A. Location and General Description

Location: The Manhattan Project is located on the west edge of the town of Manhattan. Manhattan is located approximately 35 miles north of Tonopah, in Nye County. The mine is located within Sections 19, 20, 29, and 30, Township 8 North, Range 44 East, Mount Diablo Baseline and Meridian.

General Description: The Project is in post-closure; it originally consisted of one canyon fill heap leach pad, a tailings impoundment, one waste rock storage facility, and three open pits (one now containing a pit lake). The mill, carbon plant, and various ancillary components were all removed and the disturbed ground was re-sloped and seeded. The Project is located on both private land owned by Round Mountain Gold Corporation (117 acres) and public lands administered by both the U.S. Department of the Interior, Bureau of Land Management (156 acres) and the U.S. Forest Service (16 acres) for a total project area of 289 acres.

B. Synopsis

In 1979, the tailings dam and impoundment design was submitted to the Nevada Division of Environmental Protection (Division) on behalf of the owner, Houston Oil and Mineral Corporation. Tenneco Minerals Company acquired the mine property in 1981, constructed the mill facility in 1983, and managed mining, milling operations, and tailings deposition until January 1985 when Echo Bay Mines acquired the mine. In 1990, ownership of the property was transferred to Round Mountain Gold Corporation (Permittee). From 1990 to the present, the Permittee has been the operator/owner of the mine.

Heap leach operations were initiated in May 1988. Mining ceased in early 1990, and milling operations and deposition into the tailings impoundment ceased in the third quarter of 1990. Loading of ore onto the heap leach pad continued until January 1991 from ore stockpiles and mill rejects. Process solutions continued to be recirculated onto the heap and through carbon columns for gold recovery up to October 1993. Biological detoxification of the spent ore was initiated soon after, indicating the completion of ore processing activities and the beginning of closure activities for the site. The initial Water Pollution Control Permit (Permit) was issued on 6 May 2002 and expired on 6 May 2007. The Permit was renewed in 2009, 2015, and 2019. In August 2019, the Permittee requested that all components other than the pit lake be removed from the Permit as all process components were now stable in post-closure. Upon review of as-build documentation and monitoring well data, the Division approved the request and the heap leach pad, tailings impoundment, waste rock storage facility, and dry pits were removed from the 2019 Permit renewal. See Figure 1 for a site facility map.

Geology: Rock exposed in the Manhattan Project area include Cambrian and Ordovician meta-sediments, Cretaceous granites, Tertiary volcanics, and Quaternary alluvium. Paleozoic rocks are exposed as a series of relatively thin, highly folded thrust sheets that
generally trend east-west to northwest and dip to the south. These rocks include the Ordovician Toquima Formation, the Ordovician Zanzibar Limestone, the Cambrian Mayflower Schist, and the Cambrian Gold Hill Formation. These rock units have been variably metamorphosed by Cretaceous-age plutonic events. Numerous faults occur within the mine area as a result of several tectonic events. The Cambrian Gold Hill Formation consists of interbedded phyllite, quartzite, marble, and sandy phyllite, with sandy phyllite and sandy marble being the major hosts to gold ore at Manhattan, and consisting of silt to fine-sand sized detrital quartz grains within a variable carbonate-mica-chlorite matrix. Calcite and pyrite occur along unoxidized fractures. Supergene oxidation of the host rock extended to depths of 100 feet, and fracture-controlled oxidation reached depths of 400 feet.

Open Pits: The Manhattan site consists of three open pits, the East, Stray Dog, and West Pits. The three pits were not backfilled; only one, the West Pit, penetrated groundwater. Table 1 below presents some general physical characteristics for the three pits.

Table 1: Manhattan Pits – General Characteristics and Model Comparison

<table>
<thead>
<tr>
<th>Criteria</th>
<th>East Pit</th>
<th>Stray Dog Pit</th>
<th>West Pit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining Completion Date</td>
<td>1990</td>
<td>1990</td>
<td>1990</td>
</tr>
<tr>
<td>Pit Footprint (acres)</td>
<td>26</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>Ultimate Pit Depth (ft. bgs)*</td>
<td>160</td>
<td>70</td>
<td>320</td>
</tr>
<tr>
<td>Pit De-watering Required</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Ultimate Floor Elevation</td>
<td>6,888</td>
<td>6,952</td>
<td>6,604(a)</td>
</tr>
<tr>
<td>Estimated Pre-Mining Groundwater Elevation</td>
<td>6,829</td>
<td>6,829</td>
<td>6,760(a)</td>
</tr>
<tr>
<td>Ultimate Floor Depth Below Estimated Pre-Mining Groundwater Elevation (feet bgs)*</td>
<td>NA</td>
<td>NA</td>
<td>156(a)</td>
</tr>
<tr>
<td>Predicted Pit Lake Final Elevation (ft. AMSL)**</td>
<td>NA</td>
<td>NA</td>
<td>6,640(a)</td>
</tr>
<tr>
<td>Predicted Pit Lake Final Depth (feet bgs)*</td>
<td>NA</td>
<td>NA</td>
<td>36(a)</td>
</tr>
<tr>
<td>Year Final Pit Lake Elevation Attained</td>
<td>NA</td>
<td>NA</td>
<td>2008(a)</td>
</tr>
<tr>
<td>Pit Lake Elevation as of 2018 (ft. AMSL)**</td>
<td>NA</td>
<td>NA</td>
<td>6681</td>
</tr>
</tbody>
</table>

* ft. bgs: feet below ground surface
** ft. AMSL: feet above mean sea level
(a): HSI, 1994
(c): RMGC, 2008. Future pit lake depth was not calculated in this report.
(d): With dewatering underway at nearby Goldwedge Mine, this will be delayed.
Figure 1: Site facilities and monitoring locations.
East and Stray Dog Pits: Groundwater has not impounded in either of these since mining ceased in 1990.

West Pit Lake: The West Pit was the only pit that intersected the pre-mining groundwater table. Upon cessation of production well pumping in 1992, groundwater began infilling the West Pit. Monitoring of the West Pit Lake elevations and water quality also began in 1992. Both the pit lake water balance and water quality modeling were conducted in 1994 (HSI, 1994) and updated in 2000 (HSIGT, 2000), 2008 (RMGC, 2008), and April 2016 (SRK, 2016). An addendum to the pit lake study was provided with the 2019 Permit renewal application (SRK, 2019). Conditions in the pit water have not changed substantially since the models were first published but elevation has been affected by dewatering operations at the nearby Goldwedge Mine (Water Pollution Control Permit # NEV2002107). As of May 2019, the pit lake elevation was 80 feet above the pit floor, 30 feet below the predicted elevation of 6725 feet AMSL.

West Pit Lake Water Balance: Initial water balance modeling was conducted in 1994 (HSI, 1994) and updated in 2000 (HSIGT, 2000). With the availability of additional site data, the 2000 updated model concluded that groundwater inflow actually increased over time, which will result in both a deeper pit lake and a longer time to reach a final elevation. In summary, both models predicted that the West Pit Lake will function as a groundwater sink into the long term, and discharge through evaporative losses only. However, dewatering at Goldwedge has apparently altered this assertion and the pit lake may be acting as part of a flow-through system.

See Table 2 for current well information. In 2008, the Permittee (RMGC, 2008) compiled historic and current depth to groundwater data for three adjacent West Pit wells/boreholes (HOM-24, Well 28, and 23-86). This depth to groundwater data evaluation corroborated the theory that the overall mine site groundwater flow gradient is to the northwest and groundwater recharge into the pit lake is from the east/southeast. Additional details included:

- The review essentially reinforced both the 1994 (HIS, 1994) and 2000 (HSIGT, 2000) model predictions that the West Pit Lake will continue as a hydraulic sink.
- The review predicted stabilized pit lake elevation at approximately 6,725 feet above mean sea level, although stabilization would occur approximately 10 years earlier in year 2020. The predicted pit lake elevation stabilization date of 2020 will need to be revised.

Table 2: Extant Monitoring Wells – General Characteristics

<table>
<thead>
<tr>
<th>Well ID</th>
<th>Completion Date</th>
<th>Total Depth (feet)</th>
<th>Screened Interval</th>
<th>Collar Elevation (ft. AMSL)(^{(a)})</th>
<th>Water Elevation at Completion (ft. AMSL)(^{(a)})</th>
<th>Water Elevation May 2019 (ft. AMSL)(^{(a)})</th>
<th>Difference (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOM-27</td>
<td>7/21/1980</td>
<td>650</td>
<td>110 - 229, 229 - 596</td>
<td>6985</td>
<td>6833</td>
<td>6763</td>
<td>-70</td>
</tr>
<tr>
<td>MW-HP</td>
<td>10/21/2010</td>
<td>270</td>
<td>245 - 265</td>
<td>7041</td>
<td>6917</td>
<td>6866</td>
<td>-51</td>
</tr>
<tr>
<td>WW-1</td>
<td>10/13/1986</td>
<td>512</td>
<td>239-512</td>
<td>6900</td>
<td>6659</td>
<td>6761</td>
<td>-241</td>
</tr>
</tbody>
</table>

\(^{(a)}\): ft. AMSL = feet above mean sea level
Upgradient monitoring well HOM-27 was installed in 1980 as a production well. WW-1 was installed in 1986 as a dewatering well on the east side of the West Pit. Downgradient wells include “Well 28”, constructed in 1983 as a production well, and MW-WP, completed in 2010 to monitor possible downgradient migration of constituents from the pit lake. WW-1, HOM-27, and Well 28 were all screened within the same geologic unit as penetrated by the West Pit. WW-1 is located approximately 200 feet east of the pit, HOM-27 is located some 450 feet south of the pit, and Well 28 is located about 700 feet west of the pit. The “Pauley Well”, constructed in 1978, is downgradient of the West Pit; it is not required by the Permit to be monitored. As of the 2019 renewal, only WW-1, HOM-27, MW-WP, and MW-HP are required by the Permit to be monitored.

Groundwater elevation data in Well 28 through 2014 indicated that maximum post-pumping groundwater recovery elevation occurred in March 2008. In 2003, an adjacent facility (Goldwedge Mine) began operations; in 2007, and continuing to date, began to dewater the underground workings. These dewatering actions lowered water levels in the area wells and appear to have impacted the West Pit water balance by intercepting and removing groundwater that, prior to the Goldwedge dewatering activities, would have reported to the West Pit. Pumping rates at Goldwedge increased to a maximum in 2013 of approximately 320 gallons per minute (gpm). In 2015, the rate was decreased to an estimated 200 gpm, coincident with the site entering temporary closure. This effort led to a minor rebound in the Manhattan Pit Lake and the water level increased approximately 3 feet from summer 2018 to spring 2019.

The two existing upgradient monitoring wells (WW-1 and HOM-27), and MW-WP, will continue to be monitored semi-annually for Division Profile I constituents and depth to groundwater. Well 28 (located near MW-WP) is no longer required to be monitored by the Permit and will be properly closed out (Well 28 was initially a dewatering/production well and not constructed as a monitoring well). In addition, groundwater elevations are essentially the same in both MW-WP and Well 28.

**West Pit Lake Water Quality:** The principal geochemical processes affecting current and future pit lake water quality include wall rock leaching, surface water influx, evaporation concentration of groundwater, and mineral precipitation. The introduction of additional solutes into the lake via groundwater and surface water influx and wall rock leaching will be compensated for by the removal of parameters from solution as a result of the precipitation of saturated mineral phases. Precipitating phases such as calcite, hexahydrite, quartz, halite, and clays will efficiently remove metals from solution.

Predictive pit lake water quality modeling (HSI, 1994) suggested that equilibrated pit lake water quality would meet all NDEP Profile I reference values with the exception of total dissolved solids (TDS), sulfate, magnesium, and manganese. The pH should remain neutral. Acid-base accounting (ABA) on pit wall rock confirms an excess neutralization potential. The 2000 model update (HSIGT, 2000) concurred with the 1994 predictions. Table 3 below provides both 1994 and 2000 West Pit Lake long-term water quality model predictions, for parameters mentioned above or relevant to this discussion, together with current chemistry.
Table 3 – Predicted and Current West Pit Lake Water Quality

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Division Profile I Reference Values</th>
<th>Division Profile III Reference values</th>
<th>Predicted HIS 1994</th>
<th>Predicted HIS GeoTrans 2000</th>
<th>Annual 2018 Profile III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity (mg/L)</td>
<td>--</td>
<td>--</td>
<td>145</td>
<td>111</td>
<td>74</td>
</tr>
<tr>
<td>Magnesium (mg/L)</td>
<td>150</td>
<td>--</td>
<td>220</td>
<td>155</td>
<td>180</td>
</tr>
<tr>
<td>Manganese (mg/L)</td>
<td>0.1</td>
<td>377</td>
<td>0.2</td>
<td>0.15</td>
<td>0.002</td>
</tr>
<tr>
<td>pH (standard units)</td>
<td>6.5 - 8.5</td>
<td>6.5 - 8.5</td>
<td>7.5</td>
<td>7.7</td>
<td>7.7</td>
</tr>
<tr>
<td>Sulfate (mg/L)</td>
<td>500</td>
<td>--</td>
<td>2,000</td>
<td>1,600</td>
<td>2,300</td>
</tr>
<tr>
<td>TDS (mg/L)</td>
<td>1,000</td>
<td>7,000</td>
<td>3,000</td>
<td>2,300</td>
<td>3,100</td>
</tr>
</tbody>
</table>

From 1999 through 2010, sulfate, TDS, pH, and manganese concentrations were stable; alkalinity and magnesium concentrations had been slightly decreasing. However, from 2010 to 2018, there has been gradual increase in several concentrations. Increased evapo-concentration, due to reduced inflows to the pit due to the Goldwedge dewatering activities, is considered the source of the recent increased concentrations of magnesium, sulfate and TDS.

In 1997, SRK Consulting, Inc., conducted a preliminary ecological screening analysis on pit lake water quality; results indicated current and anticipated water quality should pose no threat to local ecological communities. An updated risk assessment was submitted with the 2019 Permit renewal application. Recent water quality samples, when compared to the recent Profile III reference values, confirm the earlier conclusion.

Semi-annual (2nd and 4th quarters) measurements of pit lake elevations will continue as part of the post-closure monitoring period. In addition, post-closure monitoring of the West Pit Lake will also include an annual Division Profile I and III water quality analyses.

**Waste Rock Storage Facility (WRSF):** Waste rock materials removed from the West and Stray Dog pits were placed in the single waste rock dump located in the western portion of the mine property. The WRSF encompasses approximately 28 acres. Waste rock materials removed from the East Pit were utilized as fill during the construction of the tailings impoundment embankment raises. WRSF material comprises approximately 5 percent marble, 20 percent quartzite, and 75 percent phyllite and sandy phyllite.

The native subgrade materials beneath the WRSF are estimated to consist of a thin cover of alluvial soils consisting of sandy gravel, silty sand, and sandy silt to a maximum depth of about 50 feet underlain by highly fractured schist. Groundwater is estimated to be 250 feet beneath the WRSF.

Waste rock characterization included both ABA and the Meteoric Water Mobility Procedure (MWMP). All waste rock samples have an excess neutralization potential. The MWMP analytical results reported only slightly elevated values for sulfate and manganese. Routine inspections have not discovered seeps or discharges.

Following 2018 and 2019 site inspections by the Division, and monitoring reports submitted by the Permittee, the WRSF was deemed to be stable in post-closure. The Permittee requested that it be removed from monitoring requirements in the 2019 Permit renewal. The Division agreed and the component was removed.
Mill Site: The mill area consisted of carbon-in-leach tanks, thickener tanks, a ball mill, and associated facilities. The mill ceased operation in 1990 and has since been dismantled and reclaimed. The residual thickener solids were incorporated into the tailings impoundment during reclamation activities.

Tailings Storage Facility (TSF): The TSF was built in 1979 and occupies 26 acres and contains approximately 4.2 million tons of material; the thickness ranges from 50 to 95 feet with a mean thickness of about 70 feet. The tailings materials predominantly vary from a sandy silt with low plasticity to non-plastic characteristics, to a silty to sandy clay with low to medium plasticity characteristics. The upper tailings material exhibits an average saturated hydraulic conductivity of 9 x 10^{-6} cm/s. The base tailings (lower 10 feet) were measured to have an average saturated hydraulic conductivity of 1.9 x 10^{-6} cm/s.

The native subgrade materials beneath the impoundment were logged as being mixtures of silty to clayey sand and gravel up to 2 feet thick underlain by bedrock consisting of shale and limestone to the maximum depth explored of 27 feet below ground surface (bgs). The upper encountered portion of bedrock was indicated to be highly fractured, and the lower portion of the encountered bedrock was indicated to be less fractured with a permeability on the order of 10^{-6} cm/s to 10^{-7} cm/s. The impoundment native subgrade was augmented with powdered bentonite, moisture-conditioned, and compacted in order to reduce the potential for seepage. Groundwater beneath the impoundment is estimated to be 300 feet bgs. Since its construction, no seepage has been observed emanating from the TSF.

As part of the closure process, drilling and sampling of the soils underlying the compacted, bentonite-amended base of the TSF was performed in 1996. Acid-base accounting results indicate no potential for acid generation (RMGC, 1997). These results demonstrate that a negligible migration of parameters into the native subgrade occurred during operations, and that low potential exists for future percolation of meteoric waters and migration of entrained waters into the native substrate.

Both MWMP and ABA testing have been conducted on the tailings material. MWMP solids characterization indicates isolated exceedances of NDEP water quality reference values for several parameters (iron, manganese) but, as a whole, the material is benign. The ABA data on the tailings material demonstrates that this material has no potential for acid generation (RMGC, 1997).

As part of the heap closure program, evaporative disposal of approximately 6 million gallons of heap effluent was released onto the surface. A 3.5-acre area was utilized. Lysimeters were installed, up to 15 feet in depth, and indicated negligible increase in subsurface moisture contents during disposal period. As a result of the favorable conditions, the TSF was to be used as an evapo-transpiration cell for long-term heap leach pad effluent. Heap draindown was to gravity feed to an effluent distribution system consisting of buried drip tubing. This system was designed to maximize evapo-transpiration of the solution. The overall goal was to dispose of all effluent and not to allow the solution to accumulate in the TSF. In order to demonstrate that solution was not accumulating in the impoundment, a piezometer was installed in the deepest portion of the impoundment. This piezometer had been monitored yearly and had never shown any solution. The heap leach pad discussion below provides additional information.

During closure activities in the late 1990s to early 2000s, the TSF was covered with waste rock material to an average depth of 7 feet. This has helped preclude wind and water
erosion and allowed plant growth. The outer slope of the impoundment embankment was regraded to increase long-term slope stability; healthy vegetation now occupies the cover.

The TSF reclaim pond consisted of a basin storage area which was prepared with a layer of compacted, bentonite amended soil. The pond was decommissioned in 1991, concurrent with sealing and abandonment of decant facilities on the tailings impoundment. Characterization (MWMP and ABA) of the reclaim pond base solids indicated that process solution did not migrate from the pond. Final reclamation consisted of backfilling the pond basin with material from the WRSF (RMGC, 1994, 2001).

Following 2018 and 2019 site inspections by the Division, and review of monitoring reports submitted by the Permittee, the tailings impoundment was deemed to be stable in post-closure (ref. NAC 445A.431). There is no observed draindown and slopes are stable with no evidence of erosion. The Permittee requested that it be removed from monitoring requirements in the 2019 Permit renewal. The Division agreed and the component was removed; the tailings impoundment is permanently closed.

**Heap Leach Pad:** Constructed in 1988, the heap leach facility (27 acres; 6.5 million tons of ore) consisted of a canyon-fill pad, an in-heap process solution reservoir (sump), a heap reservoir recovery well system, and a leakage collection and recovery system.

The leach pad sub-base construction consisted of a nominal 4-inch thick layer of ¾-inch minus crushed rock placed immediately above compacted native soil material which overlays limestone (highly fractured near its surface and then more intact with depth). The entire system is lined with a single 40-mil plastic polyvinyl-chloride liner (RMGC, 1997). Leak detection beneath the single liner was provided by perforated pipes that daylight in an inspection manhole located on the downstream face of the leach pad dike embankment. Process solution has never been known to report to the inspection manhole nor the collection pond. The leak detection system piping may have been crushed during ore stacking and may have never operated correctly.

In November of 1989, sodium cyanide solution addition to the process solution circuit was discontinued. The heap solution was detoxified by recirculating the draindown through carbon columns and introducing cyanide oxidizing bacteria. Treatment occurred in two phases with the first being in May to October 1995 and the second in May to October 1996 (RMGC, 1997). The heap material has undergone ABA testing. The results of this test did not indicate a potential acid generation problem.

Initial long-term meteoric heap infiltration modeling resulted in an estimated effluent discharge rate of 0.75 gpm. In order to preclude solution buildup behind the dam, the heap earthen dam was pierced and a horizontal drain system was installed. A piezometer was also installed behind the dam to monitor solution levels. As mentioned above, residual heap draindown is designed to be gravity conveyed to the down-gradient tailings impoundment where a subsurface distribution system had been constructed.

Groundwater is located approximately 300 feet beneath the pad. Downgradient monitoring well MW-HP was installed in October 2010 and has been monitored for both groundwater quality and depth to groundwater. Monitoring results from the 2010 installation until 2018 have not exceeded any NDEP Profile I reference values. As of the Annual 2018 Monitoring Report, the TDS concentration was elevated at 970 mg/L, (the Profile I reference value is 1,000 mg/L). No typical process solution markers are evident in the groundwater. Concentrations for nitrate+nitrite as N are very low (averaging less than 2 mg/L) whereas
nitrate+nitrite (as N) concentrations in the heap leach pad solution averages 200 mg/L. WAD CN concentrations are also non-detect in MW-HP.

Following 2018 and 2019 site inspections by the Division, and the review of monitoring reports submitted by the Permittee, the heap leach pad was deemed to be stable in post-closure (ref. NAC 445A.430). There is no observed draindown and pad slopes are stable with no evidence of erosion. The Permittee requested that the leach pad be removed from monitoring requirements in the 2019 Permit renewal. The Division agreed and it was removed; the heap leach pad is permanently closed.

**Process Ponds**: There were two ponds associated with this site; the reclaim water pond for the tailings impoundment (discussed above) and the leakage collection pond for the heap leach pad. Both have been backfilled with waste rock material and reclaimed.

The leakage collection pond was double-lined with a 40-mil high-density polyethylene (HDPE) overliner and a 20-mil HDPE secondary liner; a geotextile layer separated the two liners. This pond never contained process solution.

**C. Receiving Water Characteristics**

The Manhattan Mine facility is approximately 7,000 feet above mean sea level. The approximate average annual precipitation total is 9 inches. Pan evaporation is approximately 50 inches yearly.

All drainages in the vicinity of the mine site are ephemeral; these include Manhattan Gulch (north of the site), Pipe Springs Canyon (east of the site), and Glass Gulch (to the west). Surface water occurs only in response to spring run-off and summer thunderstorm events. The ephemeral drainages are classified as losing reaches in that they lose surface flow to the groundwater system during infrequent flow events.

The groundwater flow gradient within the mine boundary is approximately east to west. The principal feature that controls groundwater availability and flow at the Manhattan site is the west-northwest trending and south dipping shear zone. The shear zone is intersected by numerous high-angle north-east striking faults. These cross faults can enhance groundwater flow where the rocks have been subjected to open space fracturing. Where clays have developed within these structures, groundwater flow has been impeded. Depth to groundwater varies throughout the site with an average depth of 200 feet.

With the exception of rare exceedances for iron, manganese, sulfate, and total dissolved solids, background groundwater quality meets all NDEP Profile I reference values.

**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](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. Pathway to Final Closure and Permit Termination

The only components remaining in the 2019 Permit renewal are the West Pit Lake and the four site monitoring wells. All of the closed and reclaimed process components such as the heap leach pad, tailings impoundment, ancillary piping and ponds have been deemed stable and, per NAC 445A.430 and NAC 445A.431, are eligible for removal from the Permit. In order for the pit lake to be considered for final closure and subsequent Permit termination, the elevation and chemistry must stabilize. The various pit lake studies and updates have indicated this should have occurred by now. While currently under Profile III reference values, magnesium, sulfate, and TDS continue to report and the fluctuating pit water levels are preventing final closure. Once the West Pit Lake has stabilized, the Permit may be considered eligible for termination; however, the Division may require additional actions, if warranted, in accordance with site conditions and applicable statutes, regulations, orders, and Permit conditions.

G. Rationale for Permit Requirements

Facility monitoring wells meet Profile I reference values and do not indicate any threats from the mine to waters of the State. The West Pit Lake elevation has not yet stabilized possibly due to dewatering activities at a nearby mine; as such, characterization and observation of the pit lake will continue to be required along with site monitoring wells.

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.

Prepared by: L. A. Kreskey
Date: 26 September 2019
Revision 00: 2019 Renewal; Permit effective 14 November 2019

References


