

Aquifer Protection Permit
Significant Amendment P-100507
Place ID 4296, LTF 61779
ASARCO Hayden Operations

The Arizona Department of Environmental Quality (ADEQ) proposes to amend 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. 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; 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:	ASARCO, LLC
Mailing Address:	ASARCO, LLC Hayden Operations P.O. Box 8 Hayden, Arizona 85135
Facility Name and Location:	ASARCO Hayden Operations 866 N. Hayden Avenue Hayden, Arizona

Regulatory Status

The APP was issued on June 4, 2009, and amended on August 7, 2009, April 28, 2014 and October 6, 2014. This amendment application was received on January 29, 2015.

Facility Description

ASARCO Hayden Operations receives sulfide ore from the Ray Mine via the Copper Basin Railway, which delivers seven times a day in railcars having a 100-ton capacity each. Secondary and tertiary crushing, conveying, and rod and ball milling operations are performed. This is followed by froth flotation, filtering, and smelting. Tailings generated in the flotation process are deposited at the AB-BC and D tailings impoundments. Table 2.1 of the permit is a list of the discharging facilities authorized by the permit.

Most of the facilities at the site are considered "existing" facilities, as they were built prior to August 13, 1986. Some of these facilities have ceased operation and are being closed.

Amendment Description

ADEQ has reviewed and approved the following changes under this amendment:

1. Revised best available demonstrated control technology (BADCT) description for the Concentrator Runoff Pond (Facility #D23) which approves the sampling and analysis portions of the closure plan; revised Compliance Schedule Item to require closure design drawings and specifications for backfilling and capping the pond; and analysis and criteria for drainage design and erosion control design.
2. Revised BADCT description for the Tailings Last Chance Basin (Facility #D42.2) which approves the runoff study plan, and revised Compliance Schedule Item to require submittal of the runoff study report and proposed design for basin upgrades and accompanying Inspections and Operational Monitoring.
3. Revised BADCT description for the D Tailings Maintenance Pond (Facility #E2), which approves the conceptual facility upgrade design, and revised Compliance Schedule Item to require design drawings, specifications and construction QA/QC plan, design analysis and criteria for erosion control and operational criteria for cleanout after a drain down event.
4. Removed Compliance Schedule Items in the permit requiring BADCT demonstrations for the Revert Crusher (D #26.1) and Revert Storage Area (Facility D #27.5); these facilities have been issued Type 2.02 General Permits. Removed these facilities from Section 2.1 of permit.
5. Removed Revert Storage Area (Facility D #40) from Section 2.1; this area has been moved to be co-located with Facility D #27.5.
6. Revised BADCT description which approves the closure of the Petroleum Coke Storage Area (Facility #D25.2) and revised Compliance Schedule Item to require as-built drawings of the concrete pad constructed over the closed facility.
7. Revised BADCT description for the AB/BC Tailings (Facility #D42) which limits operation of the AB portion to dust control and upset conditions only and limits the deposition rate to two (2) feet per year on the BC portion. Revised Compliance Schedule Item for the AB portion to require submittal of a proposed drainage system, proposed deposition rate and maximum storage elevation, an updated stability analysis, and schedule for construction of the proposed drainage system. Revised Inspections and Operational Monitoring for stability related performance levels.
8. Revised BADCT description for the D Tailings (Facility #E1) which limits the deposition rate to fifteen (15) feet per year. Removed Compliance Schedule Item in the permit requiring BADCT demonstration. Revised Inspections and Operational Monitoring for stability related performance levels.
9. Revised BADCT description for the Smelter Lined Impoundment (Facility #D28.5) which approves the characterization results for materials to be left in place at closure, and approves sampling plan for fill material. Revised Compliance Schedule Item to require closure cap design.
10. Revised the Closure and Post-Closure Costs and updated the financial assurance demonstration. Revised Compliance Schedule Item to require periodic financial assurance demonstration and updated closure/post-closure costs.
11. Removed Solid Waste Landfill (D8.3) from the Section 2.1. This is one cell of the Concentrator Solid Waste Landfill (D8) used only for asbestos. Asbestos meets the APP definition of inert material, therefore this cell is exempt from APP requirements and has not been included as a discharging facility.
12. Revised BADCT description of the Concentrator Solid Waste Landfill (D8) to indicate that a Solid Waste General Permit has been issued.
13. Revised BADCT description of the Smelter Landfill (D32) to indicate that a Solid Waste General Permit has been issued.
14. Revised BADCT description for the Decant Pond to indicate the pond is double lined with leak detection system. Added a Compliance Schedule Item to develop alert levels for the leak detection system.
15. Added a Compliance Schedule Item to evaluate the groundwater flow direction and depth downgradient of the Smelter Lined Impoundment and provide a well design to monitor the impoundment during the post closure period.
16. Added a Compliance Schedule Item to provide a closure plan for the Concentrate Storage Area. The area will be closed and replaced by a concrete structure which will be designed to meet the APP tank exemption.
17. Added Alert Levels and contingency requirements for Groundwater Level in POC wells.
18. Added Contingency requirements for slope and berm failures.

19. Revised Inspections and Operational Monitoring for several facilities to include requirements for inspection frequency, freeboard and liner inspection performance level, and to indicate the storm event that triggers an inspection.
20. Added Alert Levels for groundwater monitoring parameters set as “reserved” in current permit. Removed “Adjusted Gross Alpha Particle Activity” parameter from groundwater monitoring table.
21. Revised permit language based on the current permit framework.

II. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY

The BADCT description for each facility is provided in Table 4.1.1 of the permit. Several descriptions have been updated as mentioned in the permit amendment description.

III. COMPLIANCE WITH AQUIFER WATER QUALITY STANDARDS

Monitoring and Reporting Requirements

Groundwater at the Hayden site has been documented in the alluvial/basin fill deposits at approximate depths of 15 to 97 feet. Overall groundwater flow direction is toward the center of the river basins, and then downstream. The site is located near the confluence of the Gila and San Pedro Rivers. The direction of groundwater flow varies across the site, depending upon the direction of river flow. There are no substantial downgradient groundwater points of use in the vicinity of the site.

All Point of Compliance wells will be sampled quarterly for an abbreviated list of parameters. A longer comprehensive list of parameters is required biennially in the Point of Compliance wells.

ALs and aquifer quality limits (AQLs) have been established for all existing Points of Compliance wells.

Points of Compliance

POINTS OF COMPLIANCE FOR ASARCO HAYDEN OPERATIONS					
Well Number	Designation	Cadastral Location	Latitude North	Longitude West	ADWR Number
H-1	Hazardous/Non-Hazardous	D(5-15)8dad	33° 00' 00"	110° 45' 57"	55-535503
H-3	Hazardous/Non-Hazardous	D(5-15)16cab	32° 59' 43"	110° 49' 08"	55-535507
H-5	Hazardous/Non-Hazardous	D(5-15)16dac	32° 59' 56"	110° 48' 48"	55-535508
H-6	Hazardous/Non-Hazardous	D(5-15)13acc	32° 59' 52"	110° 45' 58"	55-535504
H-8	Hazardous/Non-Hazardous	D(5-15)15aaa	33° 00' 10"	110° 47' 31"	55-539676
Well to be determined (TBD)	TBD	TBD	TBD	TBD	TBD

IV. STORM WATER and SURFACE WATER CONSIDERATIONS

The site is located near the confluence of the San Pedro and Gila Rivers. The permitted facilities lie principally along the Gila River. Stormwater from up-gradient areas is required to be diverted around permitted facilities, as appropriate. The permitted facilities are required to be sized to incorporate the design storm event, while maintaining appropriate freeboard. Multi-sector General Stormwater Permit AZMSG-10083 was issued for the site on June 7, 2011.

V. COMPLIANCE SCHEDULE

The compliance schedule includes requirements to upgrade facilities, provide further information for proposed facility upgrades and perform closure activities. The compliance schedule also requires an updated financial assurance demonstration every two (2) years and updated closure and post-closure costs every six (6) years. Detail regarding compliance schedule changes is provided in the amendment description above.

VI. OTHER REQUIREMENTS FOR ISSUING THIS PERMIT

Technical Capability

ASARCO, LLC 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 ongoing demonstration of technical capability. The permittee is expected to maintain technical capability throughout the life of the facility.

Financial Capability

ASARCO LLC 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 closure and post-closure costs have been estimated at \$9,429,126 and \$1,764,962, respectively. The financial assurance mechanism has been demonstrated through a financial test for self-assurance pursuant to A.A.C. R18-9-A203(C)(1).

Zoning Requirements

Mines comprised of five or more contiguous commercial acres are exempt from zoning requirements per A.R.S. § 11-812.

VII. ADMINISTRATIVE INFORMATION

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.

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

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant

amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

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: Maribeth Greenslade
1110 W. Washington St., Mail Code: 5415B-3
Phoenix, Arizona 85007
Phone: (602) 771- 4578

DRAFT