

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-513561
PLACE ID 212208, LTF 88154

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 ASARCO LLC to operate the ASARCO Mission Mine Complex Impoundments located at 4201 W. Pima Mine Road, Sahuarita, Arizona, in Sections 35 and 36 in Township 16S, Range 12E; Sections 31, 32, 33 and 34 in Township 16S, Range 13E; Sections 1 and 2 in Township 17S, Range 12E; Sections 3, 4, 5, 6, 7, 8, 9, 10, and 15 in Township 17S, Range 13E, of the Gila and Salt River Baseline and Meridian.

This permit becomes effective on the date of the Water Quality Division 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: ASARCO Mission Mine Complex Impoundments
Facility Address: 4201 W. Pima Mine Road
Sahuarita, Arizona 85629
County: Pima County

Permitted Flow Rate: 10,800,000 gallons per day (gpd)

Permittee: ASARCO LLC
Permittee Address: 4201 W. Pima Mine Road
Sahuarita, Arizona 85629

Facility Contact: Environmental Manager
Emergency Phone No.: 520-393-4671

Latitude/Longitude: 31° 58' 45" N/111° 03' 07" W
31° 58' 45" N/111° 03' 08" W

Legal Description: Sections 35 and 36 in Township 16S, Range 12E; Sections 31, 32, 33 and 34 in Township 16S, Range 13E; Sections 1 and 2 in Township 17S, Range 12E; Sections 3, 4, 5, 6, 7, 8, 9, 10, and 15 in Township 17S, Range 13E, of the Gila and Salt River Baseline and Meridian.

1.2. AUTHORIZING SIGNATURE

Randall Matas, Deputy Director

Water Quality Division

Arizona Department of Environmental Quality

Signed this _____ day of _____, 20_____

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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 ASARCO Mission Complex is located approximately 15 miles south of Tucson, Arizona on non-tribal land. The Mission Complex consists of tailing impoundments, overburden and waste rock deposition areas, open pits, concentrators and other ancillary facilities associated with hard rock mining.

The Mission Complex extracts and processes copper ore from an open pit mine and operates two mills, the Mission Mill (aka North Mill) and the South Mill. The output produced by the Mission Complex is a copper concentrate which is shipped to Hayden, Arizona for final processing at a smelter.

The water used for current mining and milling operations consists of a combination of groundwater from production wells located along Pima Mine Road and water from the Central Arizona Project (CAP) provided by the Central Arizona Water Conservation District (CAWCD), as well as a minor amount from pit dewatering activities.

The NSW pond will be an HDPE lined earthen pond. The new RR is designed as a fully HDPE lined, dual basin reservoir with a capacity of 6.2 million gallons. The reclaim reservoir will receive various flows including thickener overflow influent, tailings impoundment reclaim, and fresh water from the top of the hill north of the reservoir. Runoff collected in the NSW Pond will be pumped into the RR using a portable barge pump after sediments have settled.

The site includes the following permitted discharging facilities:

Table 1: DISCHARGING FACILITIES		
Facility	Latitude	Longitude
Non-Stormwater (NSW) Pond	31° 58' 45" N	111° 03' 07" W
Retention Reservoir (RR)	31° 58' 45" N	111° 03' 08" W

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

2.1.2. Financial Capability

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

The Permittee shall be required to demonstrate financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The Permittee shall be required to maintain financial capability throughout the life of the facility. The closure costs are \$81,629.00 and there are no post-closure costs. The financial assurance mechanism shall be demonstrated through Self-Assurance per A.A.C. R18-9-A203(C)(1).

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

Reclaim Reservoir

The new Reclaim Reservoir is designed as a fully HDPE lined, dual basin reservoir with a capacity of approximately 6 million gallons. The new reservoir will be an earthen basin with 2:1 side slopes throughout. The bottom and sidewalls of the basins will be 6" of compacted 3/8" minus sand, followed by a geo-synthetic clay liner with a hydraulic conductivity minimum of 1×10^{-7} cm/s, followed by a textured 100-mil HDPE liner. The reservoir will have a compacted earthen center dike with a 6-ft wide crest to separate the two basins. The crest will have a 6"x 5'-6" concrete slab running the entire length and under the HDPE liner. The banks of the reservoir and a portion of the dike crest will be armored with Tiltex Concrete in a Roll, which is an 11,000+ psi flexible impermeable, fiber reinforced, cementitious, geocomposite material. Tiltex will also be used along the banks of the basins to protect segments of the liner from damage during insertion of a barge pump if cleaning sediment from the basin is required. The reclaim reservoir will be fed by multiple HDPE pipelines, including a 30" thickener overflow influent; a 24" connection from the existing No. 7 reclaim pipeline from the tailings impoundment; and a 12" pipeline from the fresh water 600,000 gallon welded steel tank on the top of the hill north of the reservoir. Runoff collected in the NSW will be pumped into the reclaim reservoir using a portable barge pump after sediments have settled. Two 36" HDPE pipes will be installed within each reservoir low point to provide water to the new reclaim booster pumping station clear well chambers.

Reclaim Booster Pumping Station

The new Reclaim Booster Pumping Station is designed to have up to six vertical turbine pumps mounted over two clear well chambers as shown in Figure 3-1. Four booster pumps will be installed during construction. Each pump will have a rated capacity of approximately 3,100 gallon per minute (gpm) and will be controlled by individual variable frequency drives (VFDs). The VFDs will allow operations to ramp the pump speeds up or down to meet flow demands at the Mill. The station is designed for a maximum of three pumps in operation with the fourth providing a spare for redundancy. In the future, the maximum operating condition will be four pumps with two spares. A 20-inch magnetic meter will be installed downstream of the discharge manifold wye. The length of the straight-runs of piping up- and downstream of the meter were designed to improve reliability of the meter since the existing meter was installed too close to the pump discharge and a 90-degree bend and has not provided consistent flow monitoring. Each booster pump will have diaphragm pump control valve with internal check features that allow the pumps to start against a closed valve (optimum), and a 6" surge anticipator valve to handle transients in the event of a power outage. The 12" pipe will connect to an 8" flow control valve that will provide makeup water to the reclaim reservoir from the freshwater tank. The VFDs for the pumps and motors will be housed in an air-conditioned Conex building on the west side of the access driveway. All signals to monitor and operate the reclaim booster station will be sent to the South Mill DCS room, where the facility will be continuously monitored.

Non-Stormwater Pond

The non-stormwater (NSW) pond is designed to capture runoff and prevent it from entering the Reclaim Reservoir where it can deposit sediment. The NSW pond will be an HDPE lined earthen pond. The basin will have 1/4" minus sand compacted to a minimum of 90% max density with a 60-mil textured HDPE geomembrane liner. A sump located in the northeast corner will have a role (16'x65") of Tiltex to protect the liner from damage when a barge pump is added to dewater the basin. An existing earthen dike will be enhanced to prevent runoff from the mill area reaching the Reclaim Reservoir.

The drainage area for the NSW pond was delineated from topographic files provided by the mine. The drainage area includes the South Mill buildings and side slopes of the adjacent stockpiles but excludes the proposed pit expansion. The drainage area was estimated to be 70 acres and the Rational Method was used to determine the volume required to contain a 100-year 24-hour storm event.

National Oceanic and Atmospheric Administration (NOAA) map for the 24-hour 100-year storm event for Arizona was used to determine the rainfall intensity. The map indicates the intensity would be between 3.51 and 4.0 inches. 4 inches was used in the design calculations. Volume of the NSW was calculated using Muck 3D software for calculating mine excavation/stockpile quantities. The volume of the rough excavation (which is 2-ft higher than the final grade) for the NSW pond was used in the calculation. The rough excavation was calculated by Muck 3D to be 22,443+ cubic yards or 606,000 cubic feet.

2.2.2. Site-Specific Characteristics

Not applicable

2.2.3. Pre-Operational Requirements

Not applicable

2.2.4. Operational Requirements

1. The permittee shall maintain a copy of the up-to-date operations and maintenance manual at the treatment facility site at all times; the manual shall be available upon request during inspections by ADEQ personnel.
2. The pollution control structures shall be inspected for the items listed in Section 4.2, Table 7: FACILITY INSPECTION AND OPERATIONAL MONITORING. Results of these inspections shall be documented and maintained on location for at least 10 years from the date of each inspection as required by Section 2.7.2.
3. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and materials used shall be documented in the facility log book as per Section 2.7.2 and reported to ADEQ in the event of a violation or exceedance as per Section 2.7.3.

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 as defined in A.R.S. § 49-201(12) resulting from failure or bypassing of BADCT pollutant control technologies including liner failure, uncontrollable leakage, berm breaches that result in an unexpected loss of fluid, or accidental spills. Liner failure in a single-lined impoundment is any condition that would result in leakage exceeding 550 gallons per day per acre. The discharge limitations in this section are not applicable to any discharge caused by precipitation in excess of a single 100-year/24 hour storm event or process overflow during a power outage exceeding 24 hours in duration.

2.4. POINT OF COMPLIANCE (POC)

[A.R.S. § 49-244]

The Points of Compliance (POCs) have been established at the following locations:

Table 2: POINT(S) OF COMPLIANCE		
POC #	Latitude (North)	Longitude (West)
POC-1	31°58'48"	1101°3'2"
POC-2	31°58'47"	110°3'8"

The director may require an amendment of this permit to install one or more POC wells if there is cause or concern that groundwater quality may be impacted at the POC. The Director may amend this permit to designate additional points of compliance 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 immediately available for review by ADEQ personnel.

2.5.1. Pre-Operational Monitoring

Not applicable

2.5.2. Facility / Operational Monitoring

Operational monitoring inspections shall be conducted according to Section 4.2, Table 7: FACILITY INSPECTION AND OPERATIONAL MONITORING.

2.5.3. Groundwater Monitoring and Sampling Protocols

Not applicable.

2.5.3.1. POC Well Replacement

Not applicable.

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. 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 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 state-certified laboratories in Arizona can be obtained at the address below:

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

2.5.6. 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 Protection Value Stream 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

At least one copy of this permit and the approved contingency and emergency response plan submitted in the application shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans.

Any AL exceedance, or violation of an AQL, DL, or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3, 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 plans 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.

The permittee is responsible for compliance with contingency plans 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 Freeboard

In the event that the minimum freeboard levels are not maintained, the permittee shall:

1. As soon as practicable and to the extent 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 reservoir until the water level is restored at or below the permitted freeboard limit.
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 compliance with this permit, or remove the affected system(s) from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. 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, 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.

2.6.2.2. Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.2.1. Alert Levels For Indicator Parameters

Not applicable.

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

Not applicable.

2.6.2.2.3. Alert Level to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards

Not required at time of issuance.

2.6.2.2.4. Alert Level For Groundwater Level

Not applicable.

2.6.3. Discharge Limit Violation

Not applicable.

2.6.4. Aquifer Quality Limit Violation

Not applicable.

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

The permittee shall act immediately 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(19)) 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 Protection Value Stream 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 Protection Value Stream 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 Protection Value Stream 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. 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 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, the permittee shall obtain written approval from the Groundwater Protection Value Stream 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, the operator shall submit to the Groundwater Protection Value Stream, 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

Not applicable.

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 years from the date of each inspection, and upon request, the permit and the log book shall be made immediately 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; and
6. Any other information required by this permit to be entered in the log book.
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 Protection Value Stream within five (5) days (except as provided in Section 2.6.5) 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 Protection Value Stream 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 time 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 0, Table 7 in the facility log book as per Section 2.7.2, and report to the Groundwater Protection Value Stream any violations or exceedances as per Section 2.7.3.

If the treatment facility is classified for reclaimed water under this permit, the permittee shall submit the reclaimed water monitoring results and flow volumes to any of the following in accordance with A.A.C. R18-9-B701(C)(2)(c):

1. Any reclaimed water agent who has contracted for delivery of reclaimed water from the permittee; and
2. Any end user who has not waived interest in receiving this information.

2.7.5. Reporting Location

All Self-Monitoring Report Forms (SMRFs) shall be submitted through the myDEQ portal accessible on the ADEQ website at: <http://www.azdeq.gov/welcome-mydeq>

All other documents required by this permit shall be mailed to:

The Arizona Department of Environmental Quality
 Groundwater Protection Value Stream
 Mail Code 5415B-3
 1110 West Washington Street
 Phoenix, Arizona 85007
 Phone (602) 771-4571

2.7.6. Reporting Deadline

The following table lists the quarterly report due dates:

Table 3: QUARTERLY 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 report due dates if applicable:

Table 4: (SEMI-)ANNUAL REPORTING DEADLINES	
Monitoring Conducted:	Report Due By:
Semi-annual: January-June	July 30
Semi-annual: July-December	January 30
Annual: January-December	January 30

2.7.7. Changes To Facility Information In Section 1.0

The Groundwater Protection Value Stream shall be notified within ten 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 Protection Value Stream before ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

1. If applicable, direct the wastewater flows from the facility to another state-approved wastewater treatment facility;
2. Correct the problem that caused the temporary cessation of the facility; and
3. Notify the Groundwater Protection Value Stream with a monthly facility status report describing the activities conducted on the treatment facility to correct the problem.
4. Submittal of Self-Monitoring Report Forms (SMRFs) is still required; report “temporary cessation” in the comment section.

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. Immediately following ADEQ approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the Groundwater Protection Value Stream of the operational status of the facility every three 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 below.

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 of closure to the Groundwater Protection Value Stream 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 Protection Value Stream, a closure plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the closure plan achieves clean-closure immediately, ADEQ shall 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 Protection Value Stream indicating that the approved closure plan has been implemented fully and providing supporting documentation to demonstrate 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 terms of post-closure stated in this permit:

1. Clean-closure cannot be achieved at the time of closure notification or within one 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. Activities are necessary to verify that actions or controls specified as closure requirements in an approved closure plan or strategy are routinely inspected or maintained;
4. Remedial, mitigative or corrective actions or controls are necessary to comply with A.R.S. § 49-201(30) and Title 49, Chapter 2, Article 3;
5. Further action is necessary to meet property use restrictions.
6. 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 Protection Value Stream.

In the event clean-closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Protection Value Stream 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(30) 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.

2.10.1. Post-Closure Plan

A specific post-closure plan may be required upon the review of the closure plan.

2.10.2. Post-Closure Completion

Not required at the time of permit issuance.

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 Protection Value Stream.

Table 5: COMPLIANCE SCHEDULE ITEMS			
No.	Description	Due By:	Permit Amendment Required?
1	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 submitted under Section 3.0, below. 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 cash deposit as required in A.A.C. R18-9-A203(C)(2).	March 30, 2027 and every six (6) years, for the duration of the permit.	No
2	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.	By March 30, 2027 and every 6 years thereafter.	Yes
3	The permittee shall submit construction QA/QC Report and as-built drawings, sealed by an Arizona registered professional engineer, for the NSW Pond, which demonstrate that it has been constructed in accordance with plans and specifications approved by ADEQ.	Within 90 days of completion of the construction of the facility	No
4	The permittee shall submit construction QA/QC Report and as-built drawings, sealed by an Arizona registered professional engineer, for the RR, which demonstrate that it has been constructed in accordance with plans and specifications approved by ADEQ.	Within 90 days of the first precipitation event where a sample can be obtained	No
5	The permittee shall collect a representative fluid sample from the Non-Storm Water Pond. The sample shall be analyzed for constituents listed in Table 8 and the results shall be submitted to the Groundwater Protection Value Stream.	Within 90 days of project completion	No
6	The permittee shall collect a representative fluid sample from the RR. The sample shall be analyzed for constituents listed in Table 8 and the results shall be submitted to the Groundwater Protection Value Stream.	Within 90 days of completion of the RR	No

4.0 TABLES OF MONITORING REQUIREMENTS

4.1. PRE-OPERATIONAL MONITORING (OR CONSTRUCTION REQUIREMENTS)

Table 6: PERMITTED FACILITIES AND BADCT
<p>The new Reclaim Reservoir:</p> <p>The new Reclaim Reservoir (RR) is designed as a fully HDPE lined, dual basin reservoir with a capacity of approximately 6 million gallons. The new reservoir will be an earthen basin with 2:1 side slopes throughout. The bottom and sidewalls of the basins will be 6" of compacted 3/8" minus sand, followed by a geo-synthetic clay liner with a hydraulic conductivity minimum of 1×10^{-7} cm/s, followed by a textured 100-mil HDPE liner. The reservoir will have a compacted earthen center dike with a 6-ft wide crest to separate the two basins. The crest will have a 6" x 5'-6" concrete slab running the entire length and under the HDPE liner. The banks of the reservoir and a portion of the dike crest will be armored with Tiltex Concrete in a Roll, which is an 11,000+ psi flexible impermeable, fiber reinforced, cementitious, geocomposite material . Tiltex will also be used along the banks of the basins to protect segments of the liner from damage during insertion of a barge pump if cleaning sediment from the basin is required. The reclaim reservoir will be fed by multiple HDPE pipelines, including a 30" thickener overflow influent; a 24" connection from the existing No. 7 reclaim pipeline from the tailings impoundment; and a 12" pipeline from the fresh water 600,000 gallon welded steel tank on the top of the hill north of the reservoir. Runoff collected in the NSW will be pumped into the reclaim reservoir using a portable barge pump after sediments have settled. Two 36" HDPE pipes will be installed within each reservoir low point to provide water to the new reclaim booster pumping station clear well chambers.</p>
<p>New Non-Stormwater Pond:</p> <p>The Non-Stormwater (NSW) pond is designed to capture runoff and prevent it from entering the Reclaim Reservoir where it can deposit sediment. The NSW pond will be an HDPE lined earthen pond. The basin will have 1/4" minus sand compacted to a minimum of 90% max density with a 60-mil textured HDPE geomembrane liner. A sump located in the northeast corner will have a role (16'x65") of Tiltex to protect the liner from damage when a barge pump is added to dewater the basin. An existing earthen dike will be enhanced to prevent runoff from the mill area reaching the Reclaim Reservoir. The drainage area for the NSW pond was delineated from topographic files provided by the mine. The drainage area includes the South Mill buildings and side slopes of the adjacent stockpiles but excludes the proposed pit expansion. The drainage area was estimated to be 70 acres and the Rational Method was used to determine the volume required to contain a 100-year 24-hour storm event. National Oceanic and Atmospheric Administration map for the 24-hour 100-year storm event for Arizona was used to determine the rainfall intensity. An intensity of 4 inches was estimated based on the NOAA data. Volume of the NSW was calculated using Muck 3D software for calculating mine excavation/stockpile quantities. The rough excavation was calculated by Muck 3D to be 22,443+ cubic yards or 606,000 cubic feet.</p>

4.2. COMPLIANCE OR OPERATIONAL MONITORING

Table 7: FACILITY INSPECTION AND OPERATIONAL MONITORING

The permittee shall record the inspection performance levels in a log book as per Section 2.7.2, and report any violations or exceedances as per Section 2.7.3. In the case of an exceedance, identify which structure exceeds the performance level in the log book.

Pollution Control Structure/Parameter	Performance Level	Inspection Frequency	Reporting Frequency
Retention Reservoir Freeboard	Maintain minimum 2 feet of freeboard, no visible cracks, holes or leaks in liner; pumps in good working order; no excessive sedimentation; no vegetation or other obstructions; conveyance structures free of debris; anchor trench integrity is maintained; embankment integrity is maintained.	Weekly and after major rainfall events	Exceedance of freeboard, seepage, structural integrity, overtopping standards shall be reported per Section 2.7.3, all others response actions shall be documented in the logbook and be reported in the Annual Report.
Non-Stormwater Pond Freeboard			
POC Wells	Well cap and seals are intact. No discernable corrosion or deterioration of the well(s). No discernable materials accumulating in the well. Any dedicated well equipment are functional and intact.	Monthly	See Section 2.7.3 and 2.5.3.1
Surface Impoundment Vegetation Removal	No vegetation present in the impoundment or within five feet of the impoundment	Monthly	See Section 2.7.3

Table 8: DISCHARGE CHARACTERIZATION PARAMETERS FOR THE NSW POND AND THE RR

Units shall be measured in mg/L unless otherwise noted ¹

Temperature - field (F°)	Magnesium	Mercury
pH - field & lab (S.U.)	Potassium	Nickel
Specific Conductance field and lab (µmhos/cm)-field	Sodium	Selenium
Total Dissolved Solids -lab	Aluminum	Silver
Total Alkalinity	Antimony	Thallium
Carbonate	Arsenic	Zinc
Bicarbonate	Barium	Adjusted Gross Alpha (pCi/L) ²
Hydroxide	Beryllium	Radium 226+ 228 (pCi/L)
Sulfate	Cadmium	Radon 222 (pCi/L)
Chloride	Chromium	Uranium-total (µg/l)
Fluoride	Cobalt	Uranium Isotopes(pCi/L) ³
Nitrate-Nitrite as N	Copper	Total petroleum hydrocarbons
Phosphate	Cyanide (Free)	Calcium
Lead	Iron	Manganese
		Nitrite

¹ Metals shall be analyzed as dissolved metals.

² 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).

³ Uranium Isotope activity results must be used for calculating 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: October 14, 2020
- Contingency Plan, dated: October 14, 2020
- Final Hydrologist Report, dated: Not applicable
- Final Engineering Report, dated: March 9, 2021
- Public Notice, dated: 4/30/05
- Public Hearing, dated: Not applicable
- Responsiveness Summary, dated: Not applicable

6.0 NOTIFICATION PROVISIONS

6.1. Annual Registration Fees

The permittee is notified of the obligation to pay an Annual Registration Fee to ADEQ. The Annual Registration Fee is based on the amount of daily influent or discharge of pollutants in gallons per day (gpd) as established by A.R.S. § 49-242.

6.2. 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.

6.3. 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 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.

6.4. 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 (POC) 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.

6.5. 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.

6.6. 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.

6.7. Monitoring and Records

[A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A206]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit, with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

6.8. Inspection and Entry

[A.R.S. §§ 49-1009, 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.

6.9. Duty to Modify

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

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices authorized by this permit.

6.10. 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, under the rules of the Department. The permittee shall notify the Groundwater Protection Value Stream 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 in 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 as specified in A.A.C. R18-9-A212(B) and (C).