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

Permittee Name: **Nevada Gold Mines LLC**

Project Name: **Emigrant Mine Project**

Permit Number: **NEV2005107**
Review Type/Year/Revision: **Renewal 2025, Revision 00**

A. Location and General Description

Location: The **Emigrant Mine Project** is located in northeast Nevada in southwestern Elko County, approximately 12 miles southeast of the town of Carlin. The facility is situated within Sections 25, 26, 33-36, Township 32 North (T32N), Range 53 East (R53E), and Sections 1-4, 11, and 12, T31N, R53E, Mount Diablo Baseline and Meridian, on both public land administered by the Bureau of Land Management Tuscarora Field Office (1,170 acres) and private (248 acres) land. The site may be accessed by traveling west on Interstate Highway 80 from Elko, Nevada, past the town of Carlin, to the exit for Nevada State Route (SR) 278. Proceed south on SR 278 approximately 2 miles to the junction on the east side of the highway with an improved dirt road, located south of the railroad tracks near a corral, which heads east. Travel approximately 20 miles along the dirt road, the Rain Mine Road, past the Rain Mine facilities to the Emigrant Mine Project site.

General Description: The Emigrant Mine Project consists of a single multi-phase open pit mine, a 3-phase heap leach pad, a process building with a carbon-in-column (CIC) circuit for extraction of gold and associated metals, a pregnant solution tank, two Operational (process) Ponds, a Stormwater Pond, solution collection and conveyance channels, a surface waste rock storage facility and engineered in-pit waste rock storage, and a permanent in-pit diversion channel. Existing surface facilities located at the inactive Rain Mine will be utilized for primary administrative, mechanical, and other operational support activities. As proposed, the Project had an expected operating life of about 14 years (10 years mining and 14 years leaching) and will disturb portions of an approximately 1,418 acre area. An engineering design change (EDC) Permit modification approved by the Division in July 2015 reduced the operating life to about nine years (to December 2020) as a result of an accelerated mining rate and increased solution application rate. An EDC was approved in October 2015 to increase the maximum ore processing rate from 14,000,000 tons per year to 15,000,000 tons per year, but no further changes were made to the maximum solution application rate.

In July 2019, the Emigrant Mine Project was transferred from Newmont USA Limited dba Newmont Mining Corporation to the Barrick-Newmont joint venture – Nevada Gold Mines LLC (the Permittee).

B. Synopsis

General: The Emigrant Mine Project is located at the north end of the Piñon Range, approximately 1¼ miles east of the inactive Rain Mine (Water Pollution Control

Permit (WPCP) NEV0087011). Mining and processing facilities are situated at elevations ranging from about 5,700 to 6,600 feet above mean sea level (AMSL). Site records indicate annual precipitation ranges from about 9 to over 13 inches per year, with the wettest period during January through April and up to 20% of the annual precipitation occurring as snowfall.

The Project includes a large, low-grade, shallow, west-dipping tabular gold deposit located along the contact between the Mississippian Webb Formation (siltstone) and the underlying Devonian Devils Gate Formation (limestone and dolomite). The identified deposit extends 12,000 feet along a generally north-south trend and up to 3,000 feet east of the high-angle Emigrant Fault, a north-trending normal fault that bounds the structural trend and the mineralization on the west. In addition to these and other Paleozoic sedimentary rocks exposed in the Project area, there are small areas of Quaternary alluvium ranging from 0 to 25 feet in thickness.

The identified ore body contains approximately 92 million tons of primarily ‘oxide’ gold ore (revised to 99 million tons in 2015) amenable to heap leach extraction utilizing a dilute sodium cyanide solution. During the anticipated 10-year mine life, an additional 82 million tons of both non-potentially acid generating (non-PAG) and potentially acid generating (PAG) waste rock, representing approximately 95.1% and 4.9%, respectively, of the total waste rock, will be removed. An average of 85,000 to 95,000 ounces of gold will be produced per year. Loaded carbon from the beneficiation process is trucked to permitted off-site facilities for recovery of gold and associated metals and the stripped, regenerated carbon is returned to the process.

Mining: The Emigrant deposit is mined by open pit methods at a rate of approximately 30,000 tons per day using 150-ton haul trucks. The single pit will be developed in eight phases over the 10-year mine life. The water table will not be penetrated and dewatering of the pit will not be required. Run-of-mine (ROM) ore is placed directly on the heap leach pad and the need for crushing is not anticipated. Lime is added to the ore prior to placement for pH adjustment but a need to agglomerate the ore has not been identified.

Heap Leach Pad: The heap leach pad design incorporates three phase-specific areas that will be constructed as ‘uphill’ footprint expansions in approximately 2-year intervals starting with the lower portion (Phase 1). All three phases were approved together, so additional Permit modifications are not required to construct each phase unless design changes are proposed. Phases 1 and 2 of the heap leach pad were constructed in two sub-phases each. Phase 1A was completed in the second quarter of 2012, Phase 1B, upgradient of Phase 1A, was completed in the fourth quarter of 2012, Phase 2A was completed in September 2014, and Phase 2B, cross-gradient to Phase 2A, was completed in October 2014.

The individual Phase 1, 2, and 3 footprints comprise respective areas of approximately 5.5, 3.7, and 2.6 million square feet (ft^2) for a total leach pad footprint of approximately 270 acres. The fully constructed pad will measure approximately 3,000 feet across the widest portion and have a maximum length of approximately 6,000 feet along a northwest-southeast alignment within a shallow natural valley. Active leaching is planned to continue over a period of 14 years.

The base of the heap leach pad is graded in a southeasterly direction to follow existing topography. The grading will be completed in three construction periods consistent with the 3-phase pad expansion development design. Two existing drainages to the northeast and southwest of the pad centerline were used to locate the primary solution collection pipelines within the pad. Some areas of the pad base require up to 20 feet of vertical fill. A 600-foot long portion of the Phase 1 pad base, as measured from the toe, has a maximum slope grade of 1%. This flattened base platform enhances structural stability and allows placement of leach material in this area to the maximum design height of 300 feet above the liner surface. Also, in the area of the base platform, the southwestern portion is graded toward the leach pad centerline at 4% grade and the northeastern portion is graded to the centerline at a 6% grade to provide internal buttressing.

The balance of the leach pad base is graded to follow existing topography. The leach pad base elevation ranges from a high point of 5,965 feet AMSL in the northwest corner to a low of 5,765 feet AMSL in the south-central portion of the pad. Slopes range from 3% to 5%, but all grading directs solution flow to collection header pipelines, and the entire edge of the pad base is graded to slope inward for the first 200 feet from the edge of the pad. This ensures that all solution will remain internal to the heap leach pad footprint.

The leach pad base is constructed with a prepared subgrade comprised of a low permeability soil layer (LPSL). The LPSL is placed in maximum 6-inch thick compacted lifts of native and imported borrow material to form a minimum 12-inch thick subgrade. The design calls for a minimum 95% maximum dry density (American Society for Testing and Materials (ASTM) Method D1557) compaction or the compaction effort required to achieve a maximum in-situ coefficient of permeability (k) of 1.0×10^{-6} centimeters per second (cm/sec) or less. Laboratory testing with the proposed compaction effort and samples of the available materials have demonstrated k values in the approximate range of 9.0×10^{-8} cm/sec to 3.0×10^{-7} cm/sec.

The prepared subgrade is covered with a layer of 80-mil double-textured high-density polyethylene (HDPE) liner. The textured liner provides enhanced strength at the interface with the subgrade in some areas along the edge of the pad where slopes approach a 3 horizontal to 1 vertical (3H:1V) gradient with up to 50 feet in elevation differential.

A protective layer comprised of silty sand and gravel is placed on the HDPE liner to provide resistance to puncture during placement of overlying drainage layer or ROM materials. Although proposed in earlier designs, the Rain Mine Tailings Impoundment was not used as a source of protective layer material. The majority of the protective layer is a minimum 12 inches thick, but it increases to a minimum 18-inch thickness wherever pad slopes greater than 3H:1V (greater than 4H:1V for Phase 2) are constructed. Placement of the protective layer in the steeper areas requires adherence to specific earthwork protocols developed by the design engineer in coordination with the contractor.

The heap leach pad is loaded by phase and lift sequence in an upgradient direction in approximately 30-foot lifts. The maximum design height, as measured from the top of the synthetic liner in the Phase 1 pad platform area, is 300 feet and will accommodate a maximum of twelve lifts. Subsequent phases have a slightly thinner maximum height section due to the effects of topography and the uphill construction direction. Barren, dilute sodium cyanide solution, is pumped to the heap at a design rate of 7,000 to 9,000 gallons per minute (gpm) and applied to the ore with drip emitters or sprinklers at a rate averaging 0.006 gallons per minute per square foot (gpm/ft^2). The design leach cycle is for 90 to 100 days followed by a 7-day draindown.

The EDC Permit modification approved by the Division in July 2015 increased the maximum heap leach pad solution application rate Permit limit from 9,000 gpm to 12,000 gpm in anticipation of an accelerated mining schedule, but left the maximum application rate per area at 0.006 gpm/ft^2. The Permittee expects the average application rate per area to be 0.005 gpm/ft^2. The Permittee plans to increase the solution application rate gradually over several months to 12,000 gpm, maintain it at 12,000 gpm for approximately two years, and then decrease it gradually from 12,000 gpm to 8,000 gpm over approximately 18 months. The Permittee then plans to maintain the solution application rate at approximately 8,000 gpm for the anticipated remaining 18 months of operational life, ending in December 2020.

A non-fee proposal approved in December 2012 authorized the placement of up to 30,000 tons of PAG waste rock on the Phase 1B heap leach pad near its westernmost corner, and on the Phase 1A pad if necessary, in case any PAG waste rock is mined prior to construction of the In-Pit Backfill Waste Rock Disposal Facilities, which are the primary disposal locations for PAG waste rock. The application of leach solution to any PAG waste rock placed on the new heap leach pad was prohibited by the Division; however, use of PAG waste rock for ramp construction was authorized. Standard berms or swales shall be employed to ensure that no meteoric water or process solution flows off the leach pad via the ramps. Any PAG waste rock intended for placement on the leach pad was to be characterized and reported in the next quarterly monitoring report with its location specified. No PAG was ever placed on the heap leach pad and in July 2015 the approval had expired. The In-Pit Backfill Waste Rock Disposal Facilities had been constructed and were being used for PAG waste rock placement in place of the heap leach pad.

Heap Leach Pad Solution Collection and Conveyance System: The protective layer of the heap leach pad is covered with a drainage layer that contains solution collection pipelines. Based on a maximum solution delivery rate of 9,000 gpm (increased to 12,000 gpm with the July 2015 EDC approval) and a maximum solution application rate to the heap material of 0.006 gpm/ft^2, a 4-inch diameter perforated drainage collection pipeline size, a 30-foot pipeline spacing, a target k value ranging between 1.0 x 10^{-2} and 1.0 x 10^{-1} cm/sec, and a 12-inch thick drainage blanket, comprised of coarse aggregate material, are specified.

The leach pad solution collection pipeline system, located within the drainage layer, includes a network of 4-inch diameter perforated corrugated polyethylene tube (CPT) pipelines, placed on approximately 30-foot centers in herringbone patterns generally perpendicular to the leach pad gradient. These small diameter pipelines collect and direct leach solution to perforated CPT intermediate solution collection header pipelines of increasing diameter, from 8-inch to 12-inch to 15-inch, that ultimately convey solution into 24-inch diameter perforated CPT main solution collection header pipelines.

The phased heap leach pad and solution collection pipeline system and pad grading plan are designed to divide the completed pad into 10 internal drainage collection areas. Based on the design, the leach pad Phase 1 contains five areas, Phase 2 contains three areas, and Phase 3 contains two areas. Solution from each internal drainage area reports through smaller diameter perforated CPT pipelines to a single main solution collection header pipeline constructed of perforated CPT within the collection area. Downgradient of a respective internal collection area, each header pipeline transitions to solid HDPE to convey solution from the pad and allow division of flow within the pad.

Each 24-inch diameter main solution collection header pipeline is placed within a solution channel, internal to the leach pad footprint, formed as a depression within the leach pad base during construction of the pad subgrade, liner, and overlying protective and drainage layers. The channel is designed as an inverted trapezoid, approximately 4.5 feet deep and 10 to 18 feet across the base. The channel is filled to the top with drainage layer material, capped with a layer of 10 ounce per square yard (oz/yd^2) non-woven geotextile to filter fines migrating from the overlying material, and the geotextile is covered with 1 or 2 feet of drainage layer material to form a uniform surface, level with or above the surrounding drainage layer. Within the channel, the main solution collection header pipeline is encapsulated in a zone of select gravel within the drainage layer to enhance flow. In the Phase 2 leach pad, the 10 oz/yd^2 geotextile encloses the select gravel zone around the main solution collection header pipeline within the channel, rather than capping the drainage layer over the channel.

Each main solution collection header pipeline has a dedicated process component monitoring system (PCMS) leakage collection system constructed below this area of concentrated process solution flow. The PCMS consists of an inverted trapezoidal-shaped envelope of 1-foot thick subgrade material extending downward from the base of the overlying internal solution channel. The base and sides of the envelope are lined with 80-mil double-textured HDPE liner and filled with select gravel encapsulated with 10 oz/yd^2 non-woven geotextile. PCMS solution collection pipelines are constructed of perforated 4-inch diameter CPT placed within the gravel-filled envelope. An individual perforated CPT collects any escaping solution within a specific internal drainage collection area of the pad and the CPT transitions to 6-inch diameter solid HDPE pipe at the downgradient limit of the designated collection area to convey solution to a PCMS Recovery Sump (Refer to Heap Leach Pad Solution Collection Sump). This design allows application of solution to cease in an area of the heap that exhibits leakage while maintaining solution application to and production from other unaffected portions of the heap leach pad.

Each PCMS reports to a dedicated Recovery Sump located at the downgradient toe of the heap leach pad. Between the toe of the pad and the recovery sump, outside of the pad containment, each 6-inch diameter solid HDPE PCMS conveyance pipeline is located inside a 12-inch diameter solid HDPE secondary containment pipeline. Each PCMS Recovery Sump is constructed as a vertical 10-inch diameter HDPE riser pipe with a bottom end cap inside a vertical 36-inch diameter HDPE secondary containment riser pipe with a bottom end cap. The tops of both risers are capped or blind flanged to prevent meteoric egress. A submersible pump, plumbed inside the 10-inch diameter Recovery Sump, discharges any collected solution to the adjacent lined Solution Collection Sump (Refer to Heap Leach Pad Solution Collection Sump). The primary and secondary risers of the sump are also constructed with passive overflow pipes that report by gravity to the Solution Collection Sump in the event of an emergency such as power or pump failure.

Heap Leach Pad Solution Collection Sump: The six Phase 1 and Phase 2 heap leach pad 24-inch diameter main solution collection header pipelines (three perforated Phase 1 pipelines and three solid Phase 2 pipelines) exit the south-central toe of the heap leach pad. The perforated pipelines collect any free-flowing solution in the lined area at the toe of the pad before transitioning to solid HDPE pipelines. All six pipelines are booted to the downgradient 80-mil HDPE-lined solution Retention Berm and pass through it into a downgradient lined and leak-detected Solution Collection Sump. Two solution collection header pipelines from the Phase 3 heap leach pad expansion enter from the east and bypass the Retention Berm to tie directly into two of the 24-inch diameter pipelines within the Solution Collection Sump containment.

The Retention Berm and Solution Collection Sump are constructed with a 12-inch thick prepared subgrade ($k \leq 1.0 \times 10^{-6}$ cm/sec) and 80-mil HDPE primary and secondary liners. A layer of HDPE geonet between the liners will recover any solution escaping primary containment and convey it to a gravel-filled, 10 oz/yd^2 non-woven geotextile-lined, subgrade leakage collection and recovery system (LCRS) sump. A 12-inch diameter HDPE inclined riser pipe, placed between the geonet and the underlying secondary liner along the sideslope of the Solution Collection Sump, daylights at the lined crest to allow evacuation of the LCRS sump.

Within the Solution Collection Sump, the pipelines are covered with at least 2 feet of heap leach pad drainage material. In addition, a series of tees, crosses, reducers, and valves on the pipelines within the sump area transition the 24-inch diameter pipelines to 30-inch diameter pipelines and allow the operator to control solution flow from different internal areas of the heap leach pad and direct it to different destinations. For example, solution can be directed to either the CIC Plant or the Pregnant Tank, or simultaneously to both. The pipeline and valve arrangement also incorporates flexibility of design that will allow for future separation of low-grade and high-grade solutions ("low-preg" and "high-preg", respectively) for different treatment or for bypassing the process circuit completely to recycle the solution.

The downgradient side of the Solution Collection Sump is constructed with a Launder Berm that reports to the Solution Channel. The surface of the Launder Berm and associated spillway are lined with a single layer of 80-mil HDPE. Like the Retention Berm described above, the Launder Berm is constructed above the double-lined and leak-detected system of the Solution Collection Sump for secondary containment purposes. Booted to the Launder Berm liner and penetrating the berm from the collection sump into the downgradient Solution Channel are two 30-inch diameter solid HDPE stormwater diversion pipelines, a 30-inch diameter solid HDPE pregnant solution pipeline to the Pregnant Tank, a 30-inch diameter solid HDPE pregnant solution pipeline to the CIC Plant, a blind-flanged 24-inch diameter solid steel return pipeline from a future recycle system to be permitted separately, and a 24-inch diameter solid steel barren solution return pipeline. The steel pipelines are designed for pressurized (pumped) flow, whereas the HDPE pregnant pipelines are designed for gravity flow, at least from the leach pad to the first (i.e., northwestern-most) connection to the Process Building, beyond which one of the 30-inch diameter HDPE pregnant pipelines is used in the reverse direction as a pumped return line from the Pregnant Tank back to the Process Building.

Solution Channel: The constructed Solution Channel measures approximately 870 feet long from its beginning at the Solution Collection Sump to its terminus at the Pregnant Tank and Operational Pond #2. Solution conveyance pipelines in the channel are covered with a layer of drainage material to enhance access across the channel and minimize movement caused by thermal expansion and contraction. The trapezoidal channel is constructed with a 12-foot wide base and a depth of five feet with 2.5H:1V sideslopes. The Solution Channel is designed to convey, at a depth of 0.5 feet, free flow of 9,000 gpm. Any free-flowing solution in the channel will flow by gravity through the drainage material to the two double-lined and leak-detected operating ponds.

The Solution Channel is constructed as a double-lined and leak-detected containment area for process pipelines and for conveyance of collected stormwater. The liner system is constructed with a 12-inch thick prepared subgrade ($k \leq 1.0 \times 10^{-6}$ cm/sec) and 80-mil HDPE primary and secondary liners. A layer of HDPE geonet between the liners will recover any solution escaping primary containment and convey it to a gravel-filled, 10 oz/yd^2 non-woven geotextile-lined, subgrade LCRS sump. A 12-inch diameter HDPE inclined riser pipe, placed between the geonet and the underlying secondary liner, daylights at the lined crest of the channel adjacent to the Pregnant Tank and the inlet to Operational Pond #2. Solution evacuated from the LCRS sump is discharged to the channel. The pipelines in the Solution Channel are laid on top of an 80-mil HDPE wear sheet.

Pregnant Solution Tank: Under normal operating conditions, leach solution is conveyed from the Solution Collection Sump directly to the CIC Plant. Alternatively, all or a portion of the available leach solution can be diverted from the Solution Collection Sump to the Pregnant Solution Tank through a dedicated 30-inch diameter HDPE inlet pipeline that enters on the lower side of the tank to accommodate draining for maintenance or during freezing weather and allow later introduction of solution to the CIC circuit. The tank is also designed with a 12-inch diameter pumpback and recirculation pipeline to accommodate receiving flow from the Operational and Stormwater ponds. The Pregnant Tank adds flexibility to process solution management and can be used to settle out sediment during early heap leach pad commissioning, allows bypassing the main CIC circuit during periods of maintenance or periods of excess flow from the heap, and supports future segregation of high-grade and low-grade leach solutions for selective processing in the CIC Plant or recirculation back to the heap leach pad.

The Pregnant Tank is located at the downgradient southeastern limit of the Solution Channel, adjacent to Operational Pond #2, and measures approximately 20 feet high and 30 feet in diameter, with a design capacity of approximately 90,000 gallons. The tank is mounted on a standard concrete ring wall with an interior sand foundation for the tank constructed on a bermed area sloped to the Solution Channel and Operational Pond #2 liners. The sand foundation is constructed with a gradient toward a low point and covered with a layer of 80-mil, double-textured HDPE liner that provides tank leak detection. The liner will collect any leakage from the tank and direct it through the ring wall to a discharge point on the pond and channel liner system.

Three vertical turbine pumps, a single variable drive pump with a 500 to 3,000 gpm operating range and a pair of constant drive 3,000 gpm pumps, are used to convey solution, at 500 to 9,000 gpm, from the tank through a 30-inch diameter HDPE pipeline to the CIC plant. The 30-inch diameter pipeline also ties into the 30-inch diameter pipeline feeding the CIC plant from the Solution Collection Sump. The conveyance pipeline is branched and valved to control solution flow to the CIC from either the Solution Collection Sump (gravity) or the Pregnant Solution Tank (pumped). As a future modification, an additional 24-inch diameter steel pipeline could be installed in the Solution Channel to bypass the CIC circuit and pump directly to the barren solution circuit for recycle to the heap leach pad. A fourth pump could also be added for the latter option. The tank is also equipped with a 30-inch diameter overflow pipeline to control upset conditions. A valve on the overflow pipe allows flow to be directed to either Operational Pond.

Process and Stormwater Ponds: The process circuit incorporates three process ponds, Operational Pond #1, Operational Pond #2, and the Stormwater Pond. Operational Pond #1 is located northwest of Operational Pond #2, and the Stormwater Pond, which is larger than the others, is located on the northeast side of both Operational Ponds. All ponds are double-lined and leak detected. When the Permit was initially issued in 2011, the Permittee envisioned not using the Operational Ponds and Stormwater Pond continuously for process solution management, only using them when solution volumes generated were in excess of what could normally be managed by the Pregnant Tank and the process circuit. This condition was expected to occur periodically due to maintenance requirements, meteoric events, or a combination of the two. However, with the July 2015 EDC approval of an increase in the heap leach pad solution application rate to 12,000 gpm, it is anticipated that the three process ponds will be used routinely for process solution.

Operational Ponds #1 and #2 are constructed within a single excavated 25-foot deep footprint and measure approximately 700 feet by 330 feet between the interior crest edges. The ponds are separated by a lined internal berm spanning the narrow dimension with a height of approximately 7 feet and crest width of 10 feet. The low berm eliminates the need for a spillway between the operating ponds and provides a combined capacity of 26.2 million gallons below the 3-foot design freeboard (i.e., 3 feet below the pond crest). Each Operational pond has a capacity of 2.7 million gallons below the internal berm elevation.

The Operational Ponds and internal berm are constructed with 2.5H:1V sideslopes. Each pond is constructed with a 12-inch thick prepared subgrade ($k \leq 1.0 \times 10^{-6}$ cm/sec) at a minimum 1% gradient toward the corner with the internal berm opposite the pond inlet. A layer of HDPE geonet between the 80-mil HDPE primary and secondary liners will recover any solution escaping primary containment and convey it to a gravel-filled and 10 oz/yd^2 non-woven geotextile-lined subgrade LCRS sump measuring 25 feet on a side and 2 feet deep. In addition to the geonet, a 4-inch diameter perforated CPT is placed between the liners along the toe of each pond sideslope adjacent to each side of the LCRS sump to provide enhanced drainage of any escaping solution and direct it to the collection sump. A 12-inch diameter HDPE inclined riser pipe, placed between the geonet and the underlying secondary liner along the sideslope of each pond, daylights at the lined crest to allow evacuation of the LCRS sump.

Operational Pond #1 is constructed with a lined spillway that reports to the adjacent Stormwater Pond. There are no other spillways associated with either the Operational or Stormwater Ponds. The spillway, designed with a 20-foot wide base and a 3-foot depth, has 80-mil HDPE primary and secondary liners and a geonet layer to collect any leakage and convey it to the LCRS sump for Operational Pond #1. The spillway LCRS slightly overlaps the adjacent Stormwater Pond liner system and the liners are extrusion-welded shut to physically isolate each individual LCRS from the other. The invert of the spillway is approximately coincident with the minimum 3-foot freeboard solution level in the Operational and Stormwater Ponds; therefore, the spillway provides an approximate visual datum for determining compliance with the minimum 3-foot freeboard limit.

The Stormwater Pond measures approximately 700 feet long by 420 feet wide at the interior edge of the crest, and is 25 feet deep. The Stormwater Pond is constructed to the same specifications and with the same liner system and LCRS system as that used for construction of the Operational Ponds. The constructed pond capacity, at the 3-foot freeboard elevation, is approximately 34.4 million gallons.

The combined capacity of the two Operational Ponds and the Stormwater Pond, at the 3-foot freeboard level, is approximately 60.6 million gallons. The combined capacity of the three ponds at the crest is approximately 74 million gallons. Revised water balance calculations submitted with the July 2015 EDC indicate that the required capacity for the 100-year, 24-hour storm event flow (11.2 million gallons), plus draindown resulting from an 8-hour power interruption (4.6 million gallons), plus the normal pond operating volume (3.5 million gallons), plus the average monthly precipitation on the ponds and leach pad (15.4 million gallons) totals 34.7 million gallons, which indicates an excess available total capacity of 25.9 million gallons in the three ponds, even with the heap leach pad solution application rate increased to 12,000 gpm. Another method of calculating heap leach pad draindown, which was included in the July 2015 EDC approved by the Division, is based on historic precipitation records, a revised water retention factor for the ore calculated from past make-up water usage data, and a probabilistic climatic modeling approach using GoldSim software. The GoldSim model predicts a maximum required pond storage of approximately 53 million gallons over the remaining operating life, which would leave an available total capacity of at least 8 million gallons in the three ponds with the approved maximum 12,000 gpm solution application rate.

All three ponds are equipped with a pumpback and recirculation system that allows evacuation of solution for conveyance to another pond or to the Pregnant Tank for distribution to the CIC circuit or the heap leach pad. Each pond has a sloping decant constructed of a 12-inch diameter, standard dimension ratio (SDR) 11, HDPE pumpback pipeline sleeved within a 15-inch diameter carbon steel reclaim pump tube that houses a 1,000 gpm submersible pump. The inlet of each pond decant is located within a depressed evacuation sump constructed in the corner of the pond above the LCRS sump. The pond sideslope HDPE liner is protected by placing a conveyor belt wear sheet beneath the reclaim tube on a layer of 10 oz/yd^2 non-woven geotextile. The decants connect to a 12-inch diameter, SDR 11, HDPE pipeline aligned along the pond crest that connects to the Pregnant Tank via a 12-inch diameter steel standpipe. An EDC Permit modification approved by the Division in March 2014 changed the alignment of the pumpback and recirculation pipeline from around the southeast crest of the Operational Ponds to around the northwest crest of the Operational Ponds for greater operational flexibility. Blind flanges were installed in the previous pumpback and reclaim pipeline to terminate its use. Five 4-inch diameter HDPE drain pipelines, equipped with gate valves, tee off of the pumpback and recirculation pipeline at various locations to direct solution back into the three process solution ponds as needed. Wear sheets are provided under each drain line.

Pond Embankment Geotechnical Assessment: A slope stability analysis was conducted as part of the pond embankment design for both static and seismic loading conditions. Cross sections through the downgradient Operational Pond #2 and the Stormwater Pond embankments were modeled using the computer program XSTABL Version 5.206. For both cases, the calculated Static Factor of Safety was 1.9 and the Pseudostatic Factor of Safety was 1.3. The embankments for the Operational Pond #2 and the Stormwater Pond required fill depths of up to 34 and 40 feet respectively. Based on analysis through the embankment cross sections in areas of maximum fill, the Stormwater Pond embankment was anticipated to settle 1 foot during construction and ½ foot post-construction and the Operational Pond #2 embankment exhibited potential to settle less than ½-foot post-construction.

Carbon-in-Column (CIC) Process Circuit: Gold and other precious metals are recovered from pregnant leach solution using CIC technology in a carbon adsorption process circuit. The process circuit is contained within the Process Building, which measures approximately 250 feet long, 50 feet wide, and 65 feet tall. The building is constructed on a 12-inch thick, steel-reinforced concrete slab with stemwalls for secondary containment. Small spills report to a central floor sump and are pumped to the elevated 7,000 gallon Barren Solution Tank located within the building.

A pair of 18-inch diameter HDPE pipelines are attached to two drop structures constructed approximately 120 feet apart within the process building slab. The structures and pipelines convey any large spill volumes through the building stemwall into two pipe containment trenches, the North(west) Pipe Containment Trench and the South(east) Pipe Containment Trench, which parallel each other approximately 120 feet apart and connect the Process Building with the Solution Channel. The two pipe containment trenches are each approximately 120 feet long and are constructed with the same 80-mil HDPE primary and secondary liner and geonet LCRS system (with 80-mil HDPE wear sheet) design and specification as the Solution Channel. Any trench leakage will report to the Solution Channel leak detection sump.

An external, curbed, reinforced concrete Reagent Pad, measuring approximately 95 feet long by 35 feet wide is located outside the southwest wall of the Process Building. The Reagent Pad is hydraulically linked to the Process Building, via sumps and pumps, and provides secondary containment for reagent storage tanks. The tanks include two 16-foot high by 12-foot diameter, 13,000-gallon sodium cyanide tanks, a single 3,500-gallon antiscalant tank, and a single 260-gallon sodium hydroxide tank. A reinforced concrete drive-on, drive-off load-out pad, hydraulically linked by gravity to the Reagent Pad, provides access and secondary containment during reagent deliveries.

The process circuit can receive pregnant solution either directly from the heap leach pad or from the Pregnant Solution Tank. 18-inch diameter steel and 30-inch diameter HDPE pipelines in the two pipe containment trenches connect the pregnant pipelines in the Solution Channel with the CIC tank trains in the Process Building. Additional pipe connections and valves were added as part of the July 2015 EDC construction to provide more flexibility for pregnant solution to be delivered to the Process Building via either of the two pipe containment trenches and from either the leach pad or the Pregnant Solution Tank.

The carbon adsorption process circuit was originally comprised of two trains of six CIC tanks each. The elevated tanks (columns) measure approximately 11 feet high by 12.5 feet in diameter. A third train of five CIC tanks was added as part of the July 2015 EDC (construction completed in December 2015), on existing secondary containment within the southeast end of the Process Building. For all CIC trains, pregnant solution is pumped through the series of columns, and activated carbon particles that adsorb the gold and other metals are advanced counter-current through the columns. Together, the three CIC trains are designed to handle up to the maximum permitted 12,000 gpm solution throughput.

Barren solution from the CIC trains that has had the gold and other metals removed by the activated carbon is recycled to the Barren Solution Tank where additional sodium cyanide is added and the pH is adjusted upward prior to pumping back to the heap leach pad. The Barren Solution Tank was also designed to receive “low-preg” solution from the Pregnant Tank if desired for recirculation to the leach pad. Typically, barren solution is pumped from the Barren Solution Tank by three dedicated vertical turbine pumps (two operational, one standby), at up to 12,000 gpm, through a 24-inch diameter carbon steel pipeline to the heap leach pad. However, the Barren Solution Tank is also equipped with a 30-inch diameter HDPE overflow pipeline that can convey excess solution directly to Operational Pond #1 instead.

The metal-bearing or “loaded” carbon is routinely removed from the columns and trucked to the refinery located at the Permittee’s Mill 5/6-Gold Quarry-James Creek Project (NEV0090056) where the carbon is “stripped” of metal values with a caustic solution. The solution is processed to produce a doré bullion that is shipped off site for further refining. The stripped carbon is typically reactivated and returned to the process circuit for reuse.

Heap Leach Pad Evapotranspiration (ET) Cover Study: A Schedule of Compliance item in the original Permit required that prior to constructing Phase 2 of the heap leach pad, the Permittee was to submit, and obtain approval of, an ET cover study utilizing proposed local borrow source materials and local climate data to demonstrate the adequacy and effectiveness of a minimum 2-foot thick closure cover, or an alternative as may be required by the study results, to effectively reduce the infiltration of meteoric water into the heap leach pad during final closure of the facility. The cover design and E-cell study report was conditionally approved on 31 March 2014, provided that Division comments were addressed and the report is resubmitted with the 2016 Permit renewal application. This was formalized as a Permit requirement concurrent with the July 2015 EDC approval.

The Division concerns were not addressed with the 2016 Renewal application and a weather station was not installed to record pan evaporation at Emigrant. This prompted two Schedule of Compliance items to be included in the renewed Permit requiring the pan-evaporation site to be installed and initiate monitoring by May

2017 and address all other comments in the 31 March 2014 Division correspondence, with a revised cover design and E-cell study report, to be submitted by 14 March 2021 or two years before final closure, whichever occurs first.

Waste Rock Disposal and Management: During the planned 10-year period of active mining, approximately 92 million tons of ore (revised to 99 million tons in 2015) and 82 million tons of waste rock will be generated. Based on extensive pre-mining characterization (mineralogy, net carbonate value (NCV) by LECO-type analysis, acid-base accounting (ABA), paste pH, peroxide acid generation, biological acid production potential (BAPP), meteoric water mobility procedure (MWMP) static test work, and humidity cell kinetic tests), approximately 4 million tons (revised to 4.8 million tons in September 2018) of the total waste rock has been classified as PAG and the remainder as non-PAG. An approved waste rock management plan is used to handle and dispose of all waste rock. In accordance with the Permit, the approved waste rock management plan, and an "Adaptive Management Plan for Waste Rock" (AMP) required by the U.S. Bureau of Land Management (BLM), waste rock characterization will continue throughout the life of the mine and adjustments to the management plan and handling protocols will be incorporated as approved and necessary.

Waste rock is disposed in one External Waste Rock Disposal Facility (WRDF) and in multiple In-Pit Backfill WRDFs constructed within the excavated Emigrant Pit as the mining operation progresses. The External WRDF will receive only non-PAG waste rock (and petroleum-contaminated soil; see below) and the pit areas will receive both non-PAG and PAG waste rock, to be placed in strict accordance with the approved waste rock management plan. As noted above, the Permittee is also authorized to place a small amount of PAG waste rock on a specified area of the Phase 1 leach pad if PAG waste rock is mined prior to construction of the In-Pit PAG WRDFs.

External WRDF: The non-PAG External WRDF was constructed in early 2012 at a location approximately midway between the upgradient limit of the heap leach pad and the downgradient edge of the proposed maximum pit footprint. The base of the facility was grubbed and graded to a uniform 1% gradient to create a footprint that measures approximately 1,200 feet wide by 2,400 feet long. Upgradient stormwater diversions are constructed to manage the 100-year, 24-hour storm event run-on flows and containment berms are constructed to the 25-year, 24-hour storm event flows. The 93-acre facility has a capacity for up to 12 million tons of waste rock and is loaded in 20- to 50-foot lifts, graded to maintain a minimum 1% surface gradient and compacted by haulage traffic. The final reclamation top surface will be graded at 1% to 5% to prevent ponding of meteoric water and minimize infiltration and the sideslopes will be graded to an average 2.5:1V slope.

In-Pit Backfill WRDFs: Approximately 66.4 million tons of non-PAG waste rock and 4 million tons of PAG waste rock will be placed in In-Pit Backfill WRDFs located in mined-out portions of the Emigrant Pit. At the end of mining, seven of the eight phased pit development areas will be completely backfilled with waste rock. Because Emigrant Pit development will not penetrate the water table, inundation of waste rock by groundwater will not occur. However, procedures to limit contact with surface flow and meteoric water are incorporated into the waste rock management plan.

Non-PAG waste rock for in-pit disposal, with a demonstrated minimum acid neutralizing potential to acid generating potential ratio (ANP/AGP) ≥ 3, is placed in lifts directly on mined-out pit benches. The benches, most of which will terminate in and expose neutralizing Devils Gate limestone, will be prepared to provide a free-draining base that will promote drainage to daylight and to stormwater control structures external to the pit. The prepared benches will also inhibit the impoundment of meteoric water that could infiltrate the waste rock prior to final cover placement. The design will also inhibit infiltration of direct meteoric or run-on flows along highwall contacts following final reclamation.

All PAG waste rock for in-pit disposal will be disposed using the criteria discussed above for non-PAG waste rock placement in addition to an approved PAG Encapsulation Cell (PAG Cell) design and PAG Cell-specific waste rock management protocols. In summary, the latter shall include but not be limited to:

- PAG waste rock must be segregated and placed on pit benches with exposed limestone that has been drilled, blasted, and ripped to create a free-draining base to minimize the potential for water to collect or come into contact with waste rock within the PAG Cell;
- All PAG waste rock must be fully encapsulated with a minimum 10-foot thick layer of encapsulating material having ANP/AGP ≥ 3, which may include non-PAG material that meets all characterization and other criteria for encapsulation of a PAG Cell;
- Individual PAG Cell lift surfaces shall be graded and prepared with random wheel compaction to control surface water flow and inhibit infiltration;
- Snow accumulation greater than a 24-inch depth must be removed from the top surface of any PAG Cell, active or inactive, that is not completely encapsulated; and
- PAG Cells must be constructed to maintain the minimum encapsulation layer thickness in all dimensions following reclamation activities, which shall include sideslopes graded to ≤ 3H:1V, rounded top surfaces sloped at 1% to 5%, and placement of a minimum 2-foot thick growth media cover on all final surfaces.

All WRDFs will be inspected, monitored, and reported quarterly in accordance with the approved waste rock management plan and the Permit. The BLM-required AMP identifies specific required management actions that must be implemented if the quantity of PAG waste rock increases based on results of continued testing of waste rock materials. The AMP is noted only for reference purposes, although resulting actions may require modification of the Permit.

Stormwater Diversions: Stormwater diversion channels are designed and constructed to divert run-on and direct precipitation flow resulting from the modeled 100-year, 24-hour storm event. All diversion channels are designed as standard 10- and 20-foot wide trapezoidal shapes with 2.5H:1V sideslopes for ease of maintenance. Each channel is sized and the riprap dimension and armoring depth were calculated using the 100-year, 24-hour storm event flow characteristics.

Diversion channels are constructed to protect the External WRDF, heap leach pad, Process Building and adjacent area, Solution Channel, Pregnant Tank, Operational Pond #1 and #2, Stormwater Pond, and associated embankments. Diversion channels constructed along the upgradient extent of the Phase 1 and Phase 2 heap leach pad will be removed and replaced upgradient as phased construction proceeds. Small v-ditches are used to convey stormwater away from roads, and all diversions incorporate settling pools and sediment basins as required. Appropriately sized culverts are installed at all access, perimeter, and haul road crossings over stormwater diversions and will be removed as part of end of mine life reclamation unless the access route is to remain.

Permanent Emigrant Pit Diversion Channel: The drainages that convey surface flow from Emigrant Spring and Tonkin Spring converge into a single unnamed drainage on the west side of the proposed Emigrant Pit. The unnamed drainage transects the proposed pit footprint as it continues downgradient approximately 3 miles to the confluence with Dixie Creek. An engineered permanent Emigrant Pit Diversion Channel will be constructed to divert the ephemeral flow along a slightly revised alignment, approximately 5,000 feet long, through the recontoured pit surface.

The natural drainage reach through the Project area exhibits a gradient of 3% to 4% with fairly uniform trapezoidal channel shape, top widths up to 20 feet and depths of 5 to 10 feet. The channel narrows to 5 to 10 feet in width through the pit footprint and widens again toward the downgradient extent. The engineered diversion channel design closely replicates the natural channel width, gradient, and sinuosity.

Construction of the engineered channel will occur in two segments as the Emigrant Pit is developed. The first segment will be constructed midway through Phase 1 pit development. When Phase 1 mining is nearing completion and encroaching on the natural drainage, flows will be diverted to the first segment of the engineered channel that will have been tied into a remaining downgradient portion of the natural drainage. The second segment of the engineered channel will be constructed during the early portion of Phase 2 pit development and flow will be diverted from the remaining portion of the natural drainage within the pit footprint approximately midway through Phase 2 pit development. A description of basic design and construction elements and considerations follows.

The engineered diversion will incorporate an internal channel, the 'active' channel, constructed as a trapezoidal channel with 2H:1V sideslopes between two earthen berms constructed parallel to the pit highwall on one side (berm) and the pit bench edge (levee) on the other. The berms and active channel will be underlain by a 6-inch thick channel subgrade layer compacted to 95% maximum dry density (ASTM Method D1557) or the effort needed to achieve $k \leq 1.0 \times 10^{-5}$ cm/sec. The centrally located active channel will average 20 feet wide across the top, 5 feet wide at the bottom, and approximately 2.5 feet deep, and will be lined, from bottom to top, with a layer of geosynthetic clay layer (GCL), a 6-inch thick protective layer of clean gravel, and riprap to meet design specification. The active channel is designed to carry flows associated with the 2-year, 24-hour flood event (1.4 inches) flowing full, which is the flow that forms most natural channels.

The area of the engineered diversion, between the levee on the outer side of the 'active' channel and the highwall of the pit bench, will provide capacity for the 500-year, 24-hour storm event flow (3.9 inches). The area between the active channel berm and highwall will serve as a catch basin for large debris, a conveyance for run-off from the exposed highwall, and develop riparian habitat. Drop and check structures will be incorporated into the constructed channel at approximately 120-foot intervals to serve as gradient control and to provide longitudinal stability to the channel and riparian terraces as they develop.

The final configuration of the Emigrant Pit Diversion Channel through the Emigrant Pit footprint will not be known until the channel is completed based on actual pit and bench development. However, the upgradient inlet and downgradient outlet structures will be constructed immediately.

Diversion Channel Inlet and Outlet Structures: The inlet structure design includes a cutoff wall, an inlet diversion channel for transitioning the existing drainage into the in-pit portion of the Emigrant Pit Diversion Channel, and a small sidehill diversion channel to divert runoff from a southern catchment area into the inlet diversion channel. The cutoff wall will be constructed through alluvium to a minimum depth of 15 feet at a point approximately 950 feet upgradient of the Emigrant Pit where the natural drainage is confined and will minimize the length of cutoff wall required. Since the inlet structure will be a permanent structure, the design was based on the 500-year, 24-hour storm event flow.

The cutoff wall is designed to reduce subsurface flow in the alluvium with the purpose of minimizing seepage through the pit highwall. A permeability test conducted on a sample retrieved from a drill hole at a depth of 10 feet resulted in a k value of 2.3×10^{-8} cm/sec. The cutoff wall will be constructed by backfilling a 5-foot wide by 15-foot deep vertical-wall trench excavation with a 10:1 soil to bentonite mixture placed in 12- to 18-inch thick loose layers and compacted with a tamping foot roller to a density that will achieve a maximum in-situ permeability of 1.0×10^{-6} cm/sec.

The inlet diversion channel will be constructed by reshaping the existing ground surface with typical cut-and-fill methods at a 0.5% gradient from the cutoff wall to the intersection with the Emigrant Pit Diversion Channel along the highwall pit bench at an elevation of approximately 6,110 feet AMSL. The inlet diversion channel cross section will be trapezoidal in shape with a 16-foot wide channel bottom and 2.5H:1V sideslopes. The channel will be lined with bedding material placed on bedrock or alluvium to provide a uniform surface for placement of a layer of GCL that will provide a low permeability layer and promote lateral flow along the channel. The GCL will be protected by a minimum 9-inch thick layer of cover material or riprap as required.

The small sidehill diversion channel will convey surface flows from a small upgradient catchment area into the natural drainage through a 50-foot wide by 1.5-foot deep weir located upstream of the cutoff wall. The 500-foot long sidehill diversion will be constructed perpendicular to the catchment area slope as a trapezoidal shape with a 5-foot wide channel bottom and 2.5H:1V sideslopes. The channel excavation will be smoothed with a layer of bedding material prior to placement of a layer of GCL covered with a minimum 9-inch thick layer of protective cover material or riprap as required.

The Emigrant Pit Diversion Channel outlet structure located on the east edge of the Emigrant Pit incorporates a stilling basin constructed with a layer of 10 oz/yd^2 non-woven geotextile and a minimum 12-inch thick layer of riprap. Clarified flow overtops a 30-foot wide weir and reports to a pair of culverts that convey flow under the haul road. The culverts discharge to a 15-foot wide by 2.5-foot deep apron constructed with a layer of 12-inch diameter riprap that provide flow velocity reduction and a transition into the natural drainage during active mining. Once mining is completed, the haul road and culverts will be removed as part of reclamation and the stilling basin, weir, and apron will remain.

In late 2013, the Permittee constructed a ‘temporary’ in-pit diversion channel without prior design review by the Division. The Temporary Emigrant Pit Diversion Channel is effectively a replacement of the upstream segment of the Permanent Emigrant Pit Diversion Channel, with some design differences. The permanent Channel Inlet structure was constructed concurrently with the Temporary Diversion Channel. The Channel Outlet structure was previously constructed near the main haul road crossing. The Temporary Diversion Channel connects with the Channel Inlet structure, but discharges into the natural drainage upstream of the Channel Outlet structure (i.e., the downstream segment of the diversion channel between the Temporary Diversion Channel and the Channel Outlet structure has not yet been constructed). If the Permittee desires the Temporary Emigrant Pit Diversion Channel to remain permanently instead of constructing the previously approved Permanent Emigrant Pit Diversion Channel, a Permit modification must be reviewed and approved by the Division (concurrently with a similar proposal to the BLM), including a demonstration that the design will minimize contact between stormwater flow and any in-pit PAG WRDFs to achieve long-term chemical stabilization.

The Temporary Diversion Channel design differs from the previously approved Permanent Diversion Channel design in having a 2-foot thick compacted fine-grained soil subbase instead of a 6-inch thick subgrade covered with GCL and a 9-inch thick riprap bedding/GCL cover layer. The Temporary Diversion Channel also eliminates the large-boulder-keyed drop and check longitudinal stepped structure, employing an even longitudinal gradient instead. Other design differences include, but are not limited to, a more uniform minimum 1-foot thick riprap layer (average particle size (D_{50}) = 6-inch diameter), steeper 2H:1V channel side slopes, inner channel bottom width increased from 5 to 16 feet and depth increased from 2.5 to 3 feet, placement of a 20-foot wide roadway within the outer channel, and a slightly different overflow configuration at the Channel Inlet structure.

An EDC was approved by the Division in October 2014 for a temporary haul road crossing over the Temporary Emigrant Pit Diversion Channel near its downstream end where it discharges to the natural drainage. The haul road crossing provides more direct access to the Phase 3 pit, and will be removed once it is no longer needed, which is expected to be in approximately four years. The haul road crossing uses three 48-inch diameter, approximately 200-foot long, corrugated metal pipe (CMP) culverts, which are capable of conveying the calculated 100-year peak flow of 312 cubic feet per second in the diversion channel. The culverts are placed on compacted pipe bedding material and are covered by approximately 2 feet of compacted pipe backfill material and 4 feet of compacted random fill and road wearing course material. A 4-foot deep trench, filled with fine-grained soil with a compacted permeability no greater than 1.0×10^{-6} cm/sec, is constructed across the entire width of the diversion channel on the upstream side of the crossing to force flow through the culverts.

Petroleum-Contaminated Soil (PCS) Management Plan: An EDC to add a PCS Management Plan (PCS Plan) to the Permit was approved by the Division on 20 June 2014, and incorporated into the Permit document with the July 2015 EDC approval. The PCS Plan authorizes permanent disposal of non-hazardous PCS at a designated on-site PCS disposal location on the non-PAG External WRDF, provided that identified organic constituents of concern (COCs) are present in concentrations that do not exceed established screening levels. The COC list includes volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) that may be present in the various source types of PCS that are approved for management under the PCS Plan. A screening level is established for each COC via a risk assessment based on human toxicity data and anticipated exposure parameters for potentially complete exposure pathways, including, but not limited to, leaching to groundwater followed by ingestion of the groundwater. The Permit requires the performance of routine screening analyses for COCs to verify that the PCS meets screening levels. While screening analyses are performed, the PCS may be placed temporarily on the Interim Holding Pad (IHP), located in the Rain Pit (WPCP NEV0087011), or on the Washbay PCS Temporary Holding Pad, or be placed provisionally at the disposal location. PCS that does not meet screening levels may not be placed (or left) at the disposal location, but must be properly disposed in accordance with contingency plans and timeframes specified in the approved PCS Plan, including but not limited to, performance of a more detailed and site-specific risk assessment and/or disposal at an authorized off-site disposal location. Gasoline-contaminated PCS will not be managed under the PCS Plan, but will be disposed at an authorized off-site location in accordance with applicable regulations.

The IHP containment system includes a bermed low conductivity soil liner (minimum 12 inches thick with $k \leq 1.0 \times 10^{-7}$ cm/sec) covered with a waste rock layer to prevent desiccation of the underlying soil liner. The IHP includes a sump to collect stormwater and any other water that may drain from the PCS (e.g., water draining from washbay sediment PCS). A minimum 2-foot freeboard must be maintained above any fluid surface in the IHP. The IHP is divided into individual cells via 3- to 5-foot berms, to facilitate the required segregation and analysis of the PCS by source type. The IHP covers a footprint of approximately 94,090 ft^2, and has a total capacity of approximately 28,000 cubic yards (yd^3) of PCS.

An EDC for construction of the Washbay PCS Temporary Holding Pad (WTHP) was approved by the Division in October 2015. The WTHP is a reinforced concrete drying pad for PCS removed from the adjacent existing Washbay Sump. The WTHP measures 60 feet long, 30 feet wide, and up to 8 feet deep. The pad includes 8-foot high concrete walls on its north and east sides only, and is sloped downward toward those sides for drainage. The north wall of the WTHP is armored with a ½-inch thick steel plate for protection against loaders and other heavy equipment that may be used to place and remove PCS from the pad. Along the bottom of the east wall, the base of the WTHP is sealed, via an embedded polyvinyl chloride (PVC) retrofit waterstop and a surface sealant, to the adjacent wall of the existing Washbay Sump. PVC waterstops are embedded in all other concrete joints within the WTHP as well. Four 1-foot square holes through the bottom of the east wall of the WTHP allow drainage from PCS on the pad to flow into the Washbay Sump. In accordance with the PCS Management Plan, PCS may be removed from the WTHP and placed at the on-site PCS disposal location if the PCS meets screening levels.

An EDC was approved by the Division in September 2016 to incorporate an additional final disposal location for washbay and maintenance sump sediments located on the External Waste Rock Dump Facility (ExWRDF). The ExWRDF is located north-west of the Oxide Heap Leach Facility and contains approximately 93 acres, nearly 48 acres of which are located on private land that have been designated for PCS provisional and final placement. Wash bay sump effluent is routed to a collection sump to allow the solids to settle out. The residual petroleum remaining on the surface of the water are collected through an oil-water separator or skimmer, accumulated as skimmer sludge, and subsequently recycled for reuse. The skimmed water is used as road dust suppression, and any unskimmed water, suspension, sediments, and solids are collected and managed as PCS. Screening level analysis and characterization of residual wash bay material at the source of generation is completed, and after characterization, wash bay material meeting site specific screening levels will be transported to the ExWRDF for final placement.

C. Receiving Water Characteristics

The Project is located within the Emigrant Spring portion of the Dixie Creek watershed. Within the Project area, tributaries drain from the east side of the Piñon Range as relatively small ephemeral to intermittent channels, except for the upper reaches of the Emigrant Spring and Tonkin Spring drainages, located upstream and west of the Project site, which flow intermittently to perennially. Surface flow along these drainages typically disappears near the west (upstream) edge of the Project area except in response to large precipitation events or during periods of spring snowmelt. Approximately 5 miles east of the Project, the Emigrant Spring drainage feeds into Dixie Creek, which flows into the South Fork Humboldt River approximately 8 miles northeast of the Project. The South Fork Humboldt River flows into the Humboldt River approximately 12 miles north-northeast of the Project. Because of the tributary rule (NAC 445A.1239), surface water at the Project site is subject to the surface water quality standards for the South Fork Humboldt River at NAC 445A.1466 (the reach from Lee to the confluence with the Humboldt River), and to the water quality standards at NAC 445A.1236 that apply to the beneficial uses designated for that reach of the South Fork Humboldt River. The designated beneficial uses for the South Fork Humboldt River from Lee to the Humboldt River are watering of livestock, irrigation, aquatic life, recreation involving contact, recreation not involving contact, municipal or domestic supply, industrial supply, and wildlife.

Sampling of surface water flow occurred during periods of measureable flow from mid-2005 through late 2009 (prior to Emigrant Mine Project construction), at two locations west and upstream of the proposed Emigrant Pit area (one each in the Tonkin Spring and Emigrant Spring drainages, but downstream of the respective springs), and at a third location along the Emigrant Spring drainage east and downstream of the proposed Emigrant Pit at the eastern Project boundary. These three surface water sampling locations are now included in the Permit for routine quarterly monitoring for flow and water quality. Over the pre-Emigrant Project sampling period, the upstream locations reported occasional low-level exceedances of surface water quality standards for arsenic (up to 0.0657 milligrams per liter (mg/L)), iron (up to 3.99 mg/L), manganese (up to 0.561 mg/L), nickel (up to 1.004 mg/L), pH (6.48 to 9.15 standard units (SU)), selenium (up to 0.008 mg/L), and total dissolved solids (TDS; up to 700 mg/L). The downstream location reported occasional exceedances of surface water standards for iron (up to 4.47 mg/L) and pH (6.56 to 9.37 SU) only. Therefore, prior to construction of the Emigrant Project, the surface water upstream of the Project area had slightly poorer water quality than the surface water downstream of the Project area.

Groundwater in the Project area moves through bedrock consisting of tuffaceous volcanic rocks, and sedimentary rocks, including limestone, shale, siltstone, sandstone, and conglomerate. Limited groundwater occurs in localized deposits of unconsolidated alluvium along some drainages. The groundwater in the siltstone bedrock in the Project area generally flows west to east at a gradient of about 8%. A piezometer well encountered groundwater at a depth of approximately 100 feet below ground surface (bgs) on the west side of the Emigrant Fault within the Chainman Formation but a piezometer well on the east side of the fault did not encounter groundwater at a final depth of 360 feet bgs within the Devils Gate Formation. Exploration and condemnation drill holes in alluvium beneath the footprint of the proposed heap leach pad encountered groundwater at depths ranging from 145 to 590 feet bgs.

Sampling of Emigrant Spring, located upgradient of the facility, has been used as a proxy for groundwater quality. Data collected during the period 1994 through 2008, as a monitoring requirement of WPCP NEV0087011 for the Permittee's upgradient Rain Mine Project indicate the groundwater is a circum-neutral pH, bicarbonate water reporting occasional exceedances of the Division Profile I reference values for aluminum, arsenic, iron, and manganese. A monitoring well at the Rain Mine, located approximately 1.5 miles to the west of the proposed facility, contained adequate water for sampling during 2005 and 2006 and reported an exceedance only for selenium.

The Permit includes four groundwater monitoring wells for routine quarterly monitoring for water elevation and Profile I parameters. One well (EMW-5) is located downgradient of the non-PAG WRDF and upgradient of the heap leach pad. The other three wells are located downgradient of the heap leach pad, one of which (EMW-7) is also located downgradient of the Process Building and ponds. An EDC was approved by the Division in October 2015 to replace well EMW-5 with new monitoring well EMW-5R, because EMW-5 is located within the footprint of Phase 3 of the heap leach pad. After at least two concurrent sampling events at EMW-5 and EMW-5R, EMW-5 will be properly plugged and abandoned.

D. <u>Procedures for Public Comment</u>

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's 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 Effluent 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 and component footprint areas as well as routinely sampling of groundwater monitoring wells and surface water. 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: TJ Mohammed
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Revision 00: Renewal 2025 and boiler plate updates