

Johnson Camp Mine
Aquifer Protection Permit P-100514
Place ID # 5683, LTF # 92043
Significant Amendment

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue an Aquifer Protection Permit (APP) 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. 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.

II. Permittee & Facility Location:

Excelsior Mining Arizona, Inc.
3048 N. Seven Dash Road
Dragoon, AZ 85609

III. Facility Description:

Johnson Camp Mine (JCM) is an open pit base metal mining/extraction operation located near the town of Dragoon in Cochise County, Arizona, approximately 60 miles east of Tucson. The mine property includes approximately 3,092 acres (about 4.8 square miles), and the mine is located in the southern half of the property.

Mine facilities include two inactive open pits (the Burro Pit and the Copper Chief Pit); three heap leach pads; four process solution impoundments; four non-stormwater ponds; two inactive non-stormwater ponds; a solvent extraction / electrowinning (SX/EW) plant; former crushing, agglomeration, and conveying systems; and supporting infrastructure.

Current activities consist of site maintenance and security, and circulating process solution through the heap leach pads to maintain freeboard in the pregnant leach solution (PLS) and raffinate ponds, and to allow process solution to evaporate. Planned activities consist of use of the ponds to contain process solution from the Gunnison Copper Project (APP No. 511633).

Planned activities consist of mining from the open pits and placement of mine ore on Leach Pad #5 and use of the JCM ponds to contain process solution from the Gunnison Copper Project (APP No. 511633) and/or JCM. During the Stage 1 operations of the Gunnison Copper Project (APP P-511633), PLS will be pumped to the JCM impoundments (APP No. P-100514) for processing at the SX/EW plant. Raffinate will

be stored, re-acidified, and pumped back to the Gunnison Copper Project wellfield. Operation of Leach Pad #5 and the Gunnison wellfield can be adjusted to accommodate each other, in order to stay within the operating capacity of the SX-EW plant and the permitted flow rate of 8,200,000 gallons per day.

IV. Amendment Description:

The purpose of this amendment is to permit a new leach pad (Main Leach Pad #5 Area) and an emergency overflow pond (Leach Pad #5 Emergency Overflow Pond). A new point of compliance (POC) well (POC-3) will be installed downgradient of the leach pad. The closure and post-closure costs were updated to account for the new facilities, and the financial assurance mechanism will be provided 90 days prior to placing any mineralized rock within the footprint of Main Leach Pad #5 Area. The permit category for this amendment was determined to be a “Significant Amendment” as per A.A.C. R18-9-A211(B)(1).

V. Regulatory Status

Currently, there are no open enforcement actions for this facility.

VI. Best Available Demonstrated Control Technology (BADCT):

APP facilities at this facility include four leach pads, four process solution ponds and a sump (Intercept Sump) that is buried by Leach Pads #1 and #2, five non-stormwater ponds (two of which are buried beneath Leach Pad #3), and two inactive secondary containment ponds (non-stormwater ponds) formerly associated with Solution Pond #1 that will be closed at mine closure.

VII. Compliance with Aquifer Water Quality Standards (AWQS):

To ensure that site operations do not result in violation of Aquifer Water Quality Standards at the point of compliance, routine monitoring is required at the leak collection and removal system (LCRS) and groundwater monitor wells as follows:

1. Monitoring of the LCRS flows at the Raffinate Pond #1, ILS Pond, and Solution Ponds (#1 and #2) will occur weekly (see Section 4.2, Table 12 in the permit).
2. Groundwater monitoring is required at POC-3, which will be located downgradient of the Main Leach Pad #5 Area. The permittee will monitor the groundwater quarterly for water level, pH, specific conductance, temperature, Total Dissolved Solids, nitrate/nitrite as N, sulfate, metals, and Volatile Organic Compounds (BTEX) (see Section 4.2, Table 17 in the permit). In addition, the permittee will conduct biennial groundwater monitoring for total alkalinity, carbonate, bicarbonate, hydroxide, chloride, phosphate, Total Petroleum Hydrocarbons, non-hazardous metals, and radionuclides (see Section 4.2, Tables 17 and 18 in the permit).
3. The facility has three monitoring wells (Durham, Hill, Saddle) identified as Data Continuity Wells (DCW) located south of the existing heap leach pads, upgradient of the regional groundwater flow direction. A fourth well (the existing Cross well), is located south of the Main Leach Pad #5 Area is also designated as a DCW under

this amendment. These wells will be sampled for the same parameters and frequency as POC-3.

4. Facility inspection and operational monitoring shall be performed on a routine basis (see Section 4.2, Table 11 in the permit).