



Fact Sheet

Aquifer Protection Permit
Place ID 135845, LTF 49639
Rosemont Copper Project

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an aquifer protection permit for the subject facility that covers the life of the facility, including operational, closure, and post closure periods unless suspended or revoked pursuant to Arizona Administrative Code (A.A.C.) R18-9-A213. This document gives pertinent information concerning the issuance of the permit. The requirements contained in this permit will allow the permittee to comply with the two key requirements of the Aquifer Protection Program: 1) meet Aquifer Water Quality Standards (AWQS) at the Point of Compliance(POC); and 2) demonstrate Best Available Demonstrated Control Technology (BADCT). BADCT's purpose is to employ engineering controls, processes, operating methods or other alternatives, including site-specific characteristics (i.e., the local subsurface geology), to reduce discharge of pollutants to the greatest degree achievable before they reach the aquifer or to prevent pollutants from reaching the aquifer.

I. FACILITY INFORMATION

Name and Location

Permittee's Name:	Rosemont Copper Company
Mailing Address:	P.O. Box 35130 Tucson, AZ 85740
Facility Name and Location:	Rosemont Copper Project 21900 S. Sonoita Highway Vail, AZ 85641

Regulatory Status

ADEQ received an aquifer protection permit (APP) application from Rosemont Copper Company on March 3, 2009, for copper mining operations located at the Rosemont Copper Project in Pima County.

Facility Description

The Rosemont Copper Project proposes to construct a new open-pit copper mine and associated copper recovery facilities. There are currently 9 permitted facilities that are regulated under the APP program:

- 1) Dry Stack Tailings Facility
- 2) Process Water Temporary Storage Pond
- 3) Primary Settling Basin
- 4) Raffinate Pond

- 5) Heap Leach Pad
- 6) PLS Pond
- 7) Storm water Pond¹
- 8) Waste Rock Storage Area
- 9) Waste Management Area

¹ The name “Storm water Pond” is for Rosemont facility identification purposes. By Rule, the facility is considered a non-storm water pond.

The project site lies within the Basin and Range physiographic province, on the east side of the Santa Rita Mountains, south of Tucson. The site is underlain by Cambrian to Permian marine sediments, overlain by Mesozoic sedimentary rocks of the Bisbee Group. The northeastern portion of the site overlies the Mount Fagan Caldera, a late Cretaceous rhyolitic volcanic center. These formations are unconformably overlain by the Gila Conglomerate in the southeast portion of the project area. The copper-bearing skarn in the area is the result of the emplacement of Laramide quartz latite porphyry stocks.

The groundwater at the site is enclosed as a part of the Cienega Creek Basin. Groundwater movement and storage is fracture controlled, and the interconnectedness of the fracture systems is in question. Recharge to the basin is predominantly through mountain front recharge, infiltration into fracture zones, and infiltration along the ephemeral drainages. Current groundwater quality in the area is good.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

All of the proposed APP regulated facilities at the Rosemont Copper Mine have been evaluated for compliance with the requirements of A.R.S. § 49-243 and A.A.C. R18-9-A202. All facilities have been evaluated and determined to meet the requirements of A.A.C. R18-9-A202(A)(5)

Inspections and operational monitoring is required, to ensure that facilities are maintained in accordance with BADCT and standard engineering practices, and each drainage potentially impacted by operations will be monitored to assess impact due to mining operations.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Monitoring and Reporting Requirements

The depth to water across the site historically has generally varied from about 20 feet to about 110 feet below ground surface. The groundwater flow direction is generally to the east and northeast across the site. The nearest point of use are the numerous stock wells located throughout the site, used by the Coronado National Forest as stock wells, and domestic/stock wells registered to Rosemont Copper Company.

The monitoring program includes monitoring at seven point of compliance (POC) groundwater wells located on the downgradient edge of the pollutant management

area. One of these wells is currently installed. Six other wells will be installed under the compliance schedule of the permit. The ambient monitoring program for all seven POC wells will be performed under the compliance schedule, which will require eight quarters of ambient groundwater samples. Upon completion of the ambient groundwater sampling, alert levels and aquifer quality limits will be amended into the permit.

Quarterly compliance monitoring at the site will require, in all POC wells, analysis for the following parameters:

Depth to water, water level elevation, field temperature, field pH, field specific conductance, total dissolved solids, sulfate, nitrate+nitrite, magnesium, antimony, arsenic, cadmium, copper, lead, nickel, selenium, thallium, and molybdenum.

Biennial compliance groundwater monitoring at all POC wells includes the quarterly parameters, plus the following additional parameters:

Total alkalinity, bicarbonate, carbonate, hydroxide, chloride, fluoride, potassium, sodium, aluminum, barium, beryllium, chromium, cobalt, manganese, zinc, gross alpha particle activity, radium 226, radium 228, carbon disulfide, calcium, mercury, uranium, and potentially, uranium isotopes.

Point(s) of Compliance

The following hazardous POC locations are established in the permit:

POC Locations	Latitude (Approximate)	Longitude (Approximate)
POC #1	31° 56' 06"	110° 43' 48"
POC #2	31° 50' 50"	110° 43' 10"
POC #3	31° 57' 09"	110° 41' 33"
POC #4	31° 49' 47"	110° 36' 58"
POC #5	31° 49' 23"	110° 43' 50"
POC #6	31° 48' 36"	110° 43' 49"
POC #7	31° 48' 26"	110° 45' 11"

There are no non-hazardous POC location established.

IV. STORM WATER AND SURFACE WATER CONSIDERATIONS

A system of water management using diversion channels, stormwater impoundments, underdrain culverts, and dams has been established to protect mine operations from stormwater runoff. The site is located in the ephemeral surface water drainage basins of McCleary Canyon, Wasp Canyon, and Barrel Canyon. Runoff curves and storage volume calculations have been developed using the 100 year, 24 hour storm event criterion.

There are no nearby perennial surface water drainages or large surface water bodies. Numerous springs have been located throughout the vicinity of the site. It is anticipated that a number of springs will dry up due to the dewatering effect of the open pit.

V. COMPLIANCE SCHEDULE

The compliance schedule requires that the permittee install six point of compliance (POC) groundwater monitoring wells, and to establish ambient groundwater quality. Within 32 months of permit issuance, the permittee is required to submit a report to establish alert levels (ALs) and aquifer quality limits (AQLs) for the POC wells. The permit also requires the submittal of construction quality assurance statements.

VI. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

The Rosemont Copper Company has demonstrated the technical competence necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A202(B).

ADEQ requires that appropriate documents be sealed by an Arizona registered geologist or professional engineer. This requirement is a part of an on-going demonstration of technical capability. The permittee is expected to maintain technical capability throughout the life of the facility.

Financial Capability

Rosemont Copper Company has demonstrated the financial responsibility necessary to carry out the terms and conditions of the permit in accordance with A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee is expected to maintain financial capability throughout the life of the facility. The estimated cost of closure and post-closure are \$2,744,100 and \$1,549,035, and was satisfied in accordance with A.A.C. R18-9-A203(C)(2) through a Surety Bond from Arch Insurance Company.

Zoning Requirements

Mining activity of greater than five contiguous acres is exempt from zoning requirements pursuant to A.R.S. § 11-830.

VII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-108(A))

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft permit or other significant action with respect to a permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be

public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-109(A))

The aquifer protection program rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C R18-9-109(B))

A Public Hearing will be held at Palo Verde High Magnet School, 1302 S. Avenida Vega, Tucson, AZ, 85710, on Thursday January 5th, 2012, from 5:00p.m. to 7:30 p.m. The purpose of the public hearing is to allow the public to make comments for the record. ADEQ will respond in writing to all comments submitted during the formal public comment period.

VIII. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division – Groundwater Section
Attn: Richard Mendolia
1110 W. Washington St., Mail Code: 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771- 4374