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

Permittee Name: **Miramar Gold Corporation**

Project Name: **Golden Eagle Mine**

Permit Number: **NEV0060034 (Renewal 2015, Fact Sheet Revision 00)**

A. Location & General Description

Location: The Golden Eagle Mine is located in the Flowery Mining District, Storey County, Nevada, 30 miles southeast of Reno and about four miles east of Virginia City, Nevada on Sixmile Canyon Road. The mine site is located in Township 17 North, Range 21 East, Sections 23, 24, and 26, Mount Diablo Baseline and Meridian.

General Description: The mine currently consists of two pits – one back-filled and one containing a pit lake, two waste rock dumps, one heap leach pad with four associated partially back-filled ponds - all acting as open evaporation ponds - and internal roads. The mine property encompasses approximately 139 acres, of which 65 acres are private land and 74 acres are located on Bureau of Land Management (BLM) administered lands. The project is in post-closure; all support facilities have been removed from the site. The leach pad has been recontoured, topsoil applied, and seeded; both waste rock dumps have been recontoured and seeded.

B. Synopsis

Mining activity within the area of the mine dates back to the 1860s and is now considered to be part of the Comstock Mining District.

Modern mining operations began in 1986 with Alhambra Mining Inc. (Alhambra) developing the Flowery Gold Mine property. This development consisted of constructing the heap leach facilities and mining the historic Lady Bryan Shaft/Glory Hole area. In 1989, Alhambra changed its name to American Eagle Resources, Inc. and renamed the property the Golden Eagle Mine. In 2001, Miramar Gold Corporation (Miramar) became the Permittee for the property. In March 2008, Newmont Mining Corporation (Newmont) purchased Miramar, making Miramar a wholly-owned subsidiary of Newmont. A total of about 835,000 tons of ore and 2,223,000 tons of waste were mined at the site utilizing modern mining techniques.

The first Water Pollution Control Permit (Permit) was issued to Alhambra in 1988. In 1993, American Eagle Resources, Inc. renewed the Permit and continued mining operations until 1996, at which time production ceased and closure and reclamation activities commenced. The Permit was renewed in 1999, 2004, and 2010. This is a renewal of the post-closure monitoring Permit and shall remain in effect until 30 December 2019.

Pits:

Lithologies mined at the site and include a series of oxidized and unoxidized volcanic, intrusive, and sedimentary formations. Most of the formations consist of andesitic flows and tuffs, but also include lesser volumes of intermediate felsic intrusives and surficial colluvium and alluvium. Oxide ore was mined from the Lady Bryan Pit, having an average net neutralization potential (NNP) of approximately 25 T/kT. It is presumed that at least some Bonanza Pit ore was sulfidic.

In 1874, the Lady Bryan Shaft was developed to a depth of 900 feet with mining continuing until 1881. In 1986, Alhambra open pit mined the area of the Lady Bryan Shaft. During active mining, dewatering of the pit was not required. The side-cut open pit occupies approximately 8.8 acres and has total depth of approximately 98 feet. Following cessation of mining activities, groundwater began to flow into the pit resulting in formation of a pit lake approximately 32 feet in depth. The Lady Bryan Pit Lake now occupies the bottom of the resulting side-cut open pit. Based on the pit lake water level relative to that of the down-gradient monitoring well, MH-8A, it is presumed this pit lake is a flow-through regime. The pit lake surface elevation is relatively stable, with water elevation varying seasonally by about 5 feet. The open pit is split approximately evenly between private and BLM administered lands.

The Bonanza Pit area was first mined at about the same time as the Lady Bryan Shaft with mining continuing underground into the 1920s. Following completion of open pit mining by Alhambra/American Eagle Resources, groundwater inflow created a small, approximately 2.4 acre pit lake, having a maximum depth of 3 feet. Due to the exposed sulfidic lithologies in the pit walls and bottom, the resultant pit lake water had a pH of approximately 3.0 standard units (s.u.) with elevated metal concentrations. Prior to and in addition to backfilling of the pit lake, approximately 9 tons of lime was added as slurry to neutralize the acidic water. The pit was then backfilled with oxide waste rock followed by a layer of spent oxide ore. This layer was then overlain with potentially acid generating (PAG) waste rock removed from the west side of Bonanza waste rock facility lobe area adjacent to Bonanza Creek. A layer of lime was applied over the final PAG waste backfill surface and then covered with a minimum twelve inches of oxide and/or topsoil material suitable as growth medium. The final backfill elevation from the pit bottom is approximately fifty feet which corresponds to approximately forty feet above the anticipated static groundwater level. All material was placed such that the final surface drainage slopes to the south out of the pit and all potential surface water drainages near or adjacent to the pit have been diverted away from the pit area. Surface ponding of meteoric water has never been observed.

The pit lake water quality, with the exception of arsenic and manganese, meets all NDEP Profile I reference values and meets all Profile III reference values. Monitoring well MH-8A, located approximately 1000 feet downgradient of the Lady Bryan Pit Lake, has been

monitored quarterly since the fourth quarter of 1990. Groundwater parameters sampled from this well meet all NDEP Profile I reference values. As such, because this groundwater is thought to represent Lady Bryan Pit water, the Division has determined that future monitoring of this well will not be necessary. The well remains open and accessible.

Since the Lady Bryan Pit Lake has been stable both elevation-wise and in water quality, NDEP has made the determination to monitor the water quality utilizing only the NDEP Profile III analytical suite to address NAC 445A.428. Therefore, post-closure monitoring of the Lady Bryan Pit Lake will require semi-annual monitoring of the pit lake water quality for Profile III.

Post-closure monitoring of the Bonanza Pit will require an annual inspection (Spring) of the pit for ponded water, and, if ponded water is present, a field pH, field specific conductance, photos, and a water quality sample (Profile III) shall be taken.

Both the Lady Bryan and Bonanza Pits shall be inspected annually (Spring) for stability, safety, and access restrictions.

Waste Rock Dumps:

There are two waste rock dumps constructed on the site - the Lady Bryan and Bonanza Dumps. The Lady Bryan waste rock dump, located south of the Lady Bryan Pit, was completed in 1992 and is approximately 21 acres in size. All Lady Bryan waste rock is oxide. The entire dump has been contoured, graded, and seeded.

The Bonanza waste rock dump was located south of the Bonanza Pit and, in part, adjacent to the east bank of the upper reach of the intermittent Bonanza Creek stream channel. Due to portions of the facility containing sulfidic rock, material located in the lobe shaped area of the facility adjacent to the Bonanza Creek stream channel was removed and placed as backfill into the Bonanza Pit as described above. The average net neutralization potential (NNP) of the waste rock removed was –60 tons $CaCO_3$ per thousand tons of material (T/kT). The remaining waste rock dump occupies approximately 18.6 acres. The dump was contoured and seeded in February 2002. No seepage has been observed from either dump.

Due to a lack of suitable soil and/or growth media on the site, portions of the Bonanza waste rock dump, backfilled Bonanza Pit and the heap leach pad were treated with biosolids. The material was placed on the surface and subsequently ripped to work the biosolids into the soil surface and provide a contoured surface to capture and promote infiltration of meteoric water.

The Permittee shall be required annually (Spring) to inspect all waste rock dumps for physical stability, and, should seepage be present from any portion of the waste rock dump,

take a field pH, field specific conductance, photos and a water quality sample for Profile I characterization.

Heap Leach Pad:

There is one heap leach pad on the mine site. The pad covers approximately 9.7 acres and contains approximately 835,000 tons of processed ore. The pad was constructed in three phases. Phase 1 was constructed with a cut-and-fill sandy clay sub-base overlain with 40-mil high-density polyethylene (HDPE) liner. Phases 2 and 3 were constructed with a 1-foot thick sub-base having a permeability lower than $1x10^{-6}$ cm/sec overlain with 60-mil HDPE liner.

Leak detection for Phase 1 has a booted two-inch diameter perforated pipe which daylights in the collection ditch. Phase 2 has perforated pipe between the compacted soil and the liner along the full length of its internal divider berm, as well as along the shared divider berm between Phases 1 and 2. The leak detection pipe daylights into the Phase 2 collection ditch between Phases 1 and 2 on the east side of the heap leach facility. Phase 3 has a pipe running along the length of the divider berm between Phases 1 and 3. The leak detection pipe extends to the solution collection ditch, is booted through the liner and discharges into the ditch. During closure activities, the leak detection systems were modified to route solution into the collection ditches and report to the process ponds

During closure activities, a total of 32 samples for static testing were collected from all areas of the heap. Static test results indicated a low potential for acid generation. The average NNP was 14 T/kT and the ratio of acid neutralization potential (ANP) to acid generation potential (AGP) ranged from 0.5 to 9.89. Pyritic sulfur content ranged from 0.05 % to 1.08 %.

In the Fall of 2000, the heap was reshaped and regraded to a nominal 3H:1V slope. Topsoil/growth media, at a minimum of 12 inches thick, was placed and seeded. The heap leach pad has successfully revegetated.

In July 2012, Newmont submitted an Engineering Design Change (EDC), entitled "Bonanza Evaporation Ponds Improvement Project" (Project) that is to improve, among other things, the heap leach pad draindown system piping layout. The EDC was approved in July 2013. Improvements to the heap leach pad draindown system included removal of the existing underdrain sample port, flow meter, and distribution piping and installation of a new sample vault (Vault #1) and valves to direct all long-term heap leach pad draindown flow into Pond 1.

Table 1 below provides heap draindown long-term concentrations for parameters elevated above reference values or relevant to this discussion, together with an average of water quality data collected from 2001 through the first quarter of 2015. The term 'Stable' in the

table does not recognize seasonal variation (which may be significant for some parameters) but reflects only annual average comparisons. This table format is the same for Table 1 through Table 7.

Table 1 – Heap Leach Pad Draindown Parameters

Parameter	NDEP Reference Value (mg/L)	Heap Leach Pad Average Concentration & (Range) (mg/L)	Trend
Alkalinity	---	138 (94 – 220)	Increasing
Iron	0.6	1.07 (0.12 – 6.80)	Increasing
Manganese	0.10	0.98 (ND – 5.10)	Increasing
Nitrate + Nitrite (as N)	10	259 (45 – 390)	Decreasing
pH (Standard Units)	6.5 – 8.5	7.7 (7.4 – 8.1)	Stable
Selenium	0.05	0.12 (0.08 – 0.20)	Increasing
Sulfate	500	2730 (1500 – 3400)	Stable
Total Dissolved Solids	1000	6140 (5200 – 7200)	Stable
WAD Cyanide	0.2	0.24 (0.08 – 0.95)	Decreasing
Flowrate, gpm	---	0.31 (ND – 6)	Decreasing

ND = Non-detect

Draindown from the heap (flow in gpm/NDEP Profile II) will continue to be monitored on a quarterly basis. No flow has been observed from the leach pad since 2011.

Process Ponds:

Four ponds currently remain on site - the pregnant pond (Pond 1), barren pond (Pond 2), emergency/storm event pond (Pond 3), and pond leak detection sump (Pond 4). Ponds 1 and 2 primary liners are constructed of 40-mil HDPE. The secondary liners consist of 30-mil PVC which extends three feet in height upward on the sides from the bottom of both ponds. Pond 2 was relined with an additional 40-mil HDPE liner which was placed over the old primary liner with a geofabric and 2-inch leak detection pipe placed between the new liner and the old primary liner. The subbase material was moisture conditioned and compacted in place. Leak detection for these two ponds consists of geofabric on the slopes of the ponds

and continues to function as originally designed. Pond 3 remains single-lined with 60-mil HDPE, and therefore is not considered a process pond. In an emergency situation, process solution could remain in Pond 3 up to a maximum of 20 days.

In 2001, Ponds 1, 2, and 3 were converted into open evaporation ponds by installing a synthetic geogrid (honeycomb) on top of the primary liner and covering it with suitable growth media. These now-converted ponds have functioned satisfactorily in terms of fluid containment and management but did allow for a surface expression of solution which is not deemed desirable into the long-term.

In order to remove the surface expression of process solution from the open evaporative ponds, the 2011 Project included placement of approximately one-foot of gravel in the bottom of Ponds 1 and 2. Above the gravel layer, one-foot of coarse rock was placed. The gravel and coarse rock covered the existing salts while providing pond capacity in the pore spaces. No gravel or coarse rock was placed in Pond 3; the surface of Pond 3 was only regraded to eliminate low spots.

Also part of the Project, Pond 4, which formerly contained a 2,500-gallon steel tank into which the pond leak detection systems reported, was reconstructed to a double-lined pond to allow for collection of process solution from the Pond 1 and Pond 2 leak detection systems, West pipe and East pipe, respectively. These leak detection pipes are contained within Vault #2. The Pond 4 upgrade included 6-inches of compacted in-place native soil as liner bedding protection. The primary and secondary liners consist of 80-mil HDPE. Geonet was installed between the two HDPE layers. The primary HDPE layer was covered with geocell material filled with liner bedding sand and 12 inches of coarse rock above the geocell. The geocell consisted of expanded HDPE material (TerraCell 140) placed on top of the primary liner to stabilize the cover material. A 1-foot deep leak detection sump filled with gravel, having a capacity of 75 gallons, was installed between the primary and secondary liners with a 4-inch PVC leak detection pipe extending to the pond crest.

During the Pond 4 construction activities, impacted soils containing elevated levels of nitrate ranging from 80 – 150 mg/L, were discovered in the area immediately below and adjacent to the location of the steel tank. The impacted soils were excavated to a depth of approximately 4 feet and used as fill material in Ponds 1, 2, and 3. Confirmatory sampling was conducted and results indicated that the contaminated soil had been removed.

A Corrective Action Plan (CAP) for the installation of two two-inch diameter monitoring wells to investigate the extent and magnitude of the release was submitted on November 5, 2013. The CAP was approved and the wells were installed in early December 2013. Soil samples were collected during the well installation and resulting data indicates both nitrate and WAD cyanide concentrations are below reference values. Groundwater samples have been collected from monitor wells MW-1 and MW-2 since December 2013 and will continue

to be monitored on a quarterly basis for depth to groundwater and groundwater quality (Profile I).

Both monitor wells are located approximately 32 feet south of Pond 4. MW-1 is located to the south (downgradient) and MW-2 is located to the southeast (cross-gradient); the wells are approximately 25 feet apart. MW-1 was drilled to a total depth (TD) of 51.5 ft. below ground surface (bgs) having a static water level of 23 ft. bgs. MW-2 was also drilled to a TD of 51.5 ft. bgs and static water was encountered at 21 ft. bgs. Both wells are screened from 10 ft. to 51.5 ft.

Table 2 below provides average concentrations and range for MW-1 and MW-2 (6 sampling events – December 2013 thru March 2015).

Table 2 - Average Concentration and Range for Monitor Wells MW-1 and MW-2

Parameter	**NDEP Reference Value (mg/L)**	**MW-1 Average Concentration & (Range) (mg/L)**	**MW-2 Average Concentration & (Range) (mg/L)**
Alkalinity	---	173 (167 – 190)	179 (177 – 200)
pH (Standard Units)	6.5 – 8.5	7.2 (7.06 – 7.21)	7.3 (7.03 – 8.01)
Iron	0.6	0.006 (ND – 0.12)	0.07 (ND – 0.15)
Manganese	0.10	2.1 (0.84 – 3.5)	0.28 (0.16 – 0.70)
Nitrate + Nitrite as N	10	0.50 (ND – 2.1)	0.23 (ND – 0.84)
Sulfate	500	1910 (1800 – 1990)	1870 (1790 – 1920)
Total Dissolved Solids	1000	2950 (2830 – 3100)	2860 (2700 – 3000)
WAD Cyanide	0.2	<0.010	<0.010

ND = Non-Detect

Water quality results for both MW-1 and MW-2 indicate no reference value exceedances of nitrate or WAD cyanide. Manganese, sulfate, and TDS concentrations are representative of the Central basin background water quality.

Additionally, a 12-inch perforated riser pipe was installed in Ponds 1, 2, and 4 to allow for access to check water depth in the gravel and coarse rock layers.

A precast concrete vault was installed adjacent to Pond 1 to direct heap draindown to Pond 1. The vault also allows for measuring of the draindown flowrate and sample collection. A similar vault was installed adjacent to Pond 4 to direct flow from the existing east and west leak detection pipes into Pond 4. Leak detection flowrates are measured in the vault.

The flow design of the evaporation ponds is such that the ponds are operated in series. The main draindown line reports to the vault and discharges, through double-walled pipe to Pond 1. The sample vault contains a valve to allow for measuring the draindown flowrate and sample collection. Both Ponds 1 and 2 have a lined overflow spillway located at the southern end of each pond which will allow solution to flow to the next downgradient pond.

Predictive modeling for the evaporation ponds indicate the cumulative surface of all three ponds will be satisfactory in terms of long-term process solution containment – eliminating a need for a discharge into the environment. NDEP Profile II characterization will be required, on a quarterly basis, when a surface expression of solution is present, otherwise, only the depth of solution in the pond is required.

C. Receiving Water Characteristics

The Golden Eagle Mine site is located hydrologically downgradient of Virginia City, its historic mines, waste rock dumps, mills, and tails.

The average annual precipitation, based on data collected from the Virginia City Meteorological Station (No. 268761) is estimated at 13.4 inches per year, and occurs as rain and mainly snow during the winter.

There are four hydrographically distinct drainage sub-basins, delineated by surface topography, located in the vicinity of the mine. Three of the sub-basin watersheds (West Basin, Central Basin, and East Basin) are located upgradient of, and flow beneath, portions of mined areas. The fourth sub-basin (Sixmile Creek) is located downgradient of the mine.

Groundwater in the project area is of a calcium sulfate nature, and as such, reflects: 1) the oxidation of pyrite disseminated in the volcanic rocks, and 2) the mobilization of calcium from the calcium-rich intermediate composition volcanic rocks of the range. As would be expected under these conditions, concentrations of dissolved iron, manganese, sulfate, and TDS also tend to be high and occasional low pH values occur. (Hydro-Search, Inc. 1988)

For the purpose of the water quality review in the post-closure monitoring period, all water quality data, with the exception of monitor well MH-12, begins in the fourth quarter of 2001, when closure activities were essentially completed.

Table 3 – Monitor Well Construction and Depth to Water Details

Well ID	Collar Elevation (ft. amsl)	Total Depth (feet)	Well Bottom (ft. amsl)	Depth to water (ft. from collar)	Groundwater Elevation (ft. amsl)	Screen Interval (feet)
MW-1	4,836	51.5	4,785	23	4,811	10 – 51.5
MW-2	4,837	51.5	4,784	21	4,810	10 – 51.5
MH-11A	4,845	60	4,785	29	4,816	30 - 50
MH-12	4,855	262	4,593	75	4,780	182 - 261
MH-13A	4,775	150	4,625	45	4,753	100 - 150
MH-16	4,865	150	4,715	27	4,838	130 - 150
MH-10	4,884	53	4,832	41	4,843	43 - 53
MH-11	4,828	28	4,800	25	4,803	18 - 28

West Basin:

The principal features of the west side of the project are the Lady Bryan Pit, Lady Bryan Pit Lake, and Lady Bryan waste rock dump.

The mineralization near and beneath the Lady Bryan Pit area has a localized effect on the groundwater quality during passage through the subsurface in the mine's vicinity. The water quality in the Lady Bryan Pit Lake meets all the NDEP's Profile I reference values except for arsenic (0.020 mg/L) and manganese (0.153 mg/L); however, the background groundwater and surface water also exceed the reference values for those parameters as described below.

Arsenic levels of 0.022 mg/L and 0.081 mg/L were reported by HSI in 1987 for the Flowery Shaft (MH-4) and the Lady Bryan Shaft, respectively.

Manganese is present in MH-2, and to some extent in the Lady Bryan Pit Lake, but not in MH-8A or MH-3. Manganese levels of 0.73 mg/L were reported for the Lady Bryan Shaft in 1994.

Manganese is a constituent that distinguishes the water quality between the West Basin and the East and Central Basins. The natural presence of manganese is also found in downgradient wells. Manganese concentrations are generally lower in the West Basin with the highest level occurring in MH-2; however, those are still below 1 mg/L. Manganese in the East and Central Basins and downgradient wells range from 2-15 mg/L."

Water quality in the West Basin, with the exception of arsenic and manganese, meets NDEP Profile I reference values, as evidenced by historic chemistry data of wells MH-2, MH-3, the Flowery Shaft, and the Lady Bryan Shaft, and chemistry data of the Lady Bryan Pit Lake and well MH-8A.

Water quality data throughout the western portion of the project is characterized as having neutral pH (7 – 8 s.u.), with average concentrations of total dissolved solids (TDS) and sulfates of 750 mg/L and 425 mg/L, respectively.

Central Basin:

The heap leach and ponds reside in the watershed situated entirely in the Central Basin.

The Central Basin contained two monitoring wells, MH-10 and MH-11. Both wells were downgradient of the leach pad and ponds, respectively. MH-10 was located near the toe of the heap leach pad; MH-11 was located immediately downgradient of the ponds.

Due to lack of groundwater, monitoring wells MH-10 and MH-11 were abandoned in November 2012. Following abandonment, well MH-11A was installed approximately 20 feet to the southeast of MH-11. To date, MH-11A has been sampled ten times.

Table 4 below provides average concentration and range for MH-11A (10 sampling events – December 2012 thru March 2015), the abandoned wells MH-10 (12 sampling events – December 2001 through February 2007) and MH-11 (7 sampling events – December 2001 through May 2003).

Table 4 - Average Concentration and Range for Monitor Wells MH-11A, MH-10, and MH-11

Parameter	**NDEP Reference Value (mg/L)**	**MH-11A Average Concentration & (Range) (mg/L)**	**MH-10 Average Concentration & (Range) (mg/L)**	**MH-11 Average Concentration & (Range) (mg/L)**
Alkalinity	---	180 (169 – 203)	91 (44 – 160)	40 (7.4 – 140)
pH (Standard Units)	6.5 – 8.5	7.4 (7.2 – 8.0)	6.0 (5.5 – 6.9)	7.9 (7.1 – 9.4)
Iron	0.6	4.0 (1.1 – 5.4)	97 (38 – 130)	10.3 (ND – 22.0)
Manganese	0.10	2.3 (1.4 – 2.9)	8.5 (2.6 – 12.0)	0.50 (0.12 – 1.40)
Sulfate	500	2020 (1890 – 2100)	2260 (1800 – 2900)	1720 (1600 – 1900)

Total Dissolved Solids	1000	3040 (2890 – 3220)	3290 (2800 – 3500)	2440 (2200 – 2600)
WAD Cyanide	0.2	<0.010	<0.010	<0.010

ND = Non-detect

During excavation of the Pond 4 impacted soils, the installation of MH-11A, and subsequent review of MH-11 well log information, it was observed that the now-abandoned well MH-11 was most likely monitoring perched groundwater at the interface of embankment fill and the native pre-mining surface, not actual site groundwater.

As can be seen from Table 4, MH-11A chemistry is fairly similar to that of MH-10 and MH-11. In general, sulfate and TDS concentrations are elevated and of comparable magnitude for all monitor wells located in the East and Central basins, whereas, alkalinity, manganese, and pH vary significantly.

With the exception of the second quarter of 2007, well MH-10 has been dry since the fourth quarter of 2005. The lower groundwater quality cannot be attributed to the heap. Heap draindown chemistry, as of 2013, indicated a pH of 7.7 s.u., a WAD cyanide content of 0.24 mg/L, and a nitrate concentration of 259 mg/L. This is not observed in MH-10, MH-11A, MH-12, or MH-16, thus indicating the leach pad is not leaking or affecting groundwater quality. MH-10 chemistry is similar to MH-12 and MH-16.

Well MH-11 was installed in 1988. The water represents groundwater that is different than MH-10, MH-11A, or MH-12. The pH averages from 7.0 - 8.5 and does not trend with MH-10, MH-11A, or MH-12. Iron and manganese are consistently lower than all other data points in the area including 1988 data from MH-6, 7, 10, and 12, even though MH-11 is downgradient of MH-10. Additionally, both sulfate and TDS levels are consistently lower as well. Wells MH-6 and 7 were installed in 1988 and later removed by placement of the heap leach pad. Well MH-11 has been dry since the second quarter of 2003.

Additionally, the recently installed wells MW-1 and MW-2 are also located within the Central Basin and exhibit similar chemical traits to that of all wells located in the basin.

Water quality of the East and Central Basins is heavily influenced by localized discrete zones of hydrothermal alteration in the rock units adjacent to the site. (Hydro-Search Inc., 1988)

East Basin:

The principle mine features located in the East Basin of the project are the Bonanza Pit and Bonanza waste rock dump. Water chemistry in this sub-basin is quite different than that of the West Basin and Central Basins and also appears to have some variability between the two wells, MH-12 and MH-16, located within the East Basin.

Bonanza Creek, an ephemeral drainage, discharges into Sixmile Creek in spring and ceases in early summer. This drainage is located on the east side of the mine site and is adjacent to the former process facilities area. Depth to groundwater in the vicinity of the process area has been historically recorded as shallow as 10 feet. Waters in this area are high in sulfate and total dissolved solids and have geochemical signatures distinguished by several other key parameters including manganese, pH, calcium, and fluoride. In March 1999, Bonanza Creek was flowing at about 20 - 40 gpm and had a pH ranging from 3.7 to 4.5 s.u. An investigation of the unusual pH reading indicated that sulfidic waste rock had been deposited into the Bonanza Creek drainage. Removal of the sulfidic waste rock from the drainage and deposition into the Bonanza Pit has alleviated this problem.

Table 5 below provides Bonanza Creek (BC-1) long-term concentrations only for parameters of interest or currently elevated. Average solution concentrations are based on an average of all available analyses (approximately 9 sampling events – March 2003 through December 2014).

Table 5 – Average Concentration and Range for Bonanza Creek Parameters of Interest

Parameter	**NDEP Reference Value (mg/L)**	**Bonanza Creek Average Concentration & (Range) (mg/L)**	**Trend**
Alkalinity	---	8.2 (ND – 34.0)	Increasing
Aluminum	0.2	3.4 (0.1 – 26.0)	Erratic
Iron	0.6	3.3 (ND -8.9)	Erratic
Manganese	0.10	1.96 (0.17 – 8.60)	Decreasing
pH (Standard Units)	6.5 – 8.5	5.2 (4.6 – 7.3)	Increasing
Sulfate	500	1600 (980 – 2300)	Stable
Total Dissolved Solids	1000	2310 (1500 – 2800)	Stable
WAD Cyanide	0.2	<0.010	Stable

ND = Non-detect

MH-12 is located east-southeast of the process components (heap leach pad and ponds) and MH-16 is located approximately 400 feet downgradient of the backfilled Bonanza Pit, and each exhibit differing chemical signatures.

Well MH-12 is located on the easternmost border of the site boundary. The water intercepted by this well is representative of the background water quality most influenced by the geology of the East Basin. The pH is circum-neutral (6.9 s.u.) and, based on initial water quality data at the time of drilling (1988), indicates that the chemistry predates modern mining and placement of mine rock.

Table 6 below provides monitor well MH-12 long-term concentrations only for parameters of interest or currently elevated. Average solution concentrations are based on an average of all available analyses (approximately 62 sampling events – July 1988 through March 2015). The limited data set for the initial baseline (pre-mining) sampling conducted July 1988 is provided for comparison.

Table 6 – Average Concentration and Range for Monitor Well MH-12 Parameters of Interest

Parameter	**NDEP Reference Value (mg/L)**	**Pre-mining Groundwater Concentration (mg/L) 1 July 1988**	**MH-12 Average Concentration &(Range) (mg/L)**	**Trend**
Alkalinity	---	---	11 (ND – 41)	Increasing
Fluoride	4.0	---	2.9 (0.5 – 6.8)	Stable
Iron	0.6	81	31.3 (ND – 108)	Decreasing
Manganese	0.10	15.3	8.6 (0.17 – 17.0)	Decreasing
pH (Standard Units)	6.5 – 8.5	5.5	6.8 (5.6 – 8.9)	Stable
Sulfate	500	2680	2830 (2300 – 3520)	Stable
Total Dissolved Solids	1000	3730	3860 (3100 – 4400)	Stable
WAD Cyanide	0.2	---	<0.010	Stable

ND = Non-detect

Comparison to the pre-mining groundwater sample and average concentrations indicate that both iron and manganese remain elevated, approximately 80 mg/L and 15 mg/L, respectively with TDS in the range of 3000 - 4500 mg/L, and sulfate in the range of 2300 - 3500 mg/L. These levels were present in 1988 when monitoring commenced and this well has been

continuously sampled on a quarterly basis since November 2001 to confirm pre-mining background conditions. The recent data compares quite favorably with pre-mining chemistry.

MH-16, which is located approximately 350 feet downgradient of the Bonanza Pit, was installed in October 2001 to monitor for potential outflow of groundwater from the backfilled Bonanza Pit. The well is drilled to a TD of 150 ft., screened from 130 ft. to 150 ft. The static water table was encountered at 55 ft. bgs, but has risen to a range of approximately 19 ft. to 34 ft. bgs, suggesting a slight artesian condition.

Table 7 below provides monitor well MH-16 long-term concentrations only for parameters of interest or currently elevated. Average solution concentrations are based on an average of all available analyses (approximately 62 sampling events – November 2001 through March 2015).

Table 7 – Average Concentration and Range for Monitor Well MH-16 Parameters of Interest

Parameter	**NDEP Reference Value (mg/L)**	**MH-16 Average Concentration &(Range) (mg/L)**	**Trend**
Alkalinity	---	221 (5 – 380)	Erratic
Iron	0.6	16 (ND – 94)	Erratic
Manganese	0.10	2.1 (0.8 – 29)	Stable
pH (Standard Units)	6.5 – 8.5	7.1 (6.4 – 7.9)	Stable
Sulfate	500	1350 (900 – 2800)	Stable
Total Dissolved Solids	1000	2090 (1540 – 4100)	Stable
WAD Cyanide	0.2	<0.010	Stable

ND = Non-detect

The data presented above suggests that the groundwater quality conditions present within the East and Central Basins represent the natural background conditions influenced by subsurface geology. This is further supported by hydrogeology investigations (Golden Eagle Mine Final Permanent Closure Plan Pg. 8, The Mines Group, 2000) performed that describe a complex geology and includes the presence of a northwest to southeast trending fault present in the general vicinity of the ponds. The presence of such a fault and the different

geologic formations on either side of the fault would explain the differences in observed water chemistry.

Sixmile Basin:

The principal drainage in the area of the mine site is Sixmile Creek, located less than 400 feet south of the site, and flows easterly from Virginia City through Sixmile Canyon. Sixmile Creek is intermittent and primarily flows during spring run-off and during major precipitation events. Typically, surface water in the creek will recharge the alluvial aquifer in Dayton Valley. Surface water samples collected in Sixmile Creek upgradient (SW-1) and downgradient (SW-2) of the minesite typically meet all NDEP Profile I reference values.

Due to its location, essentially in the bottom of the Six Mile Creek, and the highly variable water quality exhibited due to impacts of seasonal stream flow, the original well MH-13 was replaced with well MH-13A in 2001.

Table 8 below provides monitor well MH-13A long-term concentrations only for parameters of interest or currently elevated. Average solution concentrations are based on an average of all available analyses (approximately 62 sampling events – November 2001 through March 2015).

Table 8 – Average Concentration and Range for Monitor Well MH-13A Parameters of Interest

Parameter]	**NDEP Reference Values (mg/L)**	**MH-13A Average Concentration & (Range) (mg/L)**	**Trend**
Alkalinity	---	202 (5 – 320)	Erratic
Iron	0.6	23 (ND – 189)	Decreasing
Manganese	0.10	2.5 (0.8 – 6.3)	Decreasing
pH (Standard Units)	6.5 – 8.5	7.1 (6.3 – 9.1)	Stable
Sulfate	500	1280 (1000 – 1600)	Stable
Total Dissolved Solids	1000	2110 (1700 – 2500)	Stable
WAD Cyanide	0.2	<0.010	Stable

ND = Non-detect

Pre-mining groundwater quality for the West, Central, and East basins varies significantly from one basin to another and also appears to have some variability within each individual basin.

The Permittee has requested elimination of monitoring wells MH-12, MH-13A, MH-16, and the three surface water monitoring locations, SW-1, SW-2, and BC-1 from the Permit. NDEP has reviewed the monitoring results of these various locations and has determined that there are no indications of mining or processing impacts to the local groundwater. The parameters iron, manganese, sulfate, and TDS are naturally elevated in the Central Basin, and as can be seen from Tables 5, 6, 7, and 8 indicate that, in general, the parameters of concern are either stable or decreasing in concentration. NDEP has made the determination to eliminate these monitoring locations from the Permit.

The remaining wells to be used for monitoring groundwater at the site shall consist of the following: Well MW-1, Well MW-2, and Well MH-11A.

D. Procedures for Public Comment

The Notice of the Division's intent to issue a permit authorizing the facility to close and monitor this mine subject to the conditions contained within the Permit, is being sent to the Nevada Appeal in Carson City for publication. The notice is being mailed to interested persons on 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 the 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 renew the permit.

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

See Section I of the Permit.

G. Rational for Permit Requirements

The site has been in post-closure monitoring since 2003. All former process ponds - the pregnant (Pond 1), barren (Pond 2), and leak detection (Pond 4) have been converted to evaporation basins and the Permit forbids discharge to the environment. The overflow pond (Pond 3) is single-lined and can only be utilized if both Pond 1 and Pond 2 were to fill and overflow, which is an extremely unlikely event.

The Permit renewal will continue to require both groundwater and surface water monitoring.

Average heap draindown chemistry, as of 2014, indicates a pH of 7.7 s.u., a WAD cyanide concentration of 0.24 mg/L, and a nitrate concentration of 259 mg/L. This type of chemistry is not observed in any of the monitoring wells, thus indicating that neither the leach pad nor the process ponds leak and have not affected groundwater quality.

Groundwater quality beneath the site has been monitored since 1988 and any elevated groundwater parameters appear to be naturally occurring and not related to mining activities. The primary method for identification of escaping process solution will be placed on required routine monitoring of leak detection systems as well as routinely sampling downgradient monitoring wells. Specific monitoring requirements can be found in the Water Pollution Control Permit.

The primary means of identifying escaping solution will be placed on routine inspection of the facilities as required by the 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.

Prepared by: Karl W. McCrea
Date: July 16, 2015

Revision 00: Permit Renewal