assessment of the extent and magnitude of the contamination pursuant to NAC 445A.2269;

iv. Whether the cause and its consequences have been corrected, and if not, the anticipated time each is expected to continue; and

v. The steps taken or planned to reduce, eliminate, and prevent recurrence of the event.

c. The Permittee shall take all available and reasonable actions, including more frequent and enhanced monitoring to:

i. Determine the effect and extent of each incident;

ii. Minimize any potential impact to the waters of the State arising from each incident;

iii. Minimize the effect of each incident upon domestic animals and all wildlife; and

iv. Minimize the endangerment of the public health and safety which arises from each incident.

d. If required by the Division, the Permittee shall submit, as soon as reasonably practicable, a final written report summarizing any related actions, assessments, or evaluations not included in the report required in Part II.B.4.b., and including any other information necessary to determine and minimize the potential for degradation of waters of the State and the impact to human health and the environment. Submittal of the final report does not relieve the Permittee from any additional actions, assessments, or evaluations that may be required by the Division.

C. Administrative Requirements

1. A valid Permit must be maintained until permanent closure is complete. Therefore, unless permanent closure has been completed and termination of the Permit has been approved in writing by the Division, the Permittee shall apply for Permit renewal not later than 120 days before the Permit expires.

2. Except as required by NAC 445A.419 for a Permit transfer, the Permittee shall submit current Permit contact information described in paragraphs (a) through (c) of subsection 2 of NAC 445A.394 within 30 days after any change in previously submitted information.

3. All reports and other information requested by the Administrator shall be signed and certified as required by NAC 445A.231.

4. All reports required by this Permit, including, but not limited to, monitoring reports, corrective action reports, and as-built reports, as applicable, and all applications for Permit modifications, shall be submitted in both hard copy and a Division-approved electronic format.

5. When ordered consistent with Nevada Statutes, the Permittee shall furnish any relevant information in order to determine whether cause exists for modifying, revoking and reissuing, or permanently revoking this Permit, or to determine compliance with this Permit.

6. The Permittee shall maintain a copy of, and all modifications to, the current Permit at the permitted facilities at all times.

7. The Permittee is required to retain during operation, closure and post-closure monitoring, all records of monitoring activities and analytical results, including all original strip chart or data logger recordings for continuous monitoring instrumentation, and all calibration and maintenance records. This period of retention must be extended during the course of any unresolved litigation.

8. The provisions of this Permit are severable. If any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not thereby be affected.

9. The Permittee is authorized to manage fluids and solid wastes in accordance with the conditions of this Permit. Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of Federal, State or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under the Water Pollution Control Statutes for releases or discharges from facilities or units not regulated by this Permit. NRS 445A.675 provides that any person who violates a Permit condition is subject to administrative or judicial action provided in NRS 445A.690 through 445A.705.

D. Division Authority

The Permittee shall allow authorized representatives of the Division, at reasonable times, and upon the presentation of credentials to:

1. Enter the premises of the Permittee where a regulated activity is conducted or where records are kept per the conditions of this Permit;

2. Have access to and copy any record that must be kept per the conditions of this Permit;

3. Inspect and photograph any facilities, equipment (including monitoring and control equipment), practices, or operations regulated by this Permit; and

4. Sample or monitor for any substance or parameter at any location for the purposes of assuring Permit and regulatory compliance.

E. Sampling and Analysis Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. For each measurement or sample taken pursuant to the conditions of this Permit, the Permittee shall record the following information:
   a. The exact place, date, and time of the inspection, observation, measurement, or sampling; and
   b. The person(s) who inspected, observed, measured, or sampled.
3. Samples must be taken, preserved, and labeled according to Division approved methods.
4. Standard environmental monitoring chain of custody procedures must be followed.
5. Samples shall be analyzed by a laboratory certified or approved by the State of Nevada, as applicable for the method(s) being performed. The Permittee must identify in all required reports the certified laboratory used to perform the analyses, laboratory reference numbers, and sample dates, and for electronic version of each report only, include all associated laboratory analytical reports, including test results, test methods, chain-of-custody forms, and quality assurance/quality control documentation.
6. The accuracy of analytical results, unless otherwise specified, shall be expressed in mg/L and reliable to at least two significant digits. The analytical methods used must have a practical quantitative limit (PQL) equal to or less than one-half the reference value for Profile I and Profile III parameters. Laboratories shall report the lowest reasonable PQL based on in-house method detection limit studies. Samples for Profile I parameters shall be filtered and analyzed for the dissolved fraction, unless otherwise required by the Division; samples for Profile III parameters shall be unfiltered and analyzed for the total recoverable fraction. Unless otherwise approved by the Division, analytical results that are less than the PQL shall be reported quantitatively by listing the PQL value preceded by the "<" symbol.

F. Permit Modification Requirements

1. Any material modification, as defined at NAC 445A.365, plan to construct a new process component, or proposed change to Permit requirements must be reported to the Division by submission of a new application for a Permit modification, or if such changes are in conformance with the existing Permit, by submittal of a written notice of the changes. The Permit modification application must comply with NAC 445A.391 through 445A.399, 445A.410, 445A.412, 445A.414, 445A.4155, 445A.416, 445A.417, 445A.440, and 445A.442, as applicable. The construction or modification shall not commence, nor shall a change to the Permit be effective, until written Division approval is obtained.
2. Prior to the commencement of mining activities at any site within the State which is owned or operated by the Permittee but not identified and characterized in a previously application or report, the Permittee shall submit to the Division a report which identifies the locations of the proposed mine areas and waste disposal sites, and characterizes the potential of mined

materials and areas to release pollutants. Prior to development of these areas the Division shall determine if any of these new sources will be classified as process components and require engineered containment as well as Permit modification.

3. The Permittee must notify the Division in writing at least 30 days before the introduction of process solutions into a new process component or into an existing process component which has been materially modified, or of the intent to commence active operation of that process component. Before introducing process solution or commencing active operation, the Permittee shall obtain written authorization from the Division.

4. The Permittee must obtain a written determination from the Administrator of any planned process component construction or material modification, or any proposed change to Permit requirements, as to whether it is considered a Permit modification, and if so, what type.

5. The Permittee must give advance notice to the Administrator of any planned changes or activities which are not material modifications in the permitted facility that may result in noncompliance with Permit requirements.

Prepared by: Matthew Schulenberg

Date: 1 November **2018**

Revision 00: Renewal 2018: Permit effective **21 November 2018.** Incorporated revised pit lake monitoring and waste rock disposal facility monitoring. "Boiler Plate" updates throughout Permit. Incorporated additional monitoring well in SOC Item #1 and added SOC Item #4 for a revised WRMP outlining future sampling and analytical procedures for uncharacterized areas of the Pit. Incorporated SOC Item #5 for facility inspection prior to operation, SOC Item #6 for the submittal of updated operating plans, and SOC Item 7 for the submittal of an EDC to address the potential for SP-7 conveyance pipeline collapse. Incorporated Continuing Investigation Item #3 requiring the submittal of a study to directly measure wall rock fracturing and oxygen transport through the open pit walls.