

ASARCO Mission Mine Complex Impoundments
 Aquifer Protection Permit No. P-513561
 Place ID 212208, LTF No. 88154

I. Introduction:

The Arizona Department of Environmental Quality (ADEQ) proposes to issue 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:

4201 W. Pima Mine Road
 Sahuarita, Arizona 85629

III. Facility Description:

The ASARCO Mission Complex is located approximately 15 miles south of Tucson, Arizona on non-tribal land. The Mission Complex consists of tailing impoundments, overburden and waste rock deposition areas, open pits, concentrators and other ancillary facilities associated with hard rock mining.

The Mission Complex extracts and processes copper ore from an open pit mine and operates two mills, the Mission Mill (aka North Mill) and the South Mill. The output produced by the Mission Complex is a copper concentrate which is shipped to Hayden, Arizona for final processing at a smelter.

The NSW pond will be an HDPE lined earthen pond. The new RR is designed as a fully HDPE lined, dual basin reservoir with a capacity of 6.2 million gallons. The reclaim reservoir will receive various flows including thickener overflow influent, tailings impoundment reclaim, and fresh water from the top of the hill north of the reservoir. Runoff collected in the NSW Pond will be pumped into the RR using a portable barge pump after sediments have settled.

The site includes the following permitted discharging facilities:

Facility Name	Latitude	Longitude
Non-Stormwater (NSW) Pond	31° 58' 45" N	111° 03' 07" W
Retention Reservoir (RR)	31° 58' 45" N	111° 03' 08" W

This permit is only for the two impoundments listed in the table above. All other APP facilities at the site are permitted under a separate areawide APP Inventory #100508 Licensing Timeframe #80265.

IV. Permit Description:

- Two new facilities will be installed at the site; the Non-Stormwater Pond and the Retention Reservoir
 - The non-stormwater (NSW) pond is designed to capture runoff and prevent it from entering the Reclaim Reservoir where it can deposit sediment. The NSW pond will be an HDPE lined earthen pond. The NSW pond will be an HDPE lined earthen pond. The basin will have ¼" minus sand compacted to a minimum of 90% max density with a 60-mil textured HDPE geomembrane liner. A sump located in the northeast corner will have a roll (16'x65") of Tiltex to protect the liner from damage when a barge pump is added to dewater the basin. An existing earthen dike will be enhanced to prevent runoff from the mill area reaching the Reclaim Reservoir.
 - The new Reclaim Reservoir is designed as a fully HDPE lined, dual basin reservoir with a capacity of approximately 6 million gallons. The new reservoir will be an earthen basin with 2:1 side slopes throughout. The bottom and sidewalls of the basins will be 6" of compacted 3/8" minus sand, followed by a geo-synthetic clay liner with a hydraulic conductivity minimum of 1×10^{-7} cm/s, followed by a textured 100-mil HDPE liner. Runoff collected in the NSW will be pumped into the reclaim reservoir using a portable barge pump after sediments have settled. Two 36" HDPE pipes will be installed within each reservoir low point to provide water to the new reclaim booster pumping station clear well chambers.

V. Regulatory Status:

N/A

VI. Best Available Demonstrated Control Technology (BADCT):

Facilities regulated by this permit shall be designed, constructed, operated, and maintained to meet requirements specified by A.R.S. §49-243(B) and A.A.C. R18-9-A202(A)(5).

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

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.