

**AQUIFER PROTECTION PERMIT NO. P- 102811  
SIGNIFICANT AMENDMENT  
PLACE ID 522, LTF 61311**

**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 Imsamet of Arizona to operate the Imsamet of Arizona facility located in Goodyear, Arizona, over groundwater of the Phoenix Active Management Area – West Salt River Valley, in Township 1 North, Range 1 West, Section 20 of the Gila and Salt River Base Line 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:** Imsamet of Arizona  
**Facility Address:** 3829 S. Estrella Parkway, Goodyear, Arizona 85338

**Annual Registration Fee Flow Rate:** 97,000 gallons per day (gpd)

**Permittee:** Imsamet of Arizona  
**Permittee Address:** 3829 S. Estrella Parkway, Goodyear, AZ 85338

**Facility Contact:** Darrin Noe, Plant Manager  
**Emergency Phone No.:** Wesley Rhodes, 623 225-8763

**Latitude/Longitude:** 33° 24' 42" N, 112° 23' 23" W  
**Legal Description:** Township 1 North, Range 1 West, NW ¼, SW ¼, SW ¼ of Section 20

**1.2 Authorizing Signature**

\_\_\_\_\_  
**Trevor Baggione, Director, Water Quality Division**  
**Arizona Department of Environmental Quality**  
Signed this \_\_\_\_\_ day of \_\_\_\_\_, 2016

**THIS AMENDED PERMIT SUPERCEDES ALL PREVIOUS PERMITS**

**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)]**

Imsamet operates a secondary aluminum processing facility that uses furnaces to convert aluminum-containing material into high quality aluminum ingots. In addition to the production of aluminum ingots, Imsamet produces exothermic fines for the steel industry and Alumina Cement Additive (ACA), an aluminum oxide product, for the cement industry. Exothermic fines (exes) are a blend of aluminum metal and aluminum oxides. The ACA is washed aluminum oxide solids (AOS).

Imsamet receives scrap aluminum metal, white dross and black dross for processing at its facility. White dross typically contains from 30% to 80% aluminum metal with little, if any flux. It is fed into the furnaces along with scrap metal and some salt fluxes. Black dross typically contains from 4% to 25% aluminum metal and 20% to 30% salt flux. Black dross is not used for furnace feed. Black dross is processed in a manner so that small pieces of aluminum metal contained in the dross can be removed, dried, and re-melted in the furnaces.

A wet grinding process is used to produce aluminum concentrate and exothermic fines from the cake generated in the Imsamet furnaces and from black dross shipped to Imsamet from other facilities. The wet grinding process allows small pieces of aluminum to be separated from the remaining components of the dross, primarily aluminum oxide and salt. The material left after the removal of the aluminum concentrate metal is slurry containing salt and aluminum oxide. This slurry is currently pumped into two onsite unlined slurry ponds (Slurry Pond – North and Slurry Pond – South) for temporary storage. The solid fraction of the slurry (AOS), is removed from the ponds and processed in a wash plant to produce ACA. Water used in the wash plant is pumped to the wet grinding process where it is used to separate metallic aluminum from the dross.

A pilot study was conducted as authorized by Temporary Aquifer Protection Permit 106243, to evaluate whether a heap separation pad and brine solution pond could be used for full scale operations in place of the slurry ponds. Imsamet concluded from the pilot study that the heap separation and brine solution pond method is not practical to handle the slurry from the full scale wet grinding process and instead the facility will change to a dry milling operation and all APP discharging facilities will be closed. The Heap Separation Pad and Brine Solution Pond constructed and used in the pilot study have been included in this permit and will be utilized along with the Slurry Ponds. The dry milling operation, scheduled to be completed within 14 months of permit signature, will not utilize any impoundments or other APP discharging facilities. Use of the slurry ponds for wet grinding mill slurry will be discontinued within eighteen (18) months of permit signature as required by the permit compliance schedule. Use of the slurry ponds for wash plant wash water will be discontinued within 57 months of permit signature as required by the permit compliance schedule. The slurry ponds will be allowed to dry and then be backfilled with AOS. The AOS will be processed in the wash plant to produce ACA, and the wash water will be contained in the Heap Separation Pad the Brine Solution Pond. Once all the AOS is processed or disposed of offsite, the soil below the Slurry Ponds will be sampled at regular intervals down to groundwater, and Imsamet will develop a soil remediation and confirmation sampling plan for approval.

The site includes the following permitted discharging facilities:

Facility	Latitude	Longitude
Slurry Pond – North	33° 24' 45.4" North	112° 23' 19.0" West
Slurry Pond – South	33° 24' 42.8" North	112° 23' 19.0" West
Heap Separation Pad	33° 24' 41.8" North	112° 23' 22.6" West
Brine Solution Pond	33° 24' 39.9" North	112° 23' 22.1" West

**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 permitted flow for fee calculation is 97,000 gallons per day (gpd). If the facility is not yet constructed or is incapable of discharge at this time, the permittee may be eligible for reduced fees under the rule. Send all correspondence requesting reduced fees to the Water Quality Division of ADEQ. Please reference the permit number, LTF number and why reduced fees are requested under the rule.

**2.1.2 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 and post-closure cost is \$935,039.00. The financial assurance mechanism was demonstrated through A.A.C. R18-9-A203.C.7, a cash deposit.

**2.2 Best Available Demonstrated Control Technology [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 descriptions for the permitted facilities is presented in Section 4.1, Table 4.1.1.

**2.2.2 Site-specific Characteristics**

Not applicable.

**2.2.3 Pre-operational Requirements**

Not applicable.

**2.2.4 Operational Requirements**

**2.2.4.1 Slurry Ponds (North and South)**

The design of Slurry Ponds has not been demonstrated to meet the best available demonstrated control technology requirements and therefore, the ponds shall be closed as described in permit Sections 2.9 and 3.0. Prior to closure, the ponds are authorized for use, up to 57 months from permit signature. Fluid level in the ponds shall maintain a minimum of two feet freeboard.

**2.2.4.2 Brine Solution Pond and Heap Separation Pad**

Fluid level in the Brine Solution Pond shall maintain a minimum of two feet freeboard.

**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, berm breaches that result in an unexpected loss of fluid, accidental spills, or other unauthorized discharges.

**2.3.1 Freeboard**

A freeboard of 2 feet shall be maintained in Slurry Ponds (North and South) and the Brine Solution Pond at all times.

**2.3.2 Authorized and Unauthorized Materials**

Authorized discharge to the Slurry Ponds, Heap Separation Pad and Brine Solution Pond shall consist of and be restricted to 1) slurry from the grinding mill sump and 2) brine from the wash plant. The discharge shall not contain any organic solvents, or hazardous substances (A.R.S. § 49-201(18)) that are not associated with aforementioned routine operations and the authorized waste streams. In the event of an unauthorized discharge or accidental spill, the permittee shall initiate the contingency requirements as described in Section 2.6.3 and 2.6.5, as applicable.

**2.3.3 Maintenance**

The permittee shall maintain the Slurry Ponds (North and South), Heap Separation Pad and Brine Solution Pond to the maximum extent practicable to ensure that there are no liner failures, uncontrollable leaks, overtopping, berm breaches, accidental spills, or other unauthorized discharges into the environment. In the event of an unauthorized discharge or accidental spill, the permittee shall initiate the contingency requirements as described in Section 2.6.3 (Discharge Limit Violations). Flow monitoring equipment shall be maintained to ensure accurate flow monitoring and reporting.

**2.3.4 Monitoring Requirements**

The Slurry Ponds, Heap Separation Pad and Brine Solution Pond shall be inspected and the discharge monitored in accordance with Section 2.5 of this permit and Section 4.0. The Brine Pond LCRS shall be monitored in accordance with Table 4.2.2.B.

**2.4 Point of Compliance [A.R.S. § 49-244]**

The POC is established by the following monitoring location:

Well ID/Description	Well Location	ADWR No.	Latitude	Longitude	Screen Interval
POC Well MW-2	Near the entrance of the Facility along Estrella Parkway	55-581933	33° 24' 42.0" North	112° 23' 30.8" West	45-85

Monitoring requirements for each POC are listed in Section 4.2, Table 4.2.3.A.

The Director may amend this permit to designate additional POCs, if information on groundwater gradients or groundwater usage indicates the need.

**2.4.1 Upgradient and Cross-gradient Groundwater Monitoring Wells (Non POC Wells):**

Well ID/Description	Well Location	ADWR No.	Latitude	Longitude	Screen Interval
MW-1 (upgradient)	Immediately East of the South Slurry Pond	55-581934	33° 24' 42.2" North	112° 23' 16.3" West	45-85
MW-3 (cross-gradient)	Located approx. 200 feet Northwest of the North Slurry Pond	55-581932	33° 24' 48.6" North	112° 23' 22.4" West	45-85

Monitoring requirements for each Non POC wells is listed in Section 4.2, Table 4.2.3.B.

**2.5 Monitoring Requirements [A.R.S. § 49-243(B) and (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. 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 Discharge Monitoring**

The permittee shall monitor the flow to each Slurry Pond, the Brine Solution Pond and the Heap Separation Pad according to Section 4.2, Table 4.2.1.

**2.5.2 Facility / Operational Monitoring**

Permitted facilities shall be inspected for performance levels listed in Section 4.2, Tables 4.2.2.A and 4.2.2.B. If damage is identified during an inspection that could 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 of this permit.

**2.5.3 Groundwater Monitoring and Sampling Protocols**

**2.5.3.1 Groundwater Sampling Protocols**

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 the low-flow purging method as described in the Arizona Water Resources Research Center, March 1995 *Field Manual for Water Quality Sampling*. The well must be purged until indicator parameters stabilize. Indicator parameters shall include dissolved oxygen, turbidity, pH, temperature, and conductivity.

Groundwater monitoring shall be conducted at the POC, which is identified in Section 2.4.1 and at non-POC wells identified in Section 2.4.2, and shall be performed in accordance with Section 4.2, Tables 4.2.3.A and 4.2.3.B respectively.

#### **2.5.3.2 Ambient Groundwater Quality Monitoring for Point of Compliance Wells**

Not applicable.

#### **2.5.3.3 Alert Levels for Point of Compliance Wells**

For any new or replacement POC wells, ALs shall be calculated for all contaminants with an established numeric AWQS, as described below.

Within 90 days of the receipt of the laboratory analyses for the final month of the ambient groundwater monitoring period for each POC well referenced in Section 4.2, Table 4.2.3.A the permittee shall submit the ambient groundwater data in tabulated form to the Water Permits Section for review. Copies of all laboratory analytical reports, field notes, and the Quality Assurance/Quality Control (QA/QC) procedures used in collection and analyses of the samples for all parameters listed in Section 4.2, Table 4.2.3.A to be established for each POC well, shall be submitted to the Water Permits 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 calculation of the ALs and AQLs by the Water Permits Section. The ALs shall be established and calculated by the following formula, or another valid statistical method submitted to Water Permits Section in writing and approved for this permit by the Water Permits 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.

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 and maximum of 12 sampling 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 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 Point of Compliance Well Replacement**

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, a decrease in water levels, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is fifty (50) feet or less from the original well, the ALs and/or AQLs calculated for the designated POC well shall apply to the replacement well. Otherwise, the ALs and/or AQLs shall be set following the provisions in Section 2.5.3.3 and 2.5.3.4 of this permit.

#### **2.5.4 Surface Water Monitoring and Sampling Protocols**

Surface water monitoring is not required by 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 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 Arizona state-certified laboratories can be obtained at the address below:

Arizona Department of Health Services  
Office of Laboratory Licensure and Certification  
250 North 17<sup>th</sup> Avenue  
Phoenix, AZ 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 ADEQ Water Permits Section for approval prior to installation and the permit shall be amended to include any new 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 plan.

Any AL that is exceeded or any violation of an AQL, discharge limit (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

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. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit. 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 has 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.

#### **2.6.2 Exceeding of Alert Levels**

##### **2.6.2.1 Exceeding of Alert Levels Set for Operational Conditions**

If the operational AL (Performance Standards) set in Section 4.2., Table 4.2.2.A has been exceeded the permittee shall:

1. Within 5 days of discovery, notify ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting) of this permit.
2. Within 5 days of discovery, initiate an evaluation to determine the cause of the problem and assess the condition of the impaired system(s) or structure(s). Immediately adjust operational conditions if needed to avoid future occurrences.
3. Within 30 days of discovery, perform necessary repairs or maintenance to return the affected system, structure, or other component as necessary to return the system to operating condition and compliance with this permit. The permittee shall not operate the system(s) or structure (resume discharging) until the repairs have been performed to restore proper functioning of the system and/or the problems identified in the evaluation are resolved. Record any repair procedures, methods, and materials used to restore the facility to operating condition in the facility log/recordkeeping file. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 of this permit.
4. Submit records documenting each incident and actions taken to correct the problem in the Annual Report as required in Section 2.7.4 (Other Reporting) of this permit. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
5. The facility is no longer on alert status once the operational indicator no longer indicates that an AL 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 Alert Levels for Freeboard**

In the event that freeboard in the any of the impoundments is less than the required 2 feet, the permittee shall:

1. Immediately cease discharging to the impoundment. Remove and properly dispose, or return to the process for reuse, or transfer water to another evaporation impoundment whose freeboard has not been exceeded, all excess water in the impoundment until the water level is restored at or below the required freeboard.
2. Within 5 days of discovery, evaluate the cause of the incident and make needed operational adjustments as necessary to avoid future occurrences.
3. Record in the facility log, the amount of wastewater removed, a description of the removal method, and the disposal arrangements. The facility log shall be maintained according to Section 2.7.2 (Operational Inspection / Log Book Recordkeeping). Records documenting each freeboard incident and actions taken to correct the problem shall be included in the Annual Report as required in Section 2.7.4 (Other Reporting) of this permit.

#### **2.6.2.3 Exceedance of Alert Level 1 for Normal Liner Leakage**

If an Alert Level 1 (AL1) as specified in Section 4.2, Table 4.2.2.B, has been exceeded, the permittee shall take the following actions:

1. Within 5 days of discovery, determine if the fluid in the collection sump is operational/process water from the impoundment by measuring the pH and conductivity of fluids in the impoundment and in the sump to allow direct comparison in wastewater quality. Notify ADEQ Water Quality Compliance Section, Enforcement Unit, in accordance with Section 2.7.3 (Permit Violation and AL Status Reporting), and include in the notification an assessment of the type of water in the sump. Monitor fluid removal from the LCRS on a daily basis until the daily volume of fluid quantified remains below AL#1 for 30 days in order to minimize the hydraulic head on the lower liner.
2. Within 15 days, assess the condition of the liner system using visual methods for visible portions of the liner. If liner damage is evident, the permittee shall complete liner repairs and submit documentation of the repairs in the initial report discussed in Item No. 3 below.
3. Within 30 days of discovery of exceeding AL1, the permittee shall submit an initial report to ADEQ Water Quality Compliance Section to address problems identified from the initial assessment of the liner system, the source of the fluid, and any remedial actions taken to minimize the future occurrences. The report shall include the results of the initial liner evaluation, methods used to locate the leak(s) if applicable, any repair procedures implemented to restore the liner to optimal operational status if required, and other information necessary to ensure the future occurrence of the incidence will be minimized. The permittee shall also submit the report required under Section 2.7.3.

#### **2.6.2.4 Exceedance of Alert Level 2 for Liner Failure or Rips**

If the Liner Leakage Discharge Limit (AL2) specified in Section 4.2, Table 4.2.2.B, has been exceeded, the permittee shall:

1. Immediately cease all discharge to the impoundment, and notify ADEQ's Water Quality Compliance Section orally, electronically, or, by facsimile, of the AL2 exceedance. Within 24 hours, determine if

- water in the collection sump is operational/process water from the impoundment by measuring the pH and conductivity of fluids contained in the impoundment and in the sump to allow direct comparison in water quality.
2. Within 5 days of discovery, notify ADEQ Water Quality Compliance Section, in accordance with Section 2.7.3 (Permit violation and AL Status Reporting) and include an assessment regarding the type of water in the sump based upon the measurements taken according to Item No. 1 listed above.
  3. Within 15 days of discovery identify the location of the leak(s) using visual methods, electrical leak detection, or other methods as applicable. If liner damage is evident, the permittee shall complete liner repairs and submit documentation of the repairs in Item No. 4 below. Discharge to the impoundment shall not be re-initiated until the leak(s) have been identified and repaired.
  4. Within 30 days of exceeding AL #2, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and AL Status Reporting). The report shall include the results of the initial liner evaluation, methods used to locate the leak(s) if applicable, any repair procedures and quality assurance/quality control implemented to restore the liner to optimal operational status if required, and other information necessary to ensure the future occurrence of the incidence will be minimized. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
  5. If AL #2 continues to be exceeded following completion of repairs, submit for approval to ADEQ, a corrective action plan including a schedule to complete the corrective actions to address all problems identified from the assessment of the liner system and surface releases, if any, within 60 days of completion of repairs conducted in response to Item No. 3 above. Upon ADEQ's approval, the permittee shall implement the approved plan and schedule of corrective actions.
  6. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions).

**2.6.2.5 Exceeding of Alert Levels Set for Discharge Monitoring**

Not applicable.

**2.6.2.6 Exceeding of Alert Levels in Groundwater Monitoring**

**2.6.2.6.1 Alert Levels for Indicator Parameters**

Not applicable.

**2.6.2.6.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards**

1. If an AL for a pollutant set in Section 4.2, Table 4.2.3.A has been exceeded, the permittee may conduct verification sampling 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.
2. 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 to monthly. In addition, the permittee shall immediately initiate an investigation of the cause of the AL exceedance, 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.
3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 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. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Water Permits Section, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Water Permits Section.
4. Within 30 days after confirmation of an AL exceedance, the permittee shall submit the laboratory results to the Water Quality Compliance Section along with a summary of the findings of the investigation, the cause of the AL exceedance, and actions taken to resolve the problem.
5. Upon review of the submitted report, the Department may amend the permit to require

additional monitoring, increased frequency of monitoring, or other actions.

6. The increased monitoring required as a result of an AL exceedance may be reduced to the frequency shown for groundwater monitoring in Section 4.2 Table 4.2.3.A, if the results of four sequential sampling events demonstrate that no parameters exceed the AL.
7. If the increased monitoring required as a result of an AL exceedance continues for more than four 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 fourth sampling event.

**2.6.2.6.3 Alert Levels to Protect Downgradient Users from Pollutants without Numeric Aquifer Water Quality Standards**

Not applicable.

**2.6.2.6.4 Alert Level for Groundwater Level**

1. If the groundwater level is not within the allowable range established by the Alert Level in Section 4.2, Table 4.2.3.A, the permittee shall submit a written report to WQCS within 30 days after becoming aware of the exceedance. The report shall document the following:
  - a. the as-built configuration of the well including the screened interval;
  - b. all groundwater level measurements available for the well;
  - c. a discussion and analysis of any trends or seasonal variations in the groundwater level measurements;
  - d. information on groundwater recharge, withdrawal or other hydrologic conditions in the vicinity of the well; and
  - e. and any other pertinent information obtained by the permittee.
2. If the groundwater level is not within the allowable range established by the Alert Level in Section 4.2, Table 4.2.3.A for more than two sequential sampling events, the permittee shall submit a second report that evaluates the cause(s) of the exceedance and recommends whether the well should be replaced pursuant to Section 2.5.3.5. The report shall discuss and demonstrate whether samples representative of the water quality of the relevant aquifer can be practicably obtained from the well.
3. Upon review of the submitted report, the Department may amend the permit to require replacement of the well, require additional permit conditions or other actions.

**2.6.3 Discharge Limitations Violations**

**2.6.3.1 Liner Failure, Containment Structure Failure, or Unexpected Loss of Fluid**

In the event of overtopping, liner failure, containment structure failure, or unexpected loss of fluid such that leach fluids are discharged to the ground surface or to the vadose zone, 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.
2. Within 24-hours of discovery, notify ADEQ Water Quality Compliance Section, Enforcement Unit, orally, electronically, or by facsimile.
3. Within five (5) days of discovery of a failure that resulted in a release to the subsurface, collect representative samples of the fluid remaining in affected impoundments and drainage structures, analyze sample(s) according for the parameters listed in Section 4.2, Table 4.2.3.A and report in accordance with Section 2.7.3 (Permit Violation and AL Status Reporting). In the 30 day report required under Section 2.7.3, include a copy of the analytical results and forward the report to ADEQ Water Quality Compliance Section, Enforcement Unit and Water Permits Section.
4. Within fifteen (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 discharging to the discharging 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.
5. Record in the facility log/recordkeeping file the amount of fluid removed, a description of the removal method, and other disposal arrangements. The facility log/recordkeeping file shall be maintained

according to Section 2.7.2 (Operation Inspection / Log/Recordkeeping File).

6. Within thirty (30) days of discovery of the incident, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and AL 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 sixty (60) days of discovery, conduct an assessment of the impacts to the subsoil 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.
8. Within thirty (30) days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions).
9. 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 ADEQ Water Quality Compliance Section, Enforcement Unit.
3. Within 24 hours, collect representative samples of the fluid contained in the surface impoundment. Samples shall be analyzed for the parameters specified Section 4.2, Table 4.2.3.A. Within 30 days of the incident, submit a copy of the analytical results to ADEQ Water Quality Compliance Section, Enforcement Unit.
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 4.2.2.A. 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/Recordkeeping File).
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, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident.
8. If soil or groundwater is impacted such that it could 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 ADEQ Water Quality Compliance Section, Enforcement Unit.

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.

#### **2.6.3.2 Slope and Berm Failures**

If a slope or berm failure involving heap or dump leach facilities, waste rock dumps, tailings facilities, or retention structures (dams) occurs which affects the ability of the facility to operate in accordance with this permit or results in an unauthorized discharge, and conduct a field investigation 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 of this permit. The permittee shall initiate the actions necessary to mitigate the impacts of the failure, consistent with Department approval.

#### **2.6.4 Aquifer Quality Limit Violation**

1. If an AQL set in Section 4.2 Table 4.2.3.A has been exceeded, the permittee may conduct verification sampling within 5 days of becoming aware of an AQL 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.
2. If verification sampling confirms that the AQL is violated for any parameter or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring to monthly. In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, 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 unexpected discharge.

The permittee also shall submit a report according to Section 2.7.3, 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 90 days or a longer time period if agreed to by ADEQ 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 an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
4. The permittee shall notify any downstream or downgradient users who may be directly affected by the discharge.

#### **2.6.5 Emergency Response and Contingency Requirements for Unauthorized Discharges pursuant to A.R.S. §49-201(12) and pursuant to A.R.S. § 49-241 That Are Not Addressed Elsewhere in Section 2.6**

##### **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 ADEQ Water Quality

Compliance Section within 24 hours upon discovering the discharge of hazardous material which (a) has the potential to cause an AWQS or AQL to be exceeded, 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 ADEQ Water Quality Compliance Section within 24 hours upon discovering the discharge of non-hazardous material which (a) has the potential to cause an AQL to be exceeded, or (b) 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 ADEQ Water Quality Compliance 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. 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 that 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 Water Permits Section prior to implementing a corrective action to accomplish any of the following goals in response to exceeding an AL or violation of an 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; and/or
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 ADEQ Water Quality Compliance 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. When submitting hard copy, the permittee shall complete the Self-monitoring Report Form (SMRF) provided by ADEQ including contact information for the person completing the form. Submit the completed Form to the Water Quality Compliance Data and Enforcement Unit.
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 and submit the form to the Water Quality Compliance Data and Enforcement Unit. The permittee shall use the format devised by ADEQ.
3. The following tables contained in Section 4.2 list the parameters to be monitored and the frequency for reporting results on the SMRFs:
  - Table 4.2.1 Discharge Monitoring
  - Table 4.2.3.A Point of Compliance Groundwater Monitoring
  - Table 4.2.3.B Non Point of Compliance Groundwater MonitoringThe parameters listed in the identified tables from Section 4.0 are the only parameters for which SMRF reporting is required.
4. In addition to the SMRF, the information contained in A.A.C. R18-9-A206(B)(1) shall be included for exceeding

an AL or violation of an AQL, DL, or any other permit condition being reported in the current reporting period.

**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;
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 R18-9 A206(B)(2).

**2.7.3 Permit Violation and Alert Level Status Reporting**

1. The permittee shall notify the Water Quality Compliance Section in writing within 5 days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation or of an AL exceedance.
2. The permittee shall submit a written report to the Water Quality Compliance Section within 30 days of becoming aware of the violation of any permit condition or discharge limitation. The report shall document all of the following:
  - a. Permit section and description of the permit condition for which there has been a violation and a description of its 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**

**2.7.4.1 Annual Report**

The permittee shall submit an annual report to ADEQ Water Quality Compliance Section in accordance with Section 2.7.6 which includes the following:

1. Summary of the status of compliance under this permit
2. Identification of any contingency actions taken, violations of this permit, or alert levels or discharge limitations that have been exceeded
3. An estimate of the volume of the AOS pile at the end of the calendar year and the change in volume of the AOS pile during the calendar year.

**2.7.5 Reporting Location**

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality  
Water Quality Compliance, Data and Enforcement Unit  
Mail Code: 5415B-1  
1110 W. Washington Street  
Phoenix, AZ 85007  
Phone (602) 771-4681

All documents required by this permit to be submitted to the Water Quality Compliance Section shall be directed to:  
 Arizona Department of Environmental Quality  
 Water Quality Compliance Section  
 Mail Code: 5415B-1  
 1110 W. Washington Street  
 Phoenix, AZ 85007  
 Phone (602) 771-4497

All documents required by this permit to be submitted to the Water Permits Section shall be directed to:  
 Arizona Department of Environmental Quality  
 Water Permits Section  
 Mail Code: 5415B-3  
 1110 W. Washington Street  
 Phoenix, AZ 85007  
 Phone (602) 771-4428

**2.7.6 Reporting Deadline**

The following table lists the quarterly report due dates<sup>1</sup>:

<b>Monitoring conducted during quarter:</b>	<b>Quarterly Report due by:</b>
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

The following table lists the annual report due date:

<b>Monitoring conducted:</b>	<b>Report due by:</b>
Annual: January-December	January 30

**2.7.7 Changes to Facility Information in Section 1.0**

The Water Permits Section and Water Quality Compliance Section shall be notified within 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 Water Quality Compliance Section before ceasing operation of the facility for a period of 60 days or greater.

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’s 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 Water Quality Compliance Section 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 Water Quality Compliance Section of the permittee’s intent to cease operation without resuming activity for which the facility was designed or operated.

**2.9.1 Closure Plan**

Within 90 days following notification of closure, the permittee shall submit for approval to the Water Permits Section,

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<sup>1</sup>A post-mark date no later than the due date is considered meeting the due date requirements under this Section.

a schedule for implementation of the closure plan submitted and approved in this permit amendment which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3). The closure plan and schedule shall include the following specific activities

#### **2.9.1.1 Slurry Ponds**

- 1) The fluids present within the ponds shall be evaporated and/or infiltrated into the remaining AOS pile beneath the ponds.
- 2) Once the fluids have evaporated and infiltrated, the two Slurry Ponds shall be backfilled with AOS to promote positive drainage.
- 3) The AOS material shall be processed within the Wash Plant with the aluminum being removed and the oxide solids being sent off-site to an end-user, or disposed of offsite.
- 4) Once the AOS pile has been removed, soil samples shall be collected and analyzed at five depths from the top of natural soil to the top of groundwater (approximately 60 ft. bgs) in eight soil borings (at a frequency of one boring every quarter acre) beneath the two Slurry Ponds. The soil shall be analyzed for the analytes listed in Section 4.3, Table 4.3.1.
- 5) If any analyte is detected above a groundwater protection level (GPL), additional soil investigation shall be conducted to determine the lateral and vertical extent of contamination.
- 6) A soil remediation and confirmation soil sampling plan shall be submitted for ADEQ's approval.

#### **2.9.1.2 Brine Solution Pond and Heap Separation Pad**

- 1) Fluids, sediments, liners and associated piping shall be removed and disposed of off-site in accordance with applicable requirements. The liners shall be inspected during removal.
- 2) Soil samples shall be collected and analyzed beneath both facilities for the list of pollutants listed in Section 4.3, Table 4.3.1. Soil samples shall be collected at a frequency of one per quarter acre of pond or pad design feature, except for Dioxin, which shall be analyzed only once per facility.
- 3) The facilities shall be filled with soil that was originally removed when the facilities were constructed and the site will be properly graded to divert run-on and run-off away from the site.

#### **2.9.2 Closure Completion**

Upon completion of closure activities, the permittee shall give written notice to the Water Permits Section 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 1 year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with AWQS at the applicable POC;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remediation or mitigation measures are necessary to achieve compliance with Title 49, Ch. 2; and/or
5. Further action is necessary to meet property use restrictions.

#### **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 Water Permits Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Water Permits 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(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**

The post-closure plan shall include:

1. Remediation or mitigation measures necessary to achieve compliance with Title 49, Ch. 2,
2. Groundwater monitoring for thirty (30) years.

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

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Water Permits Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section.

CSI No.	Description	Due by:	Amend. 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, No. 2 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.	Every 6 years from the date of permit signature, 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.	Every 6 years from the date of permit signature, for the duration of the permit.	Yes
3	Submit the report titled <i>Hydrological Investigation Report, Imsamet of Arizona, 3829 South Estrella Parkway, Goodyear, Arizona</i> , dated January 2008, prepared by ERM. Also, provide groundwater monitoring data from January 2008 through December 2015, and provide an analysis of the groundwater elevations and groundwater quality parameters using the same or similar methods used in the 2008 report.	60 days from the date of permit signature.	No
4	The permittee shall cease discharge of wet grinding mill slurry to the Slurry Ponds (North and South) and provide written notification that the discharge has ceased.	Within 18 months from the date of permit signature.	No
5	The permittee shall cease discharge of wash plant wash water to the Slurry Ponds (North and South) and provide written notification of the intent to close as required by Section 2.9.	Within 57 months from the date of permit signature.	No
6	The permittee shall provide a schedule for implementation of the closure plan for the Slurry Ponds (North and South) as required by Section 2.9.1. The schedule shall be submitted as an amendment application to the permit and shall be incorporated into the permit along with requirements for periodic status reports of closure activities to ADEQ.	Within 90 days of providing the written notification of intent to close the Slurry Ponds required by Section 2.9 and CSI #4.	Yes

## **4.0 TABLES**

### **4.1 BADCT TABLE**

- TABLE 4.1.1 BADCT TABLE

### **4.2 REQUIRED MONITORING**

- TABLE 4.2.1 DISCHARGE MONITORING
  
- TABLE 4.2.2.A OPERATIONAL MONITORING  
TABLE 4.2.2.B LCRS MONITORING
  
- TABLE 4.2.3.A POINT OF COMPLIANCE GROUNDWATER MONITORING  
TABLE 4.2.3.B NON POINT OF COMPLIANCE GROUNDWATER MONITORING

### **4.3 CLOSURE SOIL SAMPLING**

- TABLE 4.3.1 CLOSURE SOIL SAMPLING

4.1 BADCT TABLE

**TABLE 4.1.1  
BADCT TABLE**

<b>Table 4.1.1 Permitted Facilities and BADCT</b>		
<b>Facility Name</b>	<b>Latitude/Longitude</b>	<b>Facility BADCT</b>
Slurry Pond - North	33° 24' 45.4" North 112° 23' 19.0" West	The pond does not meet the requirements of A.R.S. 49-243.B, and will close in accordance with permit Section 2.9.1 and Section 3.0, Compliance Schedule Items 4 and 5. A freeboard of 2-feet shall be maintained.
Slurry Pond - South	33° 24' 42.8" North 112° 23' 19.0" West	The pond does not meet the requirements of A.R.S. 49-243.B, and will close in accordance with permit Section 2.9.1 and Section 3.0, Compliance Schedule Items 4 and 5. A freeboard of 2-feet shall be maintained.
Brine Solution Pond	33° 24' 41.8" North 112° 23' 22.6" West	The pond is constructed with a 60-mil high density polyethylene (HDPE) flexible membrane upper liner, leak collection and removal system (LCRS) composed of geonet layer, and a lower liner consisting of a 60-mil HDPE flexible membrane. The double liner system overlies a GSE Bentoliner NSL layer and 6 inches of prepared subgrade. A freeboard of 2-feet shall be maintained. The containment berms are constructed with a slope that is no steeper than 2(H):1(V). Anchor trenches are constructed around the perimeter of the ponds. The anchor trenches are constructed 2-feet in depth and have a 2-foot wide flat bottom. Wash plant wash water will drain to the Brine Solution Pond from the Heap Separation Pad through a 24-inch diameter Schedule 40 polyvinylchloride (PVC) pipe.
Heap Separation Pond	33° 24' 39.9" North 112° 23' 22.1" West	The Heap Separation Pad is lined using 60-mil flexible membrane overlying a GSE bentoliner NSL layer and 6-inch prepared subgrade layer. On top of the HDPE liner, a nonwoven needle-punched geotextile layer has been placed, above which an 18-inch drainage layer with 4-inch SCH 40 slotted PVC drainage pipes has been placed. Above this layer a minimum of 30 inches of aluminum oxide solids (AOS) has been placed in 1-foot layers compacted to 90% of maximum dry density. A layer of 0.5 to 0.75 inch river rock has been placed over the AOS layer. Up to 7 feet of separated AOS shall be placed on top of the river rock layer. Compacted AOS material has been used to form a berm around the separated AOS. Erosion protection for the containment berm has been provided using GSE Hypernet HDPE Geonet (200 mil) underlined by nonwoven needle-punched geotextile (GSE NW 16) layer. Side slopes shall be no steeper than 2(H):1(V) in the design.  AOS and/or wash plant wash water shall be applied to the separation pad from the center of the pad from a nozzle designed to rotate 360 degrees or from 20 feet inside the perimeter directed in a 120-degree arc toward the center of the pad or by using a 3- to 4-inch diameter Schedule 40 PVC discharge line. Sprinklers shall be stopped if the wind speed exceeds 25 mph.

4.2 REQUIRED MONITORING

**TABLE 4.2.1  
DISCHARGE MONITORING**

Sampling Point Number	Discharging Facility	Latitude	Longitude	Inflow (gallons/day)	Monitoring Frequency	Monitoring Method	Reporting Frequency
1	Slurry Pond - North	33° 24' 45.4" North	112° 23' 19.0" West	Monitor <sup>2</sup>	Daily	Flow Meter	Quarterly
2	Slurry Pond - South	33° 24' 42.8" North	112° 23' 19.0" West	Monitor	Daily	Flow Meter	Quarterly
3	Brine Solution Pond	33° 24' 39.9" North	112° 23' 22.6" West	Monitor	Daily	Flow Meter	Quarterly
4	Heap Separation Pad	33° 24' 41.8" North	112° 23' 22.6" West	Monitor	Daily	Flow Meter	Quarterly

**TABLE 4.2.2.A  
OPERATIONAL MONITORING – LOG BOOK<sup>3</sup>**

Pollution Control Structures/Parameter	Performance Alert Level	Inspection Frequency	Reporting Frequency
Heap Separation Pad	No visible structural damage, deterioration, breach or runoff over berm	Weekly	See Section 2.7.3
Slurry Ponds and Brine Pond Freeboard	Maintain a minimum of 2 feet	Weekly	See Section 2.7.3
Slurry Ponds and Brine Pond Integrity	No visible structural damage, deterioration, breach, or erosion of embankments, no seepage or runoff through or over berm	Weekly and after significant rainfall <sup>4</sup> events	See Section 2.7.3
Slurry Pond and Brine Pond Fluid Level	No unexpected or sudden loss of fluid	Weekly and after significant rainfall events	See Section 2.7.3
Brine Pond Leak Detection and Collection System	Measure leak flow rate and check against AL1 and AL2 in Table 4.2.2.B	Weekly	See Section 2.7.3

<sup>2</sup> Monitoring required, but no limits established.

<sup>3</sup> 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.

<sup>4</sup> A significant rainfall event shall be defined as 0.50 inches or greater of precipitation within a 24-hour period.

**TABLE 4.2.2.B**  
**LCRS MONITORING – LOG BOOK<sup>5</sup>**

<b>LCRS Sump</b>	<b>Parameter</b>	<b>AL1 gallons per day (gpd)</b>	<b>AL2 gallons per day (gpd)</b>	<b>Monitoring Method</b>	<b>Monitoring Frequency</b>
Brine Pond	Liquid Pumped <sup>6</sup>	1043	8,285	Automated	See Section 2.7.3

Note: The Alert Level 1 (AL1) or Alert Level 2 (AL2) shall be exceeded when the amount of leakage pumped from the sump for the evaporation pond is greater than the applicable quantity above. Contingency requirements of Sections 2.6.2.3 and 2.6.2.4 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

<sup>5</sup> 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.

<sup>6</sup> The “Liquid Pumped” is the amount of liquid pumped from the LCRS sump in gallons per day (gpd).

TABLE 4.2.3.A

**POINT OF COMPLIANCE GROUNDWATER MONITORING**

Sampling Point Number	Identification	Latitude	Longitude
5	MW# 2	33° 24' 42.0" North	112° 23' 30.8" West

Parameter	Alert Level	AQL	Units	Sampling Frequency	Reporting Frequency
Water Level 1 (measured as feet below ground surface)	>45	Not applicable	feet	Quarterly	Quarterly
Water Level 2 (measured as feet below ground surface)	<85	Not applicable	feet	Quarterly	Quarterly
<b>Nutrients<sup>1</sup>:</b>					
Ammonia	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Nitrogen <sup>2,3</sup>	359	Monitor	mg/l	Quarterly	Quarterly
Nitrate-Nitrite as N <sup>3</sup>	55	Monitor	mg/l	Quarterly	Quarterly
Nitrate	Monitor	Monitor	mg/l	Quarterly	Quarterly
Nitrite	Monitor	1.0	mg/l	Quarterly	Quarterly
Total Kjeldahl Nitrogen (TKN)	Monitor	Monitor	mg/l	Quarterly	Quarterly
<b>Indicator Parameters &amp; Metals (Total) :</b>					
Aluminum	Monitor	Monitor	mg/l	Quarterly	Quarterly
Antimony	0.0048	0.006	mg/l	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.008	0.010	mg/l	Quarterly	Quarterly
Calcium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Chloride	Monitor	Monitor	mg/l	Quarterly	Quarterly
Chromium	0.08	0.10	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Iron	Monitor	Monitor	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Magnesium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Manganese	Monitor	Monitor	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	Monitor	Monitor	mg/l	Quarterly	Quarterly

<b>Parameter</b>	<b>Alert Level</b>	<b>AQL</b>	<b>Units</b>	<b>Sampling Frequency</b>	<b>Reporting Frequency</b>
pH	Monitor	Monitor	Standard Units	Quarterly	Quarterly
Potassium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Silver	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sodium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Specific Conductance	Monitor	Monitor	umhos/cm	Quarterly	Quarterly
Sulfate	Monitor	Monitor	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly
Total Alkalinity	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Dissolved Solids	Monitor	Monitor	mg/l	Quarterly	Quarterly
Total Phosphorus	Monitor	Monitor	mg/l	Quarterly	Quarterly

- 1 A use protection level may be set at the non-hazardous point of compliance for nitrate in accordance with Section 3.0.
- 2 Total Nitrogen is equal to Nitrate-Nitrite-N plus TKN.
- 3 Alert level equals the mean plus 2 standard deviations for data collected from October 2000 to November 2003.

**TABLE 4.2.3.B  
NON POINT OF COMPLIANCE GROUNDWATER MONITORING**

Sampling Point Number	Identification	Latitude	Longitude
6	MW# 1	33° 24' 42.2" North	112° 23' 16.3" West
7	MW# 3	33° 24' 48.6" North	112° 23' 22.4" West

Parameter	Alert Level	AQL	Units	Sampling Frequency	Reporting Frequency
<b>Nutrients:</b>					
Total Nitrogen <sup>1</sup>	Monitor Only	Monitor Only	mg/l	Quarterly	Quarterly
Nitrate as N	Monitor Only	Monitor Only	mg/l	Quarterly	Quarterly
Nitrite as N	Monitor Only	Monitor Only	mg/l	Quarterly	Quarterly
Nitrate-Nitrite as N	Monitor Only	Monitor Only	mg/l	Quarterly	Quarterly
Sulfate	Monitor Only	Monitor Only	mg/l	Quarterly	Quarterly
Total Dissolved Solids	Monitor Only	Monitor Only	mg/l	Quarterly	Quarterly

**TABLE 4.3.1  
CLOSURE SOIL SAMPLING**

<b>Parameter Soil Sample Analyte List</b>	
Aluminum	Thallium
Antimony	Zinc
Arsenic	Nitrate
Barium	Nitrite
Beryllium	Total Kjeldahl Nitrogen
Cadmium	Total Nitrogen
Total Chromium	Ammonia as Nitrogen, NH <sub>3</sub>
Hexavalent Chromium	Sulfate
Lead	Dioxin – including 2,3,7,8-TCDD
Mercury	Sodium
Nickel	Potassium
Selenium	Chloride
Silver	Fluoride

**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:

1. APP Application November 8, 2002, and subsequent information provided.
2. APP Amendment Application dated February 26, 2015, and subsequent information provided.
3. Public Notice dated May 20, 2016.
4. Public Hearing dated
5. Responsiveness Summary dated

## **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 upon the amount of daily influent or discharge of pollutants in gallons per day as established by A.R.S. § 49-242.

### **6.2 Duty to Comply [A.R.S. §§ 49-221 through 49-263]**

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 at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an aquifer water quality standard 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(D), 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.
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. §§ 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.

### **6.9 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 specified by this permit.

### **6.10 Permit Action: Amendment, Transfer, Suspension & 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, renewed, or revoked for cause, under the rules of the Department.

The permittee shall notify the Water Permits 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 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).