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

Permittee Name: **Florida Canyon Mining, Inc.**

Project Name: **Florida Canyon Mine**

Permit Number: **NEV0086001**
Review Type/Year/Revision: **Renewal 2016, Fact Sheet Revision 00**

A. Location and General Description

Location: The Florida Canyon Mine is located on both private and public land, administered by the U.S. Bureau of Land Management, in Pershing County, approximately seven miles southwest of Imlay, Nevada in Sections 1-4, 9-15, 33, 37, 38, and 39, Township 31 North (T31N), Range 33 East (R33E); Section 35, T33½N, R33E; and Sections 33, 34, and 35, T32N, R33E; Mount Diablo Baseline and Meridian.

General Description: The Project consists of open pit mining, crushing, and agglomerating, with ore processing using conventional heap leach cyanidation technology with precious metal recovery by carbon adsorption followed by stripping, electrowinning, and refining. Facilities are required to be designed, constructed, operated, and closed without any discharge or release in excess of those standards established in regulation except for meteorological events which exceed the design storm event.

B. Synopsis

Geology

Placer gold was first discovered in Humboldt Canyon during the 1860s when, what is now Pershing County, was then part of Humboldt County. Continued prospecting in the district resulted in the production of gold, silver, mercury, and tungsten from various small mines. The Standard Mine was the most productive operation yielding about one million dollars in gold and silver from 1939 to 1949. Most of the gold deposits are peripheral to the large low-grade gold deposits at the Florida Canyon Mine and the Standard Mine.

The ore bodies at Florida Canyon are hosted by the fracture zones that were open to solution transport. The ore zones are tabular, and trend generally north-south to northwest, with a westerly rake of about 30 degrees. The higher-grade ore zones appear to have the same northerly trend, but are narrower and vertical to steeply dipping east or west. These high-grade zones usually form the cores within the larger envelopes of lower grade material, suggesting that they are feeder structures. The ore zones also appear to be stepped down to the west in a roughly systematic pattern that likely follows a regional range-front block faulting system.

Gold mineralization in the Florida Canyon Mine area is structurally controlled, as described above, and hosted within a package of Triassic metasedimentary rocks (Grass Valley Formation). Past studies suggest that the Grass Valley Formation was deposited in a shallow marine shelf environment along a westerly prograding delta. The rocks in the area consisted mainly of pelites with interbedded quartzose sandstones that were later metamorphosed to argillite, phyllite, fine-grained quartzite, and meta-arkose. This westerly-dipping package of rocks in the mine area is roughly divided into an upper sequence of mostly argillite and phyllite and a lower, more ductile sequence comprised mainly of phyllite and shale.

Gold mineralization at Florida Canyon is associated with quartz veining, but not all quartz is associated with gold. It is probable that gold occurs both as auriferous pyrite and as free gold, and that there was a separate, and later, gold deposition or remobilization event. Additional studies will be necessary to better define the gold mineralization and related mineral paragenesis at Florida Canyon.

Mining

Ore is hauled from the pit(s) to either a stockpile near the crushing circuit or hauled directly to the leach pad (with lime added) as run-of-mine ore. The crushing circuit consists of jaw and gyratory crushers, cone crushers, vibrating screens and conveyor belts to the heap. Crushed ore (-1/2 to -3/4 inch material) is agglomerated using polymer or other additives such as cement. Lime (for pH control) and sodium cyanide are also added. The agglomerated ore is then placed on the leach pads via a radial stacker (conveyor). All areas on the leach pads are required to be loaded in conformance with specific configurations (e.g., lift setbacks, lift heights) determined by the responsible professional engineer to maintain an overall slope of 3:1 horizontal to vertical (H:V). The original heap is limited to a maximum height of 300 feet measured vertically from the top of the high density polyethylene (HDPE) liner. On 26 March 2014 the Permittee submitted a Major Modification to the Permit proposing the South Area Expansion which included the South Heap Leach Pad Phase 1 (SHLP1). This heap is limited to a maximum height of 200 feet measured vertically from the top of the HDPE liner.

Previously, Water had been pumped at a low flow rate (approximately 1 gallon per minute (gpm)) from within the Phase 4 pit to a storage tank on the top of the southern portion of the heap, where it was either being used for dust suppression or added to the cooling pond for make-up water. The pumping was terminated to facilitate backfilling the Phase 4 Pit. The Phase 4 Pit is backfilled to at least 4,450 feet above mean seal level (ft amsl) or 35 feet above the predicted groundwater rebound elevation of 4415 feet amsl. Potential impacts as a result of modeling concluded that "backfilling the Phase 4 Pit at the Florida Canyon Mine with the revised waste rock backfill presented in the column leach tests would not impact groundwater downgradient of the pit" (ENSR 2000). However, to confirm that groundwater was not adversely affected by the backfill, a monitoring well was developed downgradient of the pit. Former production well PW-8, located on an upper bench on the southwest edge of the Phase 4 Pit, was modified to provide a limited screen interval in the upper level of groundwater so that it could serve as an appropriate downgradient monitoring well. The modified screen interval for PW-8 is from 200 to 343 feet below ground surface (ft bgs) or 4,400 to 4,257 ft amsl, with static water level at 4,257 ft amsl.

The South Area Expansion described in the 2014 Major Modification consists of additional mining in the existing pit toward the south of the Phase 4 Main Pit and encompassing the Jasperoid Hill Pit to the east, defined as the Phase 7 Pit; construction of a new heap leach pad and ponds; expansion of the waste rock storage facility; and additional facilities necessary to support the operation. The Phase 7 Pit will be mined using conventional open-pit mining methods (truck and loader). The expansion will mine the pit to the 4,460-foot elevation amsl, terminating at least 45 feet above the predicted groundwater rebound elevation of 4,415 ft amsl. The expanded South Waste Rock Storage Facility will be an extension of the existing facility to the west and southwest. The footprint of the expanded waste rock storage facility will encompass Sediment Pond 1. Flows directed to Sediment Pond 1 will be rerouted to Sediment Pond 9 located on the south side of the South Heap Leach Pad then Sediment Pond 1 will be permanently closed.

Waste rock, overburden, and ore material are routinely tested in accordance with the Permit. Characterization of the waste rock and overburden to date indicates that the material does not have a potential to degrade waters of the State.

Heap Leach and Pads

Leaching of the ore is accomplished by applying a weak cyanide solution to the ore via emitters, wobblers, and sprinklers. The typical application rate is approximately 0.003 to 0.004 gallons per minute per square foot (gpm/ft^2). The total leach pad area is 438 acres, which consists of the 238-acre circular pad, the 75-acre semi-circular pad, the 91-acre semi-circular pad, and a 34-acre pad. These pads are single-lined systems pursuant to regulation consisting of a minimum of a one foot low permeability (1×10^{-5} centimeters per square foot (cm/ft^2)) compacted subbase, an 80-mil HDPE liner, and a free-draining overliner material (3-5 feet thick) with hydraulic relief pipes spaced to reduce the hydraulic head on the 80-mil HDPE liner and collect and transport pregnant solution to the periphery of the pad where the solution channel conveys the solution to the pregnant pond.

On 3 April 2008, the Permittee submitted an Engineering Design Change (EDC) to reconfigure the footprint of the Phase 5 expansion to resolve over-stacking issues along the east edges of cells 2 and 3. The new configuration required the removal of the truck wash bay and a new facility was proposed to take its place near the southwest corner of cell 4 as part of the same EDC. The EDC was approved by the Division and construction of the heap expansion and the truck wash bay was completed in November of 2008.

Leak detection systems are installed between the synthetic liner and the subbase of the leach pads. These systems are designed to collect and transport solution to a downgradient location for monitoring. Ten leak detection pipes (LP1 thru LP10) are located beneath the 238-acre leach pad. However, LP4 was abandoned as a result of failure of the pipe used to convey solution from the sump. Leak detectors LP11 thru LP19 monitor the 75-acre pad, leak detectors LP20 thru LP24 monitor the 91-acre pad, and leak detectors LP25-29 monitor respective cells in 34-acre pad (aka East Pad) expansion and the northeast section of the solution conveyance channel.

The Permittee submitted an EDC on 29 March 2006 for a heap injection system comprised of up to 50 gravity injection wells constructed of 8-inch polyvinyl chloride (PVC) pipe to 60 feet deep, centrally located on the heap. Operation of the approved injection system may not result in exceedance of the aggregate daily heap application flow rate limit of 9,000 gpm. Presently, only 7 gravity-only injection holes are available for use.

Based on the successful operation of the gravity feed injection holes, the Permittee submitted an EDC on 9 January 2008 to expand the operation to include Hydro-JEX of process solution into the injection holes at 300 gpm. This proposal was approved by the Division with limitations on the number of holes in which Hydro-JEX was allowed (23), limitation of total down-hole flow, whether by injection or gravity, to 6,900 gpm, the requirement to leave hole #23 inactive to use as an inspection point to monitor fluid migration toward the closed section of the heap, and the requirement to monitor the French drain and nearby wells more frequently than previously required by the Permit. A subsequent EDC submitted in March 2009 and approved by the Division modified the permitted flowrate to a maximum of 600 gpm with a limit of 300 gpm averaged over any 24-hour period. Operation of the Hydro-JEX system was suspended in August 2010 but the system remains in place for possible future use.

On 4 June 2009, under direction from the Division in correspondence dated 7 July 2008, the Permittee introduced a bromide tracer to the tan water tank located on the south end of the heap leach pad (inactive area). Analyses of downgradient samples for bromide showed increases from non-detect (<2 milligrams per liter (mg/L)) prior to the test, to significant concentrations in the French Drain Dam (15 mg/L), French Drain Pipe (11 mg/L), MW-GA (7.1 mg/L), and MW-M (7.1 mg/L) within two months of the introduction of the tracer. Based on these results, the Division directed the Permittee, in correspondence dated 29 January 2010 and 5 April 2010, to submit a work plan and schedule for the decommissioning of the tan water tank by 1 September 2010. The decommissioning of the tank was completed in the fourth quarter of 2010.

The South Area Expansion, described in the 2014 Major Modification, includes a new South Heap Leach Pad, to be constructed south of the existing leach pad in three phases. The complete new heap leach facility will encompass approximately 13.44 million square feet in total, with each of the three phases having an area of approximately 4.48 million square feet. The processing of the ore from the proposed Phase 7 Pit will require the lining of an approximately 2,800-foot by 1,600-foot wide area of land, defined as the SHLP1. Phases 2 and 3 will be designed in detail, permitted as Minor Modifications, and constructed in the future. General design elements for the heap leach facility entail a lined system with leak detection including a compacted low hydraulic conductivity soil layer (LHCSL) overlain by 80-mil smooth HDPE liner, a leachate collection and recovery system (LCRS), and protective overliner. The expansion also includes the construction of a solution conveyance system to a set of 3 process ponds west of the proposed heap leach pad. Leak detection will be placed under areas of concentrated flow. The maximum height permitted for the SHLP1 is 200 feet measured vertically from the 80-mil HDPE liner. The cumulative application rate to the SHLP1, by all methods, shall not exceed 5,000 gpm. Additionally, the solution surface application rate per unit area shall not exceed 0.004 gpm/ft^2.

Foundation construction of the subgrade consists of clearing, grubbing, and cut and moisture-conditioned/compacted fill to a depth of 1 foot. A minimum thickness of 12 inches of LHCSL shall be placed in all areas of the SHLP1 directly on the prepared subgrade. This material shall have a placed hydraulic conductivity of less than 1 x 10^{-5} centimeters per second (cm/sec). Since the surface materials present within the footprint of the SHLP1 are generally unsuitable for use as LHCSL, material shall be imported from the designated borrow source location. Remolded saturated hydraulic conductivity testing of this material indicates hydraulic conductivities of 1 x 10^{-6} to 1 x 10^{-7} cm/sec, which is less than the 1 x 10^{-5} cm/sec required for a lined facility with leak detection. It is estimated that the SHLP1 will require approximately 166,000 cubic yards of LHCSL material to be imported. The borrow material for the LHCSL will be stockpiled with sufficient quantity available to complete the construction of SHLP1.

The LHCSL is overlain with an 80-mil HDPE liner. The liner will be placed on the LHCSL and anchored outside of the pad perimeter berm.

A 3-foot thick overliner is incorporated into the design to provide protection of the HDPE liner from equipment and vehicle traffic during stacking of the ore material. The protective overliner material will be placed in a single lift using either trucks or a radial arm stacker and pushed onto the exposed liner with a dozer. At no time should there be any vehicle traffic on exposed liner before placement of a minimum of 3 feet of overliner material. The overliner will function as a component of the LCRS allowing solution to flow through the material on the HDPE liner toward the collection piping.

The LCRS will consist of 4-inch diameter HDPE corrugated-perforated pipe placed directly on top of the 80-mil HDPE primary liner at 24-foot centers. The 4-inch collection pipes will be oriented in an approximate herring bone pattern at approximately 45 degrees to the 18-inch HDPE corrugated-perforated header pipe along the base grade berm to transmit solution. After installation of the LCRS pipe network, a minimum of 3 feet of overliner material will be placed. The maximum solution application rate will be approximately 0.004 gpm/ft^2. Based on the maximum application rate, a 24-foot pipe spacing, and collection layer average hydraulic conductivity of 4×10^{-2} cm/sec, the maximum head on the liner will be less that one foot. The design concept is for the LCRS to drain the solution collection piping system to two locations one at the southwest corner of the SHLP1 and one near the northwest corner of the SHLP1 at which point solution will be conveyed through a double-lined channel, with leak detection, to the Pregnant Pond. The solution conveyance channel connecting the pad to the pond will transmit solution in a pipe covered with drain rock to reduce open exposure of solution and to facilitate flow of solution.

Leak detection will be placed under areas of concentrated flow, which will include the 18-inch header pipe for leachate collection and the solution conveyance channel between the pad and the pond. The leak detection will consist of an excavated trench with a 2-inch perforated pipe covered in drainage medium and wrapped in a nonwoven geotextile.

For slope stability analyses of the SHLP1, South Waste Rock Storage Facility, and process ponds, the most critical cross sections, slopes with the steepest base grade and greatest maximum height, were evaluated for stability. Two-dimensional limit equilibrium techniques were utilized using Rocscience's Slide 5.0 for static and pseudo-static stability analysis. For pseudo-static stability analysis, a seismic coefficient of 0.09887 was utilized based on the estimated peak horizontal ground acceleration from a probabilistic seismic hazard. Stability analyses were completed for both circular and block failures using the Morgenstern and Price method. This method satisfies all components of moment and force equilibrium.

The Facility is located in a seismically active region and therefore a pseudo-static slope stability analysis of the proposed design is warranted. The design Peak Horizontal Ground Acceleration (PHGA) was determined utilizing the United States Geological Survey (USGS) Earthquake Hazards Program (2008 Interactive Deaggregations - Beta). The USGS method incorporates a deaggregation process to determine each relevant earthquake's contribution and then sums the hazards from all relevant earthquake sources to estimate the PHGA. The earthquake parameters included in the process are mode magnitude (M_{mode}) and mode site-source distance (R_{dist}). The PHGA for a 10% probability of exceedance in 50-years is 0.098879, for a Magnitude 6.33, at a distance of 32.6 kilometers from the mine site. As a conservative approach, the PHGA of 0.09887 was used as the horizontal ground acceleration design coefficient for the Project site. The calculated return period for this earthquake event is approximately 475 years.

For the SHLP1, the most critical cross-section was chosen with a base grade that starts at 6 percent at the toe and progressively increases to 8 percent. The SHLP1 was designed with 20-foot high benches at a 1.3H:1V slope angle with 34-foot setbacks for a 3H:1V overall slope angle. The SHLP1 has been designed to have a maximum height of 200 feet above the liner. Additional slope stability analyses would have to be conducted if ore were to be stacked above 200 feet. Modeled circular failure for this cross-section occurred exclusively through the ore material. Modeled block failure occurred through the ore material and then along a preferential surface between the liner and crushed ore.

For the SHLP1, a factor of safety of 1.63 for static loading and 1.17 for pseudo-static loading was calculated for the most critical sections. This is greater than the requirement of 1.3 for static loading and 1.05 for pseudo-static loading. This indicates that the facility is stable from catastrophic failure. Results from this stability analysis are analogous to those for post reclamation as overall slope angles will remain the same.

The Facility was designed to divert runoff resulting from the 100-year, 24-hour storm event from process facilities in two parallel channels. The south channel, non-contact channel, will contain only runoff from undisturbed areas. The north, contact channel, will contain flows from both disturbed and undisturbed areas. Contact diversions direct meteoric runoff to sediment basins designed to contain the runoff from the 100-year, 24-hour storm event. All non-contact diversions direct meteoric runoff to an energy dispersion structure then to natural channels ultimately arriving at existing conveyance structures in Interstate 80. Based on engineering calculations, diversion channels were rip-rapped at critical channel segments and intersections to preclude scouring and erosion.

Process Ponds

There are six process ponds that are part of the original process fluid management system. The six ponds include the pregnant (PS1) and barren (BS1) ponds, the two contingency ponds (CP1 and CP2), the utility pond (S2), and the expansion pond (S3). These ponds are lined with 80-mil HDPE primary and 60-mil HDPE secondary geomembrane liners, with leak detection and recovery systems which are required to be routinely monitored and evacuated back into the ponds. In accordance with NAC 445A.433, the fluid management system has been designed to remain fully functional and fully contain all process fluids including all accumulations resulting from a 25-year, 24-hour storm event.

During the first quarter of 2011, the rate of fluid reporting to the leak detection sump of the Barren Pond began to rise, reaching as high as 1,652 gallons per day. The Permittee proposed, and received approval from the Division, to construct a temporary piping system using Contingency Pond 1 and bypassing the Barren Pond. After draining and cleaning the Barren Pond, it was discovered that the secondary liner only covered the flat, horizontal portion of the pond bottom, not extending up the sides. The Permittee submitted an EDC in September 2011 to rebuild the Barren Pond liner and leak detection systems using 60-mil HDPE secondary and 80-mil HDPE "drainliner" primary liners. The EDC was approved by the Division in October 2011 and rebuild of the pond was completed in November 2011.

Due to the installation of piping and other equipment at the crest of the Barren Pond, access to the existing liner anchor trenches was limited. The Permittee proposed that the new primary and secondary liners be welded to the crest of the existing primary liner since constructing a new anchor trench was not possible. The Permittee submitted results of material tests for the existing liner, as well as peel and shear tests of samples welded to new liner. All of these tests showed equal or better strength compared to current quality standards and the proposal was approved by the Division. However, the Permittee is required by the Permit to install a new primary liner with a conventional anchor trench prior to converting the pond to an evapotranspiration cell at closure.

The Pregnant Pond is in the same condition concerning the lack of full coverage of the secondary liner and limited access to the anchor trenches at the crest. A similar modification of the Pregnant Pond, with the same stipulations, will be required prior to Division authorization of introduction of process solution therein.

The South Area Expansion, described in the 2014 Major Modification, includes a set of new process ponds west of the future heap leach pad. A single set of 3 ponds designed to management stormwater run-off, pregnant solution drain-down, and barren solution from all three phases of the proposed heap leach pad. Each pond is designed with an additional 5 feet of freeboard in order to accommodate post mining evaporative cell (E-cell) conversion with an overall pond system perimeter crest elevation of 4,355 feet amsl. By raising the interior berms within the pond set between the South Contingency Pond and the South Pregnant Pond from an elevation of 4,350 feet amsl to an elevation of 4,353 feet amsl and between the South Pregnant Pond and the South Barren Pond from an elevation of 4,350 feet amsl to an elevation of 4,352 feet amsl, it both allows the Mine to operate the Pond system more efficiently during a contingency event and allows for operational flexibility. The storage capacity of all three ponds to the freeboard elevation of 4,353 feet amsl is 45,903,488 million gallons. For operational purposes, the South Barren Pond and South Pregnant Pond have storage volumes, to an elevation of 4,352 feet amsl, of 6,132,276 gallons and 25,589,810 gallons respectively, with total operational storage volume of 31,722,086 gallons. The Contingency Pond has a total storage volume, to an elevation of 4,353 feet amsl, of 11,621,788 gallons. All 3 ponds will be double-lined for leak detection with an 80-mil smooth HDPE primary liner and a 60-mil HDPE secondary drainliner to allow for transmission of leaking fluid to the leak detection sumps, each with a capacity of 2,700 gallons.

In accordance with NAC 445A.433, the fluid management system for the South Heap Leach Pad has been designed to remain fully functional and to fully contain all process fluids including all accumulations resulting from a 25-year, 24-hour storm event.

Strip Plant

Precious metals are stripped from the pregnant solution via activated carbon in column sets A, B, C, D, or E and the barren solution is re-introduced to the process circuit. The precious metals are then stripped from the carbon via an elution circuit using a hot solution of one percent sodium hydroxide (NaOH) caustic soda, which places the precious metals back into solution. The solution is then pumped into a pregnant solution tank and into two electrowinning cells in series.

In the electrowinning circuit, the metals in solution are electro-plated on cathodes. The barren solution is either recycled or returned to the barren pond. The cathodes are washed and the precipitate is collected via filtration.

The South Area Expansion, described in the 2014 Major Modification, includes one additional set of carbon adsorption columns, to be constructed adjacent to the south process ponds and within lined containment. The enriched carbon will be trucked from the southern expansion to the existing process facility for stripping, electrowinning and refining. The proposed South Carbon Column will be constructed within lined containment providing a volume of 110% of the volume of the largest vessel within the carbon column set. This containment is to be constructed atop a 10-inch thick pad of Type II Aggregate Base compacted to 95% of maximum dry density over an 80-mil HDPE textured liner. The pad will be set back from the edge of the pond a minimum of 15-feet. The 80-mil HDPE liner ties into the 80-mil HDPE liner utilized within the lined ponds at the crest of the pond. Solution leaving the last column in the circuit within the South Carbon Column system reports to the South Barren Pond via an 8-inch diameter drain pipe, which also lies within lined containment for its entire alignment.

Maximum potential solution volume within the South Carbon Column is 71,000 gallons. The containment capacity of the 120-foot by 120-foot reinforced concrete slab foundation surrounded by a 1 foot tall spill containment curbs is 107,712 gallons, which equates to approximately 36,712 gallons of extra capacity and provides the minimum 110% containment required by NAC 445A.436.

Should a leak or spill occur, solution retained within the containment system will be transmitted by gravity to the Barren Pond via two 8-inch drain pipes installed within the containment wall.

Refinery

In the refinery, the precipitate from the cathodes is first dried and retorted in one of two mercury retorts. The mercury is recovered and disposed of at a licensed facility. After retorting, the precipitate is blended with fluxing agents and introduced to a doré furnace. The doré is then shipped off-site for additional refinement.

Secondary Containment

Containment within the strip plant, the containment areas for the carbon column sets, including the South Carbon Column, and the cyanide storage tank containment areas are designed in accordance with NAC 445A.436 to contain leaks or spills before they enter the environment. If process solution escapes primary containment, it will be contained within the dedicated secondary containment area or in an adjacent process pond. In the strip plant, secondary containment consists of concrete stem walls and a concrete pad sloped to recovery sumps where process solution is re-introduced into primary containment via pumps and piping. In all cases, the required 110% secondary containment is provided.

In September 2013, the Permittee submitted an EDC proposing the redesign of the sump system within the process building. The existing Tank Farm Sump, West Sump, East Sump, A-Plant Sump, Process East Wall Sump, Compressor Room Sump, Press Room Storage Room Sump, Retort Sump, and EW-Cell Sump were abandoned by filling with concrete up to the grade of the adjacent floor slab. New or retrofitted sumps were installed for the Tank Farm Sump, West Sump, East

Sump, Acid Tank Sump, Met Lab Sump, A-Plant Sump, Process East Wall Sump, Retort Sump, and EW-Cell Sump. Each new sump was constructed as a concrete vault but with Agrusafe Sure Grip concrete protective liner. This liner system has a double-wall configuration which allows leakage through the primary wall to be monitored and evacuated if necessary through a HDPE standpipe. The EDC was approved by the Division in November 2013.

Other

Process piping, located between process components, is designed and constructed in accordance with NAC 445A.436. All process components have been designed to withstand the runoff from a 25-year, 24-hour storm event.

Groundwater monitoring wells have been installed downgradient of process components for routine monitoring in accordance with Permit conditions to ascertain compliance with regulatory requirements. Routine monitoring in the second quarter of 2000 revealed elevated concentrations of process-related constituents in the vicinity of monitoring well MW-16. The Permittee responded by performing inspections of the upgradient heap leach solution collection channel and initiated improvements to damaged areas of the channel where leakage was determined likely to occur.

Continued monitoring of the area has shown that the process-related constituents have been detected in monitoring wells MW-16B, MW-F, MW-G, MW-KA, MW-M, MW-O, and MW-N. Remediation (pump-back) wells were installed (MW-16, MW-16D, MW-GA, MW-I, and MW-K) to mitigate further migration. In April 2010, an EDC was submitted by the Permittee and approved by the Division to add another remediation well (MW-V) at a location approximately midway between MW-G and MW-M to provide additional pumping capacity.

Due to low production, wells MW-F and MW-G are no longer able to produce reliable samples for analysis. As of the 2011 Permit renewal, they have been removed from the Permit monitoring list for Profile I sampling but remain for measurement of depth to water. In addition, well MW-16C no longer produces enough to be useful as a pump-back well. However, it is retained in the Permit as a monitoring well for Profile I sampling and measurement of depth to water.

In September 2012, the Permittee submitted an EDC proposing to install four new wells as part of the ongoing remediation efforts. The EDC was approved by the Division in the same month. Two wells – MW-28 and MW-30 – were constructed as monitoring wells outside of the current plume area. The other two – MW-29 and MW-31 – were constructed as pumpback wells in the area of the administrative buildings northwest of the process building. Initial sampling results for all four wells confirms that MW-30 is outside of the impacted area, MW-28 is in an area of detectable WAD cyanide and total nitrogen (both below the Profile I reference values), with MW-29 and MW-31 within the plume.

In November 2012, the Permittee submitted an EDC proposing to install five new monitoring wells in the area planned for a future HLP southwest of the existing facility. These wells include MW-32 and MW-33 (downgradient of the future HLP and process ponds), MW-34 and MW-35 (upgradient of the future HLP but downgradient of the future waste rock facility), and MW-36 (upgradient of the future waste rock facility). The EDC was approved by the Division in November 2012 and well installation was completed in July 2013.

In May 2014, the Permittee requested the abandonment of monitoring well MW-14. This well has been replaced by the new well MW-32 installed in July 2013. MW-14 is in the footprint of the future HLP.

The South Area Expansion, described in the 2014 Major Modification, also includes relocation of the existing crusher and construction of a crusher pad. A new lay-down yard near the South Crusher and additional haul and access roads are also necessary to support operation of the South Heap Leach Pad and South Waste Rock Storage Facility and Phase 7 Pit expansions.

Stormwater management channels for diverting run-on around mining facilities and directing run-off to associated sediment ponds will also be constructed. The Non-contact South Diversion Channel is designed to divert flows from the 100-year, 24-hour storm event. Stormwater is diverted around proposed facilities and flows are dissipated at the end of the diversion channel by facilitating a hydraulic jump with a nearly flat, wide apron of large diameter rip-rap and concrete blocks. Stormwater flows then enter into a Dispersion Ditch, which contains eight rip-rap weirs to allow it to enter back into natural drainages and through culverts already in place under the Frontage Road and Interstate 80.

C. Receiving Water Characteristics

The Facility is located on the western slope of the Humboldt Mountain Range. The Humboldt River and the Rye Patch Reservoir are located approximately miles to the west. Most of the groundwater recharge is from precipitation on the mountain ranges surrounding the area including the Humboldt Mountain Range. Groundwater generally flows from east to west through the facility area.

Groundwater quality deteriorates with depth. Good quality groundwater at the site was first encountered around 100 ft bgs. However, groundwater quality at depth is geothermal (190-212 degrees Fahrenheit (°F)), and concentrations exceed Profile I reference values for arsenic, manganese, and iron. Total dissolved solids concentrations increase from 400 mg/L to 4,000 mg/L within a few hundred feet below the surface.

Ephemeral drainage occurs in Johnson and Black Canyons to the south and Humboldt Canyon to the north. These ephemeral waters are not affected by operations. However, ephemeral drainage in Florida Canyon has been diverted into the Wiley Gulch drainage, which flows into a sediment pond prior to discharge into the Johnson Canyon drainage.

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 sent to the **Lovelock Review-Miner** for publication. The Notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation our mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date of public notice. 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, any affected 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 and pumpback system wells. Specific monitoring requirements can be found in the Water Pollution Control Permit.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S. Code 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 Code of Federal Regulations 10, 15 April 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service 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.

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