

**STATE OF ARIZONA**  
**AQUIFER PROTECTION PERMIT NO. P- 105954**  
**PLACE ID 129326, LTF 45919**

**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, Redhawk Copper, Inc. is hereby authorized to operate the Copper Creek Development Rock Disposal Facility on East Copper Creek Rd located in Mammoth Arizona, Pinal County over groundwater of the Lower San Pedro Watershed, in Section 10 and 11, Township 8, Range 18 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**

<b>Facility Name:</b>	Copper Creek Development Rock Disposal Facility	
<b>Permittee:</b>	<b>Mailing Address:</b>	<b>Facility's Street Address:</b>
Redhawk Copper Inc.	6868 North 7 <sup>th</sup> Avenue, Suite 204, Phoenix, Arizona 85013-1150	East Copper Creek Rd.
<b>Facility Contact:</b>	R. Joe Sandberg	520-609-3815
<b>Emergency Telephone Number:</b>	520-609-3815	
<b>Latitude:</b>	32° 45' 16.85" North	<b>Longitude:</b> 110° 29' 8.38" West

**Legal Description:** Northeast ¼ of Section 10 and a portion of the Northwest ¼ of Section 11, Township 8 South, Range 18 East, Gila and Salt River Base Line and Meridian, in Pinal County, Arizona

**1.2 AUTHORIZING SIGNATURE**

\_\_\_\_\_  
**Henry R. Darwin, Acting Director**  
**Water Quality Division**  
**Arizona Department of Environmental Quality**

Signed this \_\_\_\_ day of \_\_\_\_\_, 2009

**2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]**

The Development Rock Disposal Facility (DRDF) shall be designed and operated in accordance with Aquifer Protection Permit (APP) requirements. Redhawk Copper, Inc. (Redhawk) shall complete approximately 19,000 feet of underground mining (excavation) to provide access to the Childs-Aldwinkle, Mammoth, Old Reliable, and other local ore bodies for the Copper Creek Project. Underground tunneling will primarily occur between and adjacent to identified ore bodies in unmineralized igneous and metamorphic rock. Locally, tunneling will extend into the ore bodies to enable collection of bulk metallurgical samples and investigation of other economic and engineering factors associated with underground mining. Development work is anticipated to produce approximately 353,000 tons of rock that will be placed directly on the land surface with no liner, to form a stockpile. A lined non-stormwater pond shall collect any discharge.

The Copper Creek property, Bunker Hill District, Pinal County, is located along the western portion of Galiuro Mountains. The geology is comprised mainly of Laramide age crystalline units consisting of volcanic flows and agglomerate units. These rocks are intruded by the Copper Creek granodiorite stock. Adjacent to the granodiorite, the volcanics are thermally altered into a dense, brittle hornfels which are themselves intruded by a variety of porphyry stocks. Associated with the porphyry bodies are numerous breccia bodies resembling pipe-like, near vertical zones of highly fractured rock. The spaces between the fractured pieces of rock are filled with material consisting of quartz, sericite, and sulfide minerals.

**Geology**

The Copper Creek mining district hosts numerous breccia pipes in addition to deep seated porphyry-style, stockwork copper mineralization and local lead-silver veins. The breccia pipes are confined to the late Cretaceous/early Tertiary Copper Creek Granodiorite cemented by quartz, chalcopyrite, bornite, anhydrite, and calcite. The project is focused on the Mammoth, Childs-Aldwinkle, and Old Reliable breccias, which are hosted entirely within the granodiorite.

Age dating suggests a minimum age of 62.1 – 60.8 million years ago (Ma) for the Copper Creek Granodiorite. Recent testing of hydrothermal minerals indicates an age of  $60.0 \pm 0.9$  Ma for the copper mineralization.

Soils at the project site are thin or non-existent. Granodiorite outcrops over most of the project area, with soil accumulations limited to a few inches or less. Minor amounts of alluvial material occur in the local water courses.

**Groundwater Information**

Local groundwater occurs in fractured crystalline bedrock. There are no extensive alluvial deposits in the vicinity of the DRDF and groundwater resources are limited. Monitoring wells were installed adjacent to Copper Creek (MW 2), and Saloon Gulch (MW 3). Saloon Gulch is ephemeral stream adjacent to the western edge of the DRDF. Saloon Gulch is a tributary to Copper Creek. In MW-3 the static water elevation was 3,995 feet amsl or 15.8 feet below ground surface (bgs). In MW-2 the static water elevation was 3625 feet amsl or 24.4 feet bgs. MW 2 is roughly southwest of MW-3. These two wells are located parallel to the expected regional groundwater flow direction towards Copper Creek. Based on the data from these two wells, the regional gradient beneath the DRDF is 0.17 feet/foot to the south- southwest. Locally, the gradient can be expected to vary as groundwater flow in the granodiorite is fracture controlled. Permeability in the granodiorite can be expected to be low; however, fracturing and geologic structures may result in locally high secondary permeability.

Several historic mine openings can be found in the vicinity below the elevation of the DRDF in Saloon Gulch, in tributaries to Saloon Gulch and adjacent Copper Creek. Existing openings appear to be dry, suggesting there is no local groundwater mound in the vicinity of the DRDF.

**2.1 Facility / Site Description[A.R.S. § 49-243(K)(8)]**

Redhawk proposes to place approximately 353,000 tons of development rock on the land surface with no liner, and complete approximately 19,000 feet of underground tunneling to provide access to the Childs-Aldwinkle, Mammoth, Old Reliable, Copper Prince, and other local ore bodies for the Copper Creek Project. This APP is for the development phase of the Copper Creek Project and the name of the approximate 3.5-acre area covered by this permit is the DRDF.

Driving the decline and tunneling shall generate up to 353,000 tons of development rock. It is expected initially that the rock being generated and stockpiled shall be un-mineralized. Toward the end of the development phase, it is expected that some of the rock being generated and stockpiled shall be mineralized. At that time, the lower portion of the DRDF shall exist and any mineralized rock being generated by driving the decline and tunneling shall be placed on the upper portion of the DRDF.

The 353,000-ton DRDF of development rock consists of a lower portion and an upper portion. The lower portion of the stockpile shall consist of 291,000 tons predicted to have acid neutralization potential and be “inert” generated from constructing access tunnels, vent raises and ramp areas. The remaining 62,000 tons is predicted to have some mineralization and will be generated from constructing ore body cross cuts and access drifts. The 62,000 tons shall be placed on the upper portion of the stock pile.

The facilities listed in this permit are subdivided into two categories: (1) those already having a designation of being a discharging facility by virtue of ADEQ evaluation of the BADCT relating to each and (2) those facilities requiring further compliance schedule evaluation before ADEQ can evaluate their classification as non-discharging (exempt) or discharging with the requirement to demonstrate BADCT. This second category relies on Redhawk submittals through the Compliance Schedule.

Also, there are two facilities lying somewhat remote from the mine facilities area near the underground mine entrance (decline portal). These are the second mine entrances accommodating ventilation and emergency escapeways. The surface installations at each of these require similar evaluation by ADEQ through the Compliance Schedule.

### **2.1.1 Permitted Discharging Facilities**

The mine facilities area is estimated to have an approximate total area of 40,000 square feet (200 by 200 feet). It will include the surface structures directly supporting the underground development and is immediately adjacent to and encompassing the decline portal itself. Within the mine facilities area are several discharging facilities commonly involved on this type of mine development project and which initially may be of temporary or portable construction to support use by a mining contractor. It is premature at this stage of the project to provide exact locations and sizing of these facilities, and some may be made more permanent if the decision is made to go into production. Locations provided below are relative to the decline portal which is located on the far eastern side of the mine facilities area at an elevation of about 3,950 feet.

#### **2.1.1.1 Non-stormwater Pond**

The pond centroid is located about 240 feet south of the portal immediately below and west of the DRDF. This pond receives all water from the DRDF. The pond may receive water encountered underground while driving the decline as part of a contingency plan. The pond may also receive water from the Facilities Area Drainage Ditch once the Facilities Area Drainage Ditch is characterized. The pond is designed for the 100-year, 24-hour storm event. Construction of this facility shall be completed prior to blasting, excavating and stockpiling rock.

#### **2.1.1.2 Development Rock Disposal Facility**

During construction of the underground workings consisting of the decline from the portal down to the underground openings driven off of the decline, such as drifts cross-cuts, raises, etc., the blasted material consisting of waste rock shall be hauled in mine trucks up the decline and to an area designated as the Development Rock Disposal Facility. The centroid

of this area is located about 480 feet southeast of the decline portal in a small, unnamed gulch running downgradient to the west into Saloon Gulch. Dumped waste shall extend about 780 feet along the gulch to a top elevation of about 4,080 feet. Total development rock during the initial development phase is estimated to be about 353,000 tons. Maximum dimensions of the Development Rock Disposal Facility are about 780 feet in length, 300 feet in width, and 100 feet in depth. Side slopes shall be maintained at close to 2H:1V (horizontal to vertical) including safety berms on the down gradient slope into the gulch. Testing has indicated this development rock is not subject to generation of acid mine drainage, but a program of inspection to check the loads of broken rock placed in this pile shall be required per Table 2B Required Inspections and Operational Monitoring to maintain this non-acid generating character through-out the period of usage for disposal. This is due to ADEQ's decision to not require placing a liner under this pile as part of BADCT, as long as Redhawk documents that non-acid generating material being placed in the lower portion of the DRDF and any mineralized rock, ore or acid generating material be placed in the upper portion of the DRDF. The upper portion of the DRDF shall not exceed 62,000 tons.

When the decline comes close to projections of potential ore zones, a cross-cut (horizontal level opening) is extended from the decline to intercept the ore projections. Whenever encountered, mineralized material shall be hauled up the decline to the surface and taken to the upper portion of the DRDF located above the 4,080 feet top elevation. Total development rock placed in the upper portion of the DRDF during the initial development phase shall be limited to 62,000 tons. This upper portion of the stockpile may be hauled offsite for bulk sampling and assaying for mill design work, and if not gone in 3 years either be sold to an offsite buyer or loaded and hauled back down the decline for placement underground. Testing has shown this 3-year period does not allow for pollution from acid mine drainage.

## **2.1.2 Facilities Requiring Further Compliance Schedule Evaluation**

### **2.1.2.1 Maintenance Shop**

The maintenance shop is located about 120 feet west and north of the portal. Its function is to house the tools and equipment required to keep the mining equipment fleet operating at a high level of efficiency following a schedule of preventive maintenance and repairing the equipment as breakdowns occur.

### **2.1.2.2 Vehicle Wash Bay**

The vehicle wash bay is envisioned to be about 80 feet west and north of the portal, and adjacent to the shop on the shop's east side. This facility's primary function is to clean the mining related equipment to optimize working performance and shall include an oil/water separator. Oil and sludge from the oil/water separator shall be routinely removed and adequately characterized for offsite disposal. The influent to the separator shall meet the requirements of the manufacturer specifications with respect to pH, flow, and influent concentrations. Exceedance of the pretreatment capacity of the oil/water separator shall be a permit violation.

### **2.1.2.3 Warehouse**

The warehouse is tentatively located about 150 feet west and north adjacent to the shop on its west side.

### **2.1.2.4 Dry / Washroom Trailers**

Two dry/washroom trailers are planned at a location about 160 feet southwest of the portal. The dry provides showers for those coming from working underground and offers secure storage of street and work clothing. Shower water and toilet sewage are directed into a temporary underground storage tank.

**2.1.2.5 Generators**

The anticipated location of the electric generators is about 70 feet due west of the portal. They provide the electrical needs of the mine site and may initially be portable types.

**2.1.2.6 Compressors**

The anticipated location of the air compressors is about 60 feet west of the portal and to the south of the generators. They provide the compressed air needs of the mine site and underground operations and may initially be portable types.

**2.1.2.7 Fenced Yard**

The expected location is about 170 feet west and north of the portal. As a fenced area, it provides secure storage for mining supplies and material, excluding explosives which require special storage according to Federal regulations.

**2.1.2.8 Facilities Area Drainage Ditch**

Ditch constructed around the mine facility area on the north, west and southwest sides to direct non-stormwater runoff into the non-stormwater pond.

**2.1.2.9 Underground Sewage Storage Tank**

The underground sewage storage tank is located about 140 feet southwest of the portal. This tank will be periodically pumped for disposal off-site.

**2.1.2.10 Surface Installation for Ventilation & Emergency Escape Way**

Current development planning includes two vertical openings connecting the underground workings to the surface to provide ventilation and escape routes. The locations of the two vent raise points are about 2,900 feet southeast of the portal and 1,200 feet southeast of the portal. Each may be equipped with a ventilation fan and a head-frame with an accompanying hoisting plant powered by a diesel generator.

The site includes the following permitted discharging facilities:

Facility	Latitude	Longitude
Non-stormwater Pond	32° 45' 16" N	110° 29' 16" W
Development Rock Disposal Facility Lower portion 291,000 tons below 4,080 elevation Upper portion 62,000 tons above 4,080 elevation	32° 45' 17" N	110° 29' 10" W

Facilities requiring further compliance schedule evaluation:

Facility	Latitude	Longitude
Maintenance Shop	32° 45' 18" N	110° 29' 17" W
Vehicle Wash Bay	32° 45' 18" N	110° 29' 17" W
Warehouse	32°45' 18" N	110° 29' 17" W
Dry/Washroom Trailers	32° 45' 18" N	110° 29' 17" W
Generators	32° 45' 18" N	110° 29' 17" W
Compressors	32° 45' 18" N	110° 29' 17" W
Fenced Yard	32° 45' 18" N	110° 29' 17" W
Facilities Area Drainage Ditch	32° 45' 18" N	110° 29' 17" W
Underground Sewage Storage Tank	32° 45' 18" N	110° 29' 17" W
Surface Installation for Ventilation & Emergency Escapeway	32° 45' 11"N	110° 29' 04" W
Surface Installation for Ventilation & Emergency Escapeway	32° 44' 57" N	110° 28' 52" W

Note: Latitude and longitude shown for facilities represent centroid coordinates.

**Annual Registration Fee [A.R.S. § 49-242]**

The Annual Registration Fee for this permit is established by A.R.S. § 49-242 and is payable to ADEQ each year. The design flow is 2,300 gallons per day.

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

Redhawk has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. Redhawk shall maintain financial capability throughout the life of the facility. The estimated closure and post-closure cost is \$189,000. The financial capability was demonstrated through a Certificate of Deposit under R18-9-A203(C)(3).

**2.2 Best Available Demonstrated Control Technology**

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

The construction and operational parameters listed, in addition to design criteria and site characteristics described in the APP application, constitute BADCT for this facility.

**2.2.1 Engineering Design**

Engineering design is include in Section 4.2, Table 2A Facilities Subject to BADCT Requirements.

**2.2.2 Site-specific Characteristics**

Site-specific characteristics were not used to demonstrate compliance with BADCT Requirements.

**2.2.3 Pre-operational Requirements**

Not applicable

**2.2.4 Operational Requirements**

If damage is identified during an inspection that could cause or contribute to a discharge, proper repairs shall be promptly performed.

The permittee shall comply with all inspections operational and operational monitoring in Section 4.2, Table 2B.

**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 and the facilities area drainage ditch to prevent unauthorized discharges pursuant to A.R.S. §§ 49-201(12) resulting from failure or bypassing of BADCT pollutant control technologies including liner failure, uncontrollable leakage, overtopping (e.g., exceeding the maximum storage capacity, defined as a fluid level exceeding the crest elevation of a permitted impoundment), berm breaches that result in an unexpected loss of fluid, accidental spills, or other unauthorized discharges. 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(s) of Compliance [A.R.S. § 49-244]**

The hazardous/non-hazardous POC numbered MW-3 is less than 750 feet from the footprint of the 353,000-ton DRDF. MW-3 is screened from 27 to 57 feet below ground surface (bgs) and the static water level is typically above the top of screened interval. Water quality samples collected from this well shall be considered representative of the water quality in the uppermost aquifer beneath the DRDF. Only POC MW-3 is required at this time.

The POC is established by the following monitoring location:

Well #	Descriptive Location	Latitude	Longitude
MW-3	MW-3 is located at the western end of the PMA and adjacent to the eastern side of Saloon Gulch.	32° 45' 15.88" N North American Datum of 1983	110° 29' 16.89" W North American Datum of 1983

Monitoring requirements for the POC is listed in Section 4.2, Table 2B and 2C.

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

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

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. 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. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and EPA 40 CFR PART 136 for guidance in this regard. 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**

Discharge monitoring and characterization are required for this facility. Sampling is required at the non-stormwater pond. An initial grab sample from the non-stormwater pond shall be collected at the first opportunity when water is present. Thereafter, an annual grab sample shall be collected at any time during the year when water is present. The sample shall be tested for the list of pollutants in Table 2C. The Alert Levels (ALs) and Discharge Limitations (DLs) shall be set at “monitor”.

**2.5.2 Facility / Operational Monitoring**

The permittee shall inspect the facilities according to Section 4.2, Table 2B.

**2.5.3 Groundwater Monitoring and Sampling Protocols**

Groundwater monitoring is required to establish ambient groundwater quality in MW-3 and the eight rounds of sampling have been completed. A total of eight rounds of sampling and testing is required to establish the ambient groundwater quality for selected pollutants listed in A.A.C. R18-9-11-406 and other pollutants that have no numeric AWQS, such as sulfate, total dissolved solids (TDS), and total petroleum hydrocarbons (TPH). The list of pollutants and parameters required to be tested for during ambient and routine groundwater sampling is presented in Section 4.2, Table 2C and 2D respectively.

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).

The permit compliance schedule shall require an ambient groundwater monitoring report to be submitted for POC well MW-3 along with proposed ALs and Aquifer Quality Limits (AQLs) for pollutants that have ALs and AQLs designated as “Reserved” at the time of permit issuance. The report shall be submitted with an amendment application and the appropriate fee.

Routine groundwater sampling at POC MW-3 shall be required at a frequency of once every 3 months (quarterly).

**2.5.3.1 POC Well Replacement**

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, insufficient water in the well for more than two sampling events, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is 50 feet or less from the original well, the ALs and/or AQLs calculated for the designated POC well shall apply to the replacement well.

**2.5.4 Rock Inspection and Classification**

A geologist or trained technician will inspect each muck pile (blasted and broken rock) before removal from the active heading. A fizz test will be conducted at the active heading with dilute hydrochloric acid (HCL). The visual inspection and fizz test will guide the placement of blasted material onto either the upper or lower portion of the DRDF. Mine staff shall maintain a log that indicates the date, name of person performing the inspection, shot identification number, location of shot, observations, designation / muck placement location, specified testing, test results and final destination. This testing shall be done as described in the document titled: Development Rock Management and Contingency Plan for the Copper Creek Development Project dated September 12, 2008, prepared by Golder Associates. The log shall be submitted quarterly per the schedule outlined in Section 2.7.6 in the SMRF.

**2.5.5 Rock Type Monitoring**

Monitoring and segregating of rock type being generated by driving the decline and tunneling will be done as described in the document titled: Development Rock Management and Contingency Plan for the Copper Creek Development Project dated September 12, 2008, prepared by Golder Associates. Acid Base Accounting (ABA) tests shall be done at a frequency based on the blasting frequency shown in the table below. ABA testing includes a measurement of the Acid Neutralization Potential

(ANP) and the Acid Generating Potential (AGP) of the blasted and broken rock. SPLP (Synthetic Precipitation Leaching Potential EPA Method 1312), shall be done monthly. SPLP testing indicates if meteoric water could leach pollutants from the blasted and broken rock. Each quarter a summary of inspections and testing shall be reported in the SMRF.

Redhawk has estimated the tons of each rock type to be generated as time elapses. The estimates are found in Attachment 9, Table 5, Stockpile Production Schedule. If the tons of mineralized rock produced exceed the schedule by more than 10 percent, then Redhawk shall be required to implement contingency actions specified in Section 2.6.1.

Time Period	ABA Test Frequency	Leach Test Frequency (EPA Method 1312)	Reporting Frequency
Initial – Start-up	Each 40 shots, approximately one test per 20 days	Once per month	Quarterly
Stage 2; month 3 or later	Each 20 shots, approximately one test per 10 days	Once per month	Quarterly
Stage 3; month 6 or later	Each 10 shots, approximately one test per 5 days	Once per month	Quarterly

**2.5.6 Analytical Methodology**

All samples collected for compliance monitoring shall be analyzed using Arizona state approved methods. If no state approved method exists, then any appropriate EPA approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. 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

**2.5.7 Installation and Maintenance of Monitoring Equipment**

Monitoring equipment required by this permit shall be installed and maintained so that representative samples required by the permit can be collected. If new groundwater wells are determined to be necessary, the construction details shall be submitted to the ADEQ Groundwater 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 the approved contingency and emergency response plan(s) submitted in the APP application and titled Contingency Plan, Copper Creek Development Project prepared by Golder Associates dated August 24, 2007, 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 that is exceeded or any violation of an AQL, 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.

If significant quantities of mineralized rock are generated prior to the lower portion of the DRDF reaching the elevation of 4,090 feet, then the mineralized material can be used as backfill in underground mine openings that are no longer needed or the material can be shipped off-site.

## **2.6.2 Exceeding of Alert Levels**

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

1. If the operational AL set in Section 4.2, Table 2B has been exceeded the permittee shall
  - a. The permittee shall notify the ADEQ within 5 days of becoming aware of an exceedance of an alert level. Within 30 days of a confirmed exceedance of the Alert Level, the permittee shall submit a written report to the ADEQ that includes the documents specified in Section 2.7.3 of this permit. In addition to actions already taken, the report shall detail additional response actions to be taken.
2. 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 of Alert Levels Set for Discharge Monitoring**

Discharge monitoring is required per 2.5.1.

### **2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring**

#### **2.6.2.3.1 Alert Levels for Indicator Parameters**

1. If an AL for an indicator parameter set in Section 4.2, Table 2D has been exceeded, the permittee may sample for the complete set of pollutants listed in Section 4.2, Table 2D at the frequency specified in that Table.
2. The permittee shall continue testing for this set of pollutants until all indicator parameters have remained below the AL for four consecutive sampling events.

#### **2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards**

1. If an AL for a pollutant set in Section 4.2, Table 2D has been exceeded; the permittee may conduct verification sampling within 5 days of becoming aware of an AL being exceeded. 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 being exceeded 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 being exceeded, 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 being exceeded. 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 Groundwater 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 Groundwater Section.
4. Within 30 days after confirmation of an AL being exceeded, 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 being exceeded, 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 ALs being exceeded may be reduced to quarterly, 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 six sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth sampling event.

#### **2.6.2.3.3 Alert Levels to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards**

Sulfate has an AL, the compliance schedule requires ALs for TDS and TPH be set after eight rounds. Exceeding these ALs shall require contingency action.

#### **2.6.3 Aquifer Quality Limit (AQL) Violation**

1. If an AQL set in Section 4.2, Table 2D has been exceeded, the permittee may conduct verification sampling within 5 days of becoming aware of an AQL being exceeded. 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 30 days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider

and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in 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**

**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 at (602) 771-4497 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 at (602) 771-4497 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 and actions identified in the approved contingency plan referenced in Section 5.0 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 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;
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. The permittee shall complete the SMRFs provided by ADEQ, and submit them to the Water Quality Compliance Section, Data 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 quarter, the permittee shall enter "not required" on the SMRF and submit the report to ADEQ. The permittee shall use the format devised by ADEQ.
3. The tables contained in Sections 4.0 list the parameters to be monitored and the frequency for reporting results for groundwater compliance monitoring. Analytical methods shall be recorded on the SMRFs.
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 10 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).

A separate log book for the rock inspection and classification will be maintained per Section 2.5.4

### **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 Alert Level being exceeded.
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. Identification 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.
    - f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

**2.7.4 Operational, Other or Miscellaneous Reporting**

Not applicable

**2.7.5 Reporting Location**

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality  
Water Quality Compliance Section, Data Unit  
Mail Code: 5415B-1  
1110 W. Washington Street  
Phoenix, AZ 85007  
Phone (602) 771-4513

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 Groundwater Section shall be directed to:

Arizona Department of Environmental Quality  
Groundwater 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:

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<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

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

The Groundwater 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. The permittee shall take the following measures upon temporary cessation:

At the time of notification the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. 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 3 years. If the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 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 Groundwater Section, a Closure Plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the 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 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 one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with aquifer water quality standards at the applicable point of compliance;

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;
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 Groundwater Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Section a Post-closure Plan that addresses post-closure maintenance and monitoring actions at the facility. The Post-closure Plan shall meet all requirements of A.R.S. §§ 49-201(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.

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**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 Groundwater Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section.

The compliance schedule is needed to determine existing groundwater quality data for the pollutants and parameters listed as “RESERVED” in Table IIA. The applicant has chosen to set the AQLs equal to applicable AWQS.

Item	Due Date	Comments
Report with proposed ALs and AQLs	Within 3 months of permit issuance.	Submit a Report which proposes ALs and AQLs for the pollutants and parameters in Section 4.2, Table 2C listed as “Reserved” with a permit amendment request and fee.
Non-stormwater Pond Completion	Prior to blasting, excavating and stockpiling rock.	The non-stormwater pond must be completed prior to blasting excavating and stockpiling rock.
Facility Design Report	90 days prior to construction or erection.	For each of the facilities listed in the Facilities Requiring Further Compliance Schedule Evaluation in Table 2A, the permittee shall submit the design report with drawings marled “For Construction” and signed and sealed by an Arizona licensed professional engineer with appropriate credentials in the required disciplines to ADEQ for approval. Of particular concern is the design to minimize the potential for pollutants to reach the groundwater. Design drawings shall be used by ADEQ to determine if the facility is discharging or not. For discharging facilities, ADEQ shall use the design report to evaluate the demonstration of BADCT by considering features, such as but not limited to impermeable construction materials, sumps, and containment berms either alone or in combination. Each submittal shall be considered an APP amendment according to A.A.C. R18-9-A211.
Facility As-built Report	30 days following construction or erection completion.	For each facility in the Permitted Discharging Facilities and Facilities Requiring Further Compliance Schedule Evaluation except for the DRDF, the permittee shall submit an as-built report with QA/QC for each facility for ADEQ approval.
Implementation of a Report on Clean-up of Mine Yard Spills or Leaks	30 days prior to initiation of decline excavation.	The permittee shall submit a plan for generating the following report for ADEQ approval before excavation or mining begins. This report is to provide ADEQ with a quarterly compilation of the Redhawk daily report summarizing significant spillage and leakage of diesel fuel from equipment moving about the mine yard or potential pollutants from what ever source, and the corrective measures taken for clean-up and disposal.

#### **4.0 TABLES OF MONITORING REQUIREMENTS**

##### **4.1 PRE-OPERATIONAL MONITORING (or CONSTRUCTION REQUIREMENTS)**

Not applicable

##### **4.2 COMPLIANCE (or OPERATIONAL) MONITORING**

Index to Tables

Table 2A – Facilities Subject To BADCT Requirements

Table 2B - Required Inspections and Operational Monitoring

Table 2C - Ambient Groundwater Monitoring

Table 2D – Routine Groundwater Monitoring

##### **4.3 CONTINGENCY MONITORING**

Not applicable

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4.2 COMPLIANCE (or OPERATIONAL) MONITORING

**TABLE 2A  
FACILITIES SUBJECT TO BADCT REQUIREMENTS**

ADEQ FACILITY NO.	FACILITY NAME	LATITUDE	LONGITUDE	BADCT REQUIREMENT
<b>PERMITTED DISCHARGING FACILITIES</b>				
1	Non-stormwater Pond	32° 45' 16"N	110° 29' 16"W	Design to prescriptive BADCT requirements for a 100-year, 24-hour storm event. Site shall be cleared, grubbed, and graded with 6" of 3/8" bedding fill compacted to ASTM D698. The geomembrane 60-mil liner shall be placed and anchored in trenches with all work performed under QA/QC program. Freeboard of 2 feet included below spillway shall be designed to discharge into Saloon Gulch for storms in excess of the design storm.
2	Development Rock Disposal Facility Lower portion 291,000 tons below 4,080 elevation Upper portion 62,000 tons above 4,080 elevation	32° 45' 17"N	110° 29' 10"W	Disposal of development rock assumes material received does not become a source of acid mine drainage. This will be controlled by close monitoring during mining to direct only non-sulfide bearing material to the lower portion of the stockpile. Contents of the upper portion of the DRDF is limited to the sampling plan and sorting to assure placement of only visibly mineralized (sulfides and oxides) material. Retention time is limited to 3 years from date of stockpile beginning. Within this time frame, material is either moved off-site for sampling and testing or returned underground for long-term storage.
<b>FACILITIES REQUIRING FURTHER COMPLIANCE SCHEDULE EVALUATION</b>				
3	Maintenance Shop	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
4	Vehicle Wash Bay	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.

<b>ADEQ FACILITY NO.</b>	<b>FACILITY NAME</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>	<b>BADCT REQUIREMENT</b>
5	Warehouse	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
6	Dry/Washroom Trailers	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
7	Generators	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
8	Compressors	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
9	Fenced Yard	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
10	Facilities Area Drainage Ditch	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
11	Underground Sewage Storage Tank	32° 45' 18"N	110° 29' 17"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
12	Surface Installation for Ventilation & Escape Way	32° 45' 11"N	110° 29' 04"W	Design report for construction is pending in the Compliance Schedule. Exemption under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.
13	Surface Installation for Ventilation &	32° 44' 57"N	110° 28' 52"W	Design report for construction is pending in the Compliance Schedule. Exemption

<b>ADEQ FACILITY NO.</b>	<b>FACILITY NAME</b>	<b>LATITUDE</b>	<b>LONGITUDE</b>	<b>BADCT REQUIREMENT</b>
	Escape Way			under A.R.S. §49-250(B)(21) rests with ADEQ approval of the design report as a non-discharging facility.

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**TABLE 2B**  
**REQUIRED INSPECTIONS AND OPERATIONAL MONITORING**

Facility	Requirements	Frequency
Non-stormwater Pond	Visually inspect monthly or during and following a storm event of 1-inch or more precipitation and take appropriate action if evidence of: <ul style="list-style-type: none"> <li>▪ visible liner tears, punctures, cracks, deformities, or other damage due to sunlight, wind, weather, debris, vegetation or other causes,</li> <li>▪ animals, or other adverse conditions affecting liner stability;</li> <li>▪ accumulation of erosion and other debris from the upgradient Waste Rock Disposal pile,</li> <li>▪ spillway integrity/instability or impairment.</li> </ul>	Monthly
DRDF	Rock Inspection and Classification per the Development Rock Management and Contingency Plan. <ul style="list-style-type: none"> <li>▪ inspect each muck pile</li> <li>▪ conduct fizz test</li> <li>▪ maintain log</li> </ul>	Weekly
	Rock Type Monitoring per the Development Rock Management and Contingency Plan. <ul style="list-style-type: none"> <li>▪ ABA Testing</li> <li>▪ Leach Testing</li> </ul> Confirm that materials are correctly sorted as mineralized or not mineralized and placed on the upper portion (mineralized) or lower portion (not mineralized) to a 90% accuracy or better.	
Facilities Area Drainage Ditch	Visually inspect weekly or during and following a storm event of 1-inch or more precipitation and take appropriate action if evidence of: <ul style="list-style-type: none"> <li>▪ slides, sloughs or unusual differential settlement affecting ability to collect and convey runoff from a 100-year, 24-hour storm event to its intended points of discharge into the non-stormwater pond.</li> <li>▪ excessive erosion or accumulation of debris causing flow restriction.</li> <li>▪ Staining or discoloration</li> </ul>	Weekly
Surface water Diversion Ditch	Visually inspect quarterly or during and following a storm event of 1-inch or more precipitation and take appropriate action if evidence of: <ul style="list-style-type: none"> <li>▪ flow impediment due to items, such as but not limited to ditch collapse, cracks, deformities, or other damage, and/or debris accumulation including that from upslope erosion.</li> <li>▪ animals, or other adverse conditions affecting ditch integrity.</li> </ul>	Quarterly

**TABLE 2C  
AMBIENT GROUNDWATER MONITORING**

Parameter <sup>1</sup>	AL <sup>2</sup>	AQL <sup>3</sup>	Units	Sampling Frequency	Reporting Frequency
Depth to water Level – high	0.0	Monitor <sup>4</sup>	ft <sup>5</sup>	Quarterly	Quarterly
Depth to water Level – low	57.0	Monitor	ft	Quarterly	Quarterly
Water Level Elevation	Monitor	Monitor	ft	Quarterly	Quarterly
Temperature – field	Monitor	Monitor	°F <sup>6</sup>	Quarterly	Quarterly
pH – field & lab	Monitor	Monitor	SU <sup>7</sup>	Quarterly	Quarterly
Specific Conductance – field & lab	Monitor	Monitor	µmhos/cm <sup>8</sup>	Quarterly	Quarterly
Total Dissolved Solids (TDS) – field & lab	Reserved <sup>9</sup>	Monitor	mg/l <sup>10</sup>	Quarterly	Quarterly
Alkalinity	Monitor	Monitor	meq/l <sup>11</sup>	Quarterly	Quarterly
Sulfate	531	Monitor	mg/l	Quarterly	Quarterly
Chloride	Monitor	Monitor	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Nitrate-Nitrite (as N)	8.0	10.0	mg/l	Quarterly	Quarterly
Calcium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Magnesium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Potassium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sodium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Iron	Monitor	Monitor	mg/l	Quarterly	Quarterly
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	1.6	2.0	mg/l	Quarterly	Quarterly
Beryllium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Cadmium	Monitor	0.0083	mg/l	Quarterly	Quarterly
Chromium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Cobalt	Reserved	Monitor	mg/l	Quarterly	Quarterly
Copper	0.0356	Monitor	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Manganese	Monitor	Monitor	mg/l	Quarterly	Quarterly
Mercury	Reserved	Reserved	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Zinc	Monitor	Monitor	mg/l	Quarterly	Quarterly
Gross Alpha Particle Activity	12	15	PCi/l <sup>12</sup>	Quarterly	Quarterly
Radium 226 & Radium 228 combined	4	5	PCi/l	Quarterly	Quarterly

**TABLE 2C CONTINUED  
AMBIENT GROUNDWATER MONITORING**

<sup>1</sup> Metals shall be analyzed as dissolved metals

<sup>2</sup> AL = Alert Level

<sup>3</sup> AQL = Aquifer Quality Limits

<sup>4</sup> Monitoring required, but no limits have been established

<sup>5</sup> ft = feet

<sup>6</sup> °F = degrees Fahrenheit

<sup>7</sup> SU = standard unit

<sup>8</sup> µmhos/cm = micro omhos per centimeter

<sup>9</sup> Reserved = To be determined by ambient groundwater sampling per the compliance schedule

<sup>10</sup> mg/l = milligrams per liter

<sup>11</sup> meq/l = milliequivalents per liter

<sup>12</sup> PCi/l = Picocuries per liter

Parameter <sup>13</sup>	AL <sup>14</sup>	AQL <sup>15</sup>	Units	Sampling Frequency	Reporting Frequency
Uranium	Monitor <sup>16</sup>	Monitor	PCi/l <sup>17</sup>	Quarterly	Quarterly
Total Petroleum Hydrocarbons (TPH)	12	Monitor	mg/l <sup>18</sup>	Quarterly	Quarterly
Parameter <sup>19</sup>					
Benzene	0.004	0.005	mg/l	Quarterly	Quarterly
Toluene	0.8	1.0	mg/l	Quarterly	Quarterly
Ethylbenzene	0.56	0.7	mg/l	Quarterly	Quarterly
Total Xylenes	8	10	mg/l	Quarterly	Quarterly

**TABLE 2D**  
**ROUTINE GROUNDWATER MONITORING**

<sup>13</sup> Metals shall be analyzed as dissolved metals

<sup>14</sup> AL = Alert Level

<sup>15</sup> AQL = Aquifer Quality Limits

<sup>16</sup> Monitoring required, but no limits have been established

<sup>17</sup> PCi/l = Picocuries per liter

<sup>18</sup> mg/l = milligrams per liter

<sup>19</sup> benzene, toluene, ethylbenzene, and total xylenes (BTEX) required to be tested for one time initially within 30 days of permit issuance

Parameter <sup>20</sup>	AL <sup>21</sup>	AQL <sup>22</sup>	Units	Sampling Frequency	Reporting Frequency
Depth to water Level – high	0.0	Monitor <sup>23</sup>	ft <sup>24</sup>	Quarterly	Quarterly
Depth to water Level – low	57.0	Monitor	ft	Quarterly	Quarterly
Water Level Elevation	Monitor	Monitor	ft	Quarterly	Quarterly
Temperature – field	Monitor	Monitor	°F <sup>25</sup>	Quarterly	Quarterly
pH – field & lab	Monitor	Monitor	SU <sup>26</sup>	Quarterly	Quarterly
Specific Conductance – field & lab	Monitor	Monitor	µmhos/cm <sup>27</sup>	Quarterly	Quarterly
Total Dissolved Solids (TDS) – field & lab	Reserved <sup>28</sup>	Monitor	mg/l <sup>29</sup>	Quarterly	Quarterly
Alkalinity	Monitor	Monitor	meq/l <sup>30</sup>	Quarterly	Quarterly
Sulfate	531	Monitor	mg/l	Quarterly	Quarterly
Chloride	Monitor	Monitor	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Nitrate-Nitrite (as N)	8.0	10.0	mg/l	Quarterly	Quarterly
Calcium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Magnesium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Potassium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Sodium	Monitor	Monitor	mg/l	Quarterly	Quarterly
Iron	Monitor	Monitor	mg/l	Quarterly	Quarterly
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	1.6	2.0	mg/l	Quarterly	Quarterly
Beryllium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Cadmium	Monitor	0.0083	mg/l	Quarterly	Quarterly
Chromium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Cobalt	Reserved	Monitor	mg/l	Quarterly	Quarterly
Copper	0.0356	Monitor	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Manganese	Monitor	Monitor	mg/l	Quarterly	Quarterly
Mercury	Reserved	Reserved	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	Reserved	Reserved	mg/l	Quarterly	Quarterly
Zinc	Monitor	Monitor	mg/l	Quarterly	Quarterly
Gross Alpha Particle Activity	12	15	PCi/l <sup>31</sup>	Quarterly	Quarterly

**TABLE 2D CONTINUED  
ROUTINE GROUNDWATER MONITORING**

<sup>20</sup> Metals shall be analyzed as dissolved metals

<sup>21</sup> AL = Alert Level

<sup>22</sup> AQL = Aquifer Quality Limits

<sup>23</sup> Monitoring required, but no limits have been established

<sup>24</sup> ft = feet

<sup>25</sup> °F = degrees Fahrenheit

<sup>26</sup> SU = standard unit

<sup>27</sup> µmhos/cm = micro ohms per centimeter

<sup>28</sup> Reserved = To be determined by ambient groundwater sampling per the compliance schedule

<sup>29</sup> mg/l = milligrams per liter

<sup>30</sup> meq/l = milliequivalents per liter

<sup>31</sup> PCi/l = Picocuries per liter

Parameter <sup>32</sup>	AL <sup>33</sup>	AQL <sup>34</sup>	Units	Sampling Frequency	Reporting Frequency
Radium 226 & Radium 228 combined	4	5	PCi/l <sup>35</sup>	Quarterly	Quarterly
Uranium	Monitor <sup>36</sup>	Monitor	PCi/l	Quarterly	Quarterly
Total Petroleum Hydrocarbons (TPH)	12	Monitor	mg/l <sup>37</sup>	Quarterly	Quarterly
Parameter <sup>38</sup>					
Benzene	0.004	0.005	mg/l	Quarterly	Quarterly
Toluene	0.8	1.0	mg/l	Quarterly	Quarterly
Ethylbenzene	0.56	0.7	mg/l	Quarterly	Quarterly
Total Xylenes	8	10	mg/l	Quarterly	Quarterly

## 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

<sup>32</sup> Metals shall be analyzed as dissolved metals

<sup>33</sup> AL = Alert Level

<sup>34</sup> AQL = Aquifer Quality Limits

<sup>35</sup> PCi/l = Picocuries per liter

<sup>36</sup> Monitoring required, but no limits have been established

<sup>37</sup> mg/l = milligrams per liter

<sup>38</sup> benzene, toluene, ethylbenzene, and total xylenes (BTEX) required to be tested for one time initially within 30 days of permit issuance

following, which are on file with the Department:

1. APP Application dated October 24, 2007.
2. Public Notice dated \_\_\_\_\_.
3. Public Hearing dated \_\_\_\_\_.
4. Responsiveness Summary dated \_\_\_\_\_.

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## 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 5 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 Groundwater Section in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

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## 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).