

Freeport-McMoRan Bagdad Mine
Aquifer Protection Permit No. 105258
Place ID No. 1390, LTF No. 72216
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. Facility Location:

The Bagdad Mine is located near Bagdad, Arizona, Yavapai County.

III. Facility Description:

Mining of copper from the Bagdad porphyry copper deposit began in 1928. The deposit is currently mined using open pit methods, with truck and conveyor haulage. The operations produce a combined total of 200,000 tons per day of sulfide ore, leach rock, and waste rock. Sulfide ores are processed in the flotation concentrator, and sent to off-site smelters. Oxide ore is processed through the leach dump and solution extraction/electrowinning (SX/EW) method. The mine includes an open pit, a concentrator, ore and concentrate stockpiles, an SX/EW plant, active and inactive leach dumps, waste rock dumps, active and inactive tailings impoundments, pregnant leach solution impoundments, raffinate impoundments, and stormwater diversion ditches and detention basins.

IV. Amendment Description:

The purpose of this amendment is to increase the footprint of the Butte Stockpile, update the design of the Butte Stockpile upgradient stormwater control structure, and to add the existing Waste Management Facility (WMF), currently regulated by APP P50007300A, to this area-wide permit. No other discharging facilities at the mine will be modified. Once this permit amendment is issued, the WMF permit will be superseded/released.

V. Regulatory Status

There are no current enforcement actions.

VI. Best Available Demonstrated Control Technology (BADCT):

The BADCT for the mining and waste management facilities is not changing from the current permits. The expansion of the Butte Stockpile was evaluated to assure that the new footprint meets

the requirements for slope stability. The upgradient stormwater control structure was re-evaluated and the design was updated to assure adequate capacity during storm events.

The existing Waste Management Facility construction debris landfill and bioremediation facility are lined with a geosynthetic clay liner. The two Waste Management Facility evaporation ponds are double lined with synthetic liners. The Waste Management Facilities will be maintained and operated until closure, when the Butte Stockpile expansion area covers the facilities under waste rock.

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

The Butte Stockpile, including the expansion area which includes the Waste Management Facility footprint, lies completely within the Passive Containment Capture Zone (PCCZ) of the Bagdad Pit. Groundwater flow patterns show that any discharge from the Butte Stockpile and Waste Management Facility will report to the Bagdad Pit. As a result, no additional Point of Compliance (POC) monitoring is required. Compliance with AWQS will continue to be monitored at the existing POCs.