STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-513690
PLACE ID 217930, LTF 90620
SIGNIFICANT/OTHER/MINOR AMENDMENT

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the Arizona Department of Environmental Quality (ADEQ) hereby authorizes Copper World, Inc. (Copper World) to operate the Copper World Operations (Copper World Project, Project) located in Pima County, Arizona, over the Upper Santa Cruz and Cienega Creek groundwater basins. Facility Operations are in Sections 10, 13, 14, 15, 22, 23, 24, 25, 27, 36 Township 18 South Range 15 East and Sections 19, 30, 31 Township 18 South Range 16 East of the Gila and Salt River Base Line and Meridian.

This permit becomes effective on the date of the Water Quality Division Deputy Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods) unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit, including the design and operational information documented or referenced below; and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant, and as determined at the applicable POC, occurs as a result of the discharge from the facility.

1.1. PERMITTEE INFORMATION

Facility Name:	Copper World Operations
Facility Address:	9025 E. Santa Rita Road Sahuarita, Arizona 85629
County:	Pima County
Annual Registration Fee Flow Rate:	10,000,000 gallons per day (gpd) or more (influent)
Permittee:	Copper World, Inc
Permittee Address:	5285 E. Williams Circle, Suite 2010 Tucson, Arizona 85711
Facility Contact:	Senior Manager, Environmental & Permitting
Emergency Phone No.:	(520) 495-3500
Latitude/Longitude:	31º 51' N / 110º 46' W
Legal Description:	Facility operations will be in portions of the following sections: T18S R15E: Sections 10, 13, 14, 15, 22, 23, 24, 25, 27, 36 T18S R16E: Sections 19, 30, 31

1.2. AUTHORIZING SIGNATURE

_____

Randall Matas, Deputy Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this _____ day of _____, 20_____

THIS AMENDED PERMIT SUPERCEDES ALL PREVIOUS PERMITS

TABLE OF CONTENTS

TABLE OF TABLES

2.0 SPECIFIC CONDITIONS

[A.R.S. §§ 49-203(4), 49-241(A)]

2.1. FACILITY / SITE DESCRIPTION

[A.R.S. § 49-243(K)(8)]

The Copper World Project (Project) is located approximately 28 miles southeast of Tucson, Arizona in Pima County and about 12 miles southeast of Sahuarita, Arizona. The approximate center of the main Project operations is located at latitude and longitude 31º 51'N and 110º 46'W, respectively. The Copper World Project will be developed as a truck and shovel open pit mining operation. Both sulfide and oxide ore will be mined and beneficiated.

The Project is located on private land and will have an estimated 15-year mine life. Ore will be mined from six open pits. Mining will occur on both sides of the Santa Rita Mountains. Ultimately, the Tailing Storage Facilities (TSFs) will store approximately 277 million tons of tailings and the Heap Leach Facility (HLF, heap leach pad [HLP] and associated ponds/infrastructure) will hold approximately 104 million tons of oxide ore. To the extent practical, operations during the life of mine will consider closure concepts to minimize the closure needs at the end of the mine life. This includes constructing and operating the TSFs and HLP at the final closure slopes to minimize grading at closure and constructing permanent diversion channels to handle the post-closure design storm event (1,000-year, 24-hour event). This will prevent the need for further diversion channel construction at closure. Interim or temporary channels are designed for the 100-year, 24-hour event. To the extent practicable, the diversion channels will divert surface water runoff from upstream drainage basins around the TSFs, HLF, and other facilities.

The Project will include a milling and flotation circuit (mill) for processing sulfide ore along with conventional tailings disposal. The TSFs will have processed cyclone tailings slurry pumped to the top of the TSFs for final depositional and water recycling purposes. The impounded solutions and precipitation that falls on the TSFs either evaporates, are decanted and recycled back into the milling and process, or slowly seeps to the bottom of the impoundment. Liquid at the bottom of a TSF impoundments will either be removed by an underdrain seepage collection system or will percolate into the underlying soil or rock. Water that seeps from the bottom of a tailings facility has the potential to affect groundwater. The rate at which water seeps from a tailings facility depends on both the configuration of the facility and the hydrogeologic characteristics of the site.

A lined HLF (pad and ponds) and associated solvent extraction and electrowinning (SX-EW) process plant are planned for the leaching and recovery of copper from oxide ore. The leaching of copper concentrate is also planned along with copper recovery in the SX-EW plant in addition to a circuit for precious metals recovery (gold and silver). Additionally, the site will have an acid plant. Run of mine (ROM) and/or crushed oxide ore will be placed on the HLP. Acidic leaching solution (dilute sulfuric acid) will be distributed over the top and side slopes of the oxide ore stockpile as needed to leach copper from the ore material. The weak acid solution percolates through the stockpiled material, reacts with the ore, and generates a copper-bearing pregnant leach solution (PLS). The PLS accumulates above an engineered liner system at the base of the leach pad where it flows laterally to a central collection system that reports to the PLS Pond. Copper is extracted from the PLS solution in the SX-EW process, leaving a barren raffinate. The barren raffinate is amended with acid and then reused in the leaching process. PLS is also generated by the concentrate leach circuit and processed in the same SX-EW plant.

As part of the stormwater management concept developed for the Project, stormwater run-on that is not diverted by the diversion channels, and precipitation that falls directly on the facilities during operations, will generally be stored within the TSF impoundments and stormwater ponds located within the Project boundary. At closure, stormwater will be routed off reclaimed facilities to downgradient drainages.

Six (6) open pits will be mined in a general west to east progression. From west to east these pits include Peach, Elgin, Heavy-Weight, Copper World, Broadtop Butte, and Rosemont. The processing facilities will be located on the west side of the Santa Rita Mountains along with the TSFs and the HLF. Waste rock storage will occur on both sides of the range in a Waste Rock Facility (WRF). Utilities (power and water) will come from the west to service the Project. Fresh water for the Project will come from well fields located near the Town of Sahuarita and

potentially from pit dewatering or other onsite wells. The Project site includes the following permitted discharging facilities:

Table 1: Discharging Facilities

Facility Name	Facility Type	Latitude (North)	Longitude (West)
Tailings Storage Facility 1 (TSF-1)	Tailings	31º52’39.9”	110º48’09.82”
Tailings Storage Facility 2 (TSF-2)	Tailings	31º50’56.24”	110º47’ 21.93”
Primary Settling Pond (PSP) (includes two cells)	Process Solution Pond	31°51'25.58"	110°48'06.00"
Heap Leach Pad / Facility (HLF)	Heap Leach Pad	31°50’55.48”	110°47’56.01”
Pregnant Leach Solution (PLS) Pond	Process Solution Pond	31°50'58.17"	110°48'21.93"
HLF North Stormwater Pond	Non-Stormwater Pond	31°51'3.20"	110°48'21.88"
HLF South Stormwater Pond	Non-Stormwater Pond	31°50'53.59"	110°48'21.90"
Raffinate Pond	Process Solution Pond	31°51'17.25"	110°48'2.09"
Reclaim Pond	Process Solution Pond	31°51'17.27"	110°47'58.76"
Process Area Stormwater Pond	Non-Stormwater Pond	31°51'20.72"	110°47'59.01"
Waste Rock Facility	Waste Rock Facility	31°51’38.77”	110°46’08.09”
Peach Pit	Open Pit	31°51’46.28”	110°47’37.88”
Elgin Pit	Open Pit	31°51’37.13”	110°47’19.62”
Heavy Weight Pit	Open Pit	31°51’42.08”	110°46’41.07”
Copper World Pit	Open Pit	31°51’36.81”	110°46’00.23”
Broadtop Butte Pit	Open Pit	31°51’04.65”	110°45’33.67”

2.1.1. Permitted Facility Description

2.1.1.1. Tailings Storage Facility 1 (TSF-1) and Tailings Storage Facility 2 (TSF-2)

Copper World plans to construct two TSFs (herein referred to as TSF-1 and TSF-2) at the Project site. Approximately 231 million tons of tailings will be placed in TSF-1 and 47 million tons in TSF-2. Both TSF-1 and TSF-2 consist of multiple cells. For each cell, a TSF starter dam (start phase) will first be constructed using locally borrowed soil and/or waste rock; the embankment along the downgradient edge of each cell will then be raised by the centerline construction method, and in some areas, followed by the upstream construction method until the final facility configuration is achieved. For the majority of each cell, the embankment is raised via the centerline method using the coarse fraction tailings sands

(cyclone underflow).

For the centerline method, tailings are separated using hydro-cyclones into the coarse sand and fine fractions. The sands will be placed downstream of the starter dam and the fine fraction will be deposited upstream. The cyclone sands provide a more permeable zone for control of the phreatic level in the TSF embankment. Criteria for the operation of the TSF have been developed to maintain a minimum length of exposed tailing beach between the supernatant decant pool and the embankment crest. Prior to the start of the centerline phase, an inclined chimney drain will be constructed over the upstream face of the starter dam, overlain by a layer of cyclone sand to further promote vertical drainage toward an underdrain seepage collection system. The chimney drain, underdrain seepage collection system, and cyclone sands in the embankments are included in the facility design to improve recovery of tailings water and to prevent the critical structural zones of the embankment from becoming saturated.

Where there is insufficient cyclone sand to continue the centerline raise method, the upstream method will be utilized. This method involves constructing embankments in discrete lifts using compacted tailings or engineered fill, and spigotting whole tailings from the crest of the embankment. Upon completion of each lift, the next lift will be stepped inboard to maintain an overall outer slope ratio of three horizontal to one vertical (3H:1V). Engineered berm fill for this method can be either a locally borrowed soil, select waste rock, or tailings from the impoundment if the materials meet the specification for gradation and compaction.

2.1.1.2. Primary Settling Pond (PSP) (includes two cells)

The Primary Settling Pond (PSP) will be used for storage of water reclaimed from both Tailings Storage Facilities (TSFs) and will also have a separate cell to contain the volume of the one tailings thickener in the event of an upset condition. The main containment cell will have a surface area of about 3.67 acres and will be constructed to have a storage capacity below the freeboard level of approximately 1,775,067 ft^3 (13.28 million gallons or 40.75 acre-feet). The pond will have 2-feet of freeboard. The maximum depth of the pond from the bottom of the pond to the pond crest is 20 feet. The thickener cell will have a surface area of about 1.38 acres and be constructed to have a storage capacity below the freeboard level and the top of the ballast material (3-foot protective layer of gravel) of about 333,056 ft^3 (2.47 million gallons or 7.6 acre-feet), respectively. The pond will have 2-feet of freeboard. The maximum depth of the pond from the bottom of the pond to the pond crest is 12 feet.

The main containment cell is sized to contain 24-hours of solution draindown from the TSFs and the precipitation from a 100-year, 24-hour storm event from the outer TSF embankment slopes. Solutions are managed below the freeboard level. The separate thickener cell will be used to contain the contents of one tailings thickener in the event of upset conditions that requires the thickener to be emptied. If the thickener contents are emptied into the cell, a clean-out ramp is designed to allow equipment access to remove the solids. A protective layer may also be incorporated into the main cell in case cleanout is ever needed.

A spillway between the cells will be constructed to allow greater storage capacity, if needed, during upset conditions. The volume of the thickener cell is not included in the required stormwater containment volume associated with the main containment cell. Both pond sections will have outer embankments constructed no steeper than 2H:1V.

2.1.1.3. Heap Leach Pad (HLP)

ROM oxide ore will be transported by haul trucks to the Heap Leach Pad (HLP where it will be placed in approximate 20 to 30-foot thick lifts prior to leaching. Some of the oxide ore will also be crushed and stacked on the HLP. The split between crushed and uncrushed will depend on the economic value of the ore. In the crushing circuit, oxide ore will go through both primary crushing and secondary crushing. Material crushed in the Oxide Primary Crusher then goes to the Oxide Coarse Ore Stockpile (Oxide COS). From there ore is transported via apron feeders and conveyors to a Secondary Crusher. Once

crushed, this material reports to an agglomeration drum where the crushed ore will be mixed with strong acid. The agglomerated material is then transportede to the HLP. A total of about 103.8 million tons of oxide ore will be placed on the HLP.

2.1.1.4. Pregnant Leach Solution (PLS) Pond

Pregnant Leach Solution (PLS) will be collected by a drainage system from the HLP and conveyed to the PLS Pond. From the PLS Pond, the solution is then piped to the SX-EW plant for copper recovery. The PLS Pond will have a surface area of about 3.2 acres and will be constructed to have a capacity below freeboard of about 1,904,005 ft^3 (14.24 million gallons or 43.71 acre-feet). The PLS Pond has 2-feet of freeboard.

The maximum depth of the pond from the bottom of the pond to the pond crest is 24 feet. In the event of pump failure, the pond is designed to contain 24-hours of draindown from the HLP, 8-hours of operational flow, and precipitation from a 100-year, 24-hour storm event, all below the freeboard level. A spillway will be constructed to two (2) HLF stormwater ponds located both to the north and south of the PLS Pond. Overflow from the PLS Pond into the HLF stormwater ponds will be for emergency, short-term storage only. Outer embankments will be constructed to be no steeper than 2H:1V.

The PLS Pond, in conjunction with the HLP, HLF Stormwater Ponds, and Raffinate Pond, are all components of the Heap Leach Facility (HLF).

2.1.1.5. HLF South and North Stormwater Ponds

Overflow from the PLS Pond during storm or upset events is collected in two HLF ponds known as the HLF North Stormwater Pond (North Pond) and HLF South Stormwater Pond (South Pond). These ponds are primarily stormwater ponds but may contain process solutions for brief periods; as such, they are considered non-stormwater ponds for purposes of ADEQ's Best Available Demonstrated Control Technology (BADCT) Guidance Manual (BADCT, BADCT Guidance Manual). Each of the HLF stormwater ponds will have a surface area of about 3.0 acres and will be constructed to have a storage capacity below freeboard of about 1,910,103 ft^3 (14.29 million gallons or 43.85 acre-feet). The ponds have 2-feet of freeboard. The maximum depth of the ponds from the bottom of each pond to the pond crest is 24 feet. The ponds are designed to contain runoff and precipitation from a 100-year, 24-hour storm event below the freeboard level. A spillway will be constructed from the two (2) HLF stormwater ponds to the PLS Pond. Overflow from the PLS Pond into the HLF stormwater ponds will be for emergency, short-term storage only. Outer embankments will be constructed to be no steeper than 2H:1V.

The HLF Stormwater Ponds, in conjunction with the HLP, PLS Pond, and Raffinate Pond, are all components of the Heap Leach Facility (HLF).

2.1.1.6. Raffinate Pond

The Raffinate Pond will contain solution recovered from the SX-EW process. This solution will be reconditioned by lowering the pH with the addition of sulfuric acid and then recycled back to the HLP. Makeup water for this circuit will come from the fresh water sources and potentially from the Process Area Stormwater Pond. The Raffinate Pond has a surface area of about 1.5 acres and will be constructed to have a storage capacity below freeboard of about 794,533 ft^3 (5.94 million gallons or 18.24 acre-feet). The pond has 2-feet of freeboard. The maximum depth of the pond from the bottom of the pond to the pond crest is 24 feet. The pond is designed to contain 24-hours of flow from the SX-EW plant, 8-hours of operational flow, and direct precipitation from a 100-year, 24-hour storm event, all below the freeboard level. A spillway will be constructed to the Reclaim Pond and to the Process Area Stormwater Pond in case of upset conditions. The pond is constructed on a platform in the Plant Site area. The outer embankment of the Plant Site platform will be constructed to be no steeper than 2H:1V.

Although located in the Plant Site area, the Raffinate Pond, in conjunction with the HLP, PLS Pond, and

HLF Stormwater Ponds, are all components of the Heap Leach Facility (HLF).

2.1.1.7. Reclaim Pond

The Reclaim Pond will be used to contain water reclaimed from the sulfide ore processing circuit. Water contained in the Reclaim Pond will be reused in the sulfide ore processing circuit. The Reclaim Pond has a surface areas of about 1.5 acres and will be constructed to have a storage capacity below freeboard of about 794,969 ft^3 (5.95 million gallons or 18.25 acre-feet). The pond has 2-feet of freeboard. The maximum depth of the pond from the bottom of the pond to the pond crest is 24 feet. The pond is designed to contain 24-hours of flow from the sulfide ore processing plant, 8-hours of operational flow, and direct precipitation from a 100-year, 24-hour event, all below the freeboard level. A spillway will be constructed to the Raffinate Pond and to the Process Plant Stormwater Pond in case of upset conditions. The pond is constructed on a platform in the Plant Site area. The outer embankment of the Plant Site platform will be constructed to be no steeper than 2H:1V.

2.1.1.8. Process Area Stormwater Pond

The Process Area Stormwater Pond will be used to contain stormwater runoff that falls within the Plant Site area. This water will be considered contact water and will be used to provide make-up water for either the sulfide ore processing circuit (flotation) or oxide ore processing circuit (HLP and SX-EW) throughout the life of the mine. The Process Area Stormwater Pond has a surface area of about 1.5 acres and will be constructed to have a storage capacity below freeboard of approximately 819,798 ft^3 (6.13 million gallons or 18.82 acre-feet). The pond has a 2-feet of freeboard. The maximum depth of the pond from the bottom of the pond to the pond crest of 24 feet. The pond is designed to contain runoff generated within the Plant Site area from a 100-year, 24-hour storm event below the freeboard level. A spillway will be constructed to the Reclaim Pond and to the Raffinate Pond in case of upset conditions. The pond is constructed on a platform in the Plant Site area. The outer embankment of the Plant Site platform will be constructed to be no steeper than 2H:1V.

2.1.1.9. Waste Rock Facility (WRF)

Rock excavated from the open pits that have metal concentrations that are too low to be economically processed as ore will be managed as waste rock. Some waste rock will be used as fill material for constructing mine facilities, such as a base for the HLF processing facilities and mine roads, during the pre-mining and early mining phases of the Project. Waste rock will also be used to backfill three (3) of the five (5) Satellite pits: Heavy Weight, Copper World, and Broadtop Butte. Mining will generally progress from west to east, beginning with the Peach and Elgin pits and ending with the Rosemont Pit. Similarly, backfilling mined-out pits with waste rock will also progress generally from west to east, from the Heavy Weight Pit to the Broadtop Butte Pit. The Peach and Elgin pits – the westernmost of the Satellite pits – will not be backfilled with waste rock. Waste rock exceeding the volume needed to backfill the three (3) pits will be managed by placement laterally beyond the footprint of the pits and vertically above the pit rim elevations. A total of about 477.4 million tons of waste rock will be excavated and placed within the main WRF or other areas where fill is required, including backfilling the pits. As designed, the WRF has a capacity of about 528 million tons. Approximately 85 percent of the waste rock is from the Rosemont Pit, nine (9) percent from the Broadtop Butte Pit, and the remainder from the Copper World, Heavy Weight, Elgin, and Peach pits.

2.1.1.10. Open Pits

Oxide ore and sulfide ore will be mined using open-pit methods. Six (6) pits will be operated during the life of the Project. The Rosemont Pit is the largest and deepest pit of the six (6) pits and is located on the east side of the Santa Rita Mountain Range. The remaining pits, referred to as the Satellite pits, are the Broadtop Butte Pit, Copper World Pit, Heavy Weight Pit, Elgin Pit, and the Peach Pit, which are primarily located on the west side of the Santa Rita Mountain Range. The Rosemont Pit will be a

hydraulic sink and is therefore not considered a discharging facility. The remaining pits are potentially discharging and are therefore considered regulated facilities under the APP Program.

2.1.2. Annual Registration Fee

[A.R.S. § 49-242 and A.A.C. R18-14-104]

The annual registration fee for this permit is payable to ADEQ each year. The annual registration flow rate fee is established by the permitted flow rate identified in Section 1.1 Permittee Information. If the facility is not constructed or is incapable of discharge, the permittee may be eligible for reduced fees pursuant to Table 2 under A.A.C. R18-14-104(A). Send all correspondence requesting reduced fees to the Groundwater Section. Please reference the permit number, LTF number, and the reason for requesting reduced fees under this rule.

2.1.3. Financial Capability

[A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The estimated closure cost is $26,600,000, and the estimated post-closure cost is $70,500,000, for a total of $97,100,000. The financial assurance mechanism shall be demonstrated through a "performance surety bond" as per A.A.C. R18-9-A203(C)(2). The Bonding may be staged.

2.2. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

[A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

Facilities regulated by this permit shall be designed, constructed, operated, and maintained to meet requirements specified by A.R.S. §49-243(B) and A.A.C. R18-9-A202(A)(5).

2.2.1. Engineering Design

BADCT description for the permitted facilities is presented in Section 4.1, Table 11: Permitted Facilities and BADCT.

2.2.2. Site-Specific Characteristics

The groundwater system in the Project area, primarily in the vicinity of the pits and WRF (waste rock placement areas), is limited and discontinuous. There is no appreciable groundwater flow or travel over significant distances due to the lack of interconnected fracture networks. There are areas of compartmentalization due to the complex geologic structure consisting of faults and intrusive features. While there is an inferred groundwater gradient to the northwest, the contribution from the bedrock system is small.

2.2.3. Pre-Operational Requirements

The pollution control structures for the facilities and associated processes include, but are not limited to, the following:

- Construction of the seepage collection system (underdrains and perimeter trenches) for the TSFs.
- TSF starter dams and associated chimney drain on the upgradient face of the dam, leading to the seepage collection underdrain system.
- Stormwater diversion channels.
- Liner installation and testing.
- Point of Compliance (POC) wells to monitor for potential Project site discharges.

2.2.4. Operational Requirements

A description of required inspections, operational monitoring, and related performance levels is included in Section 4.2, Table 12: Facility Inspection and Operational Monitoring, and recorded in a log as required by Section 2.7.2 Operation Inspection / Log Book Recordkeeping. If damage is identified during an inspection that is reasonably likely to cause or contribute to an unauthorized discharge pursuant to A.R.S. § 49-201(12), proper repairs shall be promptly performed in accordance with Section 2.6 Contingency Plan Requirements of this permit and recorded in a log.

2.3. DISCHARGE LIMITATIONS

[A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]

The permittee shall operate and maintain all permitted facilities to prevent unauthorized discharges pursuant to A.R.S. § 49-201(12) resulting from failure or bypassing of BADCT pollutant control technologies including liner failure, uncontrollable leakage, overtopping (e.g., exceeding the maximum storage capacity, defined as a fluid level exceeding the crest elevation of a permitted impoundment), berm breaches that result in an unexpected loss of fluid, and accidental spills.

2.3.1. Leach Facilities and Diversion Structures

The drainage system for the Heap Leach Pad (HLP) shall be constructed and operated in a manner to ensure adequate capacity to manage draindown solutions and stormwater runoff and direct it to the designated impoundments (ponds), respectively. Residual heap materials and fluids shall not leave the heap liner or overtop the berms.

2.3.2. Waste Rock Facility (WRF)

The placement of materials in the Waste Rock Facility (WRF) will follow the Waste Rock Management Plan. Non-acid generating (NAG) material will be placed on the outer slopes and stormwater runoff from the WRF will be routed through sediment basins, or other controls, to downgradient drainages during operations and closure. Potentially acid-generating (PAG) waste rock shall be encapsulated in NAG waste rock. Per geochemical analysis, the majority (>94 percent) of the waste rock is characterized as NAG. Ongoing waste rock characterization monitoring shall be conducted according to Section 4.2, Table 12: Facility Inspection and Operational Monitoring. The waste rock facility and associated sediment control structures shall be operated and inspected according to Section 4.2. Results of waste rock characterization shall be summarized in an annual report submitted in accordance with Section 2.7.4 Operational, Other or Miscellaneous Reporting, specifically Section 2.7.4.5. Also see CSI. No. 23.

2.3.3. Process Solution Ponds

The process solution ponds shall only receive process solution and stormwater.

2.3.4. Non-stormwater Impoundments

The permitted non-stormwater impoundments shall only receive stormwater runoff and run-on, and process solutions resulting from storm events or process upset events.

2.4. POINT OF COMPLIANCE (POC)

[A.R.S. § 49-244]

The POCs are established by the following monitoring locations (also refer to Table 17: Compliance Groundwater Quality Monitoring Locations):

Table 2 : Point of Compliance (POC) / Monitoring Locations					
POC #	**POC Location**	**ADWR Registration Number**	**Latitude**	**Longitude**	**Screen Interval**
1	Northern Boundary of TSF-1	TBD	31°53'27"	110°48'41.9"	TBD
2	Northern Boundary of TSF-1	TBD	31°53'27"	110°48'8.8"	TBD
3	Western Boundary of TSF-1	TBD	31°52'52.7"	110°48'25.2"	TBD
4	Western Boundary of TSF-1	TBD	31°52'11.7"	110°48'25.3"	TBD
5	Western Boundary of TSF-2 and HLF Ponds	TBD	31°50'54.5"	110°48'25.5"	TBD
6	Downgradient of the Processing Ponds/HLF	TBD	31°51'28.6"	110°48'15.7"	TBD
7	Downgradient of the Heavy Weight and Copper World pits and WRF	TBD	31°51'58"	110°46'22.5"	TBD
8	Downgradient of the Broadtop Butte Pit and WRF	TBD	31°51'7"	110°46'49"	TBD
9	Downgradient of the Broadtop Butte Pit and WRF	TBD	31°51'10.4"	110°45'12.3"	TBD
10	Downgradient of the Broadtop Butte Pit and WRF	TBD	31°50'39.2"	110°45'17"	TBD

Groundwater monitoring is required for this permit. Monitoring requirements for each POC are listed in Section 4.2,Table 19: Quarterly Compliance Groundwater Monitoring and Table 20: Biennial Compliance Groundwater Monitoring. The ADWR registration numbers, geographical coordinates (the coordinates shown above are approximate based on the proposed location and should not be considered final), and screen intervals shall be updated following the installation of each POC well as described in Compliance Schedule Item No. 13 and CSI No. 15. The Director may amend this permit to designate additional POCs if information on groundwater gradients or groundwater usage indicates the need.

2.5. MONITORING REQUIREMENTS

[A.R.S. § 49-243(K)(1), A.A.C. R18-9-A206(A)]

Unless otherwise specified in this permit, all monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. Unless otherwise provided, monitoring shall commence the first full monitoring period following permit issuance. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and Chain-of-Custody procedures shall be followed, in accordance with currently accepted standards of professional practice. Copies of laboratory analyses and Chain-of-Custody forms shall be maintained at the permitted facility. Upon request, these documents shall be made readily available for review by ADEQ personnel.

2.5.1. Discharge Monitoring

Discharge monitoring shall be conducted on a one-time basis at the PLS Pond, Raffinate Pond, Reclaim Pond, and Primary Settling Pond following steady flow of solutions to each of these ponds, respectively, in accordance with Section 4.2, Table 15: One-Time Discharge Sampling Locations and Table 16: Discharge

Monitoring or Contingency Monitoring, and the Compliance Schedule in Section 3.0 (CSI No. 21), in order to verify the characterization of process solutions. Results of the discharge monitoring shall be submitted to the Groundwater Protection Value Stream within 30 days from receipt of the laboratory analytical results.

2.5.2. Facility / Operational Monitoring

At a minimum, permitted facilities shall be inspected for performance levels listed in Section 4.2, Table 12: Facility Inspection and Operational Monitoring. If damage is identified during an inspection that is reasonably likely to cause or contribute to an unauthorized discharge pursuant to A.R.S. § 49-201(12), proper repairs shall be promptly performed. Results of these inspections and monitoring activities shall be documented and maintained at the facility location for at least 10 years, and as required by Section 2.7.2 Operation Inspection / Log Book Recordkeeping.

2.5.3. Groundwater Monitoring and Sampling Protocols

For all sampling methods, static water levels shall be measured and recorded prior to sampling. Wells shall be purged of at least three borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, and conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80 percent of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as "dry" for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the Self-Monitoring Report Form (SMRF).

As an alternative method for sampling, the permittee may conduct the sampling using a low-flow purging method in accordance with accepted Environmental Protection Agency (EPA), United States Geological Survey (USGS), or Department of Defense (DOD) protocols. The well must be purged until indicator parameters stabilize. Indicator parameters shall include dissolved oxygen, turbidity, pH, temperature, and conductivity.

As a third alternative method for sampling within POC wells with very low recharge rates, the permittee may conduct the sampling using no-purge sampling techniques using HydraSleeve™ or similar type methodology. The use of HydraSleeve™ or similar type samplers shall follow accepted EPA, USGS, or DOD protocols. In addition, the HydroSleeve™ or similar type sampler shall be placed just below the water table.

2.5.3.1. POC Well Replacement

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, remains dry for three (3) consecutive sampling events, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is 50 feet or less from the original well, the ALs and/or aquifer quality limits (AQLs) calculated for the designated POC well shall apply to the replacement well. However, if the permittee can provide a technical demonstration that the original ALs and AQLs are not appropriate for the replacement well then ADEQ may review and consider recalculation of the ALs and AQLs. Otherwise, the ALs and/or AQLs shall be set following the provisions in Section 2.5.3.3 Alert Levels (ALs) for Point of Compliance Wells and Section 2.5.3.4 Aquifer Quality Limits (AQLs) for POC Wells.

2.5.3.2. Ambient Groundwater Quality Monitoring for POC Wells

In accordance with CSI No. 14 in Section 3.0, Table 10 : Compliance Schedule Items, the permittee shall complete 1) a minimum of eight monthly rounds of ambient groundwater monitoring or 2) a minimum of eight quarterly rounds of ambient groundwater monitoring for each POC well for all constituents listed in Section 4.2, Table 18: Parameters for Ambient Groundwater Monitoring. As part of CSI No. 12, Copper World shall indicate the preferred approach, i.e., eight consecutive monthly samples or eight consecutive quarterly samples. The selected ambient monitoring schedule shall apply to all POC well locations.

2.5.3.3. Alert Levels (ALs) for POC Wells

ALs shall be calculated for all contaminants with an established numeric AWQS for each of the POC wells listed in Table 2 : Point of Compliance (POC) / Monitoring Locations and Section 4.2, Table 17: Compliance Groundwater Quality Monitoring Locations. For any new or replacement POC wells, ALs shall be calculated for all contaminants with an established numeric AWQS, as described below.

As per CSI No. 15, following receipt of the laboratory analyses for the final period of ambient groundwater monitoring for each POC well referenced in Section 2.4, Table 2 : Point of Compliance (POC) / Monitoring Locations and Section 4.2, Table 17: Compliance Groundwater Quality Monitoring Locations, the permittee shall submit the ambient groundwater data in tabulated form to the Groundwater Section for review. Copies of all laboratory analytical reports, field notes, and the Quality Assurance/Quality Control (QA/QC) procedures used in the collection and analysis of the samples shall be provided for all parameters listed in Section 4.2, Table 18: Parameters for Ambient Groundwater Monitoring, to be established for each POC well shall be submitted to the Groundwater Section. The permittee may submit a report with the calculations for each AL and AQL included in the permit for review and approval by ADEQ, or the permittee may defer the calculation of ALs and AQLs to the Groundwater Section. The ALs shall be established and calculated by the following formula, or another valid statistical method, submitted to the Groundwater Section in writing for approval for this particular permit by the Groundwater Section:

$AL = M + KS$

Where M = mean, S = standard deviation, and K = one-sided normal tolerance interval with a 95% confidence level (Lieberman, G.J. (1958) Tables for One-sided Statistical Tolerance Limits: Industrial Quality Control, Vol XIV, No. 10). Obvious outliers should be excluded from the data used in the AL calculation. This method should only be considered valid for data that are normally distributed and free of an observable trend. If the data are not normally distributed, the permittee shall use an alternative method to calculate the ALs. The method chosen will be subject to ADEQ approval upon submission of the Ambient Monitoring Report described in CSI No. 15.

The following criteria shall be met in establishing ALs in the permit:

1. The AL shall be calculated for a parameter using the analyses from a minimum of eight sample events.
2. Any data where the laboratory Practical Quantitation Limit (PQL) exceeds 80% of the AWQS shall not be included in the AL calculation.
3. If a parameter is below the detection limit, the permittee must report the value as “less than” the numeric value for the PQL or detection limit for the parameter, not just as “non-detect”. For those parameters, the permittee shall use a value of one-half the reported detection limit for the AL calculation.
4. If the analytical results from more than 50% of the samples for a specific parameter are non-detect, then the AL shall be set at 80% of the AWQS.
5. If the calculated AL for a specific constituent and well is less than 80% of the AWQS, the AL shall be set at 80% of the AWQS for that constituent in that well.

2.5.3.4. Aquifer Quality Limits (AQLs) for POC Wells

For each of the monitored analytes for which a numeric AWQS has been adopted, the AQL shall be established as follows:

1. If the calculated AL is less than the AWQS, then the AQL shall be set equal to the AWQS.
2. If the calculated AL is greater than the AWQS, then the AQL shall be set equal to the calculated AL value, and no AL shall be set for that constituent at that monitoring point

2.5.3.5. Compliance Groundwater Quality Monitoring for POC Wells

Quarterly compliance groundwater monitoring at each POC well shall commence within the first calendar quarter after completion of the ambient groundwater sampling period for that well. For quarterly compliance monitoring, the permittee shall analyze groundwater samples for the parameters listed in Section 4.2, Table 19: Quarterly Compliance Groundwater Monitoring. In addition to quarterly compliance groundwater monitoring, the permittee shall analyze samples from the POC wells for an expanded list of parameters biennially. For the biennial monitoring events in POC wells, the parameters listed in Section 4.2,Table 20: Biennial Compliance Groundwater Monitoring shall be analyzed. The biennial sampling event shall replace the regularly scheduled quarterly sampling event.

2.5.3.6. Early Detection Groundwater Quality Monitoring for Companion Wells

The permittee may install and monitor upgradient companion wells (also termed facility monitoring wells [FMW] or sentinel wells) for each of the POC wells. These additional monitoring locations can provide early detection of potential impacts in order that mitigation strategies may be developed prior to the impacts reaching the corresponding POC well location. These companion wells, if installed, are summarized in Table 3 below:

Table 3 : Companion Wells

Well ID #	Associated POC Well	ADWR Registration Number	Latitude	Longitude	Screen Interval (ft bgs)	Distance from Associated POC Well (feet)
FMW-1	POC-1	TBD	TBD	TBD	TBD	TBD
FMW-2	POC-2	TBD	TBD	TBD	TBD	TBD
FMW-3	POC-3	TBD	TBD	TBD	TBD	TBD
FMW-4	POC-4	TBD	TBD	TBD	TBD	TBD
FWM-5	POC-5	TBD	TBD	TBD	TBD	TBD
FMW-6	POC-6	TBD	TBD	TBD	TBD	TBD
FMW-7	POC-7	TBD	TBD	TBD	TBD	TBD
FMW-8	POC-8	TBD	TBD	TBD	TBD	TBD
FMW-9	POC-9	TBD	TBD	TBD	TBD	TBD
FMW-10	POC-10	TBD	TBD	TBD	TBD	TBD

The ADWR registration numbers, geographical coordinates, distances to associated POC wells, and screen intervals (and well depths) shall be updated following the installation of each companion well.

Groundwater quality data shall be collected at the companion wells according to the same schedule and for the same constituents listed for the associated POC wells. However, no ALs or AQLs will be established for the companion wells. Data shall be collected to provide an early detection of potential migration of impacts off-site. In the event the data collected at the companion well indicates a potential

future exceedance of an AL or AQL at the associated POC well, the permittee shall notify ADEQ and develop mitigation strategies for preventing an exceedance at the POC. The mitigation strategy shall be subject to ADEQ approval. The companion wells shall be installed and monitored in accordance with the following criteria:

1. At least 30 days prior to installation, a plan shall be submitted to ADEQ for review and comment that highlights the following for each companion well: construction diagram, proposed location (latitude and longitude), and installation schedule. Submittals can be for each individual companion well or group of wells.
2. Companion wells shall be installed as close as possible to the edge of the nearest regulated facility. The associated POC well will be installed as close to the private land boundary as possible.
3. Background (ambient) water quality at the companion wells shall be considered the same as that for the associated POC well, i.e., background ambient water quality monitoring will not be conducted at the companion well locations.
4. Companion wells shall be monitored at the same schedule and for the same constituents as the corresponding POC well.
5. As needed, detailed mitigation plans will be developed on a case-by-case basis based on the monitoring and characterization data. These mitigation plans shall be provided to ADEQ for review and approval.

2.5.4. Surface Water Monitoring and Sampling Protocols

Routine surface water monitoring is not required under the terms of this permit.

2.5.5. Groundwater Level Monitoring – Rosemont Pit Hydrologic Sink

The permittee shall develop a monitoring plan and maintain and monitor a network of monitor wells and piezometers in the vicinity of the Rosemont Pit in order to verify that the pit is acting as a hydrologic sink. The monitoring plan should include the following:

1. The type (piezometer or monitor well), location ID, geographical coordinates, and screened interval for the hydrologic sink monitoring points.
2. The frequency and duration of water level monitoring and methods used.
3. A description of the methods that will be used to evaluate the data to ensure the hydrologic sink is being maintained.

The Rosemont Pit Hydrologic Sink Monitoring Plan shall be provided per CSI No,16. The initial monitoring plan shall be provided to ADEQ for review and approval 30 days prior to the cessation of pit dewatering in the Rosemont Pit. A technical memorandum, as described in Section 2.7.4.3 summarizing the results of the monitoring and an evaluation of the hydrologic sink condition, shall be submitted annually to the Groundwater Section for review for the first 10-years in the post-closure period and every 5-years thereafter until the end of the post-closure monitoring period (see CSI No. 20). The memorandum shall include a discussion of changes/modifications to the monitoring plan or monitoring locations. Changes to the monitoring plan and/or monitoring locations shall be provided to ADEQ for review and comment. Also see CSI No. 17 for installation of monitoring points.

2.5.6. Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state-approved methods. If no state-approved method exists, then any appropriate EPA-approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits

of the parameters specified in this permit. If all methods have detection limits higher than the applicable limit, the permittee shall follow the applicable contingency requirements of Section 2.6 Contingency Plan Requirements and may propose "other actions" including amending the permit to set higher limits. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification unless exempted under A.R.S. § 36-495.02. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state-certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Avenue
Phoenix, AZ 85007
Phone: (602) 364-0720

2.5.7. Installation and Maintenance of Monitoring Equipment

Monitoring equipment required by this permit shall be installed and maintained so that representative samples required by the permit can be collected. If new groundwater wells are determined to be necessary, the construction details shall be submitted to the Groundwater Section for approval prior to installation and the permit shall be amended to include any new monitoring points.

2.6. CONTINGENCY PLAN REQUIREMENTS

[A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1. General Contingency Plan Requirements

The permittee shall prepare and implement a contingency plan consistent with the circumstances and actions described in Sections 2.6.2 through 2.6.5 and with A.A.C. R18-9-A204. At least one copy of this permit and the contingency plan shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall revise the contingency plan upon any significant change to the information contained in the plan (See CSI No. 24).

Any AL exceedance, or violation of an Aquifer Quality Limit (AQL), Discharge Limit (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3 Permit Violation and Alert Level Status Reporting, unless more specific reporting requirements are set forth in Section 2.6.2 through 2.6.5.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that previously indicated a violation or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL or DL. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, ADEQ and the permittee shall presume the initial sampling result to be confirmed as if verification sampling had been conducted. The permittee is responsible for compliance with contingency actions relating to the exceedance of an AL or violation of a DL, AQL or any other permit condition. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit.

2.6.2. Exceeding of Alert Levels and Performance Levels

2.6.2.1. Exceeding of Performance Levels Set for Operational Conditions

2.6.2.1.1. Performance Levels Set for Freeboard

In the event that freeboard performance levels established in Section 4.2, Table 12: Facility Inspection and Operational Monitoring in a surface impoundment are not maintained, the permittee

shall:

1. As soon as practicable, cease or reduce discharging to the impoundment to prevent overtopping. Remove and properly dispose or recycle to other operations the excess fluid in the impoundment until the water level is restored at or below the freeboard performance level.
2. Within 5 days of discovery, evaluate the cause of the incident and adjust operational conditions or identify design improvements to the affected system as necessary to avoid future occurrences.
3. Within 30 days of discovery, initiate repairs to the affected system, structure, or other component as necessary to return the system to the established performance levels. Record any repair procedures, methods, and materials used to restore the facility to operating condition in the facility log/recordkeeping file.
4. If design improvements are necessary and if they trigger a permit amendment, submit an amendment application within 90 days of discovery.
5. The facility is no longer on alert status once the operational indicator no longer indicates that the freeboard performance level is being exceeded. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.1.2. Performance Levels Other than Freeboard

1. If an operational performance level (PL) listed in Section 4.2, Table 12: Facility Inspection and Operational Monitoring has not been maintained during required inspection and operational monitoring, such that the result is reasonably likely to cause or contribute to an unauthorized discharge pursuant to A.R.S. § 49-201(12), the permittee shall investigate to determine the cause of the condition within 24 hours of discovery, or as soon as practicable. The investigation shall include the following:
   a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the operational performance condition.
   b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences.
2. The PL exceedance, results of the investigation, and any corrective action taken shall be reported to the Groundwater Section within 30 days of the discovery of the condition. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
3. Within 30 days, the permittee shall initiate actions identified in the contingency plan referenced in Section 2.6.1 General Contingency Plan Requirements and any necessary contingency measures to resolve problems identified by the investigation which may have led to a PL being exceeded. To implement any other corrective action, the permittee may choose to obtain prior approval from ADEQ according to Section 2.6.6 Corrective Actions.

2.6.2.2. Exceedance of Alert Level #1 for Normal Liner Leakage

If an Alert Level #1 (AL #1) as specified in Section 4.2, Table 14: Leakage Rates for LCRS Facility Monitoring has been exceeded, the permittee shall take the following actions:

1. Within 5 days of AL #1 exceedance, notify Groundwater Section in accordance with Section 2.7.3 Permit Violation and Alert Level Status Reporting. Continue monitoring to determine if the leakage rate is increasing.

2. If the leakage rate continues to exceed AL#1 for 15 days following notification of initial AL #1 exceedance, perform a visual inspection of the liner above the solution level, to determine the location of the leaks in the primary liner.
3. Within 45 days of AL #1 exceedance, if liner damage is evident, the permittee shall complete liner repairs.
4. Within 45 days of AL #1 exceedance, if the visual inspection does not identify the location of leaks, formulate a corrective action plan to determine their location and repair them.
5. Within 90 days of AL #1 exceedance and following formulation of a corrective action plan, the permittee shall complete liner repairs.
6. Within 75 days of AL #1 exceedance (if repairs were completed in Step 3), or 120 days of AL #1 exceedance (if corrective action plan was implemented per Steps 4 and 5), if no alert level exceedance is observed for 30 consecutive days, notify Groundwater Section and document assessment and/or repairs in the log book.
7. Within 120 days of AL #1 exceedance (if repairs were completed in Step 3), or 165 days of AL #1 exceedance (if corrective action plan was implemented per Steps 4 and 5), if 30 consecutive days without an AL #1 exceedance is not achieved, notify Groundwater Section and reassess the entire liner system and complete any necessary repairs as described in Steps 2 and 3 (and if necessary Steps 4 and 5 also). Repeat the assessment and liner repair cycle until requirements of Step No. 6 are attained.
8. A liner leakage assessment and repair report shall be included in the next annual report described in Section 2.7.4.1 Liner Leakage Assessment Report of this permit (also see CSI No. 18). The permittee may also submit the liner leakage assessment report to the ADEQ prior to the annual report due date. This liner leakage assessment and repair report shall be submitted to the Groundwater Section. Upon review of the report, ADEQ may require that the permittee take additional corrective actions to address the problems identified from the assessment of the liner and perform other applicable repair procedures.

2.6.2.3. Exceedance of Alert Level #2 for Liner Failure or Rips

If the Liner Leakage Discharge Limit (AL #2) specified in Section 4.2, has been exceeded, the permittee shall:

1. As soon as practicable, cease all discharge to the impoundment, implement control measures to prevent new solution buildup that may subsequently report to the impoundment, and notify Groundwater Section of the AL #2 exceedance within 24 hours of discovering the AL #2 exceedance, or as soon as practicable.
2. Within 15 days of initial AL #2 exceedance, perform a visual inspection of the liner above the solution level to identify the location of the leak(s). The permittee shall complete liner repairs and discharge to the impoundment shall not be re-initiated until the leak(s) have been identified and repaired.
3. Within 60 days of initial AL #2 exceedance if leaks were found and fixed and if no AL #2 exceedance is observed for 30 consecutive days, submit a liner leakage assessment and repair report to ADEQ. The report shall include the results of the initial liner evaluation, methods used to locate the leak(s), repair procedures and quality assurance/quality control implemented to restore the liner to optimal operational status, and other information necessary to ensure the future occurrence of the incidence will be minimized.
4. Within 30 days of initial AL #2 exceedance if the visual inspection does not identify the location of leaks and AL #2 exceedance continues, formulate a corrective action plan to determine their location and repair them. The corrective action plan takes into account the schedule for a 3rd

party contractor to perform electronic leak detection or other methods if required.

5. Within 75 days of initial AL #2 exceedance and following formulation of a corrective action plan, the permittee shall complete liner repairs.
6. Within 105 days of AL #2 exceedance and implementation of the corrective action plan per Steps 4 and 5, and if no AL #2 exceedance is observed for 30 consecutive days, notify the Groundwater Section and document the assessment and/or repairs in the log book.
7. Within 105 days of initial AL #2 exceedance (if repairs were completed in Step 3), or 150 days of AL #2 exceedance (if corrective action plan was implemented per Steps 4, 5, and 6) if 30 consecutive days without an AL #2 exceedance is not achieved, repeat Steps 1 through 7 until AL #2 is not exceeded for 30 consecutive days. When Steps 1 through 7 are repeated, the notification date is reset. Discharge to the impoundment shall not be re-initiated until the leak(s) have been identified and repaired.
8. Liner leakage assessment and repair reports required by Section 2.6.2.2 Exceedance of Alert Level #1 for Normal Liner Leakage, shall be referenced in the next annual report described in Section 2.7.4.1 Liner Leakage Assessment Report of this permit. Also see CSI No. 18.

2.6.2.4. Exceeding of Alert Levels Set for Discharge Monitoring

Not applicable.

2.6.2.5. TSF Stability

If physical evidence shows the formation of saturated zone(s) above the starter dam which may compromise the stability of the facility, the permittee shall:

1. Within five days of becoming aware of the situation notify the Groundwater Section, and
2. Within 30 days, submit a written report to the Groundwater Section and identify alternate methods of control which may include but are not limited to: temporary cessation within the area of instability, dewatering, and cyclone management.

2.6.2.6. TSF Slope Conditions

The permittee shall monitor the TSF for general slope conditions as per Section 4.2, Table 12: Facility Inspection and Operational Monitoring to identify degradation of slope conditions or visible seepage. If the TSF exhibits any signs that require maintenance, the permittee shall take the following actions:

1. After discovery prevent vehicle and/or foot traffic in the area.
2. Notify the engineer of record (EOR).
3. If necessary, perform remedial actions approved by the EOR.
4. Monitor the area for signs of decreasing slope stability.

2.6.2.7. TSF Piezometric Pore Pressure

The permittee shall monitor the piezometric head per Section 4.2, Table 13: TSF Piezometers and Alert Levels. If the piezometers read a phreatic surface in excess of Level 1, the permittee shall take the following actions:

1. Notify the engineer of record (EOR).
2. Monitor the phreatic surface within the TSF.
3. Initiate an evaluation to determine the cause of the incident. Identify the circumstances that resulted in the elevated phreatic surface. Implement corrective actions to resolve the problems

identified in the evaluation.

4. If necessary, perform a slope stability analysis on the TSF with the elevated phreatic surface to determine if any reduction in safe operation of the facility has occurred.

Record in the facility log book, the piezometer number, reading, and location. Hydrographs of the piezometers will be recorded on at least a monthly basis to allow quick inspection and evaluation of historic facility operations.

2.6.2.8. Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.8.1. Alert Levels for Indicator Parameters

Monitoring for Indicator Parameters is not required under the terms of this permit.

2.6.2.8.2. Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

If an AL for a pollutant set in Section 4.2, Table 19: Quarterly Compliance Groundwater Monitoring or Table 20: Biennial Compliance Groundwater Monitoring has been exceeded, the permittee may conduct verification sampling of the pollutant(s) that exceed their respective AL(s) within 5 days of becoming aware of an AL exceedance. The permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.

1. If verification sampling confirms the AL exceedance, or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring for the pollutant(s) exceeding their respective AL(s) as follows:

Table 4 : Accelerated Monitoring - Alert Level Exceedance

Specified Monitoring Frequency	Monitoring Frequency for AL Exceedance
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually/Biennially	Quarterly

In addition, the permittee shall initiate an investigation of the cause of the AL exceedance within 24 hours, or as soon as practicable, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.

2. The permittee shall initiate actions identified in the contingency plan referenced in Section 2.6.1 General Contingency Plan Requirements and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6 Corrective Actions. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Groundwater Section, that although an AL is exceeded, the pollutant(s) that exceed their respective AL(s) are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency, for those pollutant(s) that exceed their respective AL(s), for approval in writing by the Groundwater Section.

3. Within 30 days after confirmation of an AL exceedance for those pollutant(s), the permittee shall submit the laboratory results to the Groundwater Section along with a summary of the findings of the investigation, the cause of the AL exceedance and actions taken to resolve the problem.

4. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.The increased monitoring for those pollutant(s) required as a result of an AL exceedance may be reduced to quarterly as shown in Section 4.2,Table 20: Biennial Compliance Groundwater Monitoring

5. as shown in Section 4.2 , if the results of four (4) sequential sampling events demonstrate that the parameter(s) does/do not exceed their respective AL(s).

6. If the increased monitoring required as a result of an AL exceedance for those pollutant(s) continues for more than six sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth sampling event.

2.6.2.8.3. Alert Levels to Protect Downgradient Users from Pollutants without Numeric Aquifer Water Quality Standards

Not applicable.

2.6.2.8.4. Alert Level for Groundwater Level

Not applicable.

2.6.3. Discharge Limit Violation

2.6.3.1. Liner Failure, Containment Structure Failure, or Unexpected Loss of Fluid for reasons other than Overtopping

In the event of liner failure, containment structure failure, or unexpected loss of fluid as described in Section 2.3 Discharge Limitations, the permittee shall take the following actions:

1. As soon as practicable, cease all discharges as necessary to prevent any further releases to the environment, including removal of any fluid remaining in the impoundment as necessary, and capture and containment of all escaped fluids.

2. Within 24 hours of discovery, notify the Groundwater Section.

3. Within 24-hours of discovery of a failure, or as soon as practicable, estimate the quantity released, collect representative samples of the fluid remaining in affected impoundments and drainage structures, analyze sample(s) according to Section 4.2, Table 16: Discharge Monitoring or Contingency Monitoring. Should the permittee determine that these actions cannot be performed within 24 hours of discovery, as practicable, document the reasons in the log book and the subsequent 30-day report, as necessary. In the 30-day report required under Section 2.7.3 Permit Violation and Alert Level Status Reporting, include a copy of the analytical results and forward the report to Groundwater Section.

4. Within 15 days of discovery, initiate an evaluation to determine the cause for the incident. Identify the circumstances that resulted in the failure and assess the condition of the discharging facility and liner system. Implement corrective actions as necessary to resolve the problems identified in the evaluation. Initiate repairs to any failed liner, system, structure, or other component as needed to restore proper functioning of the discharging facility. The permittee

shall not resume discharge to the facility until repairs of any failed liner or structure are performed.

Repair procedures, methods, and materials used to restore the system(s) to proper operating condition shall be described in the facility log/recordkeeping file and available for ADEQ review. Record in the facility log/recordkeeping file the amount of fluid released, a description of any removal method and volume of any fluid removed from the impoundment and/or captured from the release area. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 Operation Inspection / Log Book Recordkeeping.

5. Within 30 days of discovery of the incident, submit a report to Groundwater Section as specified in Section 2.7.3 Permit Violation and Alert Level Status Reporting. Include a description of the actions performed in Subsections 1 through 4 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.

6. Within 60 days of discovery, assess the impacts to soil and/or groundwater resulting from the incident. If soil or groundwater is impacted such that it could or did cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to ADEQ, for approval, a corrective action plan to address such impacts, including identification of remedial actions and a schedule for completion of activities. At the approval of ADEQ, the permittee shall implement the approved plan.

7. Within 30 days of completion of corrective actions, submit to Groundwater Section, a written report as specified in Section 2.6.6 Corrective Actions.

8. Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.3.2. Overtopping of a Surface Impoundment

If overtopping of fluid from a permitted surface impoundment occurs, and results in a discharge pursuant to A.R.S. § 49-201(12), the permittee shall:

1. As soon as practicable, cease all discharges to the surface impoundment to prevent any further releases to the environment.

2. Within 24 hours of discovery, notify the Groundwater Section.

3. Within 24 hours, or as soon as practicable, collect representative samples of the fluid contained in the surface impoundment. Should the permittee determine that these actions cannot be performed within 24 hours of discovery, as practicable, document the reasons in the log book and the subsequent 30-day report, as necessary. Samples shall be analyzed for the parameters specified in Section 4.2, Table 16: Discharge Monitoring or Contingency Monitoring within 30 days of the incident, submit a copy of the analytical results to Groundwater Section.

4. As soon as practicable, remove and properly dispose of excess water in the impoundment until the water level is restored at or below the appropriate freeboard as described in Section 4.2, Table 12: Facility Inspection and Operational Monitoring. Record in the facility log/recordkeeping file the amount of fluid released, a description of the removal method, and volume of any fluid removed from the impoundment and/or captured from the release area. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 Operation Inspection / Log Book.

5. Within 30 days of discovery, evaluate the cause of the overtopping and identify the

circumstances that resulted in the incident. Implement corrective actions and adjust operational conditions as necessary to resolve the problems identified in the evaluation. Repair any systems as necessary to prevent future occurrences of overtopping.

6. Within 30 days of discovery of overtopping, submit a report to ADEQ as specified in Section 2.7.3(2) Permit Violation and Alert Level Status Reporting. Include a description of the actions performed in Subsections 1 through 5 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.

7. Within 60 days of discovery, and based on sampling in Item No. 3 above, assess the impacts to the subsoil and/or groundwater resulting from the incident.

8. If soil or groundwater is impacted such that it is reasonably likely to cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to ADEQ for approval, a corrective action plan to address such impacts, including identification of remedial actions and/or monitoring, and a schedule for completion of activities. At the direction of ADEQ, the permittee shall implement the approved plan.

9. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 Corrective Actions. Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.3.3. Inflows of Unexpected Materials to a Surface Impoundment

The types of materials that are expected to be placed in the permitted surface impoundments are specified in Section 2.3 Discharge Limitations. If any unexpected materials flow to a permitted surface impoundment, the permittee shall:

1. As soon as practicable, cease all unexpected inflows to the surface impoundment(s).

2. Within 24 hours of discovery, notify the Groundwater Section.

3. Within five (5) days of the incident, identify the source of the material and determine the cause for the inflow. Characterize the unexpected material and contents of the affected impoundment and evaluate the volume and concentration of the material to determine if it is compatible with the surface impoundment liner. Based on the evaluation of the incident, repair any systems or equipment and/or adjust operations, as necessary to prevent future occurrences of inflows of unexpected materials.

4. Within 30 days of an inflow of unexpected materials, submit a report to ADEQ as specified in Section 2.7.3(2) Permit Violation and Alert Level Status Reporting. Include a description of the actions performed in Subsections 1 through 3 listed above.

5. Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions including remediation.

2.6.3.4. Slope and Berm Failures

If a slope or berm failure involving the heap leach facility, waste rock facility, tailings facilities, or detention structures (ponds/impoundments) occurs which affects the ability of the facility to operate in accordance with this permit, or results in an unauthorized discharge pursuant to A.R.S. § 49-201(12), the permittee shall promptly close the active area in the vicinity of the failure. A field investigation shall

be conducted of the failure to analyze its origin and extent, its impact on the facility operations, temporary and permanent repairs, and changes in operational plans considered necessary. Within 30 days of a slope or berm failure, the permittee shall submit a written report, which includes the documentation specified in Section 2.7.3 Permit Violation and Alert Level Status Reporting. The permittee shall initiate the actions necessary to mitigate the impacts of the failure, consistent with Department approval.

2.6.4. Aquifer Quality Limit Exceedances

1. If an AQL set in Section 4.2, Table 18: Parameters for Ambient Groundwater Monitoring has been exceeded, the permittee may conduct verification sampling for those pollutant(s) that were above their respective AQL(s) within 5 days of becoming aware of the exceedance. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling does not confirm an AQL exceedance, no further action is needed under this Section.
3. If verification sampling confirms that an AQL was exceeded for any parameter or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring for those parameters as follows:

Table 5 : Accelerated Monitoring – Aquifer Quality Limit (AQL)Violation	
Specified Monitoring Frequency	**Monitoring Frequency for AQL Violation**
Daily	Daily
Weekly	Daily
Monthly	Weekly
Quarterly	Monthly
Semi-annually	Quarterly
Annually/Biennially	Quarterly

In addition, the permittee shall initiate an evaluation for the cause of the violation within 24 hours, or as soon as practicable, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in the unexpected discharge.

The permittee also shall submit a report according to Section 2.7.3 Permit Violation and Alert Level Status Reporting, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within 30 days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider, and ADEQ may require, corrective action that may include: control of the source of discharge, cleanup of affected soil, surface water, or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in the contingency plan, or separately approved according to Section 2.6.6 Corrective Actions.

4. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.
5. The permittee shall notify any downstream or downgradient users who may be directly affected by the discharge.
6. The increased monitoring for those pollutant(s) required as a result of an AQL exceedance may be

reduced to the original sampling frequency for each respective pollutant, if the results of four (4) sequential sampling events demonstrate that the parameter(s) does not exceed their respective AQL(s).

2.6.5. Emergency Response and Contingency Requirements for Unauthorized Discharges

[A.R.S. § 49-201(12) AND PURSUANT TO A.R.S. § 49-241]

2.6.5.1. Duty to Respond

Within 24 hours, or as soon as practicable, the permittee shall act to correct any condition resulting from a discharge pursuant to A.R.S. § 49-201(12) if that condition could pose an imminent and substantial endangerment to public health or the environment.

2.6.5.2. Discharge of Hazardous Substances or Toxic Pollutants

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of suspected hazardous substances (A.R.S. § 49-201(21)) or toxic pollutants (A.R.S. § 49-243(I)) on the facility site, the permittee shall promptly isolate the area and attempt to identify the discharged material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may have been exposed during the incident. The permittee shall notify the Groundwater Section within 24 hours of discovering the discharge of hazardous material which (a) has the potential to cause an AWQS or AQL exceedance, or (b) could pose an endangerment to public health or the environment.

2.6.5.3. Discharge of Non-Hazardous Materials

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify the Groundwater Section within 24 hours of discovering the discharge of non-hazardous material which has the potential to cause an AQL exceedance, or could pose an endangerment to public health or the environment.

2.6.5.4. Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges reported under Sections 2.6.5.2 and 2.6.5.3 to the Groundwater Section within 30 days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, and facility response activities and include all information specified in Section 2.7.3 Permit Violation and Alert Level Status Reporting. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in the notice. Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6. Corrective Actions

Specific contingency measures identified in Section 2.6 Contingency Plan Requirements have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges, the permittee shall obtain written approval from the Groundwater Section prior to implementing a corrective action to accomplish any of the following goals in response to exceedance of an AL, AQL, DL, or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;

3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer;
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action not specified in Sections 2.6.1 through Section 2.6.5, the operator shall submit to the Groundwater Section, a written report describing the causes, impacts, and actions taken to resolve the problem.

2.7. REPORTING AND RECORDKEEPING REQUIREMENTS

[A.R.S. § 49-243(K)(2) and A.A.C. R18-9-A206(B) and R18-9-A207]

2.7.1. Self-Monitoring Report Form

1. The permittee shall complete the SMRFs provided by ADEQ and submit the completed report through the myDEQ online reporting system. The permittee shall use the format devised by ADEQ.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a reporting period, the permittee shall enter "not required" on the form and include an explanation.
3. The following tables contained in Section 4.0 list the monitoring parameters and the frequencies for reporting results on the SMRF:
    a. Table 19: Quarterly Compliance Groundwater Monitoring
    b. Table 20: Biennial Compliance Groundwater Monitoring

The parameters listed in the above-identified tables from Section 4.0 are the only parameters for which SMRF reporting is required.

2.7.2. Operation Inspection / Log Book Recordkeeping

A signed copy of this permit shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made. A log book (paper copies, forms, or electronic data) of the inspections and measurements required by this permit shall be maintained at the location where day-to-day decisions are made regarding the operation of the facility. The log book shall be retained for ten (10) years from the date of each inspection, and upon request, the permit and the log book shall be made readily available for review by ADEQ personnel. The information in the log book shall include, but not be limited to, the following information as applicable:

1. Name of inspector;
2. Date and shift inspection was conducted;
3. Condition of applicable facility components;
4. Any damage or malfunction, and the date and time any repairs were performed;
5. Documentation of sampling date and time;
6. Any other information required by this permit to be entered in the log book; and
7. Monitoring records for each measurement shall comply with A.A.C. R18-9-A206(B)(2).

2.7.3. Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Groundwater Section within 5 days (except as provided in Section 2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges) of becoming aware of an AL exceedance, or violation of any permit condition, AQL, or DL for which notification requirements are not specified in Sections 2.6.2 through 2.6.5

2. The permittee shall submit a written report to the Groundwater Section within 30 days of becoming aware of the violation of any permit condition, AQL, or DL. The report shall document all of the following:

    a. Identification and description of the permit condition for which there has been a violation and a description of the cause;

    b. The period of violation including exact date(s) and time(s), if known, and the anticipated period during which the violation is expected to continue;

    c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation;

    d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS;

    e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring; and

    f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4. Operational, Other or Miscellaneous Reporting

The permittee shall record the information as required in Section 4.2, Table 12: Facility Inspection and Operational Monitoring in the facility log book as per Section 2.7.2 Operation Inspection / Log Book Recordkeeping. Additionally, the following reports shall be provided:

2.7.4.1. Liner Leakage Assessment Reporting

If an Alert Level #1 has been exceeded as discussed in Section 2.6.2.2 Exceedance of Alert Level #1 for Normal Liner Leakage, the permittee shall submit an annual report that summarizes the results of the liner assessment. The Liner Leakage Assessment Report shall also include, but not be limited to, the following information: number and location of holes identified, a table summarizing alert level exceedances including the frequency and quantity of fluid removed, and corrective actions taken. Also see CSI No. 18. Alert Level #2 exceedances shall also be reported per Section 2.6.2.3.

2.7.4.2. Groundwater Quality Monitoring and Reporting

The permittee shall submit a Groundwater Quality Monitoring Report on an annual basis that includes a summary and analysis of the results of groundwater monitoring performed at the facility POC wells and any additional monitor wells that were sampled during the previous year (see CSI No. 19). At a minimum, the report should include the following:

1. A summary and description of the monitoring events that occurred during the previous year.
2. A description of any deviations from standard sampling protocols during the reporting period.
3. Data tables summarizing the results of the current monitoring period.
4. A summary of all exceedances of ALs and/or AQLs that occurred during the reporting period.
5. A site-wide potentiometric map of the groundwater table based on available data.
6. Graphical time versus concentration plots of field pH, sulfate, total dissolved solids, and any parameter which exceeded applicable ALs or AQLs in the past 8 quarters (as applicable) for each POC well. The graphs should include data from the 16 most recent quarterly analyses.
7. Figure(s) showing monitoring locations.

2.7.4.3. Rosemont Pit Monitoring and Evaluation Reporting

The permittee shall submit a Rosemont Pit Hydrologic Sink Monitoring Report that summarizes the results of monitoring the hydrologic sink conditions at the Rosemont Pit (see CSI No. 20). The memorandum should, at a minimum, include the following:

1. A narrative description of monitoring events and information describing any deviations from normal monitoring activities.
2. Groundwater level monitoring data from all applicable monitor well and piezometer locations.
3. A statistically valid trend analysis to demonstrate sink stability.
4. Charts showing the long-term trends at each monitoring location.
5. A figure showing water level contours based on monitoring point measurements that demonstrate that the hydrologic sink is being maintained. The figure shall show applicable monitoring locations.
6. A narrative discussion of the hydrologic sink conditions, any observed changes and their impact on maintaining the sink, and recommended actions in the event the data show the sink is not being maintained or is diminishing.

The report shall be provided annually to ADEQ for the first 10 years of the post-closure period and every 5-years thereafter until the end of the post-closure monitoring period.

2.7.4.4. Tailings Storage Facility Reporting

The permittee shall submit an annual Tailings Facility Progress Report to the Groundwater Section that is prepared, signed and sealed by the Engineer of Record (EOR). The annual technical report shall be due as specified in Section 3.0 (see CSI No. 22), shall cover the previous calendar year, and shall include the following for the Tailings Storage Facilities (TSFs):

1. A summary of Tailings Storage Facilities (TSFs) construction activities for the reporting period, including maps and construction completion documents such as as-built documentation and construction quality control summaries.
2. Summary of construction activities planned for the upcoming year.
3. Summary of findings including maps, graphs, and figures related to TSFs stability and performance resulting from inspections and monitoring activities.
4. Description of any updates to the TSF's stability model and to the credible failure modes analysis.
5. Detailed construction drawings for placement of the starter dam material and results of all testing done on the materials before and after placement in the starter dam.
6. Update TSF's Dam classification in terms of the consequences of a failure.
7. A summary of the TSF supernatant (decant) pond showing the maintenance of 3 ft of freeboard during operations and storm events, including maintenance of the minimum beach distance of 400 ft.
8. An update of the monitoring equipment and schedule for replacing the existing monitoring, if needed, during embankment construction.
9. Results of the annual dam safety inspection.
10. As needed, any updates of Cone Penetration Tests (CPTs) and boreholes along the stability cross sections for justification of the stability cross section.
11. As needed updates to the stability analysis based on changed conditions such as obtained from monitoring data, material properties, etc.

12. As needed updates on laboratory (permeability and gradation tests) and instrumentation data for supporting the phreatic line assumptions in the stability analysis.

2.7.4.5. Waste Rock Characterization Reporting

The permittee shall submit a Waste Rock Characterization Report on an annual basis that includes a summary and analysis of the results of waste rock characterization performed at the facility during the previous year (see CSI No. 23).

2.7.5. Reporting Location

All SMRFs shall be submitted through the myDEQ portal accessible on the ADEQ website at: http://www.azdeq.gov/welcome-mydeq. Contact at 602-771-4571 for any inquiry related to the SMRFs.

Any 5-day and 30-day contingency notification and reports, laboratory reports, and verification sampling results required by this permit should be submitted through the myDEQ portal accessible on the ADEQ website at: http://www.azdeq.gov/welcome-mydeq.

If the required reports cannot be submitted, or require further documentation that cannot be submitted on the myDEQ portal, then submit items to APPContingencyreports@azdeq.gov or the address listed below:

The Arizona Department of Environmental Quality
Groundwater Section
1110 West Washington Street
Phoenix, Arizona 85007
Phone (602) 771-4999

2.7.6. Reporting Deadline

The following table lists the quarterly SMRF report due dates:

Table 6 : Quarterly SMRF Reporting Deadlines

Monitoring Conducted During Quarter:	**Quarterly Report Due By:**
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

The following table lists the semi-annual and annual SMRF report due dates (if applicable):

Table 7 : Semi-Annual and Annual SMRF Reporting Deadlines

Monitoring Conducted:	**Report Due By:**
Semi-annual: January-June	July 30
Semi-annual: July-December	January 30
Annual: January-December	January 30

The following table lists the biennial SMRF due date:

Table 8 : Biennial SMRF Reporting Deadlines

Monitoring conducted during biennial period:	**Biennial Report due by:**
January-December of the following year	January 30, 2025 and every two years thereafter

The following table lists the due date for the annual report per Sections 2.7.4.1 through 2.7.4.5:

Table 9 : Annual Report Deadline	
Monitoring conducted during the year period:	**Annual Report due by:**
January-December of the following year	April 30, 2025 and every year thereafter

2.7.7. Changes to Facility Information in Section 1.0

The Groundwater Section shall be notified within ten (10) days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person, or Emergency Telephone Number.

2.8. Temporary Cessation

[A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A)]

The permittee shall give written notice to the Groundwater Section before ceasing operation of the facility for a period of 60 days or greater. The permittee shall implement the following action(s) upon initiation of temporary cessation.

At the time of notification, the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Following ADEQ approval, the permittee shall promptly implement the approved plan. If necessary, ADEQ shall amend the permit conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the Groundwater Section of the operational status of the facility every three (3) years. If the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 Closure below. Submittal of SMRFs is still required; report "temporary cessation" in the comment section.

2.9. Closure

[A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(B)]

For a facility addressed under this permit, the permittee shall give written notice to the Groundwater Section of the intent to cease operation without resuming activity for which the facility was designed or operated. Submittal of SMRFs is still required; report "closure in process" in the comment section.

2.9.1. Closure Plan

Within 90 days following notification of closure, the permittee shall submit for approval to the Groundwater Section, a closure plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the results of the implemented closure plan achieve clean-closure, ADEQ will issue a letter of approval to the permittee. If the closure plan contains a schedule for bringing the facility to a clean-closure configuration at a future date, ADEQ may incorporate any part of the schedule as an amendment to this permit.

2.9.2. Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the Groundwater Section indicating that the approved closure plan has been fully implemented and supporting documentation shall be provided demonstrating that clean-closure has been achieved (soil sample results, verification sampling results, groundwater data, as applicable). If clean-closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If any of the following conditions apply, the permittee shall follow the post-closure terms stated in this permit:

1. Clean-closure cannot be achieved at the time of closure notification or within one (1) year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with the AWQS at the applicable POC or, for any pollutant for which the AWQS was exceeded at the time this permit was issued, further

action is necessary to prevent the facility from further degrading the aquifer at the applicable POC with respect to that pollutant;

3. Remedial, mitigative or corrective actions or controls are necessary to comply with A.R.S. § 49-201(36) and Title 49, Chapter 2, Article 3;
4. Further action is necessary to meet property use restrictions.
5. SMRF submittals are still required until Clean Closure is issued.

2.10. Post-Closure

[A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9 A209(C)]

Post-closure requirements shall be established based on a review of facility closure actions and will be subject to review and approval by the Groundwater Section.

In the event clean-closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Section a post-closure plan that addresses post-closure maintenance and monitoring actions at the facility. The post-closure plan shall meet all requirements of A.R.S. §§ 49-201(36) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the post-closure plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the post-closure plan.

3.0 COMPLIANCE SCHEDULE

[A.R.S. § 49-243(K)(5) and A.A.C. R18-9-A208]

Unless otherwise indicated, for each compliance schedule item listed below, the permittee shall submit the required information to the Groundwater Section.

NOTE: Arizona law requires that engineering and geological documents such as cost estimates, drawings, specifications, maps, plans, and reports be signed and sealed by an Arizona registered professional engineer or an Arizona registered geologist, pursuant to the Arizona Board of Technical Registration statutes, unless a statutory exclusion or exemption applies. See A.R.S. § 32-101 to -152; A.A.C. R4-30-101 to -306.

Table 10 : Compliance Schedule Items

No.	Description	Due By:	Permit Amendment Required?
CSI.1	The permittee shall submit a construction report along with as-built drawings and QA/QC documentation sealed by an Arizona registered professional engineer for the TSF Diversion Channels, TSF Stormwater Collection Gallery Systems, Starter Dams, and TSF Seepage Collection Systems to confirm that the facility was constructed in accordance with the design report, engineering plans, and specifications submitted in the application.	Prior to discharging under this permit and within 90 days of completion of construction. Documentation will be provided in stages based on sequencing of the TSFs.	No
CSI.2	The permittee shall submit a construction report along with as-built drawings and QA/QC documentation sealed by an Arizona registered professional engineer for the lined process and non-stormwater ponds to confirm that the facilities were constructed in accordance with the design report, engineering plans, and specifications submitted in the application.	Prior to discharging under this permit and within 90 days of completion of construction.	No
CSI.3	The permittee shall submit a construction report along with as-built drawings and QA/QC documentation sealed by an Arizona registered professional engineer for the HLF liner system (HLP and ponds) to confirm that the facility was constructed in accordance with the design report, engineering plans, and specifications submitted in the application.	Prior to discharging under this permit and within 90 days of completion of construction. Documentation will be provided in stages based on sequencing of the HLP.	No
CSI.4	Tailings Dam Safety Reviews throughout the life of the facility from operations through the post-closure period, to include Independent Technical Review Board (IRTB) and Tailings Review Board (TRB) findings and recommended actions.	Every 5 years from start of operation CSI.25	No
CSI.5	Provide supporting data to ADEQ and obtain ADEQ's approval before changing the testing amount listed in the Waste Rock Handling Plan.	Annually from start of operation CSI.25	No

Table 10 : Compliance Schedule Items			
No.	**Description**	**Due By:**	**Permit Amendment Required?**
CSI.6	Provide closure report for each adit and mine shaft inside the TSF and HLF footprints to ADEQ.	30 days prior to construction in affected area	No
CSI.7	Provide geotechnical data related to waste rock properties (i.e., strength data) taken throughout operations as information becomes available	Every 5 years from start of operation CSI.25	No
CSI.8	Submission of updates to the following documents to ADEQ. The following documents must be approved by the Engineer of Record (EOR) for the applicable facilities: • TSF Contingency Action Plan • Emergency Preparedness and Response Plan (EPRP) • Failure Modes and Effects Analysis Report • Tailings Operation, Maintenance, And Surveillance (OMS) Manual • Heap Leach Operation, Maintenance, And Surveillance (OMS) Manual	Every 5 years or within 90 days of any earlier updates	No
CSI.9	Provide site-specific data for the HLF Heap Leach Draindown Estimator (HLDE) Model, i.e., Saturated Hydraulic Conductivity, Residual Water Content, and saturated moisture content. Incorporate these updated parameters in updates to the closure plan.	Every 6 years from start of operation CSI.25	No
CSI.10	The permittee shall submit a demonstration that the financial assurance mechanism listed in Section 2.1, Financial Capability, is being maintained as per A.R.S. § 49-243(N)(4) and A.A.C. R18-9-A203(H) for all estimated closure and post-closure costs, including updated costs. The demonstration shall include a statement that the closure and post-closure strategy has not changed, the discharging facilities listed in the permit have not been altered in a manner that would affect the closure and post-closure costs, and discharging facilities have not been added. The demonstration shall also include information in support of a "performance surety bond" or alternative mechanism approved by ADEQ as required as per A.A.C. R18-9-A203(C).	Every 6 years from the date of permit signature, for the life of the permit.	No
CSI.11	The permittee shall submit updated cost estimates for facility closure and post-closure, as per A.A.C. R18-9-A201(B)(5) and A.R.S. § 49-243(N)(2)(a). When submitting the closure and post-closure costs, the permittee may provide a statement for the type of mechanism they intend to provide or maintain. The financial assurance mechanism may then be submitted or updated following ADEQ's approval of the closure and post-closure costs. The permittee shall submit an APP amendment application for the updated closure and post-closure cost estimate.	Every 6 years from the date of permit signature, for the life of the permit.	Yes
CSI.12	Submit a well construction and installation proposal for the POC wells prior to installation. At a minimum, the proposal shall contain the following: well construction diagrams, proposed locations (latitude and longitude), and a proposed installation schedule. The submittal shall be sealed by an Arizona Registered Geologist or other qualified registrant. The selected ambient monitoring schedule shall also be provided in the plan (8 consecutive monthly samples or 8 consecutive quarterly samples).	At a minimum, 30 days prior to well installation.	No

Table 10 : Compliance Schedule Items			
No.	**Description**	**Due By:**	**Permit Amendment Required?**
CSI.13	Begin installation of POC wells	Within 60 days of ADEQ approval of the well construction design and installation proposal and available access to the POC well location(s). POC well installations may be staged.	No
CSI.14	Begin ambient groundwater monitoring at the POC wells, as required in Section 2.5.3.2 and for the parameters in Section 4.2, Table 18: Parameters for Ambient Groundwater Monitoring.	Within 30 days of the completion of the installation of each POC well.	No
CSI.15	The permittee shall submit an APP amendment application (minor amendment category) and an ambient groundwater monitoring report to establish ALs and AQLs for each POC well. At a minimum, the report shall contain the following: copies of all ADWR documents related to the wells, as-built diagrams of the well, and latitude and longitude of each well. The report shall be sealed by an Arizona Registered Geologist or other qualified registrant. The permit groundwater monitoring tables shall be updated to reflect the addition of each POC well and the calculated ALs and AQLs for each POC monitoring location. See Sections 2.5.3.3 and 2.5.3.4 for establishing ALs and AQLs.	Within 60 days of the completion of ambient groundwater monitoring at each POC well installation.	Yes
CSI.16	The permittee shall submit a Rosemont Pit Hydrologic Sink Monitoring Plan that includes the information listed in Section 2.5.5 for approval by ADEQ.	Within 30 days prior to cessation of pit dewatering in the Rosemont Pit.	No
CSI.17	The permittee shall notify ADEQ prior to the installation of the monitoring points in the approved Rosemont Pit Hydrologic Sink Monitoring Plan. The locations and design of the monitoring points shall be subject to ADEQ review and comment. The permittee shall submit an APP amendment application (other amendment category)	Prior to initiation of the Rosemont Pit Hydrologic Sink Monitoring Plan.	Yes
CSI.18	As needed, the permittee shall submit a Liner Leakage Assessment Report in accordance with Section 2.7.4.1.	Annually, as needed	No
CSI 19	The permittee shall submit a Groundwater Quality Monitoring Report in accordance with Section 2.7.4.2.	Annually from January 2025	No

Table 10 : Compliance Schedule Items			
No.	**Description**	**Due By:**	**Permit Amendment Required?**
CSI.20	The permittee shall submit the Rosemont Pit Hydrologic Sink Monitoring Report as described in Section 2.7.4.3.	Annually, for the first 10 years following the cessation of dewatering in the Rosemont Pit, and every 5 years thereafter, until the end of the post-closure monitoring period.	No
CSI.21	The permittee shall conduct one-time characterization of process solutions in the PLS Pond, Raffinate Pond, Reclaim Pond, and Primary Settling Pond and provide laboratory analytical characterization data in accordance with Section 2.5.1	With 30 days of receipt of laboratory analytical results after start of operation CSI.25	No
CSI.22	The permittee shall submit a Tailings Facility Progress Report in accordance with Section 2.7.4.4	Annually from start of operation CSI.25	No
CSI.23	The permittee shall submit a Waste Rock Characterization Report in accordance with Section 2.7.4.5	Annually	No
CSI.24	The permittee shall submit an updated Contingency Plan in accordance with Section 2.6.1	Prior to construction of the facility	No
CSI.25	Provide notification to the ADEQ on the date placement of tailings commence at this facility, leaching operation	Start of facility operation	No

4.0 TABLES OF MONITORING REQUIREMENTS

4.1. PERMITTED FACILITIES AND BADCT

Table 11: Permitted Facilities and BADCT
Facility Name and BADCT
Tailing Storage Facility
Tailings Storage Facility 1 (TSF-1): TSF-1 will have a footprint of approximately 946 acres. The TSF-1 has processed cyclone tailings slurry pumped to the top of the impoundment for final depositional and water recycling purposes. The design capacity of TSF-1 is approximately 231 million tons with a deposition of about 60,000 tons of slurry per day between TSF-1 and TSF-2. TSF-1 consists of multiple cells. For each cell, a TSF starter dam (start phase) is first constructed using locally borrowed soil and/or waste rock; the embankment along the downgradient edge of each cell is then raised by centerline construction methods, and in some areas, followed by the upstream construction method until the final dam configuration is achieved. For the majority of each cell, the embankment is raised via the centerline construction method using the coarse fraction tailings sands (cyclone underflow). The maximum height of the TSF-1 is approximately 267 ft. Downstream slopes of the embankments are 3H:1V (horizontal to vertical). The slopes of the starter dams are designed at 2H:1V. Slope stability analyses were conducted under both static and pseudo static conditions, along with post-earthquake analyses. These results were shown to meet or provide greater stability than called for in ADEQ's BADCT Manual. The pseudo-static analysis incorporated a pseudo-static coefficient of 0.09g, corresponding to a seismic design event with a return period of 10,000 years. Additionally, the design criteria for the operation of the TSF includes maintaining a minimum distance of 400 ft between the embankment crest and the supernatant decant pool. TSF-1 also incorporates a seepage collection system to manage seepage water associated with tailings deposition. The seepage collection system includes a network of perforated drainage pipes (underdrains) placed in an envelope of gravel. The water intercepted by the underdrains is conveyed by gravity to seepage collection trenches located downstream along the toe of the TSF-1 embankment, which is another component of the seepage collection system. These seepage collection trenches also collect a portion of the seepage water that bypasses the underdrains and flows through the alluvium. The effectiveness of the seepage collection system is around 98 percent. These underdrains also increase vertical drainage within the embankment, maintain a minimal phreatic surface, and remove water from cyclone underflow sand deposition. A chimney drain is also placed on the upgradient slope of the starter dam(s) to increase drainage and prevent buildup of the phreatic surface. In addition to collecting seepage intercepted by the underdrains, and the portion of seepage that bypasses the underdrains and flows through the alluvium to the trenches, the seepage collection trenches will also collect storm runoff from the embankment slopes via the perimeter stormwater channel. The design storage volume of each seepage collection trench is sufficient to retain 8 hours of draindown (seepage inflow) in the event of upset conditions (power outage, pump failure, etc.). Additionally, stormwater runoff from the embankment slopes from a 100-year, 24-hour storm event will be managed and pumped to the Primary Settling Pond or to the tailings decant pool. Water collected in the seepage collection trenches are also similarly managed. Stormwater collection galleries and associated piping are also incorporated in the design to pass unimpacted stormwater underneath the facility from upgradient drainage basins.
Tailings Storage Facility 2 (TSF-2): TSF-2 will have a footprint of approximately 307 acres. TSF-2 has processed cyclone tailings slurry pumped to the top of the impoundment for final deposition and water recycling purposes. The design capacity of TSF-2 is approximately 47 million tons with a deposition of about 60,000 tons of tailings slurry per day between TSF-1 and TSF-2. TSF-2 consists of multiple cells. For each cell, a TSF starter dam (start phase) is first constructed using locally borrowed soil and/or waste rock; the embankment along the downgradient edge of each cell is then raised by centerline construction methods, and in some areas, followed by the upstream construction method until the final dam configuration is achieved. For the majority of each cell, the embankment is raised via the centerline construction method. The maximum height of TSF-2 is approximately 255 ft. Downstream slopes of the embankments are 3H:1V (horizontal to vertical). The slopes of the starter dams are designed at 2H:1V. The pseudo-static analysis incorporated a pseudo-static coefficient of 0.09g, corresponding

Table 11: Permitted Facilities and BADCT

to a seismic design event with a return period of 10,000 years. Additionally, the design criteria for the operation of the TSF includes maintaining a minimum distance of 400 ft between the embankment crest and the supernatant decant pool. TSF-2 also incorporates a seepage collection system to manage seepage water associated with tailings deposition. The seepage collection system includes a network of perforated drainage pipes (underdrains) placed in an envelope of gravel. The water intercepted by the underdrains is conveyed by gravity to seepage collection trenches located downstream along the toe of the TSF-2 embankment, which is the another component of the seepage collection system. These seepage collection trenches also collect a portion of the seepage water that bypasses the underdrains and flows through the alluvium. The effectiveness of the seepage collection system is around 98 percent. These underdrains also increase vertical drainage within the embankment, maintain a minimal phreatic surface, and remove water from cyclone underflow sand deposition. A chimney drain is also placed on the upgradient slope of the starter dam(s) to increase drainage and prevent buildup of the phreatic surface.

In addition to collecting seepage intercepted by the underdrains, and the portion of seepage that bypasses the underdrains and flows through the alluvium to the trenches, the seepage collection trenches will also collect storm runoff from the embankment slopes via the perimeter stormwater channel. The design storage volume of each seepage collection trench is sufficient to retain 8 hours of draindown (seepage inflow) in the event of upset conditions (power outage, pump failure, etc.). Additionally, stormwater runoff from the embankment slopes from a 100-year, 24-hour storm event will be managed and pumped to the Primary Settling Pond or to the tailings decant pool. Water collected in the seepage collection trenches are also similarly managed. Stormwater collection galleries and associated piping are also incorporated in the design to pass unimpacted stormwater underneath the facility from upgradient drainage basins.

Heap Leach Pad/Facility

Heap Leach Pad (HLP):

Run of mine (ROM) and /or crushed oxide ore will be placed on the HLP (ranging from about 20,000 tons per day to about 45,000 tons per day based on the mine plan). Acidic leaching solution is distributed over the top and side slopes of the ore stockpile to leach copper from the ore material. The HLP will have a footprint of approximately 336 acres. The ultimate heap height is approximately 430 ft with an overall heap slope of 2.3H:1V. Slope stability analyses were conducted under both static and pseudo-static conditions. These results were shown to meet or provide greater stability than called for in ADEQ's BADCT Manual. The pseudo-static analysis incorporated a pseudo-static coefficient of 0.04g, corresponding to a design seismic event with a return period of 2,475 years. Approximately 104 million tons of oxide ore will be placed on the HLP, which is accommodated through stacking using trucks or conveyors. The liner system for the HLP is designed as a single composite liner system. The underliner, which includes a geosynthetic clay liner (GCL), contributes to the overall impermeability of the system. Above the underliner, a geomembrane made of 80-millimeter (mil) double-sided textured linear low-density polyethylene (LLDPE) is positioned. The uppermost component, known as the overliner, is constructed as a three-foot thick stratum of well-draining material. This overliner is installed atop the geomembrane and is accompanied by drainage piping. A minimum liner slope of 1% is maintained for effective water drainage through the overliner material. During operations, a mild sulfuric acid leaching solution is applied to the heap leach at about 3,000 gallons per minute. Stormwater collection galleries and associated piping are also incorporated in the design to pass unimpacted stormwater underneath the facility from upgradient drainage basins. Seepage collection piping (underdrain) is also installed underneath the HLP liner system. Any seepage intercepted by this underdrain flows to the PLS Pond.

Process Solution Ponds

PLS Pond:

The PLS Pond is part of the HLF and collects PLS via a drainage system from the HLP. From the PLS Pond, the solution is then piped to the SX-EW plant for copper recovery. The PLS Pond has an area of 3.2 acres. The PLS Pond is constructed to have a capacity below freeboard of about 1,904,005 ft^3 (14.24 million gallons or 43.71 acre-feet) with a maximum depth to the pond crest of 24 feet. The pond is designed to contain 1) 24 hours of draindown from the HLP in the event of pump failure, 2) 8 hours of operational flow, and 3) direct precipitation from a 100-year, 24-hour storm event, all below the freeboard level. A spillway is constructed to two (2) HLF stormwater ponds located both the north and south of the PLS Pond. Overflow from the PLS Pond into the HLF stormwater ponds is for emergency, short-term storage only. Outer

Table 11: Permitted Facilities and BADCT
embankments are constructed to be no steeper than 2H:1V. The PLS Pond is a double-lined facility with a Leak Collection and Recovery System (LCRS). The construction process involves a prepared subgrade, composed of a minimum of six inches of native or natural materials that is compacted to achieve 95% maximum dry density following the standard Proctor test (ASTM D698). Overlying the prepared subgrade is an underliner that is comprised of a geosynthetic clay liner (GCL). The GCL has a hydraulic conductivity of less than $1x10^{-6}$ cm/sec. The GCL is subsequently covered by a secondary (or bottom) geomembrane liner constructed from 80-mil High-Density Polyethylene (HDPE). As part of the LCRS, a geogrid is positioned atop the secondary liner. Completing the arrangement, an additional layer of 80-mil HDPE is placed above the geogrid, serving as the primary (or top) liner for the system. The geogrid provides a preferential pathway and conveys potential leakage through the primary liner to the LCRS sump where the solution can be detected and removed. The bottom of the pond is sloped at a 3% grade toward the LCRS sump. Seepage collection piping (underdrain) is also installed underneath the PLS Pond liner system. Any seepage intercepted by this underdrain is pumped back into the PLS Pond.
Raffinate Pond: The Raffinate Pond is part of the HLF and contains solution recovered from the SX-EW process. The Raffinate Pond has an area of 1.5 acres. Solution in the pond is reconditioned by lowering the pH with the addition of sulfuric acid and then recycled to the HLP. Makeup water to this circuit comes from the fresh water sources or potentially from the Process Area Stormwater Pond. The Raffinate Pond is constructed to have a storage capacity below freeboard of 794,533 ft^3 (5.94 million gallons or 18.24 acre-feet) with a maximum depth to the pond crest of 24 feet. The pond is designed to contain 1) 24 hours of flow from the SX-EW plant, 2) 8 hours of operational flow, and 3) direct precipitation from a 100-year, 24-hour event, all below the freeboard level. A spillway is constructed to the Reclaim Pond and to the Process Plant Stormwater Pond in case of upset conditions. The pond is constructed on a platform in the Plant Site area. The outer embankment of the plant site platform is constructed to be no steeper than 2H:1V. The Raffinate Pond is a double-lined facility with a Leak Collection and Recovery System (LCRS). The construction process involves a prepared subgrade, composed of a minimum of six inches of native or natural materials that is compacted to achieve 95% maximum dry density following the standard Proctor test (ASTM D698). Overlying the prepared subgrade is an underliner that is comprised of a geosynthetic clay liner (GCL). The GCL has a hydraulic conductivity of less than $1x10^{-6}$ cm/sec. The GCL is subsequently covered by a secondary (or bottom) geomembrane liner constructed from 80-mil High-Density Polyethylene (HDPE). As part of the LCRS, a geogrid is positioned atop the secondary liner. Completing the arrangement, an additional layer of 80-mil HDPE is placed above the geogrid, serving as the primary (or top) liner for the system. The geogrid provides a preferential pathway and conveys potential leakage through the primary liner to the LCRS sump where the solution can be detected and removed. The bottom of the pond is sloped at a 3% grade toward the LCRS sump.
Primary Settling Pond (PSP): The Primary Settling Pond (PSP) is constructed with two cells: a main cell and a thickener cell. The main cell is constructed to have a storage capacity below freeboard of approximately 1,775,067 ft^3 (13.28 million gallons or 40.75 acre-feet) and the thickener cell is constructed to have a storage capacity below freeboard and the top of a 3-foot thick gravel layer (protective layer) of 333,056 ft^3 (2.47 million gallons or 7.6 acre-feet). The main cell has an area of about 3.67 acres, and the thickener cell has an area of about 1.38 acres. The maximum depth of the main cell is 20 feet to the pond crest and 12 feet to the pond crest for the thickener cell. The main PSP cell is sized to contain 24-hours of solution drain-down from the Tailings Storage Facilities (TSFs) and the precipitation from a 100-year, 24-hour storm event from the outer TSF embankments, all below the freeboard level. The thickener cell is sized to contain the contents of one tailings thickener in the event of upset conditions that requires the thickener to be emptied. A spillway between the cells is constructed to allow greater storage capacity, if needed, during upset conditions. Both ponds will have outer embankments constructed no steeper than 2H:1V. Both cells of the PSP are a double-lined with an LCRS. The construction process involves a prepared subgrade composed of a minimum of six inches of native or natural materials that is compacted to achieve 95% maximum dry density using the standard Proctor test (ASTM D698). Overlying the prepared subgrade is an underliner that is comprised of a geosynthetic clay liner (GCL). The GCL has a hydraulic conductivity of less than $1x10^{-6}$ cm/sec. The GCL is subsequently covered by a secondary geomembrane (bottom) liner constructed from 80-mil High-Density Polyethylene (HDPE). As part of the LCRS, a geogrid is positioned atop the secondary liner. Completing the arrangement, an additional layer of 80-mil HDPE is placed above the geogrid, serving as the primary (or top) liner for the system. The geogrid provides a preferential

Table 11: Permitted Facilities and BADCT

pathway and conveys potential leakage through the primary liner to the LCRS sump where the solution can be detected and removed. The bottom of each pond cell is sloped at a 3% grade toward the LCRS sump. If the thickener contents are emptied into the thickener cell, a clean-out ramp is designed to allow equipment access to remove the solids. The cell for the thickener material will have a 3-foot protective layer over the primary (top) liner to allow rubber-tired equipment to access the pond without damaging the liner. A protective layer may also be added to the main cell in case clean-out is required.

Reclaim Pond:

Water reclaimed from the sulfide ore processing circuit will report to the Reclaim Pond. The Reclaim Pond has an area of 1.5 acres. The Reclaim Pond is constructed to have a storage capacity below freeboard of 794,969 ft^3 (5.95 million gallons or 18.25 acre-feet) with a maximum depth to the pond crest of 24 feet. The pond is designed to contain 1) 24 hours of flow from the plant, 2) 8 hours of operational flow, and 3) direct precipitation from a 100-year, 24-hour event, all be low the freeboard level. A spillway is constructed to the Raffinate Pond and to the Process Plant Stormwater Pond in case of upset conditions. The pond is constructed on an elevated platform in the Plant Site area. Outer embankments are constructed to be no steeper than 2H:1V.

The Reclaim Pond is a double-lined facility with a Leak Collection and Recovery System (LCRS). The construction process involves a prepared subgrade, composed of a minimum of six inches of native or natural materials that is compacted to achieve 95% maximum dry density following the standard Proctor test (ASTM D698). Overlying the prepared subgrade is an underliner that is comprised of a geosynthetic clay liner (GCL). The GCL has a hydraulic conductivity of less than $1x10^{-6}$ cm/sec. The GCL is subsequently covered by a secondary (bottom) geomembrane liner constructed from 80-mil High-Density Polyethylene (HDPE). As part of the LCRS, a geogrid is positioned atop the secondary liner. Completing the arrangement, an additional layer of 80-mil HDPE is placed above the geogrid, serving as the primary (or top) liner for the system. The geogrid provides a preferential pathway and conveys potential leakage through the primary liner to the LCRS sump where the solution can be detected and removed. The bottom of the pond is sloped at a 3% grade toward the LCRS sump.

Non-stormwater Ponds

Process Area Stormwater Pond

Stormwater in the Plant Site area is directed to the Process Area Stormwater Pond. The Process Plant Stormwater Pond has an area of 1.5 acres. This pond is a non-stormwater pond and contains process solutions for a brief period; it is considered a non-stormwater pond for purposes of the BADCT Guidance Manual. Stormwater entering the pond is considered contact water and is used to provide make-up water for either the sulfide ore processing circuit (mill) or oxide ore processing circuit (HLP, SX-EW or other processes) throughout the life of the mine. The Process Area Stormwater Pond is constructed to have a storage capacity below freeboard of 819,798 ft^3 (6.13 million gallons or 18.82 acre-feet) with a maximum depth to the pond crest of 24 feet. The pond is designed to contain runoff within the Plant Site area from a 100-year, 24-hour storm event, all below the freeboard level. A spillway is constructed to the Reclaim Pond and to the Raffinate Pond in case of upset conditions. The pond is constructed on a platform in the Plant Site area. The outer embankment of the Plant Site platform will be constructed to be no steeper than 2:1. The Process Area Stormwater Pond systems is designed as a single-lined facility. The construction process involves creating a prepared subgrade, which includes a minimum of six inches of native or natural materials compacted to achieve a maximum dry density of 95% (using the standard Proctor test; ASTM D698). Above this prepared subgrade, an underliner will be placed consisting of a Geosynthetic Clay Liner (GCL). The GCL will achieve a hydraulic conductivity of less than $1x10^{-6}$ cm/sec. Overlying the GCL, a geomembrane made of 80-mil High-Density Polyethylene (HDPE) is installed. The pond bottom is sloped at a 1% grade to one corner to facilitate fluid removal.

HLF South and North Stormwater Ponds:

Overflow from the PLS Pond during storm or upset events is collected in the two HLF stormwater ponds known as the HLF North Stormwater Pond (North Pond) and HLF South Stormwater Pond (South Pond). The HLF North and South stormwater ponds each have an area of 3.0 acres. These ponds are non-stormwater ponds and contain process solutions for brief periods; they are considered non-stormwater ponds for purposes of the BADCT Guidance Manual. Each of the HLF stormwater ponds is constructed to have a storage capacity below freeboard of 1,910,103 ft^3 (14.29 million gallons or 43.85

Table 11: Permitted Facilities and BADCT
acre-feet) with a maximum depth to the pond crest of 24 feet. The ponds are designed to contain runoff and precipitation from a 100-year, 24-hour storm event from the HLP and direct precipitation on the pond footprints. A spillway is constructed between the HLF stormwater ponds and the PLS Pond. Overflow from the PLS Pond into the HLF stormwater ponds is for emergency, short-term storage conditions only. Outer embankments are constructed to be no steeper than 2H:1V. The North Pond and South Pond liner systems are designed as single-lined facilities. The construction process involves creating a prepared subgrade, which includes a minimum of six inches of native or natural materials compacted to achieve a maximum dry density of 95% (using the standard Proctor test; ASTM D698). Above this prepared subgrade, an underliner is placed consisting of a Geosynthetic Clay Liner (GCL). The GCL has a hydraulic conductivity of less than $1x10^{-6}$ cm/sec. Overlying the GCL, a geomembrane made of 80-mil High-Density Polyethylene (HDPE) is installed. The pond bottom is sloped at a 1% grade to one corner to facilitate fluid removal. Seepage collection piping (underdrain) is also installed underneath the HLF stormwater pond liner systems. Any seepage intercepted by this underdrain is pumped back into the PLS Pond.
Waste Rock Facility
Rock excavated from the open pits having metal concentrations that are too low to be economically processed as ore will be placed in the Waste Rock Facility (WRF). Some waste rock will be used as fill material for constructing mine facilities such as haul roads and the base of the heap leach pad (HLP). Waste rock will also be used to backfill three (3) of the open pits: Heavy Weight, Copper World, and Broadtop Butte. The main portion of the WRF covers approximately 725 acres with a design capacity of about 528 million tons. Approximately 477 million tons of waste rock will be mined from the pits: Peach, Elgin, Heavy Weight, Copper World, Broadtop Butte, and Rosemont. Waste rock mined from these pits is comprised mostly of limestone-hosted materials that are classified as non-acid generating (NAG). Potentially acid-generating (PAG) material comprises a minor portion (< 6 percent) of the materials and will be managed according to a Waste Rock Management Plan (WRMP) developed for the Copper World Project. NAG materials will be placed on the outer facility slopes. PAG materials will be encapsulated within NAG materials. The WRMP also includes ongoing geochemical testing of the waste rock. Stormwater runoff will be managed during operations, and as needed into closure, with the use of sediment basins and other controls - routing flows to downgradient drainages. The overall outer slopes of the WRF will be 2.2H:1V with inner bench slopes at 1.4H:1V. Waste rock will be placed in approximate 100-foot lifts. A 24-foot-wide bench is planned for every 100-foot lift. Slope heights vary from about 400 feet in the eastern part of the WRF to about 900 feet in the western portion of the facility. Slope stability analyses were conducted under both static and pseudo-static conditions. These results were shown to meet or provide greater stability than called for in ADEQ's BADCT Manual. The pseudo-static analysis incorporated a pseudo-static coefficient of 0.04g, corresponding to a design seismic event with a return period of 2,475 years.
Open Pits
Both sulfide and oxide ore and waste rock will be mined from the open pits via a conventional truck and shovel operation. Mining will generally occur from west to east in the following progression: Peach Pit, Elgin Pit, Heavy Weight Pit, Copper World Pit, Broadtop Butte Pit, and Rosemont Pit. Except for Rosemont Pit, which will create a hydrologic sink, all of the other pits are considered potentially discharging facilities under the APP program. Sulfide ore will go to the milling and flotation circuit while oxide ore will go to the Heap Leach Pad, either directly as ROM material or crushed and then placed on the HLP. Dewatering of the pits will occur as needed during operations to minimize inflow into the pit shells. Seepage and stormwater accumulating in sumps at the bottom of the pits will be managed via pumping back to the process circuit or used for dust control within the pit shells. Monitoring of the pit slopes will also occur during operations and operational adjustments made as needed to protect personnel and the integrity of the pit wall. Stormwater will be routed around the pit shell as practicable. Backfilling of the following pits during operations is planned: Heavy Weight, Copper World, and Broadtop Butte. Waste rock used to backfill the pits will consist of NAG material immediately above and below the anticipated water table recovery elevation line.

4.2. Compliance and Operational Monitoring

Table 12: Facility Inspection and Operational Monitoring

Facility Name & Number	Operational Requirements	Inspection Frequency	Reporting Frequency
Tailing Storage Facility TSF-1, TSF-2	Follow the latest operation, maintenance and surveillance (OMS) manual for the TSFs. **Daily:** • Check for any indications of seepage, movement, cracking, subsidence, or erosion on the TSF embankment slopes. • Verify that the beach distance is greater than 400 feet and 3 feet of freeboard is maintained. • Review flow monitoring data (if available) to evaluate the potential for leakage or blockages in the seepage collection system. **Weekly:** • Confirm the proper operation and the integrity of pumps and pipelines. • Confirm that the cyclones operate at the correct pressure and flow rate. • Monitor the direction of flow associated with the tailings discharge stream and confirm that the flow is diverted away from the embankment crest. **Monthly and following precipitation events measuring at least one (1) inch in a 24-hour period:** (Precipitation shall be measured based on readings obtained from the mine weather station used for such measurements.) Visually inspect and take appropriate action if any evidence of: • Instability, including surface cracks, slides, sloughs or unusual differential settlement; • Excessive erosion or accumulation of debris in conveyances and diversions; and • Impairment of access. • At seepage collection trench locations, inspect pumps, valves, and structures for pump operation and structural integrity. **Annually** • TSF inspection by Engineer of Record (EOR)	Daily, Weekly, Monthly and Annually	As per Sections 2.2.4 and 2.6.2.1.2

Table 12: Facility Inspection and Operational Monitoring			
Facility Name & Number	**Operational Requirements**	**Inspection Frequency**	**Reporting Frequency**
Ponds • PLS Pond • Raffinate Pond • Primary Settling Pond (PSP) • Reclaim Pond • Process Area Stormwater Pond • HLF South and North Stormwater Ponds	Follow the latest operation, maintenance, and surveillance (OMS) manual for the TSF or HLF, as appropriate. **Daily:** • Check and take appropriate action in the case of any evidence of blockages of overflow or drainage pipes/spillway structures. • Visually inspect and maintain applicable freeboard in impoundments. **Weekly:** • As appropriate, measure the flow rate in the LCRS; confirm that it is less than the specified AL #1 value and take appropriate action if exceedance is observed. **Quarterly and following precipitation events measuring at least one (1) inch in a 24-hour period:** (Precipitation shall be measured based on readings obtained from the mine weather station used for such measurements.) Visually inspect and take appropriate action if any evidence of: • Instability, including surface cracks, slides, sloughs or unusual differential settlement of embankments; and • Impairment of access. • At pump locations, inspect pumps, valves and associated structures for operational and structural integrity. • Inspect for perforated or cut or damaged liner and impairment of anchor trench integrity. **Annually:** • Remove excess sediments/sludge from the impoundments, as needed, to maintain at least 80 percent of design capacity.	Daily, Weekly, Quarterly, and Annually	As per Sections 2.2.4 and 2.6.2.1.2
Waste Rock Facility	**Monthly** • Visually inspect and take appropriate action if any evidence of: Deformation including surface cracks, slides, sloughs, or differential settlement affecting slope stability. Waste rock placement will be managed by monitoring the placement of PAG and NAG waste rock per the approved Waste Rock Handling Plan. Material testing results will be provided per CSI No. 23.	Monthly	As per Sections 2.2.4 and 2.6.2.1.2

Table 12: Facility Inspection and Operational Monitoring			
Facility Name & Number	**Operational Requirements**	**Inspection Frequency**	**Reporting Frequency**
Heap Leach Pad	Follow the latest operation, maintenance, and surveillance (OMS) manual for the HLF. **<u>Monthly and following precipitation events measuring at least one (1) inch in a 24-hour period:</u>** (Precipitation shall be measured based on readings obtained from the mine weather station used for such measurements.) • Visually inspect and take appropriate action if any evidence of stockpile deformation, including surface cracks, slides, sloughs, or differential settlement affecting slope stability. • Inspect exposed portions of the pad liner and lined conveyance channels to evaluate the structure's integrity, including liner integrity; take appropriate actions to resolve. • Check for excessive accumulation or debris in lined conveyance channels and take appropriate action as needed. **<u>Quarterly</u>** • Visual inspection and evaluation of the overall integrity of the leach pad, including a physical appraisal to ensure that the pad design capacity and safety criteria are not exceeded. **<u>Annually</u>** HLF inspection by Engineer of Record (EOR)	Monthly, Quarterly, and Annually	As per Sections 2.2.4 and 2.6.2.1.2
Open Pits	**<u>Daily:</u>** • Inspect integrity of pit slopes in active operational areas; take appropriate action as needed. • Maintenance of pit sump levels in accordance with operational criteria. **<u>Quarterly and following precipitation events measuring at least one (1) inch in a 24-hour period:</u>** (Precipitation shall be measured based on readings obtained from the mine weather station used for such measurements.) Visually inspect and take appropriate action if any evidence of: • Instability, including surface cracks, slides, sloughs or unusual conditions associated with the pit slopes; and • Impairment of access. • Pumps, valves, and associated structures associated with the pit sumps for operational and structural integrity.	Daily and Quarterly	As per Sections 2.2.4 and 2.6.2.1.2

Table 13: TSF Piezometers and Alert Levels						
TSF	**Cell**	**Cross Section**	**Piezometer ID**	**Relative Depth**	**Pore Pressure Alert Levels (feet of head)**	
					Level 1	**Level 2**
TSF-1	1	A	T1-A-1	Downstream Coarse Tailings Foundation	20	40
TSF-1	1	A	T1-A-2	Downstream Coarse Tailings Foundation	20	40
TSF-1	1	A	T1-A-3	Upstream Berm Foundation	10	20
TSF-1	1	B	T1-B-1	Downstream Coarse Tailings Foundation	20	40
TSF-1	1	B	T1-B-2	Downstream Coarse Tailings Foundation	20	40
TSF-1	1	B	T1-B-3	Upstream Berm Foundation	10	20
TSF-1	2	C	T1-C-1	Downstream Coarse Tailings Foundation	20	40
TSF-1	2	C	T1-C-2	Downstream Coarse Tailings Foundation	20	40
TSF-1	2	C	T1-C-3	Upstream Berm Foundation	10	20
TSF-1	2	F	T1-F-1	Downstream Coarse Tailings Foundation	20	40
TSF-1	2	F	T1-F-2	Downstream Coarse Tailings Foundation	20	40
TSF-1	2	F	T1-F-3	Upstream Berm Foundation	10	20
TSF-1	3	D	T1-D-1	Downstream Coarse Tailings Foundation	20	40

Table 13: TSF Piezometers and Alert Levels						
TSF	**Cell**	**Cross Section**	**Piezometer ID**	**Relative Depth**	**Pore Pressure Alert Levels (feet of head)**	
					Level 1	**Level 2**
TSF-1	3	D	T1-D-2	Downstream Coarse Tailings Foundation	20	40
TSF-1	3	D	T1-D-3	Upstream Berm Foundation	10	20
TSF-1	3	E	T1-E-1	Downstream Coarse Tailings Foundation	20	40
TSF-1	3	E	T1-E-2	Downstream Coarse Tailings Foundation	20	40
TSF-1	3	E	T1-E-3	Upstream Berm Foundation	10	20
TSF-2	1	A	T2-A-1	Downstream Coarse Tailings Foundation	20	40
TSF-2	1	A	T2-A-2	Downstream Coarse Tailings Foundation	20	40
TSF-2	1	A	T2-A-3	Upstream Berm Foundation	10	20
TSF-2	1	C	T2-C-1	Downstream Coarse Tailings Foundation	20	40
TSF-2	1	C	T2-C-2	Downstream Coarse Tailings Foundation	20	40
TSF-2	1	C	T2-C-3	Upstream Berm Foundation	10	20
TSF-2	2	D	T2-D-1	Downstream Coarse Tailings Foundation	20	40
TSF-2	2	D	T2-D-2	Downstream Coarse Tailings Foundation	20	40

Table 13: TSF Piezometers and Alert Levels						
TSF	**Cell**	**Cross Section**	**Piezometer ID**	**Relative Depth**	**Pore Pressure Alert Levels (feet of head)**	
					Level 1	**Level 2**
TSF-2	2	D	T2-D-3	Upstream Berm Foundation	10	20
TSF-2	2	E	T2-E-1	Downstream Coarse Tailings Foundation	20	40
TSF-2	2	E	T2-E-2	Downstream Coarse Tailings Foundation	20	40
TSF-2	2	E	T2-E-3	Upstream Berm Foundation	10	20

Table 14: Leakage Rates for LCRS Facility Monitoring			
LCRS Sump	**Alert Level 1 (gpd)**	**Alert Level 2 (gpd)**	**Monitoring Method**
PLS Pond	1,600	50,900	Automated
Raffinate Pond	750	23,800	Automated
Reclaim Pond	740	23,500	Automated
PSP – main cell	1,660	52,800	Automated
PSP – thickener cell	460	14,800	Automated

Note: The information in this table shall be maintained in a Log Book. The volume of liquid pumped from the LCRS shall be monitored on a continuous basis using a totalizer and entered in a facility log book on a daily basis. The Alert Level 1 (AL1) or Alert Level 2 (AL2) shall be exceeded when the amount of leakage pumped from the sump for the UCP is greater than the applicable quantity above. Contingency requirements of Sections 2.6.2.2 and 2.6.2.3 shall be followed for AL1 and AL2 exceedances, respectively. An exceedance of AL 1 or AL2 is not a violation of the permit unless the permittee fails to perform actions as required under the Sections referenced above.

Table 15: One-Time Discharge Sampling Locations		
Facility	Latitude	Longitude
PLS Pond	31°50'58.17"	110°48'21.93"
Raffinate Pond	31°51'17.25"	110°48'2.09"
Reclaim Pond	31°51'17.27"	110°47'58.76"
Primary Settling Pond (PSP)	31°51'25.58"	110°48'06.00"

Note: This is a one-time sampling event. See CSI No. 21.

Table 16: Discharge Monitoring or Contingency Monitoring[1]		
Parameters (in mg/L[3] unless otherwise noted, metals shall be analyzed as dissolved unless noted)		
pH - field & lab	Toluene	Chromium
Temperature – field (ºF)	Ethylbenzene	Lead
Specific Conductivity - field	Total Xylenes	Nickel
Total Dissolved Solids	Calcium	Selenium
Sulfate	Magnesium	Thallium
Chloride	Potassium	Carbon Disulfide
Fluoride	Sodium	Cyanide (free)
Carbonate	Antimony	Gross Alpha Particle Activity
Bicarbonate	Arsenic	Radium 226
Hydroxide	Beryllium	Radium 228
Nitrate (as N)	Barium	Mercury
Nitrite (as N)	Cadmium	Uranium (total)
Total Nitrogen	Benzene	

Table 17: Compliance Groundwater Quality Monitoring Locations					
No.	Monitoring Point	Location	Latitude	Longitude	ADWR Number
Point of Compliance (POC) Monitoring Wells					
1	POC-1	North of TSF-1	31° 53’ 27”	110° 48’ 41.9”	TBD
2	POC-2	North of TSF-1	31° 53’ 27”	110° 48’ 8.8”	TBD
3	POC-3	West of TSF-1	31° 52’ 52.7”	110° 48’ 25.2”	TBD
4	POC-4	West of TSF-1	31 °52’ 11.7”	110° 48’ 25.3”	TBD
5	POC-5	West of TSF-2 and HLF Ponds	31° 50’ 54.5”	110° 48’ 25.5”	TBD
6	POC-6	NW of the Plant Area/HLP	31° 51’ 28.6”	110° 48’ 15.7”	TBD
7	POC-7	NW of Heavy Weight and Copper World pits and WRF	31° 51’ 58”	110° 46’ 22.5”	TBD
8	POC-8	North of Broadtop Butte Pit and WRF	31° 51’ 7”	110° 46’ 49”	TBD
9	POC-9	East of Broadtop Butte Pit and WRF	31° 51’ 10.4”	110° 45’ 12.3”	TBD
10	POC-10	East of Broadtop Butte Pit and WRF	31° 50’ 39.2”	110° 45’ 17”	TBD

[1] Parameters in this table shall be used for discharge and contingency monitoring.

Table 18: Parameters for Ambient Groundwater Monitoring **(in mg/L unless otherwise noted, metals are dissolved unless otherwise noted)**		
Depth to Water level (feet bgs[4])	Water Level Elevation (feet amsl)	Temperature – field (ºF)
pH – field & lab (S.U.)	Antimony	Uranium (total)
Specific Conductivity - field (µmhos/cm)	Arsenic	Gross Alpha Particle Activity (pCi/L)
Total Dissolved Solids	Barium	Radium 226 + Radium 228 (pCi/L)
Total Alkalinity	Beryllium	Uranium-Isotopes (pCi/L)
Carbonate	Cadmium	Benzene
Bicarbonate	Chromium	Carbon Disulfide
Nitrate as N	Cobalt	Ethylbenzene
Nitrite as N	Copper	Toluene
Nitrate + Nitrite	Cyanide (free)	Total Xylenes
Total Nitrogen	Lead	
Sulfate	Manganese	
Chloride	Mercury	
Fluoride	Lead	
Calcium	Iron (total)	
Magnesium	Molybdenum	
Potassium	Nickel	
Sodium	Selenium	
Hydroxide	Thallium	
Aluminum	Zinc	

Table 19: Quarterly Compliance Groundwater Monitoring (in mg/L[2] unless otherwise noted, metals are dissolved unless otherwise noted)								
Parameter	**POC Well #1**		**POC Well #2**		**POC Well #3**		**POC Well #4**	
	AQL[3]	**AL[4]**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to Groundwater (ft. bgs[5])	Monitor[6]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft. amsl[7])	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Temperature (ºF)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
pH (field & lab)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cyanide (as Free Cyanide)	Reserved[8]	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Nitrogen[9]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate as N	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nitrite as N	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nitrate + Nitrite	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Ammonia	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Metals (Dissolved)								
Antimony	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Arsenic	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Barium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Beryllium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Cadmium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Chromium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Lead	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Mercury	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nickel	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Selenium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Thallium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium (total)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

[2] mg/L = milligrams per liter
[3] AQL = Aquifer Quality Limit
[4] AL = Alert Level
[5] ft. bgs = feet below ground surface
[6] Monitor = Analysis is required but an AQL and/or AL is not established at the time of permit issuance.
[7] amsl = above mean sea level
[8] Reserved = At the conclusion of eight (8) rounds of quarterly groundwater sampling, the permittee is required to submit an Ambient Groundwater Monitoring Report and permit amendment request to ADEQ to propose ALs and AQLs based on ambient data. The permit will be amended at the conclusion of Ambient Groundwater Monitoring to establish reserved values.
[9] Total Nitrogen is the sum of Nitrate as N, Nitrite as N, and Total Kjeldahl Nitrogen (TKN)

Table 19: Quarterly Compliance Groundwater Monitoring (continued)
(in mg/L unless otherwise noted, metals are dissolved unless otherwise noted)

Parameter	POC Well #5		POC Well #6		POC Well #7		POC Well #8	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Groundwater (ft. bgs)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft. amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature (ºF)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
pH (field & lab)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cyanide (as Free Cyanide)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Nitrogen	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate as N	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nitrite as N	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nitrate + Nitrite	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Ammonia	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Metals (Dissolved)								
Antimony	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Arsenic	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Barium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Beryllium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Cadmium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Chromium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Lead	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Mercury	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nickel	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Selenium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Thallium	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium (total)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

Table 19: Quarterly Compliance Groundwater Monitoring (continued)
(in mg/L unless otherwise noted, metals are dissolved unless otherwise noted)

Parameter	POC Well #9		POC Well #10	
	AQL	AL	AQL	AL
Depth to Groundwater (ft. bgs)	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (ft. amsl)	Monitor	Monitor	Monitor	Monitor
Field Temperature (ºF)	Monitor	Monitor	Monitor	Monitor
pH (field & lab)	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor
Total Alkalinity	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor
Cyanide (as Free Cyanide)	Reserved	Reserved	Reserved	Reserved
Hydroxide	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor
Fluoride	Reserved	Reserved	Reserved	Reserved
Sulfate	Monitor	Monitor	Monitor	Monitor
Total Nitrogen	Monitor	Monitor	Monitor	Monitor
Nitrate as N	Reserved	Reserved	Reserved	Reserved
Nitrite as N	Reserved	Reserved	Reserved	Reserved
Nitrate + Nitrite	Reserved	Reserved	Reserved	Reserved
Ammonia	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor
Metals (Dissolved)				
Antimony	Reserved	Reserved	Reserved	Reserved
Arsenic	Reserved	Reserved	Reserved	Reserved
Barium	Reserved	Reserved	Reserved	Reserved
Beryllium	Reserved	Reserved	Reserved	Reserved
Cadmium	Reserved	Reserved	Reserved	Reserved
Chromium	Reserved	Reserved	Reserved	Reserved
Lead	Reserved	Reserved	Reserved	Reserved
Mercury	Reserved	Reserved	Reserved	Reserved
Nickel	Reserved	Reserved	Reserved	Reserved
Selenium	Reserved	Reserved	Reserved	Reserved
Thallium	Reserved	Reserved	Reserved	Reserved
Zinc	Monitor	Monitor	Monitor	Monitor
Uranium (total)	Monitor	Monitor	Monitor	Monitor

Table 20: Biennial Compliance Groundwater Monitoring (in mg/L[10] unless otherwise noted)										
Parameter	**POC Well #1**		**POC Well #2**		**POC Well #3**		**POC Well #4**		**POC Well #5**	
	AQL[11]	**AL[12]**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Benzene	Reserved[13]	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Toluene	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Ethylbenzene	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Total Xylenes	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Carbon Disulfide	Monitor[14]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Radionuclides (pCi/L[15])										
Gross Alpha Particle Activity	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Adjusted Gross Alpha[16]	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Radium 226	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Radium 228	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Radium 226 + 228	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Uranium-Isotopes [17]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
	POC Well #6		**POC Well #7**		**POC Well #8**		**POC Well #9**		**POC Well #10**	
	AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Benzene	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Toluene	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Ethylbenzene	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Total Xylenes	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Carbon Disulfide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Radionuclides (pCi/L)										
Gross Alpha Particle Activity	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Adjusted Gross Alpha	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Radium 226	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Radium 228	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Radium 226 + 228	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Uranium-Isotopes	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

[10] mg/L = milligrams per liter
[11] AQL = Aquifer Quality Limit
[12] AL = Alert Level
[13] Reserved = At the conclusion of eight (8) rounds of quarterly groundwater sampling, the permittee is required to submit an Ambient Groundwater Monitoring Report and permit amendment request to ADEQ to propose ALs and AQLs based on ambient data. The permit will be amended at the conclusion of Ambient Groundwater Monitoring to establish reserved values.
[14] Monitor = Analysis is required but an AQL and/or AL is not established at the time of permit issuance.
[15] pCi/L = picocuries per liter
[16] The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).
[17] Uranium Isotope activity results must be used to calculate Adjusted Gross Alpha.

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

APP Application, dated:	September 21, 2022 and subsequent responses to information requests
Contingency Plan, dated:	Provided in Section 13 of the APP application, also see CSI No. 24

6.0 NOTIFICATION PROVISIONS

6.1. Duty to Comply

[A.R.S. §§ 49-221 through 263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2 and 3 of the Arizona Revised Statutes, Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.2. Duty to Provide Information

[A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information that is reasonably necessary which the Director may request to determine whether cause exists for amending or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

6.3. Compliance with Aquifer Water Quality Standards

[A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an Aquifer Water Quality Standard (AWQS) at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an AWQS for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.4. Technical and Financial Capability

[A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application, pursuant to A.A.C. R18-9-A203(C), shall be in effect prior to any discharge authorized by this permit and shall remain in effect for the duration of the permit.

6.5. Reporting of Bankruptcy or Environmental Enforcement

[A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. the filing of bankruptcy by the permittee; or
2. the entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.6. Inspection and Entry

[A.R.S. §§ 41-1009, 49-203(B), and 49-243(K)(8)]

In accordance with A.R.S. §§ 41-1009 and 49-203(B), the permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit.

6.7. Duty to Modify

[A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211]

The permittee shall apply for a permit amendment prior to making changes to the design or operational practices as required under A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211.

6.8. Permit Action: Amendment, Transfer, Suspension, and Revocation

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, suspended, or revoked for cause, in accordance with A.R.S. and under the rules of the Department. The permittee shall notify the Groundwater Section in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

7.0 ADDITIONAL PERMIT CONDITIONS

7.1. Other Information

[A.R.S. § 49-243(K)(8)]

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, the permittee shall promptly submit the correct facts or information.

7.2. Severability

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3. Permit Transfer

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer shall be approved until the applicant complies with all transfer requirements specified in A.A.C. R18-9-A212(B) and (C).