APPENDIX L

Tentative Plan for Permanent Closure

Note: The Section 508 amendment of the Rehabilitation Act of 1973 requires that the information in federal documents be accessible to individuals with disabilities. The Bureau of Land Management has made every effort to ensure that the information in the *Robinson Mine Plan of Operations Amendment Environmental Impact Statement* is accessible. However, this appendix is not fully compliant with Section 508, and readers with disabilities are encouraged to contact Tiera Arbogast at (775) 293-5042 or at tarbogast@blm.gov if they would like access to the information.

TENTATIVE PLAN FOR PERMANENT CLOSURE

Robinson Nevada Mining Company
Robinson Operation
Water Pollution Control Permit NEV0092105

Prepared for: Nevada Division of Environmental Protection
Bureau of Mining Regulation and Reclamation
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Revision 16: October 2020

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1.0 Introduction

The Robinson Operation is owned and operated by Robinson Nevada Mining Company (Robinson) and is located immediately south of the town of Ruth, approximately 7 miles west of Ely, on Highway 50 in White Pine County, Nevada (**Figure 1.1**).

Copper mining activities include extraction of ore using open pit mining methods, followed by froth flotation milling of the ore for recovery of copper sulfide and molybdenum disulfide concentrates. The copper concentrate operation was initiated in January 1996 under Water Pollution Control Permit (WPCP) NEV0092105, which was issued by Nevada Division of Environmental Protection – Bureau of Mining Regulation and Reclamation (NDEP-BMRR) on July 15, 1993, and the molybdenum disulfide operation was initiated under a minor modification approval dated August 22, 2005. Inactive gold heap leach pads constructed and operated by predecessor operators remain at the site and were incorporated into the WPCP NEV0092105 during a 1999 permit renewal (permit issued August 24, 1999). The first (historic) mining activity at the Robinson site was initiated in 1868, and historic facilities have been incorporated as process components into the Permit.

1.1 Purpose and Scope

This Revision 16 of the Tentative Plan for Permanent Closure (TPPC or "plan") has been updated to reflect the authorized activities included in WPCP NEV0092105 Renewal 2017, Revision 02, issued on June 8, 2018, (Permit) and to incorporate all authorized changes to the permit and construction or closure activities completed to date.

Robinson has developed this TPPC according to requirements contained at Nevada Administrative Code (NAC) 445A.398.6, which states," The proposed operating plans for a facility must include a tentative plan for the permanent closure of the facility which describes the procedures, methods and schedule for stabilizing spent process materials. The plan must include:(a) Procedures for characterizing spent process materials as they are generated; and (b) The procedures to stabilize all process components with an emphasis on stabilizing spent process materials and the estimated cost for the procedures."

The plan identifies process components; describes procedures, methods and schedules for managing fluids and detoxification/chemical stabilization of spent process materials; and identifies ongoing plans for characterization of spent process materials as they are generated, and at closure in accordance with NDEP regulations and guidelines governing permanent closure.

Table 1.1 provides details of all revisions of the TPPC plans prepared and submitted to date, including this current Revision 16.

Table 1.1: Summary of TPPC Revisions

Revision #	Date	Reasons for TPPC Revisions
1	December 1, 1999	Prepared pursuant to Part I.B.e of the 1999 WPC Permit NEV92105
2	April 26, 2004	Prepared as part of the 2004 Permit NEV92105 Renewal Application
3	February 2, 2009	Modifications reflecting installation of piezometers at the tailings BOC
4	March 2, 2009	Modifications due to submittal of Pit Lake Study
5	August 31, 2009	Modifications reflecting Minor Modification to the Permit for mining in the Ruth Pit area
6	December 5, 2009	Prepared as part of the 2009 Permit NEV0092105Renewal Application
7	November 10, 2010	Modifications reflecting slurry system pumping modifications (2010 expansion of the Giroux Wash Tailings Impoundment)
8	January 24, 2011	Modifications due to closure of Mollie Gibson Ponds 1, 2, 3E, 3W, and 4 and construction of Mollie Gibson Seepage Management Facilities
9	July 9, 2011	Modifications reflecting June 7, 2011 renewal of Permit #NEV0092105
10	July 8, 2013	Modifications reflecting proposed D-Pad Expansion
11	December 5, 2014	Prepared as part of the 2014 Permit NEV0092105 Renewal Application
12	October 12, 2015	TPPC for Tailings Pump-back System
13	December 4, 2015	Modifications for: 1. Juniper Seepage Collection and Management System 2. Carr's Pond Reconstruction 3. Giroux Wash Groundwater Pump-Back System 4. East Heap Leaching Facilities 5. Weary Flats Heap Leach Facility 6. Wedge Pit Lake 7. Intera Drain 8. Green Spring Pond, Liberty Pit, Tripp/Veteran Pit, Ruth Pit, Wedge Pit and Kimbley Pit
14	September 9, 2016	WPCP NEV0092105, Renewal 2016, Revision 02, Schedule of Compliance Item #2
In Application*	December 8, 2016	Modifications for: 1. Major Modification for the expansion of the Giroux Wash Tailings Impoundment
15	March 30, 2018	Update for:

Revision #	Date	Reasons for TPPC Revisions
		1. Permit Renewal 2017, Revision 01 – Minor Modification/Major Modification for Giroux Wash Tailings Storage Facility (TSF) Expansion 2. Giroux Wash TSF Expansion - 2017 Construction 3. Robinson East Heap Leach Facility Closures (A-Pad, A-B-C Pipeline, C-Pad Disposal Area) and B-Pad Temporary Tank Installation 4. Ruth ALM Liner Installation
16	October 2020	Update for WPCP Major Modification Application to incorporate: 1. Liberty East Pit and North Tripp Dump Expansion and King Dump construction 2. Ruth West Pit Phase 5 (RW5) Expansion with Keystone dump redesign 3. Backfilling of Ruth East Pit and Keystone Overdumping 4. Tailings Booster Pumps Installation and Slurry Conveyance & Deposition Pipeline Modifications (2018) 5. New Tailings Seepage Collection Pond (2019) 6. Giroux Wash TSF Expansion – 2018, 2019, and 2020 7. Construction of B-Pad E-Cell (2018) 8. D-Pad FPPC (2018) 9. Construction of the Mollie Gibson E-Cell (2019) 10. Mollie Gibson Acid-Leached Material (AML) Placement Area on Liberty Dump (2018) 11. Closure of the Mollie Gibson Seepage Management Pond (2019) 12. Construction of Juniper E-Cell and Juniper Pond Closure (2018)

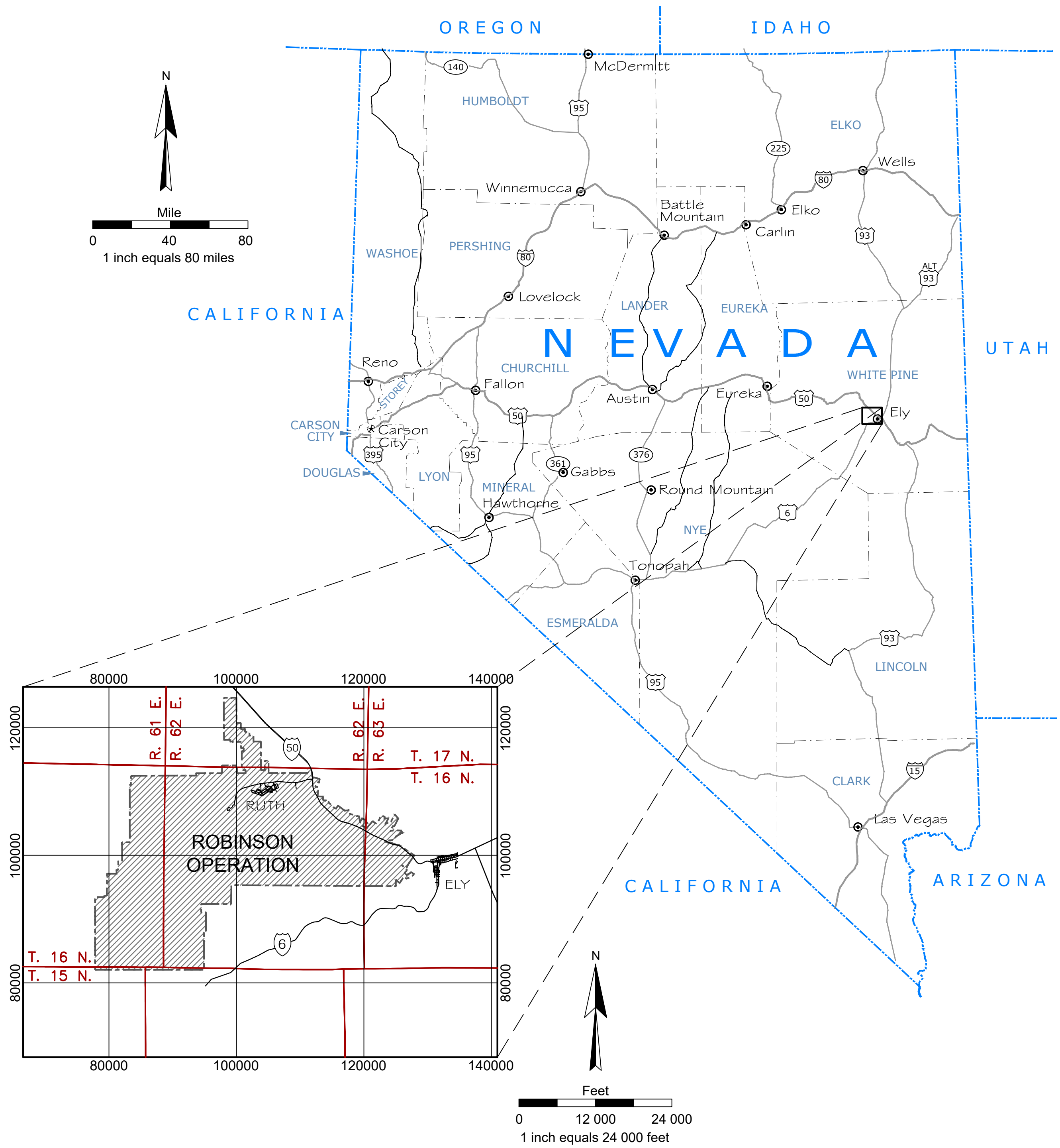
**a full revision was not completed with this application. The updated information was included within the text of the application document.*

1.2 Organization of TPPC

This TPPC includes:

- Section 2.0: Process components used for beneficiation of copper;
- Section 3.0: Process components used for beneficiation of gold;
- Section 4.0: The Giroux Wash tailings storage facility (TSF);
- Section 5.0: The Liberty, Tripp/Veteran and Ruth pit lakes;
- Section 6.0: Mine Impacted Waters (MIW) and potential MIW sources; and
- Section 7.0: Material mined from historic acid-leached dumps.
- Each of the above sections includes descriptions of spent process materials, procedures, methods and schedules for stabilizing spent process materials, procedures for characterizing spent process materials (either as they are generated or at closure); and tentative plans for permanent closure of all associated process components.

- Section 8.0: A summary of additional activities required for operational characterization and tentative timeframes for implementation of permanent closure plans
- Section 9.0: References



DESIGN: MJ	PREPARED BY: srk consulting	DRAWING TITLE: SITE LOCATION MAP
DRAWN: ML		TENTATIVE PLAN FOR PERMANENT CLOSURE
REVIEWED: MJ		WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020
APPROVED: MJ	PROJECT: KGHM ROBINSON OPERATION	DATE: 10/1/2020 · REVISION: A · DRAWING NO.: FIGURE 1.1
IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED		SRK PROJECT NO.: 150901.260.1800

H:\KGHM\RNMC\150901.260_RNMC 2020 WPCP Eng & Perm Support\040_Drafting\Task_1800_WPCP_Major_Mod\150901.260_TPPC_FIG1.1.dwg

2.0 Process Components used for Beneficiation of Copper

The copper process components (excluding the TSF infrastructure discussed in Section 4.0) are shown on **Figure 2.1** at the end of this section and are summarized below.

1. Primary crushing and coarse ore facilities including primary crusher, stacker conveyor with conveyor building and electric room, coarse ore stockpile and reclaim feeder;
2. Mill building facilities including grinding, flotation (including XCELL™ Flotation Machines (XCELL) and SuperCell™ Flotation Cell (SuperCell)), filtration, reagents, concentrate thickeners, lime tanks and a molybdenum disulfide flotation circuit;
3. Concentrate loading facilities including concentrate transfer conveyor, covered storage and load out;
4. Fluid management facilities including the Mill Water Storage Ponds and Carr's Pond

Small volumes of residual process materials remaining after operations cease may include:

1. Sulfide ore in stockpiles;
2. Process solution in flotation cells, feed sumps, storage tanks, concentrate thickeners, molybdenum disulfide flotation cells, Carr's Pond, the Mill Water Storage Ponds and other fluid management components of the mill, flotation and concentrator circuits;
3. Sulfide ore fines in the milling circuit components;
4. Sulfide ore fines, precipitates, flotation reagents and flotation tailings in the flotation circuit components; and
5. Flocculants and filtrate in the concentrator circuit components and concentrate thickeners.

Procedures and methods for stabilizing the spent process materials are summarized below:

1. Remaining sulfide ore in stockpiles will be regraded to prevent ponding of surface water in these locations and covered with oxide waste rock to prevent contact by meteoric waters; and

2. All components of the mill, flotation and concentrator circuits will be thoroughly flushed with fresh water (including interior surfaces of the process buildings), and the effluent and suspended solids disposed of in the TSF.

Stabilizing these spent process materials will be performed immediately after milling and processing operations are complete. Tentative plans for permanent closure of the process components used for beneficiation of copper are provided below.

2.1 Pre-Closure Preparation

1. Fresh water flushing of all flotation cells, feed sumps, storage tanks, concentrate thickeners, piping, pumps and other fluid management components of the mill, flotation and concentrator circuits process equipment, and disposal of flushing water in the TSF;
2. Fresh water flushing of all interior surfaces of buildings. This will include structural steel, concrete floor surfaces, and exterior surfaces of process components located inside the process buildings;
3. Identification, protection and disconnection of utilities and underground services;
4. Identification and removal of hazardous waste via transport, storage and disposal (TSD) facilities, with qualifying types of hazardous material (e.g. mercury switches) being managed by qualifying non-TSD facilities and vendors;
5. Removal of salvageable equipment, scrap steel and recyclable building materials. A salvage contractor may be contacted to remove as much recyclable building and process equipment and materials as practical.

2.2 Pre-Closure Sampling

It is expected that most of the equipment, recyclable building materials, scrap steel and ancillary facilities that has salvage value will be removed prior to implementing the pre-closure sampling task. Sampling and analysis of remaining concrete, structural steel and foundation soil will be performed as follows:

1. Steel will be “swipe” sampled using a product such as “Kim-Wipes”, which will be sent for laboratory analysis targeted to identify compounds that are specific to process solution;
2. Concrete will be sampled using impact tools or concrete cutting tools and samples submitted for laboratory analysis. The analyses performed on concrete will be also targeted to identify compounds that are specific to process solution and analytical results will be used to determine if the concrete will be buried in place or removed and disposed of in an alternative qualifying location;

3. Soil samples will be collected at specified and random locations. Two depth-specific samples will be collected from each sample location. The first sample will be collected from the zero to one-inch interval and the second from the one to three-inch interval.

   Specified soil sample locations are as follows:

   a. Pipeline corridors that interconnect the process facilities at low points of the pipeline corridor where fugitive solutions are likely to have accumulated if pipeline failures or leaks occurred.

   b. Reported/known significant spill locations where soil contamination has occurred due to pipeline or other operating failure events. These locations will be identified by reviewing spill reports submitted to NDEP-BMRR.

   In addition, process plant yards will have a minimum of three sample locations established on a random basis.

   Each soil sample will be separately analyzed. The analyses will include Meteoric Water Mobility Procedure (MWMP) extraction and analysis of the extract for relevant groundwater parameters.

4. Concrete and soil analytical results will be compared to the underlying background groundwater and analytical results for the background soil samples. If the Profile I-R levels are below the background groundwater concentrations, then the concrete and soil will be considered uncontaminated and will be left in place. If the Profile I-R levels for background groundwater are exceeded, then Robinson will review the results to determine the appropriate course of action that will demonstrate that waters of the state will not be degraded. Potential measures include:

   a. Excavation of affected soil and disposal on the tailings impoundment followed by collection and analysis of confirmatory samples prior to cover placement;

   b. Construction/placement of a compacted low permeability layer or liner graded to divert infiltration away from the contaminated material; and

   c. Evaluation of the site, based on the risk it poses to public health and the environment, to demonstrate that corrective action is not necessary (items a through k of NAC 445A.227.2).

2.3 Closure Tasks

1. Remaining facilities, including steel structures, will be dismantled, cut, transported and disposed of in the on-site Class III-waiver landfill or a Resource Conservation and Recovery Act (RCRA)-permitted off-site landfill;

2. Remaining concrete walls, supports and equipment foundations will be demolished and the remaining rubble buried in-place or covered by growth media, as appropriate. The cover will be graded to prevent ponding and revegetated; and
3. All underground voids and structures will be backfilled with non-Potentially Acid Generating (non-PAG) overburden/rock, and facility footprints regraded to shed runoff and revegetated.

2.4 Mill Water Storage Ponds

The Mill Water Storage Ponds have been used exclusively for storing freshwater from production wells. Hence there is no source of contamination in these ponds. These ponds are considered a process component because they are located on the Liberty Dump, a mixed oxide/sulfide waste rock dump that was constructed over the historic Puritan copper leach dump, both of which have the potential to generate acid mine drainage with the introduction of water should the Mill Water Storage Ponds leak. Mill Water Storage Ponds are constructed as double-lined ponds with leakage collection and recovery systems (LCRSs). Robinson re-lined both ponds and installed LCRSs in 2011 (Robinson, 2011c). Tentative closure for the Mill Water Storage Ponds consists of the following actions:

1. Pumping residual water to the tailings thickeners for evaporative disposal on the TSF;
2. Cutting and folding the liners to the base of the pond to prevent capture of infiltrating meteoric solutions; and
3. Backfilling the ponds with adjacent soils including cover grading mounding to prevent ponding and promote runoff and revegetation.

2.5 Carr's Pond

Carr's Pond is used for the management of process fluids and as such is a component of the fluid management system. This emergency containment pond is located immediately down-gradient of the Tailings Pump House and the Mill. The primary function of Carr's Pond is to collect overflow from the Tailings Pump House and related Mill fluids released during an emergency event. Occasional storage of cleanup solutions from the ore conveyor tunnel and stormwater run-off from the Mill area is a secondary function of the pond. The pond receives stormwater from the main mill-site stormwater conveyance channel, which discharges to the pond via the Carr's Pond Sediment Basin located at the east corner of the Carr's Pond.

Carr's Pond was re-constructed as a double-lined pond with LCRSs in 2015 (Robinson, 2015g).

The Carr's Pond Sediment Basin is double-lined with the same liner system as Carr's Pond, except the primary liner is overlain by geotextile and a 6-inch thick concrete-filled cellular confinement layer. The Sediment Basin drains into the Carr's Pond via a 14-inch diameter pipe installed inside a 30-inch diameter secondary containment pipe.

Tentative plans for closing Carr's Pond and associated infrastructure are as follows:

1. Removal of free liquid from the pond to the tailings thickeners for conditioning (pH adjustment) and evaporative disposal on the TSF;
2. Sampling and, if necessary, removal of the bulk of solids accumulated in the sediment basin. If necessary, remove pond sediments by either dredge pumping to the tailing thickeners, excavating and depositing into the thickeners, or excavating and transporting to the TSF;
3. Stabilizing residual sediments by admixing with cement at the approximate rate of one pound of cement to 50 pounds of sediment;
4. Cutting and folding the pond liner over the admixed cement block in the pond bottom to encapsulate the admixed cement block;
5. Backfilling both the pond and the sediment basin with adjacent borrowed non-PAG soils, with the soils machine-compacted to a mounded height that promote runoff from the area, followed by revegetation.

0 150 300

Feet

Coordinate System: RNMC Mine Grid New

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REVIEWED: MJ	
APPROVED: MJ	

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PREPARED BY: srk consulting

PREPARED FOR: KGHM ROBINSON OPERATION

DRAWING TITLE:

MILL FACILITIES

TENTATIVE PLAN FOR PERMANENT CLOSURE
WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020

DATE:	REVISION:	DRAWING NO.:
10/14/2020	A	FIGURE 2.1
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3.0 Process Components used for Beneficiation of Gold

The Gold Heap Leach Facilities include the Robinson East Heap Leach Facilities, and the Weary Flats Heap Leach Facility, which were originally comprised of the following components:

- A-Pad including one pregnant and one barren pond;
- South and North B-Pad including one pregnant pond, one barren pond, one storm containment pond, and a process plant;
- C-Pad including one pregnant pond, one barren pond, and a process plant;
- A-B-C heap leach pads draindown collection and conveyance system; and
- D-Pad (Weary Flats) including one pregnant pond, one barren pond, and a process plant.

Remaining process components historically used for the beneficiation of gold include the Robinson East Heap Leach (North B- and C-Pad) shown on **Figure 3.1**, as well as the Weary Flats Heap Leach (D-Pad), as shown on **Figure 3.2**.

Current closure status and tentative closure planning for the Robinson East and Weary Flats Heap Leach Facilities are separately discussed below.

3.1 Robinson East Heap Leach Facilities

Completed closure activities for the Robinson East Heap Leach Facilities include:

- **A-Pad:** Robinson completed A-Pad closure in 2017 consistent with the Final Plan for Permanent Closure (FPPC) submitted to NDEP-BMRR on July 10, 2015 (Robinson 2015d) and approved on July 15, 2016 (NDEP-BMRR, 2016). A-Pad spent ore was hauled and placed within the acid-leached material (ALM) placement area on Ruth Dump. The spent ore was covered with synthetic liner and a protective soil cover prior to being overdumped with waste rock, as described in Section 7. The removal and disposal of A-Pad draindown management facilities also occurred during this time, including removal of the A-Pad Emergency Overflow Pond and Transfer Tank. The A-Pad and A-Pad facility footprints have since been mined out as part of the Ruth Pit expansion. The Final Closure Report (FCR) for A-Pad was submitted to NDEP-BMRR on January 12, 2018 (Robinson, 2018a) and was approved by NDEP-BMRR on February 27, 2018 (NDEP-BMRR, 2018).

- **South B-Pad:** South B-Pad closure was completed in 2015, consistent with the December 20, 2013 FPPC (Robinson, 2013) and subsequent Robinson and NDEP-BMRR correspondences. Robinson submitted the FCR for South B-Pad on May 27, 2015 (Robinson, 2015b) and this report was approved by NDEP-BMRR on July 14, 2015 (NDEP-BMRR, 2015).
- **North B-Pad:** Closure of the North B-Pad process plant, process solution ponds (pregnant and barren), and associated pumps and pipelines was completed in 2014 (Robinson, 2014a). In 2015 the North B-Pad was covered with 5 feet of non-PAG material according to the FPPC submitted to NDEP-BMRR on June 12, 2015 (Robinson, 2015c) and approved on August 31, 2015 (NDEP-BMRR, 2015). The North B-Pad Transfer Tank and Emergency Overflow Pond were removed in 2017 and a temporary tank was installed to accommodate draindown flows while the B-Pad Evaporation Cell (E-Cell) was constructed in 2018. The temporary tank was removed following the B-Pad E-Cell commissioning in January 2019. The As-Build report was submitted to NDEP on January 22, 2019 (Robinson, 2019a) and approved on September 30, 2019 (NDEP-BMRR, 2019c).
- **C-Pad:** C-Pad and C-Pad Disposal Area were covered with 5 feet of non-PAG material in 2017 according to the C-Pad FPPC (Robinson, 2015c). An as-built report for cover placement on the C-Pad was submitted to NDEP-BMRR on January 12, 2018 (Robinson, 2018) and approved on February 28, 2018 (NDEP-BMRR, 2018b). In the fourth quarter of 2018, Robinson constructed interim modifications to the C-Pad draindown management system consistent with the 2018 EDC. Construction was documented in the 2019 As-Built Report that was submitted on January 28, 2019 (Robinson, 2019b) and approved on February 28, 2019 (NDEP-BMRR, 2019b). Current active draindown management of the residual C-Pad draindown solution includes draindown conveyance to a new transfer tank, routine tank evacuations and inventory transport via pump truck for incorporation into the Mill process circuit.
- **A-B-C Draindown Collection and Conveyance System:** The A-B-C Draindown Collection and Conveyance System operation was discontinued in 2013 due to frequent rerouting required to accommodate Ruth Pit expansions. An FPPC for the removal of the A-B-C Pipeline and associated valves and leak detection ports was submitted to NDEP-BMRR on October 5, 2017 (Robinson, 2017c) and approved on November 3, 2017 (NDEP-BMRR, 2017d). In 2017 and early 2018 the A-B-C Pipeline was either removed or closed in place according to the FPPC. The FCR for the A-B-C Pipeline was submitted to NDEP-BMRR on March 12, 2018 (Robinson, 2018c), and was approved on March 20, 2018 (NDEP-BMRR, 2018c).

3.1.1 Tentative Plan for Permanent Closure – Remaining Robinson East Heap Leach Facilities

Once the C-Pad draindown flows have reached a level manageable by an E-Cell, an EDC for the C-Pad E-Cell will be submitted to NDEP-BMRR. Modification to the C-Pad draindown management system and construction of the C-Pad E-Cell will be performed consistent with the future EDC and would typically include.

1. Construction of a new, double-lined C-Pad E-Cell with LCRS including:
   - E-Cell excavation, grading and liner subgrade compaction and preparation;
   - Installation of double geomembrane liner and LCRS sump and riser pipe;
   - Placement of initial E-Cell soil backfill
   - Installation of an E-Cell inflow, outflow and fluid distribution system and completion of E-Cell backfill;
   - Installation of a piezometer pipe to monitor the water level within E-Cell backfill;
   - Installation of in-line sampling port for draindown flow rate monitoring and sampling; and
   - Construction of perimeter fencing to prevent unauthorized human access to the E-Cells.
2. Routing C-Pad heap draindown piping (buried pipe-in-pipe) to the C-Pad E-Cell and maintaining draindown system functionality.

After construction of the C-Pad E-Cell, the C-Pad Transfer and Overflow Tanks will be removed, the respective secondary containments demolished, and the remaining disturbance regraded and revegetated.

It is anticipated that both B-Pad and C-Pad E-Cells will continue to be operated and monitored until draindown flows from the respective pads have reached de minimis levels and discharge/infiltration without degradation to waters of the State has been demonstrated and approved by NDEP-BMRR, thus allowing for closure of the respective E-Cells. E-Cells closure will include:

1. Dismantling, removal and salvage (or disposal in an approved landfill) of fencing;
2. Sealing or capping of all accessible pipeline openings; and
3. Backfilling the E-Cell with non-PAG material, grading to shed water and revegetation.

The above approach has been used for Process Fluid Stabilization (PFS) planning and cost calculations in the Robinson Operation Reclamation Plan. Both Interim Fluid

Management (IFM) and PFS flow rates are based on flow rates measured at the C-Pad through 2019, and both PFS planning and cost calculations in the Robinson Operation Reclamation Plan assume that the flow rate has not diminished (i.e., worst case scenario).

3.2 Weary Flats Heap Leach Facility

The Weary Flats Heap Leach Facility, or the D-Pad Gold Heap Leach Facilities, are shown on **Figure 3.2**, and include D-Pad, process solution ponds (pregnant and barren), pumps, pipelines, and the inactive gold recovery process plant.

D-Pad was constructed by a predecessor operator and contains approximately 635,000 cubic yards (cy) of spent ore encompassing an area of approximately 15 acres. The pad is lined with a 12-inch thick compacted soil layer overlain by a leak detection layer and an HDPE geomembrane. The vertical height of the heap is approximately 90 feet, and sideslopes were partially regraded at about 3H:1V to 3.5H:1V.

The D-Pad existing pregnant and barren ponds are both double lined with high density polyethylene (HDPE) liners and have LCRSs. Both ponds may contain residual sediments that will require stabilization for closure. The process ponds will be maintained and operated for evaporative disposal of draindown flows until the flows have sufficiently reduced to allow for passive management in the D-Pad pregnant pond converted into an E-Cell and closure of the D-Pad barren pond.

In accordance with Permit Renewal 2017, Revision 01, a FPPC was submitted on December 31, 2018 for the closure of the D-Pad Gold Heap Leach Pad and Ponds (Robinson, 2018i). The FPPC was approved by NDEP-BMRR on September 15, 2020 (NDEP-BMRR, 2020b).

3.2.1 Tentative Plan for Permanent Closure – Weary Flats Heap Leach Facilities

The D-Pad heap leach pad will be closed in a manner consistent with the D-Pad FPPC (Robinson, 2018). For the pad, the closure will include regrading the heap to slopes of 2.5H:1V or flatter and placing a one-foot thick soil cover to limit infiltration of meteoric water. Heap drain down will be initially managed through evaporation in the D-Pad process ponds, followed by evaporation in future D-Pad E-Cell.

Water balance calculations will be used to determine the required size of the D-Pad E-Cell and will be based on observed draindown flows at closure. The E-Cell will be sized to store and eliminate through evaporation the combined precipitation and draindown inventory generated on an annual basis. The cell size will also be adequate for management of precipitation from a 500-year, 24-hour storm event falling within the cell perimeter while maintaining at least two feet of freeboard.

Residual sludge in D-Pad process ponds will be transferred to an adequately sized cleared portion of the heap after drying and stabilizing. The excavated heap material will be utilized to cover the sediment, the topsoil will be replaced and mounded to prevent ponding. The pregnant pond will be converted into an E-Cell and the barren pond will be closed consistent with the D-Pad FPPC (Robinson, 2018).

The D-Pad E-Cell will be double-lined and will include LCRS and riser pipe. A draindown distribution system will be installed within E-Cell backfill, consisting of 4-inch diameter perforated corrugated polyethylene (PCP) pipe, in series of 10-foot on-center parallel trenches. The pipes will be wrapped with geotextile and the trenches will be backfilled drain gravel. A piezometer will also be installed in the E-Cell.

The barren pond will be backfilled using surplus embankment or external borrow material, graded to prevent ponding and revegetated.

The process plant building shell will be rinsed with fresh water, demolished and disposed of appropriately, as applicable.

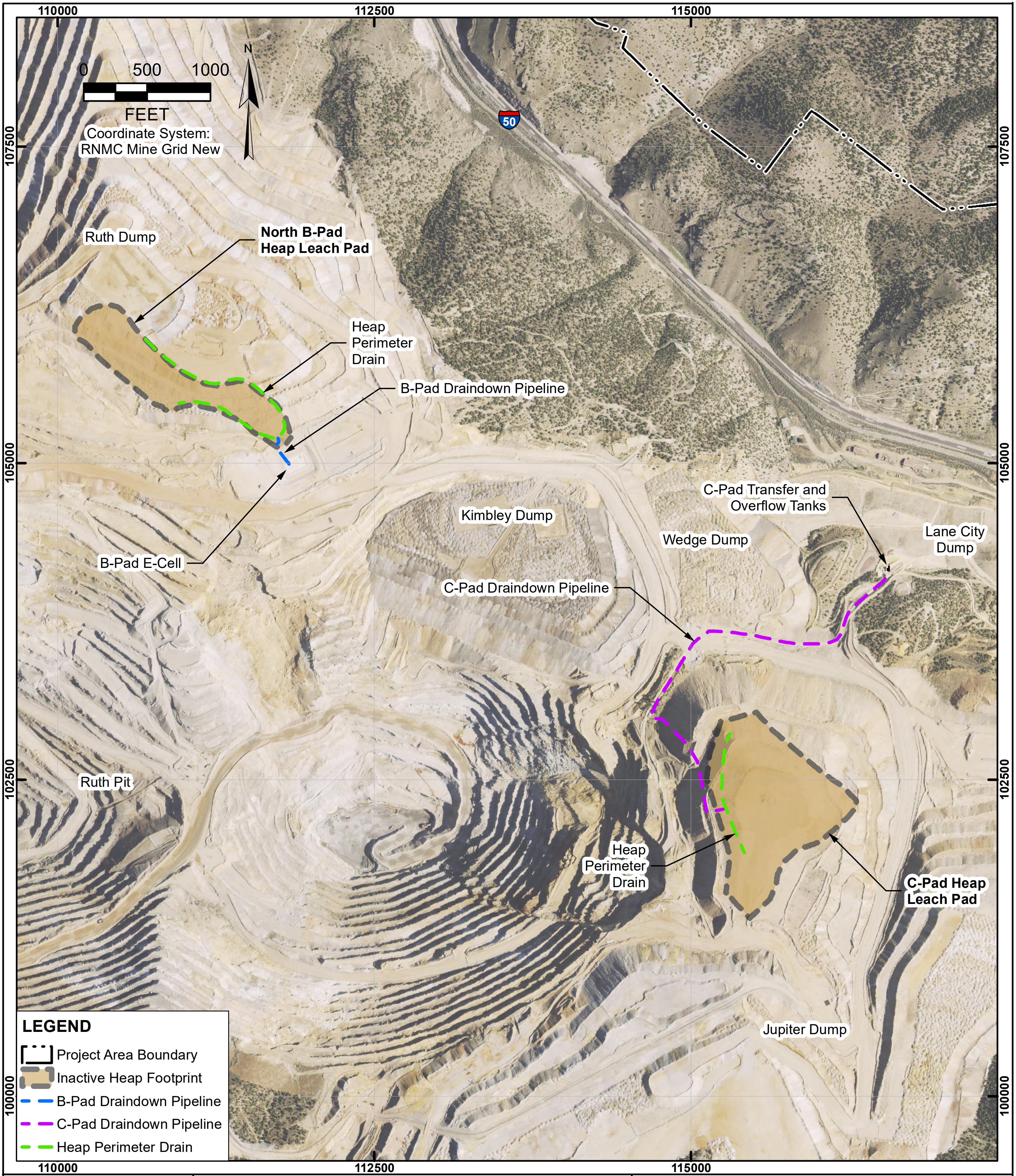
The existing diversion channel north of D-Pad Heap Leach Facilities will be modified to allow for conveyance of 500-year flows to the existing sediment pond above the mine access road. All diversion channels have been designed with depths at least twice what is required to provide sediment storage and handle the estimated flows into long-term closure period.

Future closure actions include increasing the culvert capacity under the main access road or removing the culvert completely to allow swale construction across the mine road.

The D-Pad E-Cell will be operated and monitored until draindown flows from the D-Pad heap has reached a de minimis level and discharge/infiltration without degradation to waters of the State has been demonstrated to, and approved by NDEP-BMRR, thus allowing for closure of the E-Cell. E-Cell closure will include:

1. Dismantling, removal and salvage (or disposal in an approved landfill) of fencing;
2. Sealing or capping of all accessible pipeline openings; and
3. Backfilling the E-Cell with non-PAG material, shaping to shed water and revegetation.

The above approach has been used for PFS planning and cost calculations in the Robinson Reclamation Plan.



DESIGN: MJ DRAWN: ML REVIEWED: MJ APPROVED: MJ	PREPARED BY: srk consulting	DRAWING TITLE: INACTIVE GOLD HEAP LEACH FACILITIES ROBINSON EAST **TENTATIVE PLAN FOR PERMANENT CLOSURE** **WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020**
IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED	PREPARED FOR: KGHM ROBINSON OPERATION	DATE: 10/9/2020 REVISION: A DRAWING NO.: FIGURE 3.1 SRK PROJECT NO.: 150901.260.1800

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DESIGN: MJ	PREPARED BY: srk consulting	DRAWING TITLE: INACTIVE GOLD HEAP LEACH FACILITIES WEARY FLATS TENTATIVE PLAN FOR PERMANENT CLOSURE WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020
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APPROVED: MJ	PREPARED FOR: KGHM ROBINSON OPERATION	DATE: 10/9/2020 REVISION: A DRAWING NO.: FIGURE 3.2
IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED		SRK PROJECT NO.: 150901.260.1800

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4.0 Giroux Wash Tailings Impoundment and Related Infrastructure

The Giroux Wash TSF and related infrastructure are shown on **Figure 4.1** and include:

1. TSF Embankments:
   a. Eastern Embankment Extension (EEE);
   b. Cycloned Main Embankment (CME);
   c. Western Embankment Extension (WEE);
   d. Western Perimeter Embankment (WPE);
   e. Eastern Perimeter Embankment (EPE);
   f. Supernatant Collection Area Embankment (SCAE).
2. Downstream Underdrain Stormwater and Sediment Control Facility (DUSSCF):
   a. Settling basins (paddocks);
   b. Embankment underdrainage blanket and perforated and non-perforated HDPE piping;
   c. Vertical inlet structures to decant clarified surface solution from the settling basins; and HDPE-lined collection ditch.
3. The impoundment basin and barge operating channel (BOC):
   a. Approximate final basin area of 1,800 acres;
   b. Tailings total solids stored in impoundment: ~255 million tons;
   c. Beach gradient of 0.25% from the CME towards the final BOC location;
   d. Final area of supernatant pond surface ~ 6.5 acres; and
   e. Final volume of operating supernatant pond ~ 40 acre-feet.
4. Tailings slurry and water management facilities including:
   a. Tailings slurry thickeners;
   b. Tailings slurry sump and Tailings Pump House;
   c. Tailings slurry pipeline, Slurry Break tank and controls between the Tailings Pumphouse and the Repulp Station housing slurry booster pumps and the slurry deposition and header pipelines including bermed containment areas;
   d. Tailings header system including supports, header pipeline, control valves, cyclones, cyclone overflow and underflow piping, tailings spigot pipes for total tailings deposition;
   e. Western deposition pipeline used for spigotting and open-end discharge of tailings along the WPE;

f. Northeastern Slurry Deposition Pipeline used for spigotting and open-end discharge of tailings along the EPE;
g. BOC pumps and appurtenances;
h. Reclaim Water Pipeline (from the BOC to the tailings thickener overflow sump, via the Reclaim Water Tank and booster pump station at the Repulp Station, including the Reclaim Break tank).

5. The Tailings Seepage Collection Pond (TSCP), including pumps, piping and appurtenances.
6. EEE Seep Collection and Containment System including cut-off trench, piezometers, sump and seepage pumpback system.
7. Tailings Pump Back System (PBS) including pump back wells with pumps and connecting pipelines, tank, booster pump and pipeline.

The tailings impoundment will remain functional until it is no longer required for closure water disposal (e.g., remaining Mill and pond inventories, water from flushing of process components), following which the procedures for stabilization will be implemented over an approximate 3 to 5-year period.

The following chemical characterization is performed during operations, as described in Section 5 of the FMMP:

1. Acid neutralization potential (ANP)/acid generation potential (AGP) and total petroleum hydrocarbons (TPH) analysis on quarterly composites of tailings solids collected at the Slurry Pipeline discharge port at Tailings Pump House and tailings coarse fraction samples collected at the header cyclone underflow to the CME;
2. Quarterly sampling and analysis of tailings slurry solids fraction collected in the Tailings Pump House prior to pumping to the tailings impoundment;
3. Quarterly samples of the liquid fraction of tailings slurry collected in the Tailings Pump House analyzed for Profile I-R and TPH;
4. Quarterly sampling and Profile I-R analysis of supernatant pond fluids (samples collected at the BOC); and
5. Semi-annual sampling and Profile I-R analysis of TSCP fluids (samples are collected from the pond shoreline).

Tentative plans for permanent closure of the TSF facilities are summarized below.

4.1 TSF Corrective Action Plan (CAP)

Sulfate concentration exceeding 500 mg/L Profile I-R reference value was observed in well WCC-G7 in early 2015. This finding required Robinson to submit a TSF corrective action plan (CAP) (Geomega, 2015), required under the April 29, 2015 Finding of Alleged Violation (FOAV) and Order (NDEP-BMRR, 2015a). The TSF CAP proposed hydrogeologic characterization work aimed at delineating the extent of elevated sulfate in groundwater and identifying potential sulfate sources. Installation and operation of the TSF PBS, installation and monitoring of additional groundwater wells, development and updating of a TSF water balance model and 3D numerical groundwater flow and transport model, and evaluation of sulfate source control alternatives, are ongoing. The FOAV and Order for Robinson Operation was closed by NDEP-BMRR on April 30, 2019 (NDEP-BMRR, 2019c).

The TSF CAP noted that water entrained in deposited tailings and ponding water around the tailings perimeter could potentially exacerbate seepage from the TSF. In an effort to reduce the driving hydraulic head and potential seepage, Robinson initially proposed to construct a lined Supernatant Collection Area (SCA), a double lined and leak detected Reclaim Water Pond (RWP), a decant structure that would gravity flow supernatant water from the SCA to the RWP and the associated components.

Robinson implemented additional measures effectively reducing the amount of supernatant water on the TSF and provided engineering designs for TSF expansion and operation without the SCA, RWP and Decant Structure on May 14, 2019 (Robinson, 2019d). The proposed modification was approved by NDEP-BMRR on September 24, 2019 (NDEP-BMRR, 2019e). Construction of the RWP and Decant Structure and utilization of the SCA are no longer planned for the supernatant management. Robinson also provided engineering designs for the proposed continued use of the existing and future expanded, geomembrane-lined BOC to manage supernatant water through the remaining life of the approved TSF expansion. The proposed BOC expansion will accomplish the same goal as reclaim management in the SCA/RWP. Maintaining the BOC as the ultimate low point in the TSF also simplifies the requirements for TSF closure. This EDC was submitted on November 5, 2019 (Robinson, 2019g) and was under regulatory review at the time of this document preparation.

4.2 TSF Cover Study and Tentative Closure Designs

A TSF Cover Study was prepared during 2017, submitted to NDEP on December 22, 2017 (Robinson, 2017f), and is currently under NDEP-BMRR review. As part of the cover study, Robinson contracted with:

- Cedar Creek to provide agronomic, soils, and vegetation expertise in support of the TSF Cover Study.
- GeoSystems Analysis, Inc. (GSA) to complete infiltration modeling and prepare an updated comprehensive water balance model for the tailings impoundment.

- Golder Associates to carry out assessment of TSF consolidation, prepare a conceptual grading plan for the final TSF surface, and prepare a conceptual design for run-on and runoff management.

The TPPC will be revised to incorporate modifications to the tentative TSF closure actions following the NDEP-BMRR approval of the TSF Cover Study.

4.3 Impoundment Basin and BOC

Tentative closure actions for the stabilization of the impoundment basin and BOC areas include covering with a minimum of 12 inches of stockpiled growth media and borrowed alluvium, and revegetation. Post-closure surface runoff towards the BOC area will be routed into the low-lying area along the western boundary of the impoundment footprint to minimize ponding water on the covered tailings surface.

The TSF basin, embankments, BOC, SCAE and EEE “seep monitoring” vibrating wire piezometers (refer to FMMP Section 3.2) will be abandoned in-place following shearing of the read-out cables as near as easily accessible to the piezometer locations. Exposed cable and readout boxes will be disposed of, reused or recycled.

4.4 DUSSCF

The DUSSCF stores all stormwater and sediment generated by the 25-year, 24-hour storm precipitation falling on the crest and downstream slopes of the CME. This unlined facility consists of settling basins or paddocks underlain by a southward extension of the embankment underdrainage blanket and perforated piping system, which discharges via internally perforated and externally unperforated HDPE pipelines into the TSCP. Perforated CPE vertical inlet structures decant clarified solution from the surface of the paddocks into a horizontal pipeline section that flows into a 60-mil HDPE-lined collection ditch, and thence into the TSCP.

The DUSSCF will be maintained until the CME crest and downstream embankment surfaces have been adequately stabilized against erosion (anticipated within 3 to 5 years after cover placement). Thereafter, the downstream slope soil cover will be extended southward to incorporate the remaining settling areas, graded to promote and control stormwater run-off, and revegetated. Runoff from the freshly covered sediment control facilities will be routed into the TSCP, via the HDPE lined collection ditch, until revegetation has stabilized the newly covered and revegetated sediment control facilities.

4.5 Tailings Slurry and Water Management Facilities

Tentative closure actions for the tailings slurry and reclaim water management facilities include:

4.5.1 Pre-Closure Preparation

1. Fresh water flushing of all sumps, storage tanks, thickeners, piping, pumps and other fluid management components, and disposal of flushing water in the TSF;
2. Fresh water flushing of all interior surfaces of buildings. This will include structural steel, concrete floor surfaces, and exterior surfaces of process components located inside the process buildings;
3. Identification, protection and disconnection of utilities and underground services;
4. Identification and removal of hazardous waste via TSD facilities, with qualifying types of hazardous material (e.g. mercury switches) being managed by qualifying non-TSD facilities and vendors; and
5. Removal of salvageable equipment, scrap steel and recyclable building materials.

4.5.2 Pre-Closure Sampling

Sampling and analysis of remaining structural steel, concrete and foundation soil will be performed as follows:

- Steel will be "swipe" sampled using a product such as "Kim-Wipes", which will be sent for laboratory analysis;
- Concrete will be sampled using impact tools or concrete cutting tools and samples submitted for laboratory analysis. The analyses will include MWMP extraction and analysis of the extract for copper. If this parameter is detected at above the mean background concentrations for the underlying groundwater, the sampled concrete will be removed and disposed of in the TSF; and
- Soil samples will be collected at specified and random locations (including the pipeline secondary containment areas). Two samples will be collected from each sample location. The first will be collected from the zero to one-inch interval and the second from the one to three-inch interval. Each sample will be separately analyzed. The analyses will include MWMP extraction and analysis of the extract for copper. If this parameter is detected at above the mean background concentrations for the underlying groundwater, the sampled soil will be excavated and disposed of in the TSF.

4.5.3 Closure Tasks

Remaining facilities will be dismantled, cut, transported and disposed of in the on-site Class III-waiver landfill or a RCRA-permitted off-site landfill.

Remaining concrete walls, supports and equipment foundations will be demolished and the rubble buried in-place.

All underground voids and structures will be backfilled, facility footprints regraded and revegetated.

4.6 Tailings Seepage Collection Pond

It is anticipated that the original, single-lined TSCP will be relined and converted into an E-Cell for management of long-term flows from the pump back system and the new, double-lined TSCP will be modified into an E-Cell and used for evaporative disposal of post-closure seepage from the tailings impoundment.

It is anticipated that the tailings E-Cells will continue to be operated and monitored until seepage flows have ceased or have reached de minimis levels and discharge/infiltration without degradation to waters of the State has been demonstrated and approved by NDEP-BMRR, thus allowing for E-Cell closure. Closure actions will include:

1. Dismantling, removal and salvage (or disposal in an approved landfill) of fencing;
2. Sealing or capping of all accessible pipeline openings; and
3. Backfilling the E-Cell with compacted alluvium borrowed from adjacent areas, grading to shed water and revegetation.

The above approach has been used for PFS planning and cost calculations in the Robinson Operation Reclamation Plan. Both IFM and PFS flow rates are based on flow rates measured at the TSCP during 1999-2004 Temporary Closure.

Tentative closure actions for the TSCP fluid management components (pumps and piping) are the same as for the slurry and water management components described in Section 4.4 above.

4.7 Tailings Pump Back System

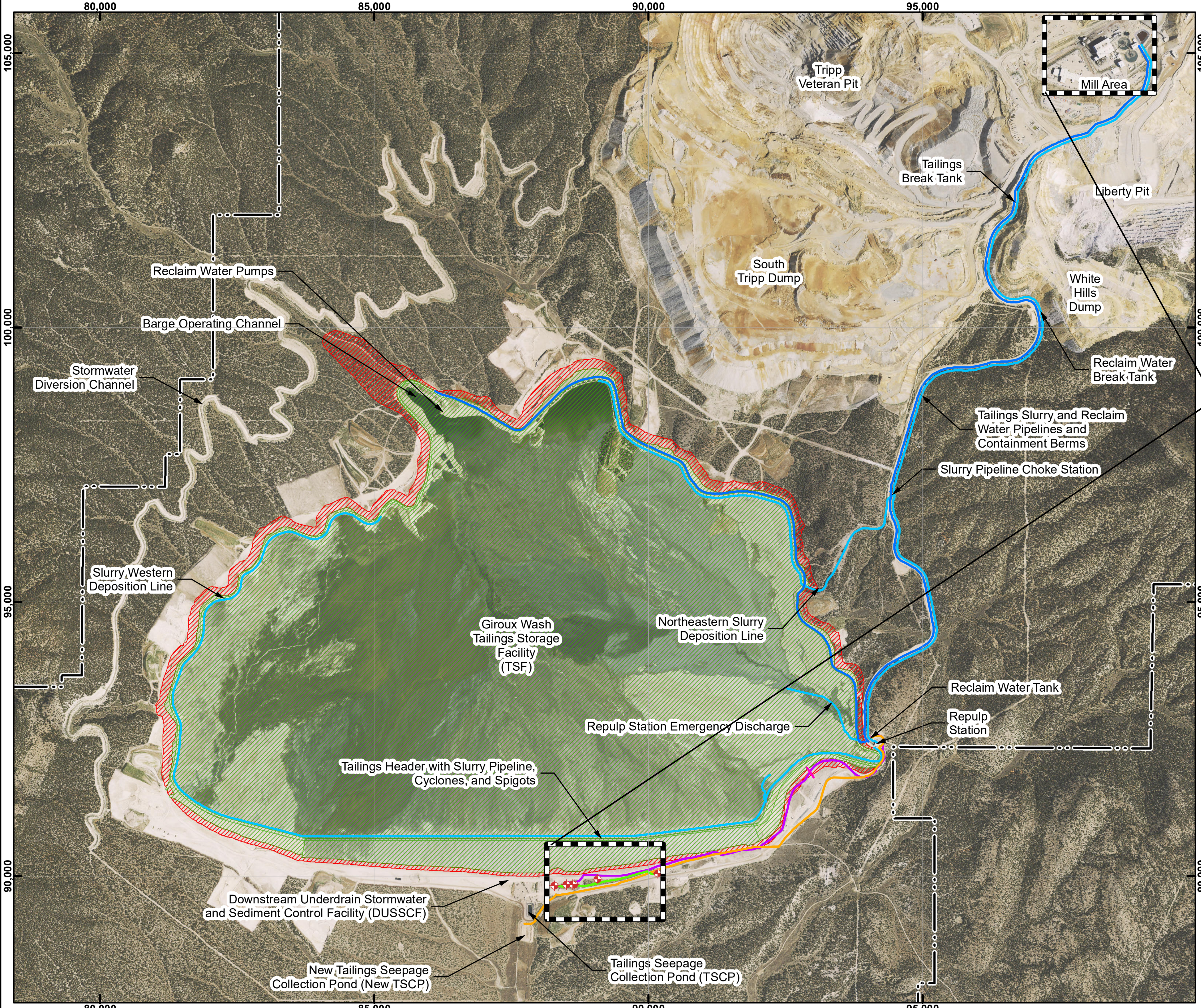
The PBS was constructed to allow pumping of groundwater with sulfate concentrations above 500 mg/L to remediate the sulfate plume downstream of the TSF. The system includes six pump-back wells, individual well discharge pipelines routed to an 8,000-gallon holding tank and booster pump located just northeast of the TSCP. The water is pumped from the holding tank via the booster pump in an HDPE pipeline routed along the northern edge of the existing access road to the Reclaim Water Tank at the Repulp Station. From there, the pump-back water is pumped with reclaim water to the Mill circuit. Addition of a new pump back well, INVW-02, to the PBS was approved by NDEP-BMRR and is scheduled for construction in 2021.

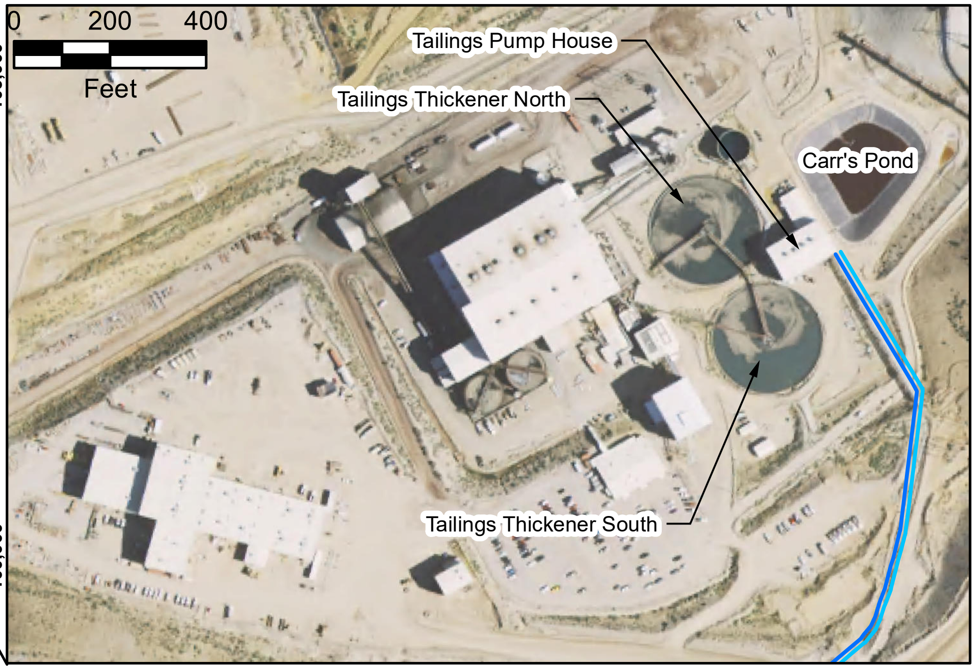
It is anticipated that the PBS will remain operational until the sulfate plume is remediated. Following cessation of the Mill operations the PBS flows will be redirected into the TSF until the original TSCP is relined and converted into an E-Cell) for long-term management of elevated sulfate concentrations. Additional E-Cell may be also constructed if necessary. The additional E-Cell may be tentatively located downstream of the tailings impoundment embankment and adjacent to the PBS tank. Robinson will develop preliminary designs following completion of the PBS (i.e., once the potential additional pump-back wells have been incorporated and the actual pump-back flows have been determined).

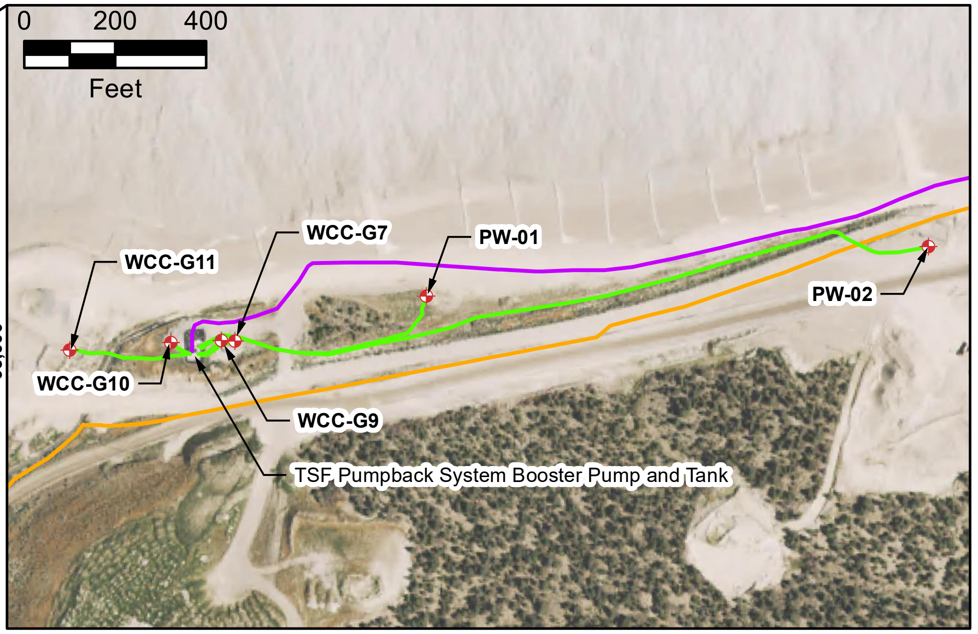
Tentative closure actions for the PBS include the following:

1. Removal and disposal in the on-site Class III landfill or salvage of all well and pumping infrastructure, including well pumps, well piping, surface piping, tank, booster pump, power supply, and associated miscellaneous items;
2. Removal and disposal of HDPE liner under booster pump and tank in the on-site Class III waivered landfill;
3. Abandonment of pump-back wells in accordance with NAC 534.420; and
4. Scarification and revegetation of surface disturbance associated with booster tank and wellheads.

The above approach has been used for IFM and PFS planning and cost calculations in the current Reclamation Plan.







LEGEND

- Project Area Boundary
- Current Tailings Impoundment Footprint
- Planned Tailings Impoundment Expansion
- TSF Pumpback System Well
- EEE Seep Pipeline
- TSF Pumpback System Discharge Pipeline
- Reclaim Pipeline
- Tailings Slurry Pipeline
- TSCP to Reclaim Tank Pipeline
- TSF Pumpback Well Pipeline

Service Layer Credits:

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Feet
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Coordinate System:
RNMC Mine Grid New

DESIGN: MJ
DRAWN: ML
REVIEWED: MJ
APPROVED: MJ

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: KGHM ROBINSON OPERATION

DRAWING TITLE:
TAILING OPERATIONS
TENTATIVE PLAN FOR PERMANENT CLOSURE
WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020

DATE: 10/9/2020
REVISION: A
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SRK PROJECT NO.: 150901.260.1800

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5.0 Pit Lakes

Two of the open pits at the site have developed pit lakes: Liberty Pit and Ruth Pit. Tripp/Veteran Pit is the third pit anticipated to develop a pit lake should the mining operations return to this pit. Resumption of mining operations in the Tripp/Veteran Pit is not part of the current mine plan. The locations of these pits are shown on **Figure 6.1**. Both Wedge and Kimbley Pits have been backfilled with non-PAG material to an elevation of 50 feet and 70 feet above the expected pit lake rebound elevations, respectively.

Mining was re-initiated in the Ruth Pit in 2010. Pursuant to the Permit Part I.N.1, Robinson contracted with Piteau Associates Inc. to prepare pit lake studies (PLS's) providing updated pit lake predictive models and ecological risk assessments for all potential pit lakes at Robinson Operation. The 2017 PLS (Piteau, 2017) provided pit lake predictive models that identify anticipated quality of waters to be impounded in the pits at closure of the facility, and the potential of the impoundments to degrade the waters of the State over time. The models integrate relevant components of each pit lake water budget, including inflows from pit-wall runoff, catchment runoff, groundwater seepage, and direct precipitation, as well as outflows from open-water evaporation. The dynamic system model "GoldSim" was used to model the pit-lake water balance. Water balance components were assigned individual geochemical profiles that were developed based on the percentages of cumulative inflow components (precipitation, groundwater flow, evaporation, etc.), groundwater chemistry, and waste rock characterization data including laboratory kinetic testing, static testing, and water quality monitoring. The pit lake geochemical model was constructed to represent water conditions in each lake during filling and under long-term steady-state conditions. The 2017 PLS, including ecologic risk assessment (ERA) was submitted to NDEP-BMRR on May 2, 2017 (Piteau, 2017). An updated PLS and ERA for the Ruth West 5 Pit Lake was completed and submitted in NDEP-BMRR in March 2019. Robinson also prepared the *Supplemental Ruth West 5 PLS with Backfilled Ruth East Pit* (2020 PLS) (Piteau, 2020) and submitted to NDEP-BMRR on July 13, 2020. The 2020 PLS was under NDEP-BMRR review at a time of this report preparation. The *East Liberty Pit Lake Screening Level Assessment* was also prepared by Piteau in July 2020 to summarize an interim, screening level study of potential groundwater related impacts resumption of mining operations would have on the Liberty Pit Lake. The updated Liberty Pit PLS will be provided at a future date when geochemical testing and updates to the regional groundwater model are completed. Current tentative plans for permanent closure of Liberty and Ruth pit lakes are summarized below.

5.1 Liberty Pit Lake

Liberty Pit dewatering ceased during Temporary Closure in August 1999. No mining took place in Liberty Pit between 1999 and 2013 and groundwater recharge resulted in recovery of the main pit lake to an elevation of 6,561.8 feet above mean level (feet amsl) by May 2011. The historic Liberty East Pit Lake began to form in 2003, and was a shallow, small lake located in the southeast corner of the pit. Liberty East Pit Lake reached an approximate elevation between 6,560 feet amsl to 6,570 feet amsl.

Monitoring records indicate a significant difference in the water chemistry between the two Liberty Pit lakes. The Liberty Main Pit Lake water pH was between 7.5 and 8.0 s.u. with low concentrations of major metal ions. The historic Liberty East Pit Lake was acidic, with a pH between 2.5 and 3.0 s.u. and high metal concentrations. The disparity between the two Liberty Pit Lakes is related to the presence of monzonite with high acid-generating potential residing along the 6,560 feet bench of the historic Liberty East Pit walls. Results of site characterization, testing and reconnaissance work conducted on the East Liberty Dump indicate that none of the surface materials appear to be acid-leached, further confirming that this dump is not the source of acid rock drainage (ARD) in the Liberty East Pit Lake.

With the resumption of mining in 2004, Robinson resumed Liberty Pit dewatering as an alternative source of mill makeup water. Dewatering system for both Liberty Main and Liberty Small pit lake was installed in 2011 and both portions of the Liberty Pit were completely dewatered by October 2013. Mining that was carried out in Liberty Pit during 2013 removed slide material in the north wall, lowering the Main Liberty Pit floor to an elevation of 6,490 feet.

The East Liberty Pit Expansion intends to resume mining in eastern Liberty Pit and expand the current footprint to the east. Proposed mining would expand the pit to the east approximately 1,180 ft and lower the Liberty East Pit floor to an elevation of 6,300 ft amsl. No significant mining would occur in the Liberty Main Pit. Mining is anticipated to start in 2022 and continue through 2027. Dewatering rates for the Liberty East Pit expansion are anticipated to range from 85 to 120 gpm from mineralized bedrock units. Dewatering is anticipated to be managed through a series of horizontal drains, sumps and pumps, and potentially in-pit wells.

The water balance and geochemical modeling were configured to evaluate Liberty Main and Liberty East pit lakes expected to form in the Liberty Pit. The results for the Liberty Main Pit configuration are:

1. The shallow pit lake recovers in the Liberty Main Pit reaching an equilibrium elevation of 6,550 feet amsl, reached approximately 20 years after the end of mining;
2. Upon reaching the 6,550 ft amsl elevation, lake water overflows and seeps into the Liberty East Pit (~11.6 gpm). Predicted lake levels are similar to the current Liberty

Main Pit Lake, with the primary difference being that the saddle elevation between Liberty Main and Liberty East Pit will be lowered from the 6,600 ft elevation to the 6,550 ft elevation during mining.

3. The equilibrium pit lake elevation was predicted to remain below the pre-mining South Block water level of 6,630 feet amsl, and below observed water levels in surrounding mineralized bedrock (7,000 - 6,670 feet amsl), indicating the pit would be a permanent groundwater sink relative to the surrounding bedrock; and
4. The Liberty Main pit lake was predicted to have circum-neutral pH, with elevated sulfate, TDS and several metal concentrations. Concentrations are anticipated to decline due to outflow from Liberty Main to Liberty East Pit. Outflow from Liberty Main Pit Lake is only to the Liberty East Pit, which functions as a hydraulic sink, therefore these exceedances are effectively captured and do not pose a risk to adjacent groundwater.

The water balance and geochemical modeling identified the following main results for the Liberty East Pit configuration:

1. The final pit lake stage was predicted to be 6,423 feet amsl reached ~150 years after the end of mining;
2. The Liberty East Pit Lake forms a hydraulic sink relative to the surrounding groundwater system and the Liberty Main Pit. Water levels in the pit lake are anticipated to be over 150 ft lower than the recovered groundwater system as the lake is suppressed by evaporation.
3. Mining of the Liberty East Pit is anticipated to produce an additional 250 feet of drawdown centered east of the current pit floor. The pit lake is a strong hydraulic sink and thus does not discharge water to the groundwater system.
4. The Liberty East pit lake is also predicted to be an acidic water body, with elevated sulfate, TDS, fluoride and metal concentrations. The predicted Liberty East Pit Lake chemistry is anticipated to be improved over historic chemistry.

Liberty Pit is determined to be a hydraulic sink relative to the surrounding groundwater system upon recovery, thereby causing no degradation to surface water or groundwater. An estimated 86.4 gpm of evaporation for both pit lakes is predicted to occur. Pit lake open areas are predicted to be approximately 38 acres.

In order to prevent impacts to human health, closure actions include construction of berms to preclude access, which is consistent with Robinson's approved Reclamation Plan and surety bond. An ERA was performed on the predicted pit lake chemistry in 2017 to derive the potential for impacts to terrestrial and avian life. The results indicate that none of the predicted chemical constituents has the potential to adversely affect avian life that may inhabit the site and use the pit as a principal drinking water source. In addition, only aluminum concentrations predicted to exist in the Liberty East pit lake following closure are likely to represent low to moderate risks to mammalian wildlife.

Additional ERA was performed for the Liberty Main and Liberty East Pit Lakes in 2020 using chemistry from the no mineral precipitation [mineral precipitation suppressed] scenario presented in the 2020 *East Liberty Pit Lake Screening Level Assessment* (Piteau, 2020b) and uses methodologies, receptors, and species-specific adjustment factors set forth in the NDEP-approved *Robinson Mine Pit Lake(s) 2017 Ecological Risk Assessments* (2017 ERA) (SRK, 2017; NDEP, 2018h). Aluminum concentrations predicted to exist in the Liberty East pit lake following closure are not likely to cause ecological risk.

The following potential mitigation actions were identified in the 2017 PLS for protection of terrestrial and avian wildlife and are therefore included in this TPPC:

1. Fencing and berms to impede wildlife access to the pit lake;
2. Water quality monitoring during the early development of Liberty Main and Liberty East pits to evaluate water chemistry evolution;
3. Strategically covering exposed PAG material on pit benches to separate source material and add a source of alkalinity to the pit walls;
4. Rapid filling of Liberty Pit with South Block dewatering water prior to closure. The South Block is dewatered at a rate of 8,000 – 20,000 gpm using high capacity wells and the water could be potentially diverted to the Liberty Pit using dewatering infrastructure. Liberty Pit could be potentially filled to the 6,630 feet amsl elevation in approximately three to six months.

5.2 Ruth Pit Lake

The Ruth Pit has contained a pit lake since mining by a predecessor operator ceased in the 1970s. Alta Gold Tailings (AGT) were deposited in the pit lake from the Lone Tree Mill during the late 1980s and early 1990s. During the period 1992 to 1997, water from the Liberty Pit was pumped into the Ruth Pit, as authorized under the Permit. Ruth Pit dewatering commenced in 1998 and was discontinued in 1999 following temporary suspension of operations. Pit lake elevations were measured monthly as part of the site characterization program conducted during Temporary Closure, together with limnological sampling aimed at determining if any lake stratification was occurring over time. Prior to Robinson resuming pit dewatering, no stratification had been observed, and no specific stabilization actions were anticipated to be required at closure.

Since resuming mining in 2004, Robinson has resumed dewatering of the Ruth Pit Lake and completed removal of AGT. The AGT were placed in the C-Pad Disposal Area that was constructed on top of the C-Pad and closed in 2017 (Robinson, 2018a).

Mining at Ruth Pit resumed in 2010 and currently includes Ruth West and Ruth East Pit. The proposed expansion of Ruth West pit is identified as the Ruth West Phase 5 (Ruth West 5). Mining was completed in the Ruth East Pit in 2020. The proposed mine plan includes backfill of the Ruth East pit with non-PAG material derived from Ruth West 5 to the 6,840 ft amsl elevation. Backfilling would commence in 2021 and end in 2022. The planned mining operations will be confined to the Ruth West Pit and will extend the mine life through the end of 2024. Following completion of mining operations, only the Ruth West Pit will host a pit lake.

Each Ruth Pit component was modeled separately to assess variations in pit lake chemistry over time and main findings are summarized below.

5.2.1 Ruth West Pit Lake

Ruth West Pit lake area is located in the western portion of the current Ruth Pit. The planned Ruth West 5 Pit will deepen the pit floor elevation to 5,700 feet amsl, which is about 940 feet below the natural water table elevation in the South Block (6,641 feet amsl). Mining will remove between 300-500 feet of material in the western portion of the Ruth West pit, exposing new rock and modifying the distribution of rock material in the ultimate pit wall (Piteau 2020). The overall distribution of rock materials is anticipated to benefit pit lake chemistry by reducing the relative exposures of PAG materials and increasing the quantity of strongly non-PAG materials.

Groundwater from the South Block will be the dominant source of water composing the Ruth West Pit Lake. Once the Ruth West Pit Lake recovers to the 6,550 feet amsl elevation, it will flow into the Ruth East Pit backfill.

Main results of the water balance and geochemical modeling performed for the Ruth West Pit Lake configuration at 10, 50, and 100 years after closure are summarized as follows:

1. The final pit lake stage is predicted to be 6,611 feet amsl reached ~120 years after the end of mining;
2. Ruth West pit lake water will reach 6,550 ft amsl elevation ND start to overflow into Ruth East backfill after 58 years (after recovery starts). This will significantly accelerate recovery in the Ruth East backfill;
3. The predicted equilibrium pit lake elevation constitutes a hydraulic sink relative to the South Block groundwater. However, groundwater outflow out of Ruth West is

anticipated to flow north towards Keystone Dump and Ruth South and Ruth North hydrogeologic blocks. Discharge from Ruth West principally occurs in areas of Pennsylvanian Ely Limestone (Pel) through the D-level underground workings above 6,100 feet elevation. Outflow to the north from ruth West pit begins approximately in year 10 post-closure. The equilibrium outflow rate is estimated to be 122 gpm;

4. South Block groundwater is the main control on pit lake chemistry. Inflows from the South Block constitute about 77% of the pit lake volume at equilibrium;
5. No exceedances of constituents for Profile III (biological receptors) or Permit limitations (groundwater) are predicted to occur. Ruth West pit lake is located in the Ruth Mineralized block. The predicted pit lake water chemistry resembles the high alkalinity, low TDS water quality of South Block groundwater; and
6. No mitigation is needed because of the high quality of South Block water entering Ruth Pit Lake at predicted closure equilibrium conditions.

Closure actions for the Ruth West Pit Lake include construction of berms to preclude access, which is consistent with Robinson's approved Reclamation Plan and surety bond.

5.2.2 Ruth East Pit Lake

The Ruth East 3 mining was completed in 2020 with the pit floor deepened to the 6,100 feet elevation. Mining occurred exclusively in the east and south walls of Ruth East Pit. The Ruth East 3 layback exposed additional PAG rock in the south wall with the non-PAG Kimbley backfill composing approximately 13% of the exposed pit wall surface. The Kimbley Pit has been backfilled in 2014/2015 with non-PAG material to an elevation of 70 feet above the expected pit lake rebound elevation, thus it is not anticipated to negatively impact runoff into the Ruth East Pit backfill.

The southern pit wall penetrates the South Block hydrogeologic unit at an elevation of approximately 6,400 ft to 6,500 ft, which is about 140 ft to 240 ft below the natural water table in the South Block (6,641 ft). South Block groundwater will be the main contributor to filling Ruth East Pit via South Block inflows and overflow from the Ruth West Pit.

Backfilling Ruth East alters the filling and flow dynamics from an open pit configuration. Water levels in Ruth East reach the 6,550 ft elevation approximately 8 years faster in a backfilled pit than in an open pit configuration. The time to final equilibration is approximately the same because it is controlled by South Block recovery. Overflow water from Ruth West pit lake to Ruth East backfill is reduced and temporary. After 100 years post-closure, Ruth East backfill discharges towards Ruth West at a final equilibrium rate of ~ 33 gpm. In the open pit configuration, Ruth East is a hydrologic sink with regard to

Ruth West. The reversal in flow gradients in the backfilled configuration is expected because there is no evaporative demand in Ruth East backfill.

Predicted Ruth East backfill pore water chemistry has fewer permit exceedances for groundwater than the open pit configuration (five exceedances for the Ruth East backfill versus ten for the Ruth East open pit), and no exceedances to Profile III. The predicted pore water chemistry is anticipated to be circum-neutral and alkaline, which is conducive to sequestering dissolved metals through mineral precipitation and/or sorption. Higher pH conditions in the backfill are responsible for removing the predicted copper, aluminum, and nickel exceedances previously predicted during the early Ruth East Pit Lake filling. Backfilling also eliminates a predicted acidic pit lake in Ruth East during the first 45 years of filling, prior to inundation and overflow from Ruth West and the South Block. Iron is a new element predicted to be in solution during early filling of Ruth East backfill, owing to the lower oxidizing potential present in backfill materials.

Closure actions for the Ruth East Pit Lake include construction of berms to preclude access, which is consistent with Robinson's approved Reclamation Plan and surety bond.

5.3 Tripp/Veteran Pit Lake

Pre-mining hydrologic evaluations indicated that mining operations in the Tripp/Veteran Pit would potentially cause the pit to intercept groundwater, resulting in formation of a permanent pit lake after mining ceases. Mining in the Tripp/Veteran Pit was conducted from 2004 through the end of 2010. The Tripp and Veteran pits are currently merged above the 6,600 feet bench and form one large open pit. Tripp Pit was backfilled to 7,050 feet amsl.

To date only minor amounts of perched groundwater have been encountered in the Tripp/Veteran Pit in early spring. The collected water typically evaporated by late summer. Currently there is no pit lake in the Tripp-Veteran Pit.

Resumption of mining operations in the Tripp/Veteran Pit is no longer part of the current mine plan at Robinson. However, as Tripp/Veteran Pit has ore reserves that that may be viable at higher copper prices, no closure actions will be performed on this pit until economic ore at the Robinson Operation has been exhausted.

An ERA was performed on the previously predicted chemistry to derive the potential for impacts to terrestrial and avian life. The results indicate no potential for adverse effects from the Tripp/Veteran pit lake water.

In order to prevent impacts to human health, closure actions include construction of berms to preclude access, which is consistent with Robinson's approved Reclamation Plan and surety bond. At this time Robinson does not include closure actions beyond construction of the access barrier berm in this TPPC.

6.0 Mine Impacted Waters (MIW) and Potential MIW Sources

MIW, potential MIW sources and associated fluid management and monitoring systems are listed as process components in the Permit. As such, closure planning in this TPPC must include: Intera Drain and planned Intera Evaporation Pond/E-Cell, Green Springs Seep and Green Springs E-Cell, Mollie Gibson Seep and Mollie Gibson E-Cell, Jupiter Seep and Jupiter E-Cell, Juniper Seep and Juniper E-Cell. The location of these MIWs is provided on **Figure 6.1**.

6.1 Intera Drain

Intera Drain was constructed in September 1997 in the location of a historic Pregnant Leach Solution (PLS) pond (Intera Pond) constructed and operated by a predecessor operator. Intera Drain collects residual leachate from the historic copper leach operations (Sunshine and Puritan Dumps), and is routinely pumped from the Intera Well to the Mill circuit and used as make-up water following procedures outlined in Section 3.3.4 of the FMMP. Historic Sunshine, Puritan and Juniper Dumps were overdumped with Liberty Pit waste rock during 1997/1998, forming the Liberty Dump.

Intera Drain consists of a ± 200,000-gallon capacity drain, located under the existing Liberty Dump. Accumulations of MIW collecting in the drain are evacuated through a vertical well that is collared in the Liberty Dump. Well pump routes the MIW through a buried double-walled HDPE pipeline and discharges it into the south tailings thickener in the Mill area. The pipeline is buried to a depth of two to three feet to preclude freezing. Three leak detection monitoring ports are installed in the buried Intera Drain Conveyance Pipeline.

Intera Drain water elevations and average inflow rates are monitored daily and reported quarterly to NDEP-BMRR under provisions of the Permit. Average inflows to the drain have been reduced from observed average flows of around 20 gpm in 1997 to less than 5 gpm in 2003. However, inflows rapidly increased immediately following the 2004 resumption of operations and have recently stabilized at an average of around 15-16 gpm. Initial Intera sources investigation identified possible flow path from the Mill Water Storage Ponds area to the Intera Drain. Following this investigation Robinson removed water truck fill station standpipe located adjacent to the ponds and re-lined the Mill Water Storage Ponds in 2011.

Robinson submitted an FPPC for Intera MIW and Source Areas on Liberty dump (Robinson, 2011a) on April 1, 2011 pursuant to Item 5.c of the October 26, 2010 Corrective Action Plan (CAP). The Intera FPPC provided design for closure of Intera Drain and placement of engineered cover over the portion of the Liberty Dump that lies within the Intera Drain source area. Robinson prepared revised closure designs for the Intera Drain and its source area on Liberty Dump to incorporate results of subsequent site characterization work and address NDEP-BMRR comments. The revised FPPC was provided to NDEP-BMRR on September 2, 2014 (Robinson, 2014b), Revision 1 of the FPPC was submitted on April 24, 2015 (Robinson, 2015a), and Revision 2 (FPPC-R2) on August 17, 2015 (Robinson, 2015f).

Robinson placed about 60 feet of non-PAG waste rock in the Intera wellhead vicinity in 2018 tp eliminate ponding. New Intera well (Intera MIW-R) was installed in March 2019 and is currently used for Intera Drain pumping.

Intera sources evaluation work was carried out during 2018/2019 included evaluation of stormwater management on Liberty Dump and Liberty/TS Dump infiltration assessment, characterization of potential Intera sources using isotopic tracers and Mill infrastructure audit that identified several leaks in the fire water and potable water system. Additional improvements are scheduled for implementation in 2020/2021, followed by submittal of the updated FMMP schedule for December 2021.

Tentative closure actions for the Intera Drain Source Areas on Liberty Dump and Intera Drain that were provided in the 2015 FPPC-R2 are described below.

6.1.1 Tentative Closure for Liberty Dump Source Area

The following tentative closure actions are proposed in the 2015 FPPC-R2 for the Liberty Dump Source Area:

1. Cut-to-fill regrading of the waste rock material to create a surface that will shed water;
2. Placement and compaction of suitable material to form 1-foot-thick liner subgrade;
3. Placement of 40-mil linear low-density polyethylene (LLDPE) liner over the prepared subgrade. The 40 mil LLDPE liner was selected due to its high flexibility and tensile strength that will allow it to conform to the underlying waste rock surface and accommodate likely differential settlements of the dump over time, while providing a barrier that will effectively prevent meteoric waters from migrating through the underlying material. The liner will be anchored by placement of liner cover material; and
4. Placement of liner protection soil/waste rock cover over the new liner using non-PAG waste rock from the Stillwater/Triangle dump complex to a minimum depth of three feet, addition of soil amendments and direct revegetation.

6.1.2 Tentative Closure for Intera Drain

The following closure actions are described in the 2015 FPPC-R2 for the Intera Drain:

1. Continued pumping from the existing Intera Well via the buried seepage conveyance pipeline into the Mill circuit until cessation of processing operations;
2. In a case of a suspension of processing operations Intera drain flows will be redirected to and stored in existing double-lined ponds (Mill Water Storage Ponds and Carr's Pond). Management of Intera flows in the existing ponds will continue for approximately 9 months during which Robinson will construct the Intera Evaporation Pond on top of Liberty/TS Dump and redirect the Intera pipeline into the new pond.
3. The Intera Evaporation Pond will be double-lined and its construction will include LCRSs, as well as installation of a chain-link fence around the pond perimeter and bird netting over the pond to prevent access by unauthorized personnel and wildlife. Robinson will also modify/construct a pipe-in-pipe conveyance system for pumping Intera water into the new pond.
4. Intera water management through evaporative disposal of pumped inventory in the Intera Evaporation Pond is anticipated to continue for approximately 3.5 years, i.e., until Intera flows are reduced to approximately 5 gpm.
5. When the flow rates are around 5 gpm, the Intera Evaporation Pond will be converted into an E-Cell. This conversion will include placement of soil fill, installation of LCRSs, sampling and flow rate monitoring ports, seepage distribution piping, and a piezometer to monitor E-Cell inflows and water levels within the E-Cell.; and
6. Long-term Intera water management through evaporative disposal of pumped inventory in the E-Cell.

Closure designs for modifications to the existing Intera Drain water conveyance and management facilities associated with Intera management during sudden suspension of processing operations are summarized below.

Immediately following sudden suspension of processing operations Intera Drain management will utilize existing double-lined ponds for storage of Intera flows and will require the following actions. It is anticipated that this Intera Drain management will continue until the Intera Evaporation Pond is constructed and commissioned.

1. Installation of new, 2-inch diameter HDPE pipe-in-pipe connections between the existing Intera pipeline and the Mill Water Storage Ponds and Carr's Pond.

2. Installation of a submersible trash pump in the Carr's Pond Sediment Basin, together with a flexible hose pipe discharging into the tailings thickener. This system will be used to pump stormwater flows into the tailings thickener in order to minimize stormwater inflows into Carr's Pond while the pond is used for Intera flow management.
3. Evacuation of the Mill Water and Carr's Pond inventories. Robinson will fully evacuate one Mill Water Storage Pond prior to the start of the interim Intera management, followed by evacuation of the remaining ponds during the first two months of the Intera management implementation. Carr's Pond inventory will be analyzed for Profile I constituents prior to being transferred to the tailings thickeners. The results will be compared to the Tier 3 water quality standards for the BOC to confirm that these standards are met. The results will be provided to NDEP-BMRR and approval obtained prior to discharging the water to the TSF. If the pond's water does not meet the Tier 3 water quality standards, Robinson will add fresh water to the pond's inventory and repeat the testing until the results meet the BOC Tier 3 water quality standards. Alternatively, depending on the results of testing, Robinson may consider providing for treatment of the pond water to meet the Tier 3 water quality standards and facilitate discharge on the TSF.
4. Robinson plans to direct Intera Drain flows to discharge into the South Mill Water Storage Pond, followed by the North Mill Water Storage Pond and Carr's Pond. These double-lined ponds have a combined capacity of 7.5 million gallons (while maintaining currently-approved freeboard requirements). This storage volume will be sufficient to contain approximately 9 months of Intera flows, equivalent to 6 million gallons assuming no reduction in the currently observed 15.5 gpm Intera flows. The anticipated reduction in Intera flows will provide additional buffer capacity.
5. Robinson will also construct a new, double-lined Intera Evaporation Pond on top of the Liberty/TS Dump during this interim Intera management.

The Intera Evaporation Pond will be constructed with sufficient volume and surface area to store and eliminate through evaporation (i.e., passively) the combined precipitation and flows generated on an annual basis from anticipated Intera flow rates while maintaining capacity to contain precipitation from the 500-year, 24-hour storm event with a minimum two feet of freeboard.

It is anticipated that Intera Drain flows will show reduction from 20 gpm to about 5 gpm over 3.5 years (after mine closure). Similar inflow reductions were observed during Temporary Closure (1999-2004). Management of Intera flows in the Intera Evaporation Pond is anticipated to continue until the Intera inflow rates are lowered to about 5 gpm, at which time the flows can be suitably managed in an E-Cell.

The Intera E-Cell will be constructed by converting the Intera Evaporation Pond into an E-Cell as follows:

1. Backfilling the evaporation pond to within 3 feet of the existing pond crest. The remaining volume and surface area will be sufficient to store and eliminate (through evaporation) the anticipated combined Intera Drain flows and precipitation inventory generated on an annual basis.

2. Installation of sampling and flow rate monitoring ports, seepage distribution piping, and an internal piezometer to monitor E-Cell inflows and saturated water levels within the E-Cell backfill.

3. E-Cell backfill and placement of liner protection soil.

Long-term Intera water management will be achieved through evaporative disposal of pumped drain inflows in the E-Cell. It is anticipated that the Intera E-Cell operation will continue until seepage flows from the Intera Drain reach zero or *de minimis* levels (i.e., water elevation in Intera Drain remains consistently below the Intera Drain crest elevation of 6,917 feet amsl despite curtailment of all evacuation pumping). At that point the Intera Drain operation will cease. The following tentative actions associated with the Intera E-Cell closure are anticipated:

1. Removal of Intera Well infrastructure, including well pump, well piping, power supply, and associated miscellaneous items;
2. Abandonment of the Intera MIW-R well in accordance with NAC 534.420;
3. In-place closure of buried Intera pipeline section from the Intera Well to the E-Cell; and
4. Placement of a 2-foot-thick growth media cover over the E-Cell. The cover will be shaped to shed stormwater and directly vegetated.

6.2 Green Springs Seep and Green Springs E-Cell

The Green Springs Seep emanated from the toe of the historic Green Springs Dump near its intersection with the original South-Tripp Dump. The seep results from meteoric water percolating through the Green Springs Dump which follow a natural drainage pattern.

The seep was originally collecting in unlined Green Springs ponds. These ponds were overdumped with waste rock from Tripp/Veteran Pit during 1998 and 1999, and with resumption of mining, the Green Springs Dump has been completely overdumped. Subsequent Green Springs Seep management included construction of a cut-off drain below the former ponds that intercepted the seep and conveyed it into an HDPE-lined

Green Springs Transfer Pond. Water collected in the transfer pond was initially routed via a gravity drain to the reclaim water pipelines at the BOC.

Overdumping and regrading of the Green Springs Dump has successfully reduced the volume of infiltrating water and resulting seepage flows. Green Springs Seep flow rates were reduced from ~10 gpm to <0.05 gpm by 2011.

Robinson submitted Green Springs FPPC (Robinson, 2011b) on May 3, 2011 to provide design for closure of the existing Green Springs Transfer Pond, construction of the new Green Springs E-Cell and placement of an engineered cover over the portion of the South Tripp Dump that lies within the Green Springs seep source area. Green Springs E-Cell was constructed in 2012.

Robinson completed closure of the Green Springs Transfer Pond in 2015. The FCR (Robinson, 2015e) was submitted on August 5, 2015 and approved on November 20, 2015. The following closure actions are proposed for the Green Springs E-Cell facilities:

1. Maintenance of existing stormwater diversion berm upstream of the Green Springs E-Cell to divert flows generated by 100-year, 24-hour precipitation falling on the upstream watershed; and
2. Long-term Green Springs Seep water management through evaporative disposal of inventory in the E-Cell.

Robinson anticipates that closure and reclamation of the Green Springs E-Cell will be performed after it has been determined that the cell is no longer needed. This will be based on the demonstration that the seepage collected by the cell has ceased and/or Robinson has adequately demonstrated to NDEP-BMRR that the seepage does not have the potential to degrade waters of the State. Once this condition is achieved, closure actions will include in-place closure of buried pipelines and placement of a 2-foot-thick growth media cover over the E-Cell. The cover will be shaped to shed stormwater and directly vegetated.

6.3 Mollie Gibson Seep and Mollie Gibson E-Cell

Mollie Gibson Dump is a historic, inactive copper leach dump. The dump is a potential source of the Mollie Gibson Seep, which flows intermittently into the Mollie Gibson E-Cell.

Initial site characterization, design and construction of interim stabilization measures were performed for Mollie Gibson Dump, Seep and Ponds between November 2000 and July 2001. The interim measures consisted of regrading the dump surface and collecting and controlling surface water flow to ensure that no ponding and meteoric recharge could occur on the dump bench areas and dump sideslope interfaces. These measures also ensured that infiltrating meteoric water does not collect over the nose of the old Mollie Gibson Dump as the area is overdumped with Ruth waste rock. Final stabilization of Mollie Gibson area occurred through overdumping of the area by waste rock material as part of the Ruth Dump expansion. Potential flow from the Mollie Gibson seep has been redirected through a pipeline that extends beyond the planned Ruth Dump footprint and into the double-lined Mollie Gibson Seepage Management Pond for evaporative disposal.

Monitoring has been performed since July 2001 and includes weekly seep flow rate measurement and quarterly analysis of seep chemistry. These requirements were incorporated into the FMMP at Section 3.3.6.

Monitoring results of seep flows between July 2001 and up to March 2004 show that the interim stabilization measures have been successful in significantly reducing the seep flows.

Final closure of the Mollie Gibson Dump was described in detail in the report *FPPC for Mollie Gibson Acid-Leached Material* (Robinson, 2016c), dated December 22, 2016. This report includes a detailed description of Mollie Gibson Dump ALM characterization and proposed closure measures.

A portion of the Mollie Gibson Dump has already been overdumped by Ruth Dump. Reclamation regrading and revegetation of the final Ruth Dump surfaces will minimize or eliminate the potential for meteoric water to infiltrate the dump and contact the Mollie Gibson Dump underneath. No additional actions are proposed to stabilize this portion of the Mollie Gibson dump. Any exposed areas of Mollie Gibson ALM remaining above the Ruth Pit rim and outside the safety berm following Ruth pit mining will be graded to prevent ponding and covered with a minimum of two feet of non-PAG waste rock.

Anticipated Mollie Gibson ALM material remaining in post-closure Ruth pit walls has been taken into account in the 2017 PLS development (Piteau, 2017). Based on the use of conservative input parameters for ALM, the predicted pit lake chemistry after pit lake recovery is not anticipated to require a mitigative cover over the remaining Mollie Gibson high-wall slopes, or any pit lake water treatment. More details about the Mollie Gibson AML is included in Section 7.1.

An updated FPPC for Mollie Gibson MIW (Robinson, 2017b) was submitted on September 1, 2017 and approved by NDEP-BMRR on June 11, 2018. This FPPC was prepared to include the construction of a new Mollie Gibson E-Cell in place of the originally-proposed conversion of the Mollie Gibson Seepage Management Pond into an E-Cell. The new E-Cell location was required to accommodate Keystone Overdumping and future expansions of the Ruth Dump into the pond area. The updated FPPC provided designs for the Mollie

Gibson E-Cell construction including extension to the seepage conveyance pipeline, and described final closure activities for:

1. The existing Mollie Gibson MIW management system, including the existing seepage cut-off drain, conveyance pipeline and Mollie Gibson Seepage Management Pond; and
2. The Mollie Gibson "source area", specifically limited to the old Mollie Gibson acid-leached dump, currently overdumped by the Ruth Dump expansion.

Mollie Gibson E-Cell construction was completed in December 2018 as documented in the As-Built Report dated January 4, 2019 (Robinson, 2019a) and approved by NDEP-BMRR on July 12, 2019 (NDEP-BMRR, 2019d). As part of the E-Cell construction, the existing seepage conveyance pipeline was connected to a new segment and routed to the new E-Cell. The new E-Cell was commissioned in January 2019 and is currently used for passive management through evaporative disposal of the Mollie Gibson MIW flows.

Closure of the Mollie Gibson Seepage Management Pond was completed in 2019 as documented in the FCR that was submitted on May 29, 2020 (Robinson, 2020) and approved by NDEP-BMRR on August 31, 2020 (NDEP-BMRR, 2020).

6.4 Jupiter Seep and Jupiter E-Cell

Historic Jupiter Dump is inactive dump that was identified as potential source of Jupiter Seep MIW flows.

Initial site characterization, design and construction of interim stabilization measures for Jupiter Dump, Seep and Pond were performed between November 2000 and July 2001 with the objective of minimizing ponding and infiltration of stormwater into the dump upgradient of the seepage area.

Monitoring of seep flows and chemistry has been performed since July 2001. Current monitoring requirements are incorporated into the FMMP Section 3.3.7.

Monitoring results of seep flows between July 2001 through March 2004 show that the interim stabilization measures were successful in significantly reducing the seep flows. Flow monitoring records indicate that no flows were observed from the Jupiter Seep since June 2011.

Subsequent site characterization work determined that Jupiter Seep's stabilization and closure design requires the capture of Jupiter Seep MIW for management in a contained system and the separation of stormwater from contaminated soils to allow discharge of non-contact stormwater to the existing stormwater management system. Robinson submitted FPPC to NDEP-BMRR for modifications to the Jupiter MIW facilities on June 15, 2012 (Robinson, 2012).

Jupiter Seep and Channel area construction included installation of a dual-walled pipe from the seep area to the basin area, installation of a seep collector to dual-walled conveyance pipe connection box and burial of the existing seep with non-PAG material. This construction was completed in 2013. Jupiter E-Cell construction included removing the existing clay lined Jupiter Pond and contaminated pond sediments, shaping and building the double-lined E-Cell, connecting the Jupiter Seep conveyance pipe to the E-Cell, and installation of final stormwater drainage channels to route uncontaminated stormwater out of the watershed area to the existing stormwater management channel. This construction was completed in 2014 and Robinson submitted Final Construction Summary Report to NDEP-BMRR on September 5, 2014 (Robinson, 2014c).

A portion of the historic Jupiter Dump lies under the HDPE-lined C-Pad, and the remainder is already overdumped by waste rock as part of the Jupiter Dump construction. Continued overdumping, reclamation regrading and revegetation of this portion of the Jupiter Dump surfaces will minimize or eliminate the potential for meteoric water to infiltrate the dump and contact the historic Jupiter Dump material underneath. No additional actions are proposed to stabilize the Jupiter Seep source area. Closure actions associated with placement of ALM on top of the Jupiter Dump are described in Section 7 of the TPPC.

The tentative plan for permanent closure of the Jupiter E-Cell includes continued management through evaporative disposal of seep flows until closure of the Jupiter Dump is complete and the E-Cell inflows discontinue or reduce sufficiently to enable non-degradation to be demonstrated. Once this condition is achieved, closure actions will include in-place closure of buried pipelines and placement of a two-foot-thick growth media cover over the E-Cell. The cover will be shaped to shed stormwater and directly vegetated.

6.5 Juniper Seep and Juniper E-Cell

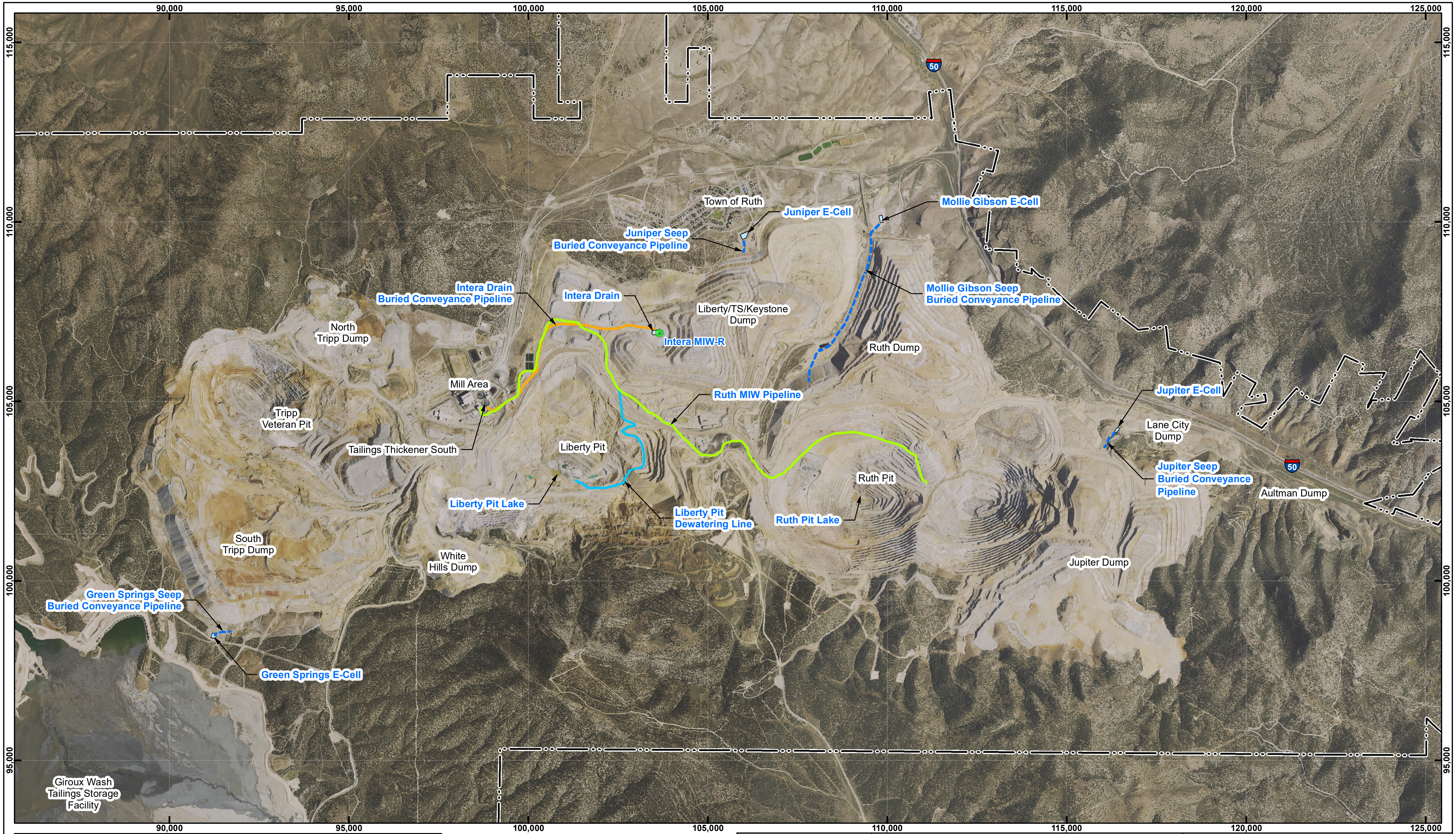
The original Juniper Seep was located immediately downgradient of the toe of the historic Juniper Dump. The Juniper Seep dried up in its original location after the initial construction (in 1997), and continued operation of Intera Drain. The original seep area was overdumped during construction of the Liberty Dump in 1997 and 1998.

The seep remained dry until excessive stormwater runoff and partial Liberty Dump side-slope slumping in the area in early 2008, which in turn resulted in construction of modifications to the Liberty Dump stormwater-management infrastructure. The stormwater-related construction work consisted of regrading low areas on the top of the Liberty Dump to prevent ponding, construction of stormwater control channels, and construction of rip-rap-lined swales down the side-slopes of the Liberty Dump. Construction work also included an interim drainage system and formation of “sediment” collection basins at the Liberty Dump toe area downstream of the overdumped Juniper Seep. The sediment basins allowed drying of the significant volume of material eroded from the Liberty Dump side-slopes during that period. This work resulted in additional stormwater reporting to the Liberty Dump area overlying and downstream of the historic Juniper Seep and is believed to be the primary contributor to the current seep.

In preparation for overdumping the Juniper Seep Area, NDEP-BMRR required installation of a seepage collection and management system. The system design was provided in an EDC dated April 24, 2015 (Robinson, 2015a), which was included as Appendix A to the Intera FPPC-R2 (Robinson, 2015f). Juniper seepage management system was constructed in 2015.

The Intera FPPC also included a conceptual design for future conversion of Juniper Evaporation Pond to an E-Cell for long-term passive management of seep flows; however the Engineering Design Change submitted on November 14, 2018 details the design for the Juniper E-Cell (Robinson 2018). The EDC was approved by NDEP on January 7, 2019 (NDEP-BMRR, 2019a). Closure of the Juniper Seepage Management Pond and construction of Juniper E-Cell were completed in December 2018. The new E-Cell was commissioned in January 2019 and is currently used for passive management through evaporative disposal of the Juniper MIW flows. The Interim As-Built report was submitted on October 31, 2019 (Robinson, 2019g) and approved on November 13, 2019 (NDEP-BMRR, 2019g). The Final As-Built Report was submitted to NDEP on December 31, 2019 (Robinson, 2019i).

The tentative plan for permanent closure of the Juniper E-Cell includes continued management through evaporative disposal of seep flows until closure of the Liberty/TS Dump is complete and the E-Cell inflows discontinue or reduce sufficiently to enable non-degradation to be demonstrated. Once this condition is achieved, closure actions will include in-place closure of buried pipelines and placement of a two-foot-thick growth media cover over the E-Cell. The cover will be shaped to shed stormwater and directly vegetated.



LEGEND

- Project Area Boundary
- Intera Drain Pipeline
- Liberty Pit Dewatering Line
- Ruth MIW Pipeline - Section II (DW to Mill)
- Seeps
- Intera MIW-R
- MIW Management Facility

DESIGN: MJ	
DRAWN: ML	
REVIEWED: MJ	
APPROVED: MJ	

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: KGHM ROBINSON OPERATION

DRAWING TITLE:

MINE IMPACTED WATER FACILITIES

TENTATIVE PLAN FOR PERMANENT CLOSURE
WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020

DATE:	REVISION:	DRAWING NO.:
10/9/2020	A	FIGURE 6.1
SRK PROJECT NO.: 150901.260.1800		

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7.0 Historic Acid-Leached Material

Historic acid-leaching of waste rock was performed by predecessor operators from the 1950's through the 1970's. Robinson prepared *Addendum 1 to Tentative Plan for Permanent Closure* on September 2, 2014, with Revision 3 TPPC submitted on December 19, 2016 and approved by NDEP-BMRR. This TPPC specifically addresses all areas where historic acid-leached waste rock (known to Robinson) has been mined and/or placed, as well as any areas of proposed future mining and placement of historic ALM. The following acid-leached dumps are included in the Permit and their locations are provided on **Figure 7.1**. Details on updated closure plans for the specific areas have been included in the follow sections.

1. Mollie Gibson Dump;
2. Sunshine and Puritan Dumps;
3. Kimbley Dump; and
4. Keystone Dump.

7.1 Mollie Gibson Dump

Mollie Gibson Dump is a historic, inactive dump where acid-leaching occurred and is a source of the Mollie Gibson MIW. The dump has been stabilized via overdumping with Ruth Dump waste rock and construction of Mollie Gibson Seep management facilities. Robinson received authorization form NDEP on August 25, 2017 to remove the historic ALM. This material was placed within the ALM placement area on the Jupiter Dump. Placement of the ALM material in the Phase I of the designated ALM placement area was completed and covered by 10-feet of non-PAG waste rock during November/December 2017. Engineering designs for the construction of the 36-acre ALM material placement on the Liberty Dump was submitted on October 24, 2018 and approved by NDEP on November 6, 2018. Once placement is complete, the area will be covered with a 60-mil LLDPE geomembrane liner and will be overlain with a minimum of three-feet of non-PAG waste rock as liner protection.

Any ALM remaining above the Ruth Pit Rim will be graded to prevent ponding of meteoric water and covered with a geomembrane liner plus three-feet of non-PAG overliner material, or a 12-inch thick layer of compacted low hydraulic conductivity soil liner (LHCSL) covered by a minimum of five-feet of non-PAG waste rock. Additionally, as this area is also an active haul road, a two-foot layer of non-PAG waste rock will be placed over the remaining exposed ALM outside the pit perimeter berm until such time as the geomembrane liner can be placed.

Current plans call for removal of Mollie Gibson ALM to accommodate expansion of the Ruth Pit. The specific stabilization measures carried out to date, and any future planned closure actions for the Mollie Gibson Dump and associated MIW management facilities, are described in Section 6.3 of this TPPC.

7.2 Sunshine and Puritan Dumps

The ALM associated with the Sunshine and Puritan dumps is buried beneath the Liberty Dump. These two dumps are the main source of Intera MIW potentially contributing any residual acid-leached dump draindown and/or meteoric infiltration to the Intera Drain. As described in Section 7.1, authorization to place ALM from the historic Mollie Gibson Dump within the specified ALM placement area on the Liberty Dump was received from NDEP in 2018. Stabilization measures carried out to date and planned closure actions are described in Section 6.1 of this TPPC.

7.3 Kimbley Dump

The Kimbley Dump ALM was mined from the Kimbley Pit from 2011 through 2014 to expose underlying copper ore (as part of the Ruth Pit expansion). Robinson completed mining operations in the Kimbley Pit in 2014 and no additional mining or placement of ALM is anticipated during future mining. Backfilling of the Kimbley Pit was completed in 2015. The mined ALM material has been placed on the Jupiter and Ruth dumps in the locations shown on **Figure 7.1**.

The affected areas (i.e., areas where acid-leached waste rock was co-disposed with PAG waste rock), are 54 acres for Jupiter and 37 acres for Ruth Dump.

Robinson completed closure of the Ruth ALM placement area in 2017, in accordance with the approved EDC (Robinson, 2016a). Closure construction included:

- Final grading and compaction of the placed materials (South-B and A-Pad spent ore and previously mined ALM were co-disposed with the Ruth ALM area);
- Liner subgrade preparation;
- Installation of 60-mil LLDPE liner; and
- Placement of a three-foot-thick overliner protection layer.

An as-built report (Robinson, 2017e) was submitted on December 19, 2017. Small portions of the north and south regions of the Ruth ALM placement area were not covered with the synthetic liner due to worker safety concerns. Robinson covered both unlined areas via targeted overdumping with an initial lift of 15 feet of non-PAG waste rock in 2018, consistent with NDEP-BMRR's December 21, 2017 approval of the Ruth ALM As-Built Report.

The Jupiter ALM placement area is planned to be used for co-disposal of any as-yet-unknown ALM potentially requiring mitigation. In addition, Robinson constructed a 17-acre Jupiter ALM placement area on Jupiter Dump (Robinson, 2016c) to accommodate Mollie Gibson ALM removed during Ruth Pit expansion. The Phase I Jupiter ALM was completed in 2017 (Robinson, 2017d), and the Phase II ALM placement was postponed. Robinson has proposed to cover these areas with synthetic liner pursuant to the Permit Limitations Item I.G.27.b. Proposed stabilization for the ALM placed on the Jupiter Dumps includes the following actions:

1. Regrading of the material placed within the designated areas;
2. Preparation of liner subgrade;
3. Installation of a 40 mil LLDPE synthetic liner over the prepared liner subgrade. Robinson plans to install textured liner on regraded sideslopes with smooth liner installed over the flat top surface. The liner will extend three-feet beyond the ALM footprint and be anchored by placement of liner cover material;
4. Placement of three feet of liner protection cover soil/waste rock over the new liner; and
5. Revegetation (if liner cover layer is final surface of the dump).

If the ALM placement area will be internal to the final waste rock dump configuration and will be overdumped, the liner cover layer will consist of PAG or non-PAG waste rock and the final dump surface will be reclaimed consistent with the Reclamation Plan.

If the liner cover layer is the final dump surface, Robinson will place non-PAG waste rock over the lined ALM disposal areas, add soil amendments and directly revegetate the cover. Meeting the vegetation cover and diversity success criteria may not be feasible in this area, irrespective of the thickness of waste rock cover placed over the liner.

ALM may remain on the sidewalls of the Ruth pit following the completion of the mining operations. The 2015 backfilling of the Kimbley pit is anticipated to effectively stabilize the remaining ALM. Where the remaining exposed Kimbley ALM is safely accessible from the surface of the pit backfill, Robinson will place non-PAG waste rock in contact with the remaining exposed ALM in the pit wall during future backfill operations to minimize the ALM surface area that could be contacted by meteoric water.

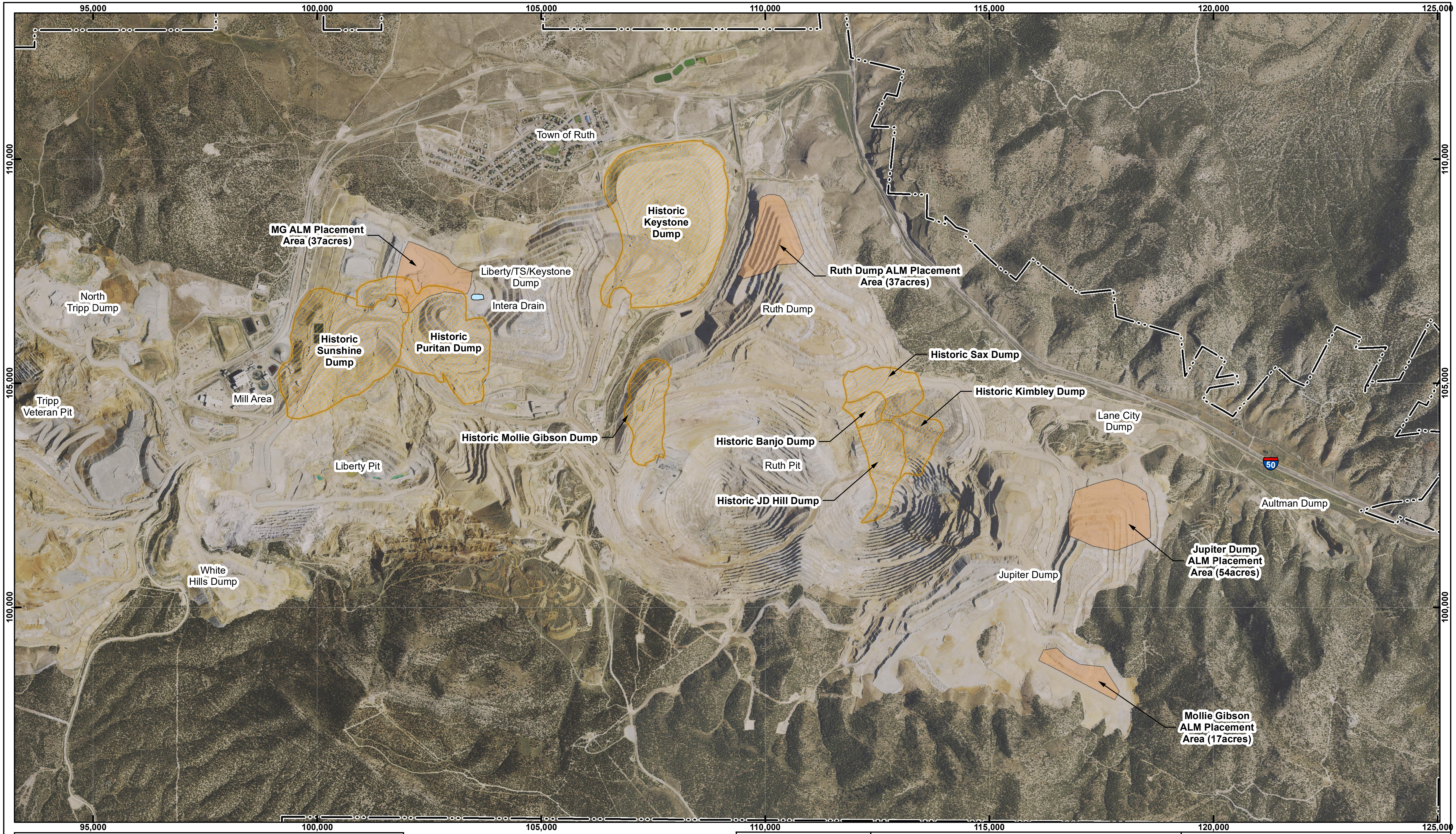
7.4 Keystone Dump

The historic Keystone Dump (refer **Figure 7.1**) was acid-leached by predecessor operator and the dump has remained inactive until 2019. Reactivation and overdumping of Keystone Dump with waste rock mined from the Ruth Pit was proposed in the 2018 *Plan of Operations Amendment* (Robinson, 2018j) that was submitted to NDEP-BMRR on February 22, 2018 and approved on March 19, 2019. Up to about 400 feet of waste rock will be placed over the Keystone Dump through to 2024.

Construction activities associated with overdumping and expanding the Keystone Dump are consistent with the *Comprehensive Waste Rock Management Plan Revision #7* (CWRMP #7) dated December 10, 2018 (Geomega, 2018) with interim approval by NDEP-BMRR provided on December 12, 2019. Robinson also submitted *Comprehensive Waste Rock Management Plan Supplemental Revision #7.1: Keystone Overdump WRF from RW-5 and East Liberty Laybacks* (CWRMP #7.1) (Geomega, 2020) on June 30, 2020. This plan describes the backfilling of the Ruth East Pit using non-PAG waste rock from the Ruth West 5 layback and completing the Keystone overdumping design using waste rock from the Liberty East Pit mining, thus extending the mine life to 2028.

Geochemical evaluation of the waste rock scheduled for placement on the Keystone Dump was conducted as part of the CWRMP #7 and #7.1 development. The respective plans include results of geochemical modeling performed to demonstrate that the waste rock management and closure strategy will protect the waters of the State.

CWRMPs describe the waste rock characterization program currently implemented at Robinson to identify and segregate PAG and non-PAG waste rock and the dump construction methodology implemented to ensure that at least 50 feet (horizontal) of non-PAG waste rock will armor sideslopes of each dump. The pyramidal shape of the completed Keystone Overdump will result in the dump surface being dominated (~75% of the footprint) by non-PAG armoring. Additionally, only non-PAG waste rock will be used in portions of lifts that will remain exposed (i.e. will not be covered with subsequent construction) below 7,300 feet amsl. Final dump closure will include regrading the non-PAG side slopes to 2.5H:1V, covering the top three lifts (above 7,300 feet amsl) with a five-foot layer of non-PAG material and revegetation.



LEGEND

- Project Area Boundary
- Acid-Leached Material Placement Area
- Historic Acid-Leached Dump
- Intera Drain

0 1000 2000
Feet
Coordinate System: RNMC Mine Grid New

N

DESIGN: MJ	
DRAWN: ML	
REVIEWED: MJ	
APPROVED: MJ	

IF THE ABOVE BAR DOES NOT MEASURE 1 INCH, THE DRAWING SCALE IS ALTERED

PREPARED BY: srk consulting

PREPARED FOR: KGHM ROBINSON OPERATION

DRAWING TITLE:
HISTORIC ACID-LEACHED MATERIAL SOURCES AND PLACEMENT LOCATIONS
TENTATIVE PLAN FOR PERMANENT CLOSURE
WPCP #NEV0092105 MAJOR MODIFICATION - OCTOBER 2020

DATE:	REVISION:	DRAWING NO.:
10/9/2020	A	FIGURE 7.1
SRK PROJECT NO.: 150901.260.1800		

H:\KGHM\RNMC\150901.260_RNMC 2020 WPCP Eng & Perm Support\040_Drafting\Task_1800_WPCP_Major_Mod\150901.260_ENG_FIG5.2_TPPC_FIG7.1.mxd

8.0 Summary of Closure Actions, Schedules, and Cost

This section summarizes tentative planning schedules and costs for implementation of closure actions for process components discussed in the previous section. The planning schedules are based on current mine plans and the costs are based on calculations derived from the Robinson Operation Reclamation Plan (including PFS costs).

8.1 Process Components used for Beneficiation of Copper

Permanent closure plans will be implemented after completion of mining, which is when economic ore at the Robinson Operation has been exhausted. Currently Robinson anticipates that this will be during calendar year 2028. Since “economic ore” is defined by the potential for delineating additional ore reserves and/or the prevailing copper price, the current End-of-Mine-Life (EOML) date will be affected by these two factors.

8.2 Process Components used for Beneficiation of Gold

The status of closure planning for the Robinson East Heap Leach facilities (C-Pad E-Cell construction) is discussed in detail at Section 3.1.1 of this TPPC. As discussed in that section, the remaining facilities subject to tentative closure planning are associated with the current draindown management facilities. The timing of closure for these facilities is dependent on either: a) draindown flows reduce to a level that no longer requires management; or b) end-of-mine-life, whereby the copper concentrator is no longer available for consuming draindown fluids. Therefore, Robinson cannot specify when permanent closure plans will be implemented, other than to say after completion of mining, and when economic ore at the Robinson Operation has been exhausted.

The status of closure planning for the Weary Flats Heap Leach (D-Pad) is discussed in detail at Section 3.2.1 of this TPPC. Robinson plans to close and cover the D-Pad heap leach pad in 2021 and monitor the effects of leach pad regrading and covering on the draindown flow rate for two to three years or until base flow rates have stabilized. At that time, Robinson will evaluate the performance of the heap’s closure cover to determine whether additional cover soil is required to reduce draindown flow rates and whether any modifications are required to the proposed E-Cell design to accommodate the stabilized draindown flow rate.

8.3 Giroux Wash Tailings Impoundment and Related Infrastructure

Permanent closure plans will be implemented after completion of mining, and economic ore at the Robinson Operation has been exhausted.

8.4 Pit Lakes (MIW)

Permanent closure plans will be implemented after completion of mining, and economic ore at the Robinson Operation has been exhausted. Specifically, each pit has ore reserves that are economic at various copper prices. Although mining is proceeding in the Ruth and Liberty Pit areas, the Tripp/Veteran Pit has reserves that may be viable at higher copper prices. Therefore, closure actions will not be taken on any of the pits until such time that none of the pits have reserves supportable with prevailing copper prices and economic ore at the Robinson Operation has been exhausted.

8.5 Other MIW and MIW Sources

8.5.1 Intera Drain

Robinson intends to continue performing fluid management and monitoring requirements contained in the FMMP until the long-term flow management using the proposed new Intera Evaporation Pond/E-Cell can be implemented. This also preserves the opportunity to permanently close the Intera Drain following Intera Drain inflows reduction so that a demonstration of non-degradation can be made.

8.5.2 Green Springs Seep and E-Cell

Green Springs E-Cell will continue to be used for passive, long-term management of the Green Springs Seep flows.

8.5.3 Mollie Gibson Seep and E-Cell

Robinson completed closure of the Mollie Gibson Dump, Seep and Ponds by overdumping with Ruth Dump waste rock. The Mollie Gibson E-Cell will continue to be used for passive long-term management of the Mollie Gibson flows. Following completion of mining activities Robinson will be able to determine if Mollie Gibson seep has been eliminated, which will allow a demonstration of non-degradation and closure of the Mollie Gibson E-Cell consistent with plans in this TPPC.

8.5.4 Jupiter Seep and E-Cell

Robinson completed closure of the historic Jupiter Dump and Seep by overdumping with Jupiter Dump waste rock. Jupiter Seep flows will continue to be managed through evaporative disposal in the Jupiter E-Cell. Following completion of mining at the Robinson Operation Robinson will be able to determine if overdumping has eliminated the Jupiter Seep, which will allow a demonstration of non-degradation and closure of the Jupiter E-Cell consistent with plans in this TPPC.

8.5.5 Juniper Seep and E-Cell

TS Dump construction, including waste rock placement and overdumping of the Juniper Seep Area, is anticipated to further reduce Juniper Seep flows. Juniper Seep flows will continue to be managed through evaporative disposal in the Juniper E-Cell. Following completion of mining Robinson will be able to determine if overdumping has eliminated the Juniper Seep, which will allow a demonstration of non-degradation and closure of the Juniper E-Cell consistent with plans in this TPPC.

8.6 Historic Acid-Leached Material

Robinson plans to implement stabilization actions for the ALM after completion of mining operations. Any remaining areas of ALM remaining above the Ruth Pit rim and outside the safety berm following the completion of mining operations will be graded to prevent ponding of stormwater and covered with a geomembrane liner plus three feet of non-PAG overliner, or covered with a 12-inch thick layer of compacted low-permeability soil covered by a minimum of five feet of non-PAG waste rock.

8.7 Summary of Closure Costs for Process Components

NAC 445A.398(6)(b) requires that Robinson include procedures to stabilize all process components with an emphasis on stabilizing spent process materials and the estimated cost for the procedures. Procedures for stabilizing process components were provided in previous sections. This section provides an estimated cost for implementing those procedures. Costs were derived from the reclamation costs estimate (RCE) prepared for the Reclamation Plan 3-Year Update (Robinson, 2020b) on March 10, 2020. The closure costs were calculated using 2019 labor, equipment and materials costs and Nevada Standardized Reclamation Cost Estimator (SRCE) model. This model prepares estimates using a grouping of all facilities, making it difficult in some instances to extract the costs that are specific to process components. The costs provided are as calculated by the SRCE for consistency and do not imply accuracy.

8.7.1 Pond Closure

Direct cost for closure of ponds classified as process components and remaining at EOML is estimated to be $181,000. This estimate includes closure of the following ponds: Carr's, Mill Water North, Mill Water South, D-Pad Barren Pond and SW Energy Washdown Pond.

8.7.2 E-Cells Construction and Operation

Direct costs for construction of E-Cells are estimated to be $6,718,000. This estimate includes conversion of the TSCP into E-Cell (including construction of new E-Cell), and D-Pad Pregnant Pond into E-Cell. Costs for construction of proposed C-Pad E-Cell and Intera Evaporation Pond, including associated modifications to the Intera conveyance system and pond's subsequent conversion into Intera E-Cell and construction of new E-Cell for management of TSF Pumpback flows are also included in the above costs.

Direct costs for long term management and final closure of all E-Cells are estimated to be $6,513,000 and are also included in the RCE.

8.7.3 Giroux Wash Tailings Impoundment

Direct costs for construction of the cover over the TSF basin, embankment and DUSSCF system, including revegetation costs, are estimated to be $6,570,000.

8.7.4 Pit Lakes

Direct costs for construction of the berms around the perimeter of pit lakes are estimated to be $306,000. These costs include the following pits: Aultman, Liberty, Tripp/Veteran and Ruth.

Placeholder costs of $1,094,000 estimated for 10 years of lime addition for Liberty Pit Lakes are also included in the current RCE.

8.7.5 Infrastructure

As described at Permit Part I.C, infrastructure included as process components includes "sumps, pumps and piping necessary to interconnect the components within the facility, and associated secondary containment" (i.e., buildings and other structures that provide secondary containment). The RCE groups these components into the following categories: Buildings and Foundations, Plant Site Utilities, and Pipe and Culvert Removal.

Buildings and Foundations

Demolition, burial, disposal, cover placement and revegetation costs for buildings and foundations qualifying as process components are estimated to be $4,019,000. This estimate includes the following structures: Mill, XCELL™ Flotation Building, SuperCell™ Flotation, Concentrate Load-out, Tailings Thickeners, Tailings Pump House, Tailings Repulp Station, Intera Well Head & Concrete Vault and D-Pad Process Building, including associated tanks.

Plant Site Utilities

Direct costs for removal under the general category of "Plant Site Utilities" are estimated to be $45,000.

Pipe and Culvert Removal

Direct cost for removal of site-wide piping infrastructure and culverts along roadways subject to reclamation are estimated to be $1,954,000. This estimate includes both non-process pipelines and culverts.

8.7.6 IFM Costs

The IFM costs of $1,320,000 were calculated for six months of active management of all process fluids at the site. Costs were calculated as shared costs for all facilities and non-shared, facility specific costs and the following items are included in the cost estimate.

The shared costs include:

1. EMAR contractor's labor, equipment and materials costs for six months of fluid management including site security;
2. Costs for six months of oversight, technical support and administrative management of the EMAR contract;
3. Costs for six months of the EMAR contractor's weekly and quarterly reporting;
4. Hazardous waste disposal;
5. Development of health, environmental and safety plan;
6. IFM plan development and mobilization; and
7. Miscellaneous costs including phones, shipping, supplies, etc.

The following facility-specific costs are also included:

1. Tailings impoundment seepage management: six months of the pump rental pump rental, power, miscellaneous parts and supplies costs;
2. Intera Drain: six months of the pump rental pump rental, power, miscellaneous parts and supplies costs;
3. BOC, Carr's pond, Mill Water ponds, Mill inventory and tailings thickeners: two pumps rental, power, miscellaneous parts and supplies costs for six months of pump operation.
4. Tailings groundwater pump back wells: six months of six pumps rental, power, miscellaneous parts and supplies costs.

Costs for IFM related to the new Tailings Pump-Back System and Intera closure plan (FPPC) were also included in these costs.

8.7.7 PFS Costs

The PFS costs of $3,979,000 were calculated for the following activities:

1. PFS Phase I:
    a. 24 months of Intera drain pumping;
    b. 24 months of tailings seepage collection inflows pumping;
    c. 24 months of tailings PBS wells pumping and
    d. 12 months of Mill and BOC inventory pumping for evaporative disposal.

All E-Cells included in the RCE were sized to allow passive management of currently observed average flows assuming E-Cells' capacity of one gpm per acre, a conservative assumption compared to NDEP-BMRR and BLM recommended two gpm per acre stipulated in the heap leach draindown estimator (HLDE). The active fluid management accounted for under the PFS Phase I is therefore considered adequate to allow for constructions of E-Cells.

1. PFS Phase II – not used;
    a. PFS Phase III – one month of labor, equipment and material costs management during construction of passive fluid management system (i.e., conversion of process ponds into E-Cells);
    b. Evaporation – not used.

8.7.8 Acid-Leached Material

Direct costs for construction of synthetic liner cover over areas on Liberty/TS and Jupiter dumps allocated for ALM placement and the remaining areas of exposed ALM associated with Mollie Gibson and Kimbley dumps are estimated to be $9,946,000. This estimate includes costs for regrading of the placed material, liner subgrade preparation, installation of synthetic liners and placement of liner cover material.

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