



CERTIFICATION

STATE OF ARIZONA
Clean Water Act Section 401 Water Quality Certification
U.S. Army Corps of Engineers File No.: SPL-2011-01005-MWL
ADEQ LTF No.: 63989

1. AUTHORIZATION

This State Water Quality Certification (Certification) is issued by the Arizona Department of Environmental Quality (ADEQ) under the authority of Section 401(a) of the federal Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) and Arizona Revised Statutes Section 49-202. The conditions listed in Section 5 are in addition to conditions in the pending U.S. Army Corps of Engineers (USACE) Application No. SPL-2011-01005-MWL. These Certification conditions are enforceable by the USACE and are subject to civil penalties if these Certification conditions are violated. Criminal penalties may also be levied if a person knowingly violates any provision of the CWA.

Subject to the conditions in Section 5, ADEQ certifies that based on the information in Section 3, the activities proposed for the Ripsey Wash Tailings Storage Facility Project will not violate applicable Surface Water Quality Standards (SWQA) in the various impacted washes and the Gila River.

Pursuant to A.R.S. 49-202C, ADEQ's review authority extends only to activities occurring within the ordinary high water mark of WUS. Not all of the project elements involve discharges of dredged or fill material to WUS requiring Section 401 certification.

APPLICANT INFORMATION

Project Name: Ripsey Wash Tailings Storage Facility Project
Latitude: 33° 4' 47.9928" Longitude: -110° 59' 53.9736"

Applicant: ASARCO LLC, Ray Operations
Duane M. Yantorno, Corporate Manager of Permitting
PO Box 640
Kearney, AZ 85137

AUTHORIZING SIGNATURE

Christopher Henninger
Water Quality Division
Arizona Department of Environmental Quality

Date
Reading file: SWGP16-0114

2. DESCRIPTION OF ACTIVITIES TO BE CERTIFIED

Asarco is proposing to construct, operate, and close a tailings storage facility to support continuing copper mining activities at the Ray Operations. The facility would accommodate tailings that would be collected at the mine, transported via a tailings delivery pipeline, and deposited in slurry form at a discharge point east of Ripsey Wash, an ephemeral wash that is a tributary to the Gila River. The facility footprint is estimated at 2,574 acres and currently has an elevational range of approximately 1,800 to 2,400 feet above mean sea level. The facility is designed for an overall storage capacity of 750 million tons of tailings and embankment materials with a final crest elevation of 2,440 feet. The proposed facility would be built with centerline and upstream construction methods.

A diversion embankment, stormwater detention pond and pumping and piping system would be constructed at the up gradient end of the facility to divert flows around the west side of the facility to Zellweger Wash. The diversion embankment and stormwater detention pond are designed to handle the 500-year, 24-hour storm event. Water from this impoundment would be pumped through pipes to Zelleweger Wash. A second diversion channel would be constructed along the east side of the facility to drain stormwater runoff from up gradient of the facility to an unnamed tributary wash to the Gila River. Diversion outfalls acting as energy dissipaters and/or stilling basins would be used at the outfall locations into Zelleweger Wash and the unnamed eastern drainage to control the discharge velocity of diverted up gradient stormwater, thereby reducing the potential for down-drainage erosion.

The starter tailings embankment would be constructed at the down gradient end of the facility with a 50-foot-wide berm with a 750-foot base. Cyclone sands would be used to construct the phased embankments. The ultimate embankment would be constructed to an elevation of 2,440 feet above mean sea level with a tailings deposition elevation just below this elevation.

Some seepage from the tailings impoundment is expected and would infiltrate the alluvial deposits located within Ripsey Wash and its tributaries. Therefore, a seepage collection trench would be constructed within Ripsey Wash downstream of the impoundment to contain the seepage, and a second seepage collection trench will be constructed in a drainage on the east side of the facility. The seepage collection trench will be constructed with a geomembrane liner anchored to bedrock and granular drain rock along the upstream face of the trench to intercept seepage from the tailings facility. A series of riser pipes will be installed within the trench and fitted with submersible pumps to pump collected seepage to the associated reclaimed water ponds.

Asarco is proposing to construct and operate tailings delivery and reclaim water pipelines as part of the project. The tailings generated from the mill at the Ray Mine would be pumped in slurry form through the tailings delivery pipeline to the proposed facility impoundment area for deposition and a reclaim water pipeline would be used to pipe reclaimed water back to the Ray Mine for reuse. The pipelines would be constructed along the existing alignment of the Florence-Kelvin Highway. To contain tailings or reclaim water in the event of a pipeline failure or during periods when the pipelines are drained for routine maintenance, a drain down pond is planned along the pipeline route north of the

Gila River. A pipeline bridge would be constructed at the point where the pipeline route crosses the Gila River.

A 2.2-mile segment of the Florence-Kelvin Highway, a Pinal County-maintained roadway, would require realignment as a result of constructing the facility.

The proposed facility would require the relocation of the San Carlos Irrigation Project power line which currently passes through the northern portion of the facility footprint. An approximately 2.3-mile segment of the power line will be moved north of the TSF and rerouted around the western portion of the project area, approximately following the proposed and existing alignment of the Florence-Kelvin Highway. The planned rerouted power line corridor is approximately 3.2 miles in length.

Asarco will relocate the Arizona National Scenic Trail, which currently runs through the proposed TSF project footprint. A 6.4-mile bypass route to the east of the TSF would be constructed.

Asarco will compensate for the loss of waters of the U.S. by implementing mitigation in the form of riparian restoration and preservation activities at four locations along the San Pedro River and one location along the Gila River, as described in the Conceptual Mitigation Plan, Appendix J of the draft EIS.

3. INFORMATION REVIEWED

During the development of this State Certification, ADEQ had access to and reviewed the following documents which are on file with ADEQ:

- A. U.S. Army Corps of Engineers (USACE), Los Angeles District Public Notice: SPL-2011-1005-MWL for the Ray Mine Proposed Tailings Storage Facility; comment period January 29 – March 14, 2016
- B. Complete CWA Section 401 Certification application package including project descriptions and maps, dated April 22, 2016, and received by ADEQ on April 22, 2016. Permittee: Duane M. Yantorno, ASARCO LLC, Ray Operations
- C. USACE Arizona – Nevada Office, Draft Environmental Impact Statement (DEIS) “Proposed Tailings Storage Facility Ray Mine – Pinal County AZ”, dated January 29, 2016
- D. State of Arizona Surface Water Quality Standards (SWQS), Arizona Administrative Code (A.A.C.) Title 18, Chapter 11, Article 1. Designated uses for the Gila River are: Agricultural – Irrigation (AgI), Agricultural - Livestock watering (AgL), Aquatic and Wildlife warm (A&Ww), Full Body Contact (FBC) and Fish Consumption (FC).
- E. U.S. Environmental Protection Agency (EPA) review and comments of the USACE Public Notice SPL-2011-1005-MWL, dated April 26, 2016
- F. U.S. EPA review and comments of the USACE Proposed Ray Tailings Storage Facility DEIS dated May 3, 2016
- G. Arizona Game and Fish Department review and comments of the USACE Proposed Ray Tailings Storage Facility DEIS dated April 28, 2016

4. NOTIFICATION PROVISIONS

For any correspondence regarding this project, the ADEQ mailing address is:
Arizona Department of Environmental Quality
Rosi Sherrill
Surface Water Section / 401 Certifications / mailstop 5415A-1
1110 West Washington Street
Phoenix, Arizona 85007

For questions or general comments:
Email: ls7@azdeq.gov Voice: (602) 771-4409

In any correspondence, reference:
Ripsey Wash Tailings Storage Facility Project
USACE File No.: SPL-2011-01005-MWL
ADEQ LTF No.: 63989
Reading file: SWGP16-0114

5. CONDITIONS FOR STATE 401 WATER QUALITY CERTIFICATION

For the purposes of this Certification the following definitions apply:

- Waters of the U.S. (WUS) as defined by the USACE and U.S. Environmental Protection Agency (EPA) under the Clean Water Act. This Certification applies only to activities within a WUS.
- Fill material means soil, sand, gravel and other natural materials that are similar in physical, chemical and biological composition to existing natural materials in the project area and which are free from pollutants in quantities and concentrations that can cause or contribute to an exceedance of applicable Surface Water Quality Standards (SWQS).

SPECIAL CONDITIONS

- The applicant shall provide a redundant power source to the pumping stations(s) to prevent overtopping of the East Wash and Ripsey Wash collection (seepage) ponds into the Gila River in the event of a power outage or electrical failure.
- In order to provide additional protection to the Gila River and Mineral Creek, the segments of tailings delivery and return pipeline(s) that run above ground and are located such that a spill could reach the Gila River or Mineral Creek shall be encased and shall include leak detection through monitoring of pressure and flow rates.

GENERAL CONDITIONS

1. ADEQ's State 401 Water Quality Certification of these activities proposed by the applicable CWA 404 Permit, does not affect or modify in any way the obligations or liability of any person for any damages, injury, or loss, resulting from these activities. This Certification is not intended to waive any other federal, state or local laws.

2. If monitoring, by ADEQ or others, indicates that a discharge from the certified activities results in a violation of Arizona's surface water quality standards (numeric or narrative), ADEQ may file a Report of Potential Unauthorized Activity with the USACE, requesting an investigation of the situation.
3. Issuance of a State 401 Water Quality Certification does not imply or suggest that requirements for other permits including, but not limited to Aquifer Protection Permits, Arizona Pollutant Discharge Elimination System Permits, Construction General Permits, DeMinimis Permits and Reclaimed Water permits are met or superseded. Applicant should contact ADEQ to ensure all applicable permits are obtained.
4. This Certification applies only to the activities described in Section 2 and is based upon the information listed in Section 3. This Certification is valid for the same period as the CWA 404 permit issued by the USACE. The applicant must apply for renewal, modification or extension of this Certification if the CWA 404 permit is renewed, modified, extended or otherwise changed. This Certification may be reopened by ADEQ at any time due to a change (e.g., lowered or more stringent) in a SWQS for a parameter likely to result from project activities. ADEQ may add or modify conditions in this Certification to ensure that the applicant's activities comply with the most recent SWQS.
5. The applicant shall provide a copy of this Certification to all appropriate contractors and subcontractors. The applicant shall also post and maintain a legible copy of this Certification in a weather-resistant location at the construction site where it may be seen by the workers.
6. The applicant shall notify ADEQ within 30 days of submitting the notice of completion of work required by the Section 404 permit for this activity.
7. The applicant is responsible to ensure that certified activities do not cause or contribute to any exceedances of SWQS in any WUS.
8. This Certification does not authorize the discharge of mining, construction or demolition wastes, wastewater, process residues or other potential pollutants to any WUS except as specified in the application, supporting documents, and/or in the CWA 404 permit.

SPECIFIC CONDITIONS

Except as specified in the application and supporting documents, including those documents referenced in Section 3, and allowed in the Section 404 permit, the following specific conditions apply:

Stormwater Management (Mines)

9. Industrial stormwater discharges covered under Arizona's Mining Multi-Sector General Permit (Mining MSGP) and allowable non-stormwater discharges, identified in Part 1.1.3 of ADEQ's Mining MSGP, must not cause or contribute to an exceedance of an Arizona Surface Water Quality Standard.

10. Stormwater that comes into contact with mine drainage that is subject to 40 CFR Part 440 or any other process water is not authorized to be discharged and is not covered under Arizona's Mining MSGP.
11. Un-impacted stormwater that has not been in contact with mine operations may be diverted directly to surface water.

Erosion Prevention and Hydraulic Alterations

12. Clearing, grubbing, scraping or otherwise exposing erodible surfaces shall be minimized to the extent necessary for each construction phase or location.
13. Dredged or fill material shall be placed so that it is stable, meaning after placement, the material does not show signs of excessive erosion. Indicators of excess erosion include: gulying, head cutting, caving, block slippage, material sloughing, etc. Material shall not discharge (e.g., via leaching, runoff) pollutants into streams or wetlands.
14. Erosion control, sediment control and/or bank protection measures shall be installed before construction and pre-operation activities, and shall be maintained during construction and post-construction periods to minimize channel or bank erosion, soil loss and sedimentation. Control measures shall not be constructed of uncemented or unconfined imported soil, or other materials easily transported by flow.
15. The effectiveness of all pollution control measures, including erosion and sediment control measures, shall be inspected, maintained and modified (as necessary) to reduce pollutants and ensure compliance with SWQS in any WUS.
16. Direct runoff of water used for irrigation or dust control shall be limited to the extent practicable and shall not cause downstream erosion or flooding nor cause an exceedance of applicable SWQS in any WUS.
17. Except where the activities certified herein are intended to permanently alter any WUS, all disturbed areas within WUS shall be restored and (re)vegetated as indicated in the application documents if approved by the USACE (including offsite/in lieu mitigation). Denuded areas within WUS not intended to be permanently altered shall be revegetated as soon as physically practicable. Vegetation shall be maintained on unarmored banks and slopes to stabilize soil and prevent erosion. Fill used to support vegetation rooting or growth shall be protected from erosion.
18. If retention/detention basins are included in or added to the project, applicant will complete the grading necessary to direct runoff towards the basins as soon as practicable.
19. Retention/detention basins shall be sized to accept storm runoff and capture sediment prior to it entering any WUS. Discharge from the basin(s) shall be at a rate and volume necessary to minimize downstream erosion and scour. The basin(s) shall be maintained as needed to ensure effectiveness.
20. Activities herein certified shall, as much as practicable, be performed during periods of low flow (baseflow or less) in any perennial WUS, or no flow in any ephemeral or

intermittent WUS. No work shall be done, nor shall any equipment or vehicles enter any WUS while flow is present, unless all conditions in this Certification are met.

21. When flow is present in any WUS within the project area, the applicant and any contractor will not alter the flow by any means except to prevent erosion or pollution of any WUS.
22. Any disturbance within the ordinary high water mark of a WUS that is not intended to be permanently altered shall be stabilized to prevent erosion and sedimentation.
23. Applicant will take measures necessary to prevent approaches to any WUS crossing from causing erosion or contributing sediment to any WUS.
24. The applicant shall implement control measures necessary to maintain designated used(s) in WUS both upstream and downstream of the project area.

Sediment Loads

25. When flow in any WUS in the work area is sufficient to erode, carry or deposit material, activities certified herein shall cease until:
 - the flow decreases below the point where sediment movement ceases; or
 - control measures have been undertaken; e.g., equipment and materials easily transported by flow are protected with non-erodible barriers or moved outside the flow area.
26. Silt laden or turbid water resulting from activities certified herein shall be managed in a manner to reduce sediment load prior to discharging so as not to exceed SWQS in any WUS.
27. Any washing or dewatering of fill material must occur outside of any WUS prior to placement and the rinsate from such washing shall be settled, filtered or otherwise treated to prevent migration of pollutants (including sediment) or from causing erosion to any WUS. Other than replacement of native fill or material used to support vegetation rooting or growth, fill placed in locations subject to scour must resist washout whether such resistance is derived via particle size limits, presence of a binder, vegetation, or other armoring.

Pollution Prevention

28. If activities certified herein are likely to cause or contribute to an exceedance of SWQS in any WUS operations shall cease until the problem is resolved or until control measures have been implemented.
29. Except as approved in the 404 permit, construction material and/or fill (other than native fill or that necessary to support re-vegetation) placed in any WUS, shall not include pollutants in concentrations that will cause or contribute to a violation of a SWQS in any WUS.

Acceptable construction materials that will or may contact water in any WUS are: untreated logs and lumber; natural stone (crushed or not), crushed clean concrete (recycled concrete); native fill; precast, sprayed or cast-in-place concrete (including

soil cement and unmodified grouts); steel (including galvanized); plastic and aluminum. Other materials allowed for this project, only if placed in accordance with application and supporting documents, are mining residues including tires, waste rock, gangue and tailings. Use of other materials may be allowed, but require prior written approval from ADEQ.

30. The applicant will erect any barriers, covers, shields and other protective devices as necessary to prevent any construction materials, equipment or contaminants/pollutants from falling, being thrown or otherwise entering any WUS.
31. Area(s) must be designated, entirely outside of any WUS, for equipment staging and storage. In addition, the applicant must designate areas, located entirely outside of any WUS, for fuel, oil and other petroleum product storage and for solid waste containment. All precautions shall be taken to avoid the release of wastes, fuel or other pollutants to any WUS.

Any equipment maintenance, washing or fueling that cannot be done offsite will be performed in the designated area with the following exception: equipment too large or unwieldy to be readily moved; e.g., large cranes, may be fueled and serviced in the WUS (but outside of standing or flowing water) as long as material specifically manufactured and sold as spill containment is in place during fueling/servicing. All equipment shall be inspected for leaks, all leaks shall be repaired and all repaired equipment will be cleaned to remove any fuel or other fluid residue prior to use within (including crossing) any WUS.

A spill response kit will be maintained in this (these) area(s) to mitigate any spills. The kit will include material specifically manufactured and sold as spill adsorbent/absorbent and spill containment. The applicant will ensure that whenever there is activity on the site, that there are personnel on site trained in the proper response to spills and the use of spill response equipment.

32. A spill containment plan shall be maintained onsite to ensure that pollutants from spills are prevented from entering any WUS. Any pollutant generated by activities certified herein shall be properly disposed of in accordance with applicable regulations.
33. Upon completion of the activities certified herein, areas within any WUS shall be promptly cleared of all forms, piling, construction residues, equipment, debris or other obstructions.
34. If fully, partially or occasionally submerged structures are constructed of cast-in-place concrete instead of pre-cast concrete, applicant will take steps; e.g., sheet piling or temporary dams, to prevent contact between water (instream and runoff) and the concrete until it cures and until any curing agents have evaporated or otherwise cease to be available; i.e., are no longer a pollutant threat.
35. Washout of concrete handling equipment must not take place within any WUS and any washout runoff shall be prevented from entering any WUS.
36. Any permanent WUS crossings other than fords, shall not be equipped with gutters, drains, scuppers or other conveyances that allow untreated runoff (due to events equal to or lesser in magnitude than the design event for the crossing structure) to directly

enter a WUS if such runoff can be directed to a local stormwater drainage, containment and/or treatment system.

Temporary and Permanent Structures

37. Permanent and temporary pipes and culvert crossings shall be adequately sized to handle expected flow and properly set with end section, splash pads, headwalls or other structures that dissipate water energy to control erosion.
38. Debris will be cleared as needed from culverts, ditches, dips and other drainage structures in any WUS to prevent clogging or conditions that may lead to washout.
39. All temporary structures constructed of imported materials and all permanent structures, including but not limited to, access roadways; culvert crossings; staging areas; material stockpiles; berms, dikes and pads, shall be constructed so as to accommodate overtopping and resist washout by streamflow.
40. Any temporary crossing, other than fords on native material, shall be constructed in such a manner so as to provide armoring of the stream channel. Materials used to provide this armoring shall not include anything easily transportable by flow. Examples of acceptable materials include steel plates, untreated wooden planks, pre-cast concrete planks or blocks; examples of unacceptable materials include clay, silt, sand and gravel finer than cobble (roughly fist-sized). The armoring must, via mass, anchoring systems or a combination of the two, resist washout.
41. No vehicles or equipment shall ford any unarmored WUS crossing when flow is present.
42. Any ford, other than fords on native material, shall be designed, and maintained as necessary, to carry the proposed traffic without causing erosion or sedimentation of the stream channel while dry or during a flow event equal to or less than the design event for the crossing.
43. No unarmored ford shall be subject to heavy-truck or equipment traffic after a flow event until the streambed is dry enough to support the traffic without disturbing streambed material to a greater extent than in dry conditions. Light vehicles (less than 14,000 pounds gross weight) are not restricted by this condition.
44. Temporary structures constructed of imported materials are to be removed no later than upon completion of the permitted activity.
45. Temporary structures constructed of native materials, if they provide an obstacle to flow, or can contribute to or cause erosion, or cause changes in sediment load, are to be removed no later than upon completion of the permitted activity.