FACT SHEET

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

Permittee Name: **Nevada Gold Mines LLC**

Project Name: **Long Canyon Project**

Permit Number: **NEV2014110**
Review Type/Year/Revision: **Renewal 2025, Revision 00**

A. Location and General Description

Location: The Long Canyon Project (LCP) is located in eastern Elko County, Nevada, within Sections 24 and 25, Township 36 North, Range 65 East; Sections 11 through 15, 17, and 19 through 36, Township 36 North, Range 66 East; Sections 1 through 6 and 9 through 16, Township 35 North, Range 66 East; Mount Diablo Baseline and Meridian. The LCP is situated on the eastern flank of the Pequop Mountains, approximately 27 miles east of Wells, Nevada and 31 miles west of West Wendover, Nevada, within the historic Pequop Mining District.

The LCP is located on 1,731 acres of public land administered by the Bureau of Land Management (BLM), Elko District—Wells Field Office and 2,144 acres located on private land. The total disturbance area for the LCP is 3,875 acres.

Newmont USA Limited dba Newmont Mining Corporation acquired the LCP and the Northumberland Mine (Water Pollution Control Permit [WPCP] NEV20070010) from Fronteer Gold Inc. (FGI) on 6 April 2011.

In July 2019, the LCP was transferred to the Barrick-Newmont joint venture – Nevada Gold Mines LLC (the Permittee).

Site Access: To access the LCP, proceed east on Interstate-80 from Elko or west from Wendover to *"Exit 378: State Route 233--Oasis/Montello"*. Proceed southeast on an unnamed dirt road (Elko County Road-790) approximately one mile to the LCP site.

General Description: The LCP facility is permitted to process up to 5 million tons of ore annually and is designed and constructed to operate and close without discharge or release in excess of those standards established in regulation except for meteorological events that exceed the 100-year, 24-hour storm event.

Initially, the facility will consist of an open pit, heap leach facility (HLF), carbon-in-column (CIC) plant, waste rock storage facility (WRSF), truck shop, administration building, and other support facilities. A mill and tailings storage facility are anticipated for future construction and are currently in the conceptual phase. Should the Permittee decide to proceed with construction of the proposed components, the Nevada Division of Environmental Protection-Bureau of Mining Regulation and Reclamation (the Division) will require the submittal of a Major Modification application for review and approval.

B. Synopsis

History: Documented mining and exploration activity in the vicinity of the LCP is limited to several small prospect pits for gold, silver, lead, and zinc. Gold-bearing jasperoids (e.g. rock consisting of cryptocrystalline, chalcedonic, or phenocrystaline silica) were discovered at Long Canyon in 1999 by Pittston Nevada Gold Company (Pittston) as a result of Pittston's follow-up work on previously defined stream sediments. Seven reverse circulation (RC) holes were drilled in 2000, one of which returned a significant gold intercept.

AuEx Ventures Inc. (Au-Ex) acquired the LCP from Pittston in 2005 and drilled seven additional RC holes, six of which intersected significant mineralization. A joint venture (JV) between FGI and AuEx was formed in 2006 when it was discovered that some of the AuEx claims were actually located over private mineral rights held by FGI and determined to be invalid. The JV subsequently completed 756 drill holes from 2006 through November 2010. In late 2010, FGI purchased AuEx and in 2011, the Permittee purchased FGI and further expanded FGI's exploration program. On 31 March 2014, the Permittee submitted a WPCP application for the LCP.

Geology: The LCP is located on the eastern slopes of the Pequop Mountains in northeast Nevada. This region is part of the Basin and Range Province of the western U.S within the hydrologic Great Basin. The project area is situated between elevations of approximately 5,600 and 7,000 feet above mean sea level (amsl), and the unnamed ephemeral drainages on the east facing slopes of the project area drain into Hardy Creek.

The Pequop Mountains comprise an uplifted block of regionally east-dipping Paleozoic carbonate and siliciclastic rocks. Rocks of particular interest to the Project include limestone and dolomite of the Cambrian Notch Peak Formation and limestone of the overlying Ordovician Pogonip Group. At the LCP site, the dolomite horizon at the top of the Notch Peak Formation has been subject to both low and high angle normal faulting. The margins of the dolomite strongly control the distribution of gold at the Project. There is also evidence of weak metamorphism in the area.

The general stratigraphy of the Long Canyon Project Area begins with the Upper Cambrian Notch Peak Formation, which consists of several hundred feet of massive-to-thinly bedded limestone. Overlying this limestone is a massive gray to dark gray dolomite with local chert ribbons and nodules. There is an erosional unconformity between the Upper Cambrian Notch Peak Formation dolomite and the overlying Ordovician Pogonip Group, which is comprised of thin to medium bedded dolomite.

The Upper Ordovician Eureka Quartzite overlies the Pogonip Group. The Late Ordovician to Silurian Fish Haven Dolomite and Permian Pequop formations are units presently mapped on the northern boundary of the Project Area that overlay the Eureka Quartzite. Mafic sills and dikes are present in the Project Area with varying degrees of alteration. Initial studies suggest the igneous units are Jurassic in age.

The structural geology of the Long Canyon Project Area includes evidence of at least four deformational events, as well as reverse and normal faulting site.

Mineralization: Gold mineralization at the LCP site occurs mainly within limestone along dolomite margins, both in the Notch Peak along the lower margin and in the Pogonip along the upper margin. Significant karsting, likely of both meteoric and hydrothermal origin, is localized along the dolomite margins, resulting in large, solution-collapse cavities. Much of the higher grade mineralization is hosted within the carbonate rocks of Cambrian-Ordovician age (400 – 570 million years ago), specifically the limestone of the Ordovician Pogonip group and the limestone and dolomite of the upper Cambrian Notch Peak Formation.

The limestone of the Pogonip group is light to dark gray, while the limestone and dolomite of the Notch Peak Formation are predominantly light gray. There has been weak metamorphism in the project area, and both high angle and low angle structures control the mineralization. Gold mineralization occurs mainly within the limestone along dolomite margins. Significant karsting is localized in these areas. Much of the higher grade mineralization is hosted in hematitic matrix of collapse breccias, as well as in adjacent zones of strata-bound mineralization characterized by strong decalcification. All of the mineralized zones discovered to date are oxidized.

Ore and Waste Rock Characterization: A characterization program was undertaken by the Permittee to investigate the potential for development of acid rock drainage (ARD), metals and metalloids leaching from the WRSF and HLF at the LCP.

Samples used in the LCP waste rock characterization program were obtained from drill core generated during the exploration program. A total of 58 sample intervals were selected within the proposed pit boundaries to represent the waste rock material types that will be encountered during mining.

The static test methods used for the LCP waste rock characterization program included multi-element analysis using four-acid digest and ICP-MS analysis, Nevada Modified Sobek Acid Base Accounting (ABA), Net Acid Generation (NAG) test and the Nevada Meteoric Water Mobility Procedure (MWMP).

Although static testing can be used to validate acid generation or neutralization potential of ore and waste rock, the tests do not consider the temporal variations that may occur in leachate chemistry as a result of long-term changes in oxidation, dissolution and desorption reaction rates. To address these factors, kinetic testing (humidity cell testing) was initiated pursuant to American Society for Testing and Materials (ASTM) Method D-5744-96.

The ABA data indicated that the carbonate-rich sedimentary host rocks of the LCP deposit contain significant neutralization capacity, despite the presence of minor amounts of sulfide-bearing minerals. Waste rock and ore samples meet the more-stringent BLM non-acid generating criteria (ANP/AGP ≥ 3.0). None of the samples tested showed an uncertain potential for acid generation. In addition, NAG test results support the ABA prediction and confirm that no acid generation is predicted for the LCP with alkaline NAG pH values for all samples. The spent ore samples included in this study were also found to contain significant neutralizing capacity and are predicted to be non-acid generating from both the ABA and NAG results. No measurable sulfide sulfur was detected in either the waste rock or ore samples.

MWMP results are consistent with the ABA and NAG results and indicate that the waste rock material types associated with the LCP demonstrate a low potential to generate acid or leach metals. MWMP leachate characterization data were compared to the Division's Profile I reference values to determine which constituents could potentially be leached at concentrations above these values. From this comparison, all constituents were below reference values with the exception of arsenic and mercury, which are consistently leached at concentrations above the reference values under circum-neutral to alkaline conditions.

The potential for metal leaching from spent ore material is also low with the exception of antimony, arsenic and mercury that were consistently above the Profile I reference values in the pregnant leach solution from the metallurgical columns. Therefore, these constituents are predicted to be elevated in the heap leach process solution. After rinsing the metallurgical columns with de-ionized water, mercury values dropped below the Profile I reference value and antimony and arsenic concentrations decreased but generally remained above the Profile I reference values. From these results, antimony and arsenic are predicted to be elevated in the heap leach facility drain down solution at closure as well as during operations.

Humidity cell testing (HCT) was conducted on 8 samples of waste rock and 4 samples of spent ore. Approval to terminate the cells was received from the BLM and the Division in a letter dated 18 August 2011 and the waste rock cells were terminated after 53 weeks of testing and the spent ore cells were terminated after 45 weeks of testing. The HCT results confirm the predictions for acid generation, metal, and metalloid leaching from the static test results and indicate the ore and waste rock material associated with the LCP is not acid generating but the potential does exist for antimony, arsenic, mercury, and thallium to leach under circum-neutral to alkaline pH conditions. Although mercury and thallium concentrations in the solute were typically elevated above the Division's reference values initially, additional rinsing quickly removed the metals. It was therefore concluded that the solute release for these constituents is mass limited. Antimony release rates did not decrease as rapidly as mercury and thallium; however the constant release of antimony from the HCTs also indicates mass driven release. Arsenic release rates showed little change in the HCTs over the course of the test, suggesting arsenic release is driven by mineral dissolution or desorption of adsorbed arsenic species on solid mineral phases in the cell under the relatively constant pH conditions.

Hydrology: Two major hydrogeologic units have been identified within the LCP site – The Basin Fill/Alluvial Aquifer and the Carbonate Bedrock Aquifer. The Basin Fill/Alluvial Aquifer is the youngest in geologic time and iscomprised of Cenozoic basin fill within the Goshute Valley. The basin fill consists of Quaternary and Tertiary alluvial deposits along the valley margins and Quaternary alluvial lake deposits within the interior portions of the valley.

The Carbonate Bedrock Aquifer is the older of the two aquifers with respect to geologic time and is comprised of Cambrian through Devonian limestone and dolomite, and Pennsylvanian and Permian carbonate rock located within the Pequop Mountains and Toano Range. Within the Plan boundary, the Carbonate Bedrock Aquifer is comprised primarily of the Cambrian Notch Peak formation and the Ordovician Pogonip Group. In addition to the two major hydrogeologic units, a range front fault (basin-mountain bounding fault system) separates a portion of the upper basin fill aquifer from the carbonate bedrock aquifer near the Johnson Springs system and the proposed mine pit.

The presence and depth of groundwater is likely impacted by lenses and layers of coarser and finer Colluvial materials, interbedded lacustrine layers, recharge from drainages of the Pequop Mountains, and structural geology features. The groundwater currently meets Division Profile I reference values for all parameters.

Groundwater depth is extremely shallow in the southern portion of the LCP site (approximately 20 feet below ground surface (bgs)) and steadily increases in depth towards the north (approximately 160 feet bgs). Groundwater depths also increase significantly to the west of the normal fault along the western edge of the LCP site. The depth of groundwater beneath the pit is 5,681 feet above mean sea level (amsl). The final projected pit floor depth is projected to be 19 feet above the groundwater table (5,700 feet amsl).

Groundwater beneath the HLF ranges from 90 to 130 feet below ground surface (bgs), with a large percentage of the depth beneath the HLF in excess of 100 feet bgs. Groundwater depth beneath the Process Pond and CIC areas is approximately 55 feet bgs and the depth beneath the WRSF ranges between 20 and 80 feet bgs.

For additional details regarding surface water and groundwater, refer to Part C, ***"Receiving Water Characteristics"***.

Mining: The Permittee utilizes conventional open-pit surface mining methods to remove oxide waste rock and ore. Mining equipment includes blast-hole drills, hydraulic shovels, front-end loaders, and off-highway trucks. Other related equipment includes dozers, rubber-tired loaders, motor graders, water trucks and other mobile support equipment. To facilitate a process throughput of 5,000 to 10,000 tons of ore material per day, the Permittee needs to remove approximately 125,000 to 175,000 tons of waste rock per day. As stated above, the final pit floor elevation is projected to be 5,700 feet amsl, which is slightly above the local water table and Big Springs.

Run-of-mine (ROM) ore is loaded using hydraulic shovels and loaders into off-highway haul trucks for transport to the HLF located northeast of the open pit, or a stockpile area located near the mine complex facilities for future processing.

Waste rock is loaded and hauled to the WRSF located east-northeast of the open pit. Mining will be conducted 24 hours per day and seven days per week. As possible and where practicable, the Permittee plans to initiate concurrent reclamation work on the WRSF early in the life of the project. The goal for this concurrent reclamation is to create a landscape that accommodates resident and migrating deer populations, to reduce the overall amount of disturbance, and to minimize the long-term financial liability for the project. Refer to the sub-section ***"Waste Rock Management"*** below for additional details.

Waste Rock Management: The Permittee estimates that 60 million tons of waste rock per year will be generated at the LCP, with a total of approximately 600 million tons over the planned mine life. As stated previously, the waste rock at the LCP is net neutralizing and does not have acid-generating potential; however the mobility of metals and metalloids under circum-neutral and alkaline pH conditions required the development and implementation of a comprehensive waste rock management program.

Waste rock mined from the open pit is hauled via truck to the WRSF which will be constructed by end-dumping waste rock across the storage area in a series of lifts. Waste rock is placed and graded within the WRSF to maintain an overall one to two percent sloped gradient to promote drainage, and prevent accumulation of stormwater.

A stability assessment of the WRSF slopes was completed for both static and dynamic conditions. Stability analyses were performed using the computer program SLIDE 6 by Rocscience. SLIDE 6 is a two-dimensional slope stability program for evaluating circular or noncircular failure surfaces in soil or rock slopes using limit equilibrium methods. Spencer's procedure, which is accurate for all slope geometries and soil profiles, was utilized within the stability model and assumes all interslice forces are parallel and have the same inclination.

Since the WRSF does not impound water and has a short design life, acceptable factors of safety for static and pseudo-static conditions were established as 1.3 and 1.0, respectively. To assess the stability of slopes during seismic loadings, a pseudo-static approach is typically utilized in which the potential sliding mass is subjected to an additional, destabilizing horizontal force that represents the effects of earthquake motions and is related to the peak ground acceleration (PGA).

The height of the WRSF was modeled at 300 feet. The foundation grade was modeled at a 1.0 percent slope that graded toward the toe and the slope angle was modeled at 3H:1V and 2H:1V. The stability model was conducted for heights of 300 and 500 feet to allow for flexibility in the WRSF development. Groundwater was modeled at a depth of 30 feet below foundation grade.

The stability analysis resulted in acceptable minimum factor of safety values for both static and pseudo-static conditions. Both block failure surfaces and circular failure surfaces were considered. Based on these results the proposed geometry of the WRSF will remain stable under both static and dynamic conditions.

In an effort to prevent the potential degradation of groundwater, the Permittee prepared the foundation surface to enhance native soil attenuation capacity and structural integrity beneath the WRSF prior to the placement of waste rock. Attenuation studies performed on behalf of the Permittee have demonstrated that soil attenuation capacity for antimony, arsenic, mercury, and thallium is increased when residence time of fluids traveling through a soil column are increased. Prior to the construction and active loading of the WRSF, the Permittee prepared the ground surface on which waste rock will be placed. Foundation preparation procedures included clearing and grubbing of vegetation material, removal of root material, and topsoil stripping. The soil and vegetative material were removed and stockpiled for use during reclamation.

The cleared ground was scarifying to a depth of approximately eight inches, moisture conditioned and compacted to a maximum dry density of at least 85 percent Modified Proctor (ASTM Method D 1557). The base lift was constructed to a 10 to 30 foot height in a manner to establish an overall gradient for surface drainage, and facilitate concurrent reclamation and closure activities. The base waste rock lift was moisture conditioned and constructed to provide a maximum dry density of at least 85 percent Modified Proctor (ASTM Method D 1557). Subsequent lifts are planned to be constructed in 60-foot increments using mine equipment traffic to compact and further decrease the internal permeability of the WRSF.

A Schedule of Compliance (SOC) item required the Permittee to provide the Division with an Engineering Design Change (EDC) for the design, cover, and operation of a cover test facility within 90 days following the initial establishment of the base lift on the WRSF.

The design was submitted and approved by the Division in July 2015. The purpose of the cover test facility is to evaluate minimum cover thickness with respect to the reduction in infiltration through the WRSF, due to the capillary break affect from contrasting hydraulic properties between the waste rock and the cover material. The test facility will consist of drainage lysimeters designed and constructed to test the effect of cover thicknesses at the Long Canyon WRSF and HLF. Test material will be sourced from actual material salvaged and stockpiled for future cover applications.

Stormwater best management practices (BMPs) within the WRSF include temporary short-term management activities that are expected to change throughout the construction of the WRSF and permanent engineered and designed control features to manage storm events. The intent of the WRSF BMPs is to shed water from the surface and to avoid ponding which will reduce infiltration through the WRSF surface. Haul roads have been constructed, graded, and crowned with the intent to direct stormwater from the active working faces promoting drainage off the WRSF to the road edges and into diversion channels. The channels are constructed around the entire WRSF while directing water to a designed sediment control basin. The channel is designed to convey the 100-year, 24-hour storm event peak flow.

The WRSF sediment collection basin was constructed along the southern toe of the facility at the lowest point to collect and hold sediment transported with stormwater. Collected water will be available for dust control, allowed to evaporate, or dispersed onto native ground.

Precipitation at Long Canyon occurring as snow can be significant at times. Following significant snowfall events where snow volume and water content is high, the Permittee will make efforts to remove accumulated snow where possible from the WRSF surfaces. This practice will include blading the snow to areas where it would melt and drain into the existing collection ditches and stormwater sedimentation basin. Snow blading activities will be limited to areas where access with mobile equipment is safe and feasible such as haul roads and open flat surfaces. Side slope and ungraded areas will not be included.

The Permittee has prepared a comprehensive Tentative Plan for Permanent Closure (TPPC) for the WRSF to ensure the protection of groundwater. The Permittee will employ a permanent closure approach to the WRSF through concurrent reclamation, meaning reclamation activities will be conducted simultaneously with construction activities.

Performing concurrent reclamation provides the final landform as the mine progresses rather than following completion of mining activities. This approach will facilitate early implementation of protective measures to minimize infiltration of stormwater into the facility. In addition, implementation of these measures on the west side of the WRSF will provide a reclaimed corridor, allowing wildlife to travel between the mine pit and the active portion of the WRSF. Finally, concurrent reclamation will help reduce potential fugitive dust impacts, allow time to test and optimize revegetation procedures, and take advantage of equipment and personnel already on site.

As lifts are completed on the facility, reclamation/closure activities will be advanced. This includes contouring slopes using heavy equipment to create a permanent landform that is consistent in form and function to the surrounding landscape. Following landform creation, a minimum 2-foot soil cover will be placed over the landform. This soil cover serves as a plant growth medium and as a surface to facilitate evapotranspiration and reduce infiltration. The placement of a cover over the waste rock will reduce the average infiltration through the WRSF due to the capillary break affect which results from contrasting hydraulic properties between the waste rock and the cover material. Upon soil cover placement, future snow removal on these areas would not continue.

The Permittee established a groundwater monitoring program for the WRSF to demonstrate that the combination of foundation preparation, construction measures, cover performance, and attenuation processes are performing as intended. A network of groundwater monitoring wells have been installed to detect the potential occurrence or absence of contaminants. The wells are located south of the WRSF where the depth to groundwater is shallowest. Eight monitoring wells were installed based on the overall surface topography and the potentiometric surface of the groundwater beneath the WRSF, generally south of the facility. These wells, in addition to the well located upgradient of the WRSF make up the groundwater monitoring program for the WRSF.

In November 2018, the Division approved the placement of waste rock within the Phase I portion of the pit. Waste rock placement occurs by end-dumping in a series of lifts not to exceed the original, pre-mining topography. Approximately 40 million tons of waste rock will be placed within the Phase I pit by 2021. The outer slopes of the waste rock will be re-graded to an overall 2.5 horizontal to 1 vertical slope. The top surface of the waste rock will also be graded to maintain an overall one to two percent easterly sloped gradient to promote drainage and prevent accumulation of stormwater.

Upon placement of waste rock on the final lift, the Permittee had proposed to construct two stormwater diversions to route stormwater from the upper drainages located on the west side of the pit across the top surface of the waste rock back into natural drainages. Because various analyses have demonstrated that arsenic, antimony, and mercury is liberated from the waste rock, the Division did not approve routing the drainages across the waste rock backfill without an engineered design.

It was required that current stormwater controls around the pit remain in place until an appropriate design is reviewed and approved by the Division; however, upon review by the Reclamation Branch, it was determined there are no stormwater controls in place surrounding the pit. In February 2019, the Division required the submittal of an engineering design change for the construction of a diversion channel or other means of stormwater controls to prevent the upgradient run-off from routing onto and infiltrating the pit backfill. The Division received the design for the stormwater controls and due to changes in the mine plan the Permittee is evaluating the closure strategy.

Mineral Processing and Fluid Management Systems: In its current configuration, the LCP consists of a HLF, CIC circuit, and associated facilities. A mill and tailings storage facility might be constructed at a later date depending on projected mine life and economics. The current plan is for high grade ore encountered during the initial stages of open pit development will either be stockpiled for future on-site processing and gold recovery and/or transported to the Gold Quarry Operation (WPCP NEV0090056) for processing and gold recovery. The stockpile area is located near the mine support and leach facilities.

Heap Leach Facility: The HLF includes the heap leach pad, process solution ponds and tanks, and all associated piping, pumping, and containment systems. The Permittee will leach lower-grade ROM oxide ore on the synthetically lined heap leach pad. Prior to the delivery and placement of ore onto the pad, lime will be added to maintain an elevated pH for the cyanide solution. Ore material will be placed in lifts on the HLF and a dozer with a ripper attachment will rip the surface of each lift to facilitate percolation of the process solution. A weak sodium cyanide solution will be applied to the surface and side slopes of the stacked ore using drip tubes, emitters or sprinklers at an average rate of 0.005 gallons per minute per square foot. Maximum permitted height of the heap leach pad is approximately 300 feet above the lowest point on the high-density polyethylene (HDPE) liner's surface.

The sodium cyanide solution migrates downward through the stacked ore, dissolves gold contained in the ore, and flows to either a pregnant solution collection tank or the process solution ponds located at the downgradient edge of the heap leach pad. The pregnant solution will be pumped from the Pregnant Solution Tank (PST) or Process Ponds to the CIC circuit located next to the ponds, where the gold is adsorbed onto the carbon. The barren solution exiting the CIC columns will be returned to the heap leach pad. The loaded carbon will be collected and transported offsite to an existing refinery located at the Gold Quarry Operation (WPCP NEV0090056) near Carlin for final processing into doré.

The HLF is located in the north central region of the mine area. The rectangular-shaped heap leach pad is orientated in a northeast-southwest direction and occupies a footprint of 3,050 feet by 2,035 feet. The HLF will be developed in three phases with phase specific areas of 3.0, 1.3, and 1.3 million square feet. Phase 1 will be constructed in the lower portion of the pad area and Phases 2 and 3 will progress uphill and to the northwest of Phase 1. The incremental storage capacity of Phases 1, 2 and 3 is approximately 10 million tons, 11 million tons and 19 million tons, respectively for a total capacity of 40 million tons.

Each phase will be constructed in three cells: Cell A, B, and C. Each cell measures approximately 1,000 feet wide and will be delineated by a 2-foot high internal berm. Internal solution collection channels will divide each cell in half and will provide a primary path for collection of solution. The interior solution channels will tie into the main solution collection channel.

The HLF was constructed by placing ore in lifts that are approximately 30 feet high to a maximum facility height of 300 feet. Along the outer slope of each lift, ore is placed at the angle of repose that equates to a slope of approximately 35 degrees or 1.4H:1V. To maintain an overall minimum slope of 2.5H:1V, 33-foot wide benches have been constructed at the top of each lift. The HLF has been designed to conform to the requirements of NAC 445A Mining facilities, the International Cyanide Code, and the Permittee's internal engineering and environmental standards.

The heap leach pad follows the existing ground that slopes from the northwest to the southeast. Minimal grading of the leach pad is required with the exception of areas where the existing ground is flatter than 2.5 percent. In these areas, the 2.5 percent is required as the existing topography slopes at approximately 2.4 percent, on average. This slope is adequate to provide a stable cross section upon loading to the anticipated height of 300 feet and would allow for positive drainage upon vertical movement of the foundation due to settlement of compressible subsurface materials.

A lined Solution Collection Channel (SCC) has been constructed along the southeastern edge of the heap leach pad. The SCC slopes at 0.8 percent over a distance of 3,000 feet along the southeast perimeter of the heap leach pad. From the southeast corner of the heap leach pad, the SCC continues to the Process Pond and parallels the pond along the north side. The channel contains the pregnant and barren solution pipework flow to and from the heap leach pad.

A composite liner system consisting of a low-permeability compacted soil layer overlain with an 80-mil HDPE double-textured liner serves as secondary containment for the heap leach pad and the SCC. The prepared subgrade has a permeability equal to or less than $1x10^{-6}$ centimeters per second (cm/sec) and has been placed in a 12-inch thick layer compacted to a minimum of 95-percent of maximum dry density (ASTM Method D1557) prior to placement of the 80-mil HDPE textured geomembrane liner.

A series of perforated corrugated polyethylene (CPe) pipes are placed on top of the 80-mil HDPE textured liner before placement of overliner material. Solution will be directed to three primary 24-inch diameter perforated CPe pipes that extend through each leach pad cell dividing each cell in half. The 24-inch diameter pipes are be fed by 6-inch diameter perforated CPe drainage pipe that extend 300 feet either side of the 24-inch diameter pipes. Four-inch perforated CPe drainage pipes will connect to the 6-inch pipe and extend another 300 feet. The 4- and 6-inch diameter pipes will be placed at 25-foot spacing in a herring bone pattern angled to the 24-inch diameter pipe.

Flow from the 24-inch CPe main collector pipes gravity drain to the southeast side of the leach pad where they connect to a solid HDPE pipe that extends along the SE edge of the pad and to the Process Pond area. The transition from perforated to solid HDPE pipe will occur at the edge of the leach pad just upstream of a retention berm. Any open flows collecting in the area of the transition, are captured in a drop inlet created from an inverted tee with an open end attached to the 24-inch diameter solid pipe. The 24-inch diameter HDPE pipe extends through a double-lined 80-mil HDPE channel with a layer of geonet to convey any leakage to a leak collection and recovery sump. Flows gravity drain through the HDPE pipe into a pregnant solution tank that is located next to the process pond and then be pumped to the CIC process plant.

The overliner includes a single 24-inch thick gravel layer placed as a blanket on top of the HDPE liner throughout the heap leach pad. The gravel layer provides protection to the HDPE during placement of ore over the HDPE liner and has a high transmissivity to promote lateral drainage of process solutions along the base of the pad. The maximum particle size of the overliner will be 2 inches to avoid placing larger sized rock pieces against the geomembrane that may potentially cause damage. The maximum fines content (minus 200-mesh particles) will be limited to 7 percent and a gravel content of at least 50 percent will be required to assure the material will meet a minimum permeability of 5×10^{-2} cm/sec.

A stability assessment of the heap leach pad was completed for both static and dynamic conditions using the SLIDE 6 predictive modeling program discussed previously. As in the case of the WRDF stability analysis, the heap leach pad does not retain water and also has short design life, therefore acceptable factors of safety for static and pseudo-static conditions were established as 1.3 and 1.0, respectively.

The height of the heap leach pad was modeled at 300 feet. To allow for flexibility in the pad base grading, the foundation grade was modeled at a 3.0 percent and 2.5 percent slope graded toward the heap toe and an overall (average) ore slope of 2.5H:1V. Groundwater was modeled at a depth of 120 feet below foundation grade.

The stability analysis resulted in acceptable minimum factor of safety values for both static and pseudo-static conditions. Both block failure surfaces and circular failure surfaces were considered. Based on these results the proposed geometry of the heap leach pad will remain stable under both static and dynamic conditions.

The as-built of Phase I was reviewed in July 2016 and approved by the Division.

HLF and SCC Leak Detection Systems: A leak detection system referred to as the Process Component Monitoring System (PCMS) is located beneath the leach pad under areas of concentrated flow. The PCMS consists of a French drain located beneath the internal solution collection channels. The PCMS is constructed beneath the HLF geomembrane and consists of a trapezoidal channel backfilled with select gravel. A 4-inch diameter perforated CPe pipe was placed within select gravel to provide additional flow capacity within the system. An 80-mil HDPE liner was placed beneath the PCMS trench to promote lateral flow and restrict vertical migration. The PCMS was initially constructed during Phases I and II and will be extended through Phase 3 during construction.

The 4-inch diameter CPe pipes extends through the entire channel length and reports to a vertical collection sump through a dual containment pipe-in-pipe system located at the southeast side of the HLF. The PCMS outlet sump includes a double containment system with a 6-inch diameter HDPE solid pipe housed in a 12-inch diameter sleeve coming from the termination of the PCMS trench. The 6-inch diameter pipe feeds into a 10-inch diameter HDPE vertical pump tube pipe that is double contained in a 36-inch diameter HDPE pipe. The sumps are located within the geomembrane-lined HLF and have the ability to overflow within containment should dedicated pumps within each sump fail to operate. Three PCMS sumps have been installed for Cells A, B, and C and are identified as LCHLF-PA, P-B, and P-C respectively.

The SCC is constructed using two layers of 80-mil HDPE liner with a layer of geonet to transmit any leakage migrating through the primary liner to a gravel filled sump located near the Process Pond. The sump is located between the primary and secondary HDPE liners. The fluid capacity of the leak collection recovery system (LCRS) is approximately 655 gallons assuming a gravel porosity of 30 percent. This LCRS is identified as LCHLF-CC.

Process Solution Pond and Pregnant Solution Tank Design and Leak Detection Systems: The Process Solution Pond (PSP) is rectangular in shape with crest dimensions of 440 feet x 635 feet and has an internal berm that divides the PSP into two equal cells identified as the North Cell and South Cell. The internal berm is located at a level 10-ft below the pond crest. Each cell has a capacity of 4.9 million gallons to the top of the berm. The maximum operating level of the pond is 17.4 million gallons. Pond sizing was based on runoff from significant storm events that result in flows above the operating flow rate up to the 100-year, 24-hour storm event, draindown from the heap during a power outage and/or a pump/plant stoppage due to maintenance/repairs for a maximum of 8 hours, and excess heap drainage which normally occurs when new leach pad cells are brought on-line.

The PSP is double-lined with 80-mil HDPE geomembrane with a layer of geonet for leak detection. A 12-inch thick compacted soil layer was placed in the pond area prior to placement of the geomembrane liners. The soil will have a coefficient of permeability equal to or less than $1x10^{-6}$ cm/sec (ASTM Method D1557). The PSP floor will slope at 1.3 percent such that any leaks through the primary liner will gravity drain to the west end of the pond to the LCRS sumps.

The sumps consist of a gravel filled depression situated between the two HDPE liners in the lowest corner of each pond cell. A 12-inch diameter HDPE pipe l extends along the pond slope from the sump to the crest. Dedicated pumps and piping are located within the HDPE pump tubes for evacuation of fluids that may collect in the sumps. Each LCRS sump is collocated with the pond pumpback system. The combined sump depth for each LCRS will be 5-feet below the bottom of the pond where the bottom 2-feet serves as the LCRS sump and the top 3-feet will serve the pumpback sump. The fluid capacity of each LCRS sump is approximately 655 gallons assuming a gravel porosity of 30 percent. The LCRS sumps for the North Cell and South Cell pond areas are identified as LCHLF-PP-N, and PP-S respectively. Removal of fluid from the pond is via a pump inserted into a pump tube placed along the pond slope. The PSP pumpback sump is located in an 8-inch diameter HDPE pipe in a 12-inch diameter carbon steel (CS) support pipe which will rest on two 6-inch diameter CS pipes.

The pipes extend along the pond slope from the crest to the sump and include a tube for inserting a submersible pump for solution evacuation. The PST pumpback piping has the ability to discharge to either the pregnant or barren tanks at a flow rate of 500 gallons per minute (gpm). The pump discharge pipeline consists of an HDPE pipe that will parallel the west pond crest along a 5-foot HDPE lined bench. The pond lining system will continue along the lined bench and containment berm such that the pipe remains within containment. Under normal operating conditions, process solution will be directed to the PST and the pond remains empty except for the amount of water needed in the sump areas to keep the dedicated pond evacuation pumps submerged.

Solution flow from the HLF gravity drains directly to the steel Pregnant Solution Tank (PST). The 8,000-gallon PST is situated on a shelf at the northwest corner of the Process Pond 5 feet below the crest within the freeboard limit and on double HDPE geomembrane lining. Flows can be routed to the PSP by control valves at the tank or can overflow the PST by a high level outlet pipe. The PST will be equipped with three pumps. Under normal operating conditions, two pumps will operate and one will serve as a backup. The dedicated pumps will transfer solution from the tank to the CIC Facility. The concrete tank foundation was constructed on top of the PSP liner system and any leakage from the tank would be visually detected on the concrete pad for proper evacuation; otherwise, leakage from the tank flowing off the concrete pad would be collected with the PSP liner system.

CIC Facility: The CIC Facility is located on the west side of the PSP, approximately 60 feet from the pond crest. In the CIC facility, pregnant solution from the PST is pumped at approximately 3,000 gpm through a train of 6 cascading columns where precious metals are adsorbed onto activated carbon. The solution exiting the carbon columns (which is now essentially depleted of gold) is piped to the Barren Solution Tank (BST) located within the CIC facility where sodium cyanide is added before the solution is pumped to the HLF. The heap leaching circuit is a closed system and fresh water is added as needed to account for evaporation losses.

Pregnant solution from the leach pad will be pumped from the PST to either the trash screen located at the head of the CIC train or the BST located at the tail of the CIC train. The pregnant solution pipes and all other process pipework will be routed through an 80-mil HDPE lined channel to the CIC building to maintain double containment and in the event of pipe rupture, direct flows to the process pond. The 80-mil HDPE liner is contiguous throughout the channel, heap leach pad, and PSP, and will be secured to the building stem wall via a batten strip. As a contingency measure, piping has been installed within the concrete stem wall at the location of the HDPE-lined trench to direct overflow within the CIC building to the process pond. Any solution escaping the CIC facility discharges into the geomembrane lined channel which directs flow to the PSP.

A reinforced concrete floor supports the steel structures and processes equipment within the CIC building. The slab is divided into two areas that independently slope toward two inner concrete sumps where liquids can be collected and pumped back into the process tanks. In addition, a 6-inch high stem wall has been designed around the building perimeter with sloping thresholds at the rollup and man doors. The concrete slab and the 6-inch stem wall are designed to contain 110 percent of the largest vessel volume (e.g. BST, capacity 12,600 gallons). The 110 percent volume of 13,860 gallons can be contained within the sloped floor area and within 3 inches of the stem wall. This leaves 3-inches of freeboard between the high water level and the stem wall crest. Spillage or leakage from the barren tank is determined through visual inspection. Joints within the concrete foundation are constructed with waterstop to inhibit water movement through the concrete.

Reagent Tanks and Truck Off-Load Containment: The Anti-Scalant Tank (AST) and two Sodium Cyanide Tanks (SCT-1 and SCT-2) are located adjacent and outside of the building on a concrete foundation. A concrete slab and stem wall contains the AST. The slab slopes to an inner concrete sump where liquids and meteoric water can be collected and pumped into the CIC building. The concrete slab and stem wall are designed to contain 110 percent of the 6,000 gallon AST. The 110 percent volume of 6,600 gallons will be contained within the sloped slab area and within 3-inches of the top of the stem wall. This provides 3 inches of freeboard between the high water level and the stem wall crest. Detection of any spillage or leakage from the tank is through visual inspection. The concrete floor and stem wall joints within the concrete foundation are constructed with waterstop material to inhibit solution movement through the concrete.

SCT-1 and SCT-2 are located adjacent to the CIC building and north of the AST. Each tank has a storage capacity of 10,000 gallons. A concrete slab and stem wall will contain both tanks. The slab slopes to an inner concrete sump where liquids and meteoric water can be collected and pumped into the CIC building. The 110 percent containment of 11,000 gallons can be contained within the sloped slab area and within 3 inches of the top of the stem wall. The concrete floor and stem wall joints within the concrete foundation are constructed with waterstop material to inhibit solution movement through the concrete.

The truck off-loading area is located directly adjacent to and west of the AST, SCT-1 and SCT-2 containment areas. The off-load area is a concrete slab that is sloped into a scupper which reports to the containment area.

Stormwater Diversion: Stormwater diversion structures at the LCP site are designed to divert non-process water around the mine facilities and discharge to downstream water courses; convey sediment-laden runoff, as necessary, to detention basins before being discharged to downstream water courses.

Surface water runoff from catchment areas upstream of the mine facilities is be intercepted and routed around the proposed facility through diversion channels to either a natural drainage way or to a sediment collection basin and released slowly or evaporate. Runoff from the impacted areas (contact with process solution) is stored internally within the HLF.

There are two diversion channels that are independent of roadways; the West Diversion Channel and the North Diversion Channel. The North Diversion Channel is located to the north of the HLF. Due to its location upstream of critical infrastructure, the channel is designed to convey flow from the 100-year, 24-hour storm event. The channel diverts run-off from north of the HLF around to the east side, where flow will dissipate onto the natural topography and drain south into Goshute Valley.

The West Diversion Channel is situated to the west of the mine complex and HLF and east of the Pit. It is designed to convey flow from the 25-year, 24-hour storm event. The primary function of the channel is to divert water around non-critical infrastructure and prevent runoff from eroding the mine roads. In addition, the diversions allow for reduced sizing of internal stormwater structures within the mine complex area.

The diversion channels are designed as a trapezoidal section with a constant 6-foot bottom width. The depth varies depending on the upstream catchment area and the design storm event. Roadside channels will be constructed as necessary along the roadways to control surface water runoff. Culverts have been placed at road crossings to divert stormwater flows away from roadway surfaces and maintain traffic flow. The culverts consist of corrugated metal pipe and vary in diameter and number of barrels, depending on the design flow rates.

Ancillary Facilities: Ancillary facilities at the LCP site include maintenance shops and warehousing, administration buildings, a bulk fuel storage and dispensing facility, wash bay, electrical substation, explosives storage, equipment ready lines, potable water and septic systems.

Petroleum Contaminated Soils Management: The Division approved the Permittee's Petroleum Contaminated Soils (PCS) Management Plan for the LCP on 9 June 2014. A revised PCS Plan was approved by the Division on 23 April 2019. The plan document does not authorize the management of hazardous waste. In the event any hazardous waste is generated at the LCP, it must be managed and disposed pursuant to applicable regulations.

C. Receiving Water Characteristics

Surface Water: The LCP site is located in the Goshute Valley Hydrographic Area HA-187 within the Central Hydrographic Region. The drainages within the area are formed from ephemeral runoff from rains and winter snowpack. Drainage flows generally to the east from the Pequop Range toward Hardy Creek and Big Springs. The ephemeral drainages typically infiltrate into the ground prior to reaching Hardy Creek and Big Springs, and there are no channels connecting these ephemeral drainages to Hardy Creek. In addition, these ephemeral drainages do not exhibit a vegetation response that differs from vegetation in the adjacent upland areas. Long Canyon Spring is an ephemeral water feature in the area, approximately 3 miles west of the LCP.

The nearest known source of permanent surface water is the Johnson Spring system, which discharges groundwater to the surface, producing localized perennial surface flows of Hardy Creek. The principal discharge of the Johnson Spring system is known as Big Springs. Big Springs is located on the Big Springs Ranch, within the southwest corner of Section 28, Township 36 North, and Range 66 East; approximately 2 miles southwest of the LCP.

A portion of the flow from Big Springs is diverted into a pipeline and used as a source of municipal water for West Wendover, Nevada, and Wendover, Utah. The Wendover Pipeline Company rehabilitated Big Springs in the fall of 2003, and a new pump station was installed. Much of the flow from the smaller springs in the Johnson Spring system, as well as some of the flow from Big Springs, is used by Big Springs Ranch for irrigation. The remaining surface flows from the Johnson Spring system converge to form Hardy Creek, which flows for as much as three miles south before water is consumed by vegetation, lost to evaporation, or infiltrates into the ground.

Flow of Big Springs varies naturally due to changes in the distribution and quantity of precipitation in the recharge areas up gradient from the spring. The cities of West Wendover, Nevada, and Wendover, Utah, have collected flow data at Big Springs from a continuous flow meter since November 2006. Test data show that the flow of Big Springs has varied from a high of over 2000 gpm in November 2006 to a low of approximately 800 gpm in February 2010. This 800 gpm flow was short term and resulted during Newmont's bedrock aquifer testing work.

Water quality from Big Springs meets Nevada drinking water standards for all parameters. As expected for any natural water source, individual chemical parameters vary slightly over the period of measurement, but there are no discernible trends in the water chemistry over the period of record. The total dissolved solids (TDS), which is a good proxy indicator of overall water quality, averages around 200 mg/L; the Nevada drinking water standard for TDS is 1000 mg/L. Water-quality sampling results show no significant change in the water quality or trace element chemistry since exploration drilling activities began in 2000.

Groundwater: As discussed previously, the two primary aquifer units within the LCP area include the Basin Fill/Alluvial Aquifer and the Carbonate Bedrock Aquifer. Groundwater in the Carbonate Bedrock Aquifer occurs as a fracture flow system in both shallow and deep bedrock. Overall average permeability in the fracture system is high. It is probable that some groundwater exits the bedrock aquifer across range-front faults and fracture systems to recharge the basin-fill aquifer. Other groundwater from the bedrock aquifer discharges to the surface as springs and seeps in an area known as the Johnson Spring system.

The basin fill within the northern Goshute Valley reaches a maximum thickness of approximately 6,560 feet with a fair amount of complexity, particularly along the east side of the valley adjacent to the Toano Range. The west side of the basin is less complex with a gradual thickening of the basin fill for approximately 4,900 feet from the Pequop mountain front, at which point rapid deepening of the basin fill occurs.

Groundwater in the basin fill generally flows from the mountain fronts at the margins of Goshute Valley towards the center of the valley and then southward toward the lower portions of the Goshute Valley. Overall groundwater gradients within the basin fill of the northern Goshute Valley appear to be relatively gentle, with steepening gradients present near the mountain fronts on both sides of the valley associated with zones of mountain-front recharge and range front faulting.

Recharge to the groundwater system occurs from infiltration of precipitation in the form of rainfall or winter snowpack melt. There is also a deep circulation component to the system, as evidenced by the relatively high (70° F) temperature of water discharged at Big Springs. Groundwater depth is extremely shallow in the southern portion of the LCP site (approximately 20 feet bgs) and steadily increases in depth towards the north (approximately 160 feet bgs). Groundwater depths also increase significantly to the west of the normal fault along the western edge of the LCP site. The presence and depth of groundwater is likely impacted by lenses and layers of coarser and finer Colluvial materials, interbedded lacustrine layers, recharge from drainages of the Pequop Mountains, and structural geology features. The groundwater meets Nevada drinking water standards for all parameters.

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 well(s) 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 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502-7147, (775) 861-6300, for additional information.

Prepared by: TJ Mohammed
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Revision 00: 2025 Renewal with boiler plate updates