FACT SHEET
(Pursuant to Nevada Administrative Code [NAC] 445A.401)

Permittee: **KG Mining (Bald Mountain) Inc.**

Project: **Mooney Basin Project**

Permit Number: **NEV0098100**
Review Type/Year/Revision: **Renewal 2022, Fact Sheet Revision 01**

A. Location and General Description

Location: The project is located on public land administered by the Bureau of Land Management, Bristlecone Field Office, within White Pine County, in portions of Sections 5, 6, and 7, Township 23 North (T23N), Range 58 East (R58E); portions of Sections 1, 11, 12, 13, 14, 24, 25, 26, 35, and 36 T24N, R57E; Sections 5, 6, 7, 8, 17, 18, 19, 30, and 31, and portions of Sections 4, 9, 16, 20, 21, 29, and 32 T24N, R58E; portions of Section 1, 2, and 12, T23N, R57E; portions of Section 25 and 36 T25N, R57E; and Section 31 and portions of Sections 29, 30, 32, and 33 T25N, R58E, Mount Diablo Baseline and Meridian, approximately 80 miles northwest of Ely, Nevada.

General Description: The Mooney Basin Project consists of open pit mining and associated waste rock dumps with ore processing by conventional cyanide heap leaching technology and precious metal recovery via carbon adsorption. Loaded carbon is transported to the Bald Mountain Mine (NEV0050045) refinery or off-site for precious metal (mainly gold) recovery. The Mooney Basin facilities are required to be designed and constructed and must be operated and closed in such manner to prevent discharge or release of process fluids in excess of those standards established in regulation except for meteorological events which exceed the design storm event.

B. Synopsis

History

In 1869, G.H. Foreman located the first mining claim in the Bald Mountain Mine (BMM) area.

In 1976, Placer Dome U.S. acquired an option for claims within the Bald Mountain Mining District thus initiating exploration for precious metals. A pilot-scale heap leach project at BMM began in 1983 and was upgraded to a commercial heap leach facility in 1985. Large scale activities at BMM have been expanded periodically since the implementation of commercial process facilities. In 1993, the Little Bald Mountain claims were acquired by Placer Dome U.S. from Northern Dynasty

Mines. Alligator Ridge and Yankee holdings, Casino/Winrock were acquired from USMX, Inc.

Prior to 1993, the Alligator Ridge Mine was owned by Nerco Minerals Co. and Amselco Minerals, Inc. Mooney Basin was part of the Alligator Ridge mine area and was approved in 1998 as a satellite operation to Bald Mountain Mine. Kennecott began production in the area in 1989, and then USMX operated the mine from 1991.

In 2006, Barrick Gold Corp acquired holdings from Placer Dome U.S. which resulted in ownership and operations conducted by Barrick, Bald Mountain Mine, a wholly owned subsidiary of Barrick Gold Corporation. Yankee, Alligator Ridge, Little Bald Mountain, Mooney, Casino/Winrock, and the Bald Mountain areas were included in the acquisition.

Kinross Gold acquired the holdings through a Barrick asset sale which closed on January 11, 2016. Kinross Gold purchased 100 percent of the mine which includes a large land package divided into three zones. The mine is owned and operated by KG Mining (Bald Mountain) Inc., a Kinross company, the current Permittee.

General

The facility includes open pit mining and processing at a permitted rate of 30,000,000 tons of ore per year.

The North Area Facility (NAF), originally permitted in 1998, components include the composite-lined heap leach pad (HLP) (Original Pad, Expansion Phase I, Expansion Phase II, Expansion Phase III collectively known as Pads 1 – 3), two double-lined (with leak detection systems) process solution ponds (Solution Ponds 1 and 2), three monitoring wells east of the process area, a process plant, waste rock disposal areas, production wells, and support facilities. The original Storm Event Pond is presently being used as a freshwater storage pond and is now known as the Freshwater Pond.

South Area Facility (SAF) Pad 4 was added as part of the 2010 major modification. The SAF HLP Cells 1 – 8 consist of the composite lined HLP, one double-lined (with leak detection system) Process Pond, a process plant, two monitoring wells, and support facilities. The fluid management systems of the NAF and SAF are typically operated independently with the exception that solution pipelines connect all of the Mooney Basin facilities for maximum operational flexibility. The SAF Storm/Event Pond was relocated to the Deep South Area Facility (DSAF) with the 2021 major modification to make room for the DSAF Pad 5 Phase 3 Expansion.

The DSAF was added as part of the 2013 major modification, consists of the composite lined HLP (Pad 5 and Pad 6), one double-lined (with leak detection system) Solution Pond, two double-lined (with leak detection system) Storm/Event Ponds (DSAF Storm/Event Pond 1 and DSAF Storm/Event Pond 2), one double-lined (with leak detection system) Solution Tank Shelf, two monitoring wells, and support facilities. Pregnant solution is pumped from the collection tank to the SAF process plant for precious metal recovery.

The Far North Area Facility (FNAF) added with the 2019 major modification consists of the composite lined HLP (Pad 8), constructed in phases, one double-lined (with leak detection system) Process Pond, one double-lined (with leak detection system) Storm/Event Pond, one double-lined (with leak detection system) Solution Tank Shelf, one new monitoring well, MMW-8, located northeast and downgradient of the Pad 8 ponds, and support facilities. Pregnant solution is pumped from the collection tank to the NAF process plant, or alternately, the SAF for precious metal recovery.

Seven-pits (Poker Flats Pit, Winrock North Pit, Winrock Main Pit, Winrock South Pit, Bida Pit, Duke Pit and Saga Pit) are mined using standard open pit methods including drilling, blasting and loading into haul trucks. Typical bench heights are 25 to 40 feet high and of variable width. Overall pit wall slope angles range from 30 to 55 degrees. Blasted ore and waste rock are loaded into haul trucks by front-end loaders or electric and hydraulic shovels. Ore is hauled to the run-of-mine (ROM) HLP where it is end-dumped into place on a nominal 24-inch thick free-draining overliner material.

Depending on the mine plan and pit sequencing, waste rock may be hauled to mined-out portions of the pits for use as backfill material or placed in rock disposal areas (RDA). Based on ground water monitoring results and studies completed for Bald Mountain's latest Environmental Impact Statement (EIS), pit lakes are not anticipated to form in any of the associated pits.

Each pit has one or more RDAs associated with it. All RDAs are constructed by end-dumping in lifts to overall slopes of 2.5 Horizontal to 1 Vertical (2.5H:1V). Final reclaimed slopes are between 2.5H:1V and 3H:1V, which will ensure the physical stability of the dumps.

Analytical results of leachate from Meteoric Water Mobility Procedure (MWMP) testing of the waste rock indicate that several constituents exceed the Division Profile I reference values, specifically aluminum (0.67 milligrams per liter (mg/L)), arsenic (0.43 mg/L), mercury (0.015 mg/L), and thallium (0.006 mg/L). Static test results for Acid Neutralizing Potential/Acid Generating Potential from representative waste rock samples indicate isolated areas of potentially acid generating rock. However, subsequent modified humidity cell tests (kinetic tests) do not indicate potential for acid generation. Routine quarterly waste rock characterization will continue according to the Permit requirements. The Division approved waste rock management plan of September 2020 or most current version are followed to address potential acid generation concerns.

North Area Facility (NAF)

The NAF HLP was constructed in four phases. The original HLP (Pad 1 Phase 1) covers an area of approximately 1.5 million square feet. The adjoining Phase I expansion (Pad 1 Phase 2) is located immediately north, west, and south of the original, covering approximately 2.1 million square feet. The Phase II expansion (Pad 2) covers 2.33 million square feet directly south of the Phase I expansion. The Phase III expansion (Pad 3 Phase 1) covers 0.85 million square feet directly west of the Phase II expansion. The Pad 3 Phase 2 expansion covers 0.307 million square feet located north of Pad 3 Phase 1 and west of Pad 1. The total NAF HLP area is 7.1 million square feet.

NAF Pad 1, Pad 2 and Pad 3 Phase 1 were originally designed and approved by the Division to accommodate 39.2 million tons of ore at a design height of 180 feet. Based on engineering data provided by the Permittee, the permitted heap height was increased from 180 feet to 250 feet to accommodate of 48.0 million tons of ore as part of the 2008 renewal. Stability analyses of the heap for Pad 1, Pad 2 and Pad 3 Phase 1 with the new height resulted in minimum factors of safety of 1.30 (static) and 1.08 (pseudostatic). The 2016 minor modification requested an increase of the HLP to 250 feet to accommodate an additional 4.5 million tons of ore. The 2021 major modification requested the maximum height for Pad 1 through 3 (including Pad 3 Phase 2) of the NAF be increased from 250 feet to 300 feet. This height increase accommodates an additional 3.2 million tons of ore for a total storage of 55.7 million tons. The new 300-foot heap height resulted in seismic minimum factors of safety of 1.30 (static) and 1.09 (pseudostatic).

The HLP base has a maximum grade of 2 percent for the first 180 feet on the downgradient side that acts as a buttress. The remaining upgradient portions of the HLP have a maximum base gradient of 6.25 percent. The perimeter berm and solution channel dimensions have been designed to accommodate runoff resulting from the 25-year, 24-hour storm event and the maximum cyanide leach solution application rate.

A dilute cyanide solution is applied to the heap via drip emitters. The solution is applied at a maximum rate of 0.005 gallons per minute per square foot (gpm/ft^2) of HLP on a maximum of approximately 15 percent (approximately 1 million square feet) of the total HLP area, resulting in a maximum total pumping rate of 6,000 gpm.

In August 2008, the Division approved an Engineering Design Change (EDC) to allow a small-scale program of limited application of barren solution into the heap through designated injection holes. Preliminary studies and analysis of core samples taken from the heap had shown that intermittent layers of low permeability material were impeding the uniform distribution of solution applied to the heap surface. To mitigate this effect, it was proposed that a series of boreholes be installed on the heap and solution be applied at various depths by gravity, bypassing the low permeability areas.

Application of solution was by gravity only, with total solution applied to the heap by all methods not to exceed the Permit limit (at that time) of 5,000 gpm. Appropriate limits on locations of holes, minimum vertical distance from bottom of hole to top of liner, and maximum allowable injection rates at individual and adjacent holes, as well as increased monitoring of injection operations were added to the Permit where appropriate.

The small-scale phase of the program was intended to provide data to be used to evaluate the feasibility of a full-scale injection program in the future. Based on the results of the injection program, as reported in the final evaluation submitted in February 2012, the Permittee elected to terminate the program. Resumption of injection hole operation will require submittal of a Permit modification (with appropriate fee) and approval by the Division.

The pregnant solution is collected within the drain blanket (overliner) covering a hydraulic relief piping system (underdrain piping) by which it is conveyed via gravity to the collection ditch situated along the eastern portion of the HLP. The pregnant solution reports to Solution Pond 1 where it is then pumped to the Carbon-In-Column (CIC) plant. The pregnant solution flows by gravity through either of two trains of five carbon columns countercurrent to the activated carbon for precious metal recovery. Barren solution reports to the barren tank where the pH is adjusted, if necessary, and sodium cyanide is added prior to pumping to the heap. The loaded carbon from the last column is removed and transported to the Bald Mountain Mine (NEV0050045) refinery or off-site for precious metal recovery.

The NAF HLP consists of a composite lined system with solution collection via perforated corrugated perforated polyethylene (CPEP) underdrain pipes covered in a minimum of 24-inches of overliner. The composite liner system consists of an 80-mil high density polyethylene (HDPE) liner placed above a prepared 12-inch-thick compacted soil layer with a maximum hydraulic conductivity of $1x10^{-6}$ centimeters per second (cm/sec) or geosynthetic clay liner (GCL). The GCL consists of a reinforced product consisting of sodium bentonite encapsulated between two non-woven geotextiles, needle-punched together. The overliner, protects the composite liner from punctures and reduces hydraulic head on the liner system. Four-inch-diameter or 6-inch-diameter underdrain pipes are spaced approximately 30 feet apart and convey process solution to the 18 and 24-inch-diameter collection pipe in the solution channels on the eastern side of the HLP.

The downgradient solution collection channels (north and south), including the transfer channel to the Solution Pond 1 and the transfer channel to the Solution Pond 2, are equipped with Leak Collection and Recovery Systems (LCRS) to recover fugitive process solution that may escape the primary liner. Each LCRS consists of a 4-inch-diameter, perforated drainpipe placed at the bottom of the channels sandwiched between the liner and the soil subbase. The pipes are surrounded with clean granular fill material. Fugitive process solutions free drain to Solution Pond 1 via 3 dedicated pipes, but the LCRSs for the southern two HLP expansions each report to a dedicated sump (8-gallon capacity each).

The original pregnant pond (now identified as Solution Pond 1) is designed and constructed with an 80-mil HDPE primary liner and a 40-mil HDPE secondary liner placed over a prepared native soil subgrade. Sandwiched between the primary and secondary liners is an HDPE geonet for collection and transfer of fugitive process solution, via gravity, to two low points (leak detection sumps – 186-gallon capacity each). The floor of the Solution Pond 1 is graded to the leak detection sumps which are filled with clean granular material. The sumps are evacuated via 8-inch-diameter HDPE pipes that extend into the sump and daylight at the pond crest. The pipes are sealed with removable caps. Total capacity of Solution Pond 1 is 7.34 million gallons at 2 feet of freeboard.

During the second quarter of 2005, leak detection sumps in Solution Pond 1 began reporting high volumes of fluid in excess of Permit leak detection limits. Extensive investigations were carried out which identified the sources of the leakage and also confirmed the integrity of the secondary liner. Repairs on the primary liner were completed in 2006, reducing the accumulations to nearly zero.

In the fourth quarter of 2007, elevated accumulations began to report again, increasing in the following quarters. To definitively address this problem, the Permittee initiated a comprehensive investigation of the primary liner integrity. Based on the initial findings of this investigation, the decision was made to replace the primary liner of Solution Pond 1 rather than attempt to repair the existing liner. The Permittee submitted an EDC to this effect on 13 July 2009 which was approved by the Division for construction on 17 July 2009. The revised design consisted of a new 60-mil HDPE primary liner placed over the existing 80-mil HDPE primary liner, with geonet in between. The 80-mil liner was breached in several locations to ensure free flow of any fugitive solution to the leak detection sumps. Sixty-mil HDPE wear sheets were welded to the new primary liner in areas which typically experience continuous flow of solution into the pond. The new liner installation was completed in October 2009.

In addition, the Permittee agreed to increase the monitoring of this area by installing three monitoring wells. MMW-1, located north of the HLP serves as the upgradient groundwater monitoring well and encountered groundwater at approximately 285 feet below ground surface (bgs). MMW-2 was installed at the southeast corner of the HLP, near water supply well MWW-3, for downgradient monitoring and encountered groundwater at approximately 300 feet bgs. MMW-3 serves as a vadose zone monitoring well located immediately east of the ponds and was drilled to a depth of approximately 80 feet at an angle of approximately 30 degrees from vertical. Initial water sample analyses showed Profile I reference value exceedances of manganese (0.105 mg/L in MMW-1) and pH (11 SU in MMW-2 – possible contamination from the well drilling process). In anticipation of the construction of the Pad 4 Expansion (see section titled *South Area Facility*) which MMW-2 is within the footprint, a request for a replacement monitoring well was approved by the Division in January 2017. The replacement monitoring well is designated as MMW-2B. MMW-2B is located 200 feet southeast of MMW-2 and 300 feet northwest of MWW-3 and is screened at the same interval as MMW-2.

In July 2009, the Permittee requested that original storm event pond (now known as the Freshwater Pond) be approved for temporary use as a freshwater pond, to be used for filling of water trucks in the summer months. This was approved by the Division contingent on a complete triple rinse of the pond and sampling of the fresh water after the initial fill. Use of the fresh water in the water trucks was approved by the Division after receipt of analysis showing no potential to degrade waters of the State. In addition, the Division requested, and received from the Permittee, revised calculations showing the ability of the pond system to accommodate the 25-year, 24-hour and 100-year, 24-hour storm events while in this configuration. Normal monitoring of the leak detection system in the pond will continue according to the Permit.

The Freshwater Pond is also lined with an 80-mil HDPE primary liner and 40-mil HDPE secondary liner with a geonet layer in between. The leak detection system is similar to that of Solution Pond 1, except there is only one sump (186-gallon capacity) and one evacuation port. Solution Pond 1 and the Freshwater Pond are connected via a synthetically-lined transfer channel at 6,890 feet above mean sea level (ft amsl), the elevation at which the capacity of the Freshwater Pond is 2.48 million gallons (2 feet of freeboard).

Solution Pond 2, formerly known as the Overflow Pond, is double-lined with an 80-mil HDPE primary liner and a 60-mil HDPE secondary liner. The leak detection system consists of geonet between the primary and secondary liners which provides a flow path to the northeast corner of the pond at 1.0 percent slope to a leakage collection sump filled with drain rock (4,500-gallon capacity). The 8-inch-diameter evacuation pipe is located between the liners, perforated in the sump, and daylights at the pond crest. In addition to the process solution volume, this pond is capable of containing runoff resulting from the 25-year, 24-hour storm event reporting to the NAF Pads 1 – 3. Solution Pond 1 and Solution Pond 2 are connected via a transfer channel at 6,887 ft amsl, the elevation at which the capacity of Solution Pond 2 is 8.00 million gallons at 2 feet of freeboard.

Gold adsorption is carried out in two trains of five carbon columns located in the process plant, which is designed and constructed to provide at least 110 percent secondary containment capacity of the largest tank volume. This is accomplished through a combination of floor sumps, concrete containment berms, stem walls, and a 24-inch-diameter overflow pipe to Solution Pond 1. Reagent off-loading occurs within the plant where secondary containment is provided. All concrete seams are sealed with epoxy grout to prevent leakage. Process piping, to convey pregnant and barren solutions to and from the process plant, is located over 80-mil HDPE liner which acts as secondary containment, draining any leakage from the pipes directly to the ponds.

Diversion ditches have been designed and constructed around the HLP, the ponds, and the process plant to direct upgradient runoff resulting from the 100-year, 24-hour storm event into existing natural drainage courses.

The Permittee submitted an EDC request related to the 2021 major modification for the NAF Pad 3 Phase 2 expansion package for the Mooney Basin process area. The proposed NAF Pad 3 Phase 2 Expansion and stormwater diversions are included in the 2021 major modification. The NAF Pad 3 Phase 2 expansion is similar to existing Mooney Basin Project facilities. The HLP expansion designs include a prepared subgrade, a GCL, and an 80-mil HDPE liner covered with a 24-inch-thick cushioning/drainage layer of overliner material overlying underdrain pipes.

There are no known significant geologic hazards that would affect the design, construction, or performance of the facility.

South Area Facility (SAF)

The SAF was proposed in the application for major modification received by the Division in February 2010 and approved by the Division in July 2010. The fluid recovery system is completely independent of the NAF with no intermixing of pregnant solution. However, the barren solution transfer pipeline allows distribution of barren solution to either facility.

SAF Cells 1-7 are located directly south of the NAF and covers an area of approximately 6.94 million square feet. The HLP was approved by the Division to accommodate 51.6 million tons of ore at a design height of 300 feet. Stability analyses of the heap resulted in minimum factors of safety of 1.30 (static) and 0.9 (pseudostatic). A deformation analysis was conducted as a follow-up to the pseudostatic study and showed that the maximum displacement of the heap material in a seismic event would be approximately 1 inch.

SAF Cells 1 - 7 are graded at 2 percent to the east and south where solution is collected and conveyed to the SAF process plant. The perimeter berm and solution channel dimensions have been designed to accommodate runoff resulting from the

25-year, 24-hour storm event and the maximum cyanide leach solution application rate.

The SAF Pad 4 Expansion was proposed in the application for minor modification received by the Division in March 2016 and approved by the Division in March 2017.

The SAF Pad 4 Expansion is located directly between SAF Pad 4 and DSAF Pad 5 and consists of one phase (Cell 8) covering an area of approximately 0.9 million square feet increasing the total SAF HLP footprint to 7.84 million square feet. The expansion was approved by the Division to accommodate 19.0 million tons of ore at a design height of 300 feet increasing the total capacity of the SAF HLP to 73.2 million tons. Stability analyses of the heap resulted in minimum factors of safety of 1.4 (static) and 1.1 (pseudostatic).

The SAF Pad 4 and Pad 4 Expansion consists of a composite lined system with solution collection via perforated pipelines within the 24-inch-thick overliner placed above the synthetic liner. The liner system consists of an 80-mil HDPE liner placed above either a prepared 12-inch-thick compacted soil layer with a maximum hydraulic conductivity of $1x10^{-6}$cm/sec, or over a GCL with equivalent or lower maximum permeability placed on a prepared subgrade. The drain blanket (overliner) covers the hydraulic relief pipes (underdrain pipes). The overliner protects the liner from punctures and reduces hydraulic head on the liner system. The combination of 80-mil HDPE liner and $1x10^{-6}$cm/sec (maximum) subbase meets the criteria of NAC 445A.434.2(a) without need for a leak detection and recovery system.

A dilute cyanide solution is applied to the heap via drip emitters. The maximum total application rate allowed by the Permit is 12,000 gpm. Because stormwater storage for SAF has been relocated to DSAF and a new storm/event pond has been constructed, the combined area under leach for SAF and DSAF has been increased to 16.0 million square feet.

The pregnant solution is collected within the underdrain piping system by which it is conveyed via gravity to the header pipe located in the collection ditch, which acts as secondary containment, situated along the eastern portion of the HLP. The underdrain pipe system consists of 4-inch and 6-inch-diameter, perforated, CPEP placed on 30-foot centers. These drain to 24-inch (cells 1-6) and 15-inch (cell 7) diameter intermediate collection pipes, which then convey fluid to the 30-inch diameter main collection header pipe running along the eastern side of the HLP. For Cell 8, the pregnant solution collected within the underdrain piping system is conveyed via gravity to the header pipe located in the collection ditch, which acts as secondary containment, situated along the eastern portion of the HLP. The Cell 8 header conveys pregnant solution to the Cells 1 – 7 header pipe that drains to the Pregnant Sump Shelf where it enters the process plant circuit.

Under normal operating conditions, the pregnant solution reports directly to the SAF Process Building. Alternatively, in the case of temporary shutdown of the plant for maintenance, pregnant solution may be diverted to the Process Pond and later pumped to the plant once it has restarted. The pregnant solution flows by gravity through either of two trains of five carbon columns countercurrent to the activated carbon for precious metal recovery. The SAF Process Building also receives pregnant solution from the DSAF through the South to North Pregnant Solution Pipeline approved by the Division as an EDC in January 2016 and may be used to process pregnant solution from FNAF as needed.

Barren solution reports to the barren tank where the pH is adjusted, if necessary, and sodium cyanide is added prior to pumping to the heap. Barren solution flow is divided between the SAF Pad 4, the DSAF Pad 5 and Pad 6, and the transfer pipeline to the NAF Pad 1-3 and FNAF Pad 8 with all or part of the total going to either facility. The loaded carbon from the last column in each train is removed and transported to the Bald Mountain Mine (NEV0050045) refinery or off-site for precious metal recovery.

The SAF Process Pond is designed and constructed with an 80-mil HDPE primary liner and a 60-mil HDPE secondary liner placed over a combination of prepared native soil and engineered compacted fill. Sandwiched between the primary and secondary liners is an HDPE geonet for collection and transfer of fugitive process solution, via gravity, to the leak detection sump (7,200-gallon fluid capacity). The Process Pond floor is graded to the sump which is filled with clean granular material. The sump is monitored and evacuated via a 12-inch-diameter HDPE pipe that extends into the sump and daylights at the pond crest. The pipe is sealed with a removable cap. Total capacity of the Process Pond is 16.15 million gallons at 2 feet of freeboard.

With Division approval of the 2021 major modification, the SAF Storm/Event Pond was removed to make room for the DSAF Pad 5 Phase 3 Expansion. The fluid storage capacity was replaced with the construction of the DSAF Storm/Event Pond 2. See the section titled “Deep South Area Facility” for additional information.

For the SAF HLP, the three ponds, SAF Process Pond, DSAF Storm/Event Pond 1 and DSAF Storm/Event Pond 2, provide sufficient combined capacity to impound the fluid accumulation resulting from the 25-year, 24-hour storm event, plus 24 hours of draindown in case of power loss, and still maintain the required 2 feet of freeboard. The ponds are also capable of containing the same accumulations for the 100-year, 24-hour storm event without overtopping. In order to achieve necessary containment in either case, operational levels in the SAF Process must be maintained at a maximum operating volume of 1.4 million gallons or less. Any accumulation of fluid in excess of this limit is required by the Permit to be evacuated within 20 days.

The SAF Process Building is designed and constructed to provide at least 110 percent secondary containment capacity of the largest tank volume. This is accomplished through a combination of floor sumps, concrete containment berms, and an outflow channel to the SAF Process Pond. Reagent off-loading occurs within the plant where secondary containment is provided. All concrete seams are sealed with epoxy grout to prevent leakage. Process piping, to convey pregnant and barren solutions to and from the process plant, is located over 80-mil HDPE liner which acts as secondary containment, draining any leakage from the pipes directly to the ponds.

Deep South Area Facility (DSAF)

The DSAF Pad 5 (Phase 1 and Phase 2) was proposed with the application for major modification received by the Division in January 2013 and approved by the Division in September 2013. DSAF Pad 6 was proposed in the application for minor modification received by the Division in March 2016 and approved by the Division in March 2017. In April 2022, the Permittee submitted an EDC request related to the 2021 major modification for the DSAF Pad 5 Phase 3 expansion package and changes to the SAF for the Mooney Basin process area.

The fluid management system also receives barren solution from the SAF and conveys pregnant solution to the SAF process building for gold recovery.

The DSAF HLP is located directly south of the SAF and consists of Pad 5 Phases 1, 2 and 3 covering an area of approximately 6 million square feet and Pad 6, located up gradient of Pad 5, constructed in three phases covering an area of approximately 4.75 million square feet for a total DSAF HLP area of 10.75 million square feet. The DSAF Pad was designed and approved by the Division to accommodate 86.9 million tons of ore at a design height of 300 feet.

Stability analyses of DSAF Pad 5 Phase 1 and Phase 2 resulted in minimum factors of safety of 1.30 (static) and 1.1 (pseudostatic). Stability analyses for DSAF Pad 6 Phase 1 and Phase 2 of the heap resulted in minimum factors of safety of 1.30 (static) and 0.9 (pseudostatic). A deformation analysis was conducted as a follow-up to the pseudostatic study and showed that the maximum displacement of the heap material in a seismic event would be approximately 3 inches.

The DSAF Pad 5 base is graded at approximately 2 percent to the east and south where solution is collected and conveyed to the solution tank. The perimeter berm and solution channel dimensions have been designed to accommodate runoff resulting from the 25-year, 24-hour storm event and the maximum cyanide leach solution application rate.

A dilute cyanide solution is applied to the heap via drip emitters. The maximum total application rate allowed to the combined DSAF (Pad 5 and Pad 6) is 12,000 gpm. Because stormwater storage for SAF has been relocated to DSAF and a new storm/event pond has been constructed, the combined area under leach for SAF and DSAF has been increased to 16.0 million square feet.

The pregnant solution is collected within the underdrain piping system, and it is conveyed via gravity to the header pipe located in the collection ditch, which acts as secondary containment, situated along the eastern portion of the HLP. The collection pipe system consists of 4-inch-diameter, perforated, CPEP placed on 30-foot centers. These drain to 24-inch-diameter intermediate collection pipes, which then convey fluid to the 24-inch-diameter main collection header pipes running along the eastern and southern sides of the HLP. The header pipe drains to the solution tank from where it is pumped to the SAF process building.

Pregnant solution reports directly to the solution tank located on the solution tank shelf at the northeast corner of the DSAF Solution. Alternatively, in the case of temporary shutdown of the SAF process plant for maintenance, the pregnant solution may be diverted to the DSAF Solution Pond and later pumped to the plant once it has restarted.

After passing through the SAF CIC circuit, the adjustment of pH and sodium cyanide addition is managed, as required, in the SAF Barren Solution Tank. Part or all of the barren solution flow is then returned to the DSAF for reapplication on the HLP. The barren solution return lines and pregnant solution delivery lines are 30-inch-diameter steel pipe which lie in a HDPE-lined secondary containment channel. The channel measures 16 feet across at the base with a minimum depth of 3 feet and 2H:1V side slopes.

The HLP consists of a composite-lined system with solution collection via perforated pipelines within the 24-inch-thick overliner placed above the synthetic liner. In areas adjacent to the downgradient perimeter berms the overliner thickness is increased to 40 inches. The composite liner system consists of an 80-mil HDPE liner placed above either a 12-inch-thick compacted soil layer with a maximum hydraulic conductivity of $1x10^{-6}$cm/sec, a 12-inch-thick compacted soil layer with a maximum hydraulic conductivity of $1x10^{-7}$cm/sec, or over a GCL with equivalent or lower maximum permeability placed on a prepared subgrade. The $1x10^{-7}$cm/sec permeability area is over the shallow groundwater identified during geotechnical investigations carried out prior to the submittal of the major modification. The overliner material protects the liner from punctures and reduces hydraulic head on the liner system. The combination of 80-mil HDPE liner and $1x10^{-6}$ cm/sec or less permeability subbase meets the criteria of NAC 445A.434.2(a) without need for a leak detection and recovery system.

The DSAF Solution Pond is designed and constructed with an 80-mil HDPE primary liner and a 60-mil HDPE secondary liner placed over a combination of prepared native soil and engineered compacted fill. Sandwiched between the primary and secondary liners is an HDPE geonet for collection and transfer of fugitive process solution, via gravity, to the leak detection sump (3,100-gallon net fluid capacity). The pond floor is graded to the sump which is filled with clean granular material. The sump is monitored and evacuated via a 12-inch-diameter HDPE pipe that extends into the sump and daylights at the pond crest. The pipe is sealed with a removable cap. Total capacity of the pond is 19.1 million gallons at 2 feet of freeboard.

The DSAF Storm/Event Pond 1 is also lined with an 80-mil HDPE primary liner and 60-mil HDPE secondary liner with a geonet layer in between. The leak detection system is similar to that of the DSAF Solution Pond 1, with one sump (3,100-gallon net fluid capacity) and one evacuation port. The DSAF Solution Pond and the DSAF Storm/Event Pond 1 are connected via a synthetically lined transfer channel at 6,709 ft amsl at which level the capacity of the Storm/Event Pond 1 is 10.6 million gallons at 2 feet of freeboard.

As part of the April 2022 EDC, the engineering design report presented the results of the design development for the alteration of the existing DSAF Storm/Event Pond (now known as DSAF Storm/Event Pond 1) to add a spillway, and construction of DSAF Storm/Event Pond 2. Construction of the DSAF Storm/Event Pond 2 was a critical initial component of the DSAF Pad 5 Phase 3 expansion construction prior to the decommissioning of the existing SAF Storm/Event Pond to manage risk.

DSAF Storm/Event Pond 2 is constructed using engineered earthfill embankments overlain with a dual geomembrane lining system that includes an intermediate drainage layer for leak detection, collection, and recovery. Additionally, the DSAF Storm/Event Pond 1 required alteration of the existing crest to construct a spillway to the new storm/event pond. The existing SAF Process Pond crest is altered with the construction of a new spillway and the removal of the existing spillway because of the decommissioning and removal of the existing SAF Storm/Event Pond.

The SAF Storm Pond was removed and stormwater overflow from the SAF Process Pond is now collected in the DSAF Pad 5 Phase 3 HLP underdrain pipes and piped to the DSAF Process Pond. The DSAF pond complex has been altered and expanded to include a second storm/event pond, DSAF Storm/Event Pond 2. The new storm/event pond has a storage capacity of 19.1 million gallons with 2 feet of freeboard and 21.6 million gallons of capacity at the pond crest.

The new DSAF Storm/Event Pond 2 is located to the southwest of DSAF Storm/Event Pond 1. The lining system for DSAF Storm/Event Pond 2 consists of an 80-mil HDPE primary liner, a 60-mil HDPE secondary liner and a geonet drainage layer. The proposed new storm/event pond has an independent leak collection and return system with a fluid sump capacity of 1,050 gallons. The new storm/event pond is designed to accommodate the 100-year, 24-hour storm.

The DSAF ponds work together as a system with process and stormwater being contained in the system as a whole. The design requirements for the DSAF pond system includes proposed storage for ballast/operating inventory and solution storage for a 24-hour power outage with a return flow rate of 10,000 gpm when solution is applied at 12,000 gpm. Solution application rates vary from 0.0015 to 0.005 gpm/ft^2. A rate of 0.0015 gpm/ft^2 was assumed for design for the maximum area under leach. The maximum area under leach is controlled predominantly by the DSAF available surface area, but also by the total permitted solution return rate and the solution application rate.

The overall pond capacities of 48,409,600 gallons at freeboard and 55,163,200 gallons at pond crest demonstrate that the DSAF pond system can store over 117 percent of the DSAF operating inventory, 24-hour power loss volume, the SAF/DSAF stormwater runoff and direct precipitation to the pond system resulting from a 25-year, 24-hour storm event, and 20 percent contingency with 2 feet of freeboard. The DSAF pond system can also contain about 110 percent of the DSAF operating inventory, 24-hour power loss volume; the SAF/DSAF stormwater runoff and direct precipitation to the pond system resulting from a 100-year, 24-hour storm event, and 20 percent contingency without overtopping.

In order to achieve necessary containment operational levels in the DSAF pond system must be maintained at maximum operating volume of 3.2 million gallons or less. Any accumulation of fluid in excess of this limit is required by the Permit to be evacuated within 20 days.

On 04 November 2021 the Permittee submitted an EDC to install a replacement monitoring well for MMW-4 designated as MMW-4R. The replacement monitoring well was required because the existing monitoring well was in the footprint of the DSAF Pad 5 Phase 3 expansion. The EDC was approved by the Division on 08 November 2021. An As-Built report for the abandonment of MMW-4 and construction of MMW-4R was received by the Division on 01 June 2022.

The DSAF Solution Tank rests on the Solution Tank Shelf, an extension of the Solution Pond, located in the northeast corner. The shelf is sloped toward the pond so that any solution that leaks or splashes out immediately enters the pond. The shelf is lined with an 80-mil HDPE primary liner and 60-mil HDPE secondary liner with a geonet layer in between. The leak detection system is independent of that of the Solution Pond, with its own sump (300-gallon net fluid capacity) and one evacuation port consisting of a 12-inch diameter HDPE pipe that extends into the sump and daylights at the pond crest, sealed with a removable cap.

Far North Area Facility Mooney Pad 8 (FNAF)

General Information

The FNAF was proposed in the application for major modification received by the Division in March 2019. The fluid management system conveys pregnant solution to the NAF or alternately the SAF process building for gold recovery.

The FNAF HLP is located directly north of the NAF and consists of a total area of approximately 7.6 million square feet. Based on a tonnage factor of 18.3 cubic feet per ton for low-grade run-of mine ore (109 pounds per cubic foot unit weight), FNAF Pad 8 will accommodate approximately 70 million tons of ore at a design height of 300 feet.

Low-grade run-of-mine ore will be placed in approximately 20-to-30-foot lifts using mine haulage vehicles at an overall side slope of 3H:1V. Irregular base topography within the HLP footprint will require thicker lifts in certain areas.

The HLP base is constructed in phases, generally graded at approximately 6 percent overall to the northeast at a maximum of 15 percent grade with a perimeter graded buttress zone where solution is collected and conveyed to the solution tank located within the Process Pond located on a solution tank shelf. The perimeter berm and containment channel dimensions have been designed to accommodate runoff resulting from the 100-year, 24-hour storm event and the maximum cyanide leach solution return rate. Flows in excess of the transfer pipeline to the solution tank are conveyed to the Process Pond through an overflow channel, bypassing the solution tank.

Solution Application Rate

For FNAF Pad 8 Phase 1, barren solution will be applied via drip emitters at a flow rate of up to 6,000 gpm with a solution application rate ranging between 0.0015 and 0.005 gpm/ft^2 with a return flow of 5,000 gpm. The flow rate will be increased once Phase 2 is constructed to 12,000 gpm. Return flows for the full 12,000 gpm will be up to 10,000 gpm. The Permitee currently envisions that solution from the FNAF Pad 8 will be pumped to the existing NAF Carbon in Column (CIC) plant for processing. Additional processing capacity is available at the SAF CIC plant and solution can be pumped from NAF to SAF. Pumping designs were not included in the major modification and will be prepared and submitted separately.

Solution Collection System

The pregnant solution is collected within the underdrain piping system and is conveyed via gravity to the header pipe located along the down gradient edge of the HLP, which acts as secondary containment, situated along the eastern portion of the HLP. The underdrain collection pipe system consists of 4-inch-diameter and 6-inch-diameted, perforated, CPEP placed on 30-foot centers. These drain to 24-inch-diameter intermediate collection pipes, which then convey fluid to the 24-inch-diameter main collection header pipes running along the eastern and northern sides of the HLP. The header pipe discharges into a carbon steel transfer pipe that drains to the solution tank from where it is pumped to the NAF process building. Solution can also be delivered to the SAF for processing.

Pregnant solution reports directly to the solution tank located on the solution tank shelf at the northeast corner of the solution pond. Alternatively, in the case of temporary shutdown of the NAF process plant for maintenance, the pregnant solution may be diverted to the Solution Pond and later pumped to the plant once it has restarted.

Barren Solution System

After passing through the NAF CIC circuit, or alternately the SAF CIC circuit, the adjustment of pH and sodium cyanide addition is managed, as required, in the NAF or SAF Barren Solution Tanks. Part or all of the barren solution flow is then returned to the FNAF Pad 8 for reapplication on the HLP. The barren solution pipelines and pregnant solution pipelines lie in a HDPE-lined secondary containment channel or within lined areas of the HLPs. The secondary containment channel measures 10 feet across at the base with a minimum depth of 5 feet and 2H:1V side slopes.

HLP Properties

The design concept for FNAF Pad 8 is similar to existing Mooney Basin Project facilities. The FNAF Pad 8 HLP design includes a composite lining system consisting of prepared subbase of a low hydraulic conductivity soil layer (LHCSL or underliner) obtained from native site material, imported borrow material, or GCL and an 80-mil high density polyethylene (HDPE) primary liner covered with a cushioning/drainage layer of overliner material.

FNAF Pad 8 composite-lined system is overlain with an underdrain solution collection of perforated pipelines covered with 24-inch-thick overliner. In areas adjacent to the downgradient perimeter berms the overliner thickness is increased to 40 inches. The composite liner system includes a LHCSL consisting of a 12-inch-thick compacted soil layer with a maximum hydraulic conductivity of $1x10^{-6}$ cm/sec or a GCL with equivalent or lower maximum permeability. The overliner material covers the hydraulic relief pipes placed on the synthetic liner, protecting the liner from punctures and reducing hydraulic head on the liner system. The combination of 80-mil HDPE liner and $1x10^{-6}$ cm/sec or less permeability subbase meets the criteria of NAC 445A.434.2(a) without need for a leak detection and recovery system.

FNAF Pad 8 is located directly north of NAF Pad 1, 2, and 3 and a total area of approximately 7.6 million square feet. Phase 1 is approximately 2.5 million square feet. Subsequent phases will make up the remaining 5.1 million square feet and will be constructed as needed.

Stability analyses of the heap resulted in minimum factors of safety of 1.30 (static) and 0.8 (pseudostatic) closure maximum credible earthquake (MCE). For closure pseudostatic conditions MCE, a factor of safety at or below 1.0 was calculated for the proposed FNAF Pad 8. This indicates that some movement of slope materials would be anticipated during the MCE generating the design peak ground acceleration (PGA) values. To assess the potential amount of slope movement, displacement analyses were conducted using a semi-empirical relationship for estimating the magnitude and probability of permanent slope displacements during a dynamic event. The model predicts displacements of 11 inches or less during an MCE seismic event. This amount of movement would not compromise the integrity of the slope or the integrity of the liner system.

Solution and Storm/Event Ponds

The FNAF Process Pond is designed and constructed with an 80-mil HDPE primary liner and a 60-mil HDPE secondary liner placed over a combination of prepared native soil and engineered compacted fill. Sandwiched between the primary and secondary liners is an HDPE geonet for collection and transfer of fugitive process solution, via gravity, to the leak detection sump (2,000-gallon net fluid capacity). The pond floor is graded to the sump which is filled with clean granular material. The sump is monitored and evacuated via a 12-inch-diameter HDPE pipe that extends into the sump and daylights at the pond crest. The pipe is sealed with a removable cap. Total capacity of the FNAF Solution Pond is 20.8 million gallons at 3 feet of freeboard.

The FNAF Storm/Event Pond is also lined with an 80-mil HDPE primary liner and 60-mil HDPE secondary liner with a geonet layer in between. The leak detection system is similar to that of the FNAF Process Pond, with one sump (2,000-gallon net fluid capacity) and one evacuation port. The FNAF ponds are connected via a synthetically lined transfer channel at 6,779 ft amsl at which level the capacity of the Storm/Event Pond is 10.4 million gallons at 3 feet of freeboard.

The FNAF Process Pond and the FNAF Storm/Event pond will have storage capacities of 25.2 million gallons and 12.7 million gallons to the pond crest. The two ponds provide sufficient combined capacity to store 24 hours of drain-down at a return rate of 10,000 gpm in case of power loss, plus operational inventory, plus runoff from FNAF Pad 8 from a 25-year, 24-hour storm event plus direct precipitation to the pond surface and withstand the runoff resulting from a 100-year, 24-hour storm event without overtopping.

The FNAF Process Pond will be the only pond constructed for Phase 1, with future FNAF HLF expansions requiring the construction of the associated Storm/Event Pond. The design requirements for Phase 1 include reducing the solution applicate rate to 6,000 gpm from the Pad 8 maximum of 12,000 gpm and limiting the operational inventory to 3.7 million gallons. At those operational constraints, the FNAF Process Pond will have 135 percent of the required capacity to store 24 hours of drain-down at a return rate of 5,000 gpm in case of power loss, plus operational inventory, plus runoff from FNAF Pad 8 from a 25-year, 24-hour storm event plus direct precipitation to the pond surface and withstand the runoff resulting from a 100-year, 24-hour storm event without overtopping.

The FNAF Solution Tank rests on the Solution Tank Shelf, an extension of the Solution Pond, located in the southwest corner. The shelf is sloped toward the pond so that any solution that leaks or splashes out immediately enters the pond. The shelf is lined with an 80-mil HDPE primary liner and 60-mil HDPE secondary liner with a geonet layer in between. The leak detection system is independent of that of the Solution Pond, with its own sump (310-gallon net fluid capacity) and one evacuation port consisting of a 12-inch diameter HDPE pipe that extends into the sump and daylights at the pond crest, sealed with a removable cap.

The FNAF Pad 8 major modification was approved by the Division for construction with a Permit Effective date of 18 March 2023.

Stormwater Diversions

Diversion ditches have been designed and constructed around each process area (NAF, SAF, DSAF and FNAF) to direct upgradient runoff resulting from the 100-year, 24-hour storm event into existing natural drainage courses. This includes systems of culverts and armored (rip-rap) channels between the NAF and the SAF, and between the SAF and the DSAF, conveying stormwater from the upgradient watershed west of the site to natural drainages east and north of the HLPs.

Petroleum Contaminated Soil (PCS) Management

Management of PCS for the site is covered by the Division approved PCS Management Plan for the Bald Mountain Mine NEV0050045. All PCS management activity for the Mooney Basin Project is to be included in the report for Bald Mountain Mine.

Pits and Waste Rock Management

In November 2016 the Permittee submitted a minor modification to develop four new open pits at the Bald Mountain Mine by the name of the Poker Flats Pit, Winrock North Pit, Winrock South Pit, and Winrock Main Pit. Upon initial review, the Division determined the minor modification constituted a major modification to the Permit. The major modification proposed to remove an estimated 51 million tons of materials from the Poker Flats Pit and 70 million tons of material from the

Winrock Pits. Of those materials, it is estimated that 23 million tons will be ore and 28 million tons will be waste rock at the Poker Flats pit, and 34 million tons will be ore and 45 million tons will be waste rock at the Winrock Pits. The ore from the Poker Flats Pit, Winrock Pits, and Duke Pit will be placed in the currently permitted Mooney North, Mooney South, and Mooney Deep South heap leach facilities. Waste rock from the Poker Flats Pit, Winrock Pits, and Duke Pit will be placed at the Poker Flats Rock Disposal Area (RDA), Duke RDA, the Winrock North, East, and West Rock RDAs respectively. The Poker Flats Pit is not expected to have pit floor elevations below the water table. The Poker Flats Pit base elevation is 6,550 ft amsl while the water table elevation is 6,052 ft amsl. The Poker Flats Pit has a depth of 800 feet.

Three existing open pits (Hilltop, Blowout, and Deer Camp pits) will be expanded into a single pit known as the Winrock Main Pit, and two additional open pits known as Winrock North and Winrock South will be developed within the Winrock Area. The Winrock Main Pit, if developed to its maximum depth of 6,200 ft amsl, is expected to intercept the water table (6,007-6,594 ft amsl). The Permittee does not anticipate having to perform active dewatering. The water which may be encountered is anticipated to be perched or seasonal and should be able to be passively managed in the pit. In addition, and as stated in the current Revised Waste Rock Management Plan (25 April 2018), pits that have a pit bottom below ground water will be backfilled with selective waste rock material to prevent the degradation of groundwater. This would be accomplished by using only select rock units for placement as backfill. The select rock units to be used would have net neutralizing potential (NNP) greater than zero kilograms per ton (kg/t) as calcium carbonate ($CaCO_3$) in the majority (greater than 95 percent) of samples from historic geochemical test data, have an average aggregate NNP of greater than 100 kg/t as $CaCO_3$, and would have total sulfur levels of less than 0.3 percent in the majority (greater than 95 percent) of samples from historic geochemical test data. At a minimum, backfill material comprising of the selected rock units described above will be placed to an elevation at least 50 feet above the water table. The Winrock North and Winrock South pits are not expected to have pit floor elevations below the water table. The Winrock North Pit base elevation is 6,575 ft amsl while the water table elevation is 6,007 ft amsl; the Winrock South Pit base elevation is 6,800 ft amsl while the water table elevation is 6,475-6,594 ft amsl. The Winrock Main, Winrock North, and Winrock South Pits will be mined to depths of 900 feet, 200 feet, and 300 feet respectively.

Three new RDAs including Poker Flats, Winrock North, and Winrock East will be constructed and one previously existing RDA, Winrock West, will be expanded. The Poker Flats RDA would have a capacity of 71.2 million tons, a height of 525 feet, and covers an area of 237 acres. The Winrock North RDA would have a capacity of 1.6 million tons, a height of 100 feet, and covers an area of 23 acres. The Winrock East RDA would have a capacity of 13.1 million tons, a height of 275 feet, and covers an area of 69 acres. The Winrock West RDA would have a capacity of 40.5 million tons, a height of 375 feet, and covers an area of 140 acres.

The waste rock material from the proposed Poker Flats Pit is estimated to be 8.4 percent potentially acid generating (PAG) material with an average NNP of 283 kg/t as $CaCO_3$. The waste rock material from all three Winrock pits (Main, North, and South) is estimated to be 36.3 percent PAG with an average NNP of 171 kg/t as $CaCO_3$. Due to the waste rock from the Winrock Pits potentially containing 36.3 percent PAG material, the Permittee plans to implement Measure 2.d. "Enhance cover design", as described in Section 4.4 Mitigation Plan of the Revised Waste Rock Management Plan (25 April 2018). Cover designs are similar to those at the Permittee's adjacent Bald Mountain Mine which typically consist of a minimum of 2 feet of cover material (alluvium) and a minimum of 6 inches of growth media; however, the final cover design for the Winrock North, Winrock East, and Winrock West RDAs will be determined by utilizing existing data, information from historic cover designs, as well as soil sample results. Permit Limitation Part I.G.14 was added to the Permit with the processing of the 2017 major modification to provide a threshold for PAG material quantity and NNP that triggers submittal for Division review and approval of an enhanced cover design.

The Permittee plans to separately place all growth media and alluvium material (non-PAG material) generated from the Poker Flats, Duke, Winrock Main, Winrock North, and Winrock South pits at designated locations to utilize as cover once mining has ended. To ensure the proper segregation of suitable cover material, the Permittee plans to conduct confirmatory sampling of these materials during mining. Prior to the placement and construction of the enhanced cover, the Permittee will submit the final cover design to the Division for review and approval. The 2017 major modification was approved by the Division in July 2017.

The 2018 Permit renewal application package included deepening the Saga Pit. The Permittee undertook a field study and data gap review to determine whether or not groundwater would be encountered with this deepening.

Mining in the Saga area began in 2007 and stopped in 2011. During this timeframe, over 111 million tons of rock were mined from the pit to an elevation of 6,575 ft amsl. The Saga area currently includes two pits which both have bottom elevations of 6,575 ft amsl. Groundwater has not been encountered to date in either of the existing Saga Pits. Mining resumed in January 2018 and the pit is currently being mined to the permitted elevation of 6,420 ft amsl.

The proposed Project would deepen the pit to 6,150 ft amsl. The pit deepening would merge the pits into a single deeper pit. The mining rate during this time would average between 16 and 27 million tons per year over an approximate five-year period.

A data gap analysis was completed to confirm the absence of groundwater within the pit deepening area. Initial data review indicated limited piezometer data were available for areas proximal to the Project area.

There were no piezometers or monitoring wells within the Project area. For this reason, a field program to collect water level data within the planned pit deepening footprint was implemented.

The field program study consisted of installing one SG-series and ten SGW-series piezometers and constructing a test well in boring SGW18-008. These piezometers were selected to provide an appropriate level of piezometer density in the key geologic units at the necessary target depths within the pit deepening footprint.

The results of the field program confirm that the Saga pit will continue to be dry for the pit deepening. Operational management of localized saturated conditions within the Tertiary volcanics may be required; however, it is possible that these pore pressures will dissipate from blasting. Monitoring of the existing piezometer network will be beneficial as mining progresses to better understand the evolution of pore pressures in this area over time.

The 2018 Permit Renewal was approved by the Division and became effective in January 2019.

As part of the 2021 major modification/renewal additional mining components include Duke South Pit, expanded Bida pit, expanded Saga pit, expanded Winrock south pit, and Royale pit. The ore material mined from the pits will be placed on the Mooney basin heap leach facilities.

Based on extensive area drilling information, the Permittee does not anticipate intercepting the groundwater table while mining, and no dewatering activities are planned. Exploration drilling water intercepts and piezometer data indicate the smaller and shallower Winrock South Pit will be mined completely within the unsaturated zone with at least 274 feet below the pit floor elevation of 6,600 feet amsl. One potential exception is that perched water may be encountered during the deepening of Saga Pit. To date, no groundwater has been encountered during the deepening of Saga Pit and any inflows are expected to be short-term because most of the water will be derived from storage. The long-term groundwater inflow will effectively be zero so a pit late will not form in the Saga Pit during permanent closure. If encountered, the flows are anticipated to be low and will likely evaporate rather than accumulate. The analysis shows that Bida Pit will be dry with at least 461 feet of freeboard to the water table and that North Duke Pit will be dry with at least 299 feet of freeboard to the water table.

The Permittee plans to manage the RDAs, such as Duke, Bida, Winrock, Saga and Royale in accordance with the approved Waste Rock Management Plan. The Waste Rock Management Plan presents a sampling approach to create a single comprehensive plan that applies to all mine areas.

The new Duke South RDA will contain an estimated 78 million tons. The expanded Bida RDA will contain an estimated 8 million tons, with 0.8 million tons sourced from the Belmont RDA. The Saga RDA, will contain material sources from both

Saga and Bida pit, estimated up to 309 million tons. The Winrock South waste rock material can be placed within the approved Winrock east or west RDAs. The new Royale RDA was designed to contain an estimated capacity of 60 million tons. However, an alternative design will be submitted by the Permittee which avoids over dumping of the closed and released White Pine HLP.

C. Receiving Water Characteristics

The Mooney Basin Project is located on an alluvial fan emanating from the eastern flank of the Ruby Mountains. The NAF HLP is situated just north of a drainage divide at the head of Mooney Basin, while the SAF HLP and DSAF HLP are situated just south of the same divide. The site slopes to the east at 6 to 7 percent grade, with existing ephemeral drainages located north and south of the HLPs. Run-off diverted around process components, especially upgradient (west) of the HLPs, is effectively received by these natural drainages. There are no perennial surface flows or springs in the project area.

A condemnation hole, advanced to a depth of 1,000 feet bgs within the NAF HLP footprint, did not encounter groundwater. However, two holes completed south of the NAF HLP intercepted groundwater at depths of approximately 600 to 700 feet. Facility water supply wells located approximately 100 to 400 feet east of NAF HLP Expansion Phase II (three wells), indicate static water levels at approximately 280 feet bgs. Water quality at these production wells meets Division Profile I reference values. Upgradient and downgradient monitoring wells added in 2009 encountered groundwater at approximately 285 and 300 feet, respectively. Groundwater data for the production and monitoring wells are reported quarterly and results can be found in NDEP files.

During the geotechnical investigation of the area designated for the DSAF HLP (Pad 5), shallow groundwater was encountered in the southern approximately 400 feet of the HLP footprint. The water was encountered approximately 36 feet bgs with a westerly gradient. Pump tests showed low productivity and the extent of area and recharge of the perched body are thought to vary seasonally.

In order to prevent degradation of the shallow groundwater, the design of the DSAF HLP (Pad 5) includes a more stringent subbase permeability requirement ($1x10^{-7}$cm/sec maximum) in this area. In addition, a second monitoring well (MMW-17) in the DSAF was added and screened within the shallow groundwater to allow monitoring for presence and quality of water.

D. Procedures for Public Comment

The Notice of the Division’s intent to issue a Permit authorizing the facility to construct, operate and close, subject to the conditions within the Permit, is being published on the Division website: https://ndep.nv.gov/posts/category/land. The Notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date the public notice is posted to the Division website. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State or intrastate agency, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

E. Proposed Determination

The Division has made the tentative determination to issue the renewed Permit.

F. Proposed Limitations, Schedule of Compliance, Monitoring, Special Conditions

See Section I of the Permit.

G. Rationale for Permit Requirements

The facility is located in an area where annual evaporation is greater than annual precipitation. Therefore, it must operate under a standard of performance which authorizes no discharge(s) except for those accumulations resulting from a storm event beyond that required by design for containment.

The primary method for identification of escaping process solution will be placed on required routine monitoring of leak detection systems as well as routinely sampling downgradient monitoring wells. Specific monitoring requirements can be found in the Water Pollution Control Permit.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S. Code 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 Code of Federal Regulations 10, 15 April 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service (the Service) is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with State permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (e.g., by covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of the toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 2800 Cottage Way, Room W-2606, Sacramento, California 95825, (916) 414-6464, for additional information.

Prepared by: Shawn K. Gooch, P.E.
28 November 2022

Revision 00: March 2021 Major Modification and 5-Year Renewal and boiler plate updates [SG 10/19/2022].

Revision 01: Addition of Mooney FNAF Pad 8 [SG 02/27/2023]