APPENDIX L

DRAFT EIS COMMENTS AND COMMENT RESPONSES

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1.0 INTRODUCTION

In March 2013, ASARCO LLC (Asarco) submitted a Section 404 permit application to the U.S. Army Corps of Engineers (Corps) for the construction and operation of a new tailings¹ storage facility (TSF) that would receive tailings generated at the Ray Mine, which is an existing open pit copper mine located in Pinal County, Arizona about 10 miles northwest of the community of Kearny and approximately 65 miles southeast of the city of Phoenix.

The Corps required a permit application for the proposed Ripsey Wash TSF to comply with regulations promulgated under Section 404 of the Clean Water Act, as the Corps has determined the Ripsey Wash drainage and other ephemeral washes within the proposed Project footprint are "Waters of the United States" and subject to Corps jurisdiction. Asarco, as the Applicant, is proposing to place fill material within Waters of the United States, which triggers the requirement for a Section 404 permit.

With the Section 404 permit application submittal, the Corps determined that an environmental impact statement (EIS) would be prepared to comply with the National Environmental Policy Act (NEPA) and that they would be the lead agency for NEPA compliance. The EIS would be completed in accordance with procedures specified by Council on Environmental Quality (CEQ) regulations for NEPA (40 CFR §1500 – 1508), CEQ guidance, the Corps' NEPA Implementation Procedures for the Regulatory Program (33 CFR Part 325, Appendix B), and South Pacific Division's Standard Operating Procedure for Preparing and Coordinating EIS Documents (12509-SPD).

Asarco's March 2013 submittal of an initial 404 permit application to the Corps initiated action under NEPA regulations. As required by NEPA (40 CFR §1501.7), the Corps provided for an early and open process to determine the scope of the issues to be addressed and the extent of the environmental analysis necessary for an informed decision on the proposed Ripsey Wash TSF.

On August 26, 2013, the Corps published their Notice of Intent (NOI) to prepare an EIS for this Project in the *Federal Register*. A 60-day EIS scoping process was initiated to solicit comments about the Project from the general public, businesses, special interest groups, Native American tribes and government agencies. This comment period was originally slated to end on October 28, 2013; however, with the October 2013 shut-down of portions of the federal government, the Corps extended the scoping comment period for another 21 days, until November 18, 2013.

In addition to the notice in the *Federal Register*, the Corps also placed public notices in local newspapers (*East Valley Tribune, Arizona Silver Belt*, and *Copper Area News*) on September 4, 11 and 18, 2013. These notices announced the Corp's plans to prepare an EIS for the proposed TSF, along with the time and place for the public scoping meetings where the public and interested parties could learn more about the project and provide comments to the Corps.

The Corps held two public scoping meetings: one on September 24, 2013 at the Ray Elementary School in Kearny (Arizona) and the other on September 25, 2013 at the Performing Arts Center at the Apache Junction High School in Apache Junction (Arizona). About twenty people attended both meetings. The Corps provided a court recorder at both meetings for verbal comments, but none were given.

¹ Tailings are the finely-ground rock material produced by the milling process, which separates copper-bearing minerals from non-economic material. Tailings should not be confused with overburden or development rock (sometimes referred to as waste rock), which is non-mineralized or uneconomic mineralized material excavated in order to access the copper-bearing ore that is mined and processed to generate a profit.

The Corps met with EPA at its offices in San Francisco (California) on September 10, 2013 to discuss the project and solicit input. The Corps also hosted an informational meeting on September 26, 2013 at its Phoenix (Arizona) office for agencies interested in Asarco's proposal and to obtain input on the project and proposed EIS work.

The Corps received 22 letters and emails during the scoping process. Commenters included the EPA, the USDA Forest Service, the Arizona Game and Fish Department (AGFD), Arizona Trail Association, Sierra Club, Gila River Indian Community, White Mountain Apache Tribe, Tohono O'Odham Nation, and numerous individuals.

2.0 DRAFT EIS PUBLIC INVOLVEMENT AND COMMENT

In early January 2016, the Corps submitted an electronic copy of Ray Mine Tailings Storage Facility Draft EIS to the Environmental Protection Agency (EPA) in Washington D.C. so that the official Notice of Availability (NOA) for the Draft EIS could be published in the Federal Register. The Corps also placed a public notice on its website announcing the availability of the Draft EIS as required by the Corps South Pacific Division Standard Operating Procedure (SOP) for preparing and coordinating environmental impact statements (12509-SPD). In addition, the Draft EIS was posed on Corps website, and hard copies of the Draft EIS were provided to the public libraries in the towns of Kearny and Superior.

On January 29, 2016, the NOA for the Ray Mine Tailings Storage Facility Draft EIS for public review was published in the *Federal Register*. A 45-day comment period was provided to solicit comments on the Draft EIS from the general public, businesses, special interest groups, Native American tribes and government agencies. This comment period was originally slated to end by the close of Monday, March 14, 2016; however, the Environmental Protection Agency (EPA) requested a 30-day extension to the comment period, which the Corps granted, extending the comment period until April 14, 2016. Subsequently, the EPA requested another extension for their Draft EIS review, which because of EPA's status as a cooperating agency, the Corps granted for EPA until the close of May 5, 2016.

In addition to the notice in the *Federal Register*, the Corps also placed public notices in local newspapers (*East Valley Tribune, Daily New Sun, Arizona Silver Belt*, and *Copper Area News*). These notices were published weekly during the weeks of February 1 through February 22, 2016, and they announced the availability of the Ray Mine Tailings Storage Facility Draft EIS for public review, along with the time and place for the Draft EIS public meeting where the public and interested parties could learn more about the Draft EIS and provide comments to the Corps.

In addition to the above notices, the Corps also directly notified those agencies, organizations and individuals on the Corps' EIS distribution list that the Ray Mine Tailings Storage Facility Draft EIS was available for review. The Corps provided CDs to those agencies, organizations and individuals who had earlier requested a copy of the Draft EIS.

The Corps held a public meeting for receipt of comment on the Draft EIS on February 24, 2016 at the Ray Elementary School in Kearny (Arizona). About twenty people attended both meetings. Story boards with various aspects of the project were set up for public review. Representatives of Corps and Asarco were in attendance to answer questions. James Stewart (Technical Manager from Asarco) made presentation about background of Ray Mine and need for a new tailings facility. Mike Langley (Corps) discussed NEPA and the 404 permit. The Corps provided a court recorder at the meeting for verbal comments, but none were given.

The Corps received 29 letters and emails regarding the Draft EIS from the following commenters:

- 1. San Carlos Irrigation Project
- 2. Bureau of Land Management
- 3. Environmental Protection Agency
- 4. Arizona House of Representatives
- 5. Town of Kearny, Arizona
- 6. Town of Hayden, Arizona
- 7. Town of Winkleman, Arizona
- 8. The Hopi Tribe
- 9. White Mountain Apache Tribe
- 10. US Department of Interior
- 11. US Fish & Wildlife Service
- 12. US Bureau of Reclamation
- 13. US Forest Service
- 14. US Coast Guard
- 15. Arizona Game & Fish Department
- 16. Pinal County
- 17. American Legion Post 18
- 18. Arizona Mining Reform Coalition
- 19. Arizona Trail Association
- 20. Asarco
- 21. Lower San Pedro Watershed Alliance
- 22. Superstition Horseman's Association
- 23. Ronal Dorn
- 24. Mike Gasparek
- 25. Fred Gaudet
- 26. Mike Kotraba
- 27. Jason Reynolds
- 28. Daniel Sharp
- 29. John Windfeldt

Copies of the letters received from these commenters, along with the brackets identifying their comments, are included in Section 5.0, Draft EIS Comments.

A variety of comments were received as set forth in Table 1, Draft EIS Comments by Category.

Table 1, Draft EIS Comments by Category

Comment Category	Number of Comments	Percentage of Total (%)
Minor Clarifications	277	24%
Wildlife	80	7%
Regulatory Aspects	69	6%
Mitigation: Project	59	5%
Geochemistry	53	5%
Surface Water	50	5%
Groundwater	50	5%

Comment Category	Number of Comments	Percentage of Total (%)
Design Considerations	48	4%
Recreation	34	3%
Alternatives	33	3%
Corps 404 (B)(1)	33	3%
Scope Of Analysis	31	3%
Monitoring	27	2%
Air Quality/Climate	26	2%
Cumulative Impacts	25	2%
Closure Financial Assurance	24	2%
Vegetation	22	2%
Proposed Action Alternative	21	2%
Visual Resources	19	2%
Mitigation: Waters of US	18	2%
Cultural Resources	18	2%
Noise	15	1%
Purpose & Need	14	1%
Socioeconomics	13	1%
Land Use	12	1%
Waters Of The US	12	1%
Reclamation/Closure	11	<1%
Geology	10	<1%
Transportation	8	<1%
Connected Actions	8	<1%
Soils	7	<1%
Geotechnical	7	<1%
No Action Alternative	6	<1%
Accidents & Spills	5	<1%
Background/Regional	5	<1%
Appendices	2	<1%
Ray Land Exchange	2	<1%
Irreversible & Irretrievable Effects	1	<1%
Glossary	1	<1%
State Land Trust	1	<1%
TOTAL	1,157	100%

3.0 RESPONSES TO COMMENTS ON THE DRAFT EIS

Comment Number	Responses to Ray Tailings Draft EIS Comments	
Comment Document #1 San Carlos Irrigation Project (Cooperating Agency)		
1-1	Text revised.	
1-2	Text revised to describe sites located within the proposed powerline relocation.	
Comment Document #2 Bureau of Land Management		
2-1	Since the issuance of the Draft EIS, Asarco has organized and submitted to the BLM four separate Plans of Development (PODs) for the tailings/water return pipelines, the relocated Florence-Kelvin highway, SCIP's relocated 69 kV powerline, and the relocated portions of the Arizona Trail that are located on BLM administered lands. These POD's contain detail requested by the BLM and are included in Appendix K, BLM Plans of Development.	
2-2	Previous BLM comment. Already addressed in Draft EIS.	
2-3	See comment response 2-1.	
2-4	Text revised.	
2-5	The San Pedro Riparian National Conservation Area (SPRNCA) is located over 100 miles south of the Ray Mine. This area would not be impacted by the construction and operation of a new TSF at the Ray Mine. Additional text has been added to Section 3.4.1.1, Regional Setting (under Section 3.4, Surface Water Hydrology) to clarify BLM's oversight role of this area and its responsibility to protect, conserve and enhance baseflows and groundwater levels within the SPRNCA.	
2-6	Previous BLM comment. Already addressed in Draft EIS.	
2-7	Previous BLM comment. Already addressed in Draft EIS.	
2-8	Previous BLM comment. Already addressed in Draft EIS.	
2-9	Previous BLM comment. Already addressed in Draft EIS.	
2-10	Previous BLM comment. Already addressed in Draft EIS.	
2-11	Previous BLM comment. Already addressed in Draft EIS.	
2-12	See Figure 30, Groundwater Hydrology – Ripsey Wash TSF, and Figure 31, Groundwater Hydrology – Hackberry Gulch TSF.	
2-13	Temperature scales noted in table footnote.	
2-14	Without well completion information, an explanation would be speculative.	
2-15	Without well completion information, an explanation would be speculative.	
2-16	The sentence has been corrected to read, " it is expected that the volume of water in these sediments is limited."	
2-17	The word "exhibit" is used correctly in the sentence.	
2-18	The Corps could not find the "expected traffic dispersion" language that the commenter questioned. It is expected, as currently addressed in the EIS, that the indirect traffic associated with the project would be scattered throughout surrounding communities, such as Kearny, Hayden, Superior, Gold Canyon and Apache Junction, and would not be concentrated in the vicinity of the proposed TSF sites.	

Comment Number	Responses to Ray Tailings Draft EIS Comments
2-19	The Corps understands that, for three years (construction period), there will be an increase in greenhouse gas emissions; and that, for that period, these construction emissions would add to the global output of greenhouse gas emissions. A text update to this effect has been added to Section 3.1, Air Quality/Climate. However, the Corps does conclude that estimated greenhouse gas estimates from the Asarco construction relative to overall Pinal County, U.S. and worldwide greenhouse gas emissions would be negligible and temporary (3 years).
2-20	Previous BLM comment. Already addressed in Draft EIS.
2-21	Previous BLM comment. Already addressed in Draft EIS.
2-22	Text revised.
2-23	Previous BLM comment. Already addressed in Draft EIS.
2-24	Previous BLM comment. Already addressed in Draft EIS.
2-25	Previous BLM comment. Already addressed in Draft EIS.
2-26	Figure clarified.
2-27	Comment noted.
2-28	Text revised.
2-29	The BLM personnel who participated in the review of the Draft EIS have been added to Section 6.0, List of Preparers.
2-30	See comment response 2-1.
2-31	See comment response 2-1.
2-32	Comment noted. The status of ROW authorization of this portion of the SCIP powerline by BLM is not relevant to this EIS and thus will not be addressed. This comment will be provided to SCIP for their information and action as appropriate.
2-33	See response to Comment 2-32 above.
2-34	See comment response 2-1.
2-35	See comment response 2-1.
2-36	See comment response 2-1.
2-37	See comment response 2-1.
2-38	See comment response 2-1.
2-39	Figure revised.
2-40	The Corps 404 permit will be contingent on Asarco purchasing the ASLD's property, since Asarco is the entity that has submitted the 404 permit application. Since no permit would be issued if the ASLD sale to Asarco is not consummated, the Corps does not believe it appropriate to analyze the scenario suggested by the commenter. The extent of the ASLD proposed land sale is on several figures including Figure 2, Site Plan Layout – Ripsey Wash TSF. Th ASLD land sale auction for this property is currently scheduled for July 23, 2018.
2-41	As explained in Section 1.2.1, Scope of Analysis, the Corps does not consider the pending BLM-Asarco Ray Land Exchange as a connected action with respect to the proposed TSF, and this land exchange is discussed as part of the cumulative impact analysis in Section 4.0, Cumulative Impacts. Also, see Section 11.0, Asarco-BLM Ray Land Exchange, in Appendix D, Regional Activity.
2-42	Repeat of comment 2-37.
2-43	Text in the Executive Summary has been clarified.

Comment Number	Responses to Ray Tailings Draft EIS Comments
2-44	Text revised.
2-45	Section 3.0, Decision Framework, already states that the BLM will issue a record of decision for those Project features and actions under their jurisdiction. Additional discussion to response to this comment has been included in Section 1.4, Decision Framework, and Section 1.5.2, Bureau of Land Management, has been clarified.
2-46	A reference to the Section 11.0, Asarco-BLM Ray Land Exchange, in Appendix G, Regional Activity, has been added to Footnote 7 in Section 1.5.2, Bureau of Land Management. There is considerable discussion about the Asarco-BLM Ray Land Exchange in Appendix G. The Corps agrees that the BLM would need to authorize a modification to Asarco's mine plan of operation in the event that the Hackberry Gulch alternative is selected, but the authorization of a mine plan of operation modification is independent of the Asarco-BLM Ray Land Exchange, as explained in Section 1.2.1, Scope of Analysis.
2-47	Table revised. Table 2-1, Summary of Ripsey Wash TSF Alternative, was also revised.
2-48	Table revised. Table 2-2, Summary of Hackberry Gulch TSF Alternative, was also revised.
2-49	The Corps agrees with the comment; the discussion in Section 1.4, Decision Framework, and in Section 1.5.2, Bureau of Land Management, has been clarified to respond to this comment.
	The proposed tailings and water return pipeline bridge is located on private lands, not on public lands administered by the BLM.
2-50	Text revised.
2-51	Text revised, including in the Executive Summary.
2-52	Text revised.
2-53	This matter was already addressed in the Draft EIS, under footnote 12, in Table 1-2, Issues Considered but not Analyzed in Detail. At the suggestion of commenter (see comment 2-55), this text has been removed as a footnote and included in the text of the table.
2-54	Text revised in Section 1.9, Regional Activity, to affirm this comment.
2-55	Text revised.
2-56	The public scoping meeting held in Apache Junction on September 25, 2013 was poorly attended, and limited public interest was shown for the project from the greater Phoenix area. Therefore, the Corps decided to hold a single public meeting/hearing on the Draft EIS in Kearny on February 24, 2016.
2-57	The topic of mineral resources, specifically the federal mineral estate, is discussed throughout the EIS document. See Section 1.5.2, Bureau of Land Management; Section 1.8, Concerns Outside the Scope of this Analysis; Section 2.3.12.3, Permanent Ripsey Wash TSF Closure Plan; Section 2.4.12.3, Permanent Hackberry Gulch Closure Plan; and Section 3.17.2.2, Effects of the Ripsey Wash TSF Alternative. The federal mineral estate is graphically shown on Figure 33, Ripsey Wash Alternative Mineral Estate, and Figure 34, Hackberry Gulch Mineral Estate. In addition, footnotes discussing the federal mineral estate managed and administered by the BLM are included in, Table 2-1, Summary of Ripsey Wash TSF Alternative, and Table 2-2, Summary of Hackberry Gulch TSF Alternative. Similar discussion about the federal mineral estate is included in the Executive Summary.

Comment Number	Responses to Ray Tailings Draft EIS Comments
2-58	Maps showing land ownership and mineral estate were included in the Draft EIS. Surface ownership is graphically shown on Figure 32, Surface Ownership. The federal mineral estate is graphically shown on Figure 33, Ripsey Wash Alternative Mineral Estate, and Figure 34, Hackberry Gulch Mineral Estate.
	The Ray Land Exchange is discussed in Section 11.0 of Appendix D, Regional Activity. Maps showing the relevant parcels involved in this pending land exchange are found in the June 1999, BLM Final Environmental Impact Statement Ray Land Exchange/Plan Amendment. See http://www.blm.gov/az/st/en/prog/lands/land_tenure/ray-mine/docs.html. This reference has been added to Section 11.0 of Appendix D, Regional Activity.
2-59	If neither TSF alternative is selected (which is the no-action alternative), Asarco would have no on-site option for storing tailings once the Elder Gulch TSF has reached its capacity. Once the Elder Gulch TSF is full and the Ray Concentrator is shut down, Asarco has the ability to ship some sulfide ore material via rail to the Hayden Concentrator.
	Additional discussion has been included in Section 2.2, No Action Alternative, to clarify this situation and to set forth the tentative limited timeframe for operation of the Ray Concentrator under the no-action alternative.
2-60	The proposed relocated portion of the Florence-Kelvin highway is located completely on private or ASLD lands.
2-61	Figure 8, BLM-Administered Lands – Pipelines and Arizona Trail, has been clarified to show BLM- administered lands.
2-62	The text in the EIS has been clarified to discuss temporary disturbance. It is not possible to quantify how much of the total disturbance would be temporary until final highway designs are approved by Pinal County and final pipeline plans are approved on BLM lands by the BLM.
2-63	Access to upper Ripsey Wash is addressed in Section 3.9.2.
2-64	Table revised.
2-65	Text revised.
2-66	See comment response 2-1.
2-67	Text revised.
2-68	The scientific name for golden eagle has been deleted from the Executive Summary. Scientific names for all wildlife species discussed are provided in Section 3.15.
2-69	Comment noted.
2-70	The list of BLM Sensitive Species has been updated in the Executive Summary and in Section 3.15, Wildlife. Based on the most recent BLM list (February 2017), desert purple martin and gilded flicker were kept on the list since WestLand's Sensitive Species analysis lists these species as possible inhabitants. Bald eagle and cactus ferruginous pygmy owl were left off the list since WestLand's Sensitive Species analysis indicated their possible presence as "None" or "Unlikely."
2-71	Text revised.
2-72	Table clarified.
2-73	Text revised.
2-74	Typo fixed.
2-75	Asarco plans to place barbed wire fencing around active operations and chain link fencing around the reclamation and drain down ponds. Text has been revised to include this information.
2-76	Text revised.
2-77	Plant without name was not found.

Comment Number	Responses to Ray Tailings Draft EIS Comments
2-78	Text revised.
2-79	Text revised.
2-80	Text revised.
2-81	Text revised.
2-82	Text revised.
2-83	Comment noted.
2-84	Desert bighorn sheep has been added to the discussion of SERI species.
2-85	Discussion of Sonoran desert tortoise information has been added to Table 3-66, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern; Section 3.15.9, Reptiles and Amphibians; and, Section 3.15.1.11, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC).
2-86	Note on golden eagle nesting near the analysis area has been added to Table 3-66, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern.
2-87	Formal consultation with the USFWS has indicated that the southwestern willow flycatcher, yellow-billed cuckoo, and northern Mexican garter snake are the only threatened and endangered species that need to be addressed by the EIS and the Biological Assessment (BA).
2-88	Additional discussion on impacts to Sonoran desert tortoise have been added to Section 3.15.2.2.3, Wildlife Habitat; Section 3.15.2.2.6, Special Habitat Features; Section 3.15.2.2.12, Reptiles and Amphibians; and Section 3.15.2.2.14, BLM Sensitive and State Wildlife Species of Concern (WSC).
2-89	Additional discussion of Sonoran desert tortoise special habitat features have been added to Section 3.15.1.1.1, Special Habitat Features, and Section 3.15.2.2.6, Special Habitat Features.
2-90	A discussion on Desert bighorn sheep has been added to Section 3.15.2.2.7, Mammal and Bird Species of Economic and Recreational Importance (SERI).
2-91	See comment response 2-88.
2-92	Appendix D revised.
2-93	Appendix D revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
Comment Docume	nt #3
Environmental Pro 3-1	At full facility build-out, the Ripsey Wash TSF alternative would cause the permanent filling of an estimated 134.36 acres of Waters of the U.S., slightly more than the 130 acres stated by the commenter. See Table 2-1, Summary of Ripsey Wash TSF Alternative, in the EIS document. The Corps will require compensatory mitigation for the function losses associated with the impacts to these Waters of the U.S.
	See Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan. Seepage from the Ripsey Wash TSF would be controlled to prevent contamination of the Gila River. See Section 2.3.2.7, Hackberry Fault Seepage Mitigation; Section 2.3.2.8, Seepage Trenches; and Section 2.3.2.9, Reclaim Ponds. Under the terms and conditions of the recently approved Aquifer Protection Permit (APP) from the Arizona Department of Environmental Quality (DEQ) for the Ripsey Wash TSF, Asarco will be required to monitor down-gradient of the tailings embankment to ensure compliance with this permit. See Section 2.3.2.10, Monitoring Wells.
	Additional safeguards to be employed at the Ripsey Wash TSF to protect the Gila River are discussed in Section 2.3.2.11, Pumping Booster Station and Tailings Drain-Down Pond; Section 2.3.2.12, Pipeline Bridge over Gila River; Section 2.3.4, Tailings Delivery System; and Appendix I, Applicant Project Mitigation.
	To further protect the Gila River, Asarco would implement safeguards for stormwater at the Ripsey Wash TSF as described in Section 2.3.2.5, Detention Dams and Diversion Structures, and Appendix I, Applicant Project Mitigation. Asarco would also maintain a stormwater pollution prevention plan (SWPPP) to address on-site stormwater runoff, in accordance with the Arizona Mining Multi-Sector General Permit (MSGP) issued by the Arizona DEQ. See Appendix C, Agency Responsibilities (Regulatory Framework).
	A complete discussion on TSF alternatives, including reasons why many of the considered alternatives were deemed not practicable, is set forth in Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
	See comment response 3-2 regarding the commenter's remark about a possible ARNI (aquatic resource of national importance) designation for Ripsey Wash.
3-2	The EPA, in an April 29, 2016 letter to the Corps, discussed a desire to elevate the Department of Army permit decision-making process for the Ray Mine TSF project using Section 404(q) of the Clean Water Act (CWA) (referred to as a memorandum of agreement [MOA]) to declare Ripsey Wash and the Gila River as ARNIs.
	In a June 22, 2016 letter, the Corps responded to the EPA that their April 29, 2016 letter was not received within the required timeframe of the MOA, which would have been during the NEPA scoping phase for the Ray Mine TSF EIS, which was conducted from August 28, 2013 to November 18, 2013. The Corps June 22, 2016 letter to EPS states: "Because the EPA's April 2016 letter is untimely, it does not meet the MOA's exclusive procedural requirements for elevation of an individual decision."
	The Gila River ARNI referenced by the commenter is located approximately 100 river miles downstream of the proposed Ray Mine TSF project, below the confluence of the Gila River with the Santa Cruz and Salt Rivers, in the southwest part of the metropolitan area of the city of Phoenix. Given that the Ray Tailings EIS describes the protective measures to be taken to prevent seepage from the Ripsey Wash TSF to reach the Gila River (see comment response 3-1), the Corps disagrees with the commenter's assertion that the designated downstream Gila River ARNI will be significantly impacted by the preferred alternative.
	The Corps agrees with EPA's comments regarding the importance of the Gila River and its riparian resources. However, as noted in the EIS, the Corps's position is that impacts to the Gila River have been thoroughly analyzed; that appropriate engineering design considerations have been incorporated into the project; that appropriate multi-agency regulatory oversight has been established to monitor the construction, operation, and closure of this facility; and that appropriate mitigation has been developed to avoid, minimize, and/or adequately compensate for any adverse effects to the Gila River.
3-3	Comment noted.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-4	The Corps disagrees with the commenter's suggestion that 550 million tons should be the basis for TSF sizing considerations. The discussion in Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis, has been expanded to further explain Asarco's need for tailings storage of 750 million tons for a new facility.
3-5	The Corps has revisited the alternatives considered for the Ray Mine TSF project and reaffirmed its Draft EIS determination that the West Dam TSF, the Granite Mountain TSF and the methods of dry stacking and in-pit tailings storage are not practicable. Additional clarification has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
3-6	See comment response 3-5.
3-7	See comment response 3-5.
3-8	See comment response 3-5.
3-9	See comment response 3-5.
3-10	WestLand Resources, Inc., an Asarco consultant, prepared a report titled, <i>Hackberry Gulch Alternative 2</i> <i>Functional Assessment of Potential Waters of the US</i> , dated August 29, 2014. This report was made available to the commenter in September 2014.
	The Corps was not present during EPA's February 9, 2016 field visit to the Ray Mine. Asarco provided the Corps with the following explanation on the commenter's claim of being denied an opportunity to "view the (Hackberry) wetlands in question."
	Asarco coordinated with and conducted a tour for EPA staff on February 9, 2016. Based on EPA's priorities determined in email correspondence dated February 2, 2016, EPA requested a tour of the Ripsey Wash, Hackberry and West Dam alternatives and proposed mitigation sites as time would allow. Based on this request, Asarco prepared an agenda and planned out a tour that allowed EPA representatives to see as much as possible in their planned one-day-long site visit. This agenda, which did not specifically include a visit to the wetlands, was provided to EPA in advance of the tour. During the afternoon portion of the tour, which included a stop to view the Hackberry Gulch alternative location, EPA representatives asked about the possibility of visiting the wetlands. Asarco explained that visiting the wetland sites would have required several hours of round trip hiking and would not have left enough time to visit the proposed mitigation sites. The EPA representatives elected to continue on the planned tour to the mitigation sites rather than visiting the wetlands. Asarco unequivocally did not "prevent" EPA representatives from visiting the wetlands. Asarco would accommodate a second visit to the wetland areas at the Hackberry Gulch site should EPA request one. Corps staff have visited the wetland sites within the alternative footprint and confirmed the preliminary assessment of these features by Asarco and their consultant.
	alternative), based primarily on substantial design challenges that are relevant to this site with respect to seepage control and the associated risks associated with operating a facility at this site compared to the Ripsey Wash TSF alternative. Additional clarification on this determination has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-11	The Corps disagrees that the proposed Ripsey Wash TSF would cause significant direct impacts to Gila River water quality. See comment response 3-1.
	The Arizona DEQ has approved an APP for the Ripsey Wash TSF. With the approval of the APP, the Arizona DEQ is satisfied that the design and proposed operation of this TSF will protect the groundwater and surface water down-gradient of the facility, in particular the Gila River. As stated in comment response 3-1, Asarco will be required to monitor groundwater quality down-gradient of the tailings embankments to ensure compliance with the APP.
	The Corps agrees that either the Ripsey Wash TSF or the Hackberry Gulch TSF would have to be "actively managed" beyond closure. See Section 2.3.12, Ripsey Wash TSF Closure and Reclamation, and Section 2.4.12, Hackberry Gulch TSF Closure and Reclamation.
	Representative geochemical and hydrogeologic information is set forth in Section 3.3, Geology, Geotechnical and Geochemistry, and in Section 3.6, Groundwater Hydrology. Discussion on surface water is set forth in Section 3.4, Surface Water Hydrology.
	Also see comment responses 3-20 and 3-21.
3-12	The EIS contains a discussion on temporary closure, closure and post-closure management, including the basis for closure and post-closure financial assurances. See Section 2.3.12, Ripsey Wash TSF Closure and Reclamation, and Section 2.4.12, Hackberry Gulch TSF Closure and Reclamation.
	As explained in these sections, the Arizona DEQ, Arizona State Mine Inspector and BLM, under their individual statutory and regulatory authorities, would require Asarco to execute financial assurance agreements as part of any plan and permit approvals from these agencies. These financial assurances would be in the form of closure and post-closure (reclamation and environmental performance) securities. Each of the aforementioned agencies would be responsible to ensure that sufficient funds or sufficient commitments are made by Asarco to meet closure or post-closure obligations under the terms and conditions of the company's plans and the agency approvals. By federal and state law, no operations under their jurisdiction can commence with the approval of the permits and plans, and agencies' approvals would depend, in part, on the calculation of adequate financial assurance agreements and the execution of the appropriate financial guarantees. Once executed, failure of Asarco to comply with approval or permit terms and conditions, including failure to maintain the financial capability required by these approvals and permits, would constitute a violation.
	The amounts and form of the financial assurances are independently determined by the Arizona DEQ, Arizona State Mine Inspector and the BLM, based on the estimated costs of reclamation and environmental protection practices that meet these agencies' statutory and regulatory authorities. These agencies may increase or decrease the financial assurances at any time to ensure sufficient funds or mechanisms are in place to compensate for compliance with their permits and approvals, and these agencies must periodically review (and update as appropriate) the Asarco financial securities to maintain such adequacy. There are no federal rules or regulations in place that create specific requirements or metrics for financial assurances that are applicable to this situation.
3-13	The Corps agrees with the eight factors identified in the comment but disagrees that the potential environmental impacts cannot be effectively mitigated by the measures discussed in the EIS to protect the Ripsey Wash watershed and the quality and quantity of flow in the Gila River.
	Although the placement of tailings as proposed by Asarco would cover a large portion of lower Ripsey Wash, the proposed design, operation and closure plans and safeguards would not cause significant degradation of the Gila River. The Arizona DEQ agrees with that conclusion based on their approval of the APP for the Ripsey Wash TSF.
	Also see comment response 3-1.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-14	The Corps believes that appropriate and practical steps have been taken to minimize potential impacts (see comment response 3-1), and appropriate mechanisms exist for closure financial assurance (see comment response 3-12).
	The Corps has directed the preparation of the conceptual mitigation plan presented in the EIS. This plan was created based on the requirements of the "2008 Mitigation Rule" and the South Pacific Division's (SPD's) compensatory mitigation procedures, which are tiered from the 2008 rule. The Corps has discussed with EPA repeatedly the basis for the mitigation presented, the need for a qualitative assessment method because of the lack of an accepted quantitative method, and the use of the SPD guidelines. Based on the commenter's remarks, the Corps has revisited the proposed compensatory mitigation outlined in Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan, and Hackberry Gulch TSF alternative and updated and clarified the proposed mitigation work. A substantial portion of the permittee-responsible mitigation proposal has been converted to in-lieu fee mitigation, a higher priority compensatory mitigation method as stated in the 2008 rule. In addition, to address the potential uncertainty associated with the use of in-lieu fee mitigation in this area, Asarco has also proposed a contingency plan to cover any in-lieu fee mitigation shortfall. This is addressed in the revised mitigation plan presented in Appendix J, Compensatory Mitigation, of the FEIS.
3-15	See comment response 3-2.
3-16	The remarks about compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230) lack specifics. To comply with these guidelines, along with Corps guidelines for compliance with alternative assessment pursuant to Section 404(b)(1) of the Clean Water Act, the Corps included Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis, in the Draft EIS. As stated in comment response 3-5, clarification has been added to this appendix to further support compliance with aforementioned guidelines.
	Regarding the need for tailings storage of 750 million tons for a new facility, see comment response 3-4. The commenter also incorrectly assumed that Asarco developed the 750 million tons estimate for the TSF based on multiplying the maximum Ray Concentrator capacity of 45,000 tons per day by the estimated mine life of 50 years. The requested tailings storage capacity was based on the potential resource at the Ray Mine site and is not tied to any particular production rate.
3-17	See comment response 3-5.
	The analysis of a smaller (550 million ton) site was not analyzed because such a facility would not meet Asarco's purpose and need. See comment response 3-4.
3-18	See comment response 3-14
3-19	The Corps believes the testing conducted for geochemical characterization for the proposed TSF project is consistent with current best practice, and the samples that underwent static and kinetic testing are representative of site materials. Additional humidity cell testing (HCT) is not necessary for characterization, as there is no indication from HCT testing conducted that the tailings have potential for acid generation. The results also show a low potential for constituent dissolution. The analyses of borrow and alluvial materials showed similar results.
	Further, the Arizona DEQ has approved the Ripsey Wash TSF APP, stating that the geochemical characterization information meets the regulatory requirements of the permit.
	Bullet 1: The ore material mined from the Ray Mine after 2042 is expected to continue to be over 85% diabase and Pinal schist.
	Bullet 2: Kinetic (HCT) testing was conducted for 10 weeks on all samples and 52 weeks on select samples. The Corps believes this timeframe was appropriate for geochemical characterization purposes, as all tests indicated low potential for acid generation. In addition, leachate parameters were relatively constant throughout the test period, and the pH values remained neutral throughout testing. Oxidation reduction potential never reached levels necessary for oxidation of sulfidic minerals. Alkalinity was in excess of acidity throughout testing. Acidity dropped below detectable levels after 38 weeks of testing.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-19	Bullet 3: The Corps believes that a sufficient number of Pinal schist and diabase samples were tested and are representative of the ore at the Ray Mine. The Ray Mine geology is well characterized and, given the porphyry nature of the ore deposit, very consistent in nature.
	The results of the static testing varied, but the results of the static testing analyses showed that the material would be classified as potentially acid generating. Static testing is known to be conservative, but, given the results, it was decided to conduct kinetic (HCT) testing, which would provide additional information regarding the potential of the Ray Mine ore material to generate acid. The kinetic testing showed that the material has a low potential for acid generation. See response to bullet 2 above.
	One of the two Precambrian diabase borrow material samples did have a pyritic sulfur content of 0.95, but this sample also had NNP >20 and ANP/AGP ratio >3. The geochemical test results for borrow material and alluvium tend to be conservative as sample preparation requires crushing, which exposes a greater surface area than would be expected in the field. In addition, this borrow material rock type would comprise only a small percentage of borrow material that would be used for starter dam construction.
	Bullet 4: The Corps believes the composite samples selected for longer duration testing were the most representative samples for the proposed TSF. As stated in the response to bullet 2 above, all of the HCT had similar results indicated a low potential for acid generation regardless of whether the tests were conducted for 10 weeks or for 52 weeks.
	Bullet 5: Humidity cell testing is the standard test used to mimic natural oxidation reactions in a field setting. HCT were run using not only deionized water as the test protocol requires but also with actual decant water collected from Elder Gulch as this water would more closely represent water that would potentially seep through future tailings. The Corps does not believe additional testing segregating the underflow and overflow is necessary. The decant water from the Elder Gulch TSF, which is in direct constant contact with the tailings (underflow), is not acidic and supports aquatic life. All of the HCT work conducted indicated that the potential for acid generation was low. If testing results had indicated otherwise, additional testing at Elder Gulch may have been warranted.
	Bullet 6: Radionuclide analyses during humidity cell testing were conducted only once at the start of testing due to insufficient extract volumes as testing progressed as previously stated. The results of these tests were well below the Arizona Aquifer Quality Standards. Some of the parameters also were detected in tailings water, alluvium and borrow samples, as well as monitoring wells in Ripsey Wash.
	Sampling of monitoring well (MW-1B) conducted in the fourth quarter of 2014 had an adjusted gross alpha concentration of 15.9 pCi/L slightly above the standard of 15 pCi/L. This result is anomalous when compared to all other results for this well. None of the other point of compliance (POC) monitoring wells had any exceedances for adjusted gross alpha, further making this one anomalous result suspect.
	Uranium is a heavy metal that would behave similarly to other heavy metals during humidity cell testing and would not be expected to increase in concentration as the risk for acid generation was low and thus metals dissolution was also low. Although a few general inorganic parameters increased in concentration over time in the modified HCT work that utilized Elder Gulch decant water, the inorganics in all other tests remained constant or decreased with time. As an inorganic metal, uranium would be expected to behave similarly.
	Sampling of radionuclides is specified in the APP for the mine site. There have been no instances where concentrations were higher than the AWQS for the period of sampling. As such, the Corps does not expect these parameters to increase in concentration over time related to activities at the proposed Ripsey Wash TSF.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-20	The Corps agrees that tailings slurry and decant waters from the Elder Gulch TSF provide an analog for the Ripsey Wash and Hackberry Gulch TSF operations, and samples from the tailings slurry and decant water were used for the geochemical testing work performed for this ElS. However, the water quality from the underdrain at the Elder Gulch TSF would not be an analog for the Ripsey Wash or Hackberry Gulch TSF sites, as this underdrain flow is impacted by mineralized rock materials used in the constructed of the Elder Gulch TSF foundation and underdrain. Therefore, additional sampling or inclusion of monitoring results from the Elder Gulch TSF were not conducted and would not be appropriate to characterize the geochemistry for the proposed Ripsey Wash or Hackberry Gulch TSFs. The Corps requested additional information from Asarco on the Elder Gulch TSF construction material geochemistry, which was provided in a November 1, 2016 technical memorandum to James Steward
	(Asarco) to Duane Yantorno (Asarco). This memorandum is posted on the project Sharefile site. Additional clarification on this matter has been added to Section 3.3.1.4, Geochemistry.
3-21	 Each of the bullet points made by the commenter are answered in the following. Bullet 1: A water balance and drain-down assessment for the Ripsey Wash TSF was performed by AMEC Foster Wheeler (AFW) that utilized a conservative, one-dimensional (1D) calculation to estimate base flow from the bottom of the TSF after closure (AFW, 2016a), and a water balance model that estimated the volume of water available for seepage and how long it would take to drain (AFW, 2017). Material types and properties applied to the studies were representative of Ripsey Wash TSF site conditions (alluvium and bedrock), and tailings that are currently stored in the Elder Gulch TSF. Asarco has characterized the future resource at the Ray Mine to verify that the types of ore to be mined is consistent with those currently being mined. Core from the existing Elder Gulch TSF were collected and tested for geotechnical properties to help estimate a range of seepage velocities. As well, empirical data from the Elder Gulch TSF were used to estimate the amount of seepage that will be lost at the Ripsey Wash TSF due to evaporation and absorption of interstitial water during TSF operations. TSF water retention capacity during and following operations was estimated based on the soil water characteristic curves (SWCC) for the tailings (AFW, 2016a). Results from scenarios using three sets of saturated hydraulic conductivities for tailings and alluvium and three sizes of asturation on the TSF where maximum evaporation will occur during operations showed the following (AFW, 2017) by these timeframes results in average flow rates of between approximately -280 to 370 gpm, with the higher flow rate occurring during the shorter timeframe. For an area of saturation of 20% of the TSF surface area, seepage at the bottom of the TSF will continue for between 12 and 110 years (AFW, 2017). Dividing the volume of seepage water available (AWF, 2017) by these timeframes results in average flow rates of between approximatel
	2016a and 2017). The discussion in Section 3.6, Groundwater Hydrology, has been expanded to further explain this post- closure seepage.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-21	Bullet 2: The objective of the groundwater modeling was to evaluate whether water (seepage) from the Ripsey Wash TSF could migrate through the subsurface to the Gila River and, if so, estimate the arrival times and the path of groundwater flow from the TSF to the Gila River. Hydrogeologic parameters assigned to the model were based on empirical data collected from numerous field investigations at the Ripsey Wash TSF, including pumping tests in alluvium and bedrock wells. The assumptions applied to the model setup are appropriate and consistent with the available hydrological data for this site. Accordingly, the flow and particle tracking simulations performed by the model are considered reasonable and representative of future operating conditions. This includes simulated flow and particle movement through the Hackberry fault.
	With respect to future drainage after closure of the Ripsey Wash TSF, see the comment response above (Bullet 1) and drain-down assessments (AFW, 2016a and 2017). Seepage at the Ripsey Wash TSF would be captured in the collection trench in Ripsey Wash, as well as in the cutoff wall and pumpback system to be installed in the East drainage. Asarco has committed to collect and pump back seepage collected from both of these systems to the Mine complex for reuse and/or back to the top of the TSF to evaporate for as long as is necessary to prevent seepage from entering the Gila River.
	Section 2.3.2.7, Hackberry Fault Seepage Mitigation, addresses the measures that Asarco plans to implement to prevent seepage from the west side of the proposed Ripsey Wash TSF, in the area underlain by the Hackberry fault. However, should flow occur in the Hackberry fault, the proposed point-of-compliance (POC) well MW-3 is appropriately located to detect any water leakage from the Ripsey Wash TSF. Section 2.6 (Contingency Plan Requirements) of the APP is designed to address exceedances in POC wells. See A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. RI8-9-A204 and R18-9-A205. If groundwater monitoring indicates impacts to the aquifer above regulatory requirements, corrective actions are required under Section 2.6.6 of the APP.
	Bullet 3: See comment response to bullet 1 above and comment response 3-12.
	With regard to the closure and post-closure timeframes, the Arizona DEQ under the approved APP for the Ripsey Wash TSF, requires Asarco to provide a notice of cessation and a plan for maintenance of long- term discharge control systems and monitoring. The APP requires Asarco to maintain discharge control systems and monitoring for as long as necessary to ensure protection of downgradient receptors. Failure to comply with the APP permit conditions or maintain financial capability would be a permit violation.
	Bullet 4: The Corps disagrees that seepage would be uncontrolled or would contaminate the Gila River. See comment responses 3-1 and 3-11.
	Detailed fate and transport modeling was determined not to be needed. Particle tracking simulations were used to assess when and where dissolved constituents from TSF seepage could migrate beyond the TSF. Results showed movement through the alluvial washes to the seepage collection trench in Ripsey Wash and the cutoff wall and pumpback system in the East Wash drainage, but did not show any particle movement to the Gila River. Particle tracking also showed movement along the Hackberry Fault, but not into Zelleweger Wash.
	The Arizona DEQ, under its approved Ripsey Wash APP, would require Asarco to capture any seepage from the TSF, even after closure of the facility, using the same or similar collection and pumpback systems that would be used during operations. Asarco would install additional pumping capacity as part of construction that would serve as contingency in the event of maintenance or operational problems. This pumping capacity will remain after cessation of tailings disposal operations for closure needs and reclamation activities. See Section 2.3.2.9, Reclaim Ponds. POC wells would monitor for potential migration. If seepage water quality exceeds levels set by the APP, the Arizona DEQ would require corrective actions to be implemented as would be required under Section 2.6.6 of the permit.
	Additional discussion regarding seepage has been added to Section 3.6.2.2.1, Potential Impacts to Groundwater Hydrology (Ripsey Wash TSF), and Section 3.6.2.3.1, Potential Impacts to Groundwater Hydrology (Hackberry Gulch TSF). Also see comment response 15-7.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-21	Bullet 5: Water balance information for the Ripsey Wash TSF is provided in the 2014 Hydrologic Characterization Report (AMEC 2014a); within this report, see Appendix B (Technical Memorandum, Ripsey Wash TSF Main Reclaim Pond BADCT Analyses) and Appendix C (Technical Memorandum, Ripsey Wash TSF East Reclaim Pond BADCT Analyses) of AMEC (2014). Additional water balance information is included in the September 29, 2016 Water Balance Model Technical Memorandum – Engineering Analysis for the Ripsey Wash TSF (AFW, 2016a) and the August 21, 2017 Water Balance Model Supplemental Technical Memorandum – Engineering Analysis for the Ripsey Wash TSF (AFW, 2017) Appendix XX (AFW 2016a and 2017). These documents were sealed by Tony J. Frieman, Arizona Professional Engineer (Civil) and provide information to support design capacities of the TSF seepage and recovery systems. The Arizona DEQ reviewed these documents as part of their approval of the Ripsey Wash TSF APP.
	Bullet 6: This referenced "mine tunnel" (adit) is thought to be a decline documented in Westland's report entitled <i>Ripsey Wash Analysis Area – Abandoned Mine Features Survey</i> (2014) and labeled U:16:281F-2. As reported by AFW (AFW 2016b), this adit is approximately 100 feet long into Ruin granite and contains perched groundwater. Due to its location within the footprint of the proposed TSF embankment, Asarco plans to backfill this adit with controlled low-strength material (CLSM) during initial construction activity to prevent it from acting as a preferential pathway to groundwater.
	Additional discussion has been included in Section 2.3.2, Pre-Tailings Construction (Ripsey Wash TSF), about backfilling and/or removing old adits and shafts at the Ripsey Wash TSF site.
	Bullet 7: Sufficient reconnaissance-level investigations have been conducted to confirm the presence of numerous faults within the Hackberry Gulch TSF site (AFW, 2015). An assessment of how these faults affect current activities at the Elder Gulch facility is outside the scope of this ElS. However, the ElS has been updated to include discussion about the potential for these faults to act as preferential pathways for seepage beneath the Hackberry Gulch TSF, and how measures to mitigate this potential will be technically challenging to implement.
	Bullet 8: Additional discussion has been included in Section 2.2, No Action Alternative, to clarify the operation of the Ray Mine if neither of the TSF action alternatives is selected. Similarly, Section 3.6.2.1, Effects of the No Action Alternative (Groundwater) have been clarified. Additional discussion regarding potential effects to the operation of Asarco's wells in the Hayden well field, based on the no action alternative, has been included in Section 4.7, Groundwater Hydrology Cumulative Impacts.
	Bullet 9: Section 4.0, Cumulative Impacts, has been updated to include information about pertinent issues raised by commenter.
3-22	Figure 5, Schematic for Seepage Trenches and Reclaim Ponds, has been updated, and a schematic drawing has been added to the EIS to illustrate the Hackberry Gulch TSF seepage capture systems, which would be very similar to that proposed at the Ripsey Wash TSF site.

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3-23	As stated in comment response 3-5, the Corps has revisited the alternatives considered for the Ray Mine TSF project, including the possibility of in-pit storage of tailings and the methods of dry stack tailings, and determined that neither of these options are practicable at the Ray Mine. Additional clarification on these items has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
	The Arizona DEQ, in a May 12, 2016 response summary regarding the Asarco Ripsey Wash TSF APP (No. 511395), stated that they believe "that properly constructed wet tailings facility continue to meet the statutory criteria for BADCT demonstration criteria," and that this agency would not require Asarco to use dry-stack tailings technology for the Ripsey Wash TSF.
	As stated in Section 3.16, Accidents and Spills, the Corps recognized that there are "an infinite number of accident and spill scenarios that could be developed for a TSF project." The analysis in this section was intended to discuss some of those scenarios and agrees with the commenter that there are probably other possible failure modes. Asarco has an approved APP for the Ripsey Wash TSF, and, to receive approval of this permit from the Arizona DEQ, Asarco had to demonstrate compliance with the state's Best Available Demonstrated Control Technology (BADCT), which requires a demonstration of stability. Regarding this matter, Asarco's tailings design engineering contractor, AMEC Foster Wheeler, prepared a technical memorandum, dated December 29, 2016 that provides discussion for demonstrating stability analysis for a TSF under the APP program.
	The Corps notes your comments about the Mt. Polly tailings failure in British Columbia, Canada. Asarco's tailings design engineering contractor, AMEC Foster Wheeler, in the aforementioned December 29, 2016 technical memorandum, explained how conditions at the proposed Ripsey Wash TSF would differ from those found to have contributed to the failure of the Mt. Polly TSF. The Corps has reviewed and concurs with conclusions of these findings, a summary of which follows:
	 The factors that have been identified as causing the Mt. Polley TSF failure are not present at the Ripsey Wash TSF Site. The foundation beneath the Ripsey Wash TSF footprint (consisting of bedrock at shallow depth, mantled by a thin layer of alluvium or colluvium) is extremely unlikely to contain strata of fine-grained materials such as the weak clay layer that failed at Mt. Polley when subjected to the loading of the TSF embankment. The geotechnical investigations performed for the Ripsey Wash TSF supports the absence of any fine-grained layer. By contrast, the Mt. Polley TSF is underlain by bedrock that has been heavily altered and extensively deformed by glacial and other geological processes, resulting in a more complex system in which fine grained strata are more likely to be present. Unlike the Mt. Polley TSF, the planned Ripsey Wash TSF will not contain large volumes of water. The Ripsey Wash TSF will be built in an environment where annual evaporation exceeds annual precipitation (unlike at Mt. Polley, where the opposite is true. The Ray Mine has no need to store excess water on the TSF, and, in fact, excess water would be pumped back from the TSF to the mine for use in operations (unlike at Mt. Polley, where the TSF was used for water storage in later years). The Ripsey Wash TSF design calls for wide beaches of 1,000 feet or more to be maintained (unlike at Mt. Polley, where beaches were very small or nonexistent). The planned Ripsey Wash TSF will incorporate a much less steep (and thus more stable) embankment slope than at Mt. Polley, Where 02.5H:1V to 3.0H:1V for the Ripsey Wash TSF, as compared to the 1.3 H:1V used at Mt. Polley. This will result in a much more robust design factor of safety for the Ripsey Wash TSF (between 1.5 and 2.0, depending on the stage of construction) than were incorporated into the Mt. Polley design (1.3)

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3-24	Given the oversight of the Arizona DEQ and the APP requirements, the Corps does not believe that a seismic hazard and analyses for the "phase 3" of the Ripsey Wash TSF alternative is necessary.
	The Corps understands that Asarco must apply for, and the Arizona DEQ must grant, an APP amendment to allow additional tailings to go to a higher elevation that the currently permitted dram crest elevation of 2,200 feet (amsl). The Arizona DEQ, in its May 12, 2016 response summary regarding the Asarco Ripsey Wash TSF APP (No. 511395), stated that "Asarco will be required to demonstrate compliance with design and safety requirements at that time, and will have data, based on past performance, with which to make that demonstration."
	The Corps further believes that a "multi-stakeholder failure modes effect analysis to identify all potential failure modes is not needed. From a review of other mining projects the Corps has reviewed within a Clean Water Act context, this type of analysis is not commonly used on Corps projects and in this case does not appear to provide a means to develop any additional information that had not already been developed and disclosed for this project. The Arizona DEQ will require any TSF permitted under an APP to meet BADCT. Also see comment response 3-23.
3-24a	As stated in comment response 3-22, the Corps has revised Figure 5, Schematic for Seepage Trenches and Reclaim Ponds, and a schematic drawing has been added to the EIS to illustrate the Hackberry Gulch TSF seepage capture systems, which would be very similar to that proposed at the Ripsey Wash TSF site.
3-25	During a period of temporary cessation, there would be no tailings (and associated water) delivered from the Ray Concentrator to the TSF, but Asarco would continue to operate the seepage collection system. Water contained in the reclaim ponds would be allowed to evaporate or could be returned to the TSF, where evaporation would also occur.
	Section 2.3.2.8 Seepage Trenches, has been clarified to describe how the seepage trenches would operate; and Section 2.3.12.2, Ripsey Wash TSF Temporary Cessation, and Section 2.3.12.3, Ripsey Wash TSF Closure Plan, have been clarified to describe how the seepage control trenches, the pump-back wells and the reclaim ponds would remain in operation during any period of temporary cessation and during final closure.
	The Corps does not believe that additional design work is needed or justified for the operational phase of the TSF. As stated in comment responses 3-23 and 3-24, Asarco must meet Arizona DEQ BADCT to obtain an APP, and BADCT does not require liners for copper tailings when other appropriate seepage control measures are in place, which is the case for the Ripsey Wash TSF.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-26	The Corps will require compliance with all related regulatory requirements (APP, CMP, BO terms and conditions, etc.) as special conditions for the 404 permit. If the permittee is found to not be in compliance with any of these requirements, the Corps can proceed under the terms of the 404 permit to seek corrective actions as needed. A separate mitigation and monitoring plan is not needed because these requirements will already be in place within the regulatory authority of the responsible agencies. Special conditions will be placed on the 404 permit that link compliance with separate regulatory requirements with 404 permit compliance.
	The mitigation and monitoring measures that would be used and employed by Asarco during construction, operation and closure are discussed and described for the Ripsey Wash TSF Alternative in Section 2.3, Ripsey Wash TSF Alternative, and for the Hackberry Gulch TSF in Section 2.4., Hackberry Gulch TSF Alternative. Appendix I, Applicant Project Mitigation, also contains a description of the environmental commitments made by Asarco for this project, which are considered a part of this project.
	As stated in the EIS document, the proposed TSF (either the Ripsey Wash TSF or the Hackberry Gulch TSF) would be designed and operated as a closed circuit (zero surface water discharge) facility. Under the requirements of an APP, Asarco would be required to construct, operate, and close the TSF to comply with the "best available demonstrated control technology" (BADCT) management practices and requirements under the APP that would be issued by the Arizona DEQ. These measures would include the installation of seepage trenches, reclaim ponds and pump-back wells to capture infiltration through or beneath the TSF embankments, construction of diversion structures/facilities that would route stormwater around the TSF, and groundwater monitoring down-drainage of the TSF facilities.
	The Corps believes the design and mitigation commitments described for the Ripsey Wash TSF Alternative in Section 2.3, Ripsey Wash TSF Alternative, and for the Hackberry Gulch TSF in Section 2.4., Hackberry Gulch TSF Alternative, are appropriate and well-considered, as was discussed for the various resources in Section 3.0, Environmental Analysis.

Comment Number	Responses to Ray Tailings Draft EIS Comments
3-27	The surface water and groundwater mitigation protection measures described in Appendix I, Applicant Project Mitigation, would be similar for the Hackberry Gulch TSF site.
	For the Hackberry Gulch TSF (the same as for the Ripsey Wash TSF), Asarco would be required to comply with the "best available demonstrated control technology" (BADCT) management practices and requirements of an APP that would be issued by the Arizona DEQ. These measures would include the design and operation of a TSF as a closed circuit (zero surface water discharge) facility, the installation of seepage trenches, reclaim ponds and pump-back wells to capture infiltration through or beneath the TSF embankments, and the construction and proper maintenance of diversion structures/facilities that would route stormwater around the TSF.
	Surface water and groundwater mitigation protection measures are incorporated throughout Section 2.4., Hackberry Gulch TSF Alternative, for the layout and design, construction, operation and closure of the Hackberry Gulch TSF. For example:
	 The Hackberry Gulch TSF would be designed and operated as shown on Figure 15, Process Flow Sheet - Hackberry Gulch TSF. See Section 2.4.1, Tailings Operation and Placement Overview. As part of pre-tailings storage construction activities, Asarco would construct detention dams and diversion channels to divert stormwater from the undisturbed watershed areas above the proposed Hackberry Gulch TSF around the facility as shown on Figure 14, Site Plan Layout – Hackberry Gulch TSF. The purpose of these detention dam structures would be to prevent updrainage stormwater runoff from entering into the tailings impoundment area. See Section 2.4.2.1, Detention Dams and Diversion Structures. A series of box culverts would be placed under State Route 177 to allow segregated stormwater passage under State Route 177 and around the reclaim ponds. A separate lined ditch for seepage water and water that comes into contact with the tailings embankment will be constructed from the TSF to the lined reclaim pond to prevent comingling with surface runoff from undisturbed sites. See Section 2.4.2.3, Box Culverts beneath State Route 177. Down-gradient of the starter dams, Asarco would install seepage trenches in each of the seven washes that dissect the area of the proposed Hackberry Gulch TSF, as shown on Figure 14, Site Plan Layout - Hackberry Gulch TSF. These trenches would be designed to intercept any water that might pass under the tailings facility through the alluvium material above the bedrock. Pumps and piping would be installed in the seepage trenches to route any collected water to lined reclaim ponds that would be located down-gradient of the seepage trenches. See Section 2.4.2.5, Seepage Trenches. Asarco would install reclaim ponds in each of the seven affected washes down gradient of the seepage trenches, as shown on Figure 14, Site Plan Layout - Hackberry Gulch TSF. These seven reclaim ponds would be constructed with an engineered double-liner system, using s
3-28	Appendix I, Applicant Project Mitigation, has been updated for consistency with the approved Ripsey Wash TSF APP (No. P-511395).
	The Corps has no authority to require the type of hydrologic monitoring requested by the commenter or the resources to oversee such monitoring. Rather, the Corps defers such oversight to the Arizona DEQ, which has the statutory and regulatory authority to require and oversee such monitoring as part of the APP.
3-29	There are no recent water quality data from Seep 4 and HW-30 in the Belgravia Wash drainage, or the four unnamed seeps and HW-26 and HW-28 northeast of Belgravia Wash. The Corps does not believe that additional sampling is necessary at this time. If the Hackberry Gulch TSF is determined to be the preferred alternative, supplemental groundwater quality sampling would probably be needed in connection with acquiring an APP from the Arizona DEQ for this TSF.

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3-30	The Corps has no authority to require an interim (emergency) fluid management plan for a TSF as requested by the commenter or the resources to oversee such a plan. Here, the Corps defers such oversight to the Arizona DEQ, which has the statutory and regulatory authority to require and oversee such activities as part of the APP. See comment response 3-25.
3-31	See comment response 3-12.
3-32	See comment response 3-12.
3-33	Estimates of PM ₁₀ annual emissions were included in Section 3.1, Air Quality/Climate, and used standard emission control values to estimate emissions. Enforcement of air quality standards for the site is the responsibility of Pinal County.
	The air quality section in the FEIS contains a new subsection for each alternative that provides for a screening of the alternatives for general conformity. Because the estimated emissions levels for PM10 associated with construction in the vicinity of impacts to waters of the U.S. are only a fraction of the <i>de minimis</i> levels, a general conformity determination is not required, and the alternatives are presumed to conform to the Clean Air Act.
3-34	See comment response 3-33.
3-35	See comment response 3-33.
3-36	In the Final EIS, in Section 3.1, Air Quality/Climate, to comply with 40 CFR 1502.14(f), the Corps will include the commenter's air quality mitigation suggestions. As stated in comment response 3-33, enforcement of air quality standards for the site is the responsibility of Pinal County.
3-37	During the initial scoping of this project, the Corps determined the scope of analysis would not include evaluation of the operation of the entire Ray Mine operation in the EIS. The proposed project is a 404 permit for a new TSF that replaces an existing TSF, using similar methods for tailings disposal. For this reason, the Corps determined that evaluation of the mine as a whole was beyond the scope of analysis for this EIS.
	To our knowledge, there are no existing emission estimates for the entire Ray Mine, although, as explained in Section 3.1.1.5, Air Permitting Requirements for Industrial Sources, and Appendix C, Agency Responsibilities, the Ray Mine operates under the terms and conditions of a Title V Operating Permit issued by Pinal County. This permit has been recently updated to include the proposed Ripsey Wash TSF. As explained in the cumulative impact section, the new TSF is simply a replacement for the Elder Gulch TSF, although there would be some short-term increases in emissions during the construction period.
	Under a no-action alternative, as explained in Section 2.2, No Action Alternative, the Ray Mine would continue operations, albeit at a lower production rate when the Elder Gulch TSF reaches capacity and when there are no areas for tailings from the Ray Concentrator. At that point, overall emissions at the Ray Mine would likely decrease.
	The Hayden Smelter currently operates under a Title V air quality operating permit (No. 1000042), that was issued and is overseen by the Arizona DEQ. As explained in the cumulative impact section, the new TSF is simply a replacement for the Elder Gulch TSF, although there would be some short-term increases in emissions during the construction period.
3-38	Comment noted. Section 1.2.1, Scope of the Analysis, has been clarified.
Comment Docume Arizona House of R	nt #4 epresentatives (Frank Pratt and T.J. Shope, Arizona State Representatives)
4-1	Comment noted.
Comment Docume	nt #5 vm Hoslor, Mayor)
5-1	Comment noted
<u> </u>	

Comment Number	Responses to Ray Tailings Draft EIS Comments	
Comment Docume	nt #6	
Town of Hayden (B Lopez, and Gloria F	obby Smith, Mayor; Maria Munoz, Vice Mayor; Jeremy Garcia, Dean Hetrick, Thomas Lagunas, Enrique Juiz, Councilmembers)	
6-1	Comment noted.	
Comment Docume	nt #7	
Town of Winkelma Marquez, Councilm	n (Louis Bracamonte, Mayor; Nolberto Waddell, Vice Mayor: Elaine Chillson, Anita Hinojos, and Felix nembers)	
7-1	Comment noted.	
Comment Docume The Hopi Tribe (Lei	nt #8 gh Kuwanwisiwma, Director of Hopi Cultural Preservation Office)	
8-1	Comment noted.	
8-2	Comment noted. The cultural resources analysis for this project has included a 100% survey of an area of potential effect (APE) associated with the project, along with a 100-foot-wide buffer. Such resources mentioned in this comment were not encountered.	
8-3	The Corps is developing a historic properties treatment plan and a memorandum of agreement to address adverse effects to NRHP-eligible sites in the APE. The Hopi Tribe will be invited to participate and will be provided draft and final copies of all reports generated under this plan.	
8-4	Copies of Phase 1 reports will be provided as requested	
8-5	The Ripsey Wash Alternative evaluated in the EIS has been determined by the Corps to be the "least environmentally damaging practicable alternative". Under federal guidelines, this is the only alternative for which a 404 permit can be issued.	
8-6	Comment noted.	
Comment Document #9 White Mountain Apache Tribe (Mark Altaha, THPO)		
9-1	Comment noted. The Corps is developing a historic properties treatment plan and a memorandum of agreement to address adverse effects to NRHP-eligible sites in the APE. The White Mountain Apache Tribe will be invited to participate and will be provided draft and final copies of all reports generated under this plan.	
Comment Document #10 U.S. Department of the Interior, Office of the Secretary, Office of Environmental Policy and Compliance (Patricia Sanderson Port, Regional Environmental Officer)		
10-1	Comment noted.	
Comment Docume U.S. Department of	nt #11 f the Interior, Fish and Wildlife Service, Arizona Services Office (Steven Spangle, Field Supervisor)	
11-1	Comment noted.	
11-2	See comment response 3-5. The Corps has fully evaluated the original array of alternatives in the 404(b)(1) alternatives analysis and has evaluated those alternatives as required under our 404(b)(1) guidelines. Alternatives were first screened to determine whether they meet the applicant's purpose and need statement. Then alternatives were screened for practicability. Two alternative locations were brought forward for analysis based on this analysis in the EIS and the 404(b)(1). By first screening alternatives under the 404(b)(1) guidelines, it allowed the Corps to screen out alternatives that could not be permitted under the guidelines and thus could be eliminated from further consideration in the EIS.	
	reaffirmed the Draft EIS determination that the East Dam TSF site is not practicable. Additional clarification has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.	

Comment Number	Responses to Ray Tailings Draft EIS Comments
11-3	The Corps also revisited the potential of multiple tailings storage sites that would together store, in total, the amount of tailings requested by Asarco, but the Corps reaffirmed the Draft EIS determination that multiple (smaller volume) tailings storage sites area not practicable. Additional clarification has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
11-4	The Corps corrected inconsistencies in the descriptions in the TSF design, reclamation and closure between the Draft EIS and the APP submitted and approved by the Arizona DEQ for the Ripsey Wash TSF alternative.
11-5	The closure plan description is comparatively minimal since it describes a simple, yet effective, plan for stabilizing the TSF surface and other mine facilities. This plan satisfies the requirements of the BLM and the Arizona Mining Inspector, and addresses the APP requirements of the Arizona DEQ. The proposed rock surface also complements the proposed post-mining land use of constructing a solar panel array field in terms of site maintenance and vegetation/weed control. Therefore, this text description satisfies the purpose of the EIS. It may also be noted that a final closure plan must be submitted to the Arizona DEQ at least 30 days prior to mine closure.
11-6	See comment response 3-12.
11-7	Section 2.3.12.2, Ripsey Wash TSF Temporary Cessation, and Section 2.4.12.2, Hackberry Gulch TSF Temporary Cessation, explain that operational and environmental maintenance and monitoring requirements would continue in the event of a temporary shutdown of the TSF. The APP from the Arizona DEQ would require that Asarco provide notice of temporary cessation and provide a plan for maintenance of discharge control systems and monitoring. Asarco would be required by the permit to continue to maintain discharge control systems and monitoring during the temporary cessation period. Failure to comply with the permit conditions be responsible to ensure that Asarco complies with the terms and conditions of the APP, even during periods of temporary cessation of operations. Failure to comply with the APP conditions would be a permit violation.
	The commenter refers to 30-year post closure activities. Such a reference is not included in the Draft EIS. It is suspected that the commenter may be referencing a 30-year period which the Arizona DEQ, as a matter of practice, allows in APP approvals for determination of closure and post-closure cost estimates for larger discharging facilities, such as the TSF being proposed by Asarco. Under the approved APP for the RIpsey Wash, the Arizona DEQ will require the updating of the estimated closure and post-closure costs every six years. The Arizona DEQ will not release the applicant under an APP permit from the compliance requirements of that permit are met, even if that timeframe extends into hundreds of years of post-closure activity.
11-8	The toe of the proposed Ripsey Wash TSF embankment (at full build-out) is approximately 2,850 feet from the Gila River.
	Several commenters asked about the history of any tailings embankment and pipeline failures at for the existing Elder Gulch TSF at the Ray Mine. Asarco provided the Corps with a February 15, 2017 technical memorandum (Asarco 2017) regarding this inquiry, and the Corps has included Asarco's technical memorandum as Exhibit A, February 15, 2017 Asarco Technical Memorandum, in this Appendix.
11-9	The Corps did not perform a functional assessment of Waters of the U.S. on alternatives that were determined " <i>not practicable</i> " in the 404(b)(1) analysis. A preliminary determination was performed for Hackberry Gulch; however, the Corps determined that no detailed work would be completed for Hackberry Gulch unless it was chosen as the preferred alternative.
11-10	See comment response 11-9.
11-11	The analysis of alternative facilities (i.e., pipelines and roads) was considered in Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
Comment Docume	nt #12 f the Interior Rureau of Reclamation Lower Colorado Region
Sean Heath, Chief o	of Environmental Resource Management Division
12-1	Figures revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
12-2	Comment noted. Asarco is working with the BLM to obtain the proper land authorization approvals for these facilities. See Section 1.5.2, Bureau of Land Management.
12-3	As indicated in Section 2.3.10.6, vegetation clearing and pipeline bridge construction would occur outside of the yellow-billed cuckoo and southwestern willow flycatcher season.
Comment Docume U.S. Department of (Laura White, Arizo	nt #13 f Agriculture, Forest Service, Southwestern Region Regional Office ona National Scenic Trail Administrator)
13-1	Comments noted.
13-2	The text was revised in the Land Use, Recreation, and Visual Resources sections of the Executive Summary to include effects on Gila River Passage. Visibility of TSF from Gila River passage would impact 5.4 miles of trail, not 7.6 as stated in comment. The text has been revised accordingly.
13-3	Revegetation is considered infeasible to due inadequate soils and lack of precipitation (see Section 3.2, Soils). Irrigating TSF (over 1,900 acres) is considered infeasible due to arid nature of climate; soils would rapidly dry and wind would blow most soil off the TSF.
	The proposed post-mining land use being considered for the TSF sites is the placement of a photovoltaic array (solar panels) atop the TSF, which means a continuing, post-closure industrial use of the site. This post-project concept was discussed in the Draft EIS in Section 8.2, Post-Mining Land Uses, of Appendix I, Applicant Project Mitigation. Some additional discussion on this post-mining land use has been added to help clarify this proposed post-project land use in Section 2.3.12, Ripsey Wash TSF Closure and Reclamation and in Section 2.4.12, Hackberry Gulch TSF Closure and Reclamation.
13-4	Suggestions noted. See comment response 13-3.
13-5	The EIS text has been revised to reflect Asarco's decision to construct the new Arizona Trail segment early in the construction of the Ripsey Wash TSF, before or as part of the construction of the realigned Florence Kelvin highway.
13-6	Text revised.
13-7	Section 3.8, Noise, has been clarified to address noise impacts on users of the Arizona Trail.
13-8	Text was clarified to discuss noise effects of Hackberry Gulch on the existing Arizona Trail.
13-9	Text revised.
13-10	Text clarified.
13-11	Text revised. Visual effects of the Arizona Trail as seen from adjacent lands is discussed in Section 3.14.2.2, Effects of Ripsey Wash TSF Alternatives (Visual Resources).
13-12	The text has been revised.
13-13	A new KOP from the realigned trail segment has been added. Views of the TSF were simulated from just one location along this section (the Tortilla Mountains Passage), since there's only 2.2 miles of view from this passage and the other locations have partial views. The selected KOP provides the closest and most expansive view of the tailings from the realigned trail segment.
	Visibility from the existing and new trail routes was shown on Figure 45.
	See response to comment on Section 3.9.22 (comment #13-11) regarding visual effects of the trail bench cuts.
	Additional data on miles of Arizona Trail north and south of the Gila River with views of the TSF alternatives and realigned highway, as well as miles affected in addition to the Ray Mine view, have been added. This data has been separated into just two distance zones, foreground/middleground and background, since the BLM combines the foreground and middleground into one distance zone. Text has also been added, however, to describe the instances where project features are located less than a half mile from the Arizona Trail or the Florence-Kelvin highway.

Comment Number	Responses to Ray Tailings Draft EIS Comments
13-14	The text in Section 3.17, Irreversible and Irretrievable Resource Commitment, was expanded to include recreation impacts. Specific miles of the Arizona Trail to be directly impacted is set forth in Section 3.9, Recreation. Section 3.17, Irreversible and Irretrievable Resource Commitment is intended as a brief summary of irreversible and irretrievable resource commitments, with the comparison of alternatives provided in the Executive Summary (Table 1).
13-15	Text revised. Direct cumulative effects on the Arizona Trail were described for the Ripsey Wash TSF alternative only, since the Arizona Trail would not be directly impacted by either the Hackberry Gulch TSF or under the no action alternative.
13-16	Section 4.0, Cumulative Impacts, lists the regional activities to be included in the cumulative impacts analysis, which includes the Resolution Copper project but not the SunZia or other projects mentioned in the comment. A general reference to other developments that would cumulatively affect the trail experience, however, was added.
13-17	Comment noted.
Comment Docume	nt #14 David Sulouff Chief of Bridge Section in 11th Coast Guard District)
14-1	Comment noted.
Comment Docume	nt #15
Arizona Game and	Fish Department (Tom Finley, Assistant Director of Field Operations)
15-1	Comment noted. Though not included as a cooperating agency, this agency was afforded a number of opportunities to participate in scoping activities, including on-site meetings and agency meetings.
15-2	Comment noted. The Corps's position is that there has been adequate coordination with Arizona Game and Fish Department (AGFD) under the Fish and Wildlife Coordination Act. It is not clear what additional coordination could take place. AGFD has been afforded numerous opportunities to provide input into the EIS process and the EIS has addressed issues raised by AGFD.
15-3	The Corps position is that, within the context of the Corps's Clean Water Act authority and scope of analysis, there has been adequate consideration of all the comments contained in your April 28, 2016 letter and provided responses or made edits in the EIS document as appropriate.
15-4	The Corps does not plan to issue another Draft EIS. The Corps has carefully reviewed the comments received on the Draft EIS, including comments on the need for additional alternatives, and reaffirmed that there are no significant changes to the information and conclusions reached in the Draft EIS. The Ripsey Wash TSF and the Hackberry Gulch TSF sites remain as the practicable alternatives to be considered in the Final EIS. As noted in several previous comment responses (i.e., 3-5, 3-23 and 11-3), additional clarification has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
15-5	The Corps disagrees with the commenter's assertion that the purpose and need statement is "unnecessarily restricted." The commenter should recognize that the proposed project would be a privately-funded project, and thus the project must meet the Asarco's purpose and need for the project, which is the creation of additional 750-million-ton tailings storage to support the ongoing operations of the Ray Mine. The Corps, as a federal agency, does not dictate a private company's project needs; rather the Corps applies regulatory rules and guidelines to the project being requested. An important part of the project is the ability of the Asarco to continue to use the extensive infrastructure in which the company has a substantial investment and to continue to operate the Ray Mine under the proven processes already in existence at the site.
15-6	See comment response 3-21 and revised discussion in Section 3.3, Geology, Geotechnical and Geochemistry; Section 3.4, Surface Water Hydrology; and Section 3.6, Groundwater Hydrology.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-7	The commenter is correct in that seepage that infiltrates into the alluvium underlying the TSF would migrate in this alluvium material and be intercepted by seepage collection trenches, cut-off walls and pumpback systems, and would be routed into reclaim ponds from which this water would be returned to the Ray Concentrator and/or the tailings impoundment, with no discharge to the Gila River.
	The statements about "limited" bedrock recharge and "further reduced" infiltration into the underlying alluvium and bedrock do not contradict the first comment. Common sense would follow that, at full footprint, the rate of recharge to the underlying alluvium and bedrock through increasingly thick, relatively low-permeable tailings would decrease. Moreover, seepage that would enter the alluvium would continue to be captured by the downgradient seepage collection trenches, cut-off walls, pumpback systems and reclaim ponds. With regard to the quality of seepage, the humidity cell test results set forth in Section 3.3.1.4, Geochemistry, indicate that seepage quality would not exceed ALs or AQLs prescribed in the APP.
	The commenter is also correct that the area under the Ripsey Wash TSF embankment would be partially lined with underdrains constructed beneath the two starter dams to collect the seepage in the Main and East Reclaim Impoundments. As noted above, seepage collection trenches, cut-off walls, pumpback systems and reclaim ponds would be constructed within the Ripsey Wash and East Drainage to intercept seepage flows within the alluvium.
	The particle tracking component of the Groundwater Modeling Report did in fact simulate capture of seepage through alluvial washes by the seepage collection trench in Ripsey Wash and the cutoff wall and pumpback system in the East Drainage. Moreover, it did not show any particle movement into the Gila River during the 65-year transient simulation. In addition, particle tracking showed movement along the Hackberry Fault, but did not show any particle movement into Zelleweger Wash during the 65-year transient simulation.
	The commenter is mistaken that the Elder Gulch TSF is an analog for either the Ripsey Wash TSF or the Hackberry Gulch TSF. Unlike the Elder Gulch TSF, the Ripsey Wash TSF or the Hackberry Gulch TSF would not have rock underdrain systems under the entire tailings facility that are designed to route water from the tailings and the drainages at the rear of the TSF into a reclaim pond located at the base of the tailings embankment. The Elder Gulch underdrains were designed to be highly permeable, and the rock used in these underdrains was mineralized, leading to different seepage water quality than expected at either the Ripsey Wash or Hackberry Gulch TSFs.
	As explained in comment response 3-20, Asarco prepared a Technical Memorandum explaining why seepage seen at Elder Gulch is not a good analog for seepage from the proposed Ripsey Wash TSF or Hackberry Gulch TSF. The mineralized material used to construct the underdrain system and the TSF embankment affects the quality of seepage seen at the Elder Gulch TSF. In contrast, the proposed starter dams at the Ripsey Wash TSF and Hackberry Gulch TSF would be constructed using non-mineralized materials collected at that site, as set forth in Section 3.3.1.4, Geochemistry, and there will be no rock underdrains beneath the tailings materials at either the Ripsey Wash TSF or the Hackberry Gulch TSF.
	Both during operations and following closure, the Ripsey Wash TSF must comply with requirements of an APP approved by the Arizona DEQ. This permit mandates that seepage or groundwater that exceeds regulatory requirements will be captured and contained.
	Also see comment responses 3-20 and 3-21.
15-8	See comment response 3-21.
15-9	The Corps does not believe that the Ray Mine and full utilization of sulfide ore resources at site makes the Ray Mine a connected action. As explained in Section 2.2, No Action Alternative, the Ray mine can continue to operate and sulfide ore resources can continue to be mined at the Ray Mine well into the future. This sort of "but for" causation has been rejected by the Supreme Court as a basis for determining the scope of the NEPA analysis. See <u>Department of Transportation v. Public Citizen</u> , 541 U.S. 752 (2004).

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-10	The Ray Land Exchange is discussed in Section 11.0, Asarco-BLM Ray Land Exchange, in Appendix D, Regional Activity.
	Under Section 1.2, Scope and Content of the EIS, the Corps explains that it does not consider the pending BLM Asarco Ray Land Exchange (Ray Land Exchange) as a connected action with respect to the proposed TSF. The proposed new TSF project has been separately planned by Asarco to address a different purpose and need, and the TSF project and the Ray Land Exchange have independent utility and can be implemented independently from each other. The proposed TSF project does not trigger the Ray Land Exchange or visa-versa.
	The Ray Land Exchange would not create an "expansion" of future mining and processing at the Ray Mine. The cumulative impacts of continuing operations at the Ray Mine are discussed in Section 4.0, Cumulative Impacts.
15-11	The Elder Gulch TSF operates under an existing APP from the Arizona DEQ and its direct analysis is outside the scope of this ElS. Potential cumulative impacts for the Ray Mine, which includes the Elder Gulch TSF, are discussed in Section 4.0, Cumulative Impacts.
15-12	See comment responses 3-4 and 3-16.
15-13	See comment response 3-5.
15-14	See comment response 3-5 and 11-3.
15-15	Rock quarries for the Ripsey Wash TSF are discussed in Section 2.3.6.3, Rock Quarry, and their location is shown on Figure 2, Site Plan Layout – Ripsey Wash TSF. The BLM controls the mineral estate for these rock quarries, but Asarco control valid mineral claims for these areas as shown on Figure 33, Ripsey Wash Alternative Mineral Estates.
	Rock quarries for the Hackberry Gulch TSF are discussed in Section 2.4.6.3, Rock Quarries, and their location is shown on Figure 14, Site Plan Layout – Hackberry Gulch TSF. The BLM controls the mineral estate for these rock quarries, but Asarco controls valid mineral claims for the borrow sites. The BLM mineral estate lands and locations of the borrow areas (rock quarries) are shown on Figure 34, Hackberry Gulch Alternative Mineral Estate.
	Also see comment responses 2-57 and 2-58.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-16	Comment #1. See comment response 15-1.
	Comment #2. Request denied. See comment response 15-1.
	Comment #3. See comment response 15-1.
	Comment #4. The Section 7 consultation process has been completed. A copy of the draft biological opinion was provided to AGFD since publication of the DEIS and AGFD provided comments on that opinion. The Final BO was issued on May 11, 2018.
	Comment #5. This comment suggests that AGFD has the authority to require 100% compensation for construction of a project on privately owned land to account for the loss of wildlife habitat. The EIS provides a full accounting of the environmental effects that would occur to biological resources if one of the alternatives is implemented, including species of interest to AGFD. Mitigation has been developed where appropriate considering the magnitude and type of impact and the requirements of the laws that are applicable to this project. Neither the Corps nor the State of Arizona have regulations in place that support the application of such mitigation.
	Comment #6. Impacts to SGCN and SERI species are addressed in Section 3.15, Wildlife. As explained in comment response 15-9, the Ray Mine is not a connected action to a new TSF.
	Comment #7. See Section 1.2.1, Scope of Analysis; and comment response 15-9.
	Comment #8. The Corps disagrees with this comment. Ample discussion has been included in the EIS to address the direct, indirect and cumulative impacts of the project. See comment response 15-28 for discussion of Hayden well field.
	Comment #9. See Section 2.3.10.6, Wildlife, for measures to protect the southwestern willow flycatcher and the yellow-billed cuckoo, who have habitat along the Gila River.
	Comment #10. See comment responses 3-12 and 13-3 and sub-comment 5 above. The Corps has no regulatory authority to require the type and scope of mitigation suggested in this comment.
15-17	See comment response 3-23.
15-18	See comment response 3-5.
15-19	General wildlife mitigation measures are set forth in Section 2.3.10.6, Wildlife, and also in Appendix I, Applicant Project Mitigation.
15-20	See comment response 3-21.
15-21	Hydrological precipitation methods have been reviewed and accepted by Arizona DEQ.
15-22	See comment response 15-21.
15-23	Preparing a cost estimate for a speculative seepage failure is outside the scope of this EIS.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-24	To comply with Arizona Revised Statute (A.R.S) 49-243.b.1, under the APP program, Asarco must follow the Arizona DEQ Best Available Demonstrated Control Technology (BADCT) (<u>http://legacy.azdeq.gov/environ/water/wastewater/download/badctmanual.pdf</u>) for the design, construction and operation of a TSF. Part of the assessment to obtain an APP is to ensure that the TSF will meet the Arizona BADCT embankment stability design requirements as presented in Section 3.5.4.4 and Appendix E of the BADCT Guidance Manual.
	Appendix B, Alternatives Screening and Clean Water Act Section 404(B)(1) Alternatives Analysis, sets forth different tailings storage methods and the comparative risks and benefits associated with each method. This appendix presents reasons why certain alternatives were not practicable under the Corps 404(B)(1) guidelines. Alternatives were eliminated in this appendix for reasons other than a potential embankment failure.
	To response to the commenter's claim that 47 separate releases on uncontained hazardous substances (copper sulfate, copper tailings and leachate) into Mineral Creek from Ray Mine, and two incidents included more than 13 separate tailings dike breaches, Asarco provided the Corps with a February 15, 2017 technical memorandum (Asarco 2017) to the Corps, in which Asarco responded to two allegations incorporated in this comment. The Corps has included this technical memorandum as Exhibit A, February 15, 2017 Asarco Technical Memorandum, in this Appendix.
15-25	The Ripsey Wash TSF has been designed using BADCT as required by the Arizona DEQ. Also see comment response 15-24.
15-26	Section 2.3.2.5, Detention Dams and Diversion Structures, has been clarified and expanded to discuss the additional lift to be added on the detention dam to be constructed and maintained up-gradient of the Ripsey Wash TSF. Figure 54, Detention Dam Plan View and Typical Section – Ripsey Wash TSF, has been added to illustrate this planned addition to the detention dam during operations.
15-27	The need for permanent water diversion at the Ripsey Wash TSF is discussed in Section 2.3.12.3, Permanent Ripsey Wash TSF Closure Plan. The permanent diversion channel on the east side of the Ripsey Wash TSF will function with gravity flow, but the topography of the west side of the tailings facility will not allow such an arrangement. Asarco would continue to maintain and operate the detention dams and stormwater pumping and piping system designed to route stormwater around the west side of the Ripsey Wash TSF. These systems would be maintained by Asarco, or an entity designated by Asarco, in perpetuity. This plan has been approved by the Arizona DEQ in the APP for the Ripsey Wash TSF.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-28	As the commenter noted, and stated in Section 2.3.7, Water Use and Management, Asarco has the legal water right to use the water from its Hayden well field. The Ray Mine uses approximately 3 – 5,000 gallons per minute (gpm) of water delivered from the Hayden well field, which is located downstream of the confluence of the Gila and San Pedro rivers, near the community of Hayden, approximately 20 miles southeast of the Ray Mine. The Hayden well field draws water from the alluvial formation surrounding the Gila River. Asarco does not own or operate any wells in the San Pedro River watershed.
	As explained in Section 3.4.1.1, Regional Setting, in Section 3.4, Surface Water Hydrology, annual flows in the Gila River at the United States Geological Survey (USGS) Kelvin stream gaging station (USGS Gaging Station 09474000) are extremely variable because of natural variability, withdrawals for irrigation and water discharge regulation from the upstream Coolidge Dam. The typical mean flows in the Gila River at this gaging station range from approximately 300 cubic feet per second (cfs) to around 600 cfs, which converts to a range of 134,640 gpm to 269,280 gpm. The Ray Mine use of 3-5,000 gpm correlates to approximately 1.1% to 3.7% of the flows in the Gila River at the Kelvin gaging station, but the aforementioned Gila River surface flows do not reflect that amount of water underflow and water storage contained in the alluvial material surrounding the Gila River.
	It should be noted that agriculture and municipal use are the major draws of surface and alluvial water from the Gila River system and the lower Gila River bed is usually dry given the large volumes of water directed toward irrigation and municipalities. The San Carlos Reservoir, formed by Coolidge Dam located upstream of the Ray Mine, has a current storage capacity of approximately 885,000 acre feet of water (288,378,135,000 gallons). This dam was constructed in 1928 to store water for irrigation of the San Carlos Irrigation Project lands. A number of minor diversion dams have been constructed along the Gila River to support water storage and diversion for irrigation purposes.
	The Corps has included discussion about the Hayden well field in Section 2.1, Ray Mine, of Appendix D, Regional Activity, and in Section 4.0, Cumulative Impacts.
15-29	See comment response 15-28.
15-30	The Ripsey Wash TSF, and its associated surrounding facilities (seepage control trenches, cut-off walls, pumpback systems and reclaim ponds) would not be within the 500-year flood plain of the Gila River. The toe of the proposed Ripsey Wash TSF embankment (at full build-out) is approximately being 2,350 feet from and approximately 80 feet above the 500-year flood plain. The toe of the reclaim pond in Ripsey Wash would be over 1,000 feet from and approximately 30 feet above the 500-year flood plain. See Figure 5, Reclaim and Seepage Trench – Ripsey Wash TSF.
	The commenter is correct that the Ripsey Wash TSF would be constructed within the 500-year flood plain of the Ripsey Wash; but this floodplain would disappear with the TSF construction. As explained in Section 2.3.2.5, Detention Dams and Diversion Structures, and shown on Figure 2, Site Plan Layout – Ripsey Wash TSF, Asarco plans to construct a detention dam in Ripsey Wash up-gradient of the Ripsey Wash TSF; this detention dam would be initially constructed to contain a 500-year return interval storm. Water intercepted by this detention dam would be routed around the Ripsey Wash TSF by pumping through a piping and small dam system for eventual discharge into the Zelleweger Wash, an ephemeral drainage located to the west of Ripsey Wash. During operations, the Ripsey Wash up-gradient detention dam would be raised to contain runoff from the probable maximum precipitation event.
	As further explained in Section 2.3.2.5, Detention Dams and Diversion Structures, and shown on Figure 2, Site Plan Layout – Ripsey Wash TSF, Asarco also plans to intercept stormwater flow on the east side of the proposed Ripsey Wash TSF and route this flow through an approximate 16,000-foot (about 3-mile long) diversion channel, which would be designed to handle flow from a 100-year, 24-hour storm event.
	Several commenters asked about the history of any tailings embankment and pipeline failures at for the existing Elder Gulch TSF at the Ray Mine. Asarco provided the Corps with a February 15, 2017 technical memorandum (Asarco 2017) regarding this inquiry, and the Corps has included Asarco's technical memorandum as Exhibit A, February 15, 2017 Asarco Technical Memorandum, in this Appendix.
	A discussion on the consequences that would result from an extremely unlikely catastrophic Ripsey Wash TSF tailings embankment failure is found in Section 3.16, Design Considerations, Accidents and Spills.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-31	The Corps has included additional information in the EIS to clarify and further describe the design, construction and operation of the proposed stormwater diversion channels, reclaim ponds and the drain- down ponds. See Sections 2.3.2.5, Detention Dams and Diversion Structures; Section 2.3.2.9, Reclaim Ponds; and Section 2.3.2.11, Pumping Booster Station and Tailings Drain-Down Pond.
	To better illustrate the aforementioned facilities and structures, the Corps has also added several figures to the EIS document. These are Figure 54, Detention Dam Plan View and Typical Section – Ripsey Wash TSF; Figure 55, Typical Sections of East Diversion and Stormwater Channel – Ray Wash TSF; and Figure 56, Reclaim Pond and Seepage Trench – Hackberry Gulch TSF.
	The detention dams and stormwater diversion channels to be installed at either the Ripsey Wash or Hackberry Gulch TSF sites would be constructed in native ground and without any synthetic liner or side slopes that would cause an entrapment impediment for wildlife.
	The reclaim ponds would be lined with a synthetic liner (80-mil HDPE or equivalent), but this facility will be fenced with an 8-foot high chain link fence to discourage wildlife and unauthorized human access to the pond.
	Although the drain-down ponds will be lined with a synthetic liner similar to the reclaim ponds, Asarco will leave an ingress/egress slope that would allow maintenance and clean-out of the pond (in the event that tailings are captured the pond from a pipeline operational emergency). This ingress/egress area would also allow for an escape route for wildlife that might inadvertently enter the pond. Asarco is also planning to fence the drain-down ponds with an 8-foot high chain link fence to discourage wildlife and unauthorized human access to the pond.
	The reclaim ponds and drain-down ponds would be reclaimed as part of the post-closure activities described in Section 2.3.12.3, Permanent Ripsey Wash TSF Closure Plan, and Section 2.4.12.3, Permanent Hackberry Gulch TSF Closure Plan. The stormwater diversion channels and detention dams upstream of the TSF sites would remain, and be monitored and maintained in perpetuity by Asarco or an entity designated by Asarco. See Section 2.3.12.3, Permanent Ripsey Wash TSF Closure Plan, and Section 2.4.12.3, Permanent Hackberry Gulch TSF Closure Plan.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-32	Issue #1 - ESA species and their Critical Habitats are addressed in Section 3.15.1.12, Section 3.15.2.15, and in the Biological Assessment prepared for the project analysis. Formal Section 7 Consultation has been initiated with the USFWS on the potential project effect on listed threatened and endangered species. Mitigation measures specific to Endangered Species Act (ESA) species are also discussed in detail in the Biological Assessment. The Sonoran desert tortoise is not an ESA species and is discussed in Section 3.15.1.9, Reptiles and Amphibians; 3.15.1.11, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC); 3.15.2.2.12, Reptiles and Amphibians, and 3.15.2.2.14, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC).
	Issue #2 – Suggested general wildlife mitigation measures have been added to Section 3.15.3. MIKE – Do we want to add a potential mitigation section at the end of Section 3.15, Wildlife? See comment response 15-31 regarding the long-term maintenance of diversion channels and possible entrapment of wildlife.
	Issue #3 - The EIS addresses the environmental effects associated with potential issuance of a Clean Water Act, Section 404 permit, addresses compensatory mitigation for the loss of aquatic functions and values as required under the 2008 Mitigation Rule. In addition, as a federal agency, the Corps is required to evaluate potential effects of permit issuance on species listed or proposed for listing under the Endangered Species Act. The Corps is consulting with the USFWS as required and will adopt conservation measures requested by USFWS as part of this consultation process.
	This comment suggests the Corps should require mitigation, in terms of compensatory mitigation, for the loss of common wildlife habitat occurring on private property (assuming the land exchange is finalized). As documented in the EIS, there are a number of species, classified as "species of greatest conservation need (SGCN)" that have the potential to occur within the analysis area; however, none of the upland habitats present in the analysis area provide unique or uncommon/rare habitat characteristics worthy of special consideration. Impacts to xeroriparian and riparian habitats, the habitats of greatest concern that would be affected, are being mitigated as discussed previously. For these reasons, mitigation was not proposed for common upland habitats. Also see response to comment 15-16 above.
	The EIS provides a full accounting of the environmental effects that would occur to biological resources if one of the alternatives is implemented, including species of interest to AGFD. Mitigation has been developed, where appropriate, considering the magnitude and type of impact and the requirements of the laws that are applicable to this project.
	This comment also refers to an AGFD policy requiring compensation for the loss of wildlife resources. The policy describes the AGFD's authority for implementing this policy with respect to federally funded land and water projects and on lands administered by the State Lands Department. Neither of these situations are applicable to the Ray Mine proposed TSF project, and there is no relevant state law placing this requirement on a project occurring on private land. The Corps also notes that AGFD has been requesting similar compensation on other Clean Water Act permitting actions for mining projects in Arizona, while at the same time NOT making such requirements, as a matter of standard practice, on other permitting actions by the Corps. This dissimilar treatment of projects appears to be arbitrary and the Corps does not agree with that approach. For these reasons, no changes will be made to the EIS in response to this comment.
	Issue #4 - A noxious weed monitoring and management discussion has been added to Appendix I, Applicant Project Mitigation.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-33	The commenter is correct that many of the environmental monitoring measures for a new TSF would be the responsibility of federal, state and local agencies other than the Corps, because of the statutory and regulatory responsibilities of those agencies. The overarching responsibilities of pertinent agencies are explained in Appendix C, Agency Responsibilities (Regulatory Framework). Adherence to these other regulatory requirements will be addressed as special conditions to the 404 permit to tie compliance with those requirements with the 404 permit.
	Regarding potential wildlife mitigation, see comment responses 15-31 and 15-32.
	The Corps believes that monitoring of fish populations, macroinvertebrates and instream habitat quality upstream and downstream of the project areas within the Gila River is not necessary. Results of groundwater modeling discussed in Section 3.6, Groundwater Hydrology, showed no seepage movement to the Gila River. The ADEQ APP point of compliance well network that would be established below the TSFs would be sufficient monitoring and does not believe that monitoring in the Gila River is necessary. The points of compliance wells are shown on Figure 30, Groundwater Hydrology – Ripsey Wash TSF and Figure 31, Groundwater Hydrology – Hackberry Gulch TSF. In addition, the TSFs will be operated as zero surface water discharge facilities, which would preclude any surface discharge of tailings or decant water into the Gila River. The stormwater diversions would simply route natural upstream drainage around the proposed TSF sites.
	In addition, as explained in Section 4.5, Surface Water Hydrology Cumulative Impacts, the Gila River would be most affected by irrigation demands and the upstream storage in and water releases from the San Carlos Reservoir behind the Coolidge Dam, which is controlled by SCIP.
15-34	See comment response 15-33.
15-35	The groundwater monitoring plan for the Ripsey Wash TSF Alternative is described in Section 2.3.2.10, Monitoring Wells, Section 3.6.1.1, Ripsey Wash TSF Site, Table 3-37, Groundwater Quality -Ripsey Wash TSF Site, and Appendix I, Applicant Project Mitigation, Section 4.3, Groundwater Wells. Table 3-37 has been updated to reflect monitoring well data collected after the Draft EIS was published.
	As stated in Appendix I, Applicant Project Mitigation, "Asarco has installed four monitoring wells downstream of the tailings embankment and proposes that these wells serve as the points of compliance in the APP for the TSF (Figure 2). The wells will be used to characterize groundwater quality before TSF operations commence and to monitor groundwater quality throughout facility operations and for some period of time after closure. Two wells are located in Ripsey Wash, one is in the unnamed drainage east of Ripsey Wash, and one is within the Hackberry Fault zone." There is no water quality monitoring plan for surface water collection in the ephemeral Ripsey Wash.
15-36	See comment responses 15-31, 15-32 and 15-33.
15-37	See comment response 3-12 and 15-4.
15-38	For discussion about no revegetation planned for the site, see comment response 13-3. For noxious weed plan, see comment response 15-32.
15-39	Section 2.3.10.3, Water Resources, has been expanded to address how abandoned mine features within the footprint of the TSF would be sealed or mined out prior to or during the TSF construction and operations to prevent seepage. Also see revised discussion in Section 3.16, Design Considerations/Accidents and Spills for additional discussion on BADCT. Also see comment response 3-21.
15-40	Additional discussion has been included in Section 2.2, No Action Alternative, to clarify the operation of the Ray Mine if neither of the TSF action alternatives is selected
15-41	See comment responses 3-1, 3-26, 3-27, 15-27, 15-30, 15-31, and 15-33.
Comment Number	Responses to Ray Tailings Draft EIS Comments
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15-42	The Corps disagrees that seepage from the TSF would reach the Gila River; see comment response 3-21. Water quality will be monitored in Arizona DEQ APP point-of-compliance (POC) wells during operation and post-closure; see Section 2.3.2.10, Monitoring Wells. Asarco has designed for seepage from the Ripsey Wash TSF and would capture and recycle any seepage; see Section 2.3.2.7, Hackberry Fault Seepage Mitigation; Section 2.3.2.8, Seepage Trenches; and, Section 2.3.2.9, Reclaim Ponds.
	With regard to closure and post-closure of the TSF, Asarco would be required by the Arizona DEQ APP to continue to maintain discharge control systems for as long as is necessary to ensure protection of downgradient receptors, including the Gila River. Failure to comply with APP requirements would be a permit violation.
15-43	See comment response 3-20.
15-44	The Draft EIS did not make comparisons to aquatic criteria as the APP provides protection from seepage reaching the Gila River. Seepage would be captured by seepage collection trenches, cutoff walls, pumpback systems and reclaim ponds for the Ripsey Wash TSF. Arizona DEQ APP point-of-compliance (POC) wells are appropriately located to detect any water leakage from the TSF. In addition, Section 2.6, Contingency Plan Requirements, of the APP is designed to address any exceedances in POC wells. See A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. RI8-9-A204 and R18-9-A205. If groundwater monitoring indicates impacts to the aquifer above regulatory requirements, corrective actions would be required under Section 2.6.6 of the APP.
15-45	See comment responses 3-21 and 15-44.
15-46	See comment response 3-21.
15-47	Standards for sulfate and total dissolved solids are nuisance based. Their presence in groundwater is not known to pose a risk to vegetation and/or wildlife. The APP provides protection from seepage reaching the Gila River, thus protecting surface water from the potential nuisance from these parameters.
	The Geochemical Characterization Report (AMEC, July 10, 2014) compared humidity cell test results to Ripsey Wash monitoring well results not to Elder Gulch point of compliance wells. Variable sulfate concentrations in those wells is attributed to natural variation.
	The Elder Gulch TSF is not a geochemical analog to the Ripsey Wash or Hackberry Gulch TSFs (November 1, 2016, Letter to James Steward, Asarco Ray Operations, from Duane Yantorno, Asarco Environmental Supervisor, regarding Elder Gulch Construction Material Geochemistry). Although sulfate has a secondary drinking water standard of 250 mg/l, there is no primary or secondary standard for total dissolved solids (TDS). Background sulfate concentrations in the existing Ripsey Wash groundwater have ranged from 260 to 1,200 mg/l, all above the above mentioned secondary drinking water standard for sulfate. The Arizona DEQ-approved APP for the Ripsey Wash TSF does not have standards for either sulfate or TDS. No change to text is necessary.
15-48	Additional information on the intensity of noise sources has been added to Section 3.15.2.2, Effects of the Ripsey Wash TSF Alternative (Wildlife). However, as indicated in this section, reaction of animals to noise varies depending on the intensity of the noise source and whether it is continuous or intermittent. Transient loud noises would provoke alarm responses; however, many animals learn to ignore more constant, lower level noise sources that are not associated with negative experiences such as being chased or hunted.
	The extent of wildlife displacement is impossible to predict for most species since the response severity varies from species to species and can even vary between different individuals of the same species.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-49	In Section 3 .9.2.3, Effects of the Hackberry Gulch TSF Alternative (Recreation), the sentence referring to access from the north or east was deleted because the distance of these trails from the Hackberry Gulch TSF site makes them not acceptable alternative access routes. The presence of private lands and closed gates also make these trails unsuitable alternatives for accessing the Dripping Springs Mountains, as mentioned in this comment. Text has been revised in this EIS section to emphasize loss of access to the Dripping Springs Mountains resulting from the Hackberry Gulch TSF alternative. Asarco has not proposed any mitigation measures that would provide access around the southern boundary of the proposed Hackberry TSF to existing trails east of the TSF. Conducting a detailed inventory of all access routes into the Dripping Springs Mountains was outside the scope of this EIS.
15-50	See comment response 15-32.
15-51	Hunting information has been updated in Section 3.15.1.2.1, Mammal Species of Economic and Recreational Importance (SERI).
15-52	Information from the AGFD citation in the comment has been added to Section 3.15.2.2.1, Habitat Loss and Fragmentation.
15-53	Section 3.15.1.10, Gila River Associated Aquatic Species, has been updated based on the two references provided in this comment.
15-54	Information on Sonoran desert tortoise has been added to Section 3.15.1.9, Reptiles and Amphibians, and Section 3.15.1.11, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC). Impact discussion text for Sonoran desert tortoise has been added to Sections 3.15.2.2, Effects of the Ripsey Wash TSF Alternative (Wildlife).
15-55	The term "possible" has been changed to "likely to occur" for appropriate species in Table 3-66. The designation of "possible" is retained for desert sucker, Sonora sucker and longfin dace since surveys have not found any of these species in reaches of the Gila River near the analysis area since 2002 (Marsh and Kesner 2006, Kesner and Marsh 2010).
15-56	See comment response 15-55.
15-57	See comment response 15-55.
15-58	Based on more recent fish surveys completed in the Gila River (Marsh and Kesner 2006, Kesner and Marsh 2010), spikedace is no longer present in the Gila River.
15-59	Citations have been updated in Section 7.0, References.
15-60	Information on the Sonoran desert tortoise has been added to Section 3.15.1.9, Reptiles and Amphibians, and Section 3.15.1.11, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC). Impact discussion text for the Sonoran desert tortoise has been added to Section 3.15.2.2, Effects of the Ripsey Wash TSF Alternative (Wildlife), and Section 3.15.2.3, Effects of the Hackberry Gulch TSF Alternative (Wildlife).
15-61	A discussion of impacts to critical habitat is provided in 3.15.2.2.15, Threatened, Endangered, Proposed and Candidate Species. A more detailed and comprehensive discussion of critical habitat impact is provided in the BA (on file with the Corps and USFWS) prepared for the proposed project.
15-62	The indicated reference has been corrected.
15-63	Additional discussion regarding potential effects to Sonoran desert tortoise from Arizona Trail construction and mitigation have been added to Sections 3.15.2.2.6, Special Habitat Features, and 3.15.2.2.14, BLM Sensitive and State Wildlife Species of Concern (WSC).
15-64	The extent and location of additional surface water sources outside of the Ripsey Wash and Hackberry Gulch TSF site footprints are unknown. Additional text on the loss of water sources within the Ripsey Wash and Hackberry Gulch TSF site footprints has been added to Sections 3.15.2.2.6, Special Habitat Features (Ripsey Wash TSF), and 3.15.2.3.6, Special Habitat Features (Hackberry Gulch TSF).

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-65	Impacts to fish populations in the Gila River from releases from the Elder Gulch TSF have been attributed to the fact that much of the rock used in the construction of this facility was acid-generating. Rock to be used for construction of the Ripsey Wash or Hackberry Gulch TSF sites would not be acid generating, and both facilities have to be designed as zero-surface water discharge impoundments. Therefore, there would be no discharge to the Gila River and no water quality impacts to Gila River fish populations from the operation of the tailings impoundment. See Section 3.4.2.2, Effects of the Ripsey Wash TSF Alternative (Surface Water Hydrology), and Section 3.4.2.3, Effects of the Hackberry Gulch TSF Alternative (Surface Water Hydrology).
15-66	Construction of a new TSF would allow for continued future use of the Ray Concentrator at the Ray Mine, and continued groundwater pumping from Asarco's wells for processing water, so there would be no change from existing conditions. In addition, under the no action alternative, mining and ore processing would also continue as explained in Section 2.2, No Action Alternative. When the existing Elder Gulch TSF reaches its full capacity (expected in 2023 or 2024), the Ray Concentrator would have to close under the no action alternative, thus reducing sulfide ore production from the Ray Mine (given the limits of the Hayden Concentrator, where sulfide ore is currently shipped and where future sulfide ore would continue to be shipped even after the Ray Concentrator was closed). This reduction is production, and with no processing at the Ray Concentrator, it would be expected there would be a decrease in groundwater extraction from the Hayden well field, which would probably lead to a localized increase in the water table surrounding the well field. However, because Asarco has adjudicated water rights at the Hayden well field, they may choose to use the water under their rights for other mine related activities. Given that the potential future use of Asarco's water rights is unknown, any future environmental impact would be speculative and so is beyond the scope of this ElS.
15-67	See comment responses 3-1, 3-13, 3-19, 3-21, 3-23, 3-25, 3-27, 11-8, 15-7, 15-28, 15-30, 15-33, 15-42, 15-45, 15-46 and 15-47.
15-68	Section 3.15.2.2.12, Reptiles and Amphibians, indicates most reptiles (including Sonoran desert tortoise) would be lost within the Ripsey Wash TSF footprint. Impacts to amphibians would be minimal for the Ripsey Wash alternative since there is little to no suitable habitat for these species within the TSF footprint. As indicated in Section 3.15.2.3.12, Reptiles and Amphibians, the risk of impacts to amphibians would be an application of the rest of the species of the rest of the section 3.15.2.3.12, Reptiles and Amphibians, the risk of impacts to amphibians would be applied to the species within the TSF footprint.
	footprint. Sonoran desert tortoise is the only listed BLM sensitive reptile species likely to be affected by TSF site development.
15-69	There would be no suitable habitat features or food sources to attract Sonoran desert tortoise back into the TSF sites. Therefore, fencing these areas to preclude the re-entry of Sonoran desert tortoise is unnecessary and not practical. Reclaim ponds below the tailings impoundment and the drain-down pond east of the tailings bridge crossing of the Gila River would be fenced with 8-foot chain-link fencing that would preclude access to Sonoran desert tortoise. Offsite bufflegrass control as a mitigation measure is beyond the scope of the EIS analysis.
15-70	The tailings to be placed at either the Ripsey Wash or Hackberry Gulch TSF sites would not be acid generating, and both facilities are designed as zero-surface water discharge impoundments, so there would be no discharge into the Gila River and no water quality impacts to Gila River fish populations from tailings impoundment operation. See Section 3.4.2.2, Effects of the Ripsey Wash TSF Alternative (Surface Water Hydrology), and Section 3.4.2.3, Effects of the Hackberry Gulch TSF Alternative (Surface Water Hydrology).
15-71	See comment response 15-70.
15-72	Asarco has committed to clearing vegetation in suitable southwestern willow flycatcher and yellow-billed cuckoo habitat outside of the nesting season for these species.
15-73	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-74	Section 3.15.2.2.15, Threatened, Endangered, Proposed and Candidate Species, summarizes direct and indirect impacts to threatened and endangered species and their critical habitats. The summaries are based on the BA prepared for the project.
15-75	See comment response 15-70.
15-76	See comment response 15-24.
15-77	Potential impacts from erosion, including tailings from the embankment faces during operations and from the regraded surface of the TSF after closure, are addressed in Section 3.4, Surface Water Hydrology.
	Asarco would be required to obtain and operate under an Arizona Pollutant Discharge Elimination System (AZPDES) 402 permit from the Arizona DEQ that would address stormwater control. See Section 9.4, Industrial Stormwater Permit, in Appendix C, Agency Responsibilities (Regulatory Framework).
15-78	Section 1.2.1, Scope of the Analysis, states the primary focus of this EIS is the identification of direct and indirect effects associated with the construction of a new TSF and its related components, including the relocation of a 69-kV electric transmission line owned and operated by SCIP, the reroute of a portion of the Arizona Trail, and the implementation of compensatory mitigation at multiple locations in the project region. In Section 4.0, Cumulative Impacts, the Corps has also identified the cumulative effects of the project, including those of the Ray Mine, within the scope of federal control that could occur as a result of Asarco's proposed alternative of a new TSF. The implications associated with the future closure of the Ray Mine (50 plus years into the future?) are way too speculative to assess at this time and are clearly outside the scope of this EIS.
15-79	There would be no change to the existing water rights associated with the Hayden well field. Also see comment response 15-28.
15-80	Additional information on construction and operational lighting has been added to Sections 2.3.6, Tailings Facility Support Facilities (Ripsey Wash TSF), and 2.4.6, Tailings Facility Support Facilities (Hackberry Gulch TSF), and a discussion of possible impact to wildlife has been added to Section 3.15.2.2.2, Displacement of Wildlife.
15-81	See comment responses 15-11 and 15-24.
15-82	See comment response 15-70.
15-83	See comment responses 15-66 and 15-70.
15-84	Comment noted. The Corps has considered the comments received from the Arizona Game and Fish Department.
15-85	See comment responses 3-23, 15-30 and 15-85.
15-86	See comment responses 3-4, 3-17 and 15-5.
	The Corps disagrees that the commenter's claim that the analysis restricted the analysis of multiple, smaller tailings storage facilities or disposal of tailings within the current or future footprint of the Ray Mine pit. These options were analyzed and evaluated in Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis. The results of this analysis found that smaller tailings storage facilities or disposal of tailings within the current or future footprint of the Ray Mine pit were not practicable and was therefore eliminated from detailed environmental evaluation in Chapter 3, Environmental Analysis, of the EIS.
15-87	See comment response 3-8.
15-88	See comment responses 3-4, 3-6, 3-7 and 15-18.
15-89	See comment responses 3-4, 3-6, 3-7 and 15-18.
15-90	See comment responses 3-4, 3-16, and 15-5.

Comment Number	Responses to Ray Tailings Draft EIS Comments
15-91	For protections measures for Gila River and its associated aquatic resources, see comment responses 3-1, 3-13, 3-19, 3-21, 3-23, 3-25, 3-27, 11-8, 15-7, 15-28, 15-30, 15-33, 15-42, 15-45, 15-46 and 15-47.
	Discussion regarding the Hayden well field is set forth in comment response 15-28.
15-92	See comment response 3-5.
15-93	See comment response 3-5.
15-94	See comment response 11-2.
15-95	The language in the final 404(b)(1), Purpose and Need, now reads "up to approximately".
15-96	See comment responses 3-4, 3-5 and 15-5.
15-97	See comment response 3-5.
15-98	Commenter reaffirmed what was discussed about the Devils Canyon alternative in Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
	Also see comment response 3-5 and note that additional clarification on the Ripsey Wash TSF and Hackberry Gulch TSF has been added to Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternative Analysis.
15-99	See comment response 3-5 and 15-24.
15-100	See comment response 3-21 and 15-7.
15-101	See comment response 3-5.
15-102	See comment response 3-21, 15-11 and 15-28.
15-103	The placement of tailings in the area suggested by the commenter is not practicable. There would be insufficient storage volume to safely contain the requested 750 million tons of tailings in a structure that would have realistic and geotechnically acceptable embankment heights. Even if practicable, storage of tailings in this suggested area could not be sited to avoid disturbance to Waters of the U.S.; and there would be a need, similar to that of the proposed Ripsey Wash TSF, to capture seepage, although from several drainages. A TSF in this area would also require the construction of upstream detention dams and diversion structures, which would capture and route upstream flows around the TSF facility. From an operation standpoint, Asarco would require pumping of tailings several miles further and nearly 1,000 feet higher than the projected pumping needs for the Ripsey Wash TSF.
15-104	See comment response 15-28.
15-105	The Corps did not see the need to analyze regional biological resources (those beyond the areas of direct physical impact from the actual TSF and associated infrastructure), given the lack of predicted impact. Where TSF-related infrastructure does cross the Gila River (i.e., the tailings and water return pipelines proposed for the Ripsey Wash TSF), the EIS contains a description of these biological resources and discusses potential impacts to those resources. Based on the proposed seepage and stormwater safeguards, and the hydrologic monitoring that would be required by the Arizona DEQ, the Corps does not expect any impacts to the aquatic resources in the Gila River. For protections measures for Gila River and its associated aquatic resources, see comment responses 3-1, 3-13, 3-19, 3-21, 3-23, 3-25, 3-27, 11-8, 15-7, 15-28, 15-30, 15-33, 15-42, 15-45, 15-46 and 15-47.
	As stated in comment response 15-28, Asarco operates its well field near Hayden under its existing water rights to supply water to the Ray Operations. The commenter mistakenly states that Asarco well field pumps water from the San Pedro River subflow. The actual well field is located down-drainage of the confluence of the Gila River and the San Pedro River. Asarco does not own or use any wells that are located within the San Pedro River bottom.
	Potential cumulative impacts for the project from the Ray Mine, including the Hayden well field, are discussed in Section 4.0, Cumulative Impacts.
15-106	Wildlife impacts are addressed in EIS but not in 404(b)(1).

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Comment Number	Responses to Ray Tailings Draft EIS Comments
15-107	See comment response 3-5.
15-108	See comment response 3-5.
15-109	General mitigation measures for the construction of a TSF are set forth in Appendix I, Applicant Project Mitigation, and the Corps will require mitigation for loss of waters of the U.S. as addressed in Appendix J, Compensatory Mitigation. These suggested mitigation measures will be discussed with Asarco and voluntarily implemented as appropriate.
Comment Docume Pinal County (Greg	nt #16 Stanley, County Manager)
16-1	Thank you for the reference information. Section 3.1, Air Quality, has been updated and clarified to address you comment.
16-2	Comment noted.
16-3	Comment noted.
16-4	Comment noted.
16-5	Comment noted.
16-6	Differences in impacts on threatened and endangered species habitat between the pipeline crossing of the Gila River versus S.R. 177 are discussed in Sections 3.15.2.2.15, Threatened, Endangered, Proposed and Candidate Species (Ripsey Wash TSF), and 3.15.2.3.15, Threatened, Endangered, Proposed and Candidate Species (Hackberry Gulch TSF).
16-7	Comment noted.
16-8	Commented noted.
16-9	Comment noted.
16-10	Comment noted.
16-11	The Corps disagrees. Both the proposed Ripsey Wash TSF and the Hackberry Gulch TSF would allow for continuation of the Ray Mine operations. The Hackberry Gulch TSF is not a continuation of the existing Elder Gulch TSF; rather, the Hackberry Gulch TSF will be a new facility.
16-12	The Ray Land Exchange is addressed in Section 1.2.1, Scope of the Analysis, and in Section 11.0, Asarco- BLM Ray Land Exchange, in Appendix D, Regional Activity. This land exchange is also addressed in Section 4.0, Cumulative Impacts, specifically in Section 4.8, Land Use Cumulative Impacts, and in Section 4.10, Recreation Cumulative Impacts, where it is noted that recreational opportunities could be restricted on the new private lands that the BLM would transfer to Asarco should the Ray Land Exchange be approved by the BLM.
16-13	Asarco informed the Corps that the Arizona State Lands Department (ASLD) fixed the size of the parcel to be included in a future land auction for the Ripsey Wash TSF site to the 7,400-acre size. Asarco did not request this much property for the purchase; as seen in Table 2-1, Summary of Ripsey Wash TSF Alternative, Asarco needs less than half of that acreage for this facility.
	Asarco will continue to allow areas further than 500 feet from project facilities to remain open to the public. See Section 3.9.2.2, Effects of the Ripsey Wash TSF Alternative. However, in that same section, the Corps acknowledges that dispersed recreation use of the area around the Ripsey Wash facility may be displaced to other areas, especially during construction.
	The Arizona Trail would continue to be available for recreationists on Asarco lands (in the event the state lands are sold to Asarco), even though a portion of the Arizona Trail located on such newly acquired lands from the ASLD would be relocated under the Ripsey Wash TSF alternative.
	If ASLD lands are sold to Asarco, there would be property taxes paid to Pinal County. The ASLD managed lands in the Ripsey Wash area are currently not taxed under state of Arizona ownership.

Comment Number	Responses to Ray Tailings Draft EIS Comments
16-14	The Corps understands that Asarco has committed to the responsibility for payment and relocation of the Arizona Trail around the Ripsey Wash TSF, if this alternative is selected. It is part of their proposed action.
	The Corps also understands that Asarco would relocate and build the relocated section of the Arizona Trail to meet the specifications agreed to by the Arizona Trail Partner Group (ATPG), a group whose function is explained in Section 2.3.2.3, Arizona National Scenic Trail.
16-15	See comment response 16-14.
	The Corps has no authority to require Asarco to pay or reimburse Pinal County for any costs associated with the Arizona Trail or its relocation. Such an agreement or arrangement would have to be made directly between Pinal County and Asarco.
16-16	See comment 16-14.
	The Corps understands that the relocation of the Arizona Trail and trailhead would occur when tailings facility construction and operations would directly impact the existing Arizona Trail. This would occur as part of the proposed early construction work for the project, should the Ripsey Wash TSF alternative be selected.
	Upon review of the early construction activities proposed for the Ripsey Wash TSF Alternative, the Corps determined that relocation of the Florence-Kelvin highway and construction of the eastside diversion structure would preclude public access to the existing trailhead or physically disturb the Arizona Trail. Therefore, the Corps has revised Section 2.3.2.3, Arizona National Scenic Trail, to clarify the Asarco commitment to relocate the Arizona Trail and the trailhead when TSF construction would have a direct impact on these items.
16-17	The Corps does not expect any major maintenance to be required of the Arizona Trail after its proper construction. In addition, the Corps has no authority to require Asarco to fund maintenance for the relocated portion of the Arizona Trail or maintenance on the relocated trailhead. Such an agreement or arrangement would have to be made directly between Pinal County and Asarco, or with some other group, such as the Arizona Trail Association.
16-18	The Corps has no authority to require Asarco to place the relocated Arizona Trail on lands purchased from private entities or the ASLD into a conservation easement or to require Asarco to provide similar protection, such as deeding an easement to either the BLM or Pinal County. Such an agreement or arrangement would have to be made directly between Pinal County and Asarco, Asarco and the Arizona Trail Association, and/or the BLM and Asarco.
16-19	See comment response 16-14.
	The Corps understands that Asarco's proposed action is to build the relocated section of the Arizona Trail to meet the specifications agreed to by the Arizona Trail Partner Group (ATPG), a group whose function is explained in Section 2.3.2.3, Arizona National Scenic Trail.
16-20	Revegetation of the TSF is not deemed to be practical considering the site's soil and moisture conditions and the extensive water requirements to re-establish revegetation.
16-21	It is not clear what "additional corridor and/or land acquisition" that the commenter is seeking to mitigate for the "permanent visual degradation of the RW TSF. It is difficult to assess a mitigation measure without specifics. Similar to response 16-18, the Corps has no authority to require Asarco to purchase additional corridor and/or other lands as a mitigation measure for effects to visual resources. Such an agreement or arrangement would have to be made directly between Pinal County and Asarco or with other interested parties.
16-22	Asarco plans to allow continued OHV access between Kearny and Florence-Kelvin Highway through Asarco lands south of TSF.
16-23	Text revised.
16-24	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
16-25	The Corps and the BLM are responsible for the timing of the individual approvals, and one agency cannot dictate to another on that timing. However, given BLM oversight on the Arizona Trail on their administered lands, Asarco should obtain the appropriate approval from the BLM before construction and operational activities physically disturb the Arizona Trail.
16-26	Language regarding Arizona Trail objectives has been deleted from Section 2.3.2.3, Arizona National Scenic Trail. Asarco plans to build the relocated portion Arizona Trail as part of their initial site construction work, which would involve the construction of the realigned Florence Kelvin highway.
16-27	Section 3.9.2.2, Effects of the Ripsey Wash TSF Alternative (Recreation) has been revised to address impacts on County's OHV network.
16-28	The new route for the Florence-Kelvin highway will be considerably less visible and audible from the Arizona Trail route proposed in the Draft EIS. Sections 3.8, Noise, and 3.9, Recreation, have been expanded to clarify the noise impacts on recreationalists using the Arizona Trail. Section 3.14, Visual Resources, has also been expanded to clarify the visual impacts to hikers along the Arizona Trail, including length of view of the new Florence Kelvin highway alignment.
16-29	Text revised.
16-30	Section 3.9.1.4 describes ROS system. ROS designations were developed for privately owned land merely as a means to assess existing conditions, and does not assume recreational access to private lands. Comment regarding preference for Hackberry site is noted.
16-31	Statement deleted. Discussion of impacts on Arizona Trail north of the Gila River is expanded.
16-32	Text revised.
16-33	Text revised.
16-34	Text revised to describe the predominance of the embankment rather than the tailings surface in the view from this KOP.
16-35	Sentence comparing the two alternatives was deleted. Direct cumulative effects on the Arizona Trail described as only relevant to the Ripsey Wash TSF alternative.
16-36	Text revised to eliminate reference to hand-built trail.
16-37	See Section 2.3.2.1, Florence-Kelvin Highway. The Corps understands that Asarco has committed to pay for the relocation of the Florence-Kelvin around the Ripsey Wash TSF, if this alternative is selected. The Corps has no authority to set the construction standards to be used for this relocation; these standards would be part of an agreement between Asarco and Pinal County.
Comment Docume American Legion P	nt #17 AL Post #18 (Michael Dinwiddie, Commander)
17-1	Comment noted.
Comment Document #18 Arizona Mining Reform Coalition	
18-1	Comment noted. See Section 1.5.2, Bureau of Land Management.
18-2	Comment noted.
18-3	This comment is a general declarative comment on the status of the EIS, 404 permit application, and the project and does not contain any specifics to back up this assertion. Many sections of the EIS describe the statutory and regulatory responsibilities of the Corps and the BLM related to the proposed project and these responsibilities are being met. For example, see Section 1.2, Scope and Content of the Draft EIS; Section 1.3, Purpose and Need; Section 1.4, Decision Framework; and Section 1.5, Agency Responsibilities and Jurisdictions. Also, see Appendix C, Agency Responsibilities (Regulatory Framework). Decision makers from the Corps, BLM and other agencies are responsible for ensuring that the proposed project complies with their regulatory charge.

Comment Number	Responses to Ray Tailings Draft EIS Comments
18-4	This comment is a general and declarative comment regarding the adequacy of the EIS and does not contain any specific facts or arguments to support the commenter's assertion. As stated in Section 1.2.1, Scope of Analysis, and demonstrated throughout the EIS, the Corps has completed the EIS in accordance with procedures specified by Council on Environmental Quality (CEQ) regulations for NEPA (40 CFR §1500 – 1508), CEQ guidance, the Corps' NEPA Implementation Procedures for the Regulatory Program (33 CFR Part 325, Appendix B), and South Pacific Division's Standard Operating Procedure for Preparing and Coordinating EIS Documents (12509-SPD).
18-5	This comment covers six issue areas, which are addressed below:
	 Ray and Hayden Operations as a connected action. The commenter states their opinion that the scope of the DEIS should have included Asarco's operations at both Ray Mine and Hayden. As discussed in the DEIS, and expanded on in sub-response 6 below, the Corps is required to develop a scope of analysis for an EIS for 404 permits based on the nature of the impacts to waters of the U.S. to occur and the relationship of those areas to
	The scope of analysis for the Corps' Regulatory Program has two distinct elements: determining (1) the areas directly or indirectly affected by the federal action; and (2) how to evaluate direct, indirect, and cumulative environmental effects. For the purposes of NEPA, the analysis area is limited to the specific activity requiring a Corps permit and any additional portions of the entire project over which there is sufficient federal control and responsibility to warrant review. In establishing the scope of analysis, the Corps must consider four basic factors to determine the extent of federal control and responsibility over a project (33 CFR Part 325, Appendix B). The following is a discussion of these four factors with respect to the proposed project.
	a. Whether the regulated activity comprises 'merely a link' in a corridor-type project. The regulated activity in this case is a mining operation that requires placement of fill within waters of the U.S. This is not a corridor type project and this is not part of a series of projects being evaluated; thus, the Corps would not extend the scope of its EIS analysis beyond waters of the U.S impact footprints based on this factor.
	 b. Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity. To construct the TSF, Asarco has identified a number of elements that are required. Because some of the new required elements would impact waters of the U.S, and because the project elements are all required to accomplish the project purpose, the scope of analysis has been expanded to include the proposed project as a whole. Other facilities associated with Ray and Hayden operations were either constructed pre-Clean Water Act or evaluated under previous 404 permits and associated NEPA documentation. It would not be appropriate to evaluate only the impact footprints to waters of the U.S because those footprints are part of a larger component footprint and cannot be independently evaluated. In addition, each of the project elements is dependent on the other elements; thus the scope of analysis has been established as the total project footprint for the new facilities as a whole.
	c. The extent to which the entire project will be within Corps jurisdiction. The project elements would impact a considerable amount of waters of the U.S. As indicated above, because of the interdependent nature of the water of the U.S. impact footprints with the project elements individually and collectively, the scope of analysis must be extended to include the physical extent of all new project elements.
	d. The extent of cumulative federal control and responsibility. In addition to the Corps's jurisdiction under the CWA, the Corps and the Advisory Council for Historic Preservation have responsibilities under the National Historic Preservation Act. The U.S. Fish and Wildlife Service have responsibilities under the Endangered Species Act and Migratory Bird Treaty Act. These three federal agencies have cumulative control and responsibility over the project footprint as a whole for direct, indirect, and cumulative impacts under these federal laws.

Comment Number	Responses to Ray Tailings Draft EIS Comments
18-5	The scope of analysis for the Section 404 permit application under consideration was established as the physical extent of new project elements associated with proposed project, including those that do not directly impact waters of the U.S. Existing mine facilities (Ray and Hayden operations) that would continue to operate are not included within the scope of analysis, but are evaluated as part of the baseline conditions and included in the cumulative analysis. One non-mining related component that is included in the scope of analysis is the establishment of off-site compensatory mitigation sites because it is directly related to the permitting action.
	As documented in the EIS, the proposed TSF would eventually replace the Elder Gulch TSF. However, no change in operations at Ray or Hayden operations would result under this project except for the future diversion of tailings from one storage point to another. Including a comprehensive analysis of Ray and Hayden operations is viewed by the Corps as being well beyond the extent of federal control and responsibility associated with the permitting action under evaluation.
	2) Cumulative Analysis: As indicated above, this EIS is not an evaluation of Ray and Hayden operations; rather, it is an evaluation of the environmental effects associated with a new tailings storage site. For this reason, to the extent appropriate, operations at these two locations were considered as part of the environmental baseline for the project and thus were considered in the cumulative analysis as part of the past, present, and reasonably foreseeable projects that are required as part of this analysis. The Ripsey TSF would eventually replace the Elder Gulch TSF when it reaches capacity; this is the only change in Asarco's mining operations in this area. There will be no changes to mining operations associated with this project with the exception of disposing of tailings at a different location. The EIS clearly states this, and no changes in this approach are warranted.
	3) Air quality analysis: Emissions for Ray and Hayden operations comprise part of the air basin baseline conditions reflected in air quality monitoring data for the basin. The emissions that are generated by these operations would not change as part of this baseline, with the exception of the construction and operations emissions that are associated with the Ripsey TSF. Thus, the only change to air quality conditions is associated specifically with the new TSF itself. Once construction of the new TSF is completed, operational emissions associated with tailings disposal will be comparable between the old and new TSFs. The construction and operation of the new TSF is the only change associated with the Ray Mine that would affect air quality at both a project level and on a cumulative basis. This is confirmed by the analysis of general conformity. Under general conformity requirements, the Corps must evaluate the impacts of a federal action, in this case, issuance of a 404 permit, to determine whether the project would conform to the requirements of the federal Clean Air Act. Thresholds used for this analysis are based on the degree of nonattainment/maintenance that is applicable to the air basin in question. This analysis is included in the EIS and confirms that the project would have a <i>de minimis</i> effect. Additional subsections have been added to the air quality section specifically addressing the issue of general conformity for purposes of clarity.
	The Corps is NOT deferring to the state with respect to air permitting. Air permitting issues at Ray and Hayden operations are a regulatory issue associated with a different agency and are not directly relevant to this NEPA analysis.
	4) Other analysis areas: See above sub-responses.
	5) Relationship of Land Exchange EIS to TSF EIS: The BLM's Land Exchange process is a separate related action that is not directly relevant to the current EIS analysis. The only potential connection would be if the Hackberry Gulch alternative site is selected for permitting. If such a thing occurred, the EIS would have to substantially revised and reissued.
	6) Scope of Action: See sub-response 1 above. The Corps' NEPA regulations limit the scope of the analysis under NEPA to the "specific activity requiring a Department of the Army (Corps) permit" and "those portions of the entire project over which the district engineer (Corps) Government has sufficient control and responsibility to warrant Federal review." 33 CFR Part 325, Appendix B, Section 7.b(1).

Comment Number	Responses to Ray Tailings Draft EIS Comments
18-5	One factor used in determining whether sufficient federal (Corps) control and responsibility exists over portions of a project in upland areas is whether that are aspects of the upland facility in the immediate vicinity of the regulated activity (i.e., the placement of fill in waters of the U.S.) that affect the location and configuration of the regulated facility. 33 CFR Part 325, Appendix B, Section 7(b)(2)(ii). Unlike a large commercial or residential project, the proposed new TSF is a single integrated facility and the upland portions of it cannot be segregated from those portions to be constructed in jurisdictional waters. Corps guidance notes that the scope of the analysis can be expanded to upland areas in cases where there is "inextricable interconnectedness of activities within and outside of jurisdictional waters.: See Memorandum from Earl Stockdale (Chief Counsel) to the Director of Civil Works, <i>Legal Guidance on the NEPA Scope of Analysis in Corps Permitting Actions</i> (July 9, 2007), at page 9. The regulations and guidance both suggest that the upland portions of the TSF could be considered with the NEPA scope of Analysis because the fact that they are integrated into the portions located in jurisdictional waters.
	The geographic scope of analysis for this project consists of jurisdictional waters and upland areas that would be impacted by the proposed TSF and related project components, including tailings delivery and return water pipelines from the existing thickener tanks at the Ray Mine to the new TSF, power infrastructure that is needed for the construction and operation of the new TSF, reroute of the Florence-Kelvin highway, SCIP electric transmission line, and the Arizona Trail as required to construct the proposed TSF and Clean Water Act Section 404 mitigation activities.
	Section 1.2.1, Scope of Analysis, has been clarified regarding federal control and responsibility, and what will be considered within the analytical framework of the EIS. In addition, Section 4.0, Cumulative Impacts, has been updated to respond to this and other comments on cumulative impacts.
18-6	See responses to Comment 18-5 above. The activities at the Ray Mine are not part of the NEPA scope of analysis for the new TSF, but are discussed in Section 4.0, Cumulative Impacts.
	Neither the Corps nor any other federal agency is currently being asked to issue a permit or authorization that will allow future activities to occur at the Ray Mine. Even if no new TSF was constructed, mining operations would continue at the Ray Mine for some time, as explained in Section 2.2, No Action Alternative.
	Overall federal control and responsibility at the Ray Mine is minimal. Several prior Section 404 permits have been issued (each with accompanying NEPA analysis), and the BLM currently manages and administers a small portion of federal lands within the overall footprint of the Ray Mine. However, as stated above, no new federal approvals or permits are currently being sought to authorize continued operations at the Ray Mine.
	The Corps does not believe the full utilization of sulfide ore resources at site makes the Ray Mine a connected action. As explained in Section 2.2, No Action Alternative, sulfide ore resources can continue to be mined at the Ray Mine well into the future. This sort of "but for" causation has been rejected by the Supreme Court as a basis for determining the scope of the NEPA analysis. See <u>Department of Transportation v. Public Citizen</u> , 541 U.S. 752 (2004).
18-7	The Corps acknowledges that the BLM is a NEPA cooperating agency on this EIS and has decision making requirements as outlined in Section 1.5.2, Bureau of Land Management and in Appendix C, Agency Responsibilities (Regulatory Framework), including their responsibility to comply with requirements under the Federal Land Policy Management Act. Section 1.3, Purpose and Need, has been strengthened to affirm BLM responsibilities.
18-8	See comment response 18-4 and 18-5.
18-9	See comment response 3-26. Technical analyses required for related regulatory actions, such as the APP, were reviewed by the EIS team and used, in part, for the analysis in the EIS.
18-10	See comment response 3-5, 3-17, 11-2, 11-3, 15-86 and 18-4. For a 404 permitting project such as this, the primary means of screening alternatives for analysis is associated with the 404(b)(1) analysis, which is a required step in the permit review process. This detailed analysis is included with the EIS as Appendix A.

Comment Number	Responses to Ray Tailings Draft EIS Comments
18-11	CWA compliance: The Corps certainly understands compliance with the Clean Water Act (CWA). As explained in Section 1.1, Introduction, the Corps determined that the Ripsey Wash drainage and other ephemeral washes within the project footprint of the proposed Ripsey Wash TSF are "Waters of the United States and subject to Corps jurisdiction under Section 404 of the CWA. With Asarco's submittal of a Section 404 permit application, the Corps determined that an EIS be prepared to comply with NEPA and provide Corps' decision makers with information (including alternatives) regarding potential environmental impacts of the issuance of a 404 permit.
	Additional information to demonstrate that the Corps understands CWA compliance is set forth in Section 1.5.1, U.S. Army Corps of Engineers; Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis; Appendix C, Agency Responsibilities (Regulatory Framework), particularly in Sections 2.0, U.S. Army Corps of Engineers, and Section 3.1, Clean Water Act; and, Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan.
	APP: The discussion on permanent closure plans and the permanent measures to prevent impacts to surface water hydrology of the area, particularly with respect to the Gila River, are addressed in Sections 2.3.13.3, Permanent Ripsey Wash TSF Closure Plan, and Section 2.4.12.3, Permanent Hackberry Gulch TSF Closure Plan.
	The Arizona Department of Environmental Quality (DEQ) is also responsible for CWA compliance under several permits including the Aquifer Protection Permit (APP), the Water Quality Certification of Corps Section 404 permit and stormwater permits. See Section 9.0, Arizona Department of Environmental Quality, in Appendix C, Agency Responsibilities (Regulatory Framework). These permits and the protective measures required by these permits, as outlined in Appendix C and summarized in Sections 2.3.13.3, Permanent Ripsey Wash TSF Closure Plan, and Section 2.4.12.3, Permanent Hackberry Gulch TSF Closure Plan, will ensure proper facility closure and long-term (in perpetuity) protection and CWA compliance.
	The APP also requires that Asarco has the financial and technical capabilities to comply with the permit, including the permanent infrastructure in place to handle water and protect water quality. For information regarding project financial assurances, see comment response 3-12.
	Technical studies developed in support of the APP were developed in concert between the ADEQ APP reviewers and the EIS team. The EIS team worked with Asarco to ensure that work plans for the technical studies developed in support of the APP also were adequate for the EIS analysis. The EIS team reviewed and commented on these draft studies, which were then used in preparing the EIS, and also used as the technical basis for the APP application.
	Alternatives analysis: The 404(b)(1) analysis exhaustively documents the alternatives analysis process in accordance with the 404(b)(1) guidelines. This analysis has been updated for the final EIS to further incorporate the results of the environmental analysis in the EIS. The environmental consequences associated with the Hackberry Gulch Alternative and the questionable constructability of the alternative disqualify this alternative from consideration. This is in addition to the loss of special aquatic sites that would occur under this alternative. No special aquatic sites would be lost under the Ripsey alternative.
	Compensatory Mitigation: Regarding compensatory mitigation, the mitigation plan has been developed under the requirements of the 2008 Mitigation Rule and South Pacific Division procedures and subsequently revised/updated for the final EIS to add higher priority mitigation to this plan.
	Financial Assurance: This issue is regulated under state permit using state rules. There is no federal rule or regulation in place that makes this requirement or sets any kind of metric. Asarco will be bound to the APP requirements regarding financial assurance and the 404 permit will require compliance with the APP as a special condition to the 404 permit.

Comment Number	Responses to Ray Tailings Draft EIS Comments
Comment Docume	nt #19
Arizona Trail Assoc	iation (Fred Guadet, Vice President for Trail Operations)
19-1	Comment noted. The impacts of the project to the ANST are documented in the EIS along with a discussion of the efforts of Asarco has been involved with to find an acceptable alternative route for this section of the trail.
19-2	Comment noted.
	Closure and reclamation work on the Hackberry Gulch TSF Alternative is discussed in Section 2.4.12, Hackberry Gulch TSF Closure and Reclamation, specifically in Section 2.4.12.3, Permanent Hackberry Gulch Closure Plan. The primary purpose of the final grading of the tailings surface would be to achieve drainage off the facility. Grading the top of the tailings surface to blend with the surrounding terrain is not a goal of the reclamation work, as the post-project land use for the tailings surface is projected by Asarco to be for solar panel generation, which will continue an industrial use for the site.
19-3	See responses 16-14 through 16-19.
19-4	Comment noted.
19-5	See comment response 16-14.
19-6	See comment response 16-16. Construction of the realigned Arizona Trail has been added to Section 2.3.2, Pre-Tailings Construction.
19-7	The cultural resources section provides a conclusion that a previously completed survey did not reveal the presence of any cultural resources sites that would be impacted by the trail construction. However, this is based on a standard pedestrian survey of the route. A typical measure that is applied for ground-disturbing projects such as this is a measure identifying the potential for encountering previously undiscovered subsurface cultural resources during construction. The 404 permit will include a special condition that addresses this possibility.
19-8	Most of the visible portions of the TSF and new alignment of the Florence-Kelvin Highway are located over one-half mile away from the Arizona Trail, and thus located within the middleground view, as defined by the U.S. Forest Service. The BLM does not distinguish between foreground and middleground views.
	A new KOP has been added from the realigned trail. The TSF will not be revegetated after closure due to limitations of existing soil and moisture conditions. Adding curvilinear topography poses challenges due to potential erosion issues.
	References to panoramic views and the relative scenic quality as seen from the realigned section of trail have been deleted.
	The Florence Kelvin highway route has been revised to reduce noise and visual effects on the Arizona Trail, particularly along the Gila River. Discussion of noise impacts from the realigned section of trail, other trail KOP's, and Jake's Crossing has been added.
	Visual and noise effects of construction and operation of the Florence-Kelvin Highway on the trail's Gila River passage have been substantially reduced by realignment of the highway closer to the TSF. Discussion of the new alignment's effects on the Arizona Trail has been added.
	See comment response 16-18 regarding donating trail easements and patented mining claims to a governing body.
	The commenter should also be aware the U.S. Department of the Interior maintains a moratorium on the acceptance of new mineral patent applications.
19-9	See responses 16-21 and 19-8.
Comment Docume Asarco LLC (James	nt #20 Stewart, Technical Services Manager)
20-1	Comment noted. Text has been augmented to further clarify that impacts to the upland areas physically disturbed by either the Ripsey Wash TSF or the Hackberry Gulch TSF are considered direct effects in this EIS document.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-2	Commented noted. See comment response 20-1.
20-3	Commented noted. See comment response 20-1.
20-4	Comment noted. See comment response 20-1.
20-5	Comment noted.
20-6	Comment noted.
20-7	Comment noted.
20-8	Comment noted.
20-9	Comment noted. The discussion on connected actions is set forth in Section 1.2.1, Scope of the Analysis.
20-10	Text in Sections 3.3.1.2, Hackberry Gulch TSF Site Geology, and 3.3.2.3, Effects of the Hackberry Gulch TSF Alternative, has been expanded to incorporate geologic and hydro-geologic complexities of the Hackberry Gulch TSF site.
20-11	See comment response 20-10.
20-12	Text revised. See comment response 20-10.
20-13	Text revised. Also, there is expanded discussion in Section 3.4, Surface Water Hydrology, and Section 3.5, Groundwater Hydrology, on this issue.
20-14	The Corps has updated and clarified Section 4.0, Cumulative Impacts, to respond to this and other comments on the cumulative impact section.
20-15	The Corps has updated and clarified Section 4.0, Cumulative Impacts, to respond to this and other comments on the cumulative impact section.
20-16	See comment response 20-15.
20-17	See comment response 20-15.
20-18	See comment response 20-15.
20-19	See comment response 20-15.
20-20	Text revised.
20-21	Text revised.
20-22	Text revised.
20-23	Additional discussion has been included in the EIS document to further explain the effects of effects of the no action alternative.
20-24	See Appendix I, Applicant Project Mitigation.
20-25	The Corps does not see any benefit in making the environmental justice a separate major section.
20-26	Comment noted. Additional text has been added to Section 3.15.1.1.2 discussing the limitations of SWAP habitat models and SGCN/SERI ratings.
20-27	Citations have been added where appropriate.
20-28	Text revised.
20-29	Text revised.
20-30	Tables revised as appropriate.
20-31	Text revised.
20-32	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-33	Comment noted, but text appears appropriate as written.
20-34	Text revised.
20-35	Text revised.
20-36	Text revised.
20-37	Text revised.
20-38	Text revised.
20-39	Text revised.
20-40	Text revised.
20-41	Text revised.
20-42	Text revised.
20-43	Text revised.
20-44	Comment noted, but text appears appropriate as written.
20-45	Comment noted, but text appears appropriate as written.
20-46	Text revised.
20-47	Text revised.
20-48	Text revised.
20-49	Text revised.
20-50	Comment noted, but text appears appropriate as written. BADCT can apply to stormwater and other surface water controls.
20-51	Text revised.
20-52	Text revised.
20-53	Text revised.
20-54	Text revised.
20-55	Text revised.
20-56	Text revised.
20-57	Text revised.
20-58	Text revised.
20-59	Text revised.
20-60	Reference checked.
20-61	Text revised.
20-62	Text revised.
20-63	Text revised.
20-64	Text revised.
20-65	The map units less than10 acres in size were considered to be too limited to significantly impact the conclusions in the soil discussion.
20-66	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-67	Text revised.
20-68	Text revised.
20-69	Text revised.
20-70	Text revised.
20-71	Text revised.
20-72	Text revised.
20-73	Text revised.
20-74	Text revised.
20-75	Text revised.
20-76	Text revised.
20-77	Text revised.
20-78	Text revised.
20-79	Text revised.
20-80	Text Revised.
20-81	Text revised.
20-82	Text revised.
20-83	Text revised.
20-84	Text revised.
20-85	Text revised.
20-86	Text revised.
20-87	Text revised.
20-88	Text revised.
20-89	Text revised.
20-90	Text revised.
20-91	Text revised.
20-92	Text revised.
20-93	Text revised.
20-94	Text revised.
20-95	Text revised.
20-96	Text revised.
20-97	Text revised.
20-98	Text revised.
20-99	Text revised.
20-100	Text revised.
20-101	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-102	Text revised.
20-103	Text revised.
20-104	Text revised.
20-105	Text revised.
20-106	Text revised.
20-107	Text revised.
20-108	Text revised.
20-109	Text revised.
20-110	Comment noted.
20-111	Text revised.
20-112	Text revised.
20-113	Text revised.
20-114	Text revised.
20-115	Text revised.
20-116	Text revised
20-117	Text revised.
20-118	Text revised.
20-119	Text revised.
20-120	Text revised.
20-121	Text revised.
20-122	Text revised.
20-123	Text revised.
20-124	Text revised.
20-125	Text revised.
20-126	Text revised.
20-127	Text revised.
20-128	Text revised.
20-129	Text revised.
20-130	Text revised.
20-131	Text revised.
20-132	Text revised.
20-133	Text revised.
20-134	Text revised.
20-135	Figure revised.
20-136	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-137	Text revised.
20-138	Text revised.
20-139	Text revised.
20-140	Text revised.
20-141	Text revised.
20-142	Text revised.
20-143	Text revised.
20-144	Text revised.
20-145	Comment noted.
20-146	Text revised.
20-147	Text revised.
20-148	Text revised.
20-149	Text revised.
20-150	Text revised to change VQR to SQR. Map of SQRU, including location of TSF, provided in Appendix F, Visual Resource Inventory Analysis.
20-151	Text revised.
20-152	Text revised.
20-153	Text revised.
20-154	Text revised.
20-155	Text revised.
20-156	Text revised.
20-157	Text revised.
20-158	Comment noted.
20-159	Text revised.
20-160	Text revised.
20-161	Text revised.
20-162	Text revised.
20-163	Text revised.
20-164	Text revised.
20-165	Text revised.
20-166	Text revised.
20-167	Text revised.
20-168	Text revised.
20-169	Text revised.
20-170	Text revised and also modified to indicate the Ripsey Wash TSF site would be used as a solar energy facility after closure.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-171	Text revised.
20-172	Discussion of Sonoran desert tortoise removed from this section as suggested.
20-173	Text revised.
20-174	Text revised.
20-175	Text revised.
20-176	Text revised.
20-177	References checked.
20-178	Reference checked.
20-179	Text revised.
20-180	Text revised.
20-181	Text revised.
20-182	Text revised.
20-183	Text revised.
20-184	Text revised.
20-185	Text revised.
20-186	Text revised.
20-187	Text revised.
20-188	Text revised.
20-189	Text revised.
20-190	Text revised.
20-191	Text revised.
20-192	Figure clarified.
20-193	Figure clarified.
20-194	Figure clarified.
20-195	Figure clarified.
20-196	Figure clarified.
20-197	Figure clarified.
20-198	Figure clarified.
20-199	Figure clarified.
20-200	Figure clarified.
20-201	Figure clarified.
20-202	Figure clarified.
20-203	Figure clarified.
20-204	Text revised.
20-205	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-206	Text revised.
20-207	Text revised.
20-208	Text revised.
20-209	Text revised.
20-210	Text revised.
20-211	Text revised.
20-212	Text revised.
20-213	Text revised.
20-214	Text revised.
20-215	Text revised.
20-216	Text revised.
20-217	Text revised.
20-218	Text revised.
20-219	Text revised.
20-220	Text revised.
20-221	Text revised.
20-222	Text revised.
20-223	Text revised.
20-224	Text revised.
20-225	Text revised.
20-226	Text revised.
20-227	Text revised.
20-228	Text revised.
20-229	Text revised.
20-230	Text revised.
20-231	Text revised.
20-232	Text revised.
20-233	Text revised.
20-234	Text revised.
20-235	Text revised
20-236	Text revised.
20-237	Text revised.
20-238	Text revised.
20-239	Text revised.
20-240	Table revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-241	Text revised.
20-242	Text revised.
20-243	Text revised.
20-244	Text revised.
20-245	Text revised.
20-246	Text revised.
20-247	The proposed paved segment of the Florence-Kelvin highway is shown on Figure 2, Site Plan Layout – Ripsey Wash TSF.
20-248	Text revised.
20-249	Text revised.
20-250	Text revised.
20-251	Text revised.
20-252	Text revised.
20-253	Text revised.
20-254	Text revised.
20-255	Figure revised.
20-256	Text revised.
20-257	Text revised.
20-258	Text revised.
20-259	Comment noted.
20-260	Text revised.
20-261	Text revised.
20-262	Text revised.
20-263	Text revised.
20-264	Text revised.
20-265	Text revised.
20-266	Text revised.
20-267	Text revised.
20-268	Text revised.
20-269	Text revised.
20-270	Text revised.
20-271	Text revised.
20-272	Text revised.
20-273	Text revised.
20-274	Text revised.
20-275	Figure clarified.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-276	Figure clarified.
20-277	Text revised.
20-278	Text revised.
20-279	Text revised.
20-280	Text revised.
20-281	Text revised.
20-282	Text revised.
20-283	Text revised.
20-284	Text revised.
20-285	Text revised.
20-286	Comment noted, but text appears appropriate as written.
20-287	Text revised.
20-288	Text revised.
20-289	Comment noted.
20-290	Text revised.
20-291	Text revised.
20-292	Text revised.
20-293	Text revised.
20-294	Text revised.
20-295	Text revised.
20-296	Text revised.
20-297	Text revised. Figure 28, Site Drainages – Hackberry Gulch TSF, was revised to show perennial/intermittent stretches.
20-298	Text revised.
20-299	Text revised.
20-300	Item #1: Table 3-40 has been revised, with additional supporting discussion.
	Item #2: The noted sections have been re-labeled as suggested.
	Item #3: Comment noted. While the rough approximation may overstate the significance of the impact, at a calculated 0.02% impact, the impact remains insignificant. Only change to the text is indicating that approach is conservative.
20-301	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-302	The Corps does not believe that the term "zero surface water discharge facility" needs to be changed, as this reference is made to the actual closed-circuit system of the concentrator process water handling, by pump back of tailings decant pond water and any seepage water collected by the seepage collection trenches that would be pumped to the reclaim ponds and then pumped back to the Ray Concentrator.
	The Corps understands that much of the upgradient stormwater runoff would be diverted around the TSF through detention dams and diversion channels, subject to the terms and conditions outlined in the Arizona DEQ Stormwater Pollution Prevention Plan (SWPPP). The Corps believes that there is sufficient information and discussion in the EIS for the reader to distinguish the difference between the zero surface water discharge nature of the tailings impoundment and the stormwater runoff diversion system designed to keep water from entering the tailings impoundment.
20-303	Text revised.
20-304	Text revised.
20-305	Text revised
20-306	Text revised.
20-307	Figure clarified.
20-308	Comment noted.
20-309	Text revised.
20-310	Text revised.
20-311	Text revised. New figure added, entitled "Detention Dam Plan View and Cross Section – Ripsey Wash."
20-312	Text revised.
20-313	Text revised.
20-314	Text revised.
20-315	Text revised.
20-316	Text revised.
20-317	Text revised.
20-318	Text revised.
20-319	Comment noted.
20-320	Text revised.
20-321	Comment noted.
20-322	Text revised.
20-323	Comment noted.
20-324	Text revised.
20-325	Text revised.
20-326	Comment noted. Text revised as appropriate.
20-327	Comment noted.
20-328	Text revised.
20-329	Text revised.
20-330	Text revised. Additional discussion has been added to Section 3.11.2.1, Effects of the No Action Alternative (under Socioeconomics).

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-331	Text revised.
20-332	Text revised.
20-333	Comment noted.
20-334	Comment noted.
20-335	Test revised.
20-336	The Corps does not see the benefit of discussing the results of the referenced species in separate EIS sections. That would create unnecessary repetition. The section clearly indicates which species is discussed as per the BLM and ESA analyses. Neither the BLM nor the USFWS requested separate discussions, so the Corps believes the information must be clear for their needs.
20-337	The Corps does not see the benefit of making the revisions requested by the commenter. This would add an unnecessary amount of verbiage and out of place in the text, when the terms themselves are self- explanatory and defined in the references.
20-338	See comment response 20-67. Acreages added.
20-339	Comment noted.
20-340	The Corps did not believe the requested change is needed.
20-341	Text revised.
20-342	Sentences regarding land exchange are necessary to explain why BLM VRM objectives will not be applicable once the land exchange is complete. This is important to keep in the text since the VRM objectives would not be met under this alternative if under BLM management.
20-343	Text revised.
20-344	Text revised.
20-345	Sonoran desert tortoise text added to analysis as suggested.
20-346	Text on suitable habitat for yellow-billed cuckoo has been added as suggested.
20-347	A table that summarizes the existing condition of mitigation sites and proposed mitigation at these sites has been added to Section 3.15.2.2.15, Threatened, Endangered, Proposed and Candidate Species.
20-348	Text has been modified to confirm there would be no fragmentation of Gila River riparian habitat or long- term interruption of wildlife movement along the Gila River corridor.
20-349	Text revised.
20-350	Text revised.
20-351	Text revised.
20-352	The Corps has included the referenced Asarco technical memorandum as Exhibit B, September 29, 2016 AMEC Foster Wheeler Technical Memorandum, in this Appendix and in Section 7.0, References as AMEC Foster Wheeler 2016. This technical memorandum summarizes the Arizona DEQ's BADCT requirements for tailings embankment stability design requirements. The Corps recognizes that the Arizona DEQ would require a future amendment to the APP permit for the upstream raise of the TSF for both liquefaction potential and earthquake induced deformations. The Corps does not expect that the results of the additional testing would alter the conclusions reached in the EIS, as this testing would merely be conducted to ensure long-term safety of the facility.
	The Corps also added discussion on potential impacts of a catastrophic tailings dam failure at the Hackberry Gulch TSF that would be different than a similar failure at the Ripsey Wash TSF.
20-353	Text revised.
20-354	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-355	Text revised.
20-356	Text revised.
20-357	Figure clarified.
20-358	Figure clarified.
20-359	Figure clarified.
20-360	Text revised.
20-361	Text revised.
20-362	Text revised.
20-363	Text revised.
20-364	Text revised.
20-365	Text revised.
20-366	Text revised.
20-367	Text revised.
20-368	Text revised.
20-369	Text revised.
20-370	Text revised.
20-371	Text revised.
20-372	Text revised.
20-373	Text revised.
20-374	Repeat of Comment 20-216.
20-375	Repeat of Comment 20-216.
20-376	Text revised.
20-377	Text revised.
20-378	Text revised.
20-379	Text revised.
20-380	Text revised.
20-381	Text revised.
20-382	Text revised.
20-383	Text revised.
20-384	Text revised.
20-385	Text revised.
20-386	Text revised.
20-387	Text revised.
20-388	Text revised.
20-389	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-390	Text revised.
20-391	Text revised.
20-392	Text revised.
20-393	Text revised.
20-394	Typo fixed.
20-395	Reference corrected.
20-396	Text revised.
20-397	Text revised.
20-398	Text revised.
20-399	Text revised.
20-400	Text revised.
20-401	Text revised.
20-402	Text revised.
20-403	Text revised.
20-404	Text revised.
20-405	Table revised.
20-406	Table 3-21, Gila River Water Quality form Kelvin (AZ) Gaging Station (Arizona DEQ-21ARIZ-WQX-MGGLR313.73) found in the Draft EIS included a maximum value for dissolved cadmium of 49 mg/l sampled on 5-13-2009. That data was obtained from the STORET database accessed on 4-17-15. After reading comment 20-406 and querying for the Gila River station on 5-13-2009, the value was no longer included in the dataset. The table has been corrected.
20-407	Table revised.
20-408	Text revised.
20-409	Text revised.
20-410	Text revised.
20-411	Text revised.
20-412	Text revised.
20-413	Text revised.
20-414	Text revised.
20-415	Table revised.
20-416	Table revised.
20-417	Revised based on final APE.
20-418	Typo fixed.
20-419	Table revised.
20-420	Table revised.
20-421	Table revised.
20-422	Table revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
20-423	Text revised.
20-424	Text revised.
20-425	Text revised.
Comment Document #21	
21-1	The 130 acres of impacts referred to in this comment is the quantity of waters of the U.S., subject to the Corps's jurisdiction, that would be impacted, which corresponds to some of the xeroriparian plant communities found within the project footprint. Not all xeroriparian vegetation found in this area corresponds to regulated waters.
21-2	Comment noted. A quantitative method for assessing regulated waters and mitigation sites is not currently available to the Corps; thus, a qualitative method must be used. The Corps notes the shortcomings inherent to using a qualitative methodology in this situation, but no other options are currently available.
21-3	Mitigation ratios have been revisited and increased in a revised conceptual mitigation that is included in the final EIS.
21-4	The revised conceptual mitigation plan has omitted Site E in favor of using the Lower San Pedro Wildlife Area in-lieu fee project for the balance of compensatory mitigation requirements. Temporal factors are taken into account when calculating mitigation ratios; this information is in the mitigation plan
21-5	See Comment 21-4.
21-6	See comment response 15-28.
21-7	The flows into Zelleweger Wash will not be increased as assumed in this comment. It is important to understand the capacity of the detention dam and reservoir located at the upstream side of the proposed Ripsey Wash TSF. There are two phases for the detention dam and reservoir. Phase 1 (interim condition) has an embankment height of 2,380 ft. (dam height of 130 feet), which will detain three times the 100-year, 24-hour storm event, or 1,163 acre-feet of water. A side weir and spillway are included in this phase to preclude overtopping the main embankment by stormwater runoff that is generated within the up-gradient Ripsey Wash watershed. The side weir and spillway are sized to pass the total discharge associated with the runoff generated during the probable maximum precipitation (PMP) event. Phase 2 (the ultimate condition) extends the height of the embankment to an elevation of 2,440 feet (dam height of 190 feet), which will detain more than 1.5 times the PMP event, or 14,902 acre-feet of water. During large runoff events, there will be sufficient capacity in either Phase 1 or Phase 2 to hold runoff. Because of the time lag between detention and release, it is anticipated that much of the suspended sediment in the runoff would settle out. Outflow to the East Wash and Zelleweger Wash and Zelleweger Wash drainages downstream of the Ripsey Wash TSF.
21-8	See Comment 21-1 above.
21-9	See Comment 21-2 above.
21-10	See Comment 21-3 above.
21-11	See Comment 21-4 above.
21-12	See Comment 21-4 above.
21-13	See Comment 21-4 above.
21-14	With the construction of a new TSF, there would be no significant changes to the use of water from Asarco's Hayden well field. See comment response 15-28.

Comment Number	Responses to Ray Tailings Draft EIS Comments
21-15	See comment responses 21-7 and 21-21.
	There are no practicable means to route Ripsey Wash ephemeral flows into a contained drainage system and route underneath or adjacent to the proposed TSF and then return such flows to Ripsey Wash.
21-16	Text revised.
21-17	Text revised.
21-18	Text revised.
21-19	Reference to sharp-shinned hawk as a yearlong resident has been revised. Scientific name for golden eagle removed from text.
21-20	Text revised.
21-21	See comment response 21-7.
21-22	WestLand baseline surveys found possible evidence of roosting by California leaf-nosed bat in an abandoned mine feature at the Ripsey Wash TSF site. Suitable roosting habitat for pocketed free-tailed bat does not exist at either the Ripsey Wash or Hackberry Gulch TSF sites; therefore, references to roost sites for this species have been removed from the EIS. Please refer to Sections 3.15.1.11, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC), and 3.15.2.2.14, BLM Sensitive and State Wildlife Species of Concern (WSC), for more in-depth discussions of Sensitive bat species presence and potential impacts to Sensitive bat species.
21-23	Please refer to Sections 3.15.1.11, BLM Sensitive Wildlife Species and Arizona Wildlife Species of Concern (WSC), and 3.15.2.2.14, BLM Sensitive and State Wildlife Species of Concern (WSC), for more in-depth discussions of Sensitive bat species presence and potential impacts to Sensitive bat species.
21-24	Text revised.
21-25	Text revised.
21-26	Text revised.
21-27	Typo fixed.
21-28	Text revised.
21-29	Text revised.
21-30	Text revised.
21-31	Text revised.
21-32	Typo fixed.
21-33	See comment response 21-7. Given the expected slow timing for the release of water into Zelleweger Wash from any diversion from Ripsey Wash (through the series of detention dams, and the condition of the Zelleweger Wash, which is a sandy and cobble stream bed, there should be no adverse impacts to this stream bed as a result of the "hungry water" denoted to by the commenter.
21-34	Text revised to indicate sharp-shinned hawk and Cooper's hawk occur primarily as winter residents.
21-35	Text revised.

Comment Number	Responses to Ray Tailings Draft EIS Comments
21-36	There has been no formal monitoring of wildlife mortalities at the Elder Gulch TSF, but Asarco operational staff have never recorded any mortalities. In addition, geochemical testing of the Elder Gulch tailings water quality (see Section 3.3.1.4, Geochemistry) indicates the water is pH neutral and contains relatively low levels of metals, such as arsenic, cadmium, lead, mercury, and selenium, which are known to bio-accumulate,
	Geochemical testing has also indicated that tailings water quality at the Ripsey Wash and Hackberry Gulch TSF sites would be similar to Elder Gulch (see Section 3.3.1.4, Geochemistry). The presence of persistent populations of mosquito fish in some of the decant pools at the Elder Gulch TSF provides further evidence of the relatively good quality of Elder Gulch tailings water.
	Another indicator that tailings water would not create a short-term or long-term toxicity issue for terrestrial wildlife is that the projected levels of metals such as arsenic, cadmium, lead, mercury, and selenium at the Ripsey Wash or Hackberry Gulch TSFs would be well below limits for these metals set by the State of Arizona for livestock drinking water sources and below or near the limits for aquatic organisms and wildlife. Only selenium slightly exceeds the aquatic and wildlife state standard perennial water sources, but selenium levels would be below the aquatic and wildlife state standard for ephemeral water sources.
21-37	Text revised.
21-38	The greatest threats to bat populations are loss of important hibernation, maternity, and brood rearing sites. Admittedly some loss of foraging habitat would occur with development of either the Ripsey Wash or Hackberry Gulch TSF alternatives, but preferred foraging locations such as aquatic and riparian habitat along the Gila River would not be impacted. The Hackberry Gulch TSF alternative may have a greater impact on preferred bat foraging habitat since this alternative would impact a number of springs as well as associated pockets of riparian habitat supported by the springs. A review of known roost, maternity, and hibernation sites outside of the analysis areas would have little value in improving the impact assessment since many of these sites may not be known and the dispersion and foraging habits of bats from any recorded locations are unknown.
21-39	See Comment 21-4 above.
Comment Docume Superstition Horser	nt #22 man's Association and the East Valley Back Country Horseman (Daryl Cross, Chair)
22-1	Comment noted.
22-2	Regarding the need for Congressional approval to move the Arizona Trail, according to Laura White of the USFS, the trail realignment would not be considered a "major relocation" and thus require Congressional approval since the Arizona Trail as constructed deviates from the original trail route approved by Congress to a similar extent as the proposed relocation for the Ripsey Wash TSF project. In addition, a similar trail realignment has been proposed for the Rosemont Copper Project without being approved by Congress. Any potential for Asarco to mine a section of new trail crossing a federally patented mining claim would only be speculative and is outside the scope of this EIS.
	See comment response 16-18 regarding potential conservation easements on the portion of relocated trail crossing patented mining claims.
22-3	Comment noted. As indicated in Section 3.15.2.2.15, potential impacts to SWFL and YBC would be relatively minor (possible short-term effects on a few individuals) with the applicant's committed mitigation measures (Appendix I), and offsite mitigation activities would improve overall habitat for both of these species. A Biological Assessment (BA), addressing threatened and endangered, was prepared for the project and must be reviewed and approved by the U.S. Fish and Wildlife Service before the project can proceed.
22-4	Comment noted.
22-5	Comment noted.
22-6	See comment response 3-12.

Comment Number	Responses to Ray Tailings Draft EIS Comments
22-7	Percentages were used because annual precipitation varies widely in this area, and calculating an amount of contact water falling with the TSF footprint could not be estimated with any certainty. Also see comment response 21-7.
Comment Docume	nt #23
23-1	Comment noted.
23-2	Comment noted
23-3	Comment noted
23-4	The Verde River is north of Phoenix and flows into the Salt River. It is well outside the area within and
23-5	Surrounding the Ray Mine. The existing Elder Gulch TSF has a limited remaining life, at which time no additional tailings can be added to this facility. Engineering (stability analysis) design for the Elder Gulch TSF limits the height that tailings can be stored, for geotechnical considerations and by permit. It is expected that the Elder Gulch TSF would reach its capacity in 2023 or 2024. Therefore, to continue mining at the Ray Mine at current production levels, a new TSF is required.
23-6	Geochemistry has been considered in the EIS. See Section 3.3, Geology, Geotechnical and Geochemistry.
Comment Docume	nt #24
24-1	Section 3.9, Recreation, have been revised to mention the presence of stock/wildlife tanks in Ripsey Wash. These tanks were installed for agricultural purposes (livestock watering) and were not intended to provide a recreation water source for users of the Arizona Trail. The Corps does not have the authority to require Asarco to replace stock tanks lost as a result of the proposed Arizona Trail relocation, but the Corps understands that Asarco is working with the BLM, Pinal County and the ATA to voluntarily provide a recreation/wildlife water supply along the relocated portion of the Arizona Trail.
Comment Docume Fred Gaudet	nt #25
25-1	Section 3.8, Noise, and Section 3.9, Recreation, have been revised to respond to comment.
25-2	A simulation of the view of the Ripsey Wash TSF from a new KOP on the relocated Arizona Trail has been added to the EIS. The simulation KOP's were selected to portray the views showing the largest extent of tailings or realigned highway, or from particularly sensitive locations, such as Jake's Overlook.
Comment Docume Mike Kotras	nt #26
26-1	Comment noted.
Comment Document #27 Jason Reynolds	
27-1	Comment noted.
Comment Document #28 Daniel Sharp	
28-1	Comment noted.
Comment Document #29 John Windfeldt	
29-1	Comment noted. The area you have cited is outside the scope of this EIS.
29-2	Comment noted.
29-3	The retaining structure for the re-located Florence-Kelvin Highway will be constructed of inert materials not associated with the copper mine or the tailings.

Comment Number	Responses to Ray Tailings Draft EIS Comments
29-4	The main pump station for the tailings is located at the Ray mine. The main pump station is at a higher elevation than the auxiliary pump station which is located just North of the Gila river. Gravity would likely supplement the energy necessary to pump tailings to this point. The auxiliary pump station, located North of the Gila river, would pump the tailings to the Tailings Storage Facility that is located at a higher elevation than the Gila river auxiliary pump station.
29-5	Comment noted.
29-6	Comment noted.

4.0 DRAFT EIS COMMENTS

(See separate file)

COMMENT DOCUMENT #1 SAN CARLOS IRRIGATION PROJECT (COOPERATING AGENCY)

Comment Pocument #1

1-2

From:	Goldstein, Beau
To:	Langley, Michael SPL
Subject:	[EXTERNAL] Ripsey Wash DEIS
Date:	Friday, February 19, 2016 10:37:50 AM

Good morning-

I have the following 2 comments on the DEIS:

1. Section 3.7.2.2 does not analyze SCIP's 69kV line relocation, even I - I though it is mentioned in Section 3.7.1.6.

2. Section 3.10.2.2 (page 3-106) discusses archaeological sites in the path of proposed Arizona Trail realignments; what about SCIP's 69kV line proposed realignments?

Thank you,

Beau J. Goldstein, RPA BIA SCIP, Acting Environmental Coordinator BIA WRO, Contractor Mobile 602.758.9335

COMMENT DOCUMENT #2 BUREAU OF LAND MANAGEMENT

Comment Document #2

From:	Dunlavey, Linda
To:	Langley, Michael SPL
Subject:	[EXTERNAL] Comments from BLM on Ripsey Wash
Date:	Monday, March 14, 2016 5:58:22 PM
Attachments:	Comennts BLomeli.pdf
	Comments LDunlavey 3-8-2016.docx
	Comments NFavour.pdf
	Minerals Program Comments 2016 03 14.docx
	Ray Mine TSF Draft EIS Review Comments DTersey dm.docx

Here are our comments.

The comments have also been sent in hard copy to your address in Phoenix.

Linda

Linda L. Dunlavey Realty Specialist 520-258-7260 Tucson Field Office 3201 E Universal Way, Tucson, AZ 85756
Comment Document #2

Ray Mine TSF Administrative Draft EIS Review Comments 2nd Review 3/7/2016

Reviewing Agency: US BLM

Reviewer: Ben Lomeli, Hydrologist

Page No.	Paragraph	Comment	
2-20 ?	4?	Engineering details of all tailings and return water pipelines, especially for tailings slurry pipeline bridge over Gila River, should be provided. (E.g. Sizes, materials, joint connections, cross-sections, hydraulic requirements, pier scour calculations, depths, geotechnical drawings, etc.). Ground disturbance and erosion control features should be described for overland pipeline segments and engineering details should be provided. Partially addressed in Figures #5, 6, 7, 9, & 12. (Locations & cross-sections are shown, but not the sizes, materials, Joint connections, hydraulic requirements, pier scour calculations, depths, geotechnical drawings, etc.).	2-
2-32?	1?	Specific locations for the proposed monitoring wells can be critical for proper detection of potential contaminant flows. A plan view on topographic base map should be provided showing exact monitoring well locations. Well construction details should also be provided, including depths, diameters, materials, perforation intervals, etc. Addressed in Figure #30 & by response #4-172.	2-2
2-34?	4?	Engineering details of all stormwater management features (ditches, ponds, diversion channels, etc.) should be provided. (E.g. Sizes, materials, cross-sections, hydraulic freeboard requirements, outfall designs, energy dissipation, etc.). Partially addressed in Figures #5, & 12. (Locations & some cross-sections are shown, but not the sizes, materials, hydraulic freeboard requirements, outfall designs, outlet energy dissipaters, etc.). May have also been partially addressed by response #4-173.	2-
3-61 3-14	4-Footnote 17 to Table 3-11	It is the Natural Resources Conservation Service (Not "National" Resources) Still not addressed (footnote not corrected).	2-
3-78	3	Protecting, conserving and enhancing groundwater levels and baseflows are also Congressionally mandated BLM goals within the SPRNCA. (BLM has an explicit Federal Reserve Water Right for the SPRNCA). Only partially addressed on page 3-43. "Conservation" not mentioned.	2-5
3-85	Table 3-17	February groundwater levels from monitoring wells likely will not show lowest (late summer) levels. The full range of groundwater level fluctuations should be analyzed. Addressed by response #4-61.	2-6
3-86	Table 3-18	February & March groundwater levels from piezometers may not show lowest (late summer) levels. The full range of groundwater level fluctuations should be analyzed. Addressed by responses #4-61 & 4-62.	2-7
3-88	1 (below Table 3-22)	How was the 5-15% of annual precipitation " <i>estimated</i> " for groundwater recharge? What was the rationale used to arrive at this estimate? Addressed by response #4-63.	2-8
3-88	Table 3-23	The temperature scale should be indicated as degrees Fahrenheit; (or Centigrade). Addressed by response #4-64.	2-
3-88	Table 3-23	Any explanation for the much higher electrical conductivity, magnesium, nitrite (N) and sulfate levels at MW-7? Addressed by response #4-65.	2-1
3-89	Table 3-23	Any explanation for the much higher TDS, manganese, zinc and total uranium levels at	2-1

3-89	last	What about the nitrite AAWQS level at MW-7 (it's much higher than the "exceedance" at MW-3)? Addressed by response #4-67.
3-93	Table 3-25	The temperature scale should be indicated as degrees Fahrenheit; (or Centigrade).
3-93	Table 3-25	Any explanation for the much higher electrical conductivity, total hardness, and calcium levels at LISGS well D-04-1407BBB2 Addressed by response #4-69
3-94	Table 3-25	Any explanation for the much higher chloride, magnesium, sulfate and TDS levels at USGS well D-04-1407BBB? Addressed by response #4-70.
3-94	last	Incomplete sentence. Does not finish thought on the volume of groundwater expected. Addressed by response #4-71.
3-132	4	The first occurrence of the word "exhibit" seems like it should be replaced with the word "exist"?? "Five wetland areas exist" May have been addressed by response #4-97?
4-161	1	What was the rationale used for "expected traffic dispersion" of new contractors and families into surrounding communities? Wouldn't most want to live close by? May have been addressed by response #4-98?
4-161	3	What was the rationale for concluding that " the greenhouse gas emissions generated from either action alternative would have a <i>negligible</i> effect on global warming"? (Localized affects on climate change may not be <i>negligible</i>). Adding a more local and longer-term (>3 years) analysis is recommended for comparison to existing conditions in the vicinity. It is part of cumulative impacts; it all adds up regionally and globally.
4-163	Table 4-4	What does "TBC" stand for? Addressed by response #4-100.
4-164	last	What is the rationale for concluding that " the estimated annual PM ₁₀ emissions during construction are expected to add <u>moderate</u> amounts of these emissions to the environment but at amounts below the EPA defined <i>de <u>minimis</u></i> levels (40 CFR 93 \$153)"? Addressed by response #4-101.
4-167	6 (4.3.4)	It appears the word "more" should be inserted in front of the word "complicated". Addressed by response #4-102.
4-173	4	Word "These" at the beginning of the second sentence is misspelled. Addressed by response #4-103.
	Figure 2-5	Needs label for Ripsey Wash; (or Hackberry). Addressed by response #4-169.
	Figure 2-7	Needs label for Hackberry; (or Ripsey Wash). Addressed by response #4-170.
	Figure 2-13	Needs upgrading (<i>engineered; not hand-drawn</i>) and labeling to specify proposed location. (So as not to be confused with crossing at Gila River). Appears to be addressed by response #4-171?
New	Comments :	(3/4/16)
Section	Tables 4.1	Cross-referencing between these two tables makes it very difficult to review by
4.0	& 4.2	resources, (using resource ID #'s).
Section 4.2	1# & Only	How does "replacing" one TSF with another automatically equate to "negligible cumulative impacts" to climate change? The second TSF does add <u>some</u> degree of cumulative impacts. As stated in this DEIS, another TSF will increase surface soil albetos / reflectivity, (bare ground), increase sedimentation and dust, decrease groundwater recharge leading to degradation of riparian vegetative communities, thus further exacerbating climate change. No

		analysis/rationale is presented to demonstrate that these additional impacts would be "negligible cumulative impacts" to climate change.
Section 6.3	List of Preparers	Only Francisco's name is on the List of Preparers for BLM.

Comment Document # 2 (continued)

Comments by Linda Dunlavey Realty Specialist BLM 3/8/2016

Information that BLM Lands and Realty will need in the EIS in order to teir off of this document.

The length, width, grade and description of what kind of construction is being used on the road. The casefile number that Pinal County will have to amend is AZA-35391-01. The legal description of where the change is being made.

Same goes for the SCIP powerline, the only difference is they will have to file a new application for a ROW across public land.

2-30

Will need the legal description for the Arizona Trail that is being moved. BLM # AZA-33631 and State Land # 10-13922.

The bridge and pipelines will need the same type of information plus a Plan of Development that shows what materials are being used, where the peirs are going, what is going to be done to protect the river.

Following comments on the Original Draft by Sbernal were not included.

Part of this San Carlos (SC) line is located on BLM lands in T.4 S., R. 13 E, sec. 12, SW4, is unauthorized and requires a BLM ROW authorization.

A portion of the existing SC line runs on BLM lands without a BLM ROW authorization. SC vill need to apply to the BLM for a ROW in order to allow the line to remain on public lands.

If the Ripsey Wash alternative is selected ASARCO will need to apply for a BLM ROW for the pipeline bridge in NE NW sec 12; and for the pipe lines crossing the BLM parcel along the adjacent road in the NWSW, NWSWSW sec. 12, T. 4 S., R. 13 E. Please add the above information along with providing the lengths and widths for each infrastructures sites (bridge/pipeline areas), with a map showing their locations and length/width/height, and provide all engineer designs for these facilities, and a section of describing the construction methodology for the bridge and pipeline such as (site preparation, reclamation, safety, hazmat mitigation, traffic control, types of equipment, number of vehicles and number personnel, engineer specifications, and must include all ancillary features.

Provide the engineer designs for the pipeline bridge and the pipeline layouts along the road and include all ancillary features required for their installations and operations. Also describe in the EIS all ancillary features are needed to support these.

Provide the specifications for the pipelines, i.e., diameter, thickness, etc. What are the risks of a pipeline bursting and causeing runoff onto public lands and the river. How will this be mitigated.

A plan of development(POD) should be created and added to the EIS that will describe the construction project for each alternative as well as their locations and designs of the bridge and pipeline. We attached to our comments a sample form POD guide. Note, where will the pipeline **2-37** be placed and what side of the road, and are there are ancillary features that required with your operations and placement. Pinal County will need to give approval if these features are to share and fall into their existing BLM road right-of-way.

In addition, the BLM is to be compensated for the loss of vegetation. The removal of saguaros are to be avoided, if not, BLM must be compensated for each lost or replaced or salvaged as much as possible. A BLM vegetation inventory of potential vegetation targeted for removal needs to be provided.

The BLM ownership is incorrect on this Figure. See the actual Figure where the BLM parcel has 2-39 been identified. in section 12.

The EIS needs to analyze the impacts of the this alternative for both scenarios if or if not the ASLD's lands are acquired by ASARCO. The purchase is a connected action, so, the question is can this alternative occur without the purchase occurring. Suggest adding a map showing the subject ASLD lands.

The EIS needs to analyze the impacts of the this alternative for both scenarios if or if not the BLM lands are acquired by ASARCO. The exchange is a connected action, so, the question is can this alternative occur without the exchange occurring. Suggest adding a map showing the BLM lands proposed under the exchange. The Hackberry alternative and analysis needs to be similar (same) as under the amended Ray Land Mine exchange.

A plan of development(POD) should be created and added to the EIS that will describe the construction project for each alternative as well as their locations and designs of the bridge and pipeline. We attached to our comments a sample form POD guide. Note, where will the pipeline be placed and what side of the road, and are there are ancillary features that required with your operations and placement. Pinal County will need to give approval if these features are to share and fall into their existing BLM road right-of-way.

Comment Document #2 (continued)

Nancy Favour

Comments on Draft EIS Proposed Tailings Storage Facility, Ray Mine – Pinal County, Arizona (January 29, 2016) (Ripsey Wash Draft EIS)

Executive Summary

Pg. ES-3 – footnote 6 – 2nd sentence is confusing– are there words missing? "If a proposed project is not water-dependent and would impact a special aquatic site (e.g., a wetland), then there is a strong regulatory presumption that if practicable alternatives that do not involve special aquatic sites are available, and that such alternatives would have less adverse impact on the aquatic ecosystem."

ES-3 - Project Purpose & Need

The Purpose and Need statement does not reflect the agency's purpose and need, just the applicant's.

For BLM, I would suggest BLM's purpose and need statement be similar to:

The BLM's purpose is to respond to ASARCO's request to develop portions of a new TSF for the Ray Mine on public lands, and to use salable materials from the federal mineral estate. The need is to comply with regulations under the General Mining Law of 1872, as amended; Federal Land Policy and Management Act of 1976, as amended (FLPMA); and the Surface Resources Act of 1955.

BLM's Decision to be Made:

The BLM Authorized Officer is the Tucson Field Manager. The Authorized Officer will decide: whether to approve ASARCO's request to construct the portion of the proposed TSF located on public land; whether to allow the applicant to relocate a segment of the Arizona Trail to a new location on BLM-administered land; whether to allow the applicant to relocate a portion of an existing 69kV transmission line onto BLMadministered land; whether to approve the Mineral Materials request for federal mineral estate; to approve one or more of the requests with modifications, or to deny the requests.

Hackberry Gulch Alternative -

It seems more should be mentioned that this alternative would require the RLE to occur, or that an MPO would be required if the land stays under BLM administration.

ES-8

Footnote 4 refers to 2,300 acres of subsurface estate administered by BLM. This acreage should be included in the table, with notation as to who manages the surface estate. Also, document needs to reflect that BLM will need to make a decision regarding proposed activities involving the subsurface estate.

ES-12

Footnote 1 describes that the facility would be partly located on land involved in the Ray Land Exchange proposal. Why is this footnote attached to "State of Arizona"? Please move note to BLM and disclose the amount of BLM-administered land [for each alternative in this EIS] involved in the land exchange and amount of BLM-managed land that would be affected that is excluded from proposed land exchange.

Ch. 1, section 1.1

The BLM has a number of decisions to make. The portion of the Proposed action and Alternatives that would involve BLM decisions need to be more clearly described, analyzed and disclosed.

Facilities that would be on BLM-managed land include/require a BLM decision:

- A tailings pipeline
- A return-water pipeline
- Re-route of an existing 69-kV transmission line



BLM's Decision to be Made:

The BLM Authorized Officer is the Tucson Field Manager. The Authorized Officer will decide: whether to approve ASARCO's request to construct the portion of the proposed TSF located on public land; whether to allow the applicant to relocate a segment of the Arizona Trail to a new location on BLM-administered land; whether to allow the applicant to relocate a portion of an existing 69kV transmission line onto BLMadministered land; whether to approve the Mineral Materials request for federal mineral estate; to approve one or more of the requests with modifications, or to deny the requests.

Pg. 1-5

jurisdiction.

This statement should be revised, "Although the only Asarco-proposed operational activity on BLMadministered lands includes be the installation and use of approximately 1,500 feet (or about 0.3 miles) of the tailings and reclaim water pipelines for the Proposed Action, use of mineral materials, and a re-route of the Arizona Trail ... "

As stated previously, there are a number of aspects of the proposal that will require BLM decision, including the mineral material sale, and over 6 miles of relocated trail.

Also, this statement illustrates that the mineral estate is a concern/should be disclosed as an impact in the document:

Federal mineral estate would be covered by both the Ripsey Wash TSF and the Hackberry Gulch alternative. Both the Ripsey Wash and the Hackberry Gulch TSF sites would remain open to mineral entry whether or not a TSF is constructed; however, the construction of a tailings facilities over the federal mineral estate may effectively preclude future mineral resource development beneath the facilities (indirect & residual impact).

The entire document needs to be reviewed and clarified as to what components would involve BLMmanaged lands, both surface and sub-surface. Also, activities proposed on any BLM-administered lands that are proposed for exchange in the Ray Land Exchange should be treated as BLM-administered lands since we do not yet know what the outcome of the proposed exchange will be. (Any assumption that the exchange is "likely" is pre-decisional.)

Pg. 1-6

This information should be in regular text and not buried as a footnote:

BLM-ASO-Favour-comments-3-4-2016



Minerals Program Comments (Dan Moore)

In order for BLM to adopt the EIS for use in making a decision concerning the potential issuance of sale contract(s) for the use of federal mineral materials in the TSF project, the EIS needs to provide 1) sufficient detail in the description of the proposed mining of the mineral materials and the reclamation of these mining activities; and 2) an analysis of the expected impacts of these mining activities on the human environment adequate for the BLM Field Manager to make a reasoned decision.

For each alternative, the following information is required:

- 1. Proposed source locations for mineral materials
- Identification of any active mining claims covering proposed sale locations (Note that BLM must seek a Mineral Materials Waiver from holders of existing, valid mining claims covering a proposed sale area prior to the issuance of a mineral material sale contract.)
- 3. Volume or tonnage of mineral materials required
- 4. Access route locations and descriptions of access route requirements
- 5. Map showing access routes and general site layout of sufficient detail to allow an analysis of the potential environmental impacts of the proposed activities
- 6. A general description of mining methods and equipment requirements
- 7. Schedule of mining activities
- 8. Discussion of methods that will be used to avoid unnecessary or undue degradation
- 9. Discussion of how the public will be protected from mining activities (fencing, signing, etc.)
- 10. Disclosure of any required permits (dust, air quality, etc.)
- 11. Reclamation plan (or final disposition plan for sites to be buried under a proposed TSF)
- Interim site management plan for sites proposed to be buried under a TSF if a protracted time period (five years or more) will pass between mineral material mining and ultimate burial under a TSF
- 13. A disclosure and analysis of the environmental impacts of the activities proposed above

Comment Document # 2 (continued)

Ray Mine TSF Administrative Draft EIS Review Comments

Reviewing Agency: _BLM____

Reviewer: Darrell Tersey

Page No.	Paragraph	Comment	
ES-14	6.2.2	Extra word in first sentence that does not belong there "within"	2-
ES-24	6.15.1	Only one species of animal has a scientific name listed. Either all should have them the first time the common name is used or none. The T&E species should have their scientific names listed for clarity and consistence with the Biological Assessment needed for the Section 7 consultation process.	2-6
ES-35	Potential spread of noxious weeds	Buffelgrass and Malta Star Thistle are both known to occur in the project area and are highly invasive on disturbed sites.	2-6
ES-37	Potential impacts to BLM sensitive wildlife species	This is a current list of BLM sensitive species for the project area. Lowland Leopard Frog (Lithobates yavapaiensis), American Peregrine Falcon (Falco peregrinus anatum), Bald Eagle (non-listed DPS) (Haliaeetus leucocephalus), Cactus Ferruginous Pygmy-Owl (Glaucidium brasilianum cactorum), Allen's Big-eared Bat (Idionycteris phyllotis), Arizona Myotis (Myotis occultus), California Leaf-nosed Bat (Macrotus californicus), Cave Myotis(Myotis velifer), Greater Western Mastiff Bat (Eumops perotis californicus). Additionally, The Sonoran Desert Tortoise (Gopherus morafkai) is covered by a Candidate Conservation Agreement and that species is now considered as a sensitive species by the BLM.	2-7
2-8	2.3.2.14	There is no information how Asarco will "eliminate existing public access within and 500 feet beyond the proposed footprint of the facility and related infrastructure in the area of construction and operation of the Ripsey Wash TSF." Response to comments on the administrative draft were referred to a non-existent section about "A new section (2.5.2.15, Fencing and Signage), has been added to EIS to respond to comment."	2-7
3-3	Table 3-1	Source 2 and 4 are both for the same location in Winkelman, but they show different average total precipitation at the bottom of the table.	2-7
3-79	3.7.1.7 Land Use Plans and Policies	Last paragraph in section is duplicate to last part of second paragraph above it. Section should also note that The area is part of the White Canyon Resource Conservation area and the Middle Gila Cultural Resource management Area under the Phoenix RMP	2-7
3-88	3.9.1.1	BLM management of recreation on BLM-administered lands in this area is guided by the 1989 Phoenix Regional Management Plan (RMP) (BLM 1989). Should be Resource management plan. Responses to Comments on the October 15, 2014 Internal Working Draft EIS stated: 4-82 Typo fixed.	2-7
3-96	3.9.2.2 Effects of the Ripsey	After construction and operation of the TSF, a total of 3.3 miles of trail located within the footprint or within 500 feet of project facilities will be closed to public use (1.0 miles on BLM ROW and 2.2 miles on County ROW).	2-7

	Wash TSF Alternative	Need to discuss how these closures will be constructed for impact analysis in wildlife and recreation sections, different types of closures will have different impacts.	Ccol
3-122 3-121	3.13.1.2 Table 3-61	Xenoriparian xeno- combining form, prefix: xeno-relating to a foreigner or foreigners. "xenophobia" •other; different in origin. Responses to Comments on the October 15, 2014 Internal Working Draft EIS stated: "Spelling correction made in text and table."	2-7
3-123	3.13.1.2	First full paragraph on page. Only one species of plant does not have a scientific name listed. Either all should have them the first time the common name is used or none.	2-7
3-123 3-124	3.13.1.3	Xenoriparian used twice in this section. Responses to Comments on the October 15, 2014 Internal Working Draft EIS stated: "Spelling correction made in text and table."	2-7
3-125	3.13.1.6	First sentence should read Pinal county	2-7
3-125	3.13.1.6.1	There is not any designated or proposed Critical Habitat for this species.	12-6
3-125	3.13.1.6.2	There is not any designated or proposed Critical Habitat for this species.	12-8
3-126	3.13.2.2.1	Xenoriparian used once in this section. Responses to Comments on the October 15, 2014 Internal Working Draft EIS stated: "Spelling correction made in text and table."	2-8
3-127	3.13.2.2.3	Buffelgrass and Malta Star Thistle are both known to occur in the project area and are highly invasive on disturbed sites.	2-8
3-146	3.15.1.2	Arizona Game and Fish Department HGIS system also identifies Desert Bighorn sheep as a Mammal Species of Economic and Recreational Importance (SERI) for the Ripsey TSF area.	2-8
3-154	Table 3-66	Sonoran Desert Tortoise should be listed as a BLM sensitive species with appropriate analysis of impacts. BLM guidance is "The Sonoran desert tortoise and its habitat south and east of the Colorado River will be conserved and managed as described in Manual Section 6840 (Special Status Species) and consistent with the CCA conservation commitments."	2-8
3-155	Table 3-66	Golden Eagles are known to next about 5 miles west of Ripsey TSF, Arizona Golden Eagle Nest Survey 2012 (AZ G&FD 2012)	2-8
3-157	3.15.1.12	F&WS IPac tool (species list) indicates that projects in the area also need to consider affects to Lesser Long-nosed bat and Ocelot.	2-8
3-161	3.15.2.2.3	Since there is not any design features in the EIS to prevent mortalities of desert tortoise both during construction and during operation of the TSF's, the EIS should clearly state that there will be a high mortality rate, possibly greater than 95% to the desert tortoise in and near the facilities. In the Candidate Conservation Agreement, Stressor A.4. Loss or degradation of habitat through minerals extraction activities may reduce available habitat and disrupt natural movement between suitable habitat patches. Has the following guidance. Adverse impacts to desert tortoise will be mitigated to the extent allowable in the 43 CFR 3809 regulations. And Salable mineral material permits will be prohibited in occupied SDT habitat unless it is clearly in the public interest to permit them.	2-8
		The footnotes at the end of the table on page 128 of the SDT-CCA defines the ratings for the impacts to desert tortoise from projects.	

3-162	3.15.2.2.6	Special habitat Features for the desert tortoise include caliche banks along washes, shelter sites under shrubs and caves and burrows in wash banks and on slopes.	
3-162	3.15.2.2.6	Need to add desert bighorn sheep	1
3-165	3.15.2.2.14	Add desert tortoise to discussion.	
Appendix D			
D-15	12.0	The Special Management Areas were designated by the Record of Decision in 1989. Drop all references to "Proposed"	1
D-9	7.1	Next to last paragraph – Delete "Bryce Thomson Arboretum"	1
8			
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			1

COMMENT DOCUMENT #3 (PART 1) ENVIRONMENTAL PROTECTION AGENCY (COOPERATING AGENCY)

Comment Document #3 : Part 1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION IX 75 Hawthorne Street San Francisco, CA 94105

> OFFICE OF THE REGIONAL ADMINISTRATOR

APR 2 9 2016

Colonel Kirk E. Gibbs District Engineer, Los Angeles District U.S. Army Corps of Engineers 915 Wilshire Boulevard Los Angeles, CA 90017

Subject: Public Notice (PN) SPL-2011-01005-MWL for the proposed Ray Mine Proposed Tailings Storage Facility (TSF), Pinal County, Arizona.

Dear Colonel Gibbs:

The U.S Environmental Protection Agency (EPA) has reviewed the subject PN dated January 29, 2016 for the Ray Mine Tailings Storage Facility (TSF) project proposed in Pinal County, Arizona. After consultation with your staff, EPA also traveled to the site on February 9, 2016, and met with the Arizona Department of Game and Fish, U.S. Fish and Wildlife Service, and the project applicant to discuss alternatives and mitigation sites. EPA appreciates the extension of the PN comment period to May 5, 2016, and the dialog with your staff that has been ongoing since we accepted Cooperating Agency status in 2013.

EPA is submitting the enclosed comments to the Corps on this permit application consistent with the Clean Water Act (CWA); final EPA comments on the Draft Environmental Impact Statement (DEIS) are being transmitted under separate cover. This letter follows the field level procedures outlined in the 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(b) regarding section 404(q) of the CWA. Based on our review of the currently available information, the EPA is hereby notifying the Corps that the TSF permit as a candidate for review by EPA and Corps headquarters because the discharges as proposed will result in substantial and unacceptable impacts to Ripsey Wash and the Gila River, which are aquatic resources of national importance (ARNI).

The Gila River was designated ARNI in 2005, and is one of the most significant aquatic resources in Arizona, providing municipal and agricultural water supplies and innumerable in-stream benefits for fish, wildlife, and recreation. Ripsey Wash is a significantly sized, ecologically intact, direct tributary to the Gila River, located at the lower-end of an undisturbed 15.5 square mile watershed; it provides outstanding individual and cumulative support to the chemical, physical and biological integrity of the Gila River's aquatic ecosystem. The proposed project would eliminate 130 acres of waters of the U.S. (waters) including 65 acres of Ripsey Wash.

Unfortunately, since EPA provided our December 18, 2014 Cooperating Agency comments, these proposed impacts to the aquatic resources reflect no substantive change. EPA remains concerned that substantial and unnecessary loss and/or degradation of the aquatic ecosystem is likely if the TSF is

constructed and operated as proposed. The Corps' DEIS, and statements from the applicant in the field, point to practicable alternatives that have not been adequately considered; the proposed action therefore does not appear to be in compliance with 40 CFR 230.10(a) which restricts the Corps to permitting only the Least Environmentally Damaging Practicable Alternative (LEDPA). These alternatives impact significantly less acreage of waters, and pose substantially lower risk to the integrity of the Gila River. The proposed TSF also does not appear to comply with 40 CFR 230.10(b) as it poses substantial water quality threats to the Gila River 0.3 miles downstream. Finally, the Guidelines at 40 CFR 230.10(d) require all practicable avoidance of impacts, and compensation for those that are unavoidable. Adequate financial assurance similar to that required of mines on public lands represent practicable steps that would help the proposal comply with this section of the Guidelines and factors under the Corps' Public Interest Review. Compensatory measures are also insufficiently described at this time.

EPA looks forward to continuing our Cooperating Agency role in this project. If you have any questions, please call Deputy Regional Administrator Alexis Strauss at (415) 972-3572. Alternatively, your Regulatory Division Chief may contact Jason Brush, Supervisor of our Wetlands Section, at (415) 972-3483.

Sincerely.

Jared Blumenfeld

cc: Misael Cabrera, Arizona Department of Environmental Quality Ray Suazo, Bureau of Land Management, Arizona State Office Francisco Mendoza, Bureau of Land Management, Tucson Field Office Ferris Begay, Bureau of Indian Affairs, San Carlos Irrigation Project Larry Voyles, Arizona Game and Fish Department Steve Spangle, U.S. Fish and Wildlife Service Mike Sundblom, Pinal County Air Quality Control District

DETAILED COMMENTS ON THE PROPOSED RAY MINE TAILINGS STORAGE FACILITY 404 PERMIT APPLICATION # 2011-01005-MWL

I. Project Description and Potential Impacts

The permit applicant, Asarco, is the owner and operator of Ray Mine, an open pit copper mine with onsite concentrator and leaching facilities located in Pinal County, Arizona, about 10 miles northwest of the community of Kearny and approximately 65 miles southeast of the city of Phoenix. Currently, mine tailings are placed at its existing facilities, Elder Gulch and Hayden AB-BC and D tailings impoundments. With Elder Gulch expected to reach capacity over the next 5-7 years, Asarco proposes to construct a new TSF for additional storage.

The proposed TSF would impact Ripsey Wash and other desert streams located approximately four miles southwest of the mine operations and present tailings facility. The TSF as described would result in the loss of 134 acres of waters associated with Ripsey Wash, the Gila River, and unnamed washes. In addition to the tailings facility, Asarco would construct a new pipeline, pumping booster station, containment ponds, a bridge across the Gila River, stormwater detention dams and diversion systems, and other infrastructure needed to transport tailings from the existing thickener to the TSF. Tailings would be discharged from spigots around the perimeter of the tailings areas, and water would accumulate at the rear of the TSF and would be pumped back to the Ray Concentrator via pipelines for reuse in the milling process. A 6.8 mile segment of the Arizona National Scenic Trail would be relocated and a 6.4 mile bypass would be constructed to maintain a scenic trail across the state of Arizona. The proposed facility would also require replacing 1.8 miles of Florence-Kelvin Highway with a new 2.1 mile segment routed around the facility.

The substantial impact of the preferred alternative is demonstrated by the permanent fill of 130 acres of jurisdictional waters in the Ripsey Wash subbasin, and the high likelihood that hazardous constituents will degrade water quality in the Gila River due to a lack of adequate and practicable post-closure management and financial assurance. The unacceptable nature of these impacts is clear because alternatives to the discharge and financial risk mitigation are practicable, making impacts to ARNI unnecessary.

II. Gila River and Aquatic Resources of National Importance (ARNI)

The Gila River, first designated ARNI in 2005, is one of the most significant aquatic resources in Arizona, providing municipal and agricultural water supplies and innumerable in-stream benefits for fish, wildlife, and recreation. As a significantly sized, ecologically intact, direct tributary to the Gila River, the 134 acres of Ripsey Wash that would be eliminated by the proposed TSF also constitute ARNI. Ripsey Wash is located at the lower-end of an undisturbed watershed comprised of 15.5 square miles of unfragmented wildlife habitat, and provides outstanding individual and cumulative support to the chemical, physical and biological integrity of the Gila River's aquatic ecosystem. Protection of these resources is an explicit priority of local, state, and federal agencies, environmental organizations, and the public.

Beginning in western New Mexico, the Gila River flows west from the Continental Divide of North America, across three of the four deserts of the United States. It winds through 600 stream miles of Arizona, discharging into the Colorado River that forms the state border with California. The Gila River

3-1

watershed covers approximately 57,950 square miles and includes the major metropolitan areas of Phoenix and Tucson, Arizona. The water and riparian habitat resources provided by the Gila River are increasingly valuable for human uses such as water supply, irrigation, and recreation as well as wildlife habitat.

The Gila River is critical to Arizona's economy and the public health of its citizens. Designated Uses for the Gila River, established by Arizona Department of Environmental Quality (ADEQ), include aquatic and wildlife habitat, fish consumption, agricultural irrigation, water for livestock, swimming and non-swimming water recreation. The Gila River watershed supplies a substantial portion of Arizona's surface water for agricultural, industrial, and municipal uses. Water use data¹ indicate that the Gila River hydrologic units provide approximately 35% of total surface water withdrawals for all water uses in Arizona and 37% of the surface water withdrawals used for irrigation.

The Gila River riparian corridor provides increasingly rare and important water, shelter, nesting, and food resources for fish and wildlife in the Southwest. Suburban and agricultural development have led to the removal of more than 90% of the desert riparian habitat in the western United States² making the remnants ever more important for plants and wildlife. The perennial and intermittent reaches of the upper Gila River support diverse array of plants and animals, and some of the highest concentrations of breeding birds in North America. The middle Gila River segment supports important wetland resources near the City of Phoenix and provides suitable habitat for many threatened and endangered species. The lower Gila River near the confluence with the Colorado provides important aquatic and wetland habitat for waterfowl and upland avian species, including nesting habitat for the Yuma clapper rail.

Agencies and non-governmental organizations (NGOs) have assembled a mosaic of public and private conservation lands to protect the important natural resources of the Gila River and its surrounding watershed. More specifically, in the upper Gila River watershed, NGOs have helped safeguard ~1.9 million acres of land surrounding the Gila River including the Gila-Mimbres Headwaters and the Gila Riparian Preserve. In the middle and lower stretches of the Gila River, significant conservation work is also underway. The Gila River Indian Community is actively protecting and restoring wetlands and riparian habitat at the confluence of the Salt and the Gila Rivers³. The City of Phoenix along with federal and state partners launched the Tres Rios project at the confluence of the Gila, Agua Fria, and Salt Rivers to test the ability of constructed 11-acres of wetlands which will eventually grow to 1,500 acres of habitat in order to treat waste water effluent for the growing metropolitan area of Phoenix.

Direct tributaries of the middle and lower Gila, such as Ripsey Wash and its unfragmented headwaters, provide a range of functions critical to aquatic ecosystem health and stability. These tributaries provide hydrologic connectivity within the watershed, facilitating the movement of water, sediment, nutrients, wildlife, and plant propagules. Ephemeral and intermittent streams are responsible for a large portion of basin ground-water recharge in arid and semi-arid regions through channel infiltration. These ephemeral systems, especially large wide channels, such as those present at Ripsey Wash, drain undisturbed directly from the headwaters in the upper watershed and contribute significantly to the biogeochemical functions of waters within their watershed. The large ephemeral drainages at Ripsey Wash are capable of storing, cycling, transforming and transporting water, elements and compounds, while facilitating the movement of sediment and debris and dissipating energy as part of natural fluvial adjustment.

3-2 (conit)

¹ https://water.usgs.gov/lookup/getwatershed?15050100

² McNamee, Gregory (1994) The Life and Death of an American River

³ Gila River Indian Community (2003 Ecological Conditions of the Gila River Wetlands, Report to the GRIC Department of Environmental Quality Water Quality Program

III. CWA Compliance

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts on the aquatic environment pursuant to EPA's Section 404(b)(1) Guidelines (Guidelines). Fundamental to the Guidelines is the principle that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that there is no less environmentally damaging practicable alternative (LEDPA) that achieves an applicant's project purpose (40 CFR 230.10(a)). The Guidelines also require compliance with three additional, independent tests:

- Protecting Water Quality and Sensitive Species: Section 230.10(b) prohibits discharges that will result in a violation of water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary.
- Significant Degradation: Section 230.10(c) prohibits discharges that will cause or contribute to significant degradation of waters. Significant degradation may include individual or cumulative impacts to human health and welfare; fish and wildlife; ecosystem diversity, productivity and stability, and recreational aesthetic or economic values.
- Mitigation: Section 230.10(d) prohibits discharges unless all appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Alternatives Analysis - 40 CFR 230.10(a)

According to the DEIS, "Asarco's basic project purpose is mine tailings disposal, which is not waterdependent. The Project's purpose is the development of tailings disposal capacity that will allow the full utilization of the mineral resource at the Ray Mine, using infrastructure and processes already in existence at the mine." Given existing remaining capacity, construction needs, and the estimated 50-year planning horizon, the DEIS concludes that approximately 550 million dry tons of new tailings storage capacity are needed based on current projections of ore resources. However, the DEIS also states, "In order to allow for possible additional resources identified in the future, and to account for starter dam or embankment construction, the Applicant has estimated for the purposes of this analysis that the new TSF may need to accommodate an additional roughly 200 million dry tons of material, for a total capacity of roughly 750 million tons." (DEIS pg 1-4)

Neither the DEIS nor the 404 Alternatives Analysis justify the stated need for 200 million tons (approximately 35 percent) of additional storage capacity for unidentified future resources, for a total of 750 million tons. Table 2-1 of the DEIS indicates that 5.2 million tons of rock material are needed for the starter dam embankments. Without an increase in mineral resources projected, the additional 195 million tons of tailings capacity would, in effect, allow for an additional 12 years of storage beyond the 50 years of presently identified storage need. As such, TSF sites significantly smaller than 750 million

tons may satisfy the project purpose; the DEIS does not rigorously explore or objectively evaluate all reasonable alternatives. As recommended in EPA's scoping and ADEIS comments, consideration should be given to the analysis of all alternative designs and methods, including smaller tailings storage facilities and a combination of smaller and larger facilities.

Based on the information provided, the appropriate project purpose to drive alternatives analysis under the Guidelines is to accommodate approximately 550 million tons, the balance of tailings that is to be milled at the Ray Mine over the next 50 years and cannot be accommodated by the existing TSFs. From this project purpose, identification of the LEDPA is achieved by performing an alternatives analysis that estimates the direct, secondary, and cumulative impacts to jurisdictional waters resulting from each alternative considered. Project alternatives that are not practicable and do not meet the project purpose are eliminated. The LEDPA is the remaining alternative with the fewest impacts to aquatic resources, so long as it does not have other significant adverse environmental consequences.

Although the applicant identified six alternatives, only two (the proposed action, Ripsey Wash, and the Hackberry Gulch alternative) were considered practicable. "Practicable" is defined by regulation as alternatives that meet the project purpose and are "available and capable of being done in light of costs, logistics and existing technology." EPA believes neither the DEIS nor the PN provide sufficient information to justify elimination of several alternatives as impracticable, particularly the West Dam and Granite Mountain alternatives. In addition to the capacity inflation discussed above, EPA believes the methods of dry stacking and in-pit storage may be practicable alternatives at any selected site that could reduce impacts and should be further evaluated.

West Dam

The West Dam alternative has the capacity to store 757.6 million tons of tailings, but was not evaluated in the EIS due to purported cost and logistics concerns. The West Dam alternative is located to the west of the Ray Mine, with the Dripping Springs Mountain and Mineral Creek located to its east and several buttes and canyons, including Granite Mountain on its west. The site straddles about 2 miles of State Route 177. The small watershed above the West Dam alternative is approximately 469 acres (0.73 square miles), extending to the Granite Mountain ridge line. Total surface disturbance is reported at 1,620 acres with 55.69 acres of direct impacts to waters of the US. Compared to the applicant's proposed alternative, West Dam has a 37% smaller footprint and nearly 60% less impact to waters. Based on this information, the West Dam alternative may be less environmentally damaging and meet the project purpose.

Asarco states that a portion of the West Dam footprint is currently used as rock deposition and leaching areas and that the construction of this alternative would require the relocation of State Route 177, which will cost an estimated \$48 million. Although this is a substantial cost, an alternative cannot be eliminated from further analysis simply because it may be more expensive than the applicant's proposed alternative. Rather, if an alternative is rejected due to costs, it must be credibly demonstrated that the costs are unreasonably higher than a typical applicant could be asked to bear in that situation (i.e., the applicant's proposed alternative is not the cost "baseline" against which alternatives are measured for practicability). Furthermore, if an alternative is to be eliminated based on logistics, it must be demonstrated that there are no viable design options that would allow for the current operation to remain while making slight modifications to the location of the new facility.

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In order to make a financially meaningful, relatively comparable distinction between the alternatives, Asarco must also provide costs associated with each alternative. Although the \$48 million cost associated with this site for the highway is a cost the other alternatives may not have, those other alternatives may have their own unique expenses, and thus the proper comparison is to the cost of the alternative over all. Full-cost accounting should be submitted for all alternatives including, but not limited to, purchasing and obtaining permits on land that are privately vs. publicly owned, re-routing all roads such as State Route 177 and Florence-Kelvin Highway, construction of bridges, pipelines, and other infrastructure, relocation of power lines, compensating for mitigation to offset unavoidable impacts, transporting tailings and other material, accounting for reclamation and post-closure management, etc. EPA recommends that the Corps obtain this critical information to support a more defensible determination on whether the \$48 million expense renders this alternative impracticable as a matter of costs.

Granite Mountain

The Granite Mountain alternative was also eliminated prior to development of the EIS, yet has the capacity to store 766.7 million tons of tailings. This alternative was identified as impracticable due to the presence of known mineral resources. However, the Mineral Estate and/or Surface and Mineral Estate associated with parcels identified in the 1999 Ray Land Exchange FEIS as CB-2, CB-3, CB-4, and CB-5 are depicted in the land exchange maps as "Production Operation and Support," "Buffer," and/or "Transition" areas. The site is located in mountainous terrain to the west of the Ray Mine, with Walnut Canyon immediately northwest of the site, Copper Butte immediately southwest of it, and the Gila River about 2 miles southwest. The small watershed above the Granite Mountain is about 531 acres (pg 11 AMEC Tailings Impoundment Alternatives Technical Memorandum).

The 1999 FEIS identifies only the southeast corner of parcel CB-1 as a "Long Range Prospect." The Granite Mountain tailings site does not overlap the CB-1 Long Range Prospect area; therefore, location of a TSF here does not appear to conflict with the mineral resource in CB-1. It is unclear that future plans for use of the Copper Butte parcels for other operations/support activities would render them impracticable from a CWA 404(b)(1) standpoint. To assess the viability of the Granite Mountain site for the proposed TSF, more detailed information is needed regarding Asarco's mineral rights and resources here, both currently under BLM management and after a possible land exchange under private ownership. EPA recommends that the Corps require a map delineating all lode and mill site claims, and more detailed information regarding Asarco's plans in the Copper Butte parcels under proposed BLM land exchange.

Dry Stack Storage

Dry stack tailings storage has been described as impracticable, primarily due to increased infrastructure costs. Dry stacking involves placement of compacted unsaturated dense tailings requiring no dam for water or slurried tailings retention and generally a smaller footprint for storage than traditional slurry facilities. In order to eliminate dry stacking from further analysis, full cost accounting similar to that required of West Dam should be required. In addition, an estimate of impact reduction that is possible at each site under dry stacking practices should be disclosed.

In-Pit Placement and Storage

In-pit tailings storage makes use of previously-disturbed mine areas for the storage of tailings. This practice is dismissed from further consideration by Asarco because it would preclude ongoing mining. However, no consideration is provided for use of areas where it can be confirmed, over time, that mineral resources have been fully exhausted. This may prove to be a practicable alternative for a

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supplemental, smaller TSF, which would help meet project purposes in a less damaging way, if specific mined out areas of the pit would become available at a later time during mine life. EPA recommends that this alternative be given serious consideration as a component of other alternatives that involve reducing the size of other TSF options to avoid resource impacts. Based on known resources and reserves, Asarco could identify areas of the Ray pit that may be useful a few decades from now, which could provide future in-pit storage capacity. Additional information is needed regarding such areas, including their potential sizes and timing of availability.

The above eliminated alternatives notwithstanding, the Corps' current analysis in the DEIS identifies both the proposed action and the Hackberry alternative as practicable and meeting the project purpose. Because direct fill impacts at Ripsey Wash are estimated at 134 acres of waters, as opposed to 71.5 acres at Hackberry, Ripsey Wash cannot be permitted unless the fill associated with Hackberry can be shown to have "other significant environmental consequences" consistent with 40 CFR 230.10(a).

Ripsey Wash, Asarco's Preferred Alternative

The Ripsey Wash alternative is described as primarily a broad channel with loose alluvium soil capable of reducing flow intensities through infiltration and evaporation. The wash is located at the northern end of the Tortilla Mountains, at the lower-end of an undisturbed watershed comprised of 15.5 square miles (Alternatives Analysis, Appendix A pg 18) and draining directly into the Gila River located 0.3 miles downstream. According to the PN, the total project disturbance is estimated at 2,574 acres (Alternatives Analysis Table 9). Total direct fill into waters of the U.S. is 130 acres, half of which are large ephemeral streams that transport high volumes of water, sediment and organic matter into the Gila River. This alternative would also result in indirect loss of an additional four acres of waters of the U.S.

Hackberry Gulch

The Hackberry Gulch alternative is located down-gradient from the mine, adjacent to the existing tailings facility of Elder Gulch on the western side of the Dripping Springs Mountains. Its total footprint is estimated at about 2,290 acres. Total direct fill into waters of the U.S. is approximately 51.7 acres, of which 0.62 acres are wetlands. This alternative would also result in indirect loss of an additional 19.8 acres of waters of the U.S. The watershed above the wash supports 4.9 square miles and its relatively confined ephemeral channels are disrupted by State Route 177 and Copper Basin Railway before draining into the Gila River 0.4 miles downstream.

Asarco considers the presence of 0.62 acres of wetlands within the Hackberry footprint as a primary regulatory obstacle. However, Asarco has not demonstrated that the fill of these wetlands and the remaining 71.5 acres of waters is more environmentally damaging than the 134 acres of waters at Ripsey Wash. Despite EPA's repeated requests for wetland functional assessment information that might support the relative importance of these small wetlands, no technical rationale has been provided. During EPA's February 9, 2016 field visit to the site, the applicant did not permit EPA to view the wetlands in question.

Asarco also claims that the presence of fault lines and difficulties with seepage control at Hackberry make this site more challenging to build. Based on maps in the DEIS, however, the fault zone and wetlands appear to be located in the periphery of the Hackberry alternative site and might be practicably avoided based on an appropriate 550 million ton storage need and/or dry stack or other reasonable operational changes. Ultimately, in order to eliminate this alternative as the LEDPA, Asarco must demonstrate that this alternative is either more environmentally damaging or is impracticable of being

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built, neither of which is reflected in the current record. Based on the information presented in the AA and DEIS, Hackberry is a less environmentally damaging alternative compared to Ripsey, and does not clearly present any "other significant environmental consequences" if the TSF is designed and managed properly.

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Water Quality - 40 CFR 230.10(b)

The Guidelines prohibit any discharge of dredged or fill material if it causes or contributes to violations of an applicable state water quality standard. Elimination of a substantial portion of the contributing subwatershed at Ripsey Wash will result in reductions in streamflow, alterations in sediment transport, and chemical leaching that will degrade water quality and the aquatic ecosystem. In addition, the proximity of the proposed facility to the Gila River poses substantial risk to water quality if facility containment should fail.

The potential environmental impacts of construction, operation, closure, and post-closure management of the proposed Ray TSF are of serious concern because the TSF, as proposed, could result in significant impacts to Gila River water quality. Experience has shown that a TSF, as designed, will likely need to be actively managed far into the future beyond closure. Representative geochemistry and hydrogeologic information is critical to inform the appropriate design and operation and <u>management needs of a TSF</u> to ensure that it is protective of groundwater and surface water resources. This information is also needed, along with temporary shutdown, closure, and post-closure management plans to estimate the true costs of the project and the long-term financial obligations that the applicant will need to satisfy to ensure protection of these resources.

The amount and type of financial assurance required of the applicant could make the difference between the project being sufficiently managed over the long-term by the site operator, versus an unfunded or under-funded contaminated site that becomes a liability for the government and taxpayers. The financial assurance proposed in the draft APP will not be adequate to satisfy closure and post-closure obligations, creating a substantial, persistent, and unnecessary risk to water quality.

Significant Degradation - 40 CFR 230.10(c)

Impacts from the proposed project will cause significant degradation of Ripsey Wash and contribute to significant degradation of the Gila River. This risk of significant degradation is based on:

- 1. The relatively large size of the Ripsey Wash contributing watershed and its associated flows;
- The large proportion of the natural Ripsey Wash watershed that will be permanently altered or eliminated by the proposed alternative;
- 3. The major disruption of the ecological connectivity between the Ripsey Wash drainage network and the affected reach of the Gila River;
- 4. The desynchronization of natural flow from Ripsey Wash into the affected stream reach, and associated disruption of sediment delivery and transport;
- 5. The degradation of aquatic life from modification of the physical structure and water quality of the affected stream reach;
- 6. The cumulative contribution to the significant degradation of the Gila River, and the impact on human welfare based on the ecological services derived from the river;

7. The high degree of difficulty to mitigate or otherwise offset the adverse impacts described above; and

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8. The potential reversal of functional improvements that have been cumulatively achieved through numerous upstream restoration and preservation efforts.

Operation of the proposed TSF, as designed, would increase pollutants from the tailings impoundment into the Gila River. Conservation and restoration objectives on the Gila River would be hampered by increased fragmentation of the landscape and riparian corridor. Alone or in combination, the changes brought on by the proposed project are significant, adverse impacts under the Guidelines.

Mitigation - 40 CFR 230.10(d)

No discharge or dredged or fill material shall be permitted unless appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem. For unavoidable impacts that remain, a permit applicant is required to comply with the "Final Rule for Compensatory Mitigation for Losses of Aquatic Resources" (40 CFR Part 230 Subpart J). As described in the PN and the Corps' DEIS, the Asarco Ray Mine TSF meets neither of these standards.

With regard to "appropriate and practicable steps" to minimize impacts, EPA believes providing industry-standard level and specificity of financial assurance is both appropriate and practicable. Extensive experience with mines and tailings facilities provides the government with ample evidence of the risk of failure and environmental consequences, and the need for closure and post-closure monitoring and management. Remarkably, Asarco has provided no such closure or long-term management plans, and has offered a corporate bond of inadequate funding for assurance.

Until the applicant addresses the practicable impact avoidance measures discussed above, it would be premature to discuss in-depth the conceptual compensatory mitigation plan for the proposed project at Ripsey Wash. Much work remains to be done toward meeting the LEDPA standard for the proposed project. However, the proposed compensatory mitigation for project impacts is inadequate for replacing functions and services that would be eliminated by the proposed project at Ripsey Wash. The applicant has not properly analyzed how the compensatory mitigation actions described in the plan will replace functions and acreage that would be lost to the proposed project.

To assess the functional condition of aquatic resources on the proposed project site as well as the proposed mitigation lands, the applicant commissioned a project-specific qualitative functional assessment.⁴ Their consultant's work product grouped streams into three classes based on channel width. Ripsey Wash drainages and mitigation sites were then scored qualitatively using a list of 11 hydrologic, chemical and biotic functions developed for each drainage class.⁵ Although valid and relevant fluvial functions were identified, they were subjectively rated on a scale from "0" (non-functional condition) to "5" (highly functional system).

This work product does not provide meaningful assessment of the functions of riverine systems across the proposed project and mitigation sites because it penalizes aquatic resources for "failing" to provide

 ⁴ Ripsey Wash Tailings Storage Facility Functional Assessment of Impacted Waters and Proposed Mitigation Sites ASARCO LLC (RWFA), prepared by Westland Resources, Inc. dated November 5, 2015.
⁵ RWFA, p. 5.

functions they did not naturally evolve to provide. A more scientifically valid assessment recognizes that some waters may perform certain functions better than others due to differences specific to their landscape context, rather than due to impairment. In other words, a valid assessment does not classify ephemeral systems as inherently "lower functioning" than intermittent or perennial systems that evolved in a completely different climatological and physiographic setting.

Similarly, the chemical, physical, and biological functions of a network of higher-order or headwater streams cannot be meaningfully "replaced" by a large single channel, even if that channel is found to pass similar levels of flow and sediment in the aggregate. Yet "assessments," such as this one, routinely "score" aquatic resources in this way for purposes of calculating mitigation requirements. For example, comparison of the functions of 1st order ephemeral riverine waters against those of 5th order perennial waters, as the applicant's assessment does for computing scores, is not ecologically meaningful. Although nearly pristine, the Ripsey Wash headwater streams received a low score ("1") for sediment transport/regulation in comparison to a high score ("5") at the Gila River Mitigation Site, despite the fact that both provide sediment transport functions appropriate to their given classes.⁶

Although some functions overlap significantly between hydrologic classes, they are performed through the combination of slightly different processes and at different levels or intensities. A more appropriate assessment would allow a relative, rather than an absolute scale, and provide better resolution of expected functions as well as a regional standard for comparison.⁷ For example, within the context of a regional reference framework, the 1st through 3rd order ephemeral streams on the Ripsey Wash impact site would likely score as high–functioning, because the upper watershed stressors in this context are minimal. Compounding this error, the assessment scores some waters based on functions that are not reasonably expected to be present in even a pristine, natural feature of this type; headwater streams (Ephemeral Class 3) are scored zero for the "Presence of Fish and Fish Habitat Structure." A natural consequence of these distortions is to bias a total numeric score toward perennial systems, rather than the actual, high functioning arid aquatic ecosystem being impacted.

The "functional assessment" assigning relative value of the services provided by the Ripsey Wash is not based on any existing or approved condition or functional assessment method. Its subjectivity and simplicity are inadequate to compare natural functions with those services provided by the proposed compensatory mitigation. EPA does not agree with the assumptions made to evaluate the functional condition of the Ripsey Wash and subsequent "scoring" of this site as well as the mitigation sites; nor with comparisons made between the intrinsic values of these two very different systems, desert streams at Ripsey vs. riparian habitats at the mitigation sites.

According to the 2008 Mitigation Rule, compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. If a functional or conditional assessment, or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used. EPA recommends that the Corps require a ratio greater than one-to-one where necessary to account for the method of compensatory mitigation (*e.g.*, preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of aquatic resource functions, the difficulty of

7 Reference sites are the observed and measured characteristics of a range of similar sites within a regional or study area.

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⁶ RWFA, p. 11. The disparity of scores was further intensified by categorizing the ephemeral waters at Ripsey Wash into "classes" based on channel width. "Ephemeral Class 3" waters are scored the lowest yet are high functioning headwater streams supporting downstream waters.

restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic resources and the compensation site (CFR 230.93(f)).

In sum, the assessment provided does not satisfy the requirements of a suitable assessment method to assess the loss of aquatic function (33 CFR 332.3 (f)(1)). A lack of understanding of how these riverine systems are connected and function, and the use of inappropriate functional criteria, have produced total numeric scores that significantly underestimate the functions of waters at Ripsey Wash and inappropriately compare these scores to the mitigation sites proposed.

Consistent with national "no net loss" goals codified in the Rule, and with the Corps' South Pacific Division standard operating procedures for setting mitigation ratios, the proposal submitted offers insufficient "in-kind" re-establishment mitigation opportunity to offset permanent impacts to 134 acres of ephemeral streams. This significant compensatory burden would be considerably reduced under a less impactful alternative that involves filling significantly fewer acres than the Ripsey alternative. However, even with reduced mitigation need, Asarco's current plan focuses primarily on preservation of riparian habitat and removal of invasive species. Preservation of existing waters should only be accepted when the aquatic resources to be preserved are of substantial ecological value, are at significant risk of loss if not preserved, and will be preserved in complement to other reestablishment and rehabilitation efforts. None of these criteria are adequately demonstrated in this case.

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COMMENT DOCUMENT #3 (PART 2) ENVIRONMENTAL PROTECTION AGENCY (COOPERATING AGENCY)

Comment Document #3: Part 2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION IX 75 Hawthorne Street San Francisco, CA 94105

MAY 32016

OFFICE OF THE REGIONAL ADMINISTRATOR

Colonel Kirk E. Gibbs U.S. Army Corps of Engineers Los Angeles District 915 Wilshire Boulevard Los Angeles, CA 90017

Subject: Proposed Ray Tailings Storage Facility Draft Environmental Impact Statement (DEIS), Pinal County, Arizona [CEQ #20160024]

Dear Colonel Gibbs:

The U.S. Environmental Protection Agency has reviewed the above referenced Draft Environmental Impact Statement (DEIS). Our review and comments are provided pursuant to the National Environmental Policy Act, the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR 1500 - 1508, and our review authority under Section 309 of the Clean Air Act.

The DEIS evaluates alternatives for a new tailings storage facility (TSF) for Asarco LLC's Ray Mine in Pinal County, Arizona. According to the DEIS, the applicant's proposed alternative would disturb 2,574 acres in Ripsey Wash watershed, 0.3 mile upstream of the Gila River, and result in direct fill of approximately 130 acres of waters of the US (WUS) and indirect loss of an additional 4 acres of WUS. The proposed project would have direct, indirect, and cumulative impacts that have the potential for significant environmental degradation and violation of substantive environmental requirements. Potentially reasonable alternatives appear to be available, but were not evaluated in the DEIS, which lacks critical information needed to adequately inform the public and support the Corps' conclusions. Accordingly, EPA has rated the proposed project and the DEIS as "*EO-3 – Environmental Objections-Inadequate*" (see Enclosure 1: "Summary of EPA Rating Definitions and Follow-Up Action").

The Environmental Objections component of this rating reflects EPA's determination that the proposed project would result in long-term unmitigated and unacceptable degradation of groundwater and of surface water resources in Ripsey Wash and the Gila River. The Gila River is one of the most significant aquatic resources in Arizona, providing municipal and agricultural water supplies and innumerable in-stream benefits for fish, wildlife, and recreation. Ripsey Wash is a significantly sized, ecologically intact, direct tributary to the Gila River and this tributary provides outstanding individual and cumulative support to the chemical, physical and biological integrity of the Gila River's aquatic ecosystem. The Gila River was identified by EPA in 2005 as an aquatic resource of national importance (ARNI), and EPA has also identified Ripsey Wash as

an ARNI (see letter of today's date under separate cover, Enclosure 3). These conclusions are based on our findings that: (a) there appear to be practicable alternative sites that would be less damaging than the proposed action; (b) Asarco has not demonstrated that its proposed compensatory mitigation for the loss of 134 acres of WUS is sufficient; (c) although management of drain down solutions from the proposed TSF, as currently designed, would be needed for at least hundreds of years -- possibly in perpetuity -- no long-term management of the TSF is proposed; and (d) the only financial assurance that has been proposed (through the State of Arizona's Aquifer Protection Permit) to cover closure and post-closure costs is inadequate to prevent the project from resulting in significant and long-term degradation of groundwater and surface water quality.

We have determined that the DEIS is *Inadequate* because it lacks critical information needed to support the Corps' conclusions and enable the Corps to make an informed decision regarding approval of the Clean Water Act (CWA) Section 404 permit. Specifically: (a) the DEIS does not provide adequate information and evaluation of alternatives necessary to support a determination of compliance with the CWA Section 404(b)(1) Guidelines Part 230.10(a); (b) the DEIS provides inadequate information regarding the availability of sufficient compensatory mitigation for the project's losses of WUS; (c) inadequate information is provided to characterize site geochemistry and support the DEIS' conclusions regarding the adequacy of the TSF design and operation to protect water resources; (d) no information is provided regarding long-term post-closure management, which may be needed in perpetuity; and (e) neither the financial assurance needed to cover the costs of closure and post-closure management of the TSF nor its effectiveness to ensure protection of water resources is disclosed or discussed. In addition, based on the project's potential PM10 (particulate matter smaller than 10 microns) emissions, additional information is needed to demonstrate general conformity.

In preparing the enclosed Detailed Comments (Enclosure 2), EPA has also reviewed the Corps' Public Notice (PN) SPL-2011-01005-MWL for the proposed Ray Mine Proposed Tailings Storage Facility. A copy of our detailed comments on the PN are enclosed as Enclosure 3. EPA also reviewed numerous background documents prepared by Asarco's contractors to support the DEIS, the PN, and other permits Asarco is seeking for the proposed project, as well as the Arizona Department of Environmental Quality's (ADEQ) draft Aquifer Protection Permit No. P-511395 (APP). A copy of our detailed comments on the draft APP, submitted to ADEQ on March 4, 2016, are enclosed as Enclosure 4. In December 2014, EPA reviewed and commented on the Administrative DEIS for the proposed project. Many of our comments on that document are reiterated in our letter today because they have not been addressed.

EPA strongly recommends that additional alternatives to the proposed project, along with information regarding site geochemistry, hydrogeology, TSF design and operation, closure and post-closure, financial assurance, and mitigation, be evaluated and made available for public comment in a Revised DEIS, consistent with NEPA and CEQ's NEPA Implementation Regulations. All reasonable alternatives should be evaluated and the range of those alternatives should not be constrained by the scope of the draft APP. On the basis of the potential significant impacts involved, this project could be a candidate for referral to the CEQ in accordance with 40 CFR Part 1504. We recommend that additional information to support a more thorough alternatives analysis be provided, and that a revised mitigation plan demonstrating how the

project would fully and appropriately offset the loss of the functions and values of the affected resources be included. We also recommend that the Revised DEIS provide additional information to demonstrate conformity to the State Implementation Plan. As a cooperating agency, EPA requests the opportunity to review an administrative draft of the Revised DEIS and provide the Corps our feedback before it is published for public review and comment.

We appreciate the opportunity to review this DEIS and look forward to working with you to resolve the issues outlined in this letter. We will call to arrange a meeting with you to discuss plans for completing the NEPA process. In the meantime, if you have any questions, please call Alexis Strauss, Deputy Regional Administrator, at 415-972-3572 or have your staff contact Jeanne Geselbracht, our lead NEPA reviewer for this project, at (415) 972-3853. Please send a copy of the Revised DEIS to this office (mailcode ENF-4-2) at the same time it is filed with EPA's *e-NEPA*.

Sincerely,

Jared Blumenfeld Regional Administrator

Enclosures:

(1) Summary of EPA Rating Definitions and Follow-Up Action

(2) EPA's detailed comments on the Proposed Ray Tailings Storage Facility

(3) EPA's April 29, 2016 3(b) letter on PN SPL-2011-01005-MWL

(4) EPA's March 4, 2016 comments on draft Aquifer Protection Permit No. P-511395

Copy via electronic mail:

Misael Cabrera, Arizona Department of Environmental Quality Ray Suazo, Bureau of Land Management, Arizona State Office Francisco Mendoza, Bureau of Land Management, Tucson Field Office Ferris Begay, Bureau of Indian Affairs, San Carlos Irrigation Project Larry Voyles, Arizona Game and Fish Department Steve Spangle, U.S. Fish and Wildlife Service Mike Sundblom, Pinal County Air Quality Control District Sally Diebolt, U.S. Army Corps of Engineers, Phoenix

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

Category "1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category "2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category "3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED RAY TAILINGS STORAGE FACILITY, PINAL COUNTY, AZ, MAY 2016

Please note that, while the following comments specifically address the DEIS analyses and conclusions, which are focused on only the Ripsey Wash and Hackberry Gulch alternatives, our observations and recommendations here should be applied in the Revised DEIS analysis to all practicable alternatives. Please note also that our April 29, 2016 3(b) letter to you (Enclosure 3) is incorporated by reference into these comments. The "Gila River and Aquatic Resources of National Importance" and "Compliance with the Clean Water Act" sections, below, summarize the issues and recommendations raised in that letter.

Gila River and Aquatic Resources of National Importance

The Gila River is one of the most significant aquatic resources in Arizona, providing municipal and agricultural water supplies and innumerable in-stream benefits for fish, wildlife, and recreation. EPA identified the Gila River as an aquatic resource of national importance (ARNI) in 2005. Ripsey Wash provides outstanding individual and cumulative support to the chemical, physical and biological integrity of the Gila River's aquatic ecosystem, the protection of which is an explicit priority of local, state, and federal agencies, environmental organizations, and the public. As a significantly sized, ecologically intact, direct tributary to the Gila River, the 134 acres of Ripsey Wash that would be eliminated by the proposed TSF also constitute ARNI. Based on the information currently available, EPA finds that the proposed discharges of dredged or fill material will have substantial and unacceptable adverse effects to ARNI.

Compliance with the Clean Water Act (CWA)

EPA has analyzed the proposed project for compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230), promulgated pursuant to Section 404(b)(1) of the CWA (Guidelines). Asarco's Alternative Screening and Clean Water Act 404(b)(1) Alternatives Analysis ("Alternatives Analysis"), found that the information in Appendix B of the DEIS is not adequate to support a determination of compliance with the Guidelines. Fundamental to the Guidelines is the principle that dredged or fill material should not be discharged into the aquatic ecosystem unless it can be demonstrated that there is no less environmentally damaging practicable alternative that achieves the project purpose, and that it will not cause or contribute to significant degradation of the waters of the United States.

The DEIS (p. 1-4) states, "Asarco's basic project purpose is mine tailings disposal, which is not water-dependent. The Project's purpose is the development of tailings disposal capacity that will allow the full utilization of the mineral resource at the Ray Mine, using infrastructure and processes already in existence at the mine." According to the DEIS (p. 1-3), current mine plans for the Ray Mine anticipate milling 850 million tons over the next 50 years, based on currently identified resources and the peak production rate (maximum design capacity) of 45,000 tons per day at the existing Ray Mine Concentrator (45,000 tpd x 50 years = 821,250,000 tons). Of that 850 million tons, Elder Gulch has remaining capacity to accept approximately 100 million tons and the Hayden tailings facilities have remaining capacity to accept approximately 200 million tons. This leaves a need for approximately 550 million dry tons of new tailings storage capacity based on current projections of ore resources. Based on the DEIS and the appended Alternatives

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Analysis, the overall project purpose driving Alternatives Analysis under the Guidelines should, therefore, be "to accommodate the balance of tailings from milling operations at the Ray Mine over the next 50 years, estimated at 550 million dry tons, which cannot be accommodated by the existing TSFs."

In discussing the project purpose, the DEIS increases the capacity need by 35% for unidentified potential future mineral resources and construction of a starter dam. The DEIS states, "In addition, a tailings facility generally requires construction of a starter dam or embankment using rock as an initial step prior to tailings deposition." Table 2-1 of the DEIS indicates that only 5.2 million tons of rock material are needed for the starter dam embankments; however, the DEIS goes on to state that, "the new TSF may need to accommodate an additional roughly 200 million dry tons of material, for a total capacity of roughly 750 million tons." The additional 195 million tons of tailings capacity would, in effect, allow for storage to accommodate an additional 12 years of milling operations beyond the 50 years of presently identified need.

The identified mineral resources justify a 50-year scope for determining the needed capacity; therefore, potential TSF sites with significantly less than 750 million tons of capacity would meet the appropriate project purpose and may be less environmentally damaging. For example, sites with practicability challenges, such as fault or fracture zones, road realignment needs, or proximity to mineral resources may be deemed more feasible if reconfigured with smaller footprints. For these reasons, the DEIS does not rigorously explore or objectively evaluate all reasonable alternatives.

Recommendations: Reassess in the Revised DEIS reasonable alternatives for a TSF based on a need to accommodate the balance of tailings from milling operations at the Ray Mine over the next 50 years that cannot be accommodated by the existing TSFs. Alternatively, clearly demonstrate why the capacity to store 195 million tons more tailings than can be generated by milling at full capacity for 50 years is essential to meet the underlying need for the project.

The Alternatives Analysis identifies two sites – Ripsey Wash and Hackberry Gulch -- as practicable, and the DEIS evaluates only those sites and the No Action alternative. The DEIS and Alternatives Analysis prematurely eliminate many potentially practicable and less damaging alternatives from consideration. Smaller (550-million-ton) site alternatives, as discussed above, were not evaluated, and the West Dam and Granite Mountain sites were not carried forward for analysis.

On-site alternatives (at any location) that might have less impact to the aquatic ecosystem were also not adequately assessed. Filter or paste (dry stack) methods of tailings storage may be practicable and need a smaller footprint than a conventional wet TSF, but the DEIS does not provide adequate information to justify the elimination of a dry stack alternative in Ripsey Wash, Hackberry Gulch, or any of the other potential TSF sites. In-pit placement may also be practicable for a smaller TSF later in mine life to supplement other smaller TSF options to avoid resource impacts. Based on its known resources and reserves, Asarco should be able to identify areas of the Ray pit that may be played out a few decades from now and assess whether they could provide future in-pit storage capacity.

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The proposed TSF in Ripsey Wash would disturb 134.36 acres of waters of the U.S. - 130.23 acres of direct fill and 4.13 acres of indirect disturbance from dewatering. Half of this acreage comprises large ephemeral streams that transport high volumes of water, sediment and organic matter into the Gila River. In contrast, according to the DEIS, a TSF in Hackberry Gulch would disturb 71.50 acres of waters of the U.S. - 51.70 acres of direct fill and 19.80 acres of indirect disturbance from dewatering. The Alternatives Analysis identifies the presence of 0.62 acre of wetlands within the Hackberry Gulch TSF footprint as the reason the Hackberry Gulch alternative is not the Least Environmentally Damaging Practicable Alternative (LEDPA). Inadequate information has been provided, however, to demonstrate that these wetlands plus the 70.88 acres of ephemeral waters in the Hackberry Gulch TSF footprint are of higher functional value than are the 134.36 acres of waters at Ripsey Wash. Furthermore, as noted in our comments on the Administrative DEIS, a TSF at Hackberry could be reconfigured and downsized to avoid the seeps at the far end of Hackberry Gulch adjacent to Elder Gulch. We were unable to locate a map in the DEIS identifying the Hackberry jurisdictional wetlands, or wetlands A, B, C, D or E mentioned in the DEIS (p. 3-58). If the 0.62-acre wetland is in the northwest portion of Hackberry Gulch, it may be avoidable as well, particularly if a smaller sized TSF meets the project purpose and is practicable. Substantial work to determine the LEDPA remains.

Recommendations: Provide more detailed information in the Revised DEIS to address the information gaps discussed above, and reassess the Ripsey Wash, Hackberry Gulch, West Dam, Granite Mountain, and Dry Stack alternatives, as well as smaller TSFs, including in-pit alternatives. Include a map that identifies all waters of the U.S. by aquatic resource type.

The Guidelines prohibit any discharge of dredged or fill material if it causes or contributes to violations of an applicable state water quality standard. Based on the information currently available, secondary impacts of the proposed fill discharges would pose substantial and unacceptable risk to surface waters that could result in violation of applicable water quality standards (including anti-degradation policies). Reductions in streamflow, alterations in sediment transport, and drainage from the TSF would degrade water quality and the aquatic ecosystem.

Impacts from the proposed project would contribute to the degradation of the Gila River by destroying miles of undisturbed upstream riparian habitat and floodplain. The proposed physical alterations to Ripsey Wash and flow bypasses may increase water velocity and dramatically alter suspended sediment loads into the Gila River, adversely affecting water quality. The proposed alternative could preclude the reduction of impairments that has been pursued through restoration projects upstream. Conservation and restoration projects on the Gila River would be hampered by increased fragmentation of the landscape and riparian corridor. Alone or in combination, the changes brought on by the proposed project would be considered significant, adverse impacts under the Guidelines.

After appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem, adequate compensatory mitigation is needed to offset losses of aquatic resources that are truly unavoidable and cannot be further minimized. Asarco

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has not demonstrated that its proposed compensatory mitigation for the loss of 134 acres of waters of the U.S. is sufficient. According to the 2008 Mitigation Rule, compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. Asarco's "functional assessment" assigning relative value of the services provided by the Ripsey Wash is not based on any existing or approved condition or functional assessment method, and is inadequate to compare natural functions with those services provided by the proposed compensatory mitigation. Consistent with national "no net loss" goals codified in the Rule, and with the Corps' South Pacific Division standard operating procedures for setting mitigation ratios, Asarco's proposal offers insufficient "in-kind" re-establishment mitigation opportunity to offset permanent impacts to 134 acres of ephemeral streams.

As proposed, the conceptual mitigation plan for the proposed Ripsey Wash TSF is not adequate for three reasons:

- 1. The applicant has not established that the potential adverse impacts are unavoidable.
- 2. The applicant has not properly analyzed how the proposed compensatory mitigation plan replaces functions that would be lost to the proposed project.
- 3. The total acres proposed do not sufficiently offset total acres of aquatic resources lost.

Recommendation: Additional analysis of mitigation opportunities is needed prior to permit issuance to allow for the development of a fully compensatory solution. Describe in the Revised DEIS the impacts that are truly unavoidable, and document the availability of specific mitigation parcels and actions that would fully and appropriately offset the loss of the functions and acreage of the affected resources. Include a revised mitigation plan that demonstrates compliance with the South Pacific Division's mitigation guidelines. Demonstrate in the Revised DEIS that the potential impacts to water quality from TSF releases would be minimized by a commitment to adequate financial assurances.

Geochemistry

Reliable, representative geochemistry information is critical to inform the EIS analysis regarding appropriate design and operation and management needs of the proposed TSF to ensure that it would be protective of groundwater and surface water resources. The geochemical testing conducted for the proposed project only addressed the Ripsey Wash site. Based on our review of the Geochemical Characterization Report¹ and Humidity Cell Test (HCT) Report², the characterization of the proposed project's tailings, tailings water, and foundational and borrow materials does not appear to be consistent with current best practice, and the samples that underwent static and kinetic testing are not adequately representative of site materials. The geochemical analysis lacks critical information, as discussed below and in our more detailed comments on the Arizona Department of Environmental Quality's (ADEQ) draft Aquifer Protection Permit No. P-511395 (APP) in Enclosure 4.

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¹ Geochemical Characterization Report Proposed Ripsey Wash Tailings Storage Facility ASARCO Ray Operations Pinal County, Arizona (AMEC, July 10, 2014, "Geochemical Characterization Report")

² Humidity Cell Test Results (52 Weeks) Geochemical Characterization, Proposed Ripsey Wash Tailings Storage Facility, ASARCO Ray Operations ("HCT Report," AMEC Foster Wheeler, May 21, 2015)

- The ore described in the Geochemical Characterization Report represents ore to be mined for less than half of the 50-year TSF life. It is unclear how the lithology of ore mined after 2042 may differ from that represented in the HCT Report.
- The Global Acid Rock Drainage (GARD) Guide³ -- a guide intended as a summary of the best practices and technology on the subject of acid rock drainage and other mining influenced water - recommends conducting kinetic tests until acidic drainage is produced or until depletion calculations can be used reliably to predict acid generation potential. Another common endpoint for kinetic testing is when leachate parameters are relatively constant with time. By these standards, the HCTs were not run long enough.
- A sufficient number of Pinal Schist and Precambrian Diabase samples were not tested, particularly in light of their static test results and demonstrated acid generating potential in the field. In addition, one of the two diabase samples representing the borrow material for the Ripsey Wash TSF embankment had a pyritic sulfur content of 0.95 percent, representing a higher acid generation potential than other potential borrow material in the area.
- Tailings samples that were tested were composited so that their net neutralizing potentials (NNP) were averaged. While this approach might be relevant if the tailings were assured of being constantly mixed to achieve the composite net neutralizing potential values, in reality ore would continue to be milled as it is available and it is conceivable that a particular lithology, for example, could be milled for a significant period. For this reason, it would have been appropriate to also conduct HCTs for non-composited samples of different lithologies for the maximum period of time.
- The proposed TSF would be constructed, in part, using cycloned tailings, with the underflow reporting to the beach and fines/slimes reporting to the interior of the TSF. Segregation of potentially acid generating pyrite can occur in the cyclone with a higher concentrate of pyrite and other minerals reporting to the cyclone underflow. The embankment-forming sands portion may be subject to higher potential for oxidation due to higher permeability. To avoid underestimation of potential for acid rock drainage, geochemical characterization programs for sites where cycloning is a feature of TSF construction frequently use samples representative of the underflow and overflow. This was not done for the proposed project.
- Radium 226 + radium 228, gross alpha, and total uranium were only analyzed once at the start of the HCTs because subsequent extract volumes were not sufficient for the required analytical method. Some of these parameters have been detected in tailings water, alluvium and borrow samples (DEIS, pp. 3-30, 31), as well as in monitoring wells in Ripsey Wash in concentrations above the Arizona Aquifer Quality Standard for gross alpha and up to 111.7 ± 6.4 pCi/L total uranium⁴. Additional analysis is needed to characterize the potential impacts

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³ The International Network for Acid Prevention (INAP), 2009. Global Acid Rock Drainage Guide (GARD Guide). http://www.gardguide.com/.

⁴ AMEC, 8/25/2014. 1st Quarter 2014 Groundwater Monitoring Report Proposed Ripsey Wash Tailings Storage Facility ASARCO Ray Complex Pinal County, Arizona; and 2nd Quarter 2014 Groundwater

of releases of these constituents from tailings and tailings drainage, alluvium, borrow materials, and bedrock for all alternative sites.

Recommendation: Require that additional humidity cell tests be conducted on representative numbers and types of samples of the following materials and for sufficiently long periods, consistent with best practice, to more reliably characterize and predict the Ray TSF tailings geochemistry, and include this information in the Revised DEIS:

- Pinal Schist and Precambrian Diabase ore samples representative of the entire 50-year life of the TSF, and which have not been composited;
- Pinal Schist and Precambrian Diabase tailings samples from the cyclone underflow and overflow, and which have not been composited;
- Precambrian Diabase bedrock in the area of Ripsey Wash from which embankment, seepage trench random fill, or other borrow or cover material could be sourced;
- Material within the Hackberry Fault zone;
- Analysis of radionuclides from tailings and tailings drainage, alluvium, borrow materials, and bedrock for all alternative sites;
- All surface and subsurface lithologies in Hackberry Gulch that could be exposed to tailings and tailings drainage, including alluvium/colluvium, borrow material and bedrock, including in local fault zones.

It is generally recognized that site analogs provide the best means of predicting future water quality. The existing Elder Gulch tailings facility is an excellent analog for predicting water quality in the proposed new TSF if the future tailings are expected to be similar to the Elder Gulch tailings. If properly characterized, the Elder Gulch tailings could provide additional insights regarding the potential for acid generation and metal leaching.

Based on the scant monitoring information we have seen for Elder Gulch, the potential impacts to groundwater and Gila River water quality could be worse than predicted in the DEIS. Asarco has indicated that it improperly used acid generating waste rock to construct the Elder Gulch TSF embankments and ascribes that TSF's history of contaminated seepage to exposure to that waste rock. We have not seen data supporting this conclusion, nor have we seen adequate data to rule out the inherent tailings geochemistry as the cause of Elder Gulch's contaminated seepage. Several underdrain discharge sources at Elder Gulch could provide useful sampling information, but no such information is provided in the HCT Report or DEIS.

The HCT Report does not provide information on existing Elder Gulch TSF seepage or pore water chemistry. As noted by the GARD Guide: tailings pore water quality is typically highly variable with depth; spatial differences in sulfide reactivity and pore water quality must be considered in the design of a TSF monitoring program; and collection of water samples from a tailings impoundment may include tailings slurry water from the point of discharge, tailings pore water, tailings pond supernatant, tailings seepage (embankment or from collection drains), and tailings runoff. Pore water characterization for the proposed new TSF is incomplete, however, as

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Monitoring Report Proposed Ripsey Wash Tailings Storage Facility ASARCO Ray Complex Pinal County, Arizona.
only supernatant and slurry decant from Elder Gulch have been analyzed to support tailings water predictions. According to the Geochemical Characterization Report, several parameters were detected in the supernatant and slurry decant. Five metals with Arizona Water Quality Standards (AWQS) (antimony, arsenic, barium, chromium and selenium), four nonmetals with AWQSs (fluoride, nitrate as N, nitrite as N and nitrate-nitrite as N) and several radiochemicals with AWQSs (adjusted Gross Alpha, radium 226 and radium 228) were detected in one or more of the tailings water samples, with all results below their respective AWQS. Barium, selenium, fluoride, nitrate as N, nitrite as N, adjusted Gross Alpha, radium 226 and radium 228 were all detected in the sample of decant water, with all results below the AWQS. Additional information is needed on tailings pore water and drainage to thoroughly characterize the Elder Gulch tailings and tailings drainage for the purpose of predicting the future geochemistry of tailings and drainage in a new TSF. These parameters, and possibly others, could become more concentrated with longer residence times in the TSF.

Various methods may be used to collect tailings pore water from the unsaturated and saturated zones. In the unsaturated zone, core sample extraction can be conducted by centrifugation, pressurized consolidation and pore water displacement. Pore water in the saturated zone can be sampled using suction lysimeters.

Recommendation: Obtain and analyze the following additional data, and assess the geochemical characterization for Elder Gulch tailings, seepage, and reclaim water to more reliably predict the future geochemistry of tailings and water of the proposed new TSF. Include this information in the Revised DEIS. Much of this information may already exist from monitoring conducted pursuant to the Ray Mine/Elder Gulch APP.

- A history of all monitoring results associated with the Elder Gulch TSF and quality and quantity of water resources, including underdrainage, springs, seepage, surface water, and groundwater at points of compliance and other locations;
- Representative sampling of Elder Gulch tailings pore water from within the existing impoundment: (1) at various depths; (2) at various locations; and (3) in beach areas and fines areas;
- Sampling of underdrainage, reclaim water, and seepage collected from several points beneath the Elder Gulch TSF that have not had contact with the waste rock embankment material;
- A mass balance for the water and key constituents of the Elder Gulch TSF, showing the historic and existing water inputs and outputs;
- Geochemical characterization of the waste rock used for the embankment at Elder Gulch, as well as the Dripping Springs Quartzite and other bedrock and alluvium that constitute the base of the Elder Gulch TSF, and analysis of how these materials have influenced the quality of seepage and underdrainage there, for a better understanding of how Elder Gulch conditions should be used in predicting conditions in the proposed TSF.

Groundwater and TSF Modeling

The DEIS (p. 3-171) states that the likelihood of a leak through the Ripsey Wash TSF seepage trenches or reclaim ponds causing down-drainage environmental problems to the Gila River is

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very low. This conclusion is not supported in the DEIS nor in the characterization reports and design documents for the project. Based on our review of *Hydrogeologic Characterization Report, Proposed Ripsey Wash Tailings Storage Facility* (AMEC, July 10, 2014, "Hydrogeology Report"), the groundwater modeling conducted for this project appears inadequate. Assumptions regarding flux through the tailings and liner at various locations in the TSF and evaporation rates are not well supported and information, critical to determining whether the project is appropriately designed and would be appropriately managed to ensure protection of environmental resources over hundreds or thousands of years, is missing. Furthermore, no modeling was conducted for the Hackberry Gulch site or the Hackberry TSF design, and is needed for a proper evaluation of that alternative. Critical issues and information gaps include:

- The DEIS (pp. 3-72, 73) states that construction and operation of the Ripsey Wash TSF would decrease, and eventually eliminate, recharge to the Quaternary deposits within the TSF because of the low permeability of the tailings, and that, upon closure, any remaining water on the surface of the TSF or precipitation that falls onto the tailings would be subjected to the high evaporation rates that occur in this part of Arizona. Based on EPA's experience, we disagree with those conclusions because: (1) the entire TSF would not have uniformly low permeability, and all rain water would not stay within the evaporative zone -- some would continue to infiltrate through the tailings; and (2) the tailings slurry water and rain water would continue to drain down into the alluvium below the TSF for hundreds of years or more.
- The groundwater modeling may under-predict the flux of water through the tailings to the subsurface, and seepage to the subsurface may not all be collected in the two proposed seepage collection systems over time. In light of the geology and hydrology of the Ripsey site and the Ray tailings geochemistry, appropriate TSF design (including liners and seepage collection systems) is critical to prevent tailings drainage from degrading groundwater and surface water quality. The DEIS does not provide adequate information to evaluate the design of the proposed TSF, nor to determine the operation and maintenance needs of the seepage collection system, both during operations and after closure.
 - The groundwater modeling only covers 65 years; however, drainage can reasonably be expected to continue for hundreds of years, or longer.
 - According to the Hydrogeology Report, the proposed TSF liner is designed to keep drainage from moving into the slightly to highly weathered bedrock material within the Hackberry fault zone. The assumptions regarding tailings permeability and the efficacy of the slime seal treatment along the Hackberry fault are not supported; therefore, the potential for drainage to seep through the fault cannot be ruled out.
 - Although the Elder Gulch TSF was also intended to be a zero discharge facility, substantial seepage has occurred from that facility. The DEIS does not explain how the proposed TSF design would differ from the Elder Gulch TSF such that it would prevent unintended seepage from the base and embankments of the new TSF.
- The DEIS anticipates a 10-year closure period (Fig. 13) with no post-closure period, and the cost estimates submitted by Asarco to ADEQ for its APP assume post-closure needs for only 30 years. The TSF and drain down solutions will likely need to be actively managed for

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hundreds years or more. We were unable to find any drain down curves for the tailings solutions in the DEIS or support documents. This is critical information for determining closure and post-closure management needs; the anticipated costs for management; the potential impacts to water quality from these solutions; and measures that should be considered to optimize facility design for the operational, closure, and post-closure phases of the TSF. For example, a geomembrane beneath the entire TSF may prove not only more effective in capturing drainage but potentially more cost-effective as well. Characterization of the long-term post-closure fate and transport of water through the tailings and liner, alluvium and bedrock, and fault zones is needed to predict how much may be captured/controlled and how much may escape; however, this has not been done. Drain down curves under various cover scenarios would also help determine the effectiveness of evapotranspirative covers in reducing infiltration through the TSF.

- Based on actual conditions at numerous TSFs in the southwestern U.S., it is highly likely that
 the TSF, as designed, could cause uncontrolled seepage to the subsurface, which could
 contaminate the Gila River. It is unclear why fate and transport modeling of potential
 subsurface flow from the TSF to the river has not been done and analyzed in the DEIS to
 inform the evaluations of groundwater and surface water impacts. This is critical information
 for determining whether the proposed TSF design, operations, monitoring, closure and postclosure management, and financial assurance would effectively protect groundwater and Gila
 River water quality.
- A water management mass balance is needed in the EIS to estimate the anticipated and maximum flows and design capacities for the TSF Ripsey Wash and East Drainage seepage collection trenches relative to the 10,000,000-gallon/day TSF flow rate. This should also account for factors potentially affected by climate change over the TSF lifetime, as well as after closure (e.g., frequency and magnitude of storms, evaporation rates, etc.). Comparison against water mass balance in Elder Gulch may help confirm the appropriateness of assumptions used in a mass balance for a new TSF.
- There appears to be a mine tunnel opening onto Ripsey Wash in Section 15 where the Ripsey TSF embankment would be located.⁵ A thorough survey of this area is needed to ensure that such a tunnel would not act as a conduit for TSF seepage or underdrainage.
- Several faults have been mapped within the Hackberry Gulch TSF site footprint, but no
 further information is presented on how faults have affected current activities at the adjacent
 existing Elder Gulch facility. Additional information should be provided on the known and
 anticipated effects of faulting at Hackberry and Elder Gulch sites and the need for careful
 TSF design here to prevent seepage through the shear zones.
- The DEIS concludes that, under the No Action alternative, existing conditions or "baseline" for several environmental resources would not change, as they would remain under current influences; however, this analysis is incomplete. For example, while a new TSF would allow for continued operations of the Ray Mine and Concentrator and continued groundwater

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⁵U.S. Geological Survey. Grayback, Arizona 1:24,000 Quadrangle (1970 Edition).

pumping from Asarco's wells for dewatering and process water at current rates, the No Action alternative presumably would not. We presume that, if no new TSF were permitted, a lack of new TSF capacity would result in operational changes at the Ray Mine and Hayden facilities; however, it is unclear from the DEIS what activities would change or be discontinued, and how such changes could affect surface water and groundwater resources relative to existing conditions (e.g., reduced pumping of wells could stimulate recovery of the water table and development of a pit lake, and increase flows in the Gila River, etc.).

Similarly, the cumulative impacts analysis in the DEIS is incomplete, as it does not
adequately describe the potential cumulative impacts to groundwater and surface water
associated with a new TSF. For example, the DEIS does not identify pumping rates or
discuss or depict the groundwater capture zone of the Ray pit, under current conditions and in
future year intervals (e.g., 100 and 500 years), or discuss the fate and transport of
contaminated groundwater from the mine and its current and eventual impacts on surface
waters, including from the TSF at any of the alternative sites. Nor does it identify pumping
rates at Asarco's Hayden area wells for process water at the Ray Mine, or assess the effects
of this pumping on groundwater and the Gila River quality and quantity.

Recommendation: Obtain and, in the Revised DEIS, thoroughly analyze the above information for all TSF alternatives.

Figure 5 in the DEIS does not accurately depict the cross-sections of proposed features in the Main and East channel areas. For example, the primary and secondary monitoring wells are not consistent with what has been proposed in the draft APP. In addition, the seepage collection trench and collection system are not representative of what has been proposed. This is important for an understanding of how the system is designed to work and its potential environmental impacts in the event of failure. Furthermore, the DEIS does not include such a figure for the Hackberry seepage capture systems.

Recommendation: Include, in the Revised DEIS, additional figures, such as sheets 4, 5, and 6 from the Hydrogeology Report, which depict the design of the proposed seepage collection trenches in the Main and East channels. Include such a figure for the Hackberry seepage capture systems as well.

TSF Design

More detailed information is needed to help determine additional siting, design and management needs of the proposed TSF, as discussed below and explained in further detail in our comments on the draft APP (Enclosure 4: pp. 5-7). This information is also important in comparing alternatives, including life-cycle costs, logistics and risks, to determine the LEDPA.

The DEIS (section 3.16.2.2.3) considers two modes of failure -- earthquake induced embankment failure (flow slide failure) and dam breach by overtopping -- and suggests that the possibility of either of these scenarios is extremely remote. This analysis is incomplete, based on other failure modes at large TSFs all over the world, including in Arizona. We note, for example, the tailings dam failure at the Pinto Valley mine in Arizona, which was not the result of either failure

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mechanism but was apparently caused by piping through the embankment. Catastrophic events at Mount Polley Mine in British Columbia in 2014 and Samarco in Brazil in 2015 suggest that a catastrophic failure of any TSF is possible. The stability analyses conducted for the proposed tailings storage facility do not reflect current engineering standards for mine tailings dam construction. The most current standards can best be summarized in the findings of the Mt. Polley Expert Panel⁶, which considers the following components as best available tailings technology (BAT): elimination of surface water from the impoundment, unsaturated conditions in the tailings with drainage provisions, and achievement of dilatant conditions throughout the tailings by compaction. The Mt. Polley Expert Panel also concluded:

"The overarching goal of BAT is to reduce the number of tailings dams subject to failure. This can be achieved most directly by storing the majority of the tailings below ground -in mined-out pits for surface mining operations or as backfill for underground mines....Apart from this, surface storage using filtered tailings technology is a prime candidate for BAT.... Demonstrated technology for producing and placing filtered tailings (sometimes termed "dry stack" tailings) is well-known in the industry....BAT should be actively encouraged for new tailings facilities at existing and proposed mines. Safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor."

In addition to increasing stability of the TSF, dry stack technology would result in significant reduction of water transported through the TSF, liner, seepage collection systems and alluvium, thereby reducing the risk of contaminant releases beyond points of compliance and into the Gila River.

Recommendation: In the Revised DEIS, rigorously evaluate in-pit and dry stack storage alternatives.

If a wet tailings approach is used, additional analysis is needed in the EIS. It has been widely noted by expert geotechnical engineers that the increase of catastrophic risk to mine tailings dams significantly increases with both the height of tailings facilities and with the use of upstream dam construction techniques. Raising the Ripsey Wash TSF above elevation 2,200 feet (phase 3) would require additional seismic hazard studies and analyses, including liquefaction analyses, which have not yet been conducted.

Recommendations:

- Given the critical nature of this analysis, conduct the seismic hazard studies and analyses for phase 3 of the Ripsey Wash alternative now to ensure appropriate design for the life of the TSF, and verify this in the Revised DEIS.
- Perform a multi-stakeholder Failure Modes Effects Analysis to identify all potential failure modes and effects as well as appropriate design and mitigation measures for all practicable alternatives, and present this in the Revised DEIS.

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⁶ Mt. Polley Expert Panel, January 30, 2015. Report on Mt. Polley Tailings Facility Breach, <u>https://www.mountpolleyreviewpanel.ca/</u>

 Given the long-term operations, closure and post-closure needs of the proposed TSF and its proximity to the Gila River, and based on a rigorous Failure Modes Effects Analysis, develop an Adaptive Management Plan (AMP) for the TSF designs and operations and include it in the comprehensive Monitoring and Mitigation Plan (MMP), recommended and described in our Mitigation comments below. The AMP should consider all geotechnical and other relevant data together with monitoring results as they become available, and detail the actions that would be taken to ensure that the TSF is constructed and operated to meet the required minimum factor of safety.

Descriptions and figures in the DEIS regarding important design elements of the proposed TSF design are vague and confusing. For example, page 2-9 mentions that the centerline embankment in Ripsey Wash would be underlain by a lined (60-80 mil HDPE liner or equivalent) drain system and a series of finger and blanket drains. These are not depicted in the DEIS, such as in figures 5 or 9. The description of the Hackberry Gulch embankment is vague and does not include a schematic (such as Figure 5, which is for Ripsey Wash).

Recommendation: Include, in the Revised DEIS, detailed descriptions and figures illustrating the TSF designs for all practicable alternatives.

Seepage collection trenches are proposed to be constructed within Ripsey Wash and the East Wash downstream of the dam to contain TSF seepage, which would be pumped back to the Reclaim Ponds and then to the Ray Operations for reuse. The DEIS provides no information on where the water would go during potential periods of temporary closure or at closure when the Ray Operations may not be available for reuse. It is likely that very long-term, perhaps perpetual, operation and maintenance would be needed to manage the drain down of the tailings, and information is needed (for both active and passive phases) on how this water would be collected, treated and discharged.

If the TSF results in degradation of water quality in the groundwater and/or surface water, the costs of long-term or perpetual seepage collection, groundwater pumping and treatment could be much higher (e.g., by two orders of magnitude or greater) than those currently estimated by Asarco for the TSF's post-closure needs. In our scoping and ADEIS comments, we recommended that gravity drains and passive treatment and transport systems be seriously considered for closure and post-closure management of the tailings drainage, which could potentially obviate the need for pumping and reduce long-term post-closure costs. It appears, however, that the proposed Ripsey Wash collection sump may be too low for passive collection and control. The Hackberry collection systems may accommodate a passive system, which would allow for gravity flow of solutions back to the mine.

Recommendation: Evaluate design options for the operational phase of the TSF that could also prove beneficial during closure and post-closure. For example, we recommend that a more reliable liner system beneath the entire TSF be seriously considered, as well as gravity drains and passive treatment and transport systems for closure and post-closure management of the tailings drainage, all of which could reduce long-term post-closure costs. Discuss this in the Revised DEIS.

3-24 (cont)

Mitigation

The DEIS (3-74) states that, should groundwater monitoring indicate exceedance of an APP performance standard, mitigation measures prescribed in the APP would be implemented. While the draft APP states that additional monitoring and reporting would be required and ADEQ may require corrective action, specific mitigation measures are not prescribed. Deferring to the APP, which does not identify mitigation measures, does not satisfy the Corps' responsibility under NEPA to include in its analysis of alternatives "appropriate mitigation measures not already included in the proposed action or alternatives" (40 CFR 1502.14(f)). ⁷ A well-considered and thorough plan to avoid the types of problems that have occurred at several other large TSFs is critical to successful management of a new TSF for the Ray Mine. Additional information is needed to ensure that water quality standards can and would be achieved and sustained in the future.

Recommendations: Develop a comprehensive Mitigation and Monitoring Plan for all aspects and phases of the proposed project, including the long-term post-closure phase, and include it in the Revised DEIS. Describe, in the Revised DEIS, the anticipated effectiveness of the mitigation measures. Include, in the MMP, an Adaptive Management Plan that clearly articulates the proposed project's management objectives, options for operating the TSF to meet those objectives, and monitoring commitments, including effectiveness monitoring. The objectives identified in the plan should be site-specific, explicit and measurable, and the triggers, thresholds, and Asarco's associated action commitments should be well defined. For each action level or trigger, include a description of necessary follow-up actions and potential corrective actions that would be needed to avoid or correct adverse impacts to the environment, along with an estimate of the time needed to implement such measures. The uncertainties regarding, and vulnerabilities of, the local hydrogeology and effectiveness of the TSF design should be identified so that appropriate monitoring is developed to not only track anticipated and potentially foreseeable responses to management, but also to uncover unexpected results. Address, in the MMP, unanticipated, but reasonably foreseeable, mine failure scenarios that can and have happened at large TSFs, such as pipeline failures, spills, leaks, and slope failure, and identify the parties who would be involved in implementing and enforcing the MMP.

The DEIS (App. I, Applicant Project Mitigation) provides surface water and groundwater protection measures for only the Ripsey Wash alternative, but not for the Hackberry Gulch alternative. 3-26

⁷ CEQ guidance states, "Agencies should ensure that the expertise and professional judgment applied in determining the appropriate mitigation commitments are described in the EA or EIS, and that the NEPA analysis considers when and how those mitigation commitments will be implemented....[M]itigation commitments should be carefully specified in terms of measurable performance standards or expected results, so as to establish clear performance expectations....When an agency funds, permits, or otherwise approves actions, it should also exercise its available authorities to ensure implementation of any mitigation commitments by including appropriate conditions on the relevant grants, permits, or approvals." [CEQ, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact. 76 Fed. Reg. 3843, 3848-3849 (Jan. 21, 2011)].

Recommendation: Identify in the Revised DEIS any measures that would mitigate impacts to water resources from the Hackberry Gulch alternative or other reasonable alternatives, which may be different from those identified for the Ripsey Wash alternative.

Monitoring

The DEIS acknowledges that the APP would require compliance monitoring along the groundwater compliance boundary downgradient of the TSF for the Ripsey Wash or Hackberry Gulch alternatives. Information provided in the DEIS is not consistent with the proposed APP monitoring requirements. Figure 5 in the DEIS depicts two sets each of primary and secondary monitoring wells downgradient of the Ripsey Wash TSF; however, the draft APP only requires one set of primary monitoring wells in the Main Channel, one well east of the East Channel, and one well west of the TSF in the Hackberry Fault zone. Furthermore, based on maps in the Hydrogeology Report, MW-2 appears to be on the east side of the East Channel, rather than in the channel where alluvial flow could be monitored. According to the DEIS (pp. 3-61, 62), this well's depth to bedrock is zero feet, and it had extremely low groundwater yield. This does not appear to be an appropriate location for a point of compliance (POC) well to monitor groundwater in the vicinity of the East Channel. EPA's March 4, 2016 comments to ADEQ on the draft APP for the Ripsey Wash TSF provide additional observations and recommendations, some of which are listed below, regarding the proposed APP monitoring requirements.

Recommendation: Include the following measures in the Ripsey Wash alternative if it is deemed the preferred alternative. Specify, in the Revised DEIS and comprehensive MMP, which measures are commitments, and how and by whom they would be enforced.

- Install monitoring wells MW-X and MW-Y, and conduct background and compliance monitoring prior to TSF construction.
- Install a monitoring well in the paleochannel east of the Main channel and downgradient
 of the TSF to ensure drainage is not seeping through at that location.
- Install a monitoring well in Ripsey fault to ensure that water from the TSF is not leaking through the fault zone. Existing monitoring wells upgradient of the fault would be helpful to establish baselines for this purpose.
- Locate a new POC well in the East Channel.
- Add gross alpha and uranium to the list of ambient groundwater monitoring parameters.
- Monitor Gila River water quality for all parameters listed in Table 4.2.2 of the draft APP plus gross alpha and uranium at points upgradient and downgradient of the TSF to establish baseline, and conduct ongoing quarterly monitoring to detect trends.
- Monitor water quality in the Main and East seepage collection trenches and Main and East reclaim impoundments to confirm quality of TSF seepage/reclaim water for purposes of understanding future water management needs should this water escape the seepage collection systems.
- Monitor for copper, gross alpha and uranium in addition to the parameters in Table 4.3.1 of the draft APP (Contingency Discharge Characterization for BADCT Failures and Overtopping).

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- Establish background levels for all parameters in Table 4.2.2 of the draft APP, and monitor those parameters for compliance (draft APP, Table 4.2.3) during operations and closure.
- Identify the compliance monitoring Alert Levels and Aquifer Quality Limits in the Revised DEIS and comprehensive MMP.
- Update Figure 5 in the Revised DEIS to indicate correct locations of monitoring wells.

Existing Conditions

We note that the background water quality information from wells in the vicinity of Hackberry Gulch is at least 15 years old and incomplete (DEIS, Table 3-39). Numerous wells exist in the area, many owned by Asarco, but none were used to characterize current conditions. Figures 28 and 31 show wells and seeps that are very near to, and may be affected by, the Elder Gulch TSF. These include Seep 4 and HW-30 in the Belgravia Wash drainage area, as well as the four unnamed seeps and HW-26 and HW-28 to the northeast of that drainage and just below the Elder Gulch TSF. Water quality and flow data from these sources would be useful in characterizing the effectiveness of the existing Elder Gulch TSF design for purposes of confirming appropriate design needs for the Hackberry Gulch alternative. This information would inform the comparison of this alternative to the Ripsey Wash and other reasonable alternatives.

Recommendations: Provide in the Revised DEIS an accurate summary of all sampling data from Asarco wells and seeps and springs on Asarco owned lands in the Hackberry Gulch TSF vicinity, particularly Seep 4 and HW-30 in the Belgravia Wash drainage area and the four unnamed seeps and HW-26 and HW-28 to the northeast of Belgravia Wash and just below the Elder Gulch TSF. If sampling events were not sufficiently recent or thorough for an accurate description of current conditions, conduct appropriate sampling and analysis for this purpose.

Temporary or Permanent Closure and Post-Closure Management

The DEIS (p. 2-17) states that, during any temporary shutdown of the Ripsey Wash TSF, Asarco would continue to implement operational and environmental maintenance activities to ensure the TSF meets permit stipulations and requirements for environmental protection. The draft APP, however, includes no substantive requirements or specific commitments to ensure that the TSF would continue to be managed in the event the mine temporarily closes because of market fluctuations or another Asarco bankruptcy. Interruption of the management of drain down fluids could result in serious adverse environmental impacts, including contamination of the Gila River. Specific commitments and are needed to ensure that critical fluid management would be continued.

Recommendation: Develop and include in the Revised DEIS an Interim (Emergency) Fluid Management Plan for the TSF that includes information and procedural commitments to ensure that critical fluid management would be continued during temporary shutdown. Our detailed recommendations for such a plan can be found on page 9 of Enclosure 4.

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Long-term, potentially perpetual, post-closure monitoring and maintenance of the TSF would be needed to ensure stabilization and control of fluids from the proposed facility; however, the DEIS provides only very conceptual information on these needs. The draft APP does not include plans for closure or post-closure management of the TSF, as ADEQ does not require these plans to be prepared until just before those phases begin. The relevant information on measures to be implemented during those phases, which was submitted by Asarco in its APP application, is also extremely conceptual and only acknowledges needs for the first 30 years beyond closure. There is no guarantee that any closure and post-closure care would occur. Without it, the proposed project would result in unacceptable long-term environmental degradation.

Recommendation: Provide more detailed information on the entire life cycle management and monitoring requirements of the TSF in the Revised DEIS, and specify which commitments are enforceable. Include the closure and post-closure monitoring and mitigation plans in the comprehensive MMP recommended above. The plans should describe monitoring requirements, the mitigation actions that would be taken should destabilization or contamination be detected, the action thresholds and triggers; identify who would be responsible for implementing and enforcing these actions; and explain how they would be funded. This would not only better inform the true costs of responsible management of the Ray TSF, but could result in improved design options that would facilitate more reliable and cost-effective closure and post-closure management of tailings drain down solutions.

Financial Assurance

Many state and federal agencies have developed financial assurance requirements for mines to ensure that funds will be available when they are needed, and for as long as may be needed, to satisfy closure and post-closure management obligations to prevent destabilization of facilities and degradation of environmental resources. Financial assurances should be disclosed in the DEIS because the viability of the closure and post-closure management is a critical factor in determining whether the project may be considered satisfactorily protective of environmental resources. If mitigation funds would not be adequate to effectively protect environmental resources from significant and long-term degradation, the project would be environmentally unacceptable. Such assurances could make the difference between the project being sufficiently managed over the long-term by the site operator, versus an unfunded or under-funded contaminated site that becomes a liability for taxpayers, e.g., under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

While neither the DEIS nor its support documents include any information regarding financial assurances for closure and post-closure management of the proposed TSF, EPA was able to access some financial assurance information by reviewing ADEQ's draft APP, Asarco's APP application, and Asarco's closure cost estimate for that permit application prepared by EEC (June 11, 2015). Based on EPA's substantial experience with long-term impacts from mining, we are concerned that, if Asarco were to go bankrupt and abandon the site, the necessary funds to satisfy its obligations would not be available because the draft APP: (a) significantly underestimates the costs of closure and post-closure monitoring and management needs, either in the event of early shut down before the end of the planned mine life or upon an orderly closure,

3-30 (con't)

as planned, at the end of mine life; (b) allows use of a financial assurance instrument for which Asarco has not demonstrated its ability to meet the criteria for its use, based on a recent demonstration of its financial condition; and (c) does not obligate Asarco to manage the TSF beyond 30 years after closure and, therefore, makes no provision for financial assurances for that care.

In response to EPA's ADEIS recommendations that the DEIS discuss the amount and type of financial assurance that would be required for the project, the Corps responded that financial assurances for closure and reclamation are outside the purview of the Corps and under the authority of other regulatory agencies. Without addressing authority issues, we note that CEQ guidance states that all relevant, reasonable mitigation measures that could improve the project are to be identified in an EIS, even if they are outside the jurisdiction of the lead agency or the cooperating agencies and, to ensure that environmental effects of a proposed action are fairly assessed, the probability of the mitigation measures being implemented should be discussed.⁸ Furthermore, CEQ guidance views a discussion of funding for implementation of mitigation commitments as critical to ensuring informed decision making, and has stated that agencies should not commit to mitigation measures if it is not reasonable to foresee the availability of sufficient resources to ensure the performance of the mitigation.⁹

Cost Estimates

EPA has determined that that Asarco's total closure and post-closure cost estimate of \$16,228,443 for the proposed Ripsey Wash TSF would not be adequate to cover the full costs of closure and post-closure of the site over the first 30-year post-closure period. It appears that \$15,583,015 of that is for closure activities. Notable omissions in the closure cost estimate, which should be included in a revised cost estimate include the following:

- Costs of managing TSF drain down solutions (pumping, pump system maintenance, etc.)
- Costs of reclaim pond and drain down pond residue sampling and disposal;
- Costs of embankment regrading;
- Costs of revegetation.

It appears that only \$645,428 of the draft APP cost estimate is for monitoring and maintenance over the first 30-year post-closure period. We have estimated that, at a minimum, \$9,343,000 would be needed to cover the costs of monitoring and maintenance during that time. Thus, rather than \$16,228,443, we estimate that the total costs of closure plus the first 30 years of postclosure would be at least \$24,926,000. In addition, the DEIS (p. 2-5) identifies other measures that are integral to proper management of the TSF and protection of water quality, such as monitoring, operation and maintenance of the stormwater detention basins, stormwater diversion channels and pipelines, and TSF spillway, and page 2-18 indicates that long-term (potentially perpetual) maintenance of the stormwater diversion systems would be needed. EPA agrees that such measures are critical; however, they are not required in the draft APP nor included in the

3-31 (con't)

⁸ CEQ, Memorandum for Federal NEPA Liaisons, Federal, State and Local Officials and Other Persons Involved in the NEPA Process, Question 19b, March 16, 1981.

⁹ CEQ, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact. 76 Fed. Reg. 3843, 3848-3849 (Jan. 21, 2011).

APP cost estimate, and it is unclear who would be responsible for implementing or enforcing them. The lack of specific commitments and financial assurances to ensure that these measures are implemented, and the absence of clear means to enforce them, pose significant risks to the integrity and effectiveness of the TSF and, hence, to water resources over the operational life of the TSF and for hundreds of years, or longer, after closure.

The true and full life cycle costs of managing the TSF were not included in the draft APP cost estimate because ADEQ only assumed a 30-year post-closure period. It is critical that Asarco's responsibility for all monitoring and management costs for the duration of the project and its closure and post-closure site management be clearly established prior to project initiation, while financial interest in the project is high and financial assurance mechanisms are available to the company, rather than waiting until 30 years after a planned closure or unplanned shutdown to acknowledge that the mine operator would have post-closure financial liabilities for hundreds of years. Notable omissions in Asarco's post-closure cost estimate, which should be included in a revised cost estimate, include the following:

- Costs of managing TSF drain down solutions (pumping, pump system maintenance and replacement, evaporation pond maintenance and replacement, water treatment if needed, etc.):
- Costs of operation and maintenance of stormwater detention basins, stormwater diversion channels and pipelines, and TSF spillway;
- Costs of vegetation and erosion maintenance;
- Costs of monitoring and maintenance of tailings dam and other facilities;
- Costs of maintaining roads and monitoring locations;
- Costs of conducting monitoring, including facilities monitoring, water quality sampling and analysis, etc.;
- Associated indirect costs.

We have estimated that the net present value of *all* post-closure obligations for hundreds of years (including the first 30-year post-closure period at \$9,343,000, as described above) is at least \$11,000,000. This is in addition to the \$15,583,015 closure amount estimated for the draft APP. It is important to note that, if the TSF results in degradation of water quality in the groundwater and/or surface water, long-term, perhaps perpetual, additional seepage collection, groundwater pumping and treatment may be needed, which could increase these costs by an order of magnitude, or more.

Recommendations: Include the following in the Revised DEIS:

- Recalculated closure and long-term post-closure costs for the proposed project, including
 appropriate costs for the additional activities identified above;
- An assessment of the likelihood that adequate financial assurances would be available to satisfy all of Asarco's financial obligations for the project; and
- A description of the potential effectiveness of the financial assurance to ensure adequate protection of environmental resources in the project area over the long term.

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Financial Assurance Mechanisms

Asarco went bankrupt in 2005 (the largest environmental bankruptcy in U.S. history at the time), and emerged from bankruptcy in 2009. According to Asarco's 2014 APP application, the company applied to ADEQ for a financial capability test with a 2009 audit, in lieu of posting other financial assurance instruments such as a surety bond or a form of cash or its equivalent. That audit was used to demonstrate that Asarco would be capable of covering its original \$4,882,600 estimated closure costs. It is unclear whether an updated audit has been submitted and assessed with respect to the updated \$16,228,443 cost estimate, which, as discussed above, falls short of what EPA estimates is needed to adequately cover necessary closure and post-closure tasks.

It is important to secure highly reliable closure and post-closure mechanisms at the inception of a new TSF project. However, it is not clear that Asarco's financial test documentation adequately demonstrates its ability to cover even the \$16,228,443 amount proposed in the draft APP for closure or post-closure obligations. Asarco's financial test demonstration did not account for any long-term post-closure obligations, which would be needed for the proposed TSF. In addition, Asarco's 2009 balance sheet claimed, for its total closure liabilities at the Hayden, Mission, Ray and Elder Gulch sites, only \$33,848,465 - an amount which EPA estimates is far too low to cover the measures we expect to be necessary to protect environmental resources when those facilities close. Nor does that sum account for any long-term post-closure costs at those facilities. As the financial test was based on 2009 financial data, the submission would not capture ASARCO's current financial position. For example, the APP financial test demonstration would not have accounted for an additional substantial liability incurred by Asarco under a recent settlement with EPA and the Department of Justice regarding its Hayden facilities. In December 2015, Asarco entered a Consent Decree which requires the company to install new equipment and pollution control technology to reduce emissions of toxic heavy metals at the Hayden smelter, estimated at a minimum value of \$150,000,000; fund local environmental projects valued at \$8,000,000; replace a diesel locomotive with a cleaner model, estimated at \$1,000,000; and pay a \$4,500,000 civil penalty.

Furthermore, in order to ensure the availability of funding to cover the costs of performing postclosure monitoring and maintenance tasks for hundreds of years, we recommend the establishment, at the beginning of the project, of a long-term funding mechanism that would be readily available for as long as it may be needed (e.g., many hundreds of years, perhaps into perpetuity). For example, a trust fund would involve an initial investment and growth over the operational phase so that sufficient money is available whenever it is needed after closure. The appropriate level of funding, types of allowable investments, and mechanics of a trust fund are critical to ensuring it would be available when it is needed. The financial assumptions used to estimate the funding level (e.g., net present value) and the projected growth rate and mechanics of the fund are important. The contingency of mine closure significantly earlier than planned should also be taken into account in establishing the long-term funding mechanism and initial investment amount.

Important financial assumptions and mechanics that should be considered for such a trust fund include: (a) requirements for timing of payments into the trust fund; (b) how Asarco would ensure that the trust fund is bankruptcy remote; (c) acceptable financial instruments; (d) legal

structure of the trust for tax purposes; (e) who would pay the taxes on trust earnings and trust fees and expenses, including if Asarco goes out of business; (g) who would make investment decisions if Asarco is no longer viable; (h) the identity of the trust fund beneficiaries; and (i) the identity and corporate structure of the operator with responsibility/liability for financial assurance at this site.

Recommendations: Disclose in the Revised DEIS how Asarco would finance the closure and long-term post-closure activities at the proposed TSF, including the coverage amounts and type(s) of financial instruments, accounting for early closure contingencies, and the effectiveness of this commitment to ensure against environmental degradation.

Air Resources

The proposed project area is in non-attainment of PM10 (particulate matter smaller than 10 microns) air quality standards. Tables 3-3 and 3-7 in the DEIS provide estimates of PM10 emissions for the Ripsey and Hackberry alternatives, which are, in some early construction years, extremely close to the PM10 *de minimis* threshold of 100 tons per year. The ERM (2014) emissions calculations referenced in these tables, however, indicate that year 2 emissions of PM10 in Ripsey Wash would be 110.42 tons per year, which exceeds the *de minimis* threshold. The DEIS (App. I, p. 3) states that fugitive dust control measures would include watering and other measures developed pursuant to a Pinal County dust control permit, and ERM's PM10 emissions estimates assumed that road watering every four hours would account for 75 percent dust control. This assumption may be unreasonably optimistic for this climate; therefore, PM10 emissions could be significantly higher than ERM estimates.

Recommendation: To support the PM10 emissions estimates, provide, in the Revised DEIS, documentation to demonstrate that road watering, done every four hours, achieves 75 percent dust control efficiency. Information on fugitive dust emissions from the same types of vehicles, activities, and conditions at the Ray mine would provide a good analog for such a demonstration. If this cannot be demonstrated, disclose actual watering rates and dust control efficiencies at the Ray Mine or a similar site and recalculate the dust emissions for all TSF alternatives.

EPA's guidance on General Conformity applicability analyses states, "the Federal agency can take measures to reduce its emissions from the proposed action to in fact below *de minimis* levels and, thus, the rule would not apply. The changes must be State or Federally enforceable to guarantee that emissions would be below *de minimis* in the future."¹⁰ It is unclear whether the DEIS's assumed dust control efficiencies would be required in the Pinal County dust control permit and, therefore, enforceable.

Recommendations: Clarify, in the Revised DEIS and the comprehensive MMP, the mechanisms that would be used to ensure that emissions reductions are enforceable and achievable. If recalculated PM10 estimates exceed *de minimis* thresholds, demonstrate, in the Revised DEIS, that the project would conform to the State Implementation Plan. EPA

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¹⁰ General Conformity Guidance: Questions and Answers (Response to Question 29), July 13, 1994 http://www.epa.gov/air/genconform/documents/gcgga 940713.pdf

encourages the Corps to work with the Pinal County Air Quality Control District in developing the Draft General Conformity Determination for the project. Include the Draft General Conformity Determination in the EIS, either as a detailed summary or as an appendix.

The DEIS (App. I, p. 3) states that, if visual observation suggests that excessive dust is being generated, a Method 9 trained operator would determine whether opacity and other permit standards are being met. It does not indicate what mitigation measure(s) would be implemented based on the findings of this monitoring measure.

Recommendation: Identify, in the comprehensive MMP, the mitigation measures that would be implemented if opacity or other permit standards were not being met.

The DEIS identifies other measures, such as applying tackifier or rock material on outer TSF slopes, which Asarco plans to do; however, it is unclear whether these are applicant-committed measures that would be enforceable throughout the project. We note that Pinal County's dust control requirements include such measures as applying surface watering and chemical stabilizers, reducing vehicle speeds on unpaved roads, and implementing track out controls. Additional measures may be applicable to the proposed project to reduce project emissions.

Recommendations: Identify, in the Revised DEIS and comprehensive MMP, additional mitigation measures that would be implemented to minimize air pollutant emissions from the proposed project, and specifically include measures to address potential impacts to nearby residents, including sensitive receptors. We recommend appropriate mitigation measures to reduce diesel particulate matter (DPM), criteria pollutants, and greenhouse gas emissions, such as the following:

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- Procure new nonroad construction equipment that are non-diesel, or use diesel engines that meet or exceed emission requirements for model year 2015, to reduce diesel particulate matter (DPM), NOx, and other pollutants;
- For existing equipment, use diesel particulate filters and other appropriate controls to reduce emissions of DPM and other air pollutants. Diesel particulate filters control approximately 80 percent of DPM, 85-90 percent of hydrocarbon emissions, and 50-90 percent of carbon monoxide;
- Minimize construction-related trips of workers and equipment, including trucks and heavy equipment; and
- Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications.

We recommended, in our comments on the ADEIS, that the DEIS include the estimated direct, indirect, and cumulative emissions from all Ray mine operations and facilities, such as roads, construction, blasting, excavation, and processing, that create the need for the proposed TSF and the smelter. Emissions sources also include off-site processing and other activities (e.g., employee vehicle traffic and delivery trucks) in the cumulative effects study area. We also

recommended that the DEIS discuss the sulfur dioxide (SO2) non-attainment area designation associated with Asarco's Hayden smelter and the copper ore from Ray Mine. The DEIS, however, does not disclose any of this information.

Information on existing and projected future emissions from Asarco's Ray Mine and Hayden facilities is relevant because the Corps' issuance of a 404 permit for fill associated with a new TSF would allow for continuation of operation of most or all of these facilities through their design lives, but the No Action alternative presumably would not. It is unclear from the DEIS whether, under the No Action alternative, mining and dump leaching would continue at the Ray Mine or by what percent smelting would decrease at the Hayden smelter, and the impacts to air quality under the No Action alternative were not assessed. The DEIS (p. 3-6) states only that air quality in the region would remain under the influence of industrial sources (Hayden smelter) and existing land use trends, and surmises that the PM10 non-attainment area, "with current and anticipated land use trends, would probably retain its designation." EPA disagrees as it is likely that, if no new TSF were to be permitted, air pollutant emissions at the Ray Mine and Hayden facilities would significantly decrease.

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Emissions from the Hayden smelter will be significantly reduced under the terms of the recent Asarco settlement, discussed above. The Hayden area of Gila and Pinal Counties is currently classified as non-attainment for the 2008 lead National Ambient Air Quality Standard (NAAQS) and the 1-hour primary SO₂ NAAQS. Since the smelter is the only source of lead and SO₂ emissions in the Hayden non-attainment area, emission reductions must come from that facility to allow for attainment of the NAAQS. Emissions reductions that result from the recent settlement will help address both the Hayden area's lead and SO₂ NAAQS non-attainment status, as well as reduce community exposure to arsenic and other hazardous air pollutants, and particulate matter, including PM10, and PM2.5. EPA estimates that the settlement will reduce emissions by no less than approximately 3,500 tons per year of particulate matter and 8.5 tons per year of hazardous air pollutants.¹¹

Recommendation: Discuss in the EIS the nexus between ore processing and tailings creation at the Ray Mine and the SO₂ and lead non-attainment area designations associated with Asarco's Hayden smelter. Provide the estimated direct, indirect, and cumulative emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases from all Ray Mine and Hayden smelter facilities under each alternative, including the No Action alternative.

Proposed Ray Land Exchange

The DEIS (p. 1-3) states that the proposed Asarco Ray land exchange, which is the subject of a Supplemental EIS currently being prepared by the Bureau of Land Management, was not intended to acquire fee title to land for additional tailings storage. This is not accurate. Written records of our discussions with BLM and Asarco during preparation of the original 1998 Land Exchange EIS (including our January 28, 1999, DEIS comment letter) indicate that Asarco intended to use parcel RM-18 for tailings storage. RM-18 includes a substantial BLM-managed

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¹¹ https://www.epa.gov/enforcement/asarco-llc-settlement

portion of the Hackberry Gulch TSF alternative site. The rest of the Hackberry Gulch site is owned by Asarco. The Proposed Ray TSF DEIS does not consider how a TSF under a BLM Mine Plan of Operation would differ from a TSF under an APP. The West Dam and Granite Mountain alternative sites, which we have indicated were prematurely eliminated from detailed analysis in this DEIS, are also on BLM land and included in the Ray Land Exchange Supplemental EIS as parcels that Asarco wishes to acquire.

Recommendation: As the Ray Land Exchange has not occurred and these parcels are still under BLM management, the EIS should assess the Hackberry Gulch and other feasible alternatives on BLM parcels in the context of BLM management of the TSF under a Mine Plan of Operation, including requirements for financial assurance.

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COMMENT DOCUMENT #4 ARIZONA HOUSE OF REPRESENTATIVES (FRANK PRATT & T.J. SHOPE, ARIZONA STATE REPRESENTATIVES)



Comment Document # 4

Arizona House of Representatives Phoenix, Arizona 85007

April 14, 2016

LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS REGULATORY DIVISION ATTN: Michael Langley 3636 North Central Avenue, Suite 900 Phoenix, AZ 85012-1939

Re: SPL-2011-01005-MWL Ray Mine Proposed Tailings Storage Facility

Dear Mr. Langley,

As the state elected officials that represent Legislative District 8, which includes Asarco's Ray and Hayden operations, we are writing you to issue our public support for the proposed Ripsey Wash Ray Mine Tailings facility. The Ray Mine has been in operation since the late 1880's and has provided jobs for our local communities and a steady stream of revenue for the state. The new proposed tailings facility at Ripsey Wash is necessary for continued operations of Ray Mine, and as such we support this proposed project.

Mining has played an important role in the development of many communities in Legislative District 8. The Copper Basin is home to numerous large-scale mining and smelting operations that support our rural communities. Developing Arizona's natural mineral endowment is a source of pride for the Copper Basin and will continue to be. In 2014 the Ray Mine and Hayden Smelter produced 330 million pounds of copper, spent over \$257 million on materials and supplies and provided \$130.4 million in wages salaries and fringe benefits. The proposed tailings facility at Ripsey Wash will extend the life of the Ray Mine and allow Asarco to continue to provide jobs and economic opportunities for the local community.

We would like to offer my public support for the Ripsey Wash proposed tailings facility at the Ray Mine and continued operations of Ray Mine and Hayden Smelter in Legislative District 8.

Sincerely,

Frank Pratt Arizona State Representative

Legislative District 8

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T.J. Shope Arizona State Representative

Legislative District 8

COMMENT DOCUMENT #5 TOWN OF KEARNY (SAM HOSLER, MAYOR)

Comment Document #5



TOWN OF KEARNY PO BOX 639, KEARNY, AZ 85137

> PHONE (520) 363-5547 FAX (520) 363-7527

March 1, 2016

VIA Email (<u>Michael.W.Langley@usace.army.mil</u>) LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS REGULATORY DIVISION ATTN: Michael Langley 3636 North Central Avenue, Suite 900 Phoenix, AZ 85012-1939

Re: SPL-2011-01005-MWL Ray Mine Proposed Tailings Storage Facility

Dear Mr. Langley,

On March 30, 2016 the Kearny Town Council voted to approve the new Ray Mine Tailings Storage Facility proposed by Asarco. The Ray Mine has operated since 1911 and the new proposed tailings storage facility will extend the life of operations for the mine. The Ray Mine and its continued operation is important for the local economy and the vitality of our community. We appreciate Asarco's willingness to further cooperate on the design of this project and the relocation of the Florence-Kelvin Highway north of the proposed site.

The new proposed tailings facility is planned to be located roughly five miles west of the Town of Kearny and four miles southwest of the Ray Mine. The Town of Kearny has long been a historic supporter of local mining operations due to the proximately of the town to these operations. Asarco has worked to keep the town council informed about this project by delivering an update to the Mayor and Council about the project. Asarco has also signaled their willingness to work with the town council and staff to address any questions about the project. The Town of Kearny appreciates Asarco's further cooperation on the design and construction of this project.

In conclusion, the Kearny Town Council supports the proposed Ray Mine Tailings Storage Facility near the Town of Kearny and offers this letter to be entered into the public record.

Sincerely,

anul Hosk

Sam Hosler Mayor, Town of Kearny

COMMENT DOCUMENT #6

TOWN OF HAYDEN

(BOBBY SMITH, MAYOR; MARIA MUNOZ, VICE MAYOR; JEREMY GARCIA, DEAN HETRICK, THOMAS LAGUNAS, ENRIQUE LOPEZ, AND GLORIA RUIZ, COUNCILMEMBERS)

Comment Document #6

March 1, 2016

VIA Email (<u>Michael.W.Langley@usace.army.mil</u>) LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS REGULATORY DIVISION ATTN: Michael Langley 3636 North Central Avenue, Suite 900 Phoenix, AZ 85012-1939

Re: SPL-2011-01005-MWL Ray Mine Proposed Tailings Storage Facility

Dear Mr. Langley,

We are writing you today to issue our support for the Ray Mine Proposed Tailings Storage Facility at Ripsey Wash. Asarco LLC is a large taxpayer in our community and the continued operations of the Hayden Smelter, and the Ray Mine that supports the smelter, is important to our municipality. We support the continued operation of both facilities and Asarco's investment in the community. We appreciate Asarco's open communication and cooperation with the Town of Hayden on this project and look forward to many more years of operations in the Town of Hayden.

The Ray Complex – Hayden Operations employs over 500 employees and paid approximately \$51 million in wages in 2015. The Ray Mine and Hayden Smelter recently celebrated 100 years of operations and Asarco has reached an agreement to invest in the Hayden Smelter to continue its operations into the future. The construction of this new tailings storage facility will ensure that the Ray Mine also has the ability to continue operations.

The construction of the new tailings storage facility will have impacts on our local communities. We appreciate the willingness of Asarco to continue to cooperate with these local communities on the design and development of this project, and as such, we issue our support for the Ray Mine Proposed Tailings Storage Facility.

Sincerely,

Bobby Smith Mayor, Town of Hayden

Jeremy Garcia Councilmember, Town of Hayden

Maria Munoz Vice Mayor, Town of Hayden

Dean Hetrick Councilmember, Town of Hayden

Marin Logur

Thomas Lagunas Councilmember, Town of Hayden

Gloria Ruiz

Councilmember, Town of Hayden

Enique & Lopy

Enrique Lopez Councilmember, Town of Hayden

COMMENT DOCUMENT #7

TOWN OF WINKELMAN

(LOUIS BRACAMONTE, MAYOR; NOLBERTO WADDELL, VICE MAYOR: ELAINE CHILLSON, ANITA HINOJOS, AND FELIX MARQUEZ, COUNCILMEMBERS)

Comment Document #7

March 1, 2016

VIA Email (<u>Michael.W.Langley@usace.army.mil</u>) LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS REGULATORY DIVISION ATTN: Michael Langley 3636 North Central Avenue, Suite 900 Phoenix, AZ 85012-1939

Re: SPL-2011-01005-MWL Ray Mine Proposed Tailings Storage Facility

Dear Mr. Langley,

We are writing you today in response to the public comment period and to offer our support for the proposed Ray Mine Tailings Storage Facility at Ripsey Wash. The Town of Winkelman has strong economic ties to mining operations in the Copper Corridor and the town benefits from the companies and contractors that work at these mines. We are issuing our support for the new Ripsey Wash tailings facility because it will add additional years to the life of the Ray Mine, which will continue to provide economic opportunities for our community.

The Ray Mine and Hayden smelter have been in operation for over 100 years and many members from our community have a connection to these facilities. Asarco has offered to work with the surrounding communities on important projects such as this new tailings storage facility. The Town of Winkleman appreciates Asarco's cooperation and looks forward to future updates about the progress of this project.

The mining industry is important to the economy of the Copper Corridor and this new tailings facility will extend the life of the Ray Mine for many years. We offer our support during the public comment period for this project.

Sincerely,

nue C. Dracajus

Louis C. Bracamonte Mayor, Town of Winkelman

Elaine M. Chillson Councilmember, Town of Winkelman

Filin G. M.

Felix A. Marquez Councilmember, Town of Winkelman

towaddell

Nolberto Waddell Vice Mayor, Town of Winkelman

Anita Hinojos

Councilmember, Town of Winkelman

COMMENT DOCUMENT #8 THE HOPI TRIBE

(LEIGH KUWANWISIWMA, DIRECTOR OF HOPI CULTURAL PRESERVATION OFFICE)

Comment Document # 8



Herman G. Honanie CHAIRMAN

Alfred Lomahquahu Jr. VICE-CHAIRMAN

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AZ KEGGELGENEN ANGH PHOEGZ, AZ

February 25, 2016

Michael Langley, Senior Project Manager United Stated Army, Los Angeles District, Corps of Engineers, Arizona Nevada Area Office 3636 North Central Avenue, Suite 900 Phoenix, Arizona 85012

Re: Proposed Ray Mine Tailing Storage Facility Project Site Corps File Number: SPL-2011-01005-MWL

Dear Mr. Langley,

1. AZ U:16:21

2. AZ U:16:23

3. AZ U:16:345

4. AZ U:16:346

5. AZ U:16:347

6. AZ U:16:348

7. AZ U:16:349

8. AZ U:16:350

9. AZ U:16:351

10. AZ U:16:390

11. AZ U:16:392

This letter is in response to your correspondence dated January 29, 2016, with an enclosed draft environmental impact statement for ASARCO LLC's proposed Ray Mine Tailings Storage Facility Project Site on Arizona State Land Department land, approximately ten miles northwest of Kearny in Pinal County. The Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Arizona. The Hopi Cultural Preservation Office supports the identification and avoidance of prehistoric archaeological sites, and we consider the prehistoric archaeological sites of our ancestors to be Traditional Cultural Properties. Therefore, we appreciate the Corps' continuing solicitation of our input and your efforts to address our concerns.

In a letter dated November 19, 2013, the Hopi Cultural Preservation Office reviewed cultural resources survey reports, a cultural resources summary, and a treatment plan, that identify numerous National Register eligible and unevaluated prehistoric sites on Arizona State Lands Department lands to be acquired by ASARCO that will be adversely affected by this proposal. Therefore, we concurred that this proposal will adversely affect cultural resources significant to the Hopi Tribe.

In a letter dated November 10, 2014, we reviewed the revised summary report that identifies the following eligible prehistoric sites that may be adversely affected by this proposal with treatment status:

habitation	phase 1 testing complete	data recovery
habitation	phase 1 testing complete	no further work
agricultural	phase 1 testing complete	no further work
agricultural	phase I testing complete	no further work
agricultural	phase 1 testing complete	no further work
agricultural	phase 1 testing complete	no further work
agricultural	phase 1 testing complete	no further work
habitation	phase 1 testing partially complete	testing/data recovery
habitation	phase 1 testing complete	data recovery
agricultural	phase 1 testing complete	no further work
habitation	phase 1 testing complete	no further work

P.O. Box 123

Michael Langley February 25, 2016 Page 2

12. AZ U:16:394	habitation	phase 1 testing on state land	testing/data recovery	0
13. AZ U:16:395	lithic	phase 1 testing complete	no further work	
14. AZ U:16:428	agricultural	no work performed	avoidance or data recovery	
15. AZ V:13:7	habitation	no worked performed	avoidance or data recovery	
16. AZ V:13:33	habitation	a portion excavated	avoidance or data recovery	
17. AZ V:13:71	resource	no work performed	avoidance or data recovery	
18. AZ V:13:220	agricultural	phase 1 testing complete	no further work	
18. AZ V:13:220 19. AZ V:13:221	agricultural agricultural	phase 1 testing complete phase 1 testing complete	no further work	

8-2

8-6

In our letters, we expressed a concern that rock cairns, which may be shrines, offering places, or trail or field markers that are significant to the Hopi Tribe may be considered ineligible isolated occurrences in the archaeological surveys. We also expressed concerns for springs in the area, and the significance of the recorded petroglyphs and pictographs.

We stated we understood data recovery is proposed at sites AZ U:16:21, 350, 351, 394, and 428, and possibly AZ V:13:7, 33, 71, and 220. We previously stated that adverse effects to the sites described as habitations are likely to include the disturbance of human remains and reiterated our request to be provided with copies of the Phase 1 testing report for review and comment.

We have now reviewed the enclosed draft environmental impact statement that would result in the Corps issuing a permit that would allow for the construction, operation and closure of a new tailing storage facility in the Ripley Wash drainage area. We understand "the State Historic Preservation Office deferred concurrence on future treatment recommendations for sites with Phase I testing work until such time as the Phase I results are reviewed by the SHPO." We reiterate our request to be provided with copies of the Phase 1 testing report for review and comment.

While the effects of the Ripley Wash Alternative through previous survey and testing are at least partially identified, only 57% of the Hackberry Gulch TSF alternative footprint has been surveyed to date and the draft environmental impact statement states, "a formal permit area was not established for the Hackberry Gulch TSF alternative" and "a substantial amount to additional surveys, eligibility determinations, testing, data recovery, and consultation with the SHPO and tribes would be required if this alternative were implemented." Does the Corps then consider the Hackberry Gulch TSF a serious alternative when the effects are unknown and consultation has not been conducted?

Therefore, because of the known adverse effects of the Ripley Wash Alternative and the unknown effects of the Hackberry Gulch TSF alternative, we support the No Action Alternative in this draft environmental impact statement. Should you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office. Thank you for your consideration.

Respectfully Kuwanwisiwma, Director eigh Hopi Cultural Preservation Office

xc: Peter Steere, Tohono O'odham Arizona State Historic Preservation Office

COMMENT DOCUMENT #9 WHITE MOUNTAIN APACHE TRIBE (MARK ALTAHA, THPO)



Comment Document #9

White Mountain Apache Tribe Office of Historic Preservation PO Box 1032 Fort Apache, AZ 85926 Ph: (928) 338-3033 Fax: (928) 338-6055

То:	Michael Langley, Senior Project Manager - U.S. Army Corps of Engineers
Date:	February 18, 2016
Re:	Ray Mine Tailings Storage Facility Draft EIS

The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the proposed project, dated January 29, 2016.

Please refer to the notes in regards to the proposed project:

We have received and reviewed information regarding the above proposed Ray Mine Tailings project, located in Kearny, Pinal County, Arizona. As the proposed project is located within ancestral aboriginal Apache territory of probable cultural and historical importance to the various Apache tribes in the southwest, we would like to be kept informed throughout the NHPA Section 106 process, and the development of the MOA and the HPTP documents. We would especially like to be involved in the mitigation efforts pertaining to all historic Apache archaeology sites.

Thank you. We look forward to continued collaborations in the protection and preservation of places of cultural and historical importance.

Sincerely, Mark T. Altaha - THPO White Mountain Apache Tribe – THPO 9-1

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COMMENT DOCUMENT #10

U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF THE SECRETARY, OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE

(PATRICIA SANDERSON PORT, REGIONAL ENVIRONMENTAL OFFICER)

Comment Document #10



United States Department of the Interior

OFFICE OF THE SECRETARY Office of Environmental Policy and Compliance Pacific Southwest Region 333 Bush Street, Suite 515 San Francisco, CA 94104

IN REPLY REFER TO: (ER 16/0080)

Filed Electronically

14 March 2016

Michael Langley U.S. Army Corps of Engineers Arizona-Nevada Office 3636 N. Central Avenue, Suite 900 Phoenix, AZ 85012-1939

Subject: Notice of Availability of a Draft Environmental Impact Statement, U.S. Corps of Engineers, Ray Mine Tailings Storage Facility - Pinal County, Arizona

Dear Mr. Langley,

The Department of the Interior has received and reviewed the subject document and has no comments to offer.

10-1

Thank you for the opportunity to review this project.

Sincerely,

Sanderson Por Incen

Patricia Sanderson Port Regional Environmental Officer

cc: OEPC - Staff Contact: Cheryl L. Kelly - 202-208-7565; <u>cheryl_kelly@ios.doi.gov</u>

COMMENT DOCUMENT #11 U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, ARIZONA SERVICES OFFICE

(STEVEN SPANGLE, FIELD SUPERVISOR)



United States Department of the Interior

Fish and Wildlife Service Arizona Ecological Services Office 2321 West Royal Palm Road, Suite 103 Phoenix, Arizona 85021-4951 Telephone: (602) 242-0210 Fax: (602) 242-2513



In reply refer to: AESO/SE 02EAAZ00- 2016-TA-0406

Comment Document #11

May 6, 2016

Mr. Michael Langley, Senior Project Manager Department of the Army Los Angeles District, U.S. Army Corps of Engineers 3636 North Central Avenue, Suite 9000 Phoenix, Arizona 85012-1939

Subject: ASARCO Ray Mine Proposed Tailings Storage Facility Draft Environmental Impact Statement (SPL-2011-1005-MWL)

Dear Mr. Langley:

The U.S. Fish and Wildlife Service (Service) Arizona Ecological Services Office (AESO) has reviewed the ASARCO Ray Mine Proposed Tailings Storage Facility Draft Environmental Impact Statement (DEIS), which was published on January 29, 2016. We are concerned that the Corps has not adequately analyzed the Least Environmentally Damaging Practicable Alternative (LEDPA) per 40 CFR 230.10(a).

This document analyzes the environmental effects of the preferred alternative, which is construction, operation, and closure of a new tailings storage facility in the Ripsey Wash drainage, Pinal County, Arizona in detail. The proposed facility would ultimately hold an estimated 750 million tons of fill and tailings generated by future production from the Ray Concentrator at the Ray Mine, which is owned and operated by ASARCO LLC. The other alternative analyzed in detail is the Hackberry Gulch Tailings Storage Facility. Although other options were considered, they were eliminated early in the analysis and not fully analyzed. The DEIS quickly dismissed tailings storage within a disturbed portion of the Ray Mine, tailings storage near Hayden (e.g., East Dam), and tailings storage at the West Dam. As such, the anticipated environmental impacts of the all of the potential project alternatives were not fully addressed in the DEIS.

The Ripsey Wash Tailings Storage Facility (TSF) would be constructed in a large contiguous swath of largely undisturbed Arizona Upland Subdivision of Sonoran Desertscrub habitat (Turner and Brown 1994). We would like to see a greater examination of other alternatives, even if they are a combination of large and small tailings storage facilities alternatives in already disturbed sites, to preclude the destruction of such a large, connected and undisturbed parcel of Sonoran desert.

11-1

11-2

We were also concerned with the following:

- The Environmental Protection Agency (EPA) noted inconsistencies in the descriptions of the TSF design, reclamation, and closure in the DEIS, the Aquifer Protection Program permit application, and other reports and supporting documents.
- The general closure and post-closure strategy for the Ray TSF is minimal and should be //-5 more fully developed. EPA characterizes the cost estimate for these actions as inadequate and at the extreme low end of cost estimates for tailings impoundments and draindown ponds. EPA also noted that several important items that are typically included in the cost estimate were omitted. Many of these items (e.g., revegetation maintenance costs, erosion maintenance costs, surface drainage maintenance costs, water quality monitoring analytical costs) should be included in the cost estimate.
- A plan to continue water management is needed in the event the mine closes temporarily. The DEIS describes post-closure activities lasting 30 years after mine closure, whereas EPA recommends post-closure activities for hundreds of years post-closure.
- The proximity of the TSF to the Gila River, history of groundwater seepage/failure at the Elder Gulch tailings facility, as well as the history of tailings pipelines breaking and discharging into the Gila.
- Was a functional value assessment done for each alternative (including alternatives eliminated from further consideration)? We would like to see the results of the functional assessments for the East Dam, West Dam, and in-pit alternatives. Without these comparisons, it is difficult to determine that the preferred alternative, Ripsey Wash, is the LEDPA.

Adequate analyses of alternative facilities were not included in the DEIS. These items should be addressed and adequately considered; we recommend that a supplemental DEIS be prepared.

Should you require further assistance or if you have any questions, please contact Jean Calhoun or Jason Douglas at (520) 670-6150. Thank you for the opportunity to comment on your project.

Sincerely, Steven L. Spangle Field Supervisor

cc (electronic):

 Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ (pep@azgfd.gov)
 Jean Calhoun, Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
 Habitat, Evaluation, and Lands Program Manager, Arizona Game and Fish Department, Tucson, AZ (Attn: John Windes) 11-7
Mr. Langley

Wildlife Biologist, Fish and Wildlife Service, Tucson, AZ (Attn: Jason Douglas) Environmental Protection Agency, Los Angeles, CA (Attn: Sarvy Mahdavi) Bureau of Land Management, Tucson Field Office, Tucson, AZ

W: Vason Douglas \DEIS comment letter draft v4-jac.docx cgg

References

Turner and Brown. 1994. Sonoran Desertscrub. (In) D.E. Brown (Ed.) Biotic Communities: Southwestern United States and Northwestern Mexico. University of Utah Press, Salt Lake City.

COMMENT DOCUMENT #12 U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, LOWER COLORADO REGION (SEAN HEATH, CHIEF OF ENVIRONMENTAL RESOURCE MANAGEMENT DIVISION)

Comment Document #12



IN REPLY REFER TO:

PXAO-1500 ENV-3.00 United States Department of the Interior

BUREAU OF RECLAMATION Lower Colorado Region Phoenix Area Office 6150 West Thunderbird Road Glendale, AZ 85306-4001

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MAR 1 0 2016

Mr. Michael Langley U.S. Army Corps of Engineers 3636 North Central Avenue, Suite 900 Phoenix, Arizona 85012-1939 AZ REGULATORY EPADOR PHOEMX, AZ

Subject: U.S. Army Corps of Engineers - Draft Environmental Impact Statement (Draft EIS) - Proposed Tailings Storage Facility, Ray Mine - Pinal County, Arizona

Dear Mr. Langley:

The Bureau of Reclamation has reviewed the U.S. Army Corps of Engineers Draft EIS entitled, *Proposed Tailings Storage Facility, Ray Mine – Pinal County, Arizona*, dated January 29, 2016. Given the description and our understanding of planned activities, we are providing the following comments for your consideration.

Project Description

As we understand from the Draft EIS, the purpose of the proposed action is to construct a tailings storage facility along with associated pipelines, powerlines, road relocations, stormwater diversions, and other related features. The project would impact approximately 130 acres and indirectly impact an additional 4 acres of waters of the United States associated with Ripsey Wash, the Gila River, and other unnamed washes.

Comments

While reviewing the Draft EIS it was noticed that land ownership on Page ES-8 and Figure 32 misidentified Reclamation Withdrawn Lands as property administered by the Bureau of Land Management (BLM). The proposed Reclaim Pipeline, Pipeline Bridge, and Electrical Line would require a Land Use Authorization to be issued either by Reclamation or the BLM. Please see the enclosed map for further clarification on updating information within the Draft EIS.

Information on the southwestern willow flycatcher (*Empidonax traillii extimus*; SWFL) identified two breeding territories that would be directly impacted by site clearing and pipeline bridge construction activities. In 2015, Reclamation contracted environmental consultants to survey for SWFLs along the Gila River from Dripping Springs Wash to the Ashurst-Hayden Dam. Those surveys detected three resident breeding pairs and two nests within close proximity of the Kelvin Bridge. Several migrant SWFLs were also detected near the bridge.

12-1

As identified within the Draft EIS, it is recommended that vegetation removal and bridge construction occur outside of the breeding season. For more information on SWFL territories near the Kelvin Bridge, please review the enclosed report.

Thank you for the opportunity to provide comments on the Draft EIS for the *Proposed Tailings* Storage Facility, Ray Mine – Pinal County, Arizona. If you have any questions, please contact Mr. Tab Bommarito at 623-773-6255 or the the marite@usbr.gov.

Sincerely, Sean Heath

Chief, Environmental Resource Management Division 2

12-3 (con't)

Enclosure





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COMMENT DOCUMENT #13 U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE, SOUTHWESTERN REGION REGIONAL OFFICE (LAURA WHITE, ARIZONA NATIONAL SCENIC TRAIL ADMINISTRATOR)

Comment Document # 13

USDA

United States Forest Department of Service Agriculture Southwestern Region Regional Office 333 Broadway SE Albuquerque, NM 87102 505-842-3292 FAX: 505-842-3800

File Code: 2350 Date: March 11, 2016

Michael Langley Senior Project Manager U.S. Army Corps of Engineers Arizona-Nevada Office 3636 N. Central Avenue, Suite 900 Phoenix, AZ 85012-1939

Dear Mr. Langley:

These comments are intended to aid in the accurate description of effects of TSF alternatives upon the Arizona National Scenic Trail and its corridor, and to recommend the Hackberry Gulch (HG) Alternative as the action alternative with the least impact to the ANST. They are not intended to diminish the importance of the Ray Mine to the economy of local communities and the State. Some background information provided in previous scoping comments is included here for context.

Congressionally designated national scenic trails are comprised not only of physical trails, but are also linear landscapes that contain resources, qualities, values and associated settings important to the nature and purposes of the trail. The National Trails System Act (NTSA) P.L. 90-143, as amended through P.L. 111-11(16 U.S.C. 1241-1251), established national scenic trails as ... "extended trails so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass...". The 800 mile Arizona National Scenic Trail is one of only 11 national scenic trails nation-wide, and the only one in Arizona. On BLM lands national scenic trails are part of the National Landscape Conservation System.

House Report No. 90-1631, accompanying P.L. 90-543, provides evidence of the intent of Congress that national scenic trail corridors should encompass and protect the resources, qualities and values for which the trails were designated.

"Selection of routes for National Scenic Trails – Such rights-of-way shall be (1) of sufficient width and so located to provide the maximum retention of natural conditions, scenic and historic features, and primitive character of the trail area, to provide campsites, shelters, and related public-use facilities, and to provide reasonable public access; and (2) located to avoid, insofar as practicable, established highways, motor roads, mining areas, power transmission lines, existing commercial and industrial developments, range fences and improvements, private operations, and any other activities that would be incompatible with the protection of the trail in its natural condition and its use for outdoor recreation.... National scenic trails shall be administered, protected, developed, and maintained to retain their natural, scenic, and historic features; and provision may be made for campsites,

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shelters, and related public-use facilities; and other uses that will not substantially interfere with the nature and purposes of the trails may be permitted or authorized, as appropriate: Provided, that the use of motorized vehicles by the general public along any national scenic trail shall be prohibited..." (1968 U.S. Code Cong. & Admin. News 3855, 3863-3864, 3867).

The language on substantial interference is echoed in Sec. 7(c) of the NTSA (16 U.S.C. 1245).

In addition Executive Order 13195 directs Federal agencies to

"....protect, connect, promote, and assist trails of all types... This will be accomplished by... protecting the trail corridors associated with National Scenic Trails... to the degree necessary to ensure that the values for which [the] trail was established remain intact."

The ANST was through an interagency agreement that included Arizona State Parks, the U.S. Forest Service, Bureau of Land Management and National Park Service, and by the tireless efforts of the Arizona Trail Association (ATA) who advocated with agencies and private organizations, and organized an army of volunteers who have put in countless hours building and maintaining the trail. Development of this region of the ANST was greatly aided by Pinal County who, in addition to acquiring the necessary Arizona State Trust Land rights-of-way and constructing trail, completed three new trailheads with the help of volunteers and private support. When designated a national scenic trail, the ANST was assigned to the U.S. Forest Service for overall administration.

The ANST offers an unparalleled recreational and visual experience to long distance and day hikers, mountain bikers and equestrians that is continuous beyond the boundaries of the proposed Ray Mine tailings storage facility project area and nearby region. In addition to many out of state visitors, increasing numbers of visitors are coming from Europe and other overseas locations to hike or ride the ANST as it becomes better known. Hiking, biking or riding the entire ANST is, for many, a once in a lifetime opportunity and involves a huge investment in planning and logistics. The services provided by communities and businesses along the route contribute to a growing, sustainable trail-based economy that will continue to increase as use of the trail increases. The ANST is a gift to be preserved for future generations.

The current location for the section of ANST through the Ripsey Wash watershed was determined by the partner agencies and the ATA to be the best location to represent the Sonoran Desert landscape and avoid developed areas, while providing the best possible trail user experience. The route between Oracle and State Highway 60 provides economic benefits and recreation opportunities to the communities of Oracle, Kelvin, Superior and others in the Copper Corridor. The completion of the Gila River Canyons Passage north of the Gila River was aided by ASARCO as they designed and rehabilitated their mineral testing access road on state land to create single track trail. This scenic passage is now one of the jewels of the ANST and has become a premier mountain bike route.

Comments by section:

ES 6.6.2

13-1 (con't)

13-2

The 6.4 mile ANST relocation will not mitigate the negative effects of the proposed Ripsey Wash (RW) TFC and infrastructure, along with the connected action of realigning the Florence-Kelvin Highway, upon 7.6 miles of the Gila River Canyons Passage. These effects should be mentioned here.

2.3.12 Ripsey Wash TSF Closure and Reclamation

No explanation is given for the omission of the consideration of naturalizing reclamation techniques for either alternative. In order to partially mitigate the visual impacts to the ANST, consider any possible methods of naturalizing the final appearance of the visible dam and tailings embankments during construction and concurrent reclamation. The portions of the tailings surface that may be visible from the ANST should be examined for the feasibility of naturalizing the appearance during final reclamation. Examples of successful efforts to naturalize tailings storage facilities exist in the arid regions of the west.

2.3.12.3.5 Re-vegetation

Under both alternatives, the establishment of vegetation on the dam slopes and tailings embankment as concurrent reclamation stages progress, as well as on the tailings when the facility is closed, would greatly reduce the visual impacts as well as contribute to stabilization of the slopes. Vegetation is very useful for naturalizing the appearance of tailings by softening the color contrast between the cover material and the surrounding terrain. Species that have the same color and texture as plants on surrounding hillsides would be suitable choices. The addition of fines to the rock cover material that would be effective for supporting vegetation, along with seeding and/or use of plants salvaged from the project area, with irrigation during establishment, could produce significant benefits in mitigating impacts to the scenic resources of the ANST and surrounding area.

2.3.2.3 Arizona National Scenic Trail

"Asarco will relocate the Arizona Trail during the later stage of site construction or during early operation as the existing Arizona Trail would not be directly impacted for several years after initial tailings deposition within the Ripsey Wash TSF: therefore, immediate relocation as part of initial construction would not be necessary."

Under the RW Alternative it would be important for the relocation of the ANST to begin immediately after the necessary permitting for the TSF in order to protect the nature and purposes of the trail to the greatest extent possible and to distance trail users from the dust and noise of the project.

3.7.1.7 Land Use Plans and Policies

Last paragraph Pg. 3-79 needs to be updated with the current status of the ROW acquisition. "The BLM administers the Arizona Trail north of the Florence-Kelvin highway, including sections across Arizona STL under a temporary right of entry. The BLM is pursuing a permanent right-of-way acquisition, whereupon the Arizona Trail right-of-way would be 15 feet wide and would be held by the United States."

3.8.2.2 Effects of the Ripsey Wash TSF Alternative Noise Levels.

3

13-3

13-4

13-6

The impacts of noise from construction and use of the realigned Florence-Kelvin Highway and the TFC project activities would likely substantially degrade the acoustic values of the Gila River Canyons Passage of the Arizona Trail, degrading the trail user experience. This would be a dramatic change from current conditions. Impacts from the Florence-Kelvin Highway should be fully analyzed and all noise impacts should be described in terms of change from current conditions.

3.8.2.3 Effects of the Hackberry Gulch TSF Alternative

"Recreationists and hikers using the re-aligned Arizona Trail would not be exposed to noise levels from the construction, operation and closure/reclamation of the Hackberry Gulch TSF."

The AZT would not need to be relocated with the Hackberry Gulch alternative so effects determinations should be based on the existing alignment.

3.9.1.1 Recreation Management

See changes below. New information in bold.

"Congress assigned administration of the Arizona Trail to the Secretary of Agriculture, which delegated overall administration to the Forest Service. The Forest Service is responsible for establishment of an advisory council for trail management and the development of a trail-wide comprehensive management plan (CMP). The nature and purposes of the trail are established through the CMP, which is developed in coordination with the national trail managing agencies and includes goals designed to safeguard the trail's nature and purposes. A public engagement process conducted in 2012 provided preliminary input towards the development of the CMP." An interdisciplinary team is currently collecting current conditions and trail use information conducting visual analyses and developing CP components which

information, conducting visual analyses, and developing CP components which include the identification of significant scenic, natural, historical, and cultural resources to be preserved (White, 2016).

3.9.1.4

Include the ROS classification for area of the Tortilla Mountains realignment.

3.9.2.2 Effects of the Ripsey Wash TSF Alternative

"Trail users along the new route would experience panoramic views of the Gila River Valley and the Dripping Springs Mountains, and thus the scenic quality of the trail experience should not be reduced by the relocation."

This statement is misleading because the RW Alternative that would make it necessary to relocate the ANST would have permanent and significant negative visual impacts on the ANST, as discussed elsewhere in the analysis and in these comments. Realignment of the trail out of Ripsey Wash will not mitigate the significant, negative visual and noise effects of the RW TSF and realigned Florence-Kelvin Highway on the Gila River Canyons Passage of the ANST.

The width of the relocated trail tread in steeper terrain of the Tortilla Mountains ANST realignment may need to be as much as 5 feet, bench cut, to accommodate the primary uses of

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the trail, particularly equestrian use. This will require moving substantial amounts of material and the use of heavy equipment is likely to be the more practical method of construction rather than hand construction. The visual impacts from the construction of this new alignment in high elevation, visible areas needs to be adequately analyzed, both from the standpoint of what will be seen from a distance as well as impacts to the character and aesthetics of the ANST compared to the existing alignment which lies in gentler terrain and blends with the landscape.

3.10.2.3 Effects of the Hackberry Gulch TSF Alternative

"No adverse effects are expected to occur to cultural resources in the corridor proposed for the relocation of the Arizona Trail and waters of the U.S. mitigation..."

This should not be here because the ANST will not be relocated under the HG alternative.

3.14 Visual Resources

At least two key observations points should be located on the Tortilla Mountains Passage, one on the relocation alignment and one south of the realignment. An analysis of visual impacts on the realignment should include a visibility map.

See the comment in 3.9.2.2, above, on construction of the Tortilla Mountains realignment. The visual effects of a substantial bench cut should be analyzed.

This section should answer the following questions in order to make comparisons with existing conditions:

- For each action alternative, how many miles of the ANST south of the Gila River and how many miles north of the Gila River would have views of the TSF, broken down by foreground and middle ground views and, for the RW Alternative, breaking out miles of the existing trail south of the realignment with RW TSF views?
- For the RW Alternative, how many miles of the ANST would have views of the realigned Florence-Kelvin Highway in addition to miles of TSF visibility.
- For each alternative, how much of the trail length affected by views of the proposed activities are in addition to miles currently affected by views of the existing Ray Mine and tailings?

Summarizing these comparisons in Table ES-3 would clarify the differences in the visual effects of the action alternatives.

3.17 Irreversible and Irretrievable Resource Commitment

This section does not adequately demonstrate the difference in effects between the RW Alternative vs. the HG Alternative upon the scenic, acoustic and recreation resources, qualities and values of the ANST. It should be included in this section that the visual and noise impacts of construction and operation of the RW TSF and infrastructure, along with the connected action of moving the Florence-Kelvin Highway, would result in permanent visual, noise and recreation effects on 7.6 miles of the Gila River Canyons Passage of the ANST, in addition to effects on the existing and realigned Tortilla Mountains Passage. This, along with the displacement of the ANST and the visual impacts of constructing the realignment in steep and difficult terrain, would

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(con't)

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result in substantial interference with the nature and purposes of the ANST, and an irreversible and irretrievable loss of qualities, resources and values associated with the trail corridor. The HG Alternative would be an extension of existing land use in that area and would not displace the ANST. Although there may be some irreversible and irretrievable loss of visual quality, it would not be to the degree of substantially interfering with the nature and purposes of the ANST.

4.0 Cumulative Impacts

4.10

This section understates impacts on the recreation resources and values of the ANST that would result with the RW Alternative. For the ANST, the difference between the RW and HG alternatives is dramatic, with no significant effects to the recreational value of the ANST under the HG alternative. The RW alternative, on the other hand, will result in substantial interference with the nature and purposes of the ANST and permanent degradation of the recreational experience.

4.10 and 4.16

The iconic landscapes that give this national scenic trail its cherished and unique character are threatened by numerous energy and mine projects. The combined effects of existing and foreseeable negative impacts along the length of the ANST corridor have the potential to degrade the overall visual and recreational experience of ANST users, and to permanently damage the values for which the ANST was designated. There are six potential major energy developments, including the recently approved SunZia transmission line, that would impact the ANST. In addition, two proposed mines would displace the Trail and add substantially to the degradation of scenery and recreation values along the corridor. The effects of the proposed RW TSF and connected actions would combine with foreseeable impacts along the entire length of the ANST to degrade the overall national scenic trail experience and character, and could damage sustainable recreation economic opportunities for Gateway Communities along the ANST.

Design and Mitigation:

- Reclamation methods that emphasize mitigation of visual impacts. See 2.3.12, above.
- For the power transmission line, possible mitigation would include locating the towers, where feasible, so they are not silhouetted against the sky when viewed from the ANST.
- Tower surfaces that weather to a natural patina to better blend with background colors.
- For buildings, pipeline and other infrastructure, painting them a color that blends well with background colors.
- Off-site mitigation commensurate with the permanent loss of national scenic trail resources, qualities and values. This could include corridor protection measures.

Thank you for the opportunity to comment on the Ray Mine TSF DEIS and for the interest shown by USACE and ASARCO for achieving the best possible outcome for the ANST.

Sincerely,

Laure White

LAURA WHITE Arizona National Scenic Trail Administrator

13-14 (con't)

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Ray Mine TSF FS Comments

CC: Matt Nelson, Arizona Trail Association Kent Taylor, Pinal County Bill Gibson, BLM Francisco Mendoza, BLM

COMMENT DOCUMENT #14 U.S. COAST GUARD

(DAVID SULOUFF, CHIEF OF BRIDGE SECTION IN 11TH COAST GUARD DISTRICT)

Comment Document #14

Signature:

Under the provisions of the Coast Guard Authorization Act of 1982, the Coast Guard has determined this project does not require Coast Guard involvement for bridge permit purposes

(View In HTML) USACE Public Notice is Available for the Ray M Subject: Date: Friday, January 29, 2016 12:43:06 PM Attachments: image007.ong

Regulatory SPL SPL

CLASSIFICATION: UNCLASSIFIED

DAVID IK SULOUFF Chief, Bridge Section 11th Coast Guard District By direction of District Commander

[Must be viewed in HTML]



From:

PUBLIC NOTICE AVAIL

U.S. ARMY CORPS OF ENGINEERS January 29, 2016

BUILDING STRONG®

Date:

14-1

2016

U.S. ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT **ISSUES A PUBLIC NOTICE**

The U.S. Army Corps of Engineers, Los Angeles District, Regulatory Division, Arizona Branch, has released, and is soliciting comments on, a draft environmental impact statement (EIS) that evaluates the potential environmental consequences associated with the potential issuance of a Department of the Army permit application. The Public Notice can be viewed at the link below

http://www.spl.usace.army.mil/Portals/17/docs/publicnotices/SPL-2011-01005-MWL%20EIS%20PN.pdf

The draft EIS can be viewed at:

http://www.spl.usace.army.mil/Missions/Regulatory/ProjectsPrograms.aspx

Project Name: Ray Mine Proposed Tailings Storage Facility

Corps File No.: SPL-2011-01005-MWL

Waterbodies: Ripsey Wash, Gila River, and Unnamed Washes

City: Unincorporated

County: Pinal

Mailing Lists: General, Central Arizona, Western Arizona, and Southeastern Arizona

Comment Period: January 29, 2016 through March 14, 2016

The Corps Regulatory Division is soliciting comments from the public; federal, state, and local agencies; Native American tribes; and other interested parties on a draft EIS that was prepared to evaluate the effects of the proposed project on the natural and human environment Instructions for commenting on the Public Notice are included in the Notice available at the above link.

The Corps Regulatory Program evaluates permit applications for most construction activities that occur in the nation's lakes, rivers, streams, oceans, and wetlands. Written comments received during the public review period will be considered by the Corps and will become part of the administrative record for the decision

You may contact Michael Langley, Project Manager at 602-230-6953 or via email at Michael W Langley@usace army mil with any questions or comments regarding this matter. For information on how to comment on this proposed action, please see the Public Notice.

You may also see a list of Final Regulatory Actions at the link below. On the left side menu, click on Final Regulatory Actions: http://www.spl.usace.army.mil/Missions/Regulatory.aspx







COMMENT DOCUMENT #15 (PART 1) ARIZONA GAME AND FISH DEPARTMENT (TOM FINLEY, ASSISTANT DIRECTOR OF FIELD OPERATIONS)

Comment Document #15



THE STATE OF ARIZONA

GAME AND FISH DEPARTMENT 5000 W. CAREFREE HIGHWAY PHOENIX, AZ 85086-5000 (602) 942-3000 • WWW.AZGFD.GOV GOVERNOR DOUGLAS A. DUCEY COMMISSIONERS CHAIRMAN, KURT R. DAVIS, PHOENIX EDWARD "PAT" MADDEN, FLAGSTAFF JAMES R. AMMONS, YUMA JAMES S. ZIELER, ST. JOHNS ERIC S. SPARKS, TUCSON DIRECTOR LARRY D. VOYLES DEPUTY DIRECTOR TY E. GRAY



15-1

15-2

April 28, 2016

Sent electronically via email to: Michael.W.Langley@usace.army.mil and USPS to:

Los Angeles District, U.S. Army Corps of Engineers Regulatory Division ATTN: Michael Langley 3636 North Central Avenue, Suite 900 Phoenix, AZ 85012-1939

RE: Application No. SPL-201-01005-MWL: Comments of the Arizona Game and Fish Department on the Draft Environmental Impact Statement, Proposed Tailings Storage Facility, Ray Mine-Pinal County, Arizona (January 29, 2016)

Dear Mr. Langley:

Enclosed are the Arizona Game and Fish Department's (Department) comments on the Draft Environmental Impact Statement (DEIS), which evaluates the environmental effects associated with the implementation of a Clean Water Act Section 404 permit to be issued by the U.S. Army Corps of Engineers (Corps) for a new tailings storage facility at the ASARCO Ray Mine site in Pinal County. Thank you for your courtesy of a 45-day extension to comment on this complex document and its associated technical reports.

The Department found itself at a considerable disadvantage as this was the Department's first opportunity to review the DEIS due to the denial of early coordination through Cooperating Agency status. As you are aware, the Corps of Engineers initially extended an invitation to other federal agencies, the Department, and Pinal County to participate as Cooperating Agencies in the development of this DEIS. The Department promptly accepted the invitation in a July 31, 2013 letter to the Corps. The Corps' invitation to the Department and Pinal County, which had also accepted, was then withdrawn due to Freedom of Information Act concerns from the Corps' Office of Counsel. The Department has participated in the development of many DEISs with other federal lead agencies. In our experience, an appropriately-drafted MOU between the Corps and the Department could have resolved any hypothetical FOIA issues. The Department requests to coordinate with the Corps as a Cooperating Agency in the future to incorporate its special expertise and statutory authorities early in the NEPA process; ensuring more robust and defensible analyses and documents.

Further, the Fish and Wildlife Coordination Act, 16 U.S.C.§§661-666c, calls for federal agencies issuing permits for water resource development projects, including dredge and fill projects, to consult with state fish and wildlife agencies regarding potential impacts of the project on fish and

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Mr. Michael Langley April 28, 2016

wildlife resources. Merely offering the Department an opportunity to comment, along with the public, on a draft published EIS developed without prior input from the Department contraveness the intent of Congress as expressed in the Act. The Department believes that early, continued, and transparent coordination would have resulted in a better, more defensible EIS that met both the needs of the State and of the project proponent. The Department hopes the Corps will consider the purposes and goals of the Fish and Wildlife Coordination Act, and include the Department (and interested local governments) in the development of future EISs.

The DEIS as presented does not adequately address many of the Department's concerns, as expressed in its earlier scoping comments and as presented here, in terms of analyses of practical alternatives not involving special aquatic sites, the potential short and long-term effects of the proposed project, including cumulative and secondary effects, on the physical, chemical and biological components of the Gila and San Pedro Rivers, as required in Corps regulations (40 C.F.R. 230.10; 230.11); as well as the absence of appropriate mitigation and compensation strategies for unavoidable impacts to state wildlife and loss of habitat, as required under the Corps' public interest review responsibilities.

The Department respectfully requests the Corps to consider its comments and recommendation for a revised DEIS, and is prepared to offer its expertise to produce an EIS that appropriately addresses protections for the state's public trust wildlife resources, while meeting the legitimate need of the project proponent to extend its mine tailing storage capacity for 50 additional years.

Sincerely,

Finley

Tom Finley, Assistant Director of Field Operations

cc : Carrie Marr, USFWS Sarvy Mahdavi, EPA Melissa Warren, BLM Joe Ortiz, Pinal County

Enclosures:

- DEIS Comment Table
- 404(b)(1) Analysis Comment Table
- Mitigation Table
- Dry Stack Tailings Storage Facility Final Design Report (AMEC, 2009)
- Photo of Elder Gulch Seepage pond
- HDMS LISTS
- Commission Riparian Policy
- Commission Habitat Compensation Policy
- 2013 Scoping letter

AGFD Log# M16-01293407

Dated: April 26 2016

DEIS REVIEW COMMENT TABLE—ARIZONA GAME AND FISH DEPARTMENT

Section	Page	Comment/Change requested	
General comment		Issue: The information in the DEIS appears to indicate that the Hackberry TSF will have fewer negative impacts on wildlife resources than the Ripsey TSF. However, the Department finds both the Hackberry and Ripsey facilities will have significant impacts to wildlife resources, and that neither alternative is acceptable as presented. The Department believes that reasonable alternative sites, methods, and technologies were unreasonably excluded from analysis. Moreover, the DEIS fails to fully analyze all direct, indirect, and cumulative impacts and provide meaningful mitigation for those impacts. Importantly the Ray Mine should be considered a connected action because it is part and parcel of one interdependent mining project. Major points of analysis, such as water sourcing and impacts from groundwater pumping, are missing. The analysis area is unreasonably restricted to the footprint of the TSF alternatives and does not examine impacts to the Gila and San Pedro Rivers. As much analysis is missing from the DEIS, it fails the "hard look" requirement of NEPA, the purpose of which is to ensure that all reasonable alternatives are available to decision makers.	15
		Action Needed: The Department insists that the Corps reissue the DEIS with an additional alternative or alternatives that will ensure the Ray Mine achieves its need to operate for the next 50 years while protecting the State's wildlife resources for present and future generations to the greatest degree possible. As stated in our scoping letter, the Department would like to participate in development of said alternatives	
Section 2.0	Page ES-3	The Purpose and Need statement is defined as ASARCO's need to create additional tailings storage to support "up to approximately" 750 million tons of tailings and embankment material, which will allow "full utilization of the mineral resource at the Ray Mine, using infrastructure and processes already in existence at the mine". This Purpose and Need Statement is unnecessarily restricted to ASARCO's private objectives, and excludes the public interest perspective. By limiting options to those that can use existing infrastructure and mine processes, the alternatives for tailings disposal are limited geographically to those within close range of the existing Ray mine and the Gila River, and constrains the possible range of less-environmentally damaging alternatives, such as smaller, multiple off-site locations which will not impact aquatic ecosystems.	15-

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Ray	Tailings	Storage	Facility	DEIS
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Section	Page	Comment/Change requested
		Consolidation of tailings into one impoundment within 2000 feet of the Gila River may not be the Least Environmentally Damaging Practical Alternative (LEDPA). See Comments below.
		The public purpose includes protection of surface water quality of the Gila River and protection of fish and wildlife habitats.
		Law: The Corps will in all cases exercise independent judgment in defining the purpose and need for the project from both the applicants' and the public's perspective. 33 CFR pt. 325, App. B(9)(4) (Purpose and Need).
		The Corps should not allow the applicant to improperly limit the project's "purpose and need" because a reasonably defined purpose and need is needed to conduct the alternatives analysis. U.S. Army Corps of Engineers Standard Operating Procedures for the Regulatory Program, page 15 (July 2009).
		The lead federal agency may not draft a narrow purpose and need statement that excludes alternatives to the applicant's specific private objectives, leading to an unreasonably narrow range of alternatives. <i>National Parks & Conservation Assn v. Bureau of Land Management</i> , 606 F.3d 1058 (9 th Cir. 2010).
ection .4.2 ection 6.2	Page ES- 16 Page	The text states "there would be no water quality impacts to the drainages downgradient of the Ripsey Wash TSF the Hackberry Gulch TSF, including to the Gila River." The text further claims that either TSF site "would decrease and eventually eliminate recharge to the Quaternary deposits from the footprint area of the TSF."
0.2	ES- 17	The Corps' <i>Response to Comments</i> at 2-35 states: "Potential for long-term or perpetual draindown of the [Ripsey Wash] tailings at or near the completion of operations is low coupled with low rainwater, high evaporation, and low permeability of tailings, no post-project discharge from the tailings is anticipated which would require post-closure treatment."
		These statements are not based on any site-specific data, modeling or other tests and appear entirely speculative. While there is a scientific basis for the DEIS statement that as the TSF tailings consolidate over time, the permeability of the tailings material is reduced and infiltration of pore water through the tailings is lessened, there is <u>no</u> analytical or modeling support for the DEIS claim that Ripsey Wash TSF recharge will be "eliminate/dl" with

Ray Tailings Facility Draft DEIS – Review

Ray Tailings Storage Facility DEIS

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ction	Page	Comment/Change requested	:
		no impacts to the Gila River.	
		As the sole "authority" for the proposition that Ripsey Wash TSF will not release seepage to the aquifer after TSF closure, the Corps in its <i>Responses to Comments</i> to the 2014 Internal Working DEIS cites to a 1992 book by one Hutchison and Ellison, <i>Mine Waste Management</i> , sponsored by the California Mining Association. According to the Corps, the authors ran a computer HELP model to simulate percolation rates through what are described as "bare tailings" with results showing no percolation through the tailings pile. The Corps asserts that this simulated result "would be a good representation of the [Ripsey Wash and Hackberry] sites."	
		The Corps' reliance on a hypothetical modeling exercise from a 24-year old book is misplaced, given the Corps' responsibility to use appropriate information and data to determine whether the preferred alternative will have an unacceptable adverse impact to Waters of the U.S. 40 CFR 230.1(c) (Purpose and Policy of Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material); 33 CFR Pt. 325, App. B.	15- (coi
		A site-specific conceptual water balance and a vertical seepage and contaminant transport analysis for the Ripsey Wash TSF must be performed to substantiate the DEIS claims that Ripsey will be a "zero discharge" facility. This modeling should involve available or estimated data including slurry inputs, underdrain losses, actual on-site and regional meteorological data for the area, evaporation, entrained water and reclaim.	
		Without a proper site-specific water balance and seepage analysis, DEIS claims that the TSF will not release seepage are wholly speculative.	
		An analog site is the proposed Rosemont Copper Mine in the Coronado National Forest, Pima County AZ. AMEC conducted dry stack tailings seepage analyses for its proposed tailings storage impoundment. A copy of the Dry Stack Tailings Storage Facility Final Design Report Section 6.0 (AMEC, 2009) is attached.	
		According to this <i>Report</i> , even though Rosemont Mine TSF proposes to utilize a dry-stack filtered tailings technology with an average tailings moisture content of only 18 percent by weight, the TSF is still expected to discharge significant quantities of tailings seepage to the regional aquifer until drainage of the pore water within the tailings is complete, which will take <u>500 years</u> following mine closure. <i>See</i> the drain-down curve at Figure 6.8 showing the rate of discharge expressed in terms of gpm over 500 years. These results were confirmed in the	

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Ray Tailings Storage	Facility DEIS
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Dated: April 26 2016	orage Facility DEIS	gs Storag	lay Tailing
	Page Comment/Change requested	Pag	ection
Revision 2 (Tetra Tech June 2012), available	Infiltration, Seepage, Fate and Transport Mod at <u>www.rosemonteis.us</u> .		
ill be significantly higher. The higher volumes of 65-year life emphasize the need for site-specific discharge" facility both during its operational life,	The tailings moisture content of Ripsey Wash ta tailings slurry reporting to the Ripsey Wash TSF modeling to substantiate DEIS claims that Ripsey and following closure.		
and seepage analysis to estimate the amount of age of pore water entrained within the tailings is	<u>Action Needed</u> The Corps has a duty to conduct seepage exiting the Ripsey Wash tailings over the complete.		
er quality impacts of long-term desaturation of the	Law: The public is entitled to a "hard look" at the Ripsey Wash TSF into the aquifer and the Gila Riv		
e federal lead agency has made the necessary	Statements in EISs must be supported with even vironmental analyses. 40 CFR 1500.2; 1502.1.		
hard data. The public must be provided with the popinion. Klamath-Siskiyou Wildlands Center v.	Expert conclusions about the lack of effects mus underlying data from which the lead federal age <i>Bureau of Land Management</i> , 387 F. 3d 989, 995 (
nations using physical, chemical, and biological	The Corps must make the required Section 404 testing procedures. 40 CFR 230.4 and Subpart G.		
priate information necessary for preparation of a	The District Engineer may require the applicant to DEIS. 33 CFR Pt. 325, App. B.		
designed and would be constructed to capture the TSF, and this water would be returned to the	S- The text states that the down-gradient seepage groundwater movement through the Quaternary de Ray Concentrator for reuse "This activity would of	ES- 17	6.2 6.2.2.1

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Ray Tailings Facility Draft DEIS - Review

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	ES-3- 72	This categorical claim is contradicted by the text in the following paragraph, which states that once the tailings encompass the full footprint of the TSF, bedrock groundwater recharge from the TSF would be "limited," and infiltration into the underlying alluvium and bedrock "further reduced." These vague statements are not quantified by any analytical data and do not inform the reader what effects the seepage will have on groundwater and surface water quality. The ADEQ Draft Fact Sheet for the ASARCO Ripsey Wash TSF states that the TSF will be partially lined with underdrains constructed beneath the two starter dams to collect the seepage in the Main and East Reclaim Impoundments. Seepage collection systems will also be constructed within Ripsey Wash and East Drainage to intercept flows within the alluvium. The DEIS text summarizes the <i>Groundwater Modeling Report</i> that seepage from the Ripsey TSF would be intercepted and captured by the down-drain seepage trenches in Ripsey Wash and East Wash. While the <i>Groundwater Modeling Report</i> is written in highly technical language, the <i>Groundwater Modeling Report</i> does not state that these drainage controls will "mitigate" the seepage. The <i>Groundwater Modeling Report</i> does not state that these
		drainage controls will capture all seepage from the Ripsey TSF. Pages 5, 13. The analog site is the Elder Gulch TSF. Notwithstanding the fact that Elder Gulch was constructed with underdrains and corrugated HDPE pipe at 100-foot intervals throughout the tailings impoundment to collect seepage to the lined Seepage Collection Pond, a 1995 water balance modeling concluded that the Elder Gulch TSF was releasing seepage at a rate of 1600 to 1700 gpm, leading to observed rises in in water levels and Action Level exceedances for several constituents, including sulfates and TDS in downgradient Point of Compliance (POC) wells. The necessary conclusion is that that notwithstanding the seepage collection system in place at the Elder Gulch TSF, seepage is entering groundwater and migrating off-site. <i>Elder Gulch Tailings Impoundment Alert Level Response</i> (AGRA Earth & Environmental, Inc. 26 June 1995). This seepage-influenced groundwater is migrating to Mineral Creek, which drains into the Gila River above the Ripsey Wash TSF location. The same conclusion was reached in <i>Seepage Investigation Report, ASARCO-Elder Gulch Tailings Facility</i> (EEC, February 11, 2013). This report analyzed historical water level data in Elder Gulch downgradient POC wells from 1991-2012. Some of these wells had increases in water level data in Elder Gulch downgradient POC wells from

Ray Tailings Facility Draft DEIS - Review

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er	attributes to a hydraulic connection to the Elder Gulch TSF. <i>Report</i> at 14. The report concludes that groundwater appears to be influenced by operation of the Elder Gulch TSF.	
nt C	<u>Action Needed</u> : Provide data and analyses to substantiate the claim that all seepage and groundwater movement from the Ripsey Wash TSF will be captured and contained.	
R	Law: Statements in a DEIS must be supported by environmental analyses and credible scientific evidence. 40 CFR 1500.2; 1502.1; 1502.22.	
e e	The lead federal agency's evaluation of impacts must be based on research methods generally accepted in the scientific community. 40 CFR 1502.22. Data collection should be commensurate with the importance of the impacts to the environment. 40 CFR 1502.15.	
u n	Vague or general statements about possible effects do not constitute a "hard look" under NEPA. Klamath-Siskiyou Wildlands Center v. Bureau of Land Management, 387 F.3d 989, 995 (9 th Cir. 2004); Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F. 3d 1372 (9 th Cir. 1998).	
	The text further states that upon closure, "any remaining water on the surface of the TSF or precipitation that falls onto the tailings surface would be subjected to the high evaporation rates that occur in the semi-arid climate in this part of Arizona." The statement implies that meteoric water (rainfall) will quickly evaporate and never migrate through the TSF.	ES- 18
2	The Department cannot not find any report or analysis that supports this statement. The proposed Rosemont Mine TSF modeling showed that the upper eight (8) feet of the dry stack tailings will perform as a storage-release unit, whereby moisture lost to evaporation is replenished by precipitation. Rosemont Copper Project Infiltration, Seepage, Fate and Transport Modeling Report, Revision 2 at 63 (Tetra Tech June 2012.	
-	Law: Statements in an EIS must be supported by credible scientific evidence and not based on conjecture. 40 CFR 1502.22.	
1	Issue: "Activities of the Pay Mine unstream of the middle distance of the middle distance of the pay Mine unstream of the middle distance	1-2

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nclude that analysis in in page 1-3 the Corps age capacity based on	

Dated: April 26 2016

actions and thus not included in the analysis of direct and indirect effects associated with the Applicant's proposed action."
40 CFR §1508.25 defines Connected Actions as actions "that are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:
(i) Automatically trigger other actions which may require environmental impact statements.
(ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
(iii) Are interdependent parts of a larger action and depend on the larger action for their justification."
The Corps cannot simply decide that connected actions will not be analyzed as such and not include that analysis in the DEIS. The TSF is clearly a connected action under this definition on multiple levels. On page 1-3 the Corps states in Purpose and Need a "need for approximately 550 million dry tons of additional storage capacity based on current projects or ore resources."
In fact, the Ray Mine cannot continue to operate once the Hayden and Elder Gulch facilities have reached capacity, hence the need for the new TSF. By definition, under ii, the entire Ray Mine is a connected action. The proposed action is an interdependent part of the Ray Mine and vice versa.
As an example of how the arbitrary decision to exclude the operation of the Ray Mine affects the public's interest in determining the effects of the project consider the effects on water use and management (2.3.7) "Water for the Ray Concentrator and operation of the existing Elder Gulch TSF and the proposed Ripsey Wash TSF is and would continue to be delivered to the Ray Mine via an existing buried pipeline that originates from the Hayden well field located at the confluence of the Gila and San Pedro rivers."
The amount of water is not quantified, nor are effects of pumping from "the Hayden Well Field", which apparently extends well upstream within the San Pedro River basin, nor is there proposed any mitigation for the pumping of this water, which, we presume will be significant as it will be required to transport up to 750 million tons of tailings to the TSF. Use of this water, taken from the subflow of the San Pedro and Gila Rivers has significant effects on the

Ray Tailings Facility Draft DEIS - Review

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Ray Tailings Stor	age Facility DEIS
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		aquatic ecosystem of both rivers and has significant effects on the riparian vegetation associated with both rivers. This riparian vegetation is habitat for numerous species including the listed Southwest willow flycatcher and yellow billed cuckoo, including Critical Habitat for the SWIFL and Proposed Critical Habitat for the Cuckoo. <u>Action Needed:</u> The Corps must revise the DEIS to include the Ray Mine as a connected action, describe the activities of the Ray Mine that could not, but for the TSF, occur and analyze those activities in connection with the TSF. Moreover, the significant effects of those activities (such as impacts to riparian habitat within critical habitat and proposed critical habitat) must be described with mitigation. <u>Law:</u> An EIS must include a discussion of the means to mitigate adverse environmental impacts. 40 CFR 81502 16(h)
Section 1.2.1 Section 4.5	1-2; 1-3 Page 4-5	The Cumulative Impacts text contains no discussion or analysis of the potential impacts to Gila River water quality or quantity in the potential mineral development of some or all of the 10,976 acres that ASARCO seeks to acquire adjacent to the Ray/Hayden operations and Kearny, AZ in the Ray Mine Exchange with BLM. Several of the parcels appear to be located in drainages leading to the Gila River. <u>Action Needed</u> Conduct a cumulative effects analysis of potential expansion of mining operations on surface water sources if the Ray Land Exchange is approved. <u>Law:</u> A cumulative environmental impact results from the incremental impact of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions. 40 CFR 1508.7; 40 CFR 1508.25.
Section 1.2.1 Section 4.5	1-2; 1-3 Page 4-5	The potential long-term fate and transport of Elder Gulch seepage to the Gila River should be evaluated and discussed in the DEIS as a "cumulative action" both during its operational life of Elder Gulch and post-closure. See Comment below. <u>Action Needed</u> Provide analytical data showing chemical concentrations of metals and other contaminants in the Elder Gulch seepage, and describe the fate and transport of this seepage in terms of its potential impacts to the regional aquifer and to the Gila River.

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1	1-3	Issue: Purpose and Need. "As documented in Appendix B, Alternative Screening and Clean Water Act Section 404(b)(1)"
	-	Action Needed: See our comments regarding Purpose and Need in our comments on the 404(b)(1) analysis.
	1-3	<u>Issue:</u> Purpose and Need: It appears that the Purpose and Need have been constructed with a particular outcome in mind in order to ensure that the proposed alternative is the only alternative which can satisfy the stated purpose and need.
		NEPA requires a hard look at all practicable alternatives. A Purpose and Need statement cannot be deliberately crafted to exclude alternatives that would be practicable and fulfill the overall project purpose. The Corps' own guidance* states that it is a Corps responsibility to verify that the Purpose and Need statement "is not unduly restrictive of potential alternatives, pursuant to the Section 404(b)(1) Guidelines."
		The EPA has clearly articulated on their comments (on the ADEIS) to the Corps that the overall project purpose does not require 750 million tons of capacity at a single site and questions the validity of the 750 million ton figure which, by ASARCO 's own admission is a rough estimate based on the possibility of new and additional capacity at the Ray Mine at best, and at worst is relying on the potential of ore development outside the Ray Mine at Copper Buttes for which NEPA has not yet contemplated and which is beyond the scope of the current document.
		It is the Department's position that the West Dam alternative may be a viable and practicable alternative and, if so, is likely the Least Environmentally Damaging Practicable Alternative (LEDPA), but was excluded from the analysis.
		The Corps' guidance document* makes it clear that a Purpose and Need Statement cannot be taken at face value by the Corps which has a responsibility to verify such statement is not unduly restrictive.
		Action Needed: The Corps must revise the Purpose and Need Statement so that it does not pre-ordain the preferred alternative prior to analysis. The Corps must analyze the West Dam alternative and present that analysis rather than make declarative statements that are unsupported by evidence.
		Law: The Corps will in all cases exercise independent judgment in defining the purpose and need for the project

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		from both the applicants' and the public's perspective. 33 CFR pt. 325, App. B(9)(4) (Purpose and Need).	
		The Corps should not allow the applicant to improperly limit the project's "purpose and need" because a reasonably defined purpose and need is needed to conduct the alternatives analysis. U.S. Army Corps of Engineers Standard Operating Procedures for the Regulatory Program, page 15 (July 2009).	15-13 (con
		The lead federal agency may not draft a narrow purpose and need statement that excludes alternatives to the applicant's specific private objectives, leading to an unreasonably narrow range of alternatives. <i>National Parks & Conservation Assn v. Bureau of Land Management</i> , 606 F.3d 1058 (9 th Cir. 2010).	
		*US Army Corps of Engineers Seattle District. 23 October 2003. Alternative Analysis Guidance: <u>http://www.nws.usace.army.mil/Portals/27/docs/regulatory/Forms/Alternative%20Analysis%20Guidance%20Enclosure%20(10-23-03).pdf</u>	
1	1-3	<u>Issue:</u> Purpose and Need. The heart of any NEPA document is based on analysis of a true range of alternatives. The Corps must rigorously explore and objectively evaluate all reasonable alternatives (40 CFR §1502.14.a). The 404b1 process supposedly eliminated alternatives from analysis that were not "practicable" but provides no actual analysis of why West Dam was excluded from analysis, and effectively removed from the DEIS as a pre-analysis decision. Simply stating that it is not practicable without a comparison of those items that make it such with the other alternatives does not provide evidence that it is not practicable.	15-14
6.7		Action Needed: The DEIS must present a true range of alternatives. The West Dam site should be included as an alternative or the 404b1 analysis must present evidence that the West Dam site is not practicable in comparison with all alternatives in the DEIS. An alternative using multiple smaller sites must be analyzed including an alternative that includes a partial backfill of the pit.	
1.5.2	1-6	Issue: "Where ASARCO proposes to quarry rock material from BLM-administered mineral estate for construction, concurrent reclamation (i.e., rock cover on the outer slope of the tailings embankment) and/or closure (i.e., rock cover material over the tailings), the BLM would need to authorize a mineral material sale for that rock material." This is a connected action (40 CFR §1508.25) which should be analyzed in the DEIS.	15-15
		Action Needed: Include the rock quarry identified on BLM lands in the DEIS.	

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1.6	1-7	Issue: The Department's Scoping Comments were not adequately addressed. We revisit those issues here:
		<u>Comment:</u> The Department requested Cooperating agency status and was denied. The Department further requested coordination under the Fish and Wildlife Coordination Act (FWCA). The Department asserts that the Corps did not adequately coordinate with us under the FWCA to wit: The Department was not provided an opportunity to provide input on the ADEIS, or the 404(b)(1) analysis prior to release to the public.
		Action Needed: Revise and Reissue the DEIS for agency and public review, use our comments here in the revision and invite us to participate in alternatives development as requested prior to release of the new DEIS.
		Law: CEQ's direction is that federal agencies should actively solicit participation of the states in order to comply with NEPA's statutory mandate.
		<u>Comment</u> : "The Department requests that the Corps invite the Department to participate in project team meetings with the Contractor when appropriate, and that Corps staff, and external contractor staff consult us informally at any time via phone and Email. The Department would like to provide regular input as the project develops." The Department was not contacted by the Corps for any project team meetings, informal discussions, or via phone or email in any substantial way that may have allowed us to address the many issues with the DEIS.
		Action Needed: Revise and Reissue the DEIS for agency and public review, use our comments here in the revision and invite us to participate in alternatives development as requested prior to release of the new DEIS.
		<u>Comment</u> : "The Department requests the opportunity to comment on the Administrative DEIS (ADEIS) and that the Department be provided 30 days to compile such comments." The Department was not provided any opportunity to comment on the ADEIS. However, we were provided 90 days to comment on the DEIS.
		Action Needed: Revise and reissue the DEIS for agency and public review, and invite the Department to participate in alternatives development as requested prior to release of the new DEIS.
		<u>Comment</u> : "The Department requests that The Corps invite the Department's participation in Section 7 consultation from the beginning of the process," The Department again requests invitation to participate in Section 7

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	consultation.	
	Action Needed: Invite the Department to participate in Section 7 consultation. The Department requests a meeting with the Corps and the USFWS Ecological Services office.	
15 (ci	<u>Comment</u> : "The Department understands the project footprint for the proponent's preferred alternative is 2,129 acres. The Department will consider this a starting point when considering compensation at 100% level. Compensation for 2,129 acres of habitat lost to the facility by purchasing 2,129 acres of existing habitat and transferring the ownership of that habitat to a conservation owner still results in a 2,129 acre net loss of existing habitat. Therefore, the Department suggests that compensation lands be purchased at a higher than 1:1 acreage and be funded to enhance habitat that will achieve 100% replacement value for the habitat lost. Only through enhancement of the habitat on these and other lands will there be an additive effect." The DEIS offers compensatory mitigation for Waters of the United States (WUS) under Clean Water Act Section 404 requirements only and offers no compensatory mitigation for losses to public wildlife held in trust by the State or to habitat wildlife is dependent upon.	
	Action Needed: The Corps must identify impacts to all wildlife and develop a mitigation plan that takes the Department's plans and policies regarding state responsibility species and state wildlife resources into account. We have offered a starting point for this mitigation and the Corps must respond to that. NEPA requires that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of federal agency. This serves to alert agencies or officials who can implement these extra measures, and will encourage them to do so. The DEIS and the Record of Decision should indicate the likelihood that such measures will be adopted or enforced by the responsible agencies (40 CFR 1502.16(h), 1505.2). The Department requests a meeting with the Corps, EPA, and the BLM to develop a mitigation plan.	
	<u>Comment</u> : "The Department fully expects the DEIS to identify all significant impacts to SGCN and SERI species, recreational use, and economic impacts related to wildlife resources and recreation. The Department expects the proponent to coordinate with the Department to achieve mutually beneficial agreement on how these impacts can be effectively mitigated, and to insist that this mitigation be integral to the DEIS."	
	The Department commends the Corps for using the State's species lists. However, the DEIS does not adequately	

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i t	describe impacts on those species including the indirect and cumulative impacts or the impacts from the connected actions of the Ray Mine. The Corps has not described adequate mitigation for these impacts and the Corps has not coordinated with the Department to develop an adequate mitigation plan for these impacts.
	Action Needed: The Department refers the Corps to our mitigation table and requests a meeting to include the Corps, EPA, and the BLM to discuss development of a mitigation plan which must be integral to the NEPA process.
15 (c	<u>Comment</u> : "The DEIS should clearly identify connected actions and the rationale behind including analysis of those connected actions in the DEIS, or excluding analysis of those actions. The Department suggests that operations at the Ray Mine, and all actions connected to the Ray Mine, should be considered connected actions." Even though we identified this issue in scoping, 40 CFR §1508.25 was not followed and the DEIS does not identify connected actions that clearly meet the CEQ definition.
	Action Needed: Revise and reissue the DEIS for public and agency comment. Identify the Ray Mine as a connected action and particularly water used for the TSF including sourcing and effects on the Gila and San Pedro River aquatic and riparian ecosystems.
	<u>Comment</u> : "The project should be evaluated with the greater ecosystem in mind including connected habitats in the Gila River watershed, particularly the Gila River and connected environment downstream and cumulative impacts upstream. Potential impacts, including cumulative and additive impacts, from pollution, habitat fragmentation, traffic, and disturbance should be evaluated." The DEIS completely failed to identify, analyze, and address cumulative impacts. Even surface and groundwater impacts supposedly analyzed as cumulative rather than connected actions were absent from the document. The Department finds that the DEIS is deficient in analyzing all direct, indirect, and cumulative impacts. As we described earlier, there is no discussion of water use and management from the extensive well fields in the Gila and San Pedro River subflow zones.
	Action Needed: To comply with NEPA the Corps must fully review the impacts from all past, present, and reasonably foreseeable future actions and consider all direct, indirect, and cumulative environmental impacts of the action.
	Comment: "The Department is concerned with take of birds or disturbance of birds nesting roosting and utilizing

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Dated: April 26 2016 Section Page Comment/Change requested the area. The Gila River is important habitat for many avian species including breeding habitat for the federally Endangered southwest willow flycatcher. The Department recommends that the proponent develop an avian conservation plan in consultation with the Arizona Game and Fish Department to be authorized by the Arizona Game and Fish Commission to address the potential for take and disturbance of birds and nests. Arizona Revised Statutes §17-236 is more restrictive than the Migratory Bird Treaty Act in that it prohibits the take of birds (and disturbance of nests and eggs) including migratory and non-migratory birds." Neither the Corps nor the proponent have addressed our request for coordination on development of an avian conservation plan. Action Needed: The Department requests that the Corps coordinate with us to develop an avian conservation plan as mitigation for take of migratory and resident birds and their habitats. 15-16 (con't Comment: "The Department is concerned about the potential for success of reclamation. It is our experience that reclamation has a very limited definition in mining nomenclature. To the extent possible, the Corps should strive for restoration of mine tails to pre-construction conditions after closure of the facility. Compensatory mitigation should be identified for any residual impacts to wildlife resources and habitat. Adequate bonding should be required to ensure that reclamation successfully restores the site." Action Needed: The Corps should require that financial assurances be disclosed in the DEIS to ensure that they satisfactorily protect the State's public trust resources. Moreover, those wildlife resources should be explicitly described and valued in such financial assurance. Long-term, post-closure monitoring and maintenance of the TSF should be thoroughly described and vetted through the NEPA process. This must occur in a re-issued DEIS to allow for adequate public and agency review. Finally, mitigation for residual and permanent losses to public trust resources should be described as required by NEPA and as requested by the Department in accordance with our 100% compensation policy. The Department suggests that at minimum, an alternative including the restoration and protection of the equivalent of 2500 acres of Arizona Upland subdivision Sonoran Desert scrub be described in the DEIS. The Department suggests such means of restoration might include enhancement of 5000 acres of public trust Arizona Upland functioning at a 50% ecological level to a 100% ecological level. This might include funding of buffelgrass control, reseeding of native vegetation, deferred or prescribed grazing, or restoration of degraded drainages through one-rock dams, purchase of conservation easements special land use permits or restricted

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covenants, and other methods. The purchase of a commercial lease on State Land for these type of conservactions should be contemplated as potential mitigation in the DEIS.	vation
CHAPTER 2	
 <u>Issue:</u> Alternatives screening. The screening of alternatives relies solely on a practicability analysis for both ta placement/storage technologies and site selection. This process by nature benefits the economic interests of project proponent, and dismisses a corresponding risk assessment. The site alternatives were evaluated based assumed set of static conditions over a long period of time. Because geophysical conditions are dynamic a inherent predisposition for groundwater and riverine contamination from tailing impoundments, a scientific based risk assessment process in which all potential failure modalities for viable alternatives are quantified s be undertaken. A risk-based approach applied to the uncertainty and change associated with tailings manage can provide sufficient flexibility to allow changing circumstances to be managed. The DEIS does not pr sufficient information to allow a firm basis for weighing the risks and benefits of the proposed action. <u>Action Needed</u>: Determine the probability of occurrence and severity of potential adverse effects to the enviror based on the analysis of potential failure modes and the selection of control options for each alternative. The f cost of a catastrophic failure should be discussed in context with a site's risk characterization and the capital cost of a catastrophic failure should be discussed in context with a site's risk characterization and the capital cost of a catastrophic failure should be discussed. <u>Law:</u> Courts consistently have held that, at a minimum, NEPA imposes a duty on Federal agencies to take a flook'' at environmental consequences. <i>Natural Resources Defense Council v. Morton</i>, 458 F.2d 827, 838 (D.C 1972). If the DEIS provides good faith analysis and sufficient information to allow a firm basis for weighin risks and benefits of a proposed action, the court will find the DEIS to be sufficient. <i>County of Suffolk v. Secro of the Interior</i>, 562 F.2d 1368 (2nd Cir. 1977), <i>cert. denied</i>, 434 U.S. 1064 (1	ailings of the on an ind an fically should ement rovide nment future sost of "hard C. Cir. ig the <i>retary</i>
Issue: The DEIS quickly dismisses in two short sentences (Appendix B - 404(b)(1) Alternatives Analysis) is placement and storage of tailings stating that Ray Mine "is an open pit mine and that this technique involdeepening and widening of current pits and would preclude on-going mining at Ray Mine." This statement, wi any substantial supporting argument, is confusing, if not erroneous. Ray Mine is over six miles long and 2 mide and hundreds of feet deep. The DEIS does not describe why an exhausted portion of the pit could neveloped to contribute to the longer term tailings impoundment strategy, reducing the area necessary for sh	in-pit olves ithout miles tot be

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		term tailings disposal. In-pit tailings storage can provide many advantages when compared to typical above-ground tailings storage facilities. As regulations become more restrictive and existing mines expand into new pits, the motivation and opportunities for in-pit tailings disposal is increasing. Another advantage to in-pit storage is that the tailings do not require containment dams, thus the risks associated with embankment instability are eliminated as well as the need to address surface water diversion and retention at a new site. An underdrainage system can be appropriately designed to improve water recovery, enhance tailings consolidation (increasing tailings density) and control seepage.	15-18 (con4)
		Action Needed: The alternatives analysis must present a systematic evaluation of the in-pit disposal option considering longer term "phased" options for tailings disposal. In particular, a near term/long term in-pit disposal strategy could change the volume requirement considerably for an off-site tailings facility. This reduced footprint requirement would, in turn, impact the offsite alternatives analysis. The West Dam alternative footprint could possibly be reduced such that the highway relocation would not be necessary. Or the Hackberry Fault could be completely avoided, reducing risk liability, or the relocation of the Florence-Kelvin Highway eliminated, in the Ripsey Wash alternative, or the Ripsey alternative could be moved completely out of the 500 year flood plain.	
2.0	2.1	Issue: Refers to Appendix 1, Applicant Project Mitigation. No alternative presented in the DEIS offers meaningful mitigation for impacts to wildlife resources.	
2 2 10 1	and	Action Needed: Work with the Department to develop meaningful mitigation plan for impacts wildlife resources.	}
2.3.10.1	2-14	Law: 40 CFR 1502.14(f) requires a discussion of appropriate mitigation measures. All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the federal agency. This serves to alert agencies or officials who can implement these extra measures, and will encourage them to do so. The EIS and the Record of Decision should indicate the likelihood that such measures will be adopted or enforced by the responsible agencies. 40 CFR §1502.16(h), 1505.2.	
		CEQ Memorandum to the Agencies 46 Fed. Reg. 18026 (March 23, 1981) as amended, states: "The mitigation measures discussed in an EIS must cover the range of impacts of the proposal. The measures must include such things as design alternatives that would decrease pollution emissions, construction impacts, esthetic intrusion, as well as relocation assistance, possible land use controls that could be enacted, and other possible efforts. Mitigation	

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		measures must be considered even for impacts that by themselves would not be considered 'significant.' Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not 'significant') must be considered, and mitigation measures must be developed where it is feasible to do so. Sections 1502.14(f), 1502.16(h), 1508.14."	(con't
2.3.1	2-2	Issue: The preferred alternative is described as a closed circuit, zero surface water discharge system. However, the DEIS makes no reference to a water balance study. One of the main causes of reported tailings incidents are a lack of control of the water balance. The water balance of a tailings storage facility is the key tool used to quantify inputs, outputs and stored water volumes. A clear understanding of the water balance enables the facility to operate to design objectives and lower the risk of water-related incidents. Additionally, a water balance study can be used to evaluate various dewatering technologies in determining cost versus risk mitigation. The DEIS does not evaluate dewatering technologies. Water management can be a significant cost during operations and a long term legacy during closure. Predictive water balance models limit risk and retain operational flexibility, allowing for long-term planning and operational adjustments for optimal results. Effective mine water balances are the result of understanding process and tailings circuits integrated with climatic data, hydrologic data and recycling opportunities.	15-20
2.3.2.5	2-5	Issue: The upstream dam, side weir, spillway and channel designs for the Ripsey Wash alternative are based on PMP precipitation data derived from Hydrometeorological Report (HMR) 49 published in 1977. Recent storm analyses and site-specific Probable Maximum Precipitation (PMP) studies completed in Arizona revealed the inadequacies of HMR 49 in properly representing storm characteristics and PMP throughout the region. HMR 49 used outdated methods and techniques that have subsequently been improved through new understanding of meteorology and updated datasets. A major issue with HMR 49 is the lack of storm data used to develop the PMP values. Only a handful of storms were investigated during the development of HMR 49, none of which were analyzed using individual storm depth-area-duration values. This combined with the fact that the document covers such a widely varying region both climatologically and topographically, explains the necessity for replacing HMR 49. In coordination with Arizona Department of Water Resources, Applied Weather Associates (AWA) completed a statewide Probable Maximum Precipitation (PMP) study for Arizona in 2013. This study produced PMP values for any point within the state of Arizona, using a grid spacing of approximately 2.45 square miles. Variations in topography, climate, and storm types across the state were explicitly taken into account. A large set of storm data	15-21

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		were analyzed for use in developing the PMP values. These values replace those presented in Hydrometeorologica Report (HMR) 49. Results of this analysis reflect the most current practices used for defining PMP, including comprehensive storm analyses procedures, extensive use of geographical information systems (GIS), updated maximum dew point and sea surface temperature climatology for storm maximization and updated understanding of the weather and climate throughout the state.
		determined by the PMP Evaluation Tool developed by Applied Weather Associates and not HMR 49. An inundation study/map should be developed for a PMP/Upstream Dam breach event.
2.3.2.5	2-5	Issue: The Rational Method may not be suitable for analyzing onsite storm water events on a 2000+ acre tailings facility, specifically as the tailings impoundment progresses and soil saturation and other physical characteristics evolve.
		Action Needed: Given the 2.45 mile grid calculation in the new study, the 50% PMP should be used (as is required by the Arizona Department of Water Resources Dam Division for high and significant hazard dams) vs. the 100 year/24hour storm event in evaluating onsite storm water flows at various stages of development of the tailings impoundment; and in developing design flow and volume criteria for contact storm water facilities.
2.3.2.8	2-7	Issue: Seepage control failure can be attributed to design failure, inadequate or inaccurate geologic, hydrologic, hydrologic, hydrogeological data, and physical and chemical characterizations of tailings inflow. <u>Action Needed</u> : The future cost of seepage failure should be examined in context with a site's risk characterization and the capital cost of selecting best available technology control measures.
.3.3	2-9	Issue: Tailings Embankment Construction. There are a number of common failures to which tailings embankment may be vulnerable. These include slope failure, overtopping, foundation failure, erosion, piping and liquefaction (seismic caused). Historically, failures have occurred primarily in embankments constructed by the upstream method by which the majority of the preferred alternative embankment (top 335') is proposed to be constructed. This is not unexpected as the upstream method of embankment construction is less costly than downstream or centerline construction. The disadvantages associated with the higher risk characterization of the upstream method include:
		• Subsequent embandment raises require the tailings to be sufficiently decisested to be trafficable and emitable

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		for excavation
		Dust emissions during and post construction are greater with upstream embankments
		 Excavated tailings have greater exposure to oxidation Seepage control measures cannot be incorporated within successive wall raises
		• Use of tailings in wall raises may negate the effectiveness of the base centerline drainage system resulting in a high phreatic surface on further deposition of tailings, which will reduce geotechnical stability
		• Excavation of the tailings and their use for wall building exposes potentially acid forming tailings to oxidation
		• Limited cover over the tailings wall raises may be prone to erosion loss in the longer-term
		Limited cover over the tailings raises places limitations on future reshaping options
		 Additional borrow material is likely to be required to achieve the optimal cover depth, final profile and surface treatment
		Reshaping for rehabilitation purposes will likely increase the footprint
		Upstream embankments are more susceptible to seismic failure
		The DEIS relies on the presumption that because this methodology is currently being used at the Elder Gulch facility its application at the new facility is effectively supported. This is faulty reasoning, especially given that between 1988 and 1997 ASARCO was responsible for 47 separate releases of uncontained hazardous substances (copper sulfate, copper tailings and leachate) into Mineral Creek and the Gila River from Ray Mine (ASARCO Final Restoration Plan and Environmental Assessment AGFD et al. 2012 www.fws.gov). Of these releases, at least two incidents included more than 13 separate tailings dike breaches (U.S. Copper Porphyry Mines: Water Quality Report • EARTHWORKS • www. earthworksaction.org 2012)

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1.	Action Needed: The DEIS should apply a risk-based approach in evaluating and selecting the construction methodology for the tailings embankment. Risk analysis allows quantification of the options, and of the likelihood, consequences, and costs of failure. More aggressive risk mitigation should be taken where there is significant uncertainty in relation to the consequence or likelihood of failure scenarios. The DEIS should analyze within the range of alternatives the different tailing storage methods including upstream, centerline and downstream, for each TSF site and analyze the comparative risks/benefits associated with each method within the environmental consequences.		
	Issue: Centerline and upstream methods of tailing storage will be used for the proposed action-Ripsey TSF. Downstream construction appears to be a more stable alternative. The Gila River and associated riparian habitat is a Resource Category I habitat of the highest value to Arizona wildlife species, and unique and/or irreplaceable on a statewide or ecoregion basis. Action Needed: Given the past history of uncontained incidents from the Ray Mine and the close proximity of the Gila River, the Department recommends that the Corps identify the least risky methodology for tailings storage to prevent potential losses of existing habitat values consistent with Arizona Game and Fish Commission Policy A2.16 and Department Policy I2.3. It is our understanding the most stable methodology with the least risk to the environment is downstream construction.	2-10	2.3.3.2
/	Issue: After Ripsey Wash TSF is permanently closed the DEIS states the detention dam will be raised ~10ft. but doesn't describe why this height was chosen or what size storm event this is designed to withstand. Action Needed: Provide information on the detention dam heights and the storm-events they can handle post-closure.	2-5 And 2-14	2.3.2.5 And 2.3.10.
1	Issue: The DEIS states ASARCO would continue to divert flows after closure but does not provide a timeframe for this required ongoing maintenance. Is this maintenance required in perpetuity? <u>Action Needed</u> : Provide information in the DEIS on post-closure maintenance activities and commitments. Describe how maintenance may be avoided using gravity-fed draindown and why a TSF alternative using passive draindown is not considered.	2-5 And 2-14	3.2.5 And 3.10.
1	Issue: Groundwater pumping from the Havden well field undoubtedly impacts the aquatic and riparian ecosystems	2-13	.3.7

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		of the Gila and San Pedro Rivers. The DEIS describes the fact that water is currently withdrawn from the Hayden well field using ASARCO water rights under the Globe Equity Decree, <i>United States v. Gila Valley Irrigation District</i> , Globe Equity No. 59 (June 29, 1935) for operations. However, the DEIS fails to disclose the effects of groundwater use on the environment. Water taken from the Hayden well field may impact surface water quantities in the Gila and San Pedro Rivers. The Wildlife Analysis Area must include all areas reasonably expected to be affected by actions directly, indirectly, or cumulatively affected by the project. Water use is central to the operation of the TSF as it will transport the 750 million tons of tailings to the site. Sourcing of that water and the environmental consequences of that sourcing cannot be excluded from the analysis of the environmental consequences of the action.	15-28 (con't.
		(losing reach) in other areas. Seasonal variation in this interrelationship is common." <u>Action Needed:</u> The DEIS should describe impacts to the environment resulting from water taken from the Hayden well field (to include wells used by the Ray Mine within the San Pedro River bottom). Include the Gila and San Pedro Rivers and associated riparian areas in the analysis area from the most-upstream well within the Gila and San Pedro floodplain utilized by the Ray Mine, downstream to the Ashurst Hayden diversion dam. The well field should be described to include amount of water use, locations of wells providing that water, depth of wells, etc. NEPA requires full disclosure in the DEIS of environmental consequences resulting from the utilization of that water right.	
2.3.7	2-13	 <u>Issue:</u> Groundwater use from the Hayden well field may impact local aquifers. The DEIS does not describe the impact of groundwater pumping on local aquifers. Direct, indirect, and cumulative effects of groundwater use are not described. <u>Action Needed:</u> Include information on water resources to be used for the construction/operation/closure of the proposed TSF (all alternatives) in the Affected Environment and analyze the consequences to local and regional water resources in the Environmental Consequences (direct, indirect, and cumulative); taking into account climate change and future projections on water use in the watershed. This analysis should include potential links between 	15-29

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		groundwater use from the Hayden well field and surface water quantity in the Gila River, as well as impacts to local aquifers.	Con
2.3.8	2-13	Issue: Stormwater Management. The Ripsey TSF would be placed within the 500 year flood plain and although the document anticipates up-drainage runoff entering into the tailings impoundment area (2.3.2.5), the Department finds no reference to down-drainage flooding from the Gila River. FEMA flood maps (see below and at https://msc.fema.gov/portal/) indicate that the preferred alternative is well within the 500 year floodplain. The Department notes that the Ray Mine has suffered breaches in tailings dikes that impacted the Gila River severely on several occasions including 6,000 -8,000 tons as recently as 2011 and 292,000 tons in 1993. An environmentally preferable alternative would place tailings in the most stable location possible and out of the 500 year floodplain to the southeast of the proposed alternative was excluded due to landownership rather than topographic concerns The Corps has "entirely failed to consider an important aspect of the problem" of environmental impacts involving potential inundation of the project footprint during a 500-year flood event during the operational life of the TSF, and long-term following closure. <i>Lands Council v. McNair</i> , 537 F. 3d 981, 987 (9th Cir. 2008). Action Needed: Analyze an alternative southeasterly of the proposed alternative which takes the facility out of Ripsey Wash and out of the 500 year flood plain altogether. Provide any data to support the statement that such an alternative is less desirable from an engineering, environmental, and cost perspective. Analyze the effect of down-drainage flooding from the Gila River and evaluate construction methods in light of such an event. Describe effects of a catastrophic failure of the tailings embendement and autorities in the such an alternative is less desirable from an engineering, environmental, and cost perspective. Analyze the effect of down-drainage flooding from the Gila River and evaluate construction methods in light of such an event. Describe effects of a catastrophic failure of the tailings embendwent and	15-3

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COMMENT DOCUMENT #15 (PART 2) ARIZONA GAME AND FISH DEPARTMENT (TOM FINLEY, ASSISTANT DIRECTOR OF FIELD OPERATIONS)

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Section	Page	Comment/Change requested	
2.3.8 And 2.3.12.3.2 And 2.4.12.3	2-13 And 2-17 And 2-27	<u>Issues</u> : There is inadequate information on the physical design of the storm water diversion channels, detention ponds, small interceptor detention dams, outflow energy dissipaters and related pipelines; as well as the Main and East Reclaim ponds. These channels/ponds features could become potential issues for entrapment and/or mortality of wildlife depending on designs. The descriptions in the DEIS are very general; and in most cases they refer the reader to plans yet to be made, such as the SWPPP and SPCC plans. This does not satisfy the purpose of NEPA.	15-3
		Action Needed: Provide detail on the design specifications and what will be done to prevent wildlife entrapment in all of these mine features. For example, both alternatives include permanently constructed channels intended to manage stormwater flows around tailings in perpetuity. How will these be managed and designed in perpetuity to prevent entrapment and/or mortality of wildlife? Provide schematics of wildlife design mitigations. Law: 40 CFR §1502.21 states that no material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time to comment	
2.3.10.6	2-15	Issue #1: The DEIS does not address all ESA species or Critical Habitat in the proposed TSF footprints and immediate vicinities. For example there is no mention of Sonoran Desert Tortoise, a "non-riparian" ESA species (CCA) or Critical Habitat for Yellow-billed Cuckoo and Willow Flycatcher. Further, management and mitigation measures are directed solely to ESA species with no recognition of other Federal/State Sensitive species including Species of Greatest Conservation Need (SGCN), as well as important game species (SERI).	
		Action Needed: Monitoring in and of itself is not a mitigation that could be used to lessen impacts to ESA species. What steps would occur should monitoring determine activities are disturbing breeding/nesting activity or other non-riparian ESA species? Secondly, the DEIS needs to state how it will avoid, minimize or mitigate impacts to Critical Habitat for Yellow-billed Cuckoo and Willow Flycatcher, as well as Sonoran Desert Tortoise (a CCA species under ESA).	15-3
		Issue #2: General wildlife mitigation measures and/or best management practices are absent from the DEIS and Appendix I; and generally non-existent for non-T&E wildlife species. Mitigation measures and facility design features should be developed to avoid, minimize, or mitigate impacts to wildlife that will continue to use habitats in the vicinity of the project oran including terrestrial and equation reasons.	
		the vielnity of the project area, including tenesular and aquate species.	

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	Federal/State Sensitive species including Species of Greatest Conservation Need (SGCN), as well as important game species (SERI); related to construction, operation, closure and post-closure activities and timeframes. For example, both alternatives include permanent constructed channels intended to manage stormwater flows around tailings. How will these be managed and designed in perpetuity to prevent entrapment and/or mortality of wildlife? <u>Issue</u> #3: There is no mitigation for major impacts to wildlife habitat and direct loss of between 2,290 and 2,574 acres of native Sonoran desert habitat; as well as indirect and cumulative impacts to habitats that will be adjacent to the project footprints. The Sonoran desert has been identified as one of the most vulnerable ecoregions in the world and the southwestern U.S., and is recognized as one of 233 ecoregions whose biodiversity and representation values (biological distinctiveness, unusual ecological, evolutionary phenomena and global rarity) are outstanding on a global scale and a priority for conserving global biodiversity (Olson & Dinerstein, 1998 ⁴ and 2002 ⁵). On a local scale the Sonoran Desert only exists in Arizona and Mexico, and within Arizona it is highly threatened by development. Over 500 species of birds migrate, breed or reside in the Sonoran Desert (Hoffmeister, 1986 ⁴); at least 96 species of netiles are endemic to the Sonoran Desert and found nowhere else in the world (Philips & Wentworth-Comus, 2000 ⁵). Sonoran Desert habitat in Arizona is unique and irreplaceable on a regional, national, and global scale. Action Needed: Mitigate loss of Sonoran Desert habitat by replacement in-kind within the Sonoran Desert; restore I:1, enhance 2:1, or preserve 3:1 habitat in perpetuity where conservation priorities have been identified by federal, state or conservation organizations and natural desert is threatened by development or other threats. Examples of preservation could be Sonoran desert in the vicinity of the Superstition Mountains or the White

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Dated: April 26 2016 Section Comment/Change requested Page adjacent non-project lands and management actions that will be taken to eliminate and control their spread. Olson, D.M. and E. Dinerstein. 1998. The global 200: A representation approach to conserving the Earth's most biologically valuable ecoregions. Conservation Biology, Vol. 12:3, pp. 502-515. (con4 Olson, D. M., Dinerstein, E. 2002. The Global 200: Priority ecoregions for global conservation. Annals of the Missouri Botanical Garden 89(2):199-224 ³Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D.F. Gori, J. Humke, R.P. Aguilar, I.E. Parra, and S. Schwartz. 2000. An Ecological analysis of conservation priorities in the Sonoran Desert ecoregion. Prepared by the Nature Conservancy Arizona Chapter, Sonoran Institute, and Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora with support from Department of defense Legacy Program, Agency and Institutional partners. 146 pp. Document available at http://www.azconservation.org. ⁴Hoffmeister, D. 1986. Mammals of Arizona. University of Arizona Press. 602 pp. ⁵Phillips, S.J. and P. Wentworth Comus. 2000. A Natural History of the Sonoran Desert. Arizona-Sonora Desert Museum Press, Tucson, AZ. 628 pp. Law: 40 CFR §1502.14(f) Include appropriate mitigation measures not already included in the proposed action or alternatives. 2.3.11 Issue: The environmental monitoring measures default to those required by permits and approvals. Based on the past 2-15 history of the Ray Mine operations and impacts to wildlife and wildlife habitat, environmental monitoring should include more than those required for ESA species. Moreover, a non-NEPA document cannot satisfy the Corps' obligations under NEPA. Action Needed: The Corps should require the project proponent to develop plans to monitor the status of fish 15-33 populations, macroinvertebrates and instream habitat quality upstream and downstream of the project area within Gila River; wildlife mortality survey of seepage ponds and incidents reports. Additionally, there should be a monitoring plan to evaluate the effect of groundwater pumping in the subflow zone of the Gila and San Pedro Rivers where the Ray Mine's well field sources water for use in the TSF, with particular attention paid to effects on critical habitat for the SWIFL and cuckoo. Finally, these plans should be part of the NEPA analysis and available through the public process. Law: 40 CF §1502.21 "No material may be incorporated by reference unless it is reasonably available for inspection

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Section	Page	Comment/Change requested	60
		by potentially interested persons within the time to comment."	
2.3.11	2- 15/16	Issue: The DEIS does not disclose information on plans related to monitoring water quality impacts to surface water in the Gila River during construction, operation, and closure. <u>Action Needed:</u> A plan to monitor surface water quality and to detect environmental contamination within the Gila River should be a required mitigation and monitoring requirement for the life of the project and post-closure.	15
2.3.11	2- 15/16	<u>Issue:</u> There is no pre-construction monitoring plan to establish baseline monitoring for water quality. Water quality monitoring, for both ground and surface water, should include a pre-construction period for "baseline" monitoring to establish the baseline conditions prior to mine expansion construction. Or if there is existing data or ongoing water quality monitoring to use for establishing baseline conditions, it should be referenced in the DEIS. <u>Action Needed:</u> Develop a plan in section 2.3.11 and all related sections (including Appendix I) to establish water quality monitoring for ground water and surface water that will occur pre-construction for a period sufficient to establish baseline conditions; and then during construction, operations and for closure period (explicitly stated length of time post-closure in the DEIS).	15-
2.3.11	2- 15/16	<u>Issue:</u> There is no comprehensive list of environmental monitoring measures and plans (frequency, timing, duration); the DEIS should provide full disclosure on the suite of environmental monitoring measures ASARCO will be doing pursuant to its APP permit for groundwater; as well as monitoring for other regulations, resources, and general project mitigation. The descriptions in the DEIS are very general; and in most cases they refer the reader to plans yet to be made such as the SWPPP and SPCC plans, or to various requirements such as Part 8.G.8.1 of the Mining MSGP; or to Appendix I. Appendix I references various permit standards and regulatory requirements such as Pinal County Air Quality Control District's code of regulations, or AZPDES Mining MSGP and SWPPP for storm water, without providing details on the relevant environmental parameters and measures. While regulatory references are important, they provide insufficient information in the DEIS and create a complicated path for the reader to easily understand what environmental monitoring will occur before, during and after the project is complete. As far as monitoring plans, the reader should have a clear understanding of the level of commitment for monitoring. For example 4.3 in Appendix I states groundwater quality will be monitored at 4 downstream locations from the TSF for "some period of time after closure." That is an example of an insufficient monitoring plan component.	/5-
		Action Needed: The DEIS should disclose a list of the various parameters that will be monitored for environmental	

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		protections and a link to the regulatory framework and the standards that compliance will be based on, as well as the monitoring plan (frequency, timing, and duration). A simple table format with the parameters for the major resources such as ground water, surface water, air, or wildlife could be used to provide a simple comprehensive description. <u>Law</u> : 40 CFR §1502.21 "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time to comment."
2.3.12 And 2.3.12.3.6	2-16	Issue: The DEIS states closure/reclamation will comply with regulations, including APP; and it will take advantage of future techniques when the time comes. The DEIS does not establish a minimum requirement but describes the regulatory framework in Appendix C. On page 2-18-19 it is established that the APP approval process will include financial assurances for post-closure reclamation. It is impossible for the reader to determine if the post-closure reclamation process will be adequate when an as yet to be written document is referenced. The APP permit and associated documents is referenced on multiple occasions throughout the text. The Department found that the AMEC Technical Memorandum dated April 24, 2014, which is the basis for establishing and applying BADCT criteria to the tailings dam construction method and surface water and seepage control designs for Ripsey, was not made available with the supporting NEPA documents. The Department had to <i>physically appear</i> at ADEQ to gain access to this document; our appointment was provided three weeks out from our request. 40 CFR §1502.21 states that "no material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment." Clearly the information necessary to provide us a firm basis for weighing the risks and benefits of the proposed action was not reasonably available. Moreover, the APP and documents provided to ADEQ may satisfy state requirements but do not satisfy the Corps obligation to the public under NEPA. The consequences of the action must be disclosed in the DEIS and supporting documents which must be made reasonably available.
		Action Needed: The Corps should reissue the DEIS with the appropriate documents made readily available to the public and agencies. The Corps should not rely on satisfaction of state APP requirements to satisfy the risk analysis documentation required by NEPA. Law: 40 CFR §1502.21 "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time to comment." <i>Kern v. BLM</i> , 284 F.3d 1062 (9th Cir. 2002), the Court held that "tiering" to a document that has not itself been subject to NEPA review is not new itself.

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		as contrary to the purpose of NEPA. In Northcoast Environmental Center v. Glickman, the Court found that, "[a]lthough CEQ procedures allow agencies to incorporate by reference certain materials to cut down on the bulk of an EIS, they cannot 'tier' their site-specific EISs to the broader POC program where the program itself has not been subject to NEPA procedures."
2.3.12.3.5 And 2.4.12.3	2-18 And 2-28	Issue: No revegetation is planned for the TSF post-closure; only natural revegetation. There is no mention of how ASARCO would handle noxious/invasive weeds if they establish post-closure. The disturbed nature of the site may provide opportunity for invasive species. The DEIS states that post-closure reclamation is not an option given the limitations of local soils (low productivity soils; pg. Sec. 6.2.2 pg. ES-14). However, there may be alternatives to reclamation not considered, such as those used on tailings in the Miami/Globe area. Action Needed: The DEIS needs to identify a post-closure noxious/invasive species management plan. The Department recommends a revegetation strategy that establishes desirable native species as opposed to a non-management approach. At minimum, an active management revegetation alternative must be described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described in the DEIS are not provide and the described
		CHAPTER 3
[No Section]		Thirty-eight (38) abandoned mine features were located and mapped within or adjacent to the Ripsey Wash TSF footprint, as documented in the <i>Ripsey Wash Analysis Area-Abandoned Mine Feature Survey</i> (Westland Resources Inc. February 6, 2014), including eleven shafts, fourteen adits, and thirteen test excavations. The investigation of one adit (X-3) was over 90 feet long before fog and ponded water was encountered, making the adit inaccessible beyond that point. Adit IO-100 and decline adit F-2 are over 100 feet long. Shaft F-7 is 60-100 feet deep, and descends at a 75 degree angle. Shaft F-3 intersects with shaft F-7 thirty feet below ground surface and continues another 20 feet with a potentially inaccessible side drift at the bottom. This survey suggests a potential network of historical underground mine workings whose features and relationship with the regional groundwater table have not been mapped or analyzed.
		The Hydrogeological Characterization Report, Proposed Ripsey Wash TSF (AMEC July 10, 2014) does not describe how these shafts and adits will be sealed to prevent tailings seepage infiltration through bedrock into the aquifer and into the Gila River. Section 6.0 (BADCT Discussions, Facilities with Potential to Discharge), describes the seepage collection systems for Ripsey Wash and the East Drainage. Adits and shafts are mentioned in a single paragraph in Section 6.3.2.3 at 43. No acknowledgment of shafts/adits as potential direct conduits to groundwater are found. No geotechnical investigation of the deeper shafts and adits can be located in the DEIS or supporting.

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subsidence of the subsurface.

EPA Technical Report at 12.

Section

reports. The weight of the tailings impoundment over certain shallower adits or shafts can cause collapse and The Groundwater Modeling Plan, Proposed Ripsey Wash TSF at 2 (AMEC, December 19, 2013) notes that tailings fines (slimes) will form a lower permeability filter-cake in the central and northern portions of the TSF. It is not known whether the project proponent intends to use slimes to plug these shafts and adits. This slimes layer typically has hydraulic conductivity values in the range of 10-5 to 10-7 centimeters per second(cm/s) and will reduce the rate at which water can move through the tailings pile and into the subsurface profile. Slime seals are permeable and only mitigate potential leakage of tailings seepage through the TSF impoundment. Report at 11. The Technical Report, Design and Evaluation of Tailings Dams (U.S. EPA, August 1994) (attached) notes at 47 that tailings slimes are easy and inexpensive to install as low permeability layers to slow but not stop seepage. Slimes can also crack 15-39 and provide a pathway for groundwater to enter the tailings or for contaminated seepage to enter ground water. (con't The DEIS at Section 6.3.2.4 at 44 notes that bedrock is present at shallow depth over the majority of the Ripsey Wash impoundment footprint. The text states that the relatively low permeability of this bedrock "functions as a natural geologic liner," with the primary seepage pathways the alluvial deposits within Ripsey Wash and the East Drainage. However, several of these vertical shafts and adits are bored through bedrock and represent direct conduits for groundwater contamination which can migrate to the Gila River.

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The transient Site Model found in the Groundwater Modeling Report does not simulate these shafts and adits in evaluating groundwater flow paths. This is a major omission in the analysis of the effects of the Ripsey Wash tailings on regional aquifer and surface water quality. The DEIS instead asserts that seepage from the Ripsey TSF is expected to be contained within the sandy substrate above impermeable bedrock.

ACTION NEEDED: Conduct historical research of historical mine maps and geophysical investigations to further delineate the underground mine workings below the Ripsey TSF footprint. Determine whether these shafts and adits are potential pathways to the aquifer. Describe how these adits/shafts will be sealed to prevent infiltration of seepage from the TSF.

Law: The Corps shall determine the potential short-term and long-term effects of a proposed discharge of dredged

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5	Dated: April 26 2016	Tallings Storage
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1	or fill material on the physical, chemical, and biological components of the aquatic environment. 40 CFR 230.11. Failure to consider an important aspect of an issue does not constitute a "hard look." <i>Anderson v. Evans</i> , 371 F. 30 475 (9 th Cir. 2004).	
	 -6 <u>Issue</u>: Effects of the No Action Alternative. This section does not address what would happen to the Ray Mine. The Ray Mine requires a TSF. This DEIS addresses that purpose and need to store up to 750 million tons. Logic dictates that without a new TSF, the Ray Mine would not be able to continue operation beyond the life of the current storage facilities. <u>Action Needed</u>: The DEIS must analyze the effect of no further mining of the Ray Mine beyond current tailings storage capacity. 	.2.1 3-6
	The DEIS does not contain any description of potential environmental impacts of TSF site preparation, including earth-moving construction activities such as the construction of a starter dam involving 5 million cubic yards of alluvium and rock, a second starter dam involving 400,000 cubic yards of dirt and rock, the removal of numerous mature saguaros, and construction of drain-down and tailings ponds. During construction, sediments could be mobilized during storm events toward the Gila River, potentially affecting water quality and wildlife. The numeric surface water quality standard for suspended sediments in the Gila River for protected Aquatic and Wildlife use is 80 mg/l as a median value as determined from a minimum of four samples collected 7 days apart. A.A.C. R18-11- 109.	tion 5.2
	Action Needed: Discuss in the text and describe potential actions to mitigate sediment discharges to the Gila River during site construction. Develop a mitigation plan for losses of plants protected under Arizona's Protected Native Plant Law. Saguaro cacti that cannot be avoided should be salvaged and transplanted on site along with an additional cactus of equal or greater height. Any cacti that cannot be transplanted in the project area, or that must be destroyed, should be replaced at a 3:1 ratio for those up to 12 feet in height, and a 5:1 ratio for those 12 feet or with arms. All saguaros planted or transplanted should be monitored at least once a year for a minimum of 5 years and replaced as needed to achieve no net loss of preconstruction saguaro numbers within each size class.	
1],	Issue: This section does not address the likelihood that leached chemicals from the TSF will impact water quality in the Gila River.	1.2

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Section	Page	Comment/Change requested	15-4
		Action Needed: Discuss potential impacts of, and mitigation for, leached chemicals from the TSF on water quality in the Gila River.	(con
Section 3.3.1.4.2.2	Page 2 3-25	The Corps accepted the use of Elder Gulch tailing slurry decant water collected on top of the Elder Gulch TSF impoundment mixed with Elder Gulch tailings for the 52-week test as predictive of the geochemistry of seepage from the Ripsey Wash TSF, in lieu of directly analyzing water quality samples of Elder Gulch tailings seepage within the Elder Gulch TSF impoundment or from the Elder Gulch seepage collection pond. A photograph of the Elder Gulch seepage pond is attached.	
		The Department learned only by reviewing EPA Comments to the October 15, 2014 Internal Working DEIS, and the Corps' Responses, that the Corps does not consider Elder Gulch seepage a comparable analog site to the Ripsey or Hackberry TSFs, because acid-generating Pinal schist and Dripping Springs quartzite was used to construct the Elder Gulch starter dam, resulting in "contaminated seepage" at the Elder Gulch TSF. This seepage is currently being collected and recirculated at the mine.	15-4
		This conclusion is not documented in the DEIS. The DEIS should provide a science-based reason for the decision to not consider Elder Gulch seepage as representative of Ripsey TSF seepage.	
		The Seepage Investigation Report, AASARCO-Elder Gulch Tailings Facility (EEC, February 11, 2013), conducted when unpermitted seepage collection ponds were found in 2012 at the base of Elder Gulch, states that Elder Gulch seepage had magnesium, sulfate, cadmium, copper, selenium and zinc in excess of the concentrations of Elder Gulch tailings (decant) water. Report at 10.	
Section 3.3.1.4.7 Section 3.15.2.2.1 3	Page 3-40 Page 3-164	The DEIS at Table 3-18 reported the results of the dissolved metals humidity cell test results for tailings and alluvium materials. The text at 3-40 notes that the use of Elder Gulch decant water in the humidity cell testing did not appear to have a significant effect on the test results "with the possible exception of higher sulfate, fluoride, nitrate as N, barium, copper, manganese, nickel, selenium, and zinc concentrations associated with the decant water solution".	15-44
		Comment: The Department's review of the Humidity Cell Test Results show selenium below the Aquifer Water Quality Standard of 0.05 mg/l, but samples D65/P35-2 (mod) and Qal-1 Mod) exceed the Surface Water Quality	

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Standards for selenium at 0.002 mg/l for aquatic and wildlife protected use in warm water (A&Ww). Seleniu highly toxic to aquatic-dependent wildlife. ADEQ has designated the segment of the Gila River adjacent to Ripsey Wash TSF as a beneficial use for wildlife under the A&Ww numeric standards. This segment of the River is designated critical habitat for the SWWF.	m is o the Gila (con't)
At a meeting held March 6, 2014 with the Corps and its consultants, the Department requested labora geochemistry tests calibrated to method detection levels set to Arizona Surface Water Quality Standards. This not done. All HCT sample results were compared only to AWQS.	tory was
<u>ACTION NEEDED</u> : Discuss the significance of selenium exceedances in 52-week HC test samples in terms potential impacts to Gila River surface water quality standard of 0.002 mg/l for A&Ww protected use.	s of
Issue: Last paragraph, first sentence, states "Upon permanent TSF closure, water remaining within the tailing impoundment would evaporate, allowing the surface layers of the tailings to dry and be graded for post-pro- drainage." This indicates there will be drainage after the TSF is permanently closed, but does not address the lack active pumping of water out of the system back into Ray Mine. If water will not be pumped back, it is reasonable expect that it will leach from the facility given that gravity will would be pumped back.	ings ject k of e to /5-45

		River is designated critical habitat for the SWWF.	(con't
		At a meeting held March 6, 2014 with the Corps and its consultants, the Department requested laboratory geochemistry tests calibrated to method detection levels set to Arizona Surface Water Quality Standards. This was not done. All HCT sample results were compared only to AWQS. <u>ACTION NEEDED</u> : Discuss the significance of selenium exceedances in 52-week HC test samples in terms of potential impacts to Gila River surface water quality standard of 0.002 mg/l for A&Ww protected use.	
3.4.2.2	3-52	Issue: Last paragraph, first sentence, states "Upon permanent TSF closure, water remaining within the tailings impoundment would evaporate, allowing the surface layers of the tailings to dry and be graded for post-project drainage." This indicates there will be drainage after the TSF is permanently closed, but does not address the lack of active pumping of water out of the system back into Ray Mine. If water will not be pumped back, it is reasonable to expect that it will leach from the facility given that gravity will pull the water down gradient toward the Gila River. Moreover, rainwater percolating through the tailings would transport leachates into the Gila River.	15-45
Section 3.4.2	Page 3-52	Issue: The text statement that "[u]pon permanent TF closure, water remaining within the [Ripsey Wash] tailings impoundment would evaporate" is not supported by competent data or analysis. This statement further appears to contradict the text at Section 6.6.2 at ES-18 that states that once tailings encompass the full footprint of the TSF, "some water would be entrapped within the tailings." Action Needed: Revise with supporting data/analysis or delete	15-46
Section 3.6.2.2.2 Section	Page 3-73 Page	<u>Issues</u> : The text states that the potential for degradation of groundwater quality from the Ripsey Wash tailings leachate or tailings dam construction materials would be "low." The DEIS categorically states that TSF operations "would not have adverse water quality effects on the Gila River."	15-47
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1 Page Comme	/Change requested
.13 3-164 The dat represent Pages because 2.2 3-25	for this statement is based on testing of current Elder Gulch tailings, which are believed to provide a tive characterization of the geochemistry of the tailings that will be stored within the Ripsey Wash TSF ney originate from the same ore body.
40 compreh	ated sulfates and total dissolved solids mobilized during the 52-week HCT tests need a more nsive discussion in the DEIS.
deionize interactio TSFs.	water and decant water collected from the pond on top of the Elder Gulch TSF in order to simulate us of tailings to predict water quality chemistry of tailings seepages from either the Ripsey or Hackberry
The cher 4, App. I 3,200 mg	stry of the decant water was first analyzed and the results presented in Table 3-13 of the DEIS and in Vol. of the <i>Geochemical Characterization Report</i> (AMEC, July 10, 2014). Concentrations of TDS ranged from to 3,800 mg/l and sulfate concentrations ranges from 2,100 mg/l to 2,400 mg/l.
The Hum attributed Qal-1(m	<i>dity Cell Test Results</i> (52 Weeks) (AMEC, May 21, 2015) and summarized in Table 3-17 of the DEIS the elevated levels of sulfates in tailings in the 52-week test [as shown in Sample D65/P35-2 (mod) and [3]] to the higher concentrations of sulfates in the decant water used to leach the samples.
The testin Elder Gu were vari	results were then compared to water quality analyses of downgradient APP Point of Compliance (POC) h wells. The <i>Geochemical Characterization Report</i> merely notes that "sulfate concentrations in the wells ole." <i>Report</i> at 11.
The Depa Gulch TS POC well began in and 2009 exceedance	ment's independent review of the ADEQ Aquifer Protection Permit (APP) regulatory files for the Elder reflect continuing exceedances of total dissolved solids (TDS), sulfates, potassium, and sodium in the downgradient of Elder Guleh in excess of APP Action Levels (AL). Exceedances for these constituents 994. ASARCO made operational improvements, but AL exceedances continued for 2006, 2007, 2008, The file seems to contain incomplete data for 2010. For the first quarter of 2011, there are AL as for sulfates, TDS, and sodium in downgradient wells.

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		These AL exceedances in downgradient Elder Gulch POC wells, along with the decant water test results and the 52- week tests strongly suggest the likelihood of development of a sulfate and TDS groundwater plume from the Ripsey Wash TSF. Groundwater flows south and southwest downgradient from the Ripsey TSF toward the Gila River, located 2000 feet away from the edge of the TSF. <u>ACTION NEEDED</u> : Discuss in greater detail the significance of elevated levels of sulfates and TDS in in the 52- week tests to assess potential impacts of the Ripsey or Hackberry TSF to groundwater and surface water quality of the Gila River. Sulfate has a secondary drinking water standard of 250 mg/l.
3.8 and Table 7 And 6.8.2	3-82 And ES- 32 And ES 19-20	Issue: The DEIS does not adequately analyze the effects of noise from construction and operations on wildlife. It states the effect will be generally "avoidance or accommodation," but it does not consider the consequence of avoidance such that it may result in permanent habitat loss and overall diminishment of habitat quality beyond the project footprint for some species; as well as reduced breeding success, disruption of feeding or prey location, higher levels of diligence and energy demand.(Barber, J. R., Crooks, K. R., & Fristrup, K. M. 2010. The costs of chronic noise exposure for terrestrial organisms. Trends in Ecology and Evolution, 25(3), 180-189.). There is no information on the expected peak noise levels from operational activities, like there is for construction activities. It is important to understand both and certainly there must be information available on operational noise levels at the existing Elder Gulch TSF and Ray Mine facilities.
3.9.2.3	3-97	impacts of noise from construction and operations on wildlife (including physiological and behavioral responses). Issue: The Department disputes the conclusion of minor-moderate impacts presented for Recreation – dispersed recreation in particular – in Table ES-3 Summary of Effects for the Hackberry Gulch TSF site. The DEIS does not adequately evaluate how closure of routes within the TSF impacts access for the broader area of the Dripping Springs Mountains. The DEIS states that loss of roads in the TSF would displace recreation and public would need to travel to the northern or eastern sides of the Dripping Springs to gain access. The Department questions the legal status of these routes. Table ES-33 states that primitive roads would remain in upper Hackberry Gulch drainage but access to those routes from the north side of the Dripping Spring Mountains traverses private lands with locked gates. It appears the analysis made assumptions that all access routes are equally available to the

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r	public; but this is not the case. The magnitude of impact from the closures within the TSF footprint is much broader than stated.	
7 1 × 1	It is also not clear what public access currently exists in and around the existing Ray Mine and Elder Gulch TSF Operations for recreation access in the northern areas of the Dripping Springs Mountains and Mineral Creek upstream of the mine. The Department believes that closure of routes that provide access northwest of Ray Mine and towards Scott Mountain, Haley Mountain and Mineral Creek drainage would significantly affect hunters and recreation.	
F 5 5	Alternate access via roads/trails on the south and north portions of the Dripping Springs Mountains are blocked by private land/locked gates. The result is that a greater proportion of the Dripping Spring Mountains become inaccessible because of closures along the south face; the effects are cumulative even though the local effect may be considered minor-moderate.	
	Action Needed #1: The DEIS must describe mitigation for losses to recreational access with an improvement to access offsite or as part of the site development plans to maintain existing or improve other key access points within the Dripping Spring Mountains.	
	Action Needed #2: The DEIS must clarify which of the alternate access routes into the Dripping Spring Mountains from the north, east and from the area of the existing Ray Mine are open to the public, have restrictions due to private lands/locked gates, and what class of vehicle use are they accessible by compared to the proposed TSF closure routes.	
	Action Needed #3: The DEIS must clarify what public access currently exists in and around the existing Ray Mine Operations to recreate in the northern areas of the Dripping Springs Mountains and Mineral Creek upstream of the mine. Can the public access the areas of Scott Mountain, Haley Mountain in northern Dripping Springs Mountains and Mineral Creek drainage upstream of Ray Mine? See 3.15.1.2.2 comment which relates to hunting	
1	3 <u>Issue:</u> The DEIS fails to analyze the potential for noxious/invasive weeds or other non-native species to establish within the project footprints and spread to surrounding native habitats. The perfunctory analysis consists of one sentence that states in that weed infestations could occur in areas disturbed by project operations.	3-128

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		Action Needed: The DEIS should analyze the potential for non-native species to establish within disturbed project areas and spread beyond. Best management practices should be described that avoid, minimize, or mitigate this issue as previously mentioned.
3.15.1.2.2	3-146	<u>Issue:</u> Issue: The hunting information presented in this section of the DEIS and Section 3.15.1.2.1 is dated 2012 <u>Action Needed:</u> Update to reflect current 5 year trends from the Hunt Arizona 2015 Edition (see <u>https://www.azgfd.com/Hunting/surveydata</u>).
3.15.1.2.2	3-146	Issue: The DEIS does not analyze impacts to wildlife habitat connectivity and specifically to wildlife linkage goals in Arizona. <u>Action Needed:</u> Include information on any wildlife linkages that have been identified in the project vicinity (see "The Pinal County Wildlife Connectivity Assessment: Report on Stakeholder Input" (AGFD, April 2013); identify mitigation measures to address cumulative impacts of wildlife habitat fragmentation
3.15.1.10	3-152	Issue: The citations for fish species present in Gila River are inadequate. <u>Action Needed:</u> Better references to the fish community in the Gila River between Mineral Creek and Ashurst- Hayden diversion dam can be found in Marsh and Kesner (2006) and Kesner and Marsh (2010)
3.15.1.9 And 3.15.2.2.1 5 And 3.15.2.3.1 5	3-152 And 3- 165/1 67 And 3-169	Reptiles and Amphibians – <u>Issue:</u> This section fails to list the Sonoran Desert Tortoise as occurring within the immediate vicinity of the Hackberry TSF. It simply states that tortoise surveys were conducted. AGFD, HDMS March 1, 2016 documents this species as occurring within 1 mile of the TSF area. The "Ripsey Wash Analysis Area Endangered Species Act-listed Species Screening Analysis" (Westland 2014g) and the "Ray Mine Tailings Storage Facility Hackberry Gulch Analysis Area Endangered Species Act-listed Species Screening Analysis" (Westland 2014i) both document tortoise environment for Sonoran Desert Tortoise; and with respect to analyzing the impacts to this species and identifying appropriate project design mitigations and habitat loss compensation.
		Action Needed: The DEIS should describe impacts on tortoise for both TSF analysis areas and the proposed AZ Trail realignment. It should also discuss the status of the species as a CCA under the ESA and identify conservation actions relevant to the CCA that apply to federal and state land signatories.

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3.15.1.11 And Table 3 66	3-153	Issue: The table summarizes the potential to occur in or near the TSF sites for desert sucker, Sonora sucker, longfin dace, common black-hawk and Mississippi kite, California leaf-nosed bat, pocketed free-tailed bat, as "possible." The summary defines "possible" in a footnote, as not being documented in the TSF, but known by geographic range and habitat characteristics to be present. The categorization of "possible" is misleading information, in that it takes a known location documented in the AGFD HDMS and says it's only possible. However, AGFD HDMS documents these species as occurring within 1 mile of the TSF sites and therefore a correct representation would be that these species "occur" and have been documented near or within 1 mile of the TSF sites (AGFD, HDMS March 1, 2016). Action Needed: These species are known to occur within 1 mile of both TSF sites (HDMS March 3, 2016) and the table should be corrected to list these species as "Occur" not "possible"	15-55
3.15.1.11	3-153	Issue: Table 3-66, first row, last column, indicates that desert sucker potential to occur in or near the site is possible. <u>Action Needed:</u> The word possible should be deleted. The species has been recorded from the reach between Mineral Creek and Ashurst-Hayden diversion dam. Better citation is Marsh and Kesner (2006) and Kesner and Marsh (2010).	15-56
	3-154	Issue: Table 3-66 indicates potential for longfin dace to occur in or near the site is "possible." <u>Action Needed:</u> The word possible should be deleted. Longfin dace and Sonora sucker have been recorded in the reach between Mineral Creek and Ashurst-Hayden diversion dam. Better citations are Marsh and Kesner (2006) and Kesner and Marsh (2010).	15-57
3.15.1.12	3-157	Issue: The DEIS indicates that only two listed species have the potential to occur in the area, however this ignores the fact that there is a record from 1991 (USFWS 2012) of spikedace in the Gila River near the Ashurst-Hayden Dam. Therefore, spikedace have the potential to occur in the Gila River downstream of the confluence with the San Pedro River. Action Needed: Include spikedace as another listed species with potential to occur in the area	15-58
3.15.1.12	3-157 to 3- 159	Issue: Citations to ESA species screening analysis as Westland 20141 and 2014m do not align with reference section. Action Needed: The screening analyses referenced appear to be Westland 2014g and 2014i. Make the correction so citation references correct reports.	15-59

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3.15.1.12	3-157 to 3- 159	Issue: This section does not include the Sonoran Desert Tortoise as a CCA species under the ESA. <u>Action Needed:</u> A detailed discussion of this species, it's status (range-wide and within project vicinity) and the CCA should be discussed in this section (Candidate Conservation Agreement for the Sonoran Desert Tortoise (Gopherus Morafkai) in Arizona (USFWS and Cooperating Agencies, May 27, 2015). Mitigation measures and best management practices to avoid, minimize, or mitigate potential impacts to this species should be developed that support/align with the CCA conservation measures. Please see the Department's guidelines for desert tortoise here https://www.azefd.com/Wildlife/NonGameManagement/Tertoine/	15-0
3.15.2		Issue: The DEIS does not present independent impacts assessment for ESA Critical Habitats - Designated Critical Habitat for Southwestern Willow Flycatcher or Proposed Critical Habitat for Yellow-billed Cuckoo. The environmental consequences of project impacts to Critical Habitat need to be analyzed in addition to impacts to the species. Action Needed: Add Critical Habitats as an independent analysis from the species in the DEIS	15-6
3.15.1,12. 2	3-158	Issue #1: Citations for flycatcher surveys are incorrect. There is no 2008 Graber and Koronkiewicz, only 2009, 2011, and 2012). Issue #2: Citations for cuckoo surveys are incorrect. Action Needed: Align citations with correct listings in DEIS 7.0 Pafarenees	15-6
3.15.2.2.6	3-162	Issue: The DEIS states there will only be short-term and/or localized impacts to wildlife as a result of the construction and relocation of the AZ Trail. The DEIS includes no mitigation strategies to avoid, minimize, and mitigate potential impacts to Sonoran Desert Tortoise should trail relocation result in destruction of tortoise burrow(s) or result in relocation of the trail into an area with greater tortoise density or high use/activity areas. Action Needed: The Department recommends surveys by a qualified biologist to detect tortoise (s) shelter/burrow sites, or high use/activity areas (defined by levels of tortoise scat, track, or carcasses) along proposed trail routes. If survey results indicate the presence of burrow/shelter sites, tortoise or tortoise activity (scat, track or carcasses), we recommend avoiding and relocating the trail.	15-6
		Remote trails have less potential for adverse effects to tortaice then trails and the trails and the second	

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		remote locations we recommend locating trails at a minimal buffer distance of approximately 25' or > so that the shelter site(s) is out of the line of site in order to minimize public contact/detection. If surveys indicate the area has a high density of tortoise shelter and/or activity, we advise reconsidering the relocation of the trail to an area where detections are absent or less abundant. We recommend using the Tortoise survey, mitigation and handling guidelines available here: <u>https://www.azgfd.com/Wildlife/NonGameManagement/Tortoise/</u>	15-6 (con
3.15.2.2.6 And 3.15.2.3.6	3-162 and 3-168	Issue: The DEIS discloses potential loss for Special Habitat Features including important water sources for wildlife such as springs, seeps and stock waters. The analysis also looks at the loss of recharge and runoff potential and impacts as they relate to Water Resources, but not Wildlife Resources. The DEIS fails to analyze the impacts from loss of water sources to wildlife, and in doing so minimizes the disproportionate importance runoff has at the local scale to support wildlife and the cumulative impacts of that loss. There is recognition that the project footprint would result in displacement of wildlife, but no discussion on the relative importance of the water sources within the project footprint to wildlife beyond the project footprint that may rely on these springs, seeps, stock waters/wells, and ephemeral runoff in drainages. For example, the Hackberry TSF site has 11 seeps of which 5 have perennial water and 71.5 acres of ephemeral drainages, and the Ripsey TSF site has 134.36 acres of ephemeral drainages and stock waters sourced by wells/spring that provide water. What is the relative abundance of critical water sources beyond the TSF footprint in the immediate vicinity, besides the Gila River? What does the loss of these waters mean for local wildlife within the region/watershed/sub-basin? The loss of water is a compounding effect that will extend beyond the footprint of the TSF, similar to disturbance impacts from mining operations. Loss of water could mean that greater areas of habitat become less suitable for wildlife species due to the lack of water. This is an additional impact analyzed.	5-6
3.15.2.2.4	3-162	beyond the footprint of the TSF sites. <u>Issue:</u> The very first sentence at top of page indicates that there have been no documented wildlife mortalities at the existing Elder Guleh TSF and ponded water at the upper end of that existing facility support a population of fish identified as mosquitofish by the Department. However, the Ray mine polluted Mineral Creek and the Gila River for years (Andrews and King 1997), and fish in Mineral Creek and the Gila River have been documented with elevated levels of several metals. Fish abundance was also low in 1993, but then improved after cleanup efforts. This	5-6;

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		Therefore, it seems likely that if releases from the Ripsey Wash TSF occurred, it could impact the fish in the Gila River.	15-6: (con'i
		Action Needed: The DEIS must discuss potential impacts to fish in the Gila River in the event of releases of contaminants or hazardous substances from the TSF.	
3.15.2.2.8	3-163	Issue: The DEIS states that based on the surface and ground water impact analysis (Sections 3.4 & 3.6) there will not be adverse water quality impacts on the Gila River, but there will be "only negligible water quantity effects" for species associated with aquatic habitats such as beaver. There is inadequate information within the DEIS on water use upon which to base conclusions on effects to species dependent on water use along the Gila River (including fish, amphibians, aquatic mammals and direct/indirect impacts to riparian dependent species, including T&E and Critical Habitats, should loss of water impact riparian habitat quality). See comment for section 2.3.7.	
		Discussion of regional water hydrology in Chapter 3.4 did not include information on quantities of water used for construction/operation/closure of the proposed TSF, and related upstream ground water pumping in the Hayden Well Field (which we understand includes wells pumping within the San Pedro River bottom).	
		The DEIS does not analyze the potential effects to Gila and San Pedro River flows and local aquifers as a result of groundwater pumping from the Hayden Well Field as a water source, but it states that groundwater and surface water systems are interdependent (pg. 3-60). The DEIS dismisses this issue by stating ASARCO has a water right for the Hayden Well Field; a fact that is irrelevant to the environmental consequences of the water pumping. The DEIS discloses there will be impacts to surface water quantity as a result of loss of watershed drainage area, reduced runoff potential and drown-drainage flows in ephemeral washes, and impacts as a result of zero surface water discharge facility and potential sediment loading in the Gila River; but it doesn't quantify. It analyzes potential impacts to groundwater hydrology, quality, and rights for wells within the 2 TSF footprints, but fails to include the main water source – Hayden Well Field - in the analysis.	15-66
		Action Needed: Include information on water resources to be used for the construction/operation/closure of the proposed TSF (all alternatives) in the Affected Environment and analyze the consequences to local and regional water resources in the Environmental Consequences (direct, indirect, and cumulative); taking into account climate change and future projections of water use in the watershed. This analysis should include potential links between groundwater use from the Hayden Well Field and surface water quantity in the Gila River, as well as impacts to	

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		local aquifers.	(cor
Section 6.4.2	ES- 16	Issue: The Department believes that the DEIS does not present sufficient information to allow the Corps to conclude that the Ripsey Wash preferred alternative will comply with CWA Section 404 Guidelines. See 40 CFR	1
Section	3-164	250.12(5)(IV).	1
3.15.2.2.1 3		The DEIS lacks the necessary factual findings on the potential short-term or long-term effects of proposed discharges from the Ripsey TSF on the physical, chemical, and biological components of the Gila River aquatic environment. 40 CFR 230 11	
Section 3.15.2.2.1 5	3-167	These findings must also be compared to Arizona's Surface Water Quality numeric and narrative standards, found at A.C.C. R 18-11-107 (Antidegradation); R18-11-108 (Narrative Water Quality Standards); R18-11-108.01 (Narrative Biological Criteria for Wadeable, Perennial Streams); R18-11-108.02 (Narrative Bottom Deposit Criteria for Wadeable, Perennial Streams) and R18-11-109 (Numeric Water Quality Standards). These regulations, which are fully promulgated, are designed to protect all surface waters in this state.	
		For example, the Narrative Water Quality Standards, R 18-11-108, requires that a surface water shall not contain pollutants in amounts or in combinations that:	15-6
		 Settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life; Cause objectionable odor in the area in which the surface water is located; Cause off-taste or odor in drinking water; 	
		5. Are toxic to humans, animals, plants, or other organisme:	
		6. Cause the growth of algae or aquatic plants that inhibit or prohibit the habitation, growth, or propagation of other aquatic life or that impair recreational uses:	
		7. Cause or contribute to a violation of an aquifer water quality standard prescribed in R18-11-405 or R18-11-406; or	
		8. Change the color of the surface water from natural background levels of color.	
		These factual determinations are necessary in determining that the preferred alternative will not result in significant degradation of WUS and is the Least Environmentally Damaging Practical Alternative (LEDPA).	

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		Action Needed: The DEIS must be revised to include science-based findings on the following issues: Potential impacts of surface or subsurface migration of TSF seepage toward the Gila River, including water chemistry, salinity, clarity, and color. 40 CFR 230.11(b). The Gila River qualifies as a "special aquatic site." 40 CFR 230.3(m).
		Suspended particulate/turbidity determinations resulting from potential discharges of sediments during construction and potential effects on aquatic organisms and recreational fishing opportunities. 40 CFR 230.11(c); 40 CFR 230.31; 40 CFR 230.51.
		An analysis of the degree to which contaminants may be introduced into or increased in the aquatic ecosystem. 40 CFR 230.11(d).
		Impacts on preferred food sources and other critical life requirements for the SWWF, other neotropical songbirds, and fish. 40 CFR 230.310(b).
		Cumulative water quality and quantity impacts on the Gila River of the Ray Mine Operations, the Elder Gulch TSF, and the Ray Mine Exchange. 40 CFR 230.11(g)(2).
.15.2.2.1 and	3-164	Issue: Reptiles and Amphibians. The DEIS does not adequately address take of reptiles and amphibians including Sonoran desert tortoise. Unlike birds and bats, reptiles within the proposed project area will not simply move out of the project area and settle into the adjacent habitat; they will be killed. Moreover, mitigation for these losses is not offered.
.15.2.15	3-165 F	Action Needed: The Department insists that a discussion on take of reptiles and amphibians be included with the following mitigation options identified in at least one alternative.
		 100% clearance surveys for desert tortoise (this includes searching all potential shelter sites); Thoroughly survey the project site for amphibian and reptile species prior to any development, remove sensitive species for appropriate placement within zoos and museums; Relocate (in coordination with the Department) all desert tortoises and Gila monsters from within the project encoded of the sensitive sen
.15.2.2.1	3-164	Issue: The DEIS does not describe adequate mitigation for losses to reptile and amphibian habitat.

Dated: April 26 2016 Section Page Comment/Change requested Action Needed: The DEIS should describe at least one alternative that describes the following mitigation measures: Fence perimeter of project footprint to ensure Sonoran desert tortoises do not reenter project area. Fund buffelgrass control for the life of the TSF on 5000 acres of Sonoran desert habitat significantly threatened with buffelgrass (2:1 ratio and assume 50% enhancement credit to achieve 100% compensation for 2500 acres total loss for Ripsey TSF footprint). 3.15.2.2.1 3-164 Issue: Gila River Associated Aquatic Species. The DEIS states "Surface and ground water impact analyses (see Section 3.4, Surface Water Hydrology, and Section 3.6, Groundwater Hydrology) indicate TSF site development and operation would not have adverse water quality effects on the Gila River" The Ray Mine has previously discharged various heavy metal contaminants into Mineral Creek and the Gila River. (see Andrews and King 1997). The DEIS does not describe that risk or the potential environmental consequences of that risk, which reasonably would include significant impact on aquatic species. Seepage or releases of tailing chemicals into the Gila River could impact about 18 miles of the Gila River from the discharge point to the Ashurst-Hayden Diversion dam, and potentially fish and aquatic species found within that reach. For the Ripsey TSF, this is an 18-mile portion of the river occupied by thousands of sportfish (about 22 miles 15-70 for the Hackberry TSF). Species potentially affected include channel catfish, flathead catfish, and yellow bullhead (Marsh and Kesner 2006; Kesner and Marsh 2010). Native fish are also found within the 18-mile reach, but at low abundance. Native fishes found in the 18-mile reach since 2000 include desert sucker, Sonora sucker, and longfin dace (Marsh and Kesner 2006; Kesner and Marsh 2010). In addition, there is one record, from 1991 (USFWS 2012), of federally endangered spikedace from near the Ashurst-Hayden Diversion Dam. Spikedace found at the diversion dam were not thought to have an established population there, but rather were likely washed downstream from Aravaipa Creek during flood events. The Gila River below the Ashurst-Hayden diversion dam is typically dry, but does flow seasonally, so if releases from the TSF occurred during seasonal flows, the Gila River, and any fish or aquatic species downstream of the diversion could be affected by the chemical discharge. The Hackberry alternative does have five wetlands with one or more seeps each, adjacent to the Gila River. These wetlands may have habitat for frogs or gartersnakes, so these species could be impacted if this alternative was chosen.

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		Action Needed: The DEIS should be revised to include an analysis of the potential risk of contamination of the Gila River and describe the potential impacts on fish and aquatic wildlife impacted by such a spill, leakage, seepage, or tailings dam failure. Aquatic species utilizing the perennial and intermittent waters within the footprint of the Hackberry TSF should be identified and impacts to those species should be described. Refer to:	15-70 (con't)
		Andrews, B. J., and K. A. King. 1997. Environmental contaminants in sediment and fish of Mineral Creek and the middle Gila River, Arizona. U. S. Fish and Wildlife Service, Ecological Services Office, Phoenix.	(00////
		Marsh, P. C., and B. R. Kesner. 2006. Analysis of Fish Population Monitoring Data for Selected Waters of the Gila River Basin, Arizona, for the Five-year Period 2000-2004. Report by Marsh and Associates, LLC for Agreement No. 04-CS-32-0170 submitted to U.S. Bureau of Reclamation, Lower Colorado Region, Phoenix Area Office, Glendale, Arizona.	
		Kesner, B. R., and P. C. Marsh. 2010. Central Arizona Project fish monitoring final report analysis of fish population monitoring data for selected waters of the Gila River Basin, Arizona, for the five-year period 2005-2009. Report by Marsh and Associates, LLC for Contract Number R09PD32013 submitted to U.S. Bureau of Reclamation, Lower Colorado Region, Phoenix Area Office, Glendale, Arizona.	
		U.S. Fish and Wildlife Service (USFWS). 2012. Endangered and threatened wildlife and plants; endangered status and designations of critical habitat for spikedace and loach minnow. Federal Register 77(36): 10810-10932. February 23, 2012.	
3.15.2.2.1 3	3-164	<u>Issue:</u> The last sentence states: "Therefore, project development is not likely to have any adverse effects on fish and other aquatic species populations in the Gila River." It is not the development phase that will have an impact to fish or aquatic wildlife. Impacts to fish and other aquatic species in the Gila River are likely to occur during the operation phase or post-operation phase.	15-71
		<u>Action Needed:</u> Revise the DEIS to analyze the effects of releases of contaminants from the TSF on aquatic wildlife during the operation phase and closure phase	

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3.15.2.2.1 5	3-167	Issue: The Department agrees with the recommendation to conduct vegetation clearing prior to construction of the tailings pipeline bridge outside of breeding/nesting season for SWFL and YBCU, but the recommendation fails to recognize the potential for disturbance of nesting/breeding adjacent to the area.
3.15.2.2.1 5	3-167	Insting/breeding season to avoid direct and indirect impacts to these species as a result of habitat loss/destruction and disturbance (noise, human/mechanical activity in close proximity). <u>Issue:</u> The DEIS states "Project mitigation activities would not have any direct adverse effect on yellow-billed cuckoo proposed critical habitat or SWFL critical habitat." The Department sees multiple problems with this statement. First and foremost is that this statement assumes that the perfunctory mitigation offered to date will be the sum of mitigation accepted by the Corps, the EPA, and other agencies. The Department asserts that our recommendation for mitigation has been inadequately addressed and we expect significantly more mitigation to be proposed, including mitigation for the impacts to both SWFL and YBCU and their impacted Critical Habitate
3.15.2.2.1	3-	Action Needed: Change to "Project mitigation activities will implement best management practices for SWFL and YBCU and will be designed to avoid vegetation removal and restoration activities during breeding/nesting periods." Examine mitigation plans to ensure this is implemented in those plans. Issue: The DEIS states on pg. 3-162 under Special Habitat Features that: Some segments of the Oil Discourse of the Oil Discourse that the theory of the Oil Discourse that the oil Discour
5 and 3.15.2.3.1	165- 167 And 3-169	adjacent riparian habitat may be close enough to TSF facilities to create indirect impacts from construction/operation on wildlife using the Gila River corridor as habitat. However, the DEIS fails to analyze the same potential indirect impact for T&E species and Critical Habitats. <u>Action Needed:</u> Analyze indirect impacts from construction/operations to riparian obligate T&E species and Critical Habitats along the Gila River. Discuss the distances between the river corridor and various project footprints along the Gila River Corridor and provide supporting literature that supports the determination of impact.
Section 15.2.2.1	Page 3-167	The DEIS text states that the TSF site operations "is not likely to have any indirect effects on the Gila River and SWWF and yellow-billed cuckoo riparian habitats." Comment: The portion of the Gila River below Ripsey Wash TSF is designated critical habitat for the endangered SWFL. The Gila River at this location provides nesting, migrating, and wintering riparian habitat for numerous

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		 neotropical songbirds, including the yellow-billed cuckoo, proposed for listing as threatened by the USFWS. A cooperative study by USFWS, AGFD, and USGS Forest and Rangeland Ecosystem Science Center found selenium concentrations in Salt, Gila River and Roosevelt SWFL eggs. Selenium in SWFL eggs collected at the Gila River near Kearny contained selenium within the "level of concern." Elevated selenium in eggs can cause developmental abnormalities and death. <i>Contaminants in Southwestern Willow Flycatcher Eggs and Prey Items, Arizona 1998-2000</i> (King, Velasco, Rourke, and Wesley (USFWS, July 2002) (attached). <u>ACTION NEEDED</u>: The DEIS requires a more detailed analysis of the significance of the HCT 52-week test for metals as compared to surface water quality numeric standards for the A&Ww Chronic protected use for the Gila River (found in A.A.C. R18-11-109 and App. A). <u>Law:</u> NEPA requires a "hard look" at the potential impacts of the Ripsey Wash alternative on the water quality and ecosystem of the Gila River. An EIS must contain a reasonably thorough discussion of an action's environmental impacts. <i>State of California v. Block</i>, 690 F. 2d 753, 761 (9th Cir. 1982). The Corps' public interest review must include consideration of water quality and fish and wildlife values. 33 CFR 320.4(a). 	15-75 (con't)
3.16.2	3- 170/3	Issue: The DEIS states "the likelihood of a leak through the Ripsey Wash TSF seepage trenches or reclaim ponds causing down-drainage environmental problems to the Gila River is very low". The past history of ASARCO operations at Ray Mine/Hayden Smelter Complex contradicts this statement. According to the <i>Restoration Plan and Environmental Assessment for the Hazardous Substance Releases from the Hayden Smelter and Ray Mine Facilities</i> (AGFD et al. August 14, 2012) between August 1988 and November 1997 there were 47 separate hazardous substance releases, a large portion of which were uncontained and eventually entered Mineral Creek and the Gila River. These releases included copper sulfate, copper tailings, and leachate; multiple groundwater wells downgroundwater along Mineral Creek, numerous spills of metal-rich mine waste tailings occurred directly into the Gila River.	15-76

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		Action Needed: The DEIS requires a discussion and disclosure of past incidents of hazardous substances releases into the aquatic ecosystem, along with a revision of the environmental consequences analysis in Section 3.16.2 for Accidents and Spills, to include analysis of past operations and facilities designs that contributed to past spills versus what will be done differently in the future to support the DEIS claim that there is a "very low" likelihood of water quality impacts to the Gila River. This discussion must include a discussion of documented current releases of TDS, sulfates and selenium from the Elder Gulch TSF into groundwater.
3.16		Issue: There is no analysis of potential impacts from erosion and transport of tailings apart from a dam failure to the environment. This could be a more subtle, but chronic, impact that would extend beyond the life of the project. Action Needed: Analyze the potential erosion and transport of tailings sediments into the environment
3.16 or 3.17	3- 173 to 177	Issue: There is no overall analysis of the environmental consequences post-closure of the remaining mining waste and features may have on the environment. For example, what happens after the open-pit mine is closed? At some point after operations cease, and groundwater pumps that pumped water from pits are turned off, a pit lake could form representing a permanent hazard on the landscape. Discussions under Section 3.17 and 3.18 and 4.0 don't address these impacts fully or from that perspective. <u>Action Needed:</u> include a section in Chapter 3 Environmental Consequences on Post-Closure; analyze the impacts of cessation of mine operations and abandonment of inferent perspective.
		is the reclamation and closure plan? This information should be part of the DEIS and included to inform the decision making process. Otherwise it is impossible to fully evaluate the impacts of the mine on the anyironment.
3.6.2.3.3	3-75	Issue: There is no analysis here of potential impacts to groundwater rights associated with Hayden Well Field water withdrawal. Action Needed: The DEIS should disclose water withdrawal associated with the principal water source, the Hayden Well Field, and analyze potential impacts to nearby non-ASARCO wells and water users
Chapter 3		Issue: There is no information on project area lighting. Would operations have night-time lighting impacts to the surrounding environment and wildlife?
		consequences section.

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Section	Page	Comment/Change requested	
Section 4.5	Page 4-5	 Issue: The DEIS text discussion of Surface Water Hydrology Cumulative Impacts states that potential cumulative impacts to the Gila River would be most affected by irrigation demands and other past, present and future land uses. There is no discussion of potential cumulative impacts from the Ray Mine Elder Gulch TSF or from Ray Mine operations in general. The Elder Gulch TSF is permitted under Section 404 by the Corps. In its Responses to Comments to the October 15, 2014 Internal Working DEIS, the Corps states that the "assessment of the Elder Gulch TSF is outside the scope of this DEIS." Response 2-29. Drainage from portions of the Ray Mine, and all of the Elder Gulch TSF, reports to Mineral Creek, a Category 5 Impaired Water for Copper (dissolved) and selenium (total). The Gila River at this location is classified as an Impaired Water, Category 5 for suspended sediment concentration. The Department's review of the ADEQ Elder Gulch APP files reflect that, in addition to exceedances of AL levels of sodium, sulfates and TDS in downgradient POC wells between the Elder Gulch TSF and Mineral Creek and the Gila River, selenium has been consistently detected in Elder Gulch POC Wells. ASARCO conducted an investigation in 1995 in response to a selenium exceedance in Elder Gulch POC Well R-3 in 1995. Elder Gulch Tailings Impoundment Alert Level Response (AGRA Earth & Environmental, Inc. 26 June 1995). Selenium ALs exceedances were documented in 2010 and 2011. The first quarter of 2012 had selenium AL exceedances in Wells R-2A and R-3, resulting in the Seepage Investigation Report, ASARCO-Elder Gulch Tailings Facility (EEC, February 11, 2013). An Administrative Order on Consent between ADEQ and ASARCO LLC, dated October 11, 2013 found that the Elder Gulch TSF discharged selenium to navigable waters without a permit. ADEQ also found that the surface water quality standard for selenium was exceeded in numerous samples collected from Hackberry Wash	15-0

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Dated: April 26 2016 Section Page Comment/Change requested It should also be noted that ASARCO is not required to monitor for the presence of copper in groundwater. This is a significant data gap. Copper is highly toxic to wildlife. Action Needed: A cumulative effects analysis requires a discussion of the APP and AZPDES water quality compliance history of the Ray Mine and the Elder Gulch TSF in terms of effects on Gila River and wildlife. As Elder Gulch is the obvious analog site, the DEIS requires a full and complete disclosure of predicted releases from the Ripsey Wash TSF, and, at a minimum, a discussion of how heavy metal releases will be managed, both during 15-81 operational life and long-term following closure. (con't Law: Discharges must not have an unacceptable adverse impact on an aquatic ecosystem, either individually or in combination with known and/or probable impacts of other activities affecting the ecosystem of concern. 40 CFR 230.0(c). Cumulative effects attributable to the discharge of dredged or fill material in WUS should be predicted to the extent reasonable and practical. The Corps shall collect information about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process on an individual 404 permit application. 40 CFR 230.11(g). The Corps' Clean Water Act scope of analysis includes the environmental consequences of the larger project that are essentially products of Corps permit actions. 33 CFR Pt. 325, App. B. The Corps must consider direct, indirect, and cumulative impacts of the proposed project. 40 CFR 1508.7. Under NEPA, an analysis of cumulative effects requires consideration of the impact on the environment which results from the incremental impact of the activity when added to other past, present, and reasonably foreseeable future actions. U.S. Army Corps of Engineers Standard Operating Procedures for the Regulatory Program (July 2009). 4-7 Issue: There is no mention of cumulative impacts to sport fish recreation in the Gila River. Releases of contaminants during the operational life of the TSF or post-closure could have an impact to sportfish in the Gila River, and would thus impact recreational fishing in the portion of the river downstream of the facility. 15-82

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Section	Page	Comment/Change requested	15-82
		Action Needed: The DEIS must address cumulative impacts to sport fish recreation.	(con't)
4.17	4-9	Issue: There is perfunctory discussion of cumulative impacts to aquatic species. Operation of Coolidge Dam, specifically very low levels of discharge, has resulted in loss of habitat and fish kills. There is also no discussion on groundwater pumping from the Hayden Well Field. All of these are cumulative effects if not connected actions.	15-83
		<u>Action Needed:</u> The DEIS should take a hard look at cumulative effects and provide a comprehensive discussion on cumulative effects of TSF operation and after the closure period on aquatic species in the Gila River.	
COMMENT DOCUMENT #15 (PART 3) ARIZONA GAME AND FISH DEPARTMENT (TOM FINLEY, ASSISTANT DIRECTOR OF FIELD OPERATIONS)

Dated: April 26, 2016

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404(B)(1) ANALYSIS COMMENTS -ARIZONA GAME AND FISH DEPARTMENT

Section	Page	Comment/Change requested	
1.1	1	Issue: The text states that "The analysis contained herein will inform the development of alternatives for the EIS for the Project." It further states that "this alternatives analysis identifies the range of reasonable alternatives to be considered in the Corps NEPA analysis of the proposed project. The screening provided in this analysis identifies alternatives that are practicable and brought forward for the analysis in the EIS."	5-84
	1	Action Needed: Because this document determined which alternatives were considered for analysis in the EIS, it is an integral part of the EIS and the Department's comments must be considered regarding this analysis.	
1,1	1	Issue: The text states that "The analysis contained herein will inform the development of alternatives for the EIS for the Project." The screening of alternatives relies solely on a practicability analysis for both tailings placement/storage technologies and site selection. This process benefits the economic interests of the project proponent, and dismisses a corresponding risk assessment. The site alternatives were evaluated based on an assumed set of static conditions over a long period of time. Because geophysical conditions are dynamic and an inherent predisposition for groundwater and riverine contamination from tailing impoundments, a scientifically based risk assessment process in which all potential failure modalities for viable alternatives are quantified should be undertaken. A risk-based approach applied to the uncertainty and change associated with tailings management can provide sufficient flexibility to allow changing circumstances to be managed.	5-85
		Action Needed: Determine the probability of occurrence and severity of potential adverse effects to the environment based on the analysis of potential failure modes and the selection of control options for each alternative. The future cost of a catastrophic failure should be discussed in context with a site's risk characterization and the capital cost of selecting best available technology control measures.	

Section	Page	Comment/Change requested
Section 1.3 Purpose and Need	4, 5	Issue: The text states that "Elder Gulch facility at the Ray Mine has the capacity to accept approximately 100 million more dry tons of tailings before it reaches capacity. The Hayden tailings facilities have approximately 200 million tons of remaining capacity. This leaves a need for approximately 550 million dry tons of additional tailings." And further "the Applicant has estimated for the purposes of this analysis that the new TSF may need to accommodate an additional roughly 200 million dry tons of material, for a total capacity of roughly 750 million tons." And finally "Therefore, the Applicant's purpose and need for the Project is to create additional tailings storage to support <i>up to</i> approximately 750 million tons of material.
		For the b1 analysis basic and overall purpose statements are needed. The text states "The Applicant's basic project purpose is mine tailings storage, which is not water-dependent. The Applicant's overall project purpose is the development of tailings storage capacity that will allow the full utilization of the mineral resource at the Ray Mine, using infrastructure and processes already in existence at the mine. The Corps has identified the overall project purpose to create additional tailings storage to support <i>up to</i> approximately 750 million tons of material."
		The Department questions whether the overall project purpose for a capacity up to 750 million tons of material is justified given that resources necessitating this capacity are unknown, may not exist, or may come from ore bodies not yet developed <i>and therefore may be beyond the scope of this EIS</i> .
		The Department further questions ASARCO's need for <i>a single facility</i> to store a projected 50 years (550 million tons) of mine tailings and an additional 35% (200 more million tons) capacity "contingency for changed market conditions and/or future technologies for mining and to account for the starter dam and embankment construction."
		The Corps' own guidelines state that the purpose and need must not be "unduly restrictive of potential alternatives, pursuant to the Section 404(b)(1) guidelines." It would appear that the purpose and need was chosen so as to unduly restrict potential alternatives e.g. smaller facilities and facilities within the current or future footprint of the pit. The Corps' analysis appears to reject alternatives that cannot support the full capacity of 750 million tons when there is only a clear need for 550 million tons.
		Action Needed: The Corps <i>must analyze</i> a full range of alternatives under the EIS and <i>must</i> include a full range of alternatives to be analyzed under the 404(b)(1) analysis. It would appear that the West Dam alternative was rejected based wholly on an analysis that <i>required</i> the full capacity of 750 million tons rather than a lesser capacity which <i>would meet</i> the purpose and need. This violates the Hard Look mandate of the NEPA particularly if the purpose and

Page Comment/Change requested need statement was constructed so as to exclude alternatives that are less environmentally damaging.	
need statement was constructed so as to exclude alternatives that are less environmentally damaging.	and the second se
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Section	Page	Comment/Change requested
2.1.3 In-pit placeme nt of tailings	6	Issue: The text states "Because this mining technique involves future deepening and widening of the current pits, the placement of tailings into the pits would preclude ongoing mining at the Ray Mine. Therefore, this method of tailings placement and storage was eliminated from further consideration." In-pit storage may be unavailable at this time, however, if a smaller facility is constructed, in-pit storage may be completely feasible <i>and less environmentally damaging</i> in 25 years when the pit has been much expanded and there may potentially be space that is currently unavailable.
		Action Needed: Much like the Corps' acceptance of a purpose and need statement that accounts for future possibilities, the Corps should accept that the purpose and need may be satisfied by a second facility which may or may not be placed within the pit in the future. This possibility should be analyzed further to determine if there is <i>any possibility</i> for a future in-pit facility and that alternative should be analyzed.

15-87

Section	Page	Comment/Change requested
Section 2.1.3	6	Issue: The document quickly dismisses in two short sentences in-pit placement and storage of tailings stating that the Ray Mine "is an open pit mine and that this technique involves deepening and widening of current pits and would preclude on-going mining at Ray Mine." This statement, without any substantial supporting argument, is at the least confusing if not erroneous. Ray Mine is over six miles long and 2 miles wide and hundreds of feet deep. An alternative involving the exhausted portion of the pit to contribute to the longer term tailings impoundment strategy should be analyzed. In-pit tailings storage can provide many advantages when compared to typical above-ground tailings storage facilities. As regulations become more restrictive and existing mines expand into new pits, the motivation and opportunities for in-pit tailings disposal is increasing. Another advantage to in-pit storage is that the mine pit acts as a hydraulic sink and does not require containment dams, thus the risks associated with embankment instability are eliminated as well as the need to address surface water diversion and retention at a new site. An underdrainage system can be appropriately designed to improve water recovery, enhance tailings consolidation (increasing tailings density), and control seepage.
		LAW: The Corps must examine practical alternatives that do not discharge into Waters of the U.S. or discharging into an alternative site with potentially less damaging consequences. 40 CFR 230.5(c).
		No discharge of dredged or fill material shall be permitted if there is a practical alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem. 40 CFR 230.10(a).
		Where the activity associated with a discharge which is proposed for a special aquatic site does not require siting within the special aquatic site to fulfill its basic purpose (which is the case with the Ripsey TSF), practical alternatives that do not involve special aquatic sites <i>are presumed to be available</i> , unless clearly demonstrated otherwise. 40 CFR 230.10(a)(3) (emphasis added).
		Action Needed: The alternatives analysis must present a systematic evaluation of the in-pit disposal option considering longer term "phased" options for tailings disposal. In particular, a near term/long term in-pit disposal strategy could change the volume requirement considerably for an off-site tailings facility. This reduced footprint requirement would in turn impact the offsite alternatives analysis. The West Dam alternative footprint could possibly be reduced such that the highway relocation would not be necessary. Or the Hackberry Fault could be completely avoided, reducing risk liability, or the relocation of the Florence-Kelvin Highway eliminated, in the Ripsey Wash alternative.

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Section	Page	Comment/Change requested		
2.1.5	7	<u>Issue</u> : The text states "the management of multiple facilities when compared to a single facility fails to meet the project purpose and need, and is considered logistically impracticable." The Department finds that this statement is unsupported given the near certainty of future available sites in-pit which, when combined with the West Dam alternative would almost certainly be a less environmentally damaging alternative than either the Ripsey or Hackberry alternatives. The purpose and need does not require a full 750 million tons of storage capacity and the purpose and need may indeed be fulfilled without a second site in-pit being fully analyzed.	15-89	
		Action Needed: Similar to the Corps' acceptance of an additional 200 million tons of capacity which might be needed based on future capacity, the Corps should analyze a situation where multiple sites might be available in the future. Rather than make a blanket statement that multiple sites are likely to have greater environmental impacts and won't satisfy purpose and need, recognize that the purpose and need may be satisfied with one fully analyzed smaller site and a new facility at a site which is not yet determined but which may in fact, be within the current footprint of the pit.		
3.1 Practica bility Criteria	future. Rather than make a blanket statement that multiple sites are likely to have greater environmental impact won't satisfy purpose and need, recognize that the purpose and need may be satisfied with one fully and smaller site and a new facility at a site which is not yet determined but which may in fact, be within the cu- footprint of the pit. 3.1 11 <u>Issue</u> : Capacity. The text states "The site must have sufficient capacity for the deposition of approximately million tons" of material. This is incorrect. The purpose and need clearly states that there is a need for 550 m tons and that the purpose of the project is to store <i>up to</i> 750 million tons. The Corps constructed a purpose and statement that meets the requirements of the 404(b)(1) analysis and of NEPA but throughout the docum misconstrues the Purpose and Need to require a capacity OF (approximately) 750 million tons. The Corps therefore not unduly exclude alternatives which meet the purpose and need, i.e. less than 750 million tons Of Corps must restate the purpose and need and justify that change. <u>Action Needed</u> : Change to "the site (or sites) must have capacity for the deposition of 550 million tons <i>up to</i> million tons."		15-90	

Section	Page	Comment/Change requested	
3.2	12	<u>Issue</u> : Estimated impacts to waters of the U.S., measured in acres of waters to be filled, are often used as a surrogate for assessing impacts to the aquatic ecosystem in the absence of a more detailed assessment of the functions and values of impacted waters."	
		The Department expects most significant impact to the aquatic ecosystem to include impacts associated with potential failure of the TSF to contain all contaminants. <i>See</i> the Department's Comments to the DEIS. Moreover, the document never analyzes the impacts to the Gila or the San Pedro from the pumping of water within the subflow zone required to transport the 750 million tons of tailings.	15
		<u>Action Needed</u> : The document should not use impacted acres of waters <i>to be filled</i> as a sole surrogate for assessing impacts to the aquatic ecosystem because the aquatic ecosystem that will be most impacted will be the ecosystem of the San Pedro and Gila Rivers, to include the area impacted by the wellfields within the Gila and San Pedro subflow downstream to the Ashurst Hayden diversion at least.	
4.1	13 Dry- Stack Tailings	<u>Issue:</u> "Given the distance of the Ray Mine Concentrator from any of the potential TSF locations and the difficulty in transporting dry material over those distances via pipeline (or by any other means, such as conveyor or truck), implementing a dry-stack tailings approach at the Ray Operations would require transporting the tailings via pipeline as conventional slurry to the TSF, followed by filtering the tailings at the TSF site at an entirely new plant that would be constructed adjacent to the TSF."	15
		<u>Action Needed</u> : This would not be an issue if the West Dam was considered. Once again, the use of water would be substantially reduced if the West Dam tailings were analyzed and the use of dry stack tailings could be used with transport not requiring slurry. Recommend including an analysis of cost and logistic difference between Ripsey and West Dam.	
4.1	14	<u>Issue</u> : "the construction of significant additional facilities adjacent to the TSF and greatly increase the cost of the project." Throughout the 404(b)(1) analysis document cost is used to justify exclusion of various alternatives. However real costs are not given and alternatives are not compared as to cost. The document cannot simply state that an alternative is cost prohibitive without providing evidence of such and without examining each alternative in terms of <i>all</i> overall costs. The Corps' own guidance* states that "we recommend preparing a matrix listing alternative sites and analyzing them in terms of cost, logistics, and existing technology, as well as impacts." This	15

Section	Page	Comment/Change requested	0
		was not done.	1.1
		<u>Action Needed</u> : The analysis should include a matrix which meets the Corps' own guidance*. Costs should be quantified and the method of determining those costs should be transparent and repeatable by anyone auditing those costs. These costs should include the costs to mitigate for damages done to the aquatic ecosystem by pumping the unstated quantity of water necessary to transport wet tailings vs. the cost necessary to transport dry tailings to a geographically closer alternative.	15-93 (con'i
		*US Army Corps of Engineers Seattle District. 23 October 2003. Alternative Analysis Guidance:	
		http://www.nws.usace.army.mil/Portals/27/docs/regulatory/Forms/Alternative%20Analysis%20Guidance%20Enclo sure%20(10-23-03).pdf	
4.2.2 E. Dam Practica bility	15	Issue: Development of the E Dam alternative "has been determined to be logistically impracticable due to its distance from the Ray Mine as well as other constraints with the Project pipelines." This statement is not supported with any evidence or costs. The reader is led to believe that a tailings facility itself, with all the issues of pollutant containment, seepage, etc. not to mention the Ray Mine itself, with all the logistics of mining and refining ore is practicable, but that a 20 mile pipe line is somehow an engineering problem as fraught with hazard as to be impracticable. Evidence from other mines with similar pipelines that failed or did not should be included. Studies comparing such facilities should be included.	15-94
		Action Needed: The Corps must clearly demonstrate that this alternative is logistically impracticable by quantifying the costs associated with the pipeline and evidence that such pipelines are a true and substantial impracticability. Moreover, the Corps should follow their 2003 guidance* and include the quantified costs in a table compared to the other alternatives.	
		*US Army Corps of Engineers Seattle District. 23 October 2003. Alternative Analysis Guidance:	
		http://www.nws.usace.army.mil/Portals/27/docs/regulatory/Forms/Alternative%20Analysis%20Guidance%20Enclo sure%20(10-23-03).pdf	

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4.3.2 W Dam Practica	16	Issue: "the alternative would require the rerouting of SR 177" and "Locating this alternative to avoid SR 177 and the existing operations at the Ray Mine was not possible". This assumes that the alternative requires the full 750 million ton capacity and does not analyze a smaller facility.	15-95	
bility		Action Needed: If the Purpose and Need demands that a 750 million ton capacity is the criteria for any alternative then the Purpose and Need should be changed so that it does not say "up to" 750 million tons but rather "approximately" 750 million tons.		
4.3.2 W Dam Practica bility	16	Issue: "the alternative would require the rerouting of SR 177" and "Locating this alternative to avoid SR 177 and the existing operations at the Ray Mine was not possible". This assumes that the alternative requires the full 750 million ton capacity and does not analyze a smaller facility. Would SR 177 need to be rerouted if the facility's capacity was capped at 550 million tons? If so, why is that alternative not analyzed? The Corps should examine the assumption that ASARCO <i>needs</i> capacity to store a projected 50 years (550 million tons) of mine tailings and an additional 35% (200 more million tons) capacity "contingency for changed market conditions and/or future technologies for mining and to account for the starter dam and embankment construction."	15-96	
		Action Needed: If the purpose and need requires 750 million tons of capacity that quantity should be justified. Sufficient information has not been provided to support the need for 750 million tons. The Corps should determine if the highway would have to be moved in order to support a 550 million ton facility.		

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4.3.2 W Dam	16	Issue: Cost was cited as one reason that West Dam is impracticable. However a smaller facility was not contemplated, but more importantly <i>the cost of West Dam has not been compared to the other alternatives</i> .	
Practica bility		<u>Action Needed</u> : The Corps should follow its own 2003 guidance* document which requires a full comparison of costs between alternatives and not simply state that cost is a reason. Moreover, a cost of \$48 million dollars, although not insignificant, seems practicable given a 50 year mine life. The Corps needs to clearly demonstrate that moving the highway is necessary and that the cost of West Dam is significantly more than other alternatives before peremptorily excluding it from further analysis.	15-91
		**US Army Corps of Engineers Seattle District. 23 October 2003. Alternative Analysis Guidance:	
		http://www.nws.usace.army.mil/Portals/27/docs/regulatory/Forms/Alternative%20Analysis%20Guidance%20Enclo sure%20(10-23-03).pdf	
4.5.2	18	Issue: The analysis states that for the Devils Canyon alternative "construction and operation of a TSF immediately upstream of this area could adversely impact the mitigation site through dewatering and changes in sediment transport downstream, thereby adversely affecting the projected development of wetland and riparian habitat within the mitigation area. Therefore, this alternative is not considered logistically practicable."	15-96
		However these potential impacts are not recognized or disclosed for either the Ripsey or Hackberry TSF sites, and in fact the DEIS determines these two types of impacts would be negligible or minor. There seems to be contradicting assessments between alternatives on what the true environmental impacts would be.	
		Action Needed: Address why the two adverse impacts of dewatering and sediment transport downstream are more significant with the Devils Canyon alternative versus the alternatives carried forward in the DEIS.	

Section	Page	Comment/Change requested		
4.7.1	24	Issue: The Ripsey Wash alternative (and others) would be built with cyclone centerline and upstream construction methods. The upstream construction method is considered the least stable method, with centerline construction the second least. Of primary concern to the Department is a tailings embankment failure which would release tailings into the Gila River a mere 3200 feet downstream of the Ripsey TSF. Such a tailings release would result in severe injuries to fish and wildlife held in trust by the Arizona Game and Fish Commission. Recent analyses of failed tailings embankments such as the Mount Polley Mine in British Columbia have urged the use of the best available technology for tailings impoundments to reduce the likelihood of catastrophic failure. Other alternatives, such as dry stack tailings, partial backfill of the pit, and downstream embankment construction were dismissed based on cost and impracticability without an analysis showing such cost would be exorbitant or explaining why a future backfill could not occur. A Ripsey alternative outside of the 500 year floodplain was dismissed due to topography. Costs of remediation due to failure were not examined. Downstream embankment construction is the most stable construction method. Action Needed: The DEIS should examine alternatives previously excluded from analysis including dry stack tailings, and partial backfill of the pit once resources have been extracted. Costs should be compared and listed in a matrix. Downstream construction should be used if it is the most stable method regardless of seismic risk since this is a permanent structure and seismic activity of significance is likely in the lifetime of the structure. Additionally, a fourth Ripsey alternative southeasterly of Alternative 3 and out of the 500 year floodplain should be analyzed.	15-99 t t s a	
4.7.1.2	25	Issue: "seepage is expected to be contained within the sandy materials above the bedrock and could reliably be intercepted downstream of the embankment using seepage collection trenches and a series of dewatering pumpback wells located across the washes." This system relies on active pumping powered by electric pumps with a maintained power supply. The Department questions the viability of such pumps to control seepage that will occur far beyond the foreseeable future, including the long-term, post-closure period.	15-100	
		Action Needed: The analysis of environmental effects must extend beyond the mine's operational life. Describe how seepage will be controlled following mine closure, as well as the environmental impacts when seepage is no longer actively recirculated back to the mine. Passive controls of seepage not reliant on human presence, continual power, and active management should be presented. A site which could reasonably use passive (gravity) seepage control would likely be more practicable when other sites rely in continual management.		

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4.8	27	Issue: "The dry-stack tailings disposal method was deemed impracticable for the proposed TSF." The argument is made that the cost of dry stack tailings would be exorbitant and impracticable to transport to the Ripsey site. Since the West Dam and in-pit sites which would be closer to the tailings point of origin they might be more practicable if they were not excluded from analysis.	15-101
		Action Needed: The West Dam site and in-pit sites should be analyzed to accurately compare costs which may include dry stack tailings, ultimately leading to a LEDPA for one or both of these sites rather than sites located more distant from the mine.	
5.1.3	30	Issue: Cumulative Effects Analysis. The DEIS does not analyze the effects of the pumping from the Hayden well field, and other well fields within the San Pedro River basin that supply the water for the tailings slurry. Of primary concern to the Department are the effects on the San Pedro River, which may be dry over many miles due in large part to the pumping within its subflow zone by ASARCO. Mitigation for dewatering the river, reducing riparian vegetation, fish, and wildlife is not mentioned.	15-102
		LAW: An EIS must include the environmental impacts of all alternatives including the proposed action. 43 U.S.C. §4332(C); 40 CFR 1502.16.	10 102
		The Corps should identify compensatory mitigation for significant resource losses reasonably likely to occur and of importance to the human and aquatic environment. Corps General Policies for Evaluating Permit Applications, 33 CFR §320.4(r).	
		An EIS must include all appropriate mitigation measures. 40 CFR 1502.14.	
		Action Needed: A full analysis of the effects of the Ray Mine itself, of which the TSF is part and parcel, should be provided. The TSF is part of the Ray Mine.	
5.2.1	31	Issue: Impacts to the Aquatic Ecosystem. "ASARCO has evaluated the possibility of avoiding the wetlands within the impact footprint of this alternative. Moving the TSF southeasterly to avoid wetland areas would impact more drainages, require even more environmental controls and potential for seepage, resulting in a larger TSF footprint." The Department notices that moving any farther southeasterly would place the tailings facility on federal and private lands requiring additional permitting requirements and not available to purchase by ASARCO. However, placing the tailings farther southeasterly could eliminate the placing of tailings in Ripsey Wash altogether, thereby reducing	15-103

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	impacts from high flood events in a wash which drains a much larger area than a TSF placed outside of Ripsey.
	FEMA flood maps (see below and at <u>https://msc.fema.gov/portal/</u>) show the preferred alternative well within the 500 year floodplain. Ray Mine has suffered breaches in tailings dikes causing tailings collapses into the Gila River, including 6,000 - 8,000 tons as recently as 2011 and 292,000 tons in 1993. It seems logical to place the tailings in the most stable location possible and out of the 500 year flood plain altogether. The Department questions whether analysis of such an alternative outside the 500 year floodplain to the southeast of the proposed alternative was excluded due to landownership rather than topographic concerns.
	Action Needed: The DEIS should describe an alternative for the Ripsey TSF southeast of the proposed alternative that is outside the 500 year floodplain.
	LAW: The Corps has "entirely failed to consider an important aspect of the problem" of environmental impacts involving potential inundation of the project footprint during a 500-year flood event during the operational life of the RSF, and long-term following closure. <i>Lands Council v. McNair</i> , 537 F. 3d 981, 987 (9 th Cir. 2008).
	An alternative involving an area not presently owned by the applicant is practicable if it could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity. 40 CFR 230.10(a)(ii)(2)
	Action Needed: Analyze the effects of a 500-year flood on the structural integrity of the TSF and associated infrastructure, as well as the environmental impacts on the Gila River. Analyze an alternative southeasterly of the proposed alternative which takes the facility out of Ripsey Wash and out of the 500 year flood plain altogether. Use data to support the statement that such an alternative is less desirable from an engineering, environmental, and cost perspective.



Section	Page	Comment/Change requested	
5	28, 31, 36	Issue: Impacts to the Aquatic Ecosystem. ASARCO has evaluated the possibility of avoiding the wetlands within the impact footprint of this alternative. On page 3-60 of the DEIS, the Corps states "The regional surface and groundwater systems are interdependent, and, in general, groundwater contributes in some areas to the Gila River baseflow (gaining reach), while surface flow in the Gila River contributes to groundwater recharge (losing reach) in other areas. Seasonal variation in this interrelationship is common." However, the 404(b)(1) analysis does not analyze the aquatic ecosystem impacted <i>outside</i> the footprint of the TSF even though significant impacts may occur from pumping via the Hayden well field and wells within the San Pedro River bottom. The document also does not evaluate the possible significant effects on the aquatic ecosystem downstream of the TSF which may be impacted by seepage or catastrophic failure of the TSF. Nor does the document analyze the impacts to the aquatic ecosystem directly and indirectly by the Ray Mine itself, a connected action (CEQ §1508.25.a.1) of which the TSF is part and parcel.	15-104
		LAW: The EIS discussion of environmental impacts shall include a discussion of all direct and indirect effects and their significance. 40 CFR 1502.16. Reasonably foreseeable impacts include impacts which have catastrophic consequences, even if their probability is	
		low. 40 CFR 1502.22. <u>Action Needed</u> : The analysis area should include the Hayden well field and all wells in the San Pedro and Gila River bottoms that provide water to bring slurry to the tailings as well as the Gila River and its tributaries within the footprint of facility operations, and the Gila River and its tributaries downstream of possible heavy metals releases from the TSF.	
5	28-36, Append ix E	<u>Issue</u> : Biological Resources. The document does not analyze biological resources impacted <i>outside</i> the footprint of the TSF and its associated infrastructure even though significant impacts occur from pumping via the Hayden wellfield and the San Pedro River subflow. The document also does not evaluate the possible significant effects on biological resources downstream of the TSF which may be impacted by seepage or catastrophic failure of the TSF. Nor does the document analyze the impacts to the aquatic ecosystem directly and indirectly by the Ray Mine itself, a connected action of which the TSF is part and parcel.	15-105
_		Action Needed: The analysis area for the project extends to the entire scope of the Ray Mine to include well fields in the San Pedro and Gila River bottoms, the Gila River and its tributaries within the footprint of mining operations,	

15-105	Comment/Change requested	n Page	Section
(con't)	and the Gila River and its tributaries downstream of potential spill and seep locations. All areas impacted by the Ray Mine's activities, and especially those directly connected to it via pipelines and infrastructure, must be analyzed under the NEPA.		
15-10	<u>Issue:</u> The biological resources review is perfunctory and does not address State listed species. The Department requested in our scoping letter that the Corps evaluate the project in the context of Arizona's State Wildlife Action Plan (SWAP) and use the species lists found in the SWAP when considering impacts to wildlife to ensure that impacts to state trust responsibility species are evaluated and considered. These lists include Species of Greatest I Conservation Need (SGCN) and Species of Economic and Recreational Importance (SERI.) The Corps ignored this request in violation of NEPA and the Fish and Wildlife Coordination Act (FWCA) under which we expected to have been coordinating.	28-36, Biologi cal Resourc es all alternati ves	5
	LAW: In accordance with the <i>Fish and Wildlife Coordination Act</i> , district engineers shall consult with the head of the agency responsible for fish and wildlife for the state in which the work is to be performed, with a view to the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity performed in a permit application. The Army will give full consideration to the views of [the state wildlife agency] on fish and wildlife matters in deciding on the issuance, denial, or conditioning of individual or general permits. <i>Corps General Policies for Evaluating Permit Applications</i> , 33 CFR 320.4(c).		
	Action Needed: The Corps must re-evaluate the project and analyze the effects on all state listed-species as we requested during scoping. The 404(b)(1) analysis must include all viable options and must address effects on all wildlife, not simply federally-listed species.		
15-10	Issue: The 404(b)(1) analysis excluded the West Dam inappropriately as the Purpose and Need defined it out of the analysis. Had the West Dam been included in the analysis and biological resources been appropriately evaluated and compared, West Dam would have likely been the LEDPA. As an example, we queried the Habitat Data Management System for special status species <i>observed</i> within a mile of West Dam, Hackberry Alt 2, and Ripsey Alt 3. The two alternatives analyzed in the 404(b)(1) analysis bring up a host of special status species and critical relation on this topic. While recorded observations alone do not indicate presence or absence of a given species, the West Dam alternative is farther from important riparian habitats, has a smaller physical footprint, is closer to the species observed.	Biologi cal Resourc es West Dam, Hackber ry Alt 2 Ripsey	5

on	Page	Comment/Change req	uested							-	_
	Alt 3	disturbed areas, including the existing Ray Mine, and has much greater potential for recordation of species due									
		the highly accessible na	ture of the site that surro	ounds a	highway	<u>v</u> .					
		Special Status Spec	cies, Critical Habitat a	nd Spec	ial Area ernative	as witl e	nin 1 mil	le of th	e Tailing	storage l	Facility
		2.0		FW		BL	SGC	NP	Ripse	Hack-	West
		NAME	COMMON NAME	S	USFS	Μ	N	L	y	berry	Dam
		Agosia chrysogaster	and the second states				170		v	v	
		chrysogaster	Gila Longfin Dace	SC		S	IB		X		
		Bat Colony			1.000	-		-	A	A	
		Buteogallus	Common Black Hawk				1C		x	x	
		Camissonia pusilla	Washoe Suncup		1		1		X		
		Catostomus clarkii	Desert Sucker	SC	S	S	1B		X	X	
		Catostomus insignis	Sonora Sucker	SC	S	S	1B		X	X	-
		CH for Empidonax traillii extimus	Southwestern willow flycatcher Designated Critical Habitat						x	x	
		Empidonax traillii extimus	Southwestern Willow Flycatcher	LE			1A		x	X	
		Gopherus morafkai	Sonoran Desert Tortoise	CCA	S		1A			X	
		Ictinia mississippiensis	Mississippi Kite				1B			X	
		Macrotus californicus	California Leaf- nosed Bat	SC		s	1B		x	X	
		Nyctinomops femorosaccus	Pocketed Free-tailed Bat				1B		x	x	
		PCH for Coccyzus americanus	Yellow-billed Cuckoo Proposed Critical Habitat						x		

15-107 (con't)

Ray Tailings 40-	b1 Analysis AGFD Review		Dated: April 26, 2016	÷			
Section Pa	comment/Change requested			IF IN			
	AGFD, HDMS March 1, 2016			(con'			
	within project footprint						
	Action Needed: Include West Dam Department's lists and review tools ma	in the analysis. Do a full co ade available to the Corps in s	omparison of biological resources utilizing the coping.				
Table 9 43	Issue: Table 9 compares the various alternatives that are not practicable against each other. When we compare West Dam to Ripsey Alt 3 we find the following:						
		Ripsey Alt 3	West Dam				
	Tailings Footprint	2129 acres	1333 acres	10.10			
	Total Est Surface Disturbance	2575 acres	1620 acres	15-10			
	Total Impact to Waters of U.S.	134.36 acres	55.69 acres				
	Distance to Intermittent or perennial tributary)	.3 miles from Gila River	.8 mile to Mineral Creek (ephemeral 3.2 mile to Gila River				
	Crest Elevation	2970'	2440				
	These figures add more evidence that if the West Dam alternative were not excluded from the analysis it may it be selected at the LEDPA given a 38% smaller footprint for tailings overall and a 59% smaller footprint for of the US and ten times the distance from the Gila River Moreover, the elevation difference of 530' in ele may indicate a preferred possibility for a gravity-powered passive draindown collection system for collection control in the inevitable need for closure and post-closure management of the tailings drainage. This coul result in considerable cost savings given that draindown is likely to occur long past the predicted life of the mi						

Arizona Game and Fish Department

Suggested Mitigation to offset Impacts to Public Wildlife Resources from ASARCO's Ray Tailings Storage Facility*

Impact(s) Needing Mitigation	Proposed Mitigation				
TSF footprint -Direct loss of 2500 acres of Sonoran Desert Habitat.	Proponent acquisition of lands or easements that preserve and protect Arizona Upland Subdivision Sonoran Desert lands at a 2:1 ratio (5000 acres) adjacent to existing protected areas to enhance or establish connectivity between existing protected areas (e.g. uplands on both sides of the San Pedro Wildlife Area or properties between the San Pedro Wildlife Area and the TNC property at Dudleyville).				
TSF footprint -Direct loss of 2500 acres of Sonoran Desert Habitat.	Fund buffelgrass control for the life of the TSF on 5000 acres of Sonoran desert habitat significantly threatened with buffelgrass (2:1 ratio and assume 50% enhancement credit to achieve 100% compensation for 2500 acres total loss for Ripsey TSF footprint).				
TSF footprint -Direct loss of 2500 acres of Sonoran Desert Habitat.	Conservation activities including acquisition of lands or easements at the following ratios in Arizona Upland Sonoran desert: full restoration from bare ground and permanent preservation-1:1, enhancement from 50% ecosystem function to 100% ecosystem function and preservation- 2:1, or preservation only of 100% ecosystem function lands - 3:1 where conservation priorities have been identified by federal, state or conservation organizations and natural desert is threatened by development or other threats. Examples of preservation could be Sonoran desert in the vicinity of the Superstition Mountains or the White Tank Mountains in Pinal and Maricopa Counties respectively. Restoration could include brownfield sites such as fallow farmland or other disturbed sites. Mitigation could align with wildlife linkage conservation priorities as well				
TSF footprint -Direct loss of 2500 acres of Sonoran Desert Habitat	Purchase state land in upper Mineral Creek upstream of Big Box Dam and transfer ownership to Arizona Game and Fish Department or other conservation organization with endowment for operation and maintenance expenses for the life of the TSF. The purchase would benefit Gila chub and Gila chub critical habitat in upper Mineral Creek.				
TSF footprint -Direct loss of 2500 acres of Sonoran Desert Habitat	Purchase state land in Devils Canyon between Big Box Dam and U.S. Highway 60 and transfer ownership to Arizona Game and Fish Department or other conservation organization, and provide for yearly operating expenses for the life of the TSF. The purchase would benefit Gila chub, Gila topminnow, and loach minnow which could be stocked into the stream to establish recovery populations. Non-listed desert sucker and Sonora sucker could also be stocked.				
TSF footprint -Direct loss of 2500 acres of Sonoran Desert	Purchase land and mineral rights connecting the Galiuro Ecosystem Management Area of the Coronado National Forest and the Aravaipa Ecosystem Management Area of the Gila District Bureau of Land Management. Protect these lands in				

Habitat	perpetuity through restrictive covenants and easements.
Public Access for recreation in Hackberry TSF area	Restore and enhance public access to the Dripping Springs Mountains through private land acquisition or an access agreement that improves access at offsite location (including the north and eastern portions of the mountain range via Dripping Springs Wash
Public Access to recreation in Hackberry TSF area	Create or enhance public access to the south and southwest areas of the Dripping Springs Mountains through new roads/routes or improvements to existing roads/routes that could provide access around the TSF site in the immediate vicinity.
Loss of abandoned mine roost habitat for bats	Offsite habitat enhancement/protection for bats to protect important roost/hibernation and or maternity habitat. Construct a bat gate or cupola for a known site; or acquire habitat for permanent protection in areas known to be threatened by development.
Loss of abandon mine roost habitat for bats	Contribute funds to the State's abandoned mine program for purchasing materials and offsetting construction costs for bat friendly gates and fencing.
Potential mortality of bats during TSF construction/operations as a result of abandoned mine site destruction	Wildlife exclusions must be performed at all abandoned mine sites within the footprint of the tailings facility for owls and bats to ensure wildlife is not entombed. The surveys that were conducted by Westland Resources did not indicate that any exclusionary devices were installed. All exclusions must be performed outside the nesting season for owls (can be year round for barn owls) and the maternity season for bats (April-July). This should be part of an Avian and Bat Protection Plan.
Potential mortality of bats during TSF construction/operations as a result of abandoned mine site destruction	Avoid and minimize mortality by timing work and using closure methods that ensure no interference with bats.
Loss of springs, seeps, stock watering features and source wells	Provide one permanent water source for each permanent water source lost. Provide one intermittent water source for each intermittent source lost. Enhance existing livestock waters to wildlife friendly specifications at a ratio of 2:1 for each water source lost. Ensure that wildlife benefits lost are wildlife benefits replaced e.g. frog waters replaced with frog waters.
Loss of riparian habitat	Purchase small tracts to augment Lower San Pedro River Wildlife Area or fund riparian enhancements at 2:1 ratio as in kind replacement for 0.2 miles of direct impact to river habitat as a result of pipeline bridge crossing construction; an

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	revegetation of 110 feet of lost vegetation.
Loss of Critical Habitat for SWFL and YBCU	In-kind replacement for 0.2 miles of <u>direct</u> impact (loss) to Critical Habitat as a result of pipeline bridge crossing construction; and revegetation of 110 feet of lost vegetation. Acquire and protect in-kind replacement parcel of 13 acres of <u>direct</u> impact (loss) to Critical Habitat for highway relocation and infrastructure and acquire and protect lands for in-kind replacement for direct impact (loss) of 2 SWFL breeding territories.
Fragmentation of wildlife habitat from increased highway traffic, and footprint of TSF.	Fund a telemetry study and roadkill survey to locate high-use wildlife in crossing areas along SR77 and SR177.
Fragmentation of wildlife habitat from increased highway traffic, and footprint of TSF.	Secure funding a wildlife crossing structure over or under SR77 or SR177 to mitigate loss and cumulative fracturing o wildlife corridors.
Direct take of birds during TSF construction.	Develop an Avian and Bat Protection Plan in coordination with the Department. During the initial start of delivery of tailings material, adult Migratory Bird species that are currently nesting are likely to abandon nests during tailing delivery/deposit. This impact is likely to be lessened once delivery starts as birds are not likely to begin nesting while materials are being deposited. The DEIS recognizes the loss of available habitat, but fails to assess the effects to currently nesting Migratory Birds or estimate the direct loss.
Direct take of small animals including herps	Fund species-focused conservation activities such as species specific habitat enhancements, translocations, captive breeding projects etc. for Tier 1A&B SGCN species (Sonoran desert toad, Sonoran desert tortoise, Gila monster, regal horned lizard Sonoran whipsnake, variable sandsnake, saddled leaf-nosed snake, Bezy's night lizard, Sonoran coral snake, tige rattlesnake, Harris' antelope squirrel, banner-tailed kangaroo rat, Arizona pocket mouse, antelope jackrabbit, and Kit fox that are likely to have young animals on site.
Direct take of desert tortoise during construction.	Conduct 100% clearance surveys for desert tortoise (this includes searching all potential shelter sites). Thoroughly survey the project site for amphibian and reptile species prior to any development, remove sensitive species for appropriate placement within zoos and museums. Relocate (in coordination with the Department) all desert tortoises an Gila monsters from within the project area.
Introduction of Noxious	Develop a noxious weed and invasive species management and mitigation plan that includes offsite monitoring on adjacent

15-109

Weeds and Invasive Species	non-project lands and management actions that will be taken to eliminate and control their spread.
Loss of Protected Native Plants	Develop mitigation plan for losses of plants protected under Arizona's Protected Native Plant Law. Saguaro cacti that cannot be avoided should be salvaged and transplanted on site along with an additional cactus of equal or greater height. Any cacti that cannot be transplanted in the project area, or that must be destroyed, should be replaced at a 3:1 ratio for those up to 12 feet in height, and a 5:1 ratio for those 12 feet or with arms. All saguaros planted or transplanted should be monitored at least once a year for a minimum of 5 years and replaced as needed to achieve no net loss of preconstruction saguaro numbers within each size class.

*This table presents a number of alternatives for mitigating impacts of the TSF. This table is meant to provide a number of potential mitigation options that may be considered and is not all inclusive.

COMMENT DOCUMENT #16 PINAL COUNTY (GREG STANLEY, COUNTY MANAGER)

Comment Document # 16



Greg Stanley County Manager

March 9, 2016

Michael Langley Senior Project Manager U.S. Army Corps of Engineers Arizona-Nevada Office 3636 N Central Ave, Suite 900 Phoenix, Arizona 85012-1939

Dear Mr. Langley:

Pinal County appreciates the opportunity to provide comments on the Draft Environmental Impact Statement for the Proposed Tailings Storage Facility, Ray Mine, Pinal County, Arizona, File No. SPL-2011-1005-MWL. Pinal County understands the economic importance and supports the development of a new Tailings Storage Facility (TSF) in order for Asarco to continue mine operations at the Ray Complex.

The Asarco Ray Mine has been an important economic driver for the county since mining began at this site in the 1880's. The Ray Mine currently employs approximately 870 people, many of whom reside in Pinal County or the surrounding areas.

Pinal County understands and respects the need to find creative solutions that protect our natural environment while also allowing businesses to design, develop and operate facilities that create jobs and other economic benefits for our local communities. We appreciate Asarco's willingness to work with the local community and other stakeholders on developing this balance that will allow the mine to continue to operate for 50+ years while also respecting Pinal County's natural beauty and resources. We also appreciate the public outreach efforts that you and your staff have undertaken to allow the residents of Pinal County to weigh in on the proposed project.

The ultimate location of the TSF will have permanent impact to residents and visitors to that area of Pinal County. Thus a majority of the attached comments address concerns with the proposed TSF location at the Ripsey Wash location and represent our desire to support the project while minimizing long term impacts.

Sincerely,

Greg Stanley County Manager

COUNTY MANAGER

135 North Pinal Street, Administrative Complex, PO Box 827

Florence, AZ 85132 T 520-866-6212

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Air Quality Department Comments

1) The PM10 data record referenced in section 3.1.1.4 "Regional Air Quality" on page 3-5 is incorrect. Pinal County did not operate a PM10 site in town of Kearny from 2009-2011 and the referenced maximum value is incorrect. Pinal County operated a PM10 monitoring site at Riverside during the period from 2003-2010 with 2003 and 2010 including partial year data collection. The maximum 24-hour PM10 value recorded during that period was 100.7 µg/m³ measured in 2003. This measurement is below the relevant National Ambient Air Quality Standard ("NAAQS") for PM10 set at 150 µg/m³. The 51 µg/m³ maximum value referenced in the section occurred in 2009 and reflects a 24-hour average not an annual average concentration. The 50 µg/m³ standard referenced in the section reflects an annual average PM10 concentration which was revoked by the U.S. EPA in 2006. In 2006 U.S. EPA retained the 24-hour PM10 NAAQS of 150 µg/m³ which is currently the applicable standard. Data reference: "Pinal County Air Quality Control District 2012 Ambient Monitoring Network Plan and 2011 Data Summary", PCAQCD 2012, also available through EPA's AQS database.

Open Space and Trails Department Comments

The Pinal County Open Space and Trails Department understands the need for ASARCO to develop a new Tailings Storage Facility (TSF) for the Ray Mine complex. Respectfully though, we support the Hackberry Gulch (HG) alternative as the preferred alternative. Reasons for this recommendation are given below. In addition we have provided specific issues with the analysis and information presented in the Draft Environmental Impact Statement (DEIS). We are also providing suggestions for additional mitigation measures to be included in the Final EIS, if the Ripsey Wash alternative is selected as the final TSF location.

Key points which support the HG TSF site are:

 The HG TSF site leaves the current Arizona National Scenic Trail (ANST) alignment intact including an existing trailhead. This is the alignment which was in place when the ANST was granted National Scenic Trail status and thus contributed to the significance of the ANST in meeting the threshold for National Scenic Trail designation. The Ripsey Wash (RW) TSF alternative requires moving the trail corridor and the trailhead location, significantly impacting the trail experience and the sustainability of the trail. Additionally, the RW alternative significantly impacts the visual impacts to trail users, not only as it relates to the RW TSF, but also due to the other land disturbance related to the RW project. The RW TSF and the associated actions (relocation of the Florence/Kelvin Hwy and the WAPA power line) would permanently degrade the visual resources from the trail in several locations as outlined in the DEIS.

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- 2) The HG alternative meets the storage capacity outlined in the DEIS, but with less new, unrelated ground disturbance. This maintains the continuity of the natural resources, existing and historic recreation activity, working landscapes and vegetative and wildlife resources intact.
- 3) The HG alternative requires a bridge over highway 77 while the RW alternative requires a bridge over the Gila River. A bridge over an existing highway is less of an impact than a bridge over a critical riparian area which has known cultural resources and significant wildlife habitat including Threatened and Endangered species.
- 4) The HG alternative has over 50% less impact on Waters of the U. S., less impacts on watersheds and impacts no designated flood plains.
- 5) The HG alternative has less overall impact to the native vegetation and wildlife habitat, including 16-8 Threatened and Endangered species.
- 6) The HG alternative has significantly less impact to existing recreational activities, especially if the entire impact of Arizona State Land acquisition and the Ray Land Exchange are completely analyzed. (See discussion items # 1 & 3 In the "Key Items" section below).
- 7) The HG alternative is a better land use as it maintains the new disturbance within the historic "footprint" of the existing mine operations including the existing TSF. This footprint is primarily on the east side of Highway 77. The RW alternative spreads the operations into areas that are currently in their natural state, but also opens up significant other areas for expansion based on the size of the Arizona State Land Purchase and the completion of the Ray Land Exchange. (See discussion item # 1 in the "Key Items" section below).

Key items that were not adequately addressed in the DEIS analysis:

 The DEIS analysis did not adequately address the fact that the HG site is a continuation of the existing mine and TSF facility. Thus, the HG alternative and its associate impacts, is a related activity and fits in with the existing land uses that are currently occurring. This was not adequately analyzed within the existing DEIS. This is a key decision point and should be highlighted and better analyzed throughout the report.

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- 2) The DEIS fails to adequately address the Ray Land Exchange in the HG alternative. Ultimately, the whole HG site will be privately owned by ASARCO and this should be fully analyzed within all applicable segments of the DEIS. An example of how this can affect the analysis would be in the Recreation use discussion. The current analysis assumes and provides benefit to existing uses of BLM property within the footprint of the HG site. In reality, as soon as the Ray Land exchange is consummated, that BLM land will become private, this meaning that it has no recreational value whatsoever.
- 3) The DEIS fails to adequately address the full spectrum of the Arizona State Land (ASLD) purchase, instead focusing only on the RW site footprint. The RW proposal includes over 7,400 acres which have existing natural resource, recreation and working landscape value. Once consummated, these 7,400 acres become private, thus affecting any future use and value. This fact should be properly analyzed in all applicable segments of the report.

Mitigation measures:

If the RW site is ultimately chosen as the TSF location, the OS&T Department suggests that the following mitigation measures be included with the final Environmental Impact Statement Report:

- ASARCO will pay all costs associated with the complete relocation of the Arizona National Scenic Trail and the associated trailhead. This trail is to be built to specifications as outlined in the final grade centerline report which will be part of the final EIS. Final trail layout, design, construction, constructions techniques and the selection of the contractor for trail and trailhead construction must be approved by all of these parties; the Bureau of Land Management (BLM), Pinal County and the Arizona Trail Association (ATA).
- 2) ASARCO will be responsible for reimbursement to Pinal County for any costs associated with the acquisition costs of the current trail ROW, including but not limited to, Recreational Trail Program (RTP) funds and Pinal County funds used for ASLD ROW acquisition. Pinal County will invoice ASARCO for this amount and payment will be due within 30 days of the invoice.
- ANST trail relocation construction will begin as soon as the 404 permit is issued. Construction of the relocated trail and trailhead must be completed within two years from the start date of trail construction.
- 4) ASARCO will fully fund trail maintenance for the relocated trail and trailhead for a period no less than 3 years after the final trail construction ends. Trail maintenance needs will be outlined and reported to ASARCO on a twice a year basis. The report should be jointly produced by the BLM, Pinal County and the ATA.

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- 5) On the portion of the ANST trail which will be relocated to private lands or part of the ASLD purchase which becomes private lands, ASARCO will place the trail and an adequate corridor into a conservation easement or similar protection, deeded to either BLM or Pinal County. The corridor width and other significant details of the easement will be determined in negotiations between ASARCO, BLM, Pinal County and the ATA and included in the Final EIS. The easement must be completed and recorded within 6 months of completion of the relocated trail.
- 6) Trail relocation center line report included as part of the Final EIS will include specifics of the necessary trail design and construction details for a safe trail corridor along Riverside Road. These details will be approved by Pinal County, BLM and ATA. ASARCO will be responsible for all planning and construction costs as well as any necessary right of way acquisition.
- 7) The plan of operations for the TSF will include the addition of vegetation to the facility in order to minimize the visual impact.
- 8) The final EIS should include mitigation provided and paid for by ASARCO to mitigate for the permanent visual degradation of the RW TSF. This mitigation could include additional corridor and/or land acquisition which would further protect other encroachments, disturbances or impacts to the ANST.
- 9) The final EIS should address mitigation for the loss of future connectivity to the Pinal County plans for Off Highway vehicle (OHV) trails that will be lost due to the RW TSF alternative.

DEIS report comments:

ES-5,-" A 6.4-mile bypass would be constructed to the east of the Ripsey Wash TSF; this routing would conform to the original objectives of the Arizona Trail, which were to establish and maintain a diverse and scenic trail across the state of Arizona." This statement is subjective, misleading and should be removed. The statement does not reflect the permanent visual, noise and vegetative impact of the RW alternative, which is a significant impact over the existing corridor. Any similar statements throughout the report should also be removed.

Table ES-1-The statement on footnote 1 "....while on state and private lands, Pinal County is the managing agency..." is incorrect. Pinal County only manages the trail Right of Way on state lands.

1.5.2-Section states that "The BLM must approve any portion of a relocated Arizona Trail that would cross their administered lands." If the RW TSF is selected as the approved site, this BLM approval needs to occur prior to a 404 permit being issued.

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2.3.2.3 - This section should remove wording about "conforming to the original objectives....." as stated above. Additionally, trail construction needs to occur as soon as the 404 permit is issued for safety, user experience etc reasons, not at the later stage of site construction. Also need to address construction timeline as mentioned above.

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3.9.1.2.3-This needs to address the loss of planned connectivity of the County's desired OHV trail network. This should also be addressed in the mitigation measures if the RW site is selected.

2.3.2.1-This section should clarify that the proposed relocation of the Florence Kelvin/Highway would have a significant visual and noise impact to the Arizona National Scenic Trail. This would impact trail users on the north side of the Gila River for a minimum of seven plus miles.

3.7.2.2- The statement "Arizona would benefit financially from the sale of this land" should be removed. Without a statistically valid analysis of the current and future economic benefits of the land, the State Land Trust and a variety of other assessments, the value of this sale to the State is unknown.

3.9.1.4-As stated in #6 Key Points above, the analysis of private land as a readily accessible for recreation activities is incorrect. Current conditions on ASARCO private owned lands include fencing with "Keep out, Private Property" signs installed. As this section mentions, the entire HG site will ultimately be private, negating any recreational value. Thus, in order to have the least amount of impact to historic and future recreational activities, the HG site would be best as it would leave the 7,400 acres of the RW site intact for these activities.

3.9.2.2-This section states "Trail users along the new route would experience panoramic views of the Gila River Valley and the Dripping Springs Mountains and thus the scenic quality of the trail experience should not be reduced by the relocation..." This statement is false and misleading and should be removed. Existing trail users already have a scenic view of the Dripping Spring Mountains, so this is unchanged. What changes dramatically is the view for trail users north of the Gila under the RW proposal. The visual impact here is 7.2 miles of new roadway, new power lines and a new TSF facility. So yes, the trail location would be dramatically reduced by relocation.

3.13.1.6-Reference to "Pima" County, not "Pinal County".

3.14.2.3-This sections states "...Hikers on the realigned Arizona Trail would have foreground/middleground view of the Hackberry Gulch TSF for about 4.6 miles and no background views." This is incorrect, if the TSF is the HG site; there is no need for a "realigned" trail.



3.14.2.3.2- This section states "KOP 6 is lower in elevation than the ultimate height of the TSF embankment, so the actual tailings impoundment area would not be visible from this KOP." That statement misses the point and should be restated. The embankment is a significant part of the visual degradation of the RW site for trail users.

4.10-The statement "cumulative recreation impacts would essentially be the same for either the Ripsey Wash or Hackberry Gulch TSF." is incorrect. As outlined in #6 Key Points above, the RW site location has significantly more of an impact. This impact is evident in the loss of recreation access to over 7,400 acres of land which would become private if the RW TSF is developed. If the HG site is chosen the historic recreation activity remains intact for these 7,400 acres.

Various sections-Several sections make note of the relocated trail being primarily "hand built". During recent discussions among the trail partners, the current thought is that the relocated trail may need to be constructed more with equipment due to the soil condition, steepness of the terrain, wash crossings and switchback construction. This discussion needs to be analyzed within the DEIS and the related impacts (larger landscape scars etc) analyzed where appropriate.

Public Works Department Comments

 If the Ripsey Wash TSF alternative is selected ASARCO will pay all costs associated with the complete relocation of the Florence/Kelvin Highway. This relocation is to be an all weather surface and built to specifications as outlined and approved by Pinal County. Paving must connect to existing pavement to the east of the TSF. 16-35

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COMMENT DOCUMENT #17 AMERICAN LEGION PAL POST #18 (MICHAEL DINWIDDIE, COMMANDER)

Comment Document #17

From: To: Subject: Date: <u>Mike & Gwen</u> Langley, Michael SPL; <u>Mike Dinwiddie</u>; <u>Stewart, James</u> [EXTERNAL] ASARCO Ripsey Wash Wednesday, April 06, 2016 5:59:16 PM

American Legion PAL Post #18

Michael R. Dinwiddie, Commander

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P. O. Box 78

Kearny, Az. 8513

April 6, 2016

VIA Email (Michael.W.Langley@usace.army.mil)

LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS REGULATORY DIVISION

ATTN: Michael Langley 3636 North Central Avenue, Suite 900

Phoenix, AZ 85012-1939

Re: SPL-2011-01005-MWL Ray Mine Proposed Tailings Storage Facility

Dear Mr. Langley,

I am writing you today to issue support for the proposed Ripsey Wash Tailings facility at the Ray Mine. The Ray Mine has been a historic provider of jobs and economic opportunities for the Copper Basin and surrounding communities since mining began in the early 1900's. The development of this new tailings facility will bring more jobs to the local communities and will ensure the Ray Mine has the ability to operate well into the future.

The Copper Basin is proud of its mining history and these mining operations are directly tied to the history and foundation of many of our local communities and counties. Asarco has worked with the local communities and organizations to take in put, provide answers and recommendations on the design of this new project. It is important for existing mining operations to maintain strong working relationships with their neighbors and local communities, and Asarco has demonstrated that it will work with its surrounding communities on large projects similar to this.

We would like to offer our public support for the proposed Ripsey Wash Tailings Facility during the open comment period.

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Please be advised that this support is for the members of post 18 only and no other American Legion organization is in evolved.

Sincerely,

Michael R. Dinwiddie, Commander

COMMENT DOCUMENT #18 ARIZONA MINING REFORM COALITION

Comment Document #18

Arizona Mining Reform Coalition (AMRC), — Center for Biological Diversity, — Earthworks, — Sierra Club – Grand Canyon (Arizona) Chapter

Via Email

March 14, 2016

U.S. Army Corps of Engineers, Los Angeles District Arizona Regulatory Branch ATTN: SPL-2011-01005-MWL 3636 N. Central, Suite 900 Phoenix, AZ 85012-1939 Michael.W.Langley@usace.army.mil

U.S. Bureau of Land Management Tucson Field Office 3201 E. Universal Way Tucson, AZ 85756 TFOWEB_AZ@blm.gov

Re: Comments on Draft EIS and Public Notice/Application No. SPL-2011-01005-MWL Ray Mine Proposed Tailings Storage Facility

Pursuant to the Army Corps of Engineers' (Corps or ACE) Public Notice and Notice of Availability of the Draft EIS (DEIS) for the Ray Mine Proposed Tailings Storage Facility (TSF), these comments are submitted on the DEIS and Public Notice by the Arizona Mining Reform Coalition (AMRC), Center for Biological Diversity, Earthworks, and the Sierra Club – Grand Canyon (Arizona) Chapter. The DEIS is found at http://www.spl.usace.army.mil/Missions/Regulatory/ProjectsPrograms/RayMineTailingsStorag

eFacility.aspx

As noted in the DEIS: "Because approximately 0.3 miles of tailings and reclaim water pipelines, a portion of the re-route for the Arizona National Scenic Trail (Arizona Trail), and rock material for reclamation would involve BLM administered lands and minerals, the BLM will use this EIS to support their decision-making processes." DEIS at ES-2, note 2. Thus, these comments are also submitted to the BLM. Any concerns noted herein (including but not limited to comments on the DEIS) must also be satisfied by the BLM before BLM can issue any approvals, permits, or authorizations regarding the TSF or Ray Mine.

AMRC works in Arizona to improve state and federal laws, rules, and regulations governing hard rock mining to protect communities and the environment. AMRC works to hold mining operations to the highest environmental and social standards to provide for the long term environmental, cultural, and economic health of Arizona. Members of the Coalition include: Apache Stronghold, Center for Biological Diversity, Concerned Citizens and Retired Miners Coalition, Concerned Climbers of Arizona, Dragoon Conservation Alliance, Earthworks, Environment Arizona, The Grand Canyon Chapter of the Sierra Club, Groundwater Awareness League, Maricopa Audubon Society, Patagonia Area Resource Alliance, Save the Scenic Santa
Ritas, Save Tonto National Forest, Sky Island Alliance, Spirit of the Mountain Runners, and the Tucson Audubon Society.

The **Center for Biological Diversity** is a non-profit public interest organization with an office located in Tucson, Arizona, representing more than 990,000 members and supporters nationwide dedicated to the conservation and recovery of threatened and endangered species and their habitats. The Center has long-standing interest in projects of ecological significance undertaken in the National Forests of the Southwest, including mining projects.

Earthworks is a nonprofit organization dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions. Earthworks stands for clean air, water and land, healthy communities, and corporate accountability. We work for solutions that protect both the Earth's resources and our communities.

Sierra Club is one of the nation's oldest and most influential grassroots organizations whose mission is "to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments." Sierra Club has more than 2.4 million members and supporters with 35,000 in Arizona as part of the Grand Canyon (Arizona) Chapter. Our members have long been committed to protecting and enjoying the Tonto National Forest and have a significant interest in the proposed Resolution Copper Mine and related activities.

As shown in more detail below, the DEIS contains numerous legal and factual errors and as such should be revised in order to comply with federal law. In addition, any ACE plan to continue its review of the Section 404 permit application must comply with federal law as detailed herein. At a minimum, a revised Draft EIS must be prepared, subject to full public comment.

THE PROPOSED PROJECT, 404 PERMIT, AND DEIS VIOLATE NUMEROUS FEDERAL AND STATE LAWS AND CANNOT BE APPROVED AS PROPOSED AND REVIEWED IN THE DEIS.

As detailed herein, the Ray Tailings Storage Facility (TSF), the connected Ray Mine, and the DEIS violate numerous federal and state mining, public lands, environmental, wildlife, historic/cultural preservation and related laws, regulations, and policies. As such, the ACE cannot approve the proposed Section 404 permit and the BLM cannot approve the pipeline/ROW, quarry, or other proposed actions associated with the TSF or Ray Mine. These laws (with their implementing regulations and policies) include, but are not limited to: the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Clean Water Act (CWA), the Clean Air Act (CAA), the Federal Land Policy and Management Act (FLPMA), Arizona State wildlife, air, water, and related statutes, and Presidential Executive Orders related to wildlife, wetlands, and other resources potentially affected by the TSF and Mine.

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THE ACE AND BLM MUST PREPARE A REVISED DRAFT EIS

For the reasons articulated herein, and in the previous comments submitted by the Sierra Club (Oct. 28, 2103), the DEIS is substantially inadequate and violates NEPA. The DEIS fails to take the requisite "hard look" at the TSF and Mine. Critical and explanatory data, methodologies, and analysis are simply not provided; this failure goes to the heart of NEPA's requirements regarding full and transparent disclosure of issues so that the public can credibly comment on the proposal. As such, the remedy for these inadequacies is for the ACE/BLM to prepare and publish a revised Draft EIS for public and agency comment.

Among other inadequacies noted herein, the DEIS fails to properly review all direct, indirect, and cumulative impacts (as well as connected actions), fails to properly review all reasonable alternatives, fails to conduct the required baseline analysis (and defers consideration of critical information until after the NEPA process is concluded), and fails to conduct the proper mitigation analysis (including the effectiveness of all mitigation measures), against the requirements of NEPA and the other laws noted herein.

ADDITIONAL ISSUES

I. THE DEIS FAILED TO FULLY ANALYZE ALL DIRECT, INDIRECT, AND CUMULATIVE IMPACTS

One of the most glaring deficiencies in the DEIS is its failure to analyze the impacts from the Ray Mine itself, despite the acknowledged fact that the TSF is part and parcel of the Ray Mine and that expansion of the Ray Mine to allow an additional 50 years of mining is premised on construction of the TSF (in either the Ripsey Wash or Hackberry Gulch locations).

Under the NEPA, the ACE must fully review the impacts from all "past, present, and reasonably foreseeable future actions." These are the "cumulative effect/impacts" under NEPA. To comply with NEPA, the ACE must consider all direct, indirect, and cumulative environmental impacts of the proposed action. 40 CFR §§ 1502.16, 1508.8, 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. 40 CFR § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. 40 CFR § 1508.8(b). Both types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." Id.

The DEIS's analysis of baseline conditions and impacts were strictly limited to the impacts from the two TSF locations. This is despite the fact that the proposed TSF's entire purpose is to "support continuing copper mining activities at the Ray Mine Complex." ACE Public Notice for DEIS at 2. There can be no credible argument that impacts from continued operation at the Ray Mine Complex is not a direct or indirect result from construction and operation of the TSF (in either location). "[T]he proposed new TSF is slated to replace the existing Ray Mine Elder Gulch TSF." DEIS at 4-3. As a result, "Mining [is] expected to continue into the future (50+ years)." DEIS Table 4-2, DEIS at 4-2. As such, the DEIS's failure to consider the impacts from continued operation of the Ray Mine violates the agencies' duties to analyze the direct and indirect impacts from the TSF and Ray Mine.

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In any event, the DEIS's failure to analyze the cumulative effects/impacts from the past, present, and future operation of the Ray Mine violates the agencies' duties to review all cumulative effects/impacts. Cumulative effects are defined as:

[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 CFR § 1508.7. In a cumulative impact analysis, an agency must take a "hard look" at all actions.

An EA's analysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. ... Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.

<u>Te-Moak Tribe of Western Shoshone v. U.S. Dept. of Interior</u>, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations).

A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Engineers, 361 F.3d 1108 1118 (9th Cir. 2004). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003).

The NEPA obligation to consider cumulative impacts extends to all "past," "present," and "reasonably foreseeable" future projects. <u>Blue Mountains</u>, 161 F.3d at 1214-15; <u>Kern</u>, 284 F.3d at 1076; <u>Hall v. Norton</u>, 266 F.3d 969, 978 (9th Cir. 2001) (finding cumulative analysis on land exchange for one development failed to consider impacts from other developments potentially subject to land exchanges); <u>Great Basin Mine Watch v. Hankins</u>, 456 F.3d 955, 971-974 (9th Cir. 2006)(requiring "mine-specific ... cumulative data," a "quantified assessment of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed mining operations in the region).

As the Ninth Circuit has further held:

Our cases firmly establish that a cumulative effects analysis "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past,

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present, and future projects." <u>Klamath–Siskiyou</u>, 387 F.3d at 994 (emphasis added) (quoting <u>Ocean Advocates v. U.S. Army Corps of Eng'rs</u>, 361 F.3d 1108, 1128 (9th Cir.2004)). To this end, we have recently noted two critical features of a cumulative effects analysis. First, it must not only describe related projects but also enumerate the environmental effects of those projects. See <u>Lands Council v. Powell</u>, 395 F.3d 1019, 1028 (9th Cir.2005) (holding a cumulative effects analysis violated NEPA because it failed to provide "adequate data of the time, place, and scale" and did not explain in detail "how different project plans and harvest methods affected the environment"). Second, it must consider the interaction of multiple activities and cannot focus exclusively on the environmental impacts of an individual project. See <u>Klamath–Siskiyou</u>, 387 F.3d at 996 (finding a cumulative effects analysis inadequate when "it only considers the effects of the very project at issue" and does not "take into account the combined effects that can be expected as a result of undertaking" multiple projects).

<u>Oregon Natural Resources Council Fund v. Brong</u>, 492 F.3d 1120, 1133 (9th Cir. 2007). In addition to the fundamental cumulative impacts review requirements noted above, NEPA regulations also require that the agency obtain the missing "quantitative assessment" information:

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

(a) If the incomplete information relevant to reasonably foreseeable significant adverseimpacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

(b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:

(1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

40 CFR § 1502.22. "If there is 'essential' information at the plan- or site-specific development and production stage, [the agency] will be required to perform the analysis under § 1502.22(b)." 18-5 (con4)

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<u>Native Village of Point Hope v. Jewell</u>, 740 F.3d 489, 499 (9th Cir. 2014). Here, the adverse impacts from the TSF when added to other past, present or reasonably foreseeable future actions is clearly essential to the ACE's determination (and duty to ensure) that the TSF and Mine complies with all legal requirements and minimizes all adverse environmental impacts.

"[W]hen the nature of the effect is reasonably foreseeable but its extent is not, we think that the agency may not simply ignore the effect. The CEQ has devised a specific procedure for 'evaluating reasonably foreseeable significant adverse effects on the human environment' when 'there is incomplete or unavailable information.' 40 C.F.R. § 1502.22.'' <u>Mid States Coalition for Progress v. Surface Transportation Board</u>, 345 F.3d 520, 549-550 (8th Cir. 2003) (emphasis in original).

Here, as shown herein, no quantitative data or analysis is provided, a direct violation of the Ninth Circuit's holding in <u>Great Basin Mine Watch</u>:

The [agency] cannot simply offer conclusions. Rather, it must identify and discuss the impacts that will be caused by each successive [project], including how the combination of those various impacts is expected to affect the environment, so as to provide a reasonably thorough assessment of the projects' cumulative impacts.

456 F.3d at 974. The ACE cannot "merely list other [projects] in the area without detailing impacts from each one." <u>Id</u>. at 972. A "quantified assessment of their combined environment impacts" must be completed. <u>Id</u>.

NEPA explicitly requires a cumulative impact analysis. A particular action may seem unimportant in isolation, but that small action may have dire consequences when combined with other actions. As we observed in <u>Klamath–Siskiyou Wildlands Center</u>, "[s]ometimes the total impact from a set of actions may be greater than the sum of the parts."

<u>ONRC v. Goodman</u>, 505 F.3d 884, 893 (9th Cir. 2007). See also <u>Te-Moak</u>, 608 F.3d at 606 (same).

Yet that is exactly what the agencies did here. The DEIS simply briefly mentions some (but certainly not all) of the other current and reasonably foreseeable future activities in the area, such as the Ray Mine, Hayden Concentrator and Hayden Smelter, but no detailed analysis of their impacts is provided. Thus, in this case, the DEIS failed to fully consider the cumulative impacts from all past, present, and reasonably foreseeable future projects in the region on, at a minimum, water and air quality including ground and surface water quantity and quality, recreation, cultural/religious (including its duties under the National Historic Preservation Act), wildlife, transportation/traffic, scenic and visual resources, etc. At a minimum, this requires the agencies to fully review, and subject such review to public comment in a revised DEIS, the cumulative impacts from all other mining, grazing, recreation, energy development, roads, etc., in the region.

As just one example, air quality, the DEIS admits that the area has exceeded the allowable standards, yet simply asserts that because the emissions from the construction and operation of

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the TSF alone would not be significant, then the combined emissions from the TSF and Ray Mine operations need not be analyzed. As the DEIS states:

Fugitive dust and gaseous emissions associated with either TSF action alternative would add to the overall emissions in the region, particularly during the expected three years of initial site development and construction activities, but additional TSF construction generated emissions would be minor compared to the overall emissions from the region that already experiences mining (Ray Mine), industrial (Hayden smelter), urban (the Phoenix metropolitan area), transportation and agricultural activities.

DEIS at 4-3. No calculation of the "overall emissions in the region" is provided, despite the fact that the BLM and ACE cannot approve any action that would contribute to a violation of any federal or state air quality permit under the Clean Air Act, FLPMA (for BLM) and the Clean Water Act (for ACE). The DEIS asserts that because the emissions from the TSF alone are "*de minimis*" or "negligible" compared to the emissions from these other projects, no further analysis or CAA/FLPMA compliance is required. DEIS at 4-3 to -4.

Yet this utterly fails to account for the fact that the air quality is already above standards. For example: "PM10 monitoring was conducted in the town of Kearny for nearly three years (2009 – 2011) by Pinal County. The highest PM10 value from this monitoring was 51 μ g/m3, which is a value that slightly exceeds the Pinal County AAQS for PM10, which is 50 μ g/m3." DEIS at 3-5. The projected emissions from just the TSF include up to 94 tons/yr. DEIS Table 3-3, DEIS at 3-7.

The fact that project emissions will not constitute a large percentage of regional air emissions in Pinal County, as asserted by the agencies, DEIS at 3-8, is irrelevant, as the agencies need to analyze the full emissions from the TSF combined with operation of the Ray Mine for another 50+ years, and ensure that no air standards are exceeded at any time. The same is true for all of the air pollutants reviewed in the DEIS, as the agencies never calculated the cumulative emissions from the entire Ray Mine – which includes, but is not separate from – the TSF. Thus, the NEPA analysis is legally deficient and any assurances that the full project will comply with all air standards at all times is unsupported.

It should be noted that the fact that Arizona may issue, or has issued, an air quality permit for the Ray Mine Project does not satisfy the ACE's duties. The ACE cannot defer to a state permitting process that never underwent the rigorous public and agency review requirements in NEPA.

A non-NEPA document – let alone one prepared and adopted by a state governmentcannot satisfy a federal agency's obligations under NEPA. <u>Klamath-Siskiyou Wildlands</u> <u>Center v. BLM</u>, 387 F.3d 989, 998 (9th Cir.2004).

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 726 (9th Cir. 2009). The Ninth Circuit rejected as "without merit" arguments that a federal agency may avoid its NEPA duties where a "facility operates pursuant to a state permit under the Clean Air Act." <u>Klamath-Siskiyou</u>, 387 F.3d at 998.

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The agencies cannot comply with NEPA, let alone its duty to ensure that all air quality standards will be met at all times under the Clean Air Act, CWA, FLPMA, and their implementing regulations, when it has not fully analyzed the air emissions that may result from the Ray Mine (which includes the TSF) and other activities in the area.

The same fundamental error is repeated for all of the 18 resources affected by the Ray Mine, as well as the other resources affected by the other past, present, and reasonably foreseeable future actions/activities listed in Table 4-2. As just one example, the DEIS fails to analyze the significant cumulative impacts to recreation resulting from the next 50+ years of Ray Mine operations (including the TSF), as the Arizona Trail runs through Ripsey Wash. No baseline analysis of users was conducted, as this popular Trail is under assault as it is also in the path of Resolution Copper's tailings dump just north of Highway 60 by Superior. *See also* Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations (Project) <u>http://www.fs.usda.gov/detail/tonto/news-events/?cid=FSEPRD489408</u> and <u>http://www.fs.usda.gov/project/?project=44494</u>.

It should also be noted that reliance on future completion of BLM's Supplemental EIS for the Ray Mine Land Exchange does not satisfy the ACE/BLM duties here. Such a short-sighted view of NEPA has been consistently rejected by the federal courts.

NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment. Rather, it is designed to require such analysis as soon as it can reasonably be done. *See Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n. 9 (9th Cir.1984) ("Reasonable forecasting and speculation is ... implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry,'" quoting *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C.Cir.1973)).

Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1072 (9th Cir. 2002). Thus, even if the future SEIS may review the full impacts from the Ray Mine whether occurring on private or public lands, that potential does not make the DEIS legally compliant with NEPA.

Further, under 40 CFR §1502.22, the agency must obtain such information when "the overall costs of obtaining it are not exorbitant." 40 CFR §1502.22 (a) ("If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement."). Here, there is no rational basis, nor has one been provided, that the costs to analyze the impacts from the rest of the Ray Mine and other area activities are "exorbitant." Further, even if the agencies could somehow argue that the costs are "exorbitant," theY still must conduct an "evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." 40 CFR §1502.22 (b)(1)(4). Certainly, ACE/BLM and Asarco have the expertise to "evaluate such impacts" based upon their scientific and technical experience.

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In addition to NEPA, the ACE is required by the CWA to fully analyze all impacts that may result from approval of the 404 permit. As one recent federal court stated:

Specifically, the Corps' regulations require it to consider the impacts of an entire project. When an applicant seeks a permit for an activity which is a component of a larger project, the Corps' regulations require it to assess "the impacts of the specific activity requiring a [Corps'] permit and those portions of the entire project over which the district engineer has sufficient control and responsibility to warrant Federal review." 33 C.F.R. § 325 (App.B, § 7(b)(1)); *Sylvester v. Army Corps of Engineers*, 884 F.2d 394, 398 (9th Cir.1989). Thus, "while it is the development's impact on jurisdictional waters that determines the scope of the Corps' permitting authority, it is the impact of the permit on the environment at large that determines the Corps' NEPA responsibility." *[Save Our] Sonoran [v. Flowers]*, 408 F.3d 1113, 1122 (9th Cir. 2004). The Corps has control of and responsibility for portions of a project beyond Corps jurisdiction "where the Federal involvement is sufficient to turn an essentially private action into a Federal action. These are cases where the environmental consequences of the larger project are essentially products of the Corps' permit action." 33 C.F.R. § 325 (App.B, § 7(b)(2)).

Baykeeper v. U.S. Army Corps of Engineers, 2006 WL 2711547, *8 (E.D. Cal. 2006). As the Ninth Circuit has held for 404 permits in Arizona:

Although the Corps' permitting authority is limited to those aspects of a development that directly affect jurisdictional waters, it has responsibility under NEPA to analyze all of the environmental consequences of a project. Put another way, while it is the development's impact on jurisdictional waters that determines the scope of the Corps' permitting authority, it is the impact of the permit on the environment at large that determines the Corps' NEPA responsibility. The Corps' responsibility under NEPA to consider the environmental consequences of a permit extends even to environmental effects with no impact on jurisdictional waters at all.

Save Our Sonoran v. Flowers, 408 F.3d 1113, 1122 (9th Cir. 2004).

More recently, the Ninth Circuit issued a similar decision against the Corps in Arizona in <u>White</u> <u>Tanks Concerned Citizens, Inc. v. Strock</u>, 563 F.3d 1033 (2009), where the court rejected the Corps' 404 permit for failing to conduct an environmental review of the entire project (as to just the wetlands/waters lands affected by the project.

Because this project's viability is founded on the Corps' issuance of a Section 404 permit, the entire project is within the Corps' purview. SOS [Save Our Sonoran] makes this clear. 408 F.3d at 1124. In SOS, we affirmed an injunction barring any development pending adequate environmental review. We did so "[b]ecause no development could occur without impacting jurisdictional waters." *Id*.

<u>White Tanks Concerned Citizens</u>, 563 F.3d at 1042. The same is true here, as it is undisputed that the expansion and continued operation of the Ray Mine cannot occur without the Corps' approval of the 404 permit for the TSF (in either location).

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Federal courts across the country have held the same. See Riverside Irrigation District v. Andrews, 758 F.2d 508, 511-513 (10th Cir. 1985) (rejecting arguments that the Corps must only consider the "direct effects" of a wetlands fill; proper to deny nationwide permit on basis of effects to whooping crane 150 miles away); Colorado River Indian Tribes v. Marsh, 605 F.Supp. 1425, 1433 (C.D. Cal. 1985)("The Corps should have analyzed the indirect effects of the [project] on both 'on site' and 'off site' locations "); Fox Bay Partners v. U.S. Army Corps of Eng'rs, 831 F. Supp. 605, 609 (N. D. Ill. 1993) (holding that "the Corps must look not only to the direct effects of a discharge but also at the indirect effects . . . [of] the fill and construction that the Corps has been asked to authorize [which] will lead to the existence of 512 new boat slips "); Pye v. U.S. Army Corps of Engineers, 269 F.3d 459, 469, 470 (4th Cir. 2001) (holding that the Corps had regulatory authority to condition a nationwide permit "so as to minimize harm to historic sites," notwithstanding the fact that the Corps confined its Section 106 review to the "footprint" of the roadway that would fill wetlands, and the potentially affected historic site lay outside the "footprint" of the area to be filled.); United States v. Mango, 199 F.3d 85, 92-3 (2d Cir. 1999) (The Corps' jurisdiction includes "upland" areas that are "indirectly or directly related to the discharge"); Vieux Carré Property Owners, Residents & Assoc's v. Pierce, 948 F.2d 1436, 1445 n.30, 1445 (5th Cir. 1991) (Corps' permitting authority over aquarium also included park project located on adjacent upland area); Sayler Park Village Council v. U.S. Army Corps of Engineers, 2003 U.S Dist. LEXIS 7104 at *12-13 (D. Ohio Jan. 17, 2003) (court enjoined upland development that was part of water-based loading dock facility).

Overall, the Corps and BLM cannot limit the scope of its review to just the area affected by its permit. The revised DEIS must look more broadly at the entire Ray Mine project facilitated by its permit. See <u>White Tanks Concerned Citizens v. Strock</u>, 563 F.3d 1033 (9th Cir. 2009). It is not the percentage of the TSF or Ray Mine project that are "waters of the U.S." subject to Corps' jurisdiction that matters, but "whether the waters must be affected to fulfill the project's goals." <u>White Tanks</u>, 563 F.3d at 1041 (noting that full review was warranted in case where 5% of project was subject to federal jurisdiction). As the record clearly shows, without the TSF (in either location), the Ray Mine expansion and continued operation would not occur as proposed.

The DEIS has confused the <u>action</u> that is subject to NEPA in the first place with the direct, indirect, and cumulative <u>effects</u> that must be considered in the EIS. Under controlling Ninth Circuit law, those effects must be included in the EIS and the amount of "control and responsibility" the Corps has over them does not limit the agencies' NEPA duties to review these impacts. *See* <u>Save Our Sonoran</u>, 408 F.3d at 1122; <u>White Tanks Concerned Citizens</u>, 563 F.3d at 1042; <u>Border Plant Working Grp. v. Dep't of Energy</u>, 260 F. Supp. 2d 997, 1014 (S.D. Cal. 2003)(discussing difference between scope of "action" and scope of "review," which includes effects of the action); <u>Sierra Club v. Mainella</u>, 459 F. Supp. 2d 76 (D.D.C. 2006) (invalidating environmental assessment for a permit to drill underneath a National Park unit because agency did not inadequately consider the environmental impacts of the surface drilling operations that were outside the Park, even though agency could not directly regulate them). As the above cases hold, the indirect impacts that a court directed the agency to include in its environmental review was not within the "control and responsibility" of the agency making the decision—that is indeed a hallmark of indirect effects in most cases.

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Thus, the Corps and BLM must fully analyze (and protect against) all of the impacts from all of these projects, especially the current and continued operation of the Ray Mine. Such review and protection requirements are required under NEPA, CWA, FLPMA, and the Endangered Species Act (ESA)(due to the adverse impacts to listed species from the TSF activities as well as the Ray Mine and other projects listed in the DEIS's cumulative impacts section).

II. OPERATION OF THE RAY MINE IS A CONNECTED ACTION THAT MUST BE REVIEWED IN ONE EIS

In addition to, and separate from, the agencies' duty to review the cumulative and other impacts from continued operation of the Ray Mine, NEPA requires that the Ray Mine and the TSF be considered in one EIS as a "connected action" under NEPA. This is because the TSF is part of the Ray Mine as one interdependent mining project. Indeed, without the new TSF, the Ray Mine could not continue to operate for the 50+ years proposed by Asarco. Indeed, the proposed pipeline reviewed in the DEIS will literally "connect" the operations at the main Ray Mine with the TSF, as the tailings slurry will travel from the Mine to the TSF along that route.

As acknowledged by the agencies, the Ray Mine cannot continue as projected without the new TSF, as the current tailings facility can only last for a few more years, and no other alternative site exists (according to the DEIS):

Prior to the May 2011 Section 404 permit that authorized expansion of the Elder Gulch impoundment, that facility was expected to reach capacity in approximately 2013. Raising the crest elevation of the impoundment to the 2,590-foot level authorized in the Elder Gulch APP, as authorized by the May 2011 Section 404 permit, will allow the existing Elder Gulch tailings impoundment to be used for an anticipated 5 to 7 additional years. The Ray Mine has mineral resources that will allow mining to continue well past that timeframe, and **additional expansions of the Elder Gulch facility are not feasible** because the safety and stability of the Elder Gulch facility would be compromised. In addition, the nearby Burro Springs wetland would be impacted if the height of the structure were to be increased beyond the current permitted limits.

DEIS Appendix B at 3. Indeed, that Alternatives Analysis says that the new TSF is needed to make up for an anticipated shortfall of 750 million tons of tailings waste. Appendix B at 4., "Table 1. Future tailings storage capacity needs for the Ray Mine"

"[A]n agency is required to consider more than one action in a single EIS if they are 'connected actions,' 'cumulative actions,' or 'similar actions.'" <u>Kleppe v. Sierra Club</u>, 427 U.S. 390, 408 (1976). "[P]roposals for . . . actions that will have cumulative or synergistic environmental impact upon a region . . . pending concurrently before an agency . . . must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate different courses of action." <u>Kleppe</u>, 427 U.S. at 410. When preparing an EA or an EIS, an agency must consider all "connected actions," "cumulative actions," and "similar actions." 40 C.F.R. § 1508.25(a).

Actions are "connected" if they trigger other actions, cannot proceed without previous or simultaneous actions, or are "interdependent parts of a larger action and depend on the larger action for their justification." <u>Id.</u> § 1508.25(a)(1). If one project cannot proceed without the other project (i.e., "but for" the other project), or if the first project is not "independent" of the second project, the two projects are considered connected actions and must be reviewed in the same EIS. <u>Thomas v. Peterson</u>, 753 F. 2d 754, 758-60 (9th Cir. 1985). "The purpose of this requirement is to prevent an agency from dividing a project into multiple 'actions,' each of which individually has an insignificant environmental impact, but which collectively have a substantial impact. ... The crux of the test is whether each of the two projects would have taken place with or without the other and thus had independent utility." <u>Great Basin Mine Watch</u>, 456 F.3d at 969 (9th Cir. 2006).

Even if the Mine could conceivably occur without the previous or simultaneous occurrence of the TSF (or vice versa), which is not the case here, if it could not occur without such actions it is a connected action and must be considered within the same NEPA document as the underlying action. "[E]ven though an action could conceivably occur without the previous or simultaneous occurrence of another action, if it would not occur without such action it is a 'connected action' and must be considered within the same NEPA document as the underlying action." Dine <u>Citizens Against Ruining Our Env't v. Klein</u>, 747 F. Supp. 2d 1234, 1254 (D. Colo. 2010). As such, they are considered "connected actions" under NEPA and must be considered in this EIS.

III. FLPMA REQUIRES BLM TO ANALYZE ALL ACTIVITIES RELATED TO THE PIPELINE ROW, INCLUDING THE REST OF THE RAY MINE, AS WELL AS PROTECT THE PUBLIC INTEREST

Because BLM proposes to issue a Right-of-Way (ROW) for the tailings pipeline, its review and approval must meet the mandates of Title V of the Federal Land Policy Management Act ("FLPMA") and its implementing regulations (e.g., no permit can be issued unless it can be shown that the issuance of the permits is in the best interests of the public, payment of fair market value, etc.). Under FLPMA Title V, Section 504, the USFS may grant a SUP/ROW if it "(4) will do no unnecessary damage to the environment." 43 U.S.C. § 1764(a). Rights of way "shall be granted, issued or renewed ... consistent with ... any other applicable laws." Id. § 1764(c). A right-of-way that "may have significant impact on the environment" requires submission of a plan of construction, operation, and rehabilitation of the right-of-way. Id. § 1764(d).

A Title V SUP/ROW "shall contain terms and conditions which will ... (ii) minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." <u>Id.</u> § 1765(a). In addition, the SUP/ROW can only be issued if activities resulting from the SUP/ROW:

(i) protect Federal property and economic interests; (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way; (iii) protect lives and property; (iv) protect the interests of individuals living in the 18-7

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general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes; (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (vi) otherwise protect the public interest in the lands traversed by the right-of-way or adjacent thereto.

FLPMA, § 1765(b). BLM regulations for FLPMA ROW's are found at 43 CFR Part 2800. Under those regulations, BLM must deny a ROW application, among other reasons, if "The proposed use would not be in the public interest § 2804.26 (a)(2). BLM's approval of the quarry and sale of those minerals also must be in the public interest, which has not been shown.

At least two important substantive requirements flow from the FLPMA's SUP/ROW provisions. First, the BLM has a mandatory duty under Section 505(a) to impose conditions that "will minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise **protect the environment**." Id. §1765(a) (emphasis added). The terms of this section do not limit "damage" specifically to the land within the ROW corridor. Rather, the repeated use of the expansive term "the environment" indicates that the overall effects of the SUP/ROW on cultural, environmental, scenic and aesthetic values must be evaluated and these resources protected. In addition, the obligation to impose terms and conditions that "protect Federal property and economic interests" in Section 505(b) supports an expansive reading that the BLM must impose conditions that protect not only the land crossed by the right-of-way, but **all** federal land affected by the approval of the SUP/ROW.

Second, the discretionary requirements in Section 505(b) require a BLM determination as to what conditions are "necessary" to protect federal property and economic interests, as well as "otherwise **protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto**." (emphasis added). This means that the agency can only approve the SUP/ROW if it "protects the public interest in lands" not only upon which the pipeline and road would traverse, but also lands and resources adjacent to and associated with the SUP/ROW. Thus, in this case, BLM can only approve the SUP/ROWs if all aspects of the Project, and the Main Mine itself, "protect the public interest." The agency has made no showing that this is the case here.

For example, in addition to the severe water quality and related impacts noted herein, the TSF will obliterate a vital portion of the Arizona National Scenic Trail.

The Ripsey Wash Segment represents an important and unique part of the overall trail experience, marking the transition from open desert landscape to the mountainous terrain that continues north of the Gila River. This section of trail provides travelers a distinct change from the 50 miles of flat to rolling desert terrain south of Ripsey Wash (Redfield, 2014). The vegetation also changes upon reaching Ripsey Wash, from desertscrub to the upland desertscrub and ephemeral riparian vegetation of Ripsey Wash and the Tortilla Mountains.

Although the Ripsey Wash TSF would directly affect the 5.1 miles of the trail with the state land parcel, another 8.2 miles south of the state land boundary may be affected by the relocation, depending on the bypass route selected. Thus approximately 14 miles of trail could potentially be replaced as a result of the Ripsey Wash TSF project.

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DEIS at G-3 to -4. Simply moving the trail to another, and inferior, location clearly does not protect the public interest in the Trail. For example, the Appendix G analysis of the impacts to the Trail admits that either re-route alternative will violate BLM and public land visual protection requirements since they will result in "views of the existing Ray Mine or proposed Ripsey TSF [and] would not be consistent with Class 1 or Class 2 VRM [Visual Resource Management] objectives." DEIS at G-7. *See also* Table G-2 (outlining failure of the relocated trail to meet trail management requirements).

As the DEIS acknowledges: "Trail modifications considered a major relocation from the route designated by Congress would need to be approved by an act of Congress. The term 'major relocation' is defined as 'a significant change in the location of the designated National Trail that would substantially depart from the Congressional route, established National Trail Right-of-Way, or Management Corridor...' (BLM 2012b)." DEIS at G-4. Instead of protecting the Trail, the DEIS relies on the recommendation of the Arizona Trail Partner Group (ATPG) to assert that the relocation is not "major." Yet the ATPG includes Asarco, which negates any claim of objectivity for this purported exemption from the congressional action requirement. DEIS at G-1. And further, as noted above, both relocations would violate BLM VRM requirements as well as the BLM RMP, which cannot be done under FLPMA.

For all these significant impacts caused by the TSF and related Ray activities, the federal courts have recently and repeatedly held that the federal land agencies not only have the authority to consider the adverse impacts on lands and waters outside the immediate ROW corridor, it has an obligation to protect these resources under FLPMA. In <u>County of Okanogan v. National Marine Fisheries Service</u>, 347 F.3d 1081 (9th Cir. 2003), the court affirmed the Forest Service's imposition of mandatory minimum stream flows as a condition of granting a ROW for a water pipeline across USFS land. This was true even when the condition/requirement restricted or denied vested property rights (in that case, water rights). Id. at 1085-86.

The BLM cannot issue a SUP/ROW that fails to "protect the environment" as required by FLPMA, including the environmental resource values outside the immediate ROW corridor. "FLPMA itself does not authorize the Supervisor's consideration of the interests of private facility owners as weighed against environmental interests such as protection of fish and wildlife habitat. FLPMA *requires* all land-use authorizations to contain terms and conditions which will protect resources and the environment." <u>Colorado Trout Unlimited v. U.S. Dept. of Agriculture</u>, 320 F.Supp.2d 1090, 1108 (D. Colo. 2004)(emphasis in original) appeal dismissed as moot, 441 F.3d 1214 (10th Cir. 2006).

A recent case, dealing with a Special Use Permit for a water conveyance, specifically found that the agency must consider its duties under FLPMA to protect public resources. "Federal law, including the Federal Land Policy Management Act of 1976 ("FLMPA") 'specifically authorizes the Forest Service to restrict such rights-of-way [granted by an SUP] to protect fish and wildlife and maintain water quality standards under federal law, without any requirement that the Forest Service defer to state water law.' <u>County of Okanogan v. Nat'l Marine Fisheries Serv.</u>, 347 F.3d 1081,1086 (9th Cir.2003)." <u>Sequoia Forestkeeper v. U.S. Forest Service</u>, 2010 WL 5059621, *19 (E.D. Cal. 2010), amended on reconsideration, 2011 WL 902120 (E.D. Cal. 2011). The court

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also held that the USFS failed to consider its SUP authorities during the scoping process in violation of NEPA: "The USFS's erroneous conclusion that it had no authority to condition the SUP to require minimum bypass flows or other rights-of-way restrictions led to its unreasonable failure to consider the requests to do so in its scoping period." <u>Sequoia Forestkeeper v. U.S.</u> Forest Service, 2010 WL 5059621, *21. The fact that that case dealt with an SUP for a water conveyance, rather than a road, is not relevant, as the same SUP/ROW requirements to protect public resources apply equally in both situations.

The Department of Interior, interpreting FLPMA V and its similar right-of-way regulations, has held that: "A right-of-way application may be denied, however, if the authorized officer determines that the grant of the proposed right-of-way would be inconsistent with the purpose for which the public lands are managed or if the grant of the proposed right-of-way would not be in the public interest or would be inconsistent with applicable laws." <u>Clifford Bryden</u>, 139 IBLA 387, 389-90 (1997) 1997 WL 558400 at *3 (affirming denial of right-of-way for water pipeline, where diversion from spring would be inconsistent with BLM wetland protection standards).

Similar to the <u>County of Okanogan, Colorado Trout Unlimited</u>, and <u>Sequoia Forestkeeper</u> federal court decisions noted above, the Interior Department has held that the fact that a ROW applicant has a property right that may be adversely affected by the denial of the ROW does not override the agency's duties to protect the "public interest." In <u>Kenneth Knight</u>, 129 IBLA 182, 185 (1994), the BLM's denial of the ROW was affirmed due not only to the direct impact of the water pipeline, but on the adverse effects of the removal of the water in the first place:

[T]he granting of the right-of-way and concomitant reduction of that resource, would, in all likelihood, adversely affect public land values, including grazing, wildlife, and riparian vegetation and wildlife habitat. The record is clear that, while construction of the improvements associated with the proposed right-of-way would have minimal immediate physical impact on the public lands, the effect of removal of water from those lands would be environmental degradation. Prevention of that degradation, by itself, justified BLM's rejection of the application.

1994 WL 481924 at *3. That was also the case in <u>Clifford Bryden</u>, as the adverse impacts from the removal of the water was considered just as important as the adverse impacts from the pipeline that would deliver the water. 139 IBLA at 388-89. *See also* <u>C.B. Slabaugh</u>, 116 IBLA 63 (1990) 1990 WL 308006 (affirming denial of right-of-way for water pipeline, where BLM sought to prevent applicant from establishing a water right in a wilderness study area).

In <u>King's Meadow Ranches</u>, 126 IBLA 339 (1993), 1993 WL 417949, the IBLA affirmed the denial of right-of-way for water pipeline, where the pipeline would degrade riparian vegetation and reduce bald eagle habitat. The Department specifically noted that under FLPMA Title V: "[A]s BLM has held, it is not private interests but the public interest that must be served by the issuance of a right-of-way." 126 IBLA at 342, 1993 WL 417949 at *3 (emphasis added).

Thus, the DEIS and proposed authorizations fail to satisfy these FLPMA requirements, regarding both the need to analyze all aspects of the main mine, as well as the failure to ensure that the TSF and Ray Mine facilities are in the public interest.

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IV. THE DEIS FAILS TO FULLY ANALYZE ALL BASELINE CONDITIONS POTENTIALLY AFFECTED BY THE PROJECT

The ACE and BLM are required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process:

"NEPA clearly requires that consideration of environmental impacts of proposed projects take place before [a final decision] is made." <u>LaFlamme v. FERC, 842</u> <u>F.2d 1063, 1071 (9th Cir.1988)</u> (emphasis in original). Once a project begins, the "pre-project environment" becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. <u>Id</u>. Without establishing the baseline conditions which exist in the vicinity ... before [the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.

Half Moon Bay Fisherman's Mark't Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). "In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions." Western Watersheds Project v. BLM, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008). "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).

Such baseline information and analysis must be part of the DEIS and be subject to public review and comment under NEPA. The lack of an adequate baseline analysis fatally flaws an EA or EIS. "[O]nce a project begins, the pre-project environment becomes a thing of the past and evaluation of the project's effect becomes simply impossible." <u>Northern Plains v. Surf. Transp.</u> <u>Brd.</u>, 668 F.3d 1067, 1083 (9th Cir. 2011). "[W]ithout [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fail[s] to consider an important aspect of the problem, resulting in an arbitrary and capricious decision." <u>Id</u>. at 1085.

Here, the DEIS does not contain the required baseline analysis of the affected area for the TSF lands as well as the rest of the Ray Mine area for numerous potentially affected resources. For example, Chapter 3's air quality section contains a brief mention of air quality conditions in Pinal County, but no site-specific baseline analysis of the TSF or Ray Mine areas. "Ninth Circuit cases acknowledge the importance of obtaining baseline condition information before assessing the environmental impacts of a proposed project." <u>Gifford Pinchot Task Force v. Perez</u>, 2014 WL 3019165, *28 (D. Or. 2014)(USFS/BLM EA for mineral exploration project failed to obtain and analyze baseline data in violation of NEPA).

"NEPA requires that the agency provide the data on which it bases its environmental analysis. Such analyses must occur before the proposed action is approved, not afterward." <u>Northern</u> <u>Plains</u>, 668 F.3d at 1083 (internal citations omitted) (concluding that an agency's "plans to conduct surveys and studies as part of its post-approval mitigation measures," in the absence of baseline data, indicate failure to take the requisite "hard look" at environmental impacts). This requirement applies not only to ground and surface waters, but any potentially affected resource such as air quality, recreation (e.g., Arizona Trail), soils, cultural/historical, wildlife, etc.

V. THE DEIS FAILS TO INCLUDE AN ADEQUATE MITIGATION PLAN, INCLUDING A DETAILED REVIEW OF THE IMPACTS FROM, AND EFFECTIVENESS OF, ANY MITIGATION MEASURES

Under NEPA, the agency must have an adequate mitigation plan to minimize or eliminate all potential project impacts. NEPA requires the agency to: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 CFR § 1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 CFR § 1502.16(h). NEPA regulations define "mitigation" as a way to avoid, minimize, rectify, or compensate for the impact of a potentially harmful action. 40 C.F.R. §§1508.20(a)-(e). "[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." <u>Robertson v. Methow Valley Citizens Council</u>, 490 U.S. 332, 353 (1989).

NEPA requires that the agency discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated." <u>Methow Valley</u>, 490 U.S. at 352, 109 S.Ct. 1835.

An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. Compare <u>Neighbors of</u> <u>Cuddy Mountain v. U.S. Forest Service</u>, 137 F.3d 1372, 1381 (9th Cir.1998) (disapproving an EIS that lacked such an assessment) with <u>Okanogan Highlands Alliance</u> <u>v. Williams</u>, 236 F.3d 468, 477 (9th Cir.2000) (upholding an EIS where "[e]ach mitigating process was evaluated separately and given an effectiveness rating"). The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. <u>Methow Valley</u>, 490 U.S. at 351–52, 109 S.Ct. 1835(citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least some evaluation of effectiveness is useless in making that determination.

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009)(emphasis added)(rejecting EIS for mining project for failure to conduct adequate review of mitigation and mitigation effectiveness in EIS). "The comments submitted by [plaintiff] also call into question the efficacy of the mitigation measures and rely on several scientific studies. In the face of such concerns, it is difficult for this Court to see how the [agency's] reliance on mitigation is supported by substantial evidence in the record." Wyoming Outdoor Council v. U.S. Army

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<u>Corps of Eng'rs</u>, 351 F. Supp. 2d 1232, 1251 n. 8 (D. Wyo. 2005). See also <u>Dine Citizens v.</u> <u>Klein</u>, 747 F.Supp.2d 1234, 1258-59 (D. Colo. 2010) (finding "lack of detail as the nature of the mitigation measures" precluded "meaningful judicial review").

The DEIS provides only a cursory mention that all of the mitigation measures will be effective. Yet no supporting analysis is provided to back up this claim. It is impossible for the ACE/BLM to contend that it fully reviewed the effectiveness of mitigation measures – as required by NEPA – when the DEIS lacks any reference to such analysis. Simply referring to the list of mitigation measures does not comply with NEPA. As held recently by the federal courts, a NEPA document violates NEPA if it "fails to address the effectiveness of the mitigation measures." Gifford Pinchot Task Force v. Perez, 2014 WL 3019165, *39 (D. Or. 2014).

Further, critical mitigation measures are not included in the DEIS. No closure and post-closure plan for the TSF and related Ray Mine facilities is provided. The DEIS implies that the State of Arizona will consider such plans in the future. Yet this suffers from a number of problems. First, state law, if such a plan was provided in the DEIS, only covers 30 years, does not cover the monitoring and mitigation for the projected 50+ years of waste and impacts. Second, as noted above, the ACE and BLM cannot rely on state review as a substitute for federal NEPA review.

A non-NEPA document – let alone one prepared and adopted by a state governmentcannot satisfy a federal agency's obligations under NEPA. <u>Klamath-Siskiyou Wildlands</u> <u>Center v. BLM</u>, 387 F.3d 989, 998 (9th Cir.2004).

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 726 (9th Cir. 2009). The Ninth Circuit rejected as "without merit" arguments that a federal agency may avoid its NEPA duties where a "facility operates pursuant to a state permit under the Clean Air Act." <u>Klamath-Siskiyou</u>, 387 F.3d at 998. Lastly, as noted above, the failure to review the mitigation/closure/reclamation of the Ray Mine fatally flaws the mitigation analysis in the DEIS.

Regarding the mitigation that was analyzed, such as the replacement sites along the San Pedro and Gila Rivers, little analysis was done regarding whether these will be successful. For example, no analysis was done as to whether additional development, including surface and groundwater depletions in these basins, will negate the purported benefits of these as fully functioning replacement/mitigation sites.

VI. THE EIS FAILED TO FULLY REVIEW ALL REASONABLE ALTERNATIVES

NEPA requires the agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(E); 40 CFR § 1508.9(b). It must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990). The alternatives analysis is considered the heart of a NEPA analysis. 40 C.F.R. § 1502.14. The alternatives analysis should present the environmental impacts in comparative form, thus sharply defining

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important issues and providing the public and the decisionmaker with a clear basis for choice. <u>Id</u>. The lead agency must "rigorously explore and objectively evaluate all reasonable alternatives" including alternatives that are "not within the [lead agency's] jurisdiction." Id.

The agency's response largely argues that alternatives that would reduce Asarco's desired scope of work and "purpose and need" required the rejection of alternatives. *See e.g.*, Response Report Table 2-27 to -31. However, the agency cannot circumscribe its duty to fully review "all reasonable alternatives" in this manner. The CEQ regulations warn that a NEPA document is not to be used to justify a decision already made. 40 C.F.R. § 1502.2(g). Thus, "an agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative . . . would accomplish the goals of the agency's action, and the EIS would become a foreordained formality." <u>Citizens Against Burlington, Inc. v. Busey</u>, 938 F.2d 190, 196 (D.C. Cir. 1991), cert. denied, 502 U.S. 994, 112 S. Ct. 616 (1991). *See* <u>Muckleshoot Indian Tribe v.</u> U.S. Forest Service, 177 F.3d 800, 814 n.7 (9th Cir. 1999).

"An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality." Friends of Southeast's Future v. Morrison, 153 F.3d 1059, 1066 (9th Cir. 1998). "Obviously, an applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable." Sylvester v. U.S. Army Corps of Engineers, 882 F.2d 407, 409 (9th Cir.1989). "No decision is more important than that delimiting what these 'reasonable alternatives' are ... One obvious way for an agency to slip past the structures of NEPA is to contrive a purpose so slender as to define competing 'reasonable alternatives' out of consideration (and even out of existence) ... If the agency constricts the definition of the project's purpose and thereby excludes what truly are reasonable alternatives, the EIS cannot fulfill its role." Simmons v. United States Army Corps of Engineers, 120 F.3d 664, 660 (7th Cir. 1997).

At a minimum, the DEIS failed to consider the alternative of less, or no, continued mining at the Ray pit, which would reduce or eliminate the need for the new TSF. Regarding the tailings themselves, the DEIS's dismissal of other types of tailings disposal, and mine management violates NEPA and the EPA/ACE 404(b)(1) Guidelines.

The importance of tailings storage and design is highlighted by the recent tailings impoundment failure at the Mount Polley Mine in British Columbia in 2014. The BC Minister of Mines and Energy hired an independent panel of technical experts to determine the cause of the failure and make a series of strong recommendations to reduce the likelihood of further failures. The panel's report, released in January 2015, urged the use of best available technology for tailings impoundments at new mines to reduce the likelihood of catastrophic failures and better protect public safety and the environment. The panel identified the best available technology for tailings storage as the use of backfill to store tailings underground, and the use of dry tailings instead of wet tailings (i.e., eliminating water storage) for surface disposal. According to the panel, "The overarching goal of BAT is to reduce the number of tailings dams subject to failure. This can be achieved most directly by storing the majority of the tailings below ground—in mined-out pits for surface mining operations or as backfill for underground mines." *See* Independent Expert

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Engineering and Review Panel, Report on Mount Polley Tailings Storage Facility Breach, January 30, 2015, at 121-122 (attached). Available at:

<u>https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailings</u> <u>StorageFacilityBreach.pdf.</u> The ACE/BLM must fully review this Report and ensure that any of the conditions or aspects of the tailings at Mount Polley are not found at Ray.

The panel emphasizes the need for emphasizing long-term stability and public safety in the analysis:

The chief reason for the limited industry adoption of filtered tailings to date is economic. Comparisons of capital and operating costs alone invariably favour conventional methods. But this takes a limited view. Cost estimates for conventional tailings dams do not include the risk costs, either direct or indirect, associated with failure potential. The Mount Polley case underscores the magnitude of direct costs for cleanup, but indirect losses—notably in market capitalization can be even larger. Nor do standard costing procedures consider externalities, like added costs that accrue to the industry as a whole, some of them difficult or impossible to quantify. Full consideration of life cycle costs including closure, environmental liabilities, and other externalities will provide a more complete economic picture. While economic factors cannot be neglected, neither can they continue to pre-empt best technology.

Panel Report at 123. The panel concludes that "Safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor." Report at 125. Dismissing alternatives because it would cost the operator more money is not a valid reason.

VII. THE DEIS FAILS TO ENSURE COMPLIANCE WITH THE CWA

The CWA is designed to "restore and maintain the chemical, physical and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The goal of the CWA is that the discharge of pollutants into navigable waters be eliminated, and "it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." *Id.* Section 301 of the CWA prohibits the discharge of any pollutant into waters of the United States, except as provided by specific statutory authority. *Id.* § 1311. The CWA and its implementing regulations define "waters of the United States" to include wetlands and riparian habitats adjacent to waters of the United States. *Id.* § 1362(7); 33 C.F.R. § 328.3(b). "Pollutant" is defined to include dredged or fill material. 33 U.S.C. § 1362(6). Any applicant for a federal permit to conduct any activity which may result in the discharge into the navigable waters must provide the permitting agency with a certification from the State that any such discharge will comply with the CWA and state water quality standards. *Id.* § 1323(a).

Section 404 of the CWA regulates the discharge fill material into waters of the United States. 33 U.S.C. § 1344(e). The Secretary of the Army, acting through the Corps, may issue permits for such activities. *Id.* The Corps has adopted regulations to implement this permitting process, known as the "public interest" factors. 33 C.F.R. §§ 320 *et seq.* In addition, the EPA

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promulgated regulations, known as the "404(b)(1) Guidelines," to eliminate unnecessary environmental impacts. 33 U.S.C. § 1344(b)(1); 40 C.F.R. § 230. The Corps must review all proposed section 404 permits under both the Corps' public interest factors and EPA's 404(b)(1) guidelines. 33 C.F.R. § 320.2(f).

Section 404 of the CWA prohibits the filling or dredging of wetlands without first receiving a § 404(b) permit from the ACE. 33 U.S.C. § 1344 (a), (d). The CWA and its implementing regulations "express a strong preference for wetland protection." <u>National Wildlife Federation v. Whistler</u>, 27 F.3d 1341, 1344 (8th Cir. 1994). A Section 404 permit may not be issued if (i) there is a practicable alternative which would have less adverse impact and does not have other significant adverse environmental consequences, (ii) the discharge causes or contributes to violations of any applicable state water quality standards, (iii) the discharge would result in the likely destruction or adverse modification of critical habitat, (iv) the discharge will cause or contribute to significant degradation of waters of the United States, (v) the discharge does not include all appropriate and practicable measures to minimize potential harm, or (vi) there does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with the Corps' Guidelines for permit issuance. 40 C.F.R. § 230.10-12; *see* Bering Strait Citizens for Responsible Resource Dev. v. U.S. Army Corps of Engineers, 524 F.3d 938, 946-47 (9th Cir. 2008).

For the "practicable alternative" requirement, the Corps must follow a specific two step procedure. First, a correct statement of the proposed project's "basic purpose" is necessary. See 40 C.F.R. § 230.10(a)(3). The Corps is to define the proposed project's basic purpose. See 33 C.F.R. Part 325, App. B(9)(b)(4). Second, after the Corps defines the basic purpose of the project, it must determine whether that basic purpose is "water dependent." See 40 C.F.R. § 230.10(a)(3). As one example, a gold mining project located in a watershed is not considered water dependant. See Bering Strait, 524 F.3d at 947.

"[I]f a dredge or fill permit application does not concern a water-dependent project, the Corps assumes that practicable alternatives exist unless the applicant 'clearly demonstrated otherwise."" <u>National Wildlife Federation</u>, 27 F.3d at 1344 (quoting 40 C.F.R. § 230.10(a)(3); <u>Resource Inv's</u>, Inc. v. United States Army Corps of Eng'rs, 151 F.3d 1162, 1167 (9th Cir. 1998). "This presumption of practicable alternatives 'is *very* strong." <u>National Wildlife Federation</u>, 27 F.3d at 1344 (*quoting Buttry v. United States*, 690 F.2d 1170, 1180 (5th Cir. 1982)) (emphasis in original). "Practicable" is defined at 40 C.F.R. § 230.10(a)(2) as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." When this presumption applies, the applicant must rebut the presumption by clearly demonstrating that a practicable alternative is not available, and the Corps presumes that all practicable alternatives that do not involve the discharge into a wetland have a less adverse environmental impact. 40 C.F.R. § 230.10(a)(3). The permit applicant must provide detailed, clear and convincing information proving that an alternative will less adverse impacts is impracticable. <u>Greater Yellowstone Coalition v. Flowers</u>, 359 F.3d 1257, 1269 (10th Cir. 2004). The DEIS failed to do this.

In addition, a permit may not be issued "unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic

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ecosystem." 40 C.F.R. § 230.10(d). That has not occurred here. At a minimum, the Hackberry Gulch site will result in less loss of waters of the U.S.

The DEIS also fails to demonstrate that there is no practicable alternative which would have less adverse impact and does not have other significant adverse environmental consequences. The proposed mine is clearly not a "water-dependent project," and thus the Corps must assume that practicable alternatives exist unless the applicant clearly demonstrates otherwise. <u>National Wildlife Federation</u>, 27 F.3d at 1344 (quoting 40 C.F.R. § 230.10(a)(3); *see also* 7050.0186(4) (prudent and feasible alternatives that do not involve wetlands are presumed to be available unless clearly demonstrated otherwise by the permit applicant). The DEIS falls far short in demonstrating that there are no practicable alternatives that would have less severe impacts to wetlands. 40 C.F.R. § 230.10(a).

In addition, as stated, the permit applicant must also provide compensatory mitigation for unavoidable wetlands impacts, and if compensatory mitigation is accomplished by restoration or creation, the replacement wetland should be of the same type and in the same watershed as the impacted wetland. EPA's Guidelines (40 CFR 230.11(h)) and the 2008 Mitigation Rule (40 CFR 230.93) clearly state the need to compensate for losses of waters due to secondary impacts. The requirement that secondary impacts be fully compensated is consistent with standard practice for projects of this magnitude and essential given that the range, extent and severity of secondary adverse impacts upon aquatic resources are as significant as the direct impacts. That has not occurred here. For example, the U.S. Government Accountability Office has found that the Corps has performed very limited oversight to determine the status of the required compensatory mitigation. "Wetlands Protection, Corps of Engineers Does Not Have an Effective Oversight Approach to Ensure that Compensatory Mitigation is Occurring". http://www.gao.gov/assets/250/247675.pdf Because many projects do not receive any oversight, the Corps cannot definitively assess whether the required compensatory mitigation has even been performed. Id. The Corps has thus consistently failed to ensure that the mitigation it has required as a condition of obtaining a 404 permit has been completed. Id.

The DEIS and proposed mitigation proposal also lacks the certainty and other assurances required under the 2008 regulations (such as enforceable and ecologically meaningful success criteria).

In addition, water quality must be protected. For example, pursuant to the Clean Water Act, the ACE/BLM must require Asarco to obtain Arizona Pollutant Discharge Elimination System (AZPDES) permit coverage for the sediment and other pollutants discharged from the road culverts and other water management structures. As the Ninth Circuit has stated:

Further, the term man-made "conveyance," the essential trigger for finding a "point source" under the CWA, is broadly defined. [W]hen stormwater runoff is collected in a system of ditches, culverts, and channels and is then discharged into a stream or river, there is a "discernable, confined and discrete conveyance" of pollutants, and there is therefore a discharge from a point source. In other words, runoff is not inherently a nonpoint or point source of pollution. Rather, it is a nonpoint or point source under § 502(14) depending on whether it is allowed to run off naturally (and is thus a nonpoint source) or is collected, channeled, and discharged through a system of ditches, culverts, channels, and similar

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conveyances (and is thus a point source discharge).

<u>Northwest Environmental Defense Center v. Brown</u>, 640 F.3d 1063, 1070-71 (9th Cir. 2011) (culverts directing stormwater flows are point sources subject to NPDES permitting) overturned on other grounds <u>Decker v. Nw. Envtl. Def. Ctr.</u>, 133 S.Ct. 1326 (2013). The Ninth Circuit recently reiterated, in light of the Supreme Court's and its previous decision in those cases, that:

The Court left intact our holding that "when stormwater runoff is collected in a system of ditches, culverts, and channels and is then discharged into a stream or river, there is a 'discernable, confined and discrete conveyance' of pollutants, and there is therefore a discharge from a point source" within the meaning of the Clean Water Act's basic definition of a point source in 33 U.S.C. § 1362(14).

Northwest Environmental Defense Center v. Decker, 728 F.3d 1085-86 (9th Cir. 2013).

The DEIS also fails to show how the potential for perpetual treatment of the TSF ensures compliance with the CWA and other laws noted herein. For example, in Ripsey Wash, numerous facilities such as a pump station, detention dams and ponds, trenches, and pipelines would be needed for water management and to prevent water interactions with the TSF. Yet no financial assurance or bond is provided for these mitigation measures (or for any of the Ray facilities including the TSF), nor can their success be guaranteed to last.

CONCLUSION

In conclusion, the DEIS fail to fully comply with numerous federal and state laws, regulations, policies, and other requirements. The ACE and BLM cannot approve any of the activities described in the DEIS, or any action alternative at all that the applicant may propose, unless and until all laws, etc., noted herein are satisfied.

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COMMENT DOCUMENT #19 ARIZONA TRAIL ASSOCIATION (FRED GUADET, VICE PRESIDENT FOR TRAIL OPERATIONS)

Comment Document # 19

March 10, 2016

Michael Langley Senior Project Manager U.S. Army Corps of Engineers Arizona – Nevada Office 3636 N. Central Avenue, Suite 900 Phoenix, AZ 85012-1939



RE: Ray Mine Tailings Storage Facility Draft EIS SPL-2011-1005-MWL

Dear Mr. Langley:

The Arizona Trail Association is appreciative for the opportunity to comment on the Draft Environmental Impact Statement for the Proposed Tailings Storage Facility, Ray Mine, Pinal County, Arizona File No. SPL-2011-1005-MWL.

The Arizona Trail Association (ATA) is a nonprofit organization whose mission is to build, maintain, promote, protect and sustain the Arizona Trail as a unique encounter with the land. The ATA takes seriously its role in sharing with the land managers the responsibility for the Arizona Trail.

The Arizona Trail is an 800-mile National Scenic Trail and State Scenic Trail that is among the greatest natural resources in the nation and the state. It attracts locals and international visitors alike, and has become increasingly popular since its completion in 2011. It is an economic engine for the state of Arizona as well as the 33 Arizona Trail Gateway Communities, including the towns of Kearny, Hayden, Superior. and Florence.

The current Arizona National Scenic Trail (AZT) going over the "Big Hill" and back into Ripsey Wash was selected with thorough involvement and cooperation between Pinal County, Bureau of Land Management (BLM), and ATA with a strong recommendation from a local rancher. The trail was built in its present location because of the outstanding scenic qualities of the immediate area and the views of the natural landscape for miles around. The trail in this area was built primarily by volunteers, demonstrating the strong connection between the trail, its users and supporters. The placement of the proposed Ripsey Wash Tailings Storage Facility (TSF) will negatively impact the Arizona National Scenic Trail and the experience of trail users, including hikers, runners, backpackers, mountain bikers, and equestrians. In fact, the TSF will bury the AZT and eliminate the popular Florence-Kelvin Trailhead, where the ATA and Pinal County have invested significant resources. For these reasons, the position of the ATA is that the interests of the Arizona National Scenic Trail are best served by the no-action alternative.

However, ATA acknowledges that the no-action alternative may not be the final decision. If the Hackberry Gulch alternative is approved, there will not be any major impacts to the AZT and Florence-Kelvin Trailhead. The Florence-Kelvin Highway and the SCIC power line would not have to be relocated. There will not be a need for a pipeline bridge over the Gila River. Most importantly, there would not be a need to relocate the Arizona National Scenic Trail and the Florence Kelvin Trailhead. There would be a visual impact as seen from KOP 6 (Appendix E) which is from a high point looking east, but this impact is minor and is an extension of the current viewscape of existing mine tailings. If the TSF is placed in Hackberry Gulch a mitigation to minimize the visual impact would be to contour the top of the TSF to blend in with the surrounding landscape.

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A decision to place the TSF in Ripsey Wash will necessitate a reroute of the AZT and the Florence-Kelvin Trailhead. Furthermore, there are multiple issues and concerns resulting from a Ripsey Wash TSF approval that will need compensatory mitigations. All costs associated with rerouting and mitigation efforts, including administration and/or monitoring by Pinal County, BLM, or ATA must be paid by Asarco.

Trail Reroute: BLM approval of the AZT reroute is given once the Record of Decision is issued, contrary to the Draft Environmental Impact Statement (DEIS)(1-6). ATA supports the reroute of the AZT to the east, as describe in Appendix G, rejoining the former trail at the historic bridge over the Gila River. The reroute requires an easement through patented mining claims. The northernmost 0.2 miles will be located on Riverside Drive; these 0.2 miles will need a safety measure such as a shoulder pathway in order to protect all users, especially equestrians. The route to the relocated Florence-Kelvin Trailhead will also need appropriate safety measures to protect all users. Since many activities, such as relocation of Florence-Kelvin Highway, infrastructure for Ripsey Wash TSF, and multiple construction projects will occur near the end of the trail reroute, safety issues must be addressed when planning transition onto the historic bridge (Figure 41).

Given the steepness of the terrain of the reroute, trail tread must be full bench, the width dependent on percentage of hillside slope (Appendix G-3); this width will often exceed the three feet width indicated in the DEIS (3-13). A five-foot width on steep hillsides would be required; wider tread will be needed on switchbacks. The use of manual labor (3-9) is not recommended by the ATA, rather the use of equipment large enough to haul rock for riprap and rock walls as well as to excavate a wide bench would be the most efficient and effective mode of construction. Since onsite rock materials are limited they will have to be hauled from either naturally occurring sites or material piles delivered at a suitable location. If transplanting vegetation along the numerous switchbacks is included as part of the trail realignment, this incredibly expensive suggestion will increase the cost of the reroute. The relocated AZT must be built to the standards indicated in Appendix G, Table G-3 in order to have a sustainable trail for all users. Since all new trails require maintenance over time, Asarco should pay for trail maintenance for three years.

Timing of Reroute: ATA recommends that the trail reroute begin as soon as possible if the decision is reached to place the TSF in Ripsey Wash. According to the DEIS, Asarco will relocate the Arizona Trail during the later stage of site construction or during early operation as the existing Arizona Trail would not be directly impacted for several years after initial tailings deposition within the Ripsey Wash TSF: therefore, immediate relocation as part of initial construction would not be necessary (2-4). The actual tread of the trail may not be covered until after tailings are placed in the TSF, but there are major negative consequences if the trail is not moved for three or more years.

If the trail reroute does not occur until after the construction of retention dams, all users of the AZT will be exposed to fugitive dust and gaseous emissions – the Tortilla Mountains would not block the windblown emissions like they will for the residents of Kelvin and Riverside (ES-8) until the trail is on the eastern side of the mountains. Also, the Tortilla Mountains would not block noise from the construction activities unless the trail is rerouted prior to those projects. Furthermore, the relocation of the Florence-Kelvin Highway and SCIP power lines, site preparation, and infrastructure construction will make the current AZT inoperable or unsafe for users. The reroute of the Arizona National Scenic Trail is a high priority mitigation that must be completed prior to exposing trail users to such negative trail experiences that would happen if the AZT is not relocated for three or more years. The relocation of the AZT is of such importance that it should be included as an item in 2.3.2 Pre-Tailings Construction just before or after the "Relocation of the Florence-

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Kelvin Highway" and also in Year 1 of the schedule of activities in Figure 13. The Tentative Schedule presented at the public meeting held on February 24, 2016, must also be revised to include not only the relocation of the AZT but also the relocation of the Florence-Kelvin Highway and the SCIP power lines.

In the Cultural Resources section it is stated that during the new Arizona Trail realignment the potential exists for discovery of previously unknown cultural resources (3-106). Further, in the same page is also stated "construction of the new alignment can be accomplished without disturbing known archaeological sites" (3-106). All questions concerning cultural resources should be resolved before the Final EIS.

Degradation of Scenic, Acoustic, and Recreational Values of AZT: Even after the AZT is rerouted away from Ripsey Wash, there will still be negative impacts on the qualities that define a national scenic trail. The TSF will still be visible from 17% of the reroute (G-6), or for 1.2 miles (ES-33), mainly in the foreground. A KOP is needed for visualization of the TSF from the realigned trail since this area is currently a BLM Level B SQR and Class II VRI; it is important to know what the visual impact will be from these 1.2 miles. Upon closure of the TSF, curvilinear features and revegetation with minimize the starkness of light colored boulders that are proposed to be place on top.

From the realigned trail to the east there will be "panoramic views of the Gila River Valley and the Dripping Springs Mountains" (3-96), however this view already exits from high points on the current trail. The conclusion that "thus the scenic quality of the trail experience should not be reduced by the relocation" (3-96) is not warranted for two basic reasons: the 1.2 miles of exposure to the TSF along the reroute and the 7.6 miles of negative impact north of the Gila River. During construction and throughout life of TSF, there will be noise levels that do not currently occur along the 1.2 miles of direct eye/ear sight.

On the north side of the Gila River for 7.6 miles (ES-26) there will be negative impacts to the scenic, acoustic, and recreational values of the Arizona National Scenic Trail. The AZT heading west from the BLM access parking area is currently a popular scenic destination between two steep mountain ridges with the Gila River flowing between them. The first few miles leading to "Jake's Overlook" KOP (Appendix E, ii) is on a very successful reclaimed Asarco exploration road that is not noticeable to the casual observer. The views, the soundscape, and the solitude are significant characteristics of this part of the trail and for another 5+ miles to the west. During construction and after Florence-Kelvin Highway and the SCIP transmission lines are relocated and the TSF is in place, the attributes of this stretch of AZT will be greatly denigrated. The visual effects impacts will be "Major substantial, highly noticeable, and long term" (ES26) including visibility of the TSF for southbound trail users for 1.2 miles (ES-33). Providing a non-lineal surface with natural vegetation would help to minimize the stark appearance of proposed TSF but the visual impact will still exist. A noise impact estimate is needed from Jake's Overlook, although it is clear that sounds will reverberate in the canyon area from construction and traffic-tire and engine noise-on the relocated Florence-Kelvin Highway. As stated in the DEIS, "the relocated Florence Kelvin Highway...would create a permanent change in character of the area, affecting portions of the Arizona Trail corridor" and "views of the TSF would result in irreversible visual effects on recreational facilities within the project viewshed, including the Arizona Trail" (3-174).

These severe negative impacts on the Arizona National Scenic Trail must be offset with compensatory mitigations that will offset the damage to the character of the Arizona National Scenic Trail and the degraded trail experience of all users by protecting other parts of the AZT along these passages. First, section 2 and that part of section 11 north of the Gila River that Asarco will

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acquire when purchasing State Land for the Ripsey Wash TSF should be either donated to a governing body or by other perpetual means to permanently preserve the undeveloped nature with the stipulation that no future mining claims will be patented. It is acknowledged that existing easements would remain intact. Second, the patented mining claims that Asarco must acquire towards the end of the rerouted AZT will be deeded to a governing body with the stipulation that the current patented mining claims will be abandoned and that no future mining claims will be patented.

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Cumulative Effects of Approval of Proposed Action: The Ripsey Wash TSF is a major contributing factor in the negative cumulative effects impacting the Arizona National Scenic Trail. To offset the Ripsey Wash TSF's contribution to the degradation of its value, Asarco should acquire from the State of Arizona section 2 and part of section 3 in Range 12E, Township 4S and section 36 in Range 12E Township 4N in order to permanently preserved the undeveloped nature of this area, either by donation to a governing body or other perpetual means with the stipulation that no future mining claims will be patented.

The Arizona Trail Association, along with Pinal County and Bureau of Land Management, has been in dialogue with Asarco since 2010 on their need for additional space for storage of tailings. We look forward to the Final Environmental Impact Statement that will move this proposed action toward a final decision.

Sincerely,

Fred Gaudet Vice President for Trail Operations, Arizona Trail Association fredgaudet1@gmail.com

cc: Laura White, USFS Arizona Trail Administrator Matthew Nelson, Executive Director, Arizona Trail Association

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rizona Trail

COMMENT DOCUMENT #20 (Part 1 of 4) ASARCO LLC

(JAMES STEWART, TECHNICAL SERVICES MANAGER)



Comment Document #20 Part 1 of 4

March 31, 2016

Via e-mail (Michael.W.Langley@usace.army.mil)

Mr. Michael Langley U.S. Army Corps of Engineers Arizona Regulatory Branch 3636 N. Central Ave., Suite 900 Phoenix, AZ 85012-1939

Re: ASARCO LLC COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE RAY MINE TAILINGS STORAGE FACILITY (CORPS FILE NO. SPL-2011-1005-MWL)

Dear Mr. Langley:

Thank you for the opportunity to review and provide comments on the Draft Environmental Impact Statement (DEIS or draft EIS) for the Ray Mine Tailings Storage Facility Project proposed by ASARCO LLC (Asarco or the Applicant). We appreciate the hard work you and the EIS contractor have put into developing the DEIS. Our comments are intended to help improve the clarity, accuracy and defensibility of the final EIS.

This cover letter and its attachments collectively represent Asarco's comments on the DEIS. There are four pieces to these comments: (1) key concepts, which are addressed in narrative fashion in this cover letter; (2) an attached table presenting additional comments (labeled "specific comments") that do not rise to the level of key concepts; (3) another attached table including editorial comments; and (4) a scanned PDF including hand-written notations on numerous tables and figures from the DEIS (we believe this is a more efficient way to present these comments than making them in narrative form). With limited exceptions, we have not provided comments specific to the executive summary, but our comments on the main body of the DEIS should be understood as applying to any similar language on the same topic found in the executive summary.

We understand that the comment deadline has been extended until April 28 for some entities (EPA, FWS, AGFD). Asarco may also submit some additional comments or information prior to that date, including some information referenced in the attached specific comments.

The key concepts discussed below fall into the following categories: (1) appropriate NEPA scope of analysis for the DEIS; (2) the DEIS' analysis of the potential for seepage at the Hackberry alternative; (3) enhancing the rigor of the cumulative impacts analysis in Chapter 4 of

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the DEIS; (4) ensuring that the issues identified at the beginning of each resource analysis in Section 3 are addressed specifically in the subsequent text; (5) the need for consistency in how the DEIS analyzes the affected environment and environmental consequences of the proposed action and the alternatives; (6) the manner in which the no action alternative is analyzed in the effects and cumulative impacts portions of the DEIS; (7) the concept of "mitigation" under NEPA; (8) the approach to considering environmental justice in the DEIS; (9) context for some of AGFD's mapping resources referenced in the DEIS; and (10) need for additional citations in some areas of the DEIS.

1. <u>Scope of Analysis</u>: We have several comments related to the scope of analysis discussion (Section 1.2.1, pp. 1-2 to 1-3).

(a) The Corps' NEPA regulations limit the scope of analysis under NEPA to the "specific activity requiring a [Corps] permit and those portions of the entire project over which the Government has sufficient control and responsibility to warrant Federal review." 33 C.F.R., Part 325, Appendix B paragraph 7.b(1). Section 1.2.1 (specifically, the end of the 3rd paragraph and start of the 4th paragraph) seems to suggest that upland impacts of the TSF are considered as either an indirect effect (defined in Section 8.2 of the DEIS as an effect caused by the action at a later time and distance) or a cumulative effect of the action. However, rather than being an indirect or cumulative effect, those upland impacts likely could be considered direct effects of the action and within the Corps' NEPA scope of analysis under the Corps' NEPA regulations.

One factor used in determining whether sufficient federal control and responsibility exists over portions of a project in uplands is whether there are aspects of the upland facility in the immediate vicinity of the regulated activity (i.e., the placement of fill in waters of the U.S.) that affect the location and configuration of the regulated facility. 33 C.F.R. Part 325, Appendix B, Section 7(b)(2)(ii). Unlike a large commercial or residential project, the TSF is a single large integrated facility and the upland portions of it cannot be segregated from those portions to be constructed in jurisdictional waters. Corps guidance notes that the scope of analysis can be expanded to upland areas in cases where there is "inextricable interconnectedness of activities within and outside of jurisdictional waters." See Memorandum from Earl Stockdale (Chief Counsel) to the Director of Civil Works, Legal Guidance on the NEPA Scope of Analysis in Corps Permitting Actions (July 9, 2007), at p. 9. The regulations and guidance both suggest that the upland portions of the TSF could be considered within the NEPA scope of analysis because of the fact that they are integrated into the portions located in jurisdictional waters. This may be a cleaner framework for discussing the impact of activities in uplands in Section 1.2.1, rather than suggesting they are considered as indirect or cumulative effects.

We note that in the balance of the document, the effects of the TSF and related components are evaluated as a whole, with no distinction between portions located in jurisdictional waters and portions located in uplands. Therefore, even if the analytical framework in Section 1.2.1 were tweaked as suggested here, no changes would be required on that account to the subsequent effects analysis.

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Asarco believes that the geographic scope of analysis for this project consists of jurisdictional waters and upland areas that would be impacted by the proposed tailings storage facility and all related project components, including tailings delivery and reclaimed water pipelines from the existing thickener tanks at the Ray Mine to the new tailings storage facility, all power infrastructure that is needed for construction and operation of the tailings storage facility, rerouting of the Florence-Kelvin highway, SCIP powerline, and Arizona National Scenic Trail as required to construct the proposed tailings storage facility, and Clean Water Act section 404 mitigation activities. This should be consistently noted throughout the document, where appropriate.

(b) Section 1.2.1 of the DEIS notes that activities at the Ray Mine, as well as the proposed Ray land exchange between Asarco and BLM, are not part of the NEPA scope of analysis, but will be considered in the cumulative impacts discussion. Asarco believes this is the correct approach, and that considering these other actions as part of this EIS (outside of the cumulative impacts analysis) would be legally unjustified. Nevertheless, we are aware that other entities have previously suggested these actions must be considered as connected actions under NEPA that should be addressed in this EIS. Therefore, we are providing some discussion below of why this is <u>not</u> required under NEPA.

Actions are considered connected for NEPA purposes and must be evaluated in a single NEPA document only when the actions are interdependent or interrelated. When actions have independent utility, they do not have to be evaluated jointly to comply with NEPA.

(i) Land exchange: The proposed TSF does not "automatically trigger" the land exchange or vice versa. See 40 C.F.R. § 1508.25(a)(1)(i). The purpose of the proposed TSF project is the development of tailings storage capacity that will allow the full utilization of the sulfide mineral resource at the Ray Mine. The project has been proposed to provide additional tailings storage to support ongoing mine operations, and has not been triggered by – and does not trigger – the need for the land exchange.

Similarly, once the land exchange has been completed and title to the Selected Lands has passed to Asarco, no additional actions are triggered. Asarco may subsequently require federal permits or other authorizations to conduct activities on the Selected Lands, and those authorizations will require compliance with NEPA, but no authorizations or other federal actions automatically follow from the transfer of title to the Selected Lands.

Second, both actions can proceed without the other action being taken previously or simultaneously. See 40 C.F.R. § 1508.25(a)(1)(ii). Regardless of whether the land exchange takes place, Asarco has the legal right to use the Selected Lands for mining-related activities by virtue of its unpatented mining and mill site claims on these lands, as the Ninth Circuit recognized in its decision on the EIS for the land exchange. See Center for Biological Diversity v. U.S. Department of the Interior, 623 F.3d 633, 643 (9th Cir. 2010).

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The purpose of the land exchange is to allow Asarco to obtain fee simple title to land in the vicinity of the Ray Mine and thereby obtain greater title certainty while consolidating Asarco's private land holdings. The exchange is not intended to acquire fee title to land for additional tailings storage, nor is fee title necessary for such purpose because of Asarco's rights under the Mining Law. Thus, even if an alternative site that included some of the Selected Lands identified in the proposed land exchange (i.e., the Hackberry alternative) were chosen as the site for the new TSF, Asarco will have the right under the Mining Law to use that site for tailings storage or other mining-related activities even if the land exchange is not completed (subject, of course, to obtaining all required permits and approvals). The TSF thus can proceed without the land exchange being completed previously or simultaneously.

Third, neither action is an interdependent part of a larger action that depends on the larger action for its justification. See 40 C.F.R. § 1508.25(a)(1)(iii). The Ray land exchange was planned in the 1990s, and approved in 2000 – years before planning began for a new TSF. A new TSF will be required even if the land exchange is not completed. The two actions address different purposes and needs, were proposed at different times, and can proceed independently each other. Indeed, but for the legal challenge to the land exchange, Asarco would have acquired title to the Selected Lands more than a decade ago. The two actions clearly are not interdependent parts of a larger action and do not depend on a larger action for their justification.

(ii) Operations at the Ray Mine: Operations at the Ray Mine should not be considered connected actions under NEPA. Neither the Corps nor any other federal agency is currently being asked to issue a permit or authorization that will allow future activities to occur at the mine. Furthermore, even if no new tailings facility were constructed, mining operations would continue at Ray for some time. Oxide ore would continue to be leached until the oxide resource is depleted, and sulfide ore would continue to be mined and milled at the Ray Concentrator (with tailings being placed in the Elder Gulch TSF until some time in the 2021-2023 range, depending on production rates) or shipped to the Hayden Concentrator for milling there (with tailings placed in the existing TSF facilities at Hayden). Depending on economics and production rate, capacity for tailings disposal at Hayden could exist for another 30 years or more. Given these facts, we do not believe continued operations at the Ray Mine can be considered a connected action as that term is explained in the CEQ regulations at 40 C.F.R. § 1508.25(a)(1).

Moreover, overall federal control and responsibility at the Ray Mine is minimal. Several prior Section 404 permits have been issued (each with accompanying NEPA analysis), and BLM currently has ownership interest in a small portion of lands within the mine footprint (where Asarco is operating pursuant to existing plans of operation). However, as noted above, no new federal approvals or permits are currently being sought to authorize continued operations at the mine.

Some commenters may argue that because the TSF is fed by material produced at the mine, and because full utilization of the sulfide ore resource at the mine is dependent on a new

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TSF, that fact alone is sufficient to make operations at the mine a connected action that must be analyzed in the EIS. This sort of "but for" causation has been rejected by the Supreme Court as a basis for determining the scope of NEPA analysis. See Department of Transportation v. Public Citizen, 541 U.S. 752 (2004).

In light of the foregoing, operations at the mine cannot be considered a "connected action" as that term is defined in the NEPA regulations. Continued operations at the Ray Mine should be considered only in the cumulative impacts section of the EIS.

2. Seepage Potential at Hackberry Alternative: We are concerned that the DEIS does not fully bring out the potential for seepage to occur at Hackberry even if proper design measures are implemented.

(a) The discussion of the geology at Hackberry in Section 3.3.1.2.3 (p. 3-22, paragraph 3) does not reflect several of the key considerations identified in AMEC's technical memoranda regarding the Asarco Ray Mine Tailings Impoundment Alternatives (June 23, 2014) and the Hackberry Gulch TSF Site Fault Reconnaissance (June 2, 2015) (these memoranda appear in Appendices B and D of the 404(b)(1) analysis, which is Appendix B of the DEIS, and the considerations are noted on pp. 22-23 of the 404(b)(1) analysis). Specifically, the text does not seem to highlight the following features that could result in seepage: (1) the presence of coarser grained, more permeable zones within the Big Dome formation that could provide preferential pathways for seepage; (2) the presence of two dozen NW-striking faults that are potential seepage avenues; and (3) the presence of paleo-channels paralleling the existing drainage channels that represent potential future seepage pathways. All of these factors highlight the difficulty of controlling seepage at the Hackberry alternative, and we believe they should be discussed in the text of this section.

Given these features, Asarco does not believe that the potential effects of the Hackberry alternative would be "essentially the same" as the Ripsey alternative from a geochemical and geotechnical standpoint, as stated in Section 3.3.2.3 (p. 3-41, paragraph 4). Although the quality of the seepage would be expected to be similar at each location, there are (as noted above) numerous geologic features within the Hackberry alternative footprint that would make seepage control difficult and potentially allow seepage to reach the Gila River. The draft cites the presence of more drainages and notes that seepage control would be more complicated, but this does not fully capture the difficulty and uncertainty associated with controlling seepage at Hackberry.

Similarly, Asarco questions the statement in Section 3.4.2.3 (p. 3-55, paragraph 3) that there should be no water quality impacts to the downgradient drainages, including the Gila, under the Hackberry alternative. Even with careful design and construction, we are concerned with the potential for seepage to reach the Gila River from this alternative. This is one of the primary reasons for Asarco preferring the Ripsev alternative.

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(b) The draft EIS (Section 3.3.2.2, p. 3-40, 4th paragraph) states that the purpose of the geochemical work was to assess potential impact to groundwater and surface water, but there is no discussion of how the modeled seepage quality compares to surface water quality standards (nor is this done in section 3.4, surface water hydrology). A comparison of modeled seepage results to Gila River surface water quality standards may be appropriate. It may also be appropriate to discuss the particle tracking work (for the Ripsey alternative) performed by Asarco and included in the APP application materials somewhere in the draft EIS. Although no detailed fate and transport analysis was done for either alternative, a simple comparison of modeled seepage to surface water quality standards, along with a discussion of the seepage control potential at each alternative site, may strengthen the document.

<u>Cumulative Impacts</u>: We have several suggestions for improving the rigor of the cumulative impacts section:

(a) As a general matter, the cumulative effects of the no action, proposed action and Hackberry alternative need to be clearly identified. The distinction between these alternatives is substantial in some cases and the cumulative effects analysis of the proposed Ripsey TSF and the Hackberry Alternative are not similar for all resources.

(b) Although all resources/issues identified and considered in chapter 3 should be considered during the cumulative effects scoping effort, not all affected resources will be meaningfully impacted and require significant analysis in Chapter 4. It might make the overall analysis more accessible if this were noted up front, along with an identification of those resources that the Corps has determined require a more robust analysis. For example, accidents and spills may not require a detailed cumulative impacts analysis, whereas impacts to wildlife might require a more thorough analysis. CEQ cumulative effects guidance (*Considering Cumulative Effects Under the National Environmental Policy Act* (January 1997)) discusses focusing on "truly meaningful effects" and "important issues of national, regional or local significance." For these resources, the document should do a more thorough job of identifying the past, present and reasonably foreseeable future actions that fall within the geographic boundaries identified for the analysis of the resources, and then considering the effects of the alternatives in the context of these actions.

(c) In general, we suggest a more structured approach to the cumulative impacts analyses, following more closely the CEQ guidance on this topic: (a) identify significant issues for cumulative impacts analysis (scoping); (b) establish the geographic scope for the analysis; (c) establish the time frame for the analysis; (d) identify other actions affecting the resources, ecosystems and communities of concern (this should include beneficial as well as adverse actions).

The draft EIS does include a discussion regarding the geographic area for cumulative impacts analysis, by resource (pp. 4-1 to 4-3). However, the scope of some of the described areas (e.g., "same air shed," "same watershed as TSF alternatives," and "geographic area examined for

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TSF alternatives") is not always clear. The Corps may wish to consider better identifying these areas, and depicting the geographic scope of analysis on a figure (currently, Figure 50 is just a general overview figure and does not depict any analysis areas).

(d) The declarative statements used in many instances in the DEIS may not always constitute the requisite "hard look" expected under NEPA. Qualitative analysis is certainly acceptable, but should be robust enough to satisfy the Corps' NEPA obligations.

(e) The no action alternative is not discussed in the cumulative impacts section, but it can be used to help establish the environmental baseline against which to compare the effects of the proposed action and reasonable alternatives (e.g., establishing what regional trends there already are in air quality with and without the proposed TSF would help assess the incremental effect of the TSF and determine the extent of the cumulative effects on air quality).

(f) In some instances in the analysis of cumulative effects, the text provided for a specific resource seems to be a recasting of the direct and indirect effects of the action and not a thorough analysis of the cumulative effects (the effects of the alternative being considered plus the composite effects of past, present and reasonably foreseeable future actions). Air resources is one example of this. The cumulative effects of the Ripsey and Hackberry Gulch alternatives would be somewhat different because the Hackberry Gulch alternative is expected to have greater levels of fugitive dust emissions. The cumulative effects analysis then needs to consider the long term trends in the region to provide a context for the expected effects of the action alternatives and the no action alternative. Simply recasting the direct and indirect effects of the alternatives may not represent an adequate cumulative effects analysis.

4. <u>Addressing Issue Statements</u>: In chapter 3 (Environmental Analysis), it should be clear how each of the issues within the issue statements at the beginning of each section is addressed in the subsequent discussion of the affected environment and environmental consequences. It did not appear to us that this was always done in the DEIS. Some examples of when the issue statements are not clearly addressed in the DEIS are provided below.

In Section 3.2 (p. 3-14), the second area of concern identified for soils is the "potential for increased soil erosion and sedimentation from construction and operation activities." The only clear reference to this issue is a single sentence on p. 3-20, where it is noted that indirect impacts include potential off-site sedimentation resulting from soil erosion occurring during TSF construction and operation. Asarco believes it should be noted that control measures will be required during construction and operation pursuant to the Arizona Mining MSGP. We also note that "potential for increased sediment levels" is identified as an area of concern in section 3.4 (surface hydrology). If that is where the issue is to be primarily addressed, perhaps a cross-reference to the relevant pages would be appropriate here.

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- In Section 3.9 (p. 3-88), the second area of concern identified for recreation is disruption to dispersed recreation activities such as off-road recreation and hunting. However, hunting is not clearly addressed in the environmental consequences section.
- In Section 3.12 (p. 3-117), of the three issues identified to be addressed for transportation, item 1 is clearly discussed, but items 2 and 3 have not been clearly addressed.

5. <u>Addressing the Affected Environment and Environmental Consequences</u>: Chapter 3 addresses both the affected environment and the environmental consequences.

(a) With respect to <u>affected environment</u>, for some issues/resources the discussion of the affected environment could include combining the discussion of both action alternative areas. For example, the affected environment associated with Air Quality/Climate (Section 3.1) and Socioeconomics (Section 3.11) should include discussion of a region that includes both the action alternatives. Other discussions of affected environment, however, would be stronger if they clearly distinguished between the two action alternatives. For example, with respect to the affected environment, Sections 3.2.1 (Soils), 3.7.1 (Land Use), 3.8.1 (Noise), 3.9.1 (Recreation), 3.12.1 (Transportation), 3.14.1 (Visual Resources), and portions of Sections 3.13.1 (Vegetation) and 3.15.1 (Wildlife) conflate discussion of Ripsey and Hackberry even though there are distinct differences between the sites with respect to the affected environment. Specific examples are provided, below.

- Section 3.2.1 (pp. 3-14 to 3-17, and Table 3-11) provides the soils baseline characteristics for the Ripsey Wash and Hackberry Gulch alternatives combined. We suggest providing this data for each alterative separately for tracking purposes.
- Section 3.2.1.3 (p. 3-19, paragraph 1) provides a range of the K factors for the mapping units across both the Ripsey and Hackberry sites. We suggest that a range of this data be provided separately for each site.
- Section 3.7.1.3 (p. 3-77, Table 3-41) provides the total acreage for the three grazing allotments that occur at both the Ripsey and Hackberry sites. We suggest identifying the acreages within each of the alternatives separately.
- Section 3.7.1.6 (p. 3-78, paragraphs 5-8) discusses utilities and transportation within the region, but does not provide clear description of these facilities within each alternative. We suggest providing separate sections for each alternative. A reference to a figure depicting the utilities and transportation infrastructure in the area also might be helpful.
- Section 3.7.1.7 (p. 3-79, paragraph 5) identifies the BLM Travel and Transportation Management Plan that in which portions of the Ripsey Wash alternative are located, but is silent regarding the Hackberry Gulch alternative. We suggest that, to the

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extent possible, equal consideration be given to each of the action alternatives in describing their affected environments.

 Section 3.8.1.2 (p. 3-84, Table 3-45) provides background noise levels for areas across the landscape of both action alternatives. We suggest identifying which locations pertain to each of the alternatives. A figure showing the locations also might be helpful.

(b) In terms of <u>environmental consequences</u>, the differences in the impacts between the Ripsey and Hackberry alternatives are sometimes not as clearly defined as they could be. This includes discussions in Sections 3.2.2 (Soils), 3.7.2 (Land Use), 3.8.2 (Noise), 3.9.2 (Recreation), 3.12.2 (Transportation), 3.14.2 (Visual Resources), 3.13.2 (Vegetation) and 3.15.2 (Wildlife). In numerous instances the DEIS refers to effects being "the same" (or words to that effect) between the two alternatives when in fact there are differences in the scope or intensity of impacts. Although impacts may be generally similar for some affected resources, there may be qualitative or quantitative differences that should be noted. Specific examples are provided below:

- Section 3.2.2.3 (p. 3-20, paragraph 3) states that the effects to soils resulting from the proposed project activities would be essentially the same for the Hackberry TSF alternative, with the exception of the discussion on the Arizona Trail, which would remain in its existing location under the Hackberry alternative. We suggest providing a discussion of the effects to soils from the Hackberry TSF alternative similar to that provided for the Ripsey Wash TSF alternative in Section 3.2.2.2.
- Section 3.4.2.3 (p. 3-54, paragraph 2) states that development and construction activities for the Hackberry Gulch TSF would be similar to the Ripsey Wash TSF Alternative and would have the same effect on sediment and erosion. We suggest providing a discussion of the effects associated with the Hackberry Gulch TSF alternative similar to that provided for the Ripsey Wash TSF alternative in Section 3.4.2.2.
- Section 3.6.2.3.2 (p. 3-73, paragraph 6) states that the potential impacts to groundwater quality would be the same for the Hackberry TSF as those described for the Ripsey Wash TSF. We suggest providing a discussion of the effects similar to that provided for the Ripsey Wash TSF alternative in Section 3.6.2.2.
- Section 3.7.2.3 (p. 3-80, paragraph 10) states that the land use effects of the Hackberry Gulch TSF alternative would essentially be the same as that described for the Ripsey alternative. We suggest providing a discussion of the disturbances to federal lands, mineral estates, and post-mining uses similar to that provided for the Ripsey Wash TSF alternative.

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Section 3.13.2.3 (p.3-128, paragraph 3) states that the Hackberry TSF would result in approximately 2,290 acres of surface disturbance, the vast majority of which currently supports vegetation communities, and that, as a result, the effects of this alternative in terms of direct and indirect impacts such as vegetation productivity/habitat loss, blowing dust, noxious weeds, etc. are the same as for the Ripsey Wash TSF. However, the Ripsey Wash TSF would impact 2,574 acres with a difference of 284 acres. We suggest providing a discussion of the effects similar to that provided for the Ripsey Wash TSF alternative in Section 3.13.2.2.

6. <u>No Action Alternative</u>: The effects of the no action alternative are often not fully disclosed. Some examples are as follows:

- With respect to Socioeconomics (and other resources), there should be further qualitative discussion regarding the impacts to the local and regional economy with respect to the potential eventual reduction in open-pit mining and milling activities under the no action alternative. As noted above, however, the Mine could operate for many years even if no TSF were permitted (depending on economics), so this impact will not be immediate and may be hard to quantify (which is why we suggest a qualitative discussion where appropriate).
- For Air Quality (p. 3-6, Section 3.1.2.1), the Ray Mine contributions to the nonattainment area inventory could be considered in describing the effects to regional air quality.
- There will be beneficial effects associated with the proposed mitigation that should also be discussed in Sections 3.13.2 (Vegetation) and 3.15.2 (Wildlife).

7. <u>Mitigation</u>: Mitigation is likely to be an issue brought up by some commenters on the DEIS, but it is an often misunderstood concept under NEPA. For example, Asarco agrees with the statement on p. A-4 that the Corps may "identify" additional mitigation measures in the final EIS. Evaluation of mitigation measures is required by CEQ regulations (40 C.F.R. §§ 1502.14(f), 1502.16(h) & 1508.25(h)(3)). However, NEPA does not grant an action agency the independent ability to mandate mitigation for adverse effects disclosed in the EIS. Mitigation measures need to be agreed to by a project proponent as part of the project design, or required by a state, federal or local regulatory program, before they are identified in a NEPA document as mitigation measures to be implemented. Stated another way, an action agency can identify additional potential mitigation measures in the EIS, but cannot mandate their implementation absent either: (a) an applicant's agreement to incorporate the measure(s) into project design, or (b) the existence of an independent state, federal or local regulatory program or permit that requires the measure(s). Some of the mitigation measures for the proposed Ripsey Wash TSF are identified in WestLand Resources, Inc., Ripsey Wash Tailings Storage Facility Environmental Protection Measures and Monitoring (June 19, 2015) (Appendix I to the DEIS).

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We discussed the issue of mitigation in greater detail in our response to select scoping comments (letter dated January 30, 2014, item 2, pages 3-4). The issue is also squarely addressed in CEQ's most recent mitigation guidance. *See* 76 Fed. Reg. 3843 (January 21, 2011). If the Corps determines the existing language may be confusing to readers, it may wish to add clarification regarding mitigation authority under NEPA.

8. <u>Environmental Justice</u>: Although the identification of EJ populations is based on socioeconomic data, the determination of disproportionate impacts should address the whole range of potential impacts (noise, air, traffic, etc.). It typically is a separate and independent resource discussion. Asarco believes the document would be strengthened by addressing environmental justice in its own section, rather than as a subset of the Socioeconomics section.

9. <u>Context for AGFD Mapping Resources</u>: It may be useful to include a more complete discussion of how AGFD habitat rankings are derived. In particular, AGFD rankings are not based on project-specific fieldwork, but rather extremely coarse GIS layers and records of species occurrence of unknown accuracy in time and space. As such, their utility in evaluation of project-specific alternatives is severely limited, and they are more useful as an initial source of information for further inquiry. For this project, Asarco has provided significant surveys and other information pertaining to wildlife, which we believe are more beneficial for analytical purposes than AGFD's more generic tools.

Many of the resources relied upon by AGFD are regional mapping and GIS analyses that rely on broad, sometimes generic data sets to assign resource value to the landscape, and are not appropriate for the site specific EIS analysis being conducted for the proposed new TSF. For example, there are concerns with the use of the broad-scale State Wildlife Action Plan (SWAP) models to evaluate specific effects of the Ripsey Wash TSF project.

The habitat models used by SWAP are not based on species-specific survey data in the area surrounding the Project. Rather, "expert opinion" is coupled with a few broad-scale GIS data layers, such as elevation and vegetation maps, with limited field verification. For example, SWAP habitat models indicate that the Ripsey Wash site contains jaguar habitat. In addition, Hackberry Gulch is not mapped as being habitat for Sonoran desert tortoise, while Ripsey Wash is mapped as habitat for the species. Site-specific surveys, however, indicate that both areas contain habitat for Sonoran desert tortoise, and that Ripsey Wash cannot be reasonably considered habitat for jaguar. Thus, the higher ranking of Ripsey Wash relative to Hackberry that is reflected in the AGFD mapping is likely a consequence of applying large, regional scale models to analyze site-specific projects.

We also note that the relatively higher SGCN and/or SERI ratings for the Ripsey Wash site (as compared to the Hackberry site) discussed in Section 3.15.1.1.2 (p. 3-146, Table 3-64) is likely a result of AGFD's decision to use Highway 177 as the divider between game management units (with the result that the Gila River corridor is located wholly within the GMU containing the Ripsey Wash site).

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10. <u>Additional Citations</u>: There is sometimes a lack of citations of scientific literature or primary source data and analyses to support the findings or statements in the DEIS. For example:

- In Section 3.1.1.4 (p. 3-5, paragraph 2), the source for the PM10 monitoring data from the town of Kearny should be identified.
- In Section 3.3.1.1.2 (p. 3-21, paragraph 1), the description of the Ripsey Wash TSF Site Quaternary Deposits should be cited.
- In In Section 3.3.1.4.5 (p. 3-27, Table 3-14), the source for the ABA values for tailings and alluvium/borrow materials should be identified.
- In Section 3.4.1.1 (p. 3-41, paragraph 7), it states that the Basin and Range physiographic province of Arizona is characterized by few perennial streams and low rainfall. We suggest providing a citation.
- In Section 3.6.1.1 (p.3-61, paragraph 3), the gradient of groundwater movement at the Ripsey Wash TSF Site is described. We suggest providing a citation for this data.
- In Section 3.8.1.1 (p. 3-83, Table 3-44), the source for the typical range of common sounds should be provided.
- In Section 3.13.1.2 (p, 3-123, paragraph 2), the Ray Mine Tailings Storage Facility Ripsey Wash Analysis Area, Vegetation Baseline prepared by WestLand dated February 14, 2014, should be cited.
- In Section 3.15.2.2.2 (p. 3-160, paragraph 80), justification and scientific citations of why acclimation may increase predation and have other effects on wildlife species should be included.
- In Section 3.15.1.3 (p. 3-147, paragraph 5), scientific citation for the known ranges and habitat preferences of mammalian predators and furbearers should be included.

In addition, a number of our specific comments in the attached table provide citations to previously submitted technical or other documents to support language in the EIS that describe aspects of the alternative sites or proposed project or mitigation elements. Adding these citations may be appropriate in the final EIS.

We hope the comments provided above will help the Corps strengthen the final EIS.

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If you have any questions or require additional information, please do not hesitate to contact me at (520) 356-2377.

Sincerely,

James M. Stewart Technical Services Manager

Attachments: specific comment table editorial comment table scanned PDF with handwritten comments on select tables/figures

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COMMENT DOCUMENT #20 (Part 2 of 4) ASARCO LLC

(JAMES STEWART, TECHNICAL SERVICES MANAGER)

Comment Document #20 Part 2 of 4

Table 2. ASARCO LLC Editorial Comments on the Ray Mine Tailings Storage Facility DEIS - March 31, 2016

Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
1	1	Fact Sheet			The project proponent should be identified as "ASARCO LLC" (all capitals) rather than "Asarco LLC."	
				11	The same comment applies to the initial reference to the proponent in the Abstract.	20-26
2	1	Fact Sheet			The "Project Location" provided (10 miles NW of Kearny) is the location of the Ray Mine. If the intent is to identify the proposed TSF location, it should be ide as being located approximately 5 miles west of Kearny.	20-29
3	ES-12	ES, 5,3	Table ES-2		In the attached scanned pages from the DEIS, we provide suggested edits to Tables ES-2, 2-1, 2-2, 3-1, 3-2, 3-3, 3-5, 3-6, 3-8, 3-10, 3-13, 3-14, 3-15, 3-16, 3-18 3-21, 3-28, 3-31, 3-34, 3-35, 3-40, 3-42, 3-43, 3-49, 3-52, 3-53, 3-56, 4-2, and Table 1 in Appendix C. Our suggested edits to the tables include comments that are editorial, specific, or technical in nature.	, 3-20, e either 20-30
4	1-1	1.1		3	 In referring to ASLD, the word "Land" should be used rather than "Lands." 	1.1
					The same correction also should be made on p. 5-1.	20-31
5	1-2	1.2.1		2	The NEPA scope of analysis IS defined, not 'normally' defined by 33CFR	20-32
6	1-2	1.2.1		2	Suggest replacing "regarding" with "requiring" as this is what the regulations say.	20-33
7	1-3	1.3		6	In the last line of the paragraph, we believe "projects or" should instead be "projected."	20-34
8	1-4	1.3		1	There is a reference to the world demand for copper "as discussed above," but there is no such discussion earlier in the document (or later in the document). We recommend the reference be deleted, or a discussion of world copper demand be added.	e either 20-35
9	1-4	1.3		3	The words "750 million tons is approximately" appear superfluous and render the second sentence of the paragraph (which addresses peak daily production for the purposes, rather than total facility capacity) confusing.	ansport 20-36
10	1-7	1.6		3	The reference should be to the "Arizona Game and Fish Department" rather than the "Arizona Department of Game and Fish." The same correction also should be made on pp. 5-1 and 9-1.	20-37
11	2-1	2.1		3	Second sentence - suggest removing "to assist in the process", and replacing with "accomplish this"	20-38
12	2-1	2.3		8	First sentence - this should be Permit. Asarco has submitted and Aquifer Protection Permit (APP) application suggest eliminating "Plan".	20-39
13	2-2	2.3.2		4	First sentence - suggest removing "tasks", and replacing with "project elements"	20-40
14	2-2	2.3.2	2-1		In footnote 2, "Department of State Lands" should be "State Land Department."	20-41
15	2-3	2.3.2.1	1	1	Please replace "State Highway 79" with "State Route 79" and "State Highway 177" with "State Route 177".	20-42
16	2-6	2.3.2.7		7	Suggest defining the term "trace" in a footnote. Is the "trace" the "Approximate Location of Hackberry Fault" identified in Figure 4? Can the "trace" be ident	ified in
					Figure 4? "Trace" is also not defined in Section 8.2 (Glossary).	20-4-
17	2-6	2.3.2.7		8	Suggest referencing Figure 4.	20-4

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
8	2-6	2.3.2.7		10	Suggest referencing Figure 4.	20-
9	2-7	2.3.2.10		6	Suggest not referring here to Figure 31 (which relates to the Hackberry alternative) in this discussion of the Ripsey alternative. That reference probably instead in Section 2.4.2.7, which addresses monitoring wells for the Hackberry Wash alternative.	belongs 20-4
0	2-12	2.3.6.2		5	Electrical power is needed at the detention dam and associated stormwater diversions upstream of the proposed TSF. We recommend this be noted in the first s of this paragraph (as it is in the second sentence).	entence 20 - 4
1	2-14	2.3.9		2	In the footnote (#14) at the end the first sentence of this paragraph; we suggest it be noted that construction activities also include relocation of the SCIP powerling	ne. 20-4
2	2-14	2.3.9		3	At the end of this paragraph, add "TSF" after "Ripsey Wash."	20-
3	2-15	2.3.10.3		1.	As it focuses on APP controls, a better title for this section might be "Groundwater" (as opposed to "Water Resources").	20-1
4	2-16	2.3.12		2	Suggest referencing Appendix I - Environmental Protection Measures	20-5
5	2-17	2.3.12.3		4	Suggest noting that these are the "currently planned" closure procedures. Given that permanent closure is decades into the future, legal requirements and/or best p for TSF reclamation may change.	20
26	2-22	2.4.2.2		7	 (1) "Operational" should be "operation." (2) The paragraph references the 4 reclaim ponds on the SW side of the Hackberry alternative. There are 7 total ponds - is this referring to the 4 that are between highway and the Gila (i.e., west of the highway)? If so, that could be made clearer. 	20-5 veen the
27	2-25	2.4.3.3		4	Section 2.3.3.3 referenced here is two sentences in length. We suggest repeating it here, rather than referring the reader back to it, for tracking purposes.	20-5
8	3-1	3.0		4	First sentence- the language used is confusing. The "categories" listed are the alternative that are being evaluated. It would be more clearly described as such.	20-5
9	3-2	3.0		3	We suggest adding the word "are" in the last line after the word "area."	20-
0	3-2	3.1.1.1		5	We suggest adding the words ", described as follows" to the end of this paragraphs.	20-
1	3-2	3.0		3	We suggest (1) The word "of" be inserted before "the Ripsey Wash and"; (2) the word "are" be added before "addressed" at the end of the paragraph.	20-
32	3-3	3.1.1.1	1.1.1.1	1	As a suggestion, add the words "and during the winters months." The Sonoran desert is semi-and meaning we have 2 main rainy seasons (summer monsoons an rains).	d winter 20-
33	3-3	3.1.1.1	Table 3-1		Source 1 link invalid - should be http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?az8348	7
34	3-3	3.1.1.1	Table 3-1		Source 2 link invalid - http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?az9420	2
35	3-3	3.1.1.1	Table 3-1		Source 3 link invalid - should be http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?az4590	1
36	3-4	3.1.1.3		5	On the last line of the page, the comma should be deleted and the closed parentheses should be moved to the end of the sentence.	20-

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
1	3-7	3.1.2.2.1		4	No2 or NOx; there is no N2O	20-1
8	3-7	3.1.2.2.1		5	Suggest changing "later" to "latter" in the second sentence.	20-
>	3-10	3.1.2.2.3		1	 Suggest the title of the section (and the later similar section for Hackberry) refer to "POTENTIAL Climate Change IMPACTS Associated with R Alternative," as it is not clear that the project would have any measurable impact on climate change. [Same comment applies to Section 3.1.2.3.3 f Suggest using a different word than "purports" in the second sentence (e.g., "has concluded" or "suggests"), as "purports" suggests that the concluded (which is not the case). 	tipsey Wash TSF or Hackberry] 20 d onclusion will be
0	3-13	3,2,1,3		7	No references are made in this section to Map Units 16, 17, 52, 79 or 101.	20-6
1	3-18	3.2.1.1.2		2	Paragraph 2 - This paragraph does not seem to match up with the topic of this section.	20-
L	3-19	3.2.2.2		3	We suggest providing the acreage of impact here for discussion purposes. Referencing a table in Chapter 2 in the discussion of impacts makes it diffic to track the impacts associated with each alternative.	cult for the reader
3	3-21	3.3.1.2.2		8	Suggest adding the words "At the Hackberry Gulch location" after the word deposit in sentence 1.	20-1
P T	3-22	3.3.1.4		7	Line 3 - change the word "at" to "for" after the word TSF.	20-0
	3-22	3.3.1.3		6	Last sentenceand this agency is responsible to approve the overall design we recommend this be reworded to state "and this agency is responsional and approving the overall design.	ble for reviewing
	3-25	3.3.1.4.2.1		1	We recommend this be reworded as: Seven discrete samples of tailings derived from diabase and eight discrete samples of tailings derived from Pina collected for ABA testing. Two composite samples were generated for MWMP and HCT from the individual discrete samples to assure representative Diabase and Pinal Schist. To further simulate representative tailings, Diabase and Pinal Schist samples were composited in the percentages expected to TSF (65% Diabase and 35% Pinal Schist). Refer to Table 2.2 in the Geochemical Characterization Report for a summary of the samples collected and the	I Schist Ore were samples for both be present in the ests performed.
с. 	3-25	3.3.1.4.2.1		1	In the first line of the page, "discreet" should be "discrete."	20-
	3-26	3.3.1.4.3		1	We suggest clarifying that two samples for each of the following rock types were collected and tested for ABA and MWMP as part of	20-
)	3-27	3.3.1.4.5		2	We suggest placing the criteria for interpreting the ABA results before the table, not after.	20-
	3-29	3.3.1.4.6.2		6	We suggest clarifying that two Quaternary alluvium (Qal) samples were averaged and summarized individually for MWMP analyses and selected material would comprise the base of the tailings impoundment.	for HCT, as this 20-
1	3-32	3.3.1.4.7		7	We suggest explaining briefly the term "redox potential." We assume it is shorthand for the "oxidation/reduction potential" referred to in paragraph so, adding "(redox potential)" after "oxidation/reduction potential" in paragraph 3 would be sufficient clarification.	3 on this page. If 20 -
2	3-37	3.3.1.4.7		3	Suggest clarifying that dissolved metals concentrations from extract solutions were evaluated for trends in concentrations over time.	20
-	3-37	3.3.1.4.7		3	In the first line, suggest changing "form" to "from."	20-
4	3-40	3.3.1.4.7		1	Suggest deleting the second "that".	20-

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
55	3-41	3.3.2.2		2	Suggest revising the last sentence in the paragraph as follows: "It should be noted that there has never been a tailings dam failure at the Ray Mine." OR leave the ensentence out. It is unclear why the potential for unspecified "tailings accidents" are being referenced in the geology section.	atire 20
56	3-41	3.4.1.1		9	Line 2 - Suggest using "by SCIP" instead of "to SCIP" in reference to the operation of Coolidge Dam.	20-
7	3-42	3.4.1.1		4	Line 8 - suggest adding the word "its" after the words "station of 100,000 cfs and."	20-
8	3-43	3.4.1.1		3	Suggest noting the San Pedro River is approximately 17 miles upstream from the Ray Mine.	20-
9	3-43	3.4.1.2		5	The AgI use denotes "agricultural irrigation" and the AgL use denotes "agricultural livestock watering." A.A.C. R18-11-101. The references to those uses in paragraph are slightly off and we recommend this be corrected.	this 20-
60	3-43	3,4.1.2		5	Change the opening word "ADEQ" to" Arizona DEQ."	20-
1	3-43	3.4.1.2		5	Second Sentence - the word "within" should be removed.	20-
12	3-51	3.4.2.2		6	 We have the following recommendations: (1) BADT should be BADCT. (2) Also, the more pertinent source of required erosion control measures is the mining MSGP, rather than the APP BADCT measures. These comments also apply to the similar discussion found in the Hackberry alternative section (p. 3-54, paragraph 2). 	20-
53	3-52	3.4.2.2		4	We recommend defining SWPPP (as storm water pollution prevention plan). In addition, consider using this SWPPP in the glossary rather than "SWMP"	20
4	3-53	3.4.2.2		2	Additional discussion of accidental spills and possible impacts are discussed in Section 3.16, Accidents and Spills.	20
5	3-53	3.4.2.2		3	Suggest changing the words "Arizona DSL" to "ASLD."	20-
6	3-55	3.4.2.3		1	Suggest changing "Alternation" to "Alteration" in the 1st line.	20
57	3-55	3.4.2.3		4	We suggest using "result in the loss of" rather than "obliterate."	20
58	3-56	3.5.1.1		3	(1) The phrase "1987 and 2008" does not seem to fit within the second sentence and should be removed(2) A revised JD was approved in August 2013.	20
9	3-57	3.5.1.1.2	Table 3-28		Table 3-28 has a footnote marker after the heading "functional score," but no explanation of what the footnote means. Presumably it is the same note that appendix Table 3-29, but we suggest the explanation be included in Table 3-28 as well.	ars in 20
70	3-66	3.6.1.1.1		1	microsiemens per centimeter (/cm)	20
71	3-72	3.6.1.2.3		1	Suggest that the following language be added to the next to the last sentence: "and allows for pumpage of less than 35 gpm."	20

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
72	3-73	3.6.2.2.1		1	Suggest that the last sentence be revised as follows: "Diverted water may re-infiltrate into the alluvium deposits in the wash where it is released."	20
13	3-73	3.6.2.2.2		6	This paragraph contains a reference to "AMEC 2014." There is no such document in the references (chapter 7). There are 2014a, 2014b, 2014c and 2104d AU documents listed in the references. Please revise to cite the correct reference.	MEC 20
4	3-74	3.6.2.2.3		8	Suggest adding the words "de minimus" after the words "cause a" in the last line of the page	20-
5	3-76	3.6.2.3.3		1	The listing of wells refers to Ripsey Wash TSF instead of Hackberry Gulch TSF.	20-
6	3-76	3.7.1.3	Table 3-41		AUMs are not defined in this document	20-
7	3-77	3.7.1		1	Asarco owns or controls the mineral estate (emphasis added) within the areas being considered for TSF.	20-
8	3-79	3.7.1.7		6	We suggest the meaning of "Arizona STL" be clarified.	20.
9	3-83	3.8.1.2		4	Second sentence - this states that, in general, the Ripsey Site would be relatively quiet, but this section is for the affected environment or baseline condition. We survising this statement to read that the site is relatively quiet.	ggest 20
0	3-86	3.8.2.2		3	Suggest that the words "would probably" be changed to "may."	20-
1	3-86	3.8.2.2		4	Suggest adding word "along" after the words "traffic noise" in line 2. Add the word "initial" before the word "construction" in line 2. Suggest adding the words "activate the Ripsey Wash TSF" after the word "construction" in line 2.	vities 20
2	3-86	3.8.2.2		5	Rather than stating that the A Diamond Ranch "is controlled by Asarco," we believe it would be more accurate to state that Asarco has an option to purchase the r as is stated elsewhere in this section.	anch, 20
33	3-88	3.9.1		10	Please discuss and provide reference to a figure showing the locations of the AZ Trail and dispersed recreational opportunities within each of the alternatives.	20.
4	3-96	3.9.2.2		5	End of Line 2 - suggest adding the word "open" after the word "remain."	20.
15	3-97	3.9.2.2		1	Presentation of the impacts associated with each of the action alternatives may be more easily compared in a table format.	20.
36	3-98	3.10		2	Regarding (2) the potential to affect cultural resources, reserved rights, trust issues, traditional cultural properties, and other responsibilities of Native American trip Please delete "reserved right, trust issues" and "other responsibilities of Native American tribes" There is no tribal land within the project area to our knowledge, are no reserved rights, trust issues, and other responsibilities. The term "cultural properties" should be used because there are cultural resources that are or eligib listing on the NRHP. A cultural resources becomes a cultural property when it is determined eligible. This should be consistent throughout the document.	bes: There le for 20

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment		
87	3-99	3.10.1.1.1		2	We suggest providing clarification based on the following:		
					The criteria for eligibility to the NRHP provides the basis for evaluation and subsequent management of cultural resources in the permit area. The term "historic is used in this DEIS to identify a property that is listed in the NRHP or which has been determined to be eligible for listing in the National Register. The eligiproperty is determined in consultation between the Corps and other federal agencies, the SHPO and/or Tribal Historic Preservation Officer (THPO) (as is Eligibility is determined by the Corps in consultation with the SHPO). There is no tribal involvement at this point in the process. No THPO has jurisdiction property. Effects of the proposed undertaking on eligible properties are determined by the lead federal agency. The lead federal agency will consult with the STHPO and/or THPO is requested for evaluations and recommendations with respect to NRHP eligibility and adverse effects. The TH are not consulted on the effects on historic properties at this point. Eligibility and effect determinations are between the Corps and the SHPO. We also suggest in last paragraph on the page providing clarification that prior to the submittal of a 404 permit application to the Corps in 2013, Asarco had	ic property" gibility of a appropriate on over this HPO and/or in the APE. IPO are not 20- d conducted	112
		1.1			cultural resources surveys and Phase I data recovery of 28 sites on ASLD land. Six of the sites were recommended for additional Phase II data recovery.	P	
88	3-100	3.10.1.3.1			WestLand (Asarco's consultant) has conducted cultural resource surveys both in support of Asarco's acquisition of State lands for the proposed project and for area associated with the 404 permit application. WestLand prepared a summary document that details the previous investigations that have occurred within area and provides a summary of the status of each archaeological site. This report was updated due to changes in the Corps APE and submitted to the Corp 29, 2016. Please see Appendix A in the Revised Historic Properties Treatment Plan prepared for the project (Deaver, William L., David E. Purcell, Mary M. and Avi Buckles. 2016. Historic Properties Treatment Plan for 11 Sites for the Ripsey Wash Tailings Storage Facility, Pinal County, Arizona. WestLand Reso Tucson.).	r the permit a the permit as on March Prasciunas, ources, Inc., 20 -	113
89	3-106	3.10.2.2		1	The reference to "inadvertent discoveries" in the last sentence is confusing. We suggest that "inadvertent discoveries" should be changed to "new sites disc	covered" or 20 -	114
90	3-106	3.10.2.2		3	"Noticeably" should be "noticeable" in the fourth sentence.	20-	115
91	3-106	3.10.2.2		-4	It is not clear that this sentence is necessary, since the impact (or lack thereof) of the Trail realignment on cultural sites is addressed on the last paragraph of	this page.	-116
92	3-107	3.11		8	3rd line - should be "including".	20	-117
93	3-107	3.11.1		9	Last part of the last sentence ("and was carved out of the neighboring Maricopa County and Pima County in 1875") does not seem to be necessary.	20.	IIE
94	3-108	3.11.1		1	First sentence - the word "of" should be added after "overview".	20-	119
95	3-108	3.11.1		1	Last line -suggest delete "the entire".	20-	12
96	3-108	3.11.1.1		4	Line 2 - Suggest using "These" not "This".	20-	121
97	3-109	3.11.1.1		2	Second line – Suggest using "an" not "in". Third line Suggest stating "over the past 20 years" not "of the past 20 years".	20-	122
98	3-113	3.11.1.5	-	2	"Pina" should be "Pinal" in the last sentence.	20-	12:
99	3-115	3.11.2.2,1		1	Recommend revising this long sentence to clarify the point to be made. This section is intended to discuss the Ripsey Wash TSF so we suggest removing to the other action alternative.	he reference	12

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
00	3-115	3.11.2.2.2		4	Recommend rewording the first sentence: "Ripsey Wash would provide an estimated additional 200 jobs"	20
01	3-115	3.11.2.2.3		8	2nd sentence - suggest adding - "no long-term increase"	20
02	3-115	3.11.2.2.3		8	Recommend removing reference to Hackberry Gulch TSF, since the Ripsey Wash TSF is the subject of this section.	20
03	3-115	3.11.2.2.3		9	2nd line - Suggest using "nature" not "ration".	20
04	3-116	3.11.2.2.6		2	5th line - Suggest using "may" not "my".	20-
05	3-116	3.11.2.2.6		3	Use of the term "Asarco TSF project" is not consistently used. We recommend using consistent terms throughout the DEIS.	20
06	3-117	3.12.1	3-60		The note at the bottom of the table is difficult to understand - recommend rewording for clarity.	20
07	2.119	3 12 1 3		1	References to SR 179 should be changed to SR 79.	20
08	3-118	3.12.1.4		3	Consider adding a label for Riverside to Figure 42.	20-
09	3-119	3.12.2.2		3	Consider rephrasing the first sentence. It could be read to indicate that a "one to two months" traffic delay is short-term.	20-
10	3-119	3.12.2.2		4	Consider identifying the following on Figure 42: Arizona Trail, existing trailhead parking lot, proposed parking lot, and Riverside Drive.	20
11	3-122	3.13.1.2		3	The subheading for this section is specific to "Upland Vegetation", however, please make note that no wetland vegetation occurs within the Ripsey Wash Project	Area.
12	3-123	3.13.1.3		4	The subheading for this section is specific to "Upland Vegetation", however, please make note that wetland vegetation occurring within the Hackberry Gulch Area is discussed in Section 3.5.1.2.3.	Project 20
113	3-125	3.13.1.6		1	Suggest changing the word "Pima" to the word "Pinal" in line 1.	20-
14	3-128	3.14.1.1		9	We recommend a consistent use of terms - BLM lands, BLM-administered lands, lands managed by BLM	20-
15	3-128	3.14.1.1	1	9	Lines 3 and 5 - suggest deleting "lands" after BLM	20
116	3-129	3.14.1.1		2	Consider revising the last sentence: "The land exchange is not part of the proposed TSF project and is considered in the cumulative effects analysis of this EIS (4.0)."	Section 20
17	3-129	3.14.1.1		6	2nd line - RMP is the acronym for Resource Management Plan (not Planning), as indicated	20-
18	3-129	3.14.1.1		3	Paragraphs 3 - 4 are difficult to follow- consider revising and adding bullets for describing each of the three criteria: Scenic Quality, Viewer Sensitivity, and Distance	/iewing 20-
119	3-130	3.14.1.1		1	Line 3 - suggest deleting "s" - "no-action alternative"	20
120	3-130	3.14.1.2		3	Last sentence - suggest adding River - "Gila River"	20
121	3-131	3.14.1.3.1		3	Should reference a figure that depicts the transportation corridors identified in the paragraph (and following sections).	20

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
22	3-132	3.14.1.3.2		3	This section should provide some reference to the VRI that is previously described. Recommend reviewing term use throughout this section.	20-
23	3-132	3.14.1.3.2		3	The term Class C VQR is not defined and not described in earlier section (Section 3.14.1.1). We suggest providing definitions of terms used in this section.	20-
24	3-132	3.14.1.3.2		4	We suggest reviewing all sections for consistent use of terms. Terms used in describing the Ripsey Wash TSF Alternative include Ripsey project area, Ripsey TSF area, Ripsey TSF site, project area, etc.	project 20
25	3-132	3.14.1.3.2		5	Line 6 - suggest using the acronym SQRU, as it has already been defined. Recommend figure reference to show location of SQRUs. Where are TSFs relative Mine SQRU?	to Ray
26	3-133	3.14.1.4		4	Line 4 - Suggest using "select" not "selecting"	20-
27	3-133	3.14.1.3.5		3	The information presented in this section would track more easily in a tabular form.	20-
8	3-135	3.14.1.4.3		2	Last line - based on the description, we suggest removing "relatively".	20-
29	3-136	3.14.1.6		6	3rd line - suggest using the plural form for KOP- KOPs	20-
0	3-137	3.14.2		3	These terms are used in the previous section and should be defined sooner. Recommend moving distance area definitions to 3.14.1.1 and separate the 3 crit completing the VRI analysis as previously described in these comments.	eria for 20°
1	3-137	3.14.2		4	The acronym KOP has already been defined	20-
32	3-138	2.14.2.2		1	First sentence - recommend using "alternative" instead of "project"	20-
3	3-138	3.14.2.2		5	Line 2 - Throughout the text there are times when "site" is used, as well as "project area" or TSF by itself. Suggest using the term "TSF" when discussing visibility. TSF would be visible, not the site. Recommend review for consistency and clarity.	ity. The 20 -
4	3-139	3.14.2.2		5	Suggest using the defined acronym for Visual Resource Inventory: VRI Last line - use "Class B SQR"	20-
5	3-139	3.14.2.2		6	Line 2 - suggest using "SQR", not "VQR".	20-
36	3-139	3.14.2.2		6	Line 2 - Suggest defining VRI zones.	20-
37	3-140	3.14.2.2		2	Line 5 - Sentence states "existing" cultural modifications but in parenthesis includes "proposed Kelvin bridge"; suggest referring to "existing or proposed" modifications.	cultural 20
38	3-141	3.14.2.3		6	Line 1 - recommend revising to state - "Ripsey Wash TSF alternative" rather than "project"	20.
39	3-140	3.14.2.2		2	Line 1- recommend revising to "approximately 3-mile long"	20-
40	3-140	3.14.2.2		2	Line 7 - recommend adding "objectives" - "Class III VRM objectives"	20
41	3-142	3.14.2.3		5	Line 1 - recommend adding "objectives" after "Class III VRM "	20-

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment		
42	3-143	3,15,1		6	On the last line of the page, TAF should be TSF.	20-	1
43	3-157	3.15.1.12		4	Suggest revising the text to state that the western DPS of the yellow-billed cuckoo is listed as threatened under the ESA.	20-	11
44	3-158	3.15.1.12.2		6	Suggest revising the text to state that the western DPS of the yellow-billed cuckoo is listed as threatened under the ESA.	20-	-1
45	3-161	3.15.2.2.3		7	Suggest refraining from terms such as "never" in referencing effects of temporary disturbance on wildlife species. Replace with "foreseeable future" or similar terms is less provocative and more accurate.	m that 20 -	1
46	3-165	3.15.2.2.15		5	Suggest changing the word "four" to "three" in line 4.	20-	1
17	3-169	3152315		8	Suggest removal of the discussion of Sonoran desert tortoise from this section, as the species is no longer a proposed or candidate species.	20-	1
48	3-172	3.16.2.2.3.1		2	 (1) The word "that" should be removed from the second sentence. (2) In the fourth sentence, we suggest changing "conservation" to "unlikely" or unrealistic." In the fifth sentence, we suggest using "conservation" not "conservation" to "unlikely" or unrealistic. 	20 ive."	-1
49	3-174	3.17.2.2		6	This paragraph discusses the Hackberry alternative, and so we recommend it be moved to section 3.17.2.3.	20-	11
50	4-2	4.0	Table 4-2		"Bryce Thompson Arboretum" should instead be "Boyce Thompson Arboretum."	20-	1
51	5-1	5.0		2	The reference should be to the "Arizona State Parks Board" rather than the "Arizona Department of State Parks."	20-	-1
52	7-7	7.0		13	Information in reference cited as WestLand 2013b is outdated. The most recent functional assessment methods are described in Appendix A of Appendix A Conceptual Mitigation Plan dated November 5, 2015 (Report titled "Ripsey Wash Tailings Storage Facility Functional Assessment of Impacted Waters and Pro- Mitigation Sites").	of the oposed 20 .	-/
53	7-7	7.0		14	The reference cited as WestLand 2013c is a duplicate of the reference cited as WestLand 2013a.	20-	-1
54	8-1	8.1			Suggest using Aquifer Protection Permit, not Plan	20	-
155	8-4	8.2		18	In the definition of "ambient air," the use of the word "minimum" is confusing. The NAAQS do not require "minimum" pollutants. Instead, they set thresholds level of select pollutants in the ambient air that, if exceeded, trigger certain actions.	for the 20-	-/
56	8-7	8.2	1	18	The definition of "concentrator" references a definition of "mill," but the glossary contains no definition of the word "mill" (although there is one for "milling").	20	4
157	8-12	8.2		4	The general definition of "fill material" is accurate, but it may be worth noting that the term has a specific meaning within the Section 404 program (33 C.F.R. 3 & (f)).	23.2(e) 20 -	-
58	8-19	8.2		5	The definition of "outfall location" is tied to the end of the pipe that carries tailings slurry. The term is used more broadly in this draft EIS (see, e.g., p. 2-2, when is reference to the outfall locations related to diversion channels and pipes used to convey upstream water around the TSF). Suggest that the definition be moder effect that.	e there ified to 20	
159	8-20	8.2		6	Is the definition of "permanent disposal facilities" necessary? The term does not appear to be used in the text. If it is retained, the reference to "tipping" is contaugest that it just refer to the placement of waste rock and overburden excavated in order to access ore.	using - 20	

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
160	8-22	8.2		10	The reference in the definition of "reclamation" to "returning" disturbed land to a post-mining land use is confusing. Reclamation will not always involve "return land to a use. Suggest the definition refer to actions taken to ensure that disturbed land achieves an approved post-mining land use.	ng" 20-18
161	8-23	8.2	-	2	Suggest replacing the word "influence" with "influenced."	0-186
162	8-24	8.2		12	The definition of "slurry" would be clearer if the last phrase were to be "produced at the concentrator" rather than "sent through pipe for treatment." It is not clear to treatment is contemplated, unless thickening/settling is considered treatment.	vhat 20-187
163	8-25	8.2		4	The definition of "tailings drain down ponds" is overly limited (at least in the context of this draft EIS) when it refers to holding water from the TSF. The ponds designed to hold either tailings or reclaim water in the event the pipelines need to be drained for maintenance or if there is a pipeline release.	are 20-188
164	8-25	8.2		10	The definition of "thickening" seems somewhat convoluted ("rejecting a liquid that is substantially solid-free"). It could be simplified (or language could be added state that for purposes of this EIS, thickening means reducing the content of water in tailings slurry, with the recovered water being reused in operations.	i) to 20-18
165	8-26	8.2		11	Using the word "navigable" before "waters of the United States" may create confusion. The operative term in the CWA is "navigable waters," which in turn is defined in the statute as the "waters of the United States." It is the latter phrase that is used throughout most of the CWA regulatory programs, including the 404 program However, the phrase "navigable waters of the United States" still has significance in the Rivers and Harbors Act, and is defined in Corps regulations at 33 C.F.R. 32 322.2 & 329.4. Suggest just using the phrase "waters of the United States" without the preceding word "navigable."	ined ram. 21.1, 20-19(
166	9-1	9.1			 (1) The table of contents includes entries for both the "Arizona National Scenic Trail" and the "Arizona Trail." These could perhaps be combined, as they refer to same trail. (2) Also, the table of contents includes two entries for "ephemeral drainages." 	the 20-19
167	-		Figure 5		This figure along with Figure 4 and Figures 6 through 9 are specific to the Ripsey Wash Alternative. We suggest labeling them as such.	20-19
168			Figure 8		Suggest revising this figure title to read: "BLM-Administered Land"; "BLM Land Ownership" is not an appropriate title considering the BOR lands along the Gila R	iver.
169			Figure 14		Suggest labeling Belgravia Wash, not Belgravia Gulch.	20-19
170			Figure 25		Suggest replacing "Kearney", with "Kearny"	20-19
171			Figure 28		We recommend the figure title to be "Surface Water Features- Hackberry Gulch TSF" to be consistent	20-19
172			Figure 30		The black indicating a compliance monitoring well sometimes covers the color showing whether it is a bedrock or alluvial well, and is sometimes covered by those of colors. This can make it hard to identify those wells designated as point of compliance wells in the proposed APP, especially MW-1A and MW-1B.	other 20-19
173			Figure 32		Hatching that identifies "Disturbed Area" seems to be incomplete.	10-191
174			Figure 43		Hatching that identifies "Disturbed Area" seems to be incomplete.	20-19
175			Figure 44		WestLand will revise this figure to remove reference to Alternative 2 for Hackberry Gulch and Alternative 3 for Ripsey Wash.	20-20

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment		1
76			Figure 48		Incorrect Scale identified	20-	2
17		1-1-1	Figure 49		Incorrect Scale identified	20-	20
8			Figure 50	1	Scale is not legible	20-	20
9	A-3	App. A, 2.2.1		1	Suggest deleting the word "has" from the last sentence of section 2.2.1, as it might suggest to a reader that there are still outstanding information requests, we the case.	which is not 20	-20
0	C-1	App. C, 2.0		5	The Corps generally uses the term "approved jurisdictional determination" rather than "formal jurisdictional delineation." Pursuant to policies in place at the Corps provided the determination to EPA for review prior to finalizing it. It is Asarco's understanding that EPA did not comment on the determination.	he time, the 20-	20
81	C-2	App. C, 2.0	1	2	Suggest referencing "Game and Fish Department," not "Department of Game and Fish."	20-	20
82	C-2	App. C, 2.0	1		Suggest referencing the "State Land Department," not "Department of State Lands."	20-	20
83	C-5	App. C, 4.0		1	Suggest removing sentence fragment at end of paragraph.	20	-20
84	C-5	7	1	6	Recommend changing the word "Office" in line 5 to "Act." Should read "National Historic Preservation Act.	20	-20
85	C-6	App. C, 9.0		2	Suggest adding "AZPDES" before "stormwater permit" in the list of bulleted items.	20.	-21
86	C-6	9		2	Suggest adding the word "Arizona" in the parenthetical (DEQ) in the first line. Should be defined as (Arizona DEQ).	20	-21
87	C-7	11		3	Recommend changing "Arizona DWR" to "Arizona Department of Water Resources (Arizona DWR)"	20	-21
88		App D			Suggest including reference to figures in this section.	20-	21
89	D-4	2.1		3	Paragraph 3 is largely duplicative of Paragraph 1.	20	-21
90	D-4	2.2		7	Suggest combining the words "rail road" to form the word "railroad" in line 3.	20	-2
91	D-8	App. D, 6.4		7	 (1) The Pinal County bridge has not yet been constructed. Suggest revising the first sentence of the second paragraph of Section 6.4 to begin simply: "F plans to construct" (2) Similarly, in the second sentence of that paragraph, suggest deleting the phrase "and will be completed in 2015." 	inal County	-2
92	D-9	App. D, 7.1		6	 (1) In the last line of the paragraph, recommend replacing "conducted" with "constructed." (2) Recommend deleting "Boyce Thompson Arboretum" or making it a heading if the next paragraph in the document is retained (see next comment). (3) Suggest the following: changing the word "considered" to "considering" and the words "trail contractor" to "Southwest Trail Solutions"; in line 7 - remove the second secon	2.C	2-2

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
193	D-9	App D., 7.1		7	Asarco has no concerns with the content of the paragraphs on the Boyce Thompson Arboretum, but is uncertain if it is needed. In Table 4.2 in Chapter 4, the Arboretur is identified as not being relevant to any of the resources being evaluated in the draft EIS. If that remains the case in the final EIS, then this language in Appendix D ma not be necessary. However, as previously noted, Asarco has no concerns with the content of the paragraphs.	n y 2-2/8
194	D-11	App. D, 7.4		.3	May not be accurate to say there is "no" legal access to the Needle's Eye Wilderness, as the paragraph discusses ways that area can be accessed if required approvals permits are obtained. "Limited" legal access may be a better description.	2-219
195	D-12	8.5	-	-4	Suggest changing the word "town" to "community" in line 2 to be consistent with paragraph 1. Kelvin is identified as an unincorporated community in paragraph 1 this section.	of -22
196	D-12	8.6		5	Recommend adding the word "of" after the language "the Ray Mine, south" in line 2.	2-221
197	D-14	11		6	Recommend changing the 2nd "that" to "which" in line 1. Also suggest revising the second sentence and making it 2 separate sentences. Suggest starting the new 3 sentence in line 4 after the words "acquisition by the BLM."	rd 0-22:
198	D-15	11		4	Suggest changing the 5th sentence to indicate that the appraisals "have been" done for each property.	0-22:
199	D-16	App. D, 12.0	D-I		 (1) In footnote 2, it is not accurate to state that a portion of the relocated SCIP powerline would be located on BLM land. Instead, part of a project powerline to provide power to the TSF would track the pipeline route, resulting in a portion of that line crossing BLM land. (2) Also in Table D-1, in the first row in the "Current Designation" column, "withdraw" should be "withdrawal." 	le 20-22
200	G-2			4	Rather than saying the state land is "in the process of being transferred to Asarco," we suggest stating that Asarco is planning to purchase the state land.	0-22
201	G-7	-		1	Suggest striking "to be" in the last sentence of the paragraph, and add "Proposed Tailings" before "Storage Facility."	0-22
202	H-2	App. H, 1.0		1	Suggest deleting Casas Grandes and substituting Salado, as there is little evidence of Casas Grandes north of the Jaynes Well site in southern New Mexico	0-22
203	H-4	App. H, 1.1.1		5	Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with the Gila River (Classic period compound settlements with platform mounds have also been identified along the Lower San Pedro River south of its confluence with platform mounds have also been identified along the Lower San Pedro River south of its confluence with platform mounds have also been identifi	rk 0-22
204	H-5	App. H, 1,1,1		1	Fourth sentence – suggest inserting ", small seasonally occupied farmsteads," after "probably represent temporary foraging camp"	0-22

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COMMENT DOCUMENT #20 (Part 3 of 4) ASARCO LLC

(JAMES STEWART, TECHNICAL SERVICES MANAGER)

Comment Document # 20 Part 3 of 4

Table I. ASARCO LLC Specific Comments on the Ray Mine Tailings Storage Facility DEIS - March 31, 2016

Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment
1	ES-5	ES 5.2		4	The East Drainage starter dam crest elevation is 2125 feet. The East Drainage starter dam must be in place by Year 3 of the tailings deposition
2	1-1	1.1		3	In addition, in the second sentence of the paragraph, reference to the re-routed 69 kv electric transmission line should be removed because that re-routed line will not be placed on BLM land. Instead, a portion of a project-specific powerline, following the pipeline route, will be located on BLM land. The language should be modified accordingly.
3	I-]	1,1		5	Suggest saying "After review of Asarco's Section 404 permit application" rather than 'With the 404 permit' It was determined that an EIS would be prepared AFTER Corps review of the submittal and consideration of the factors that are necessary to make that determination.
4	1-2	1.1		5	On p. 1-2 (6 th paragraph, 2 nd sentence), the DEIS states that the activities of the Ray Mine "upstream" from the thickeners are not being considered in the NEPA analysis, except as cumulative actions. This wording could be read as suggesting that the thickener tanks themselves <u>are</u> being considered as part of the action being evaluated. That this is not the case is made clear elsewhere in the document (e.g., the 4 th paragraph on the same page, as well as Figure 3). The language in this paragraph should be clarified to be consistent with these other statements and depictions.
2	1-3	1.2.2		3	In the last sentence, suggest adding "and BLM in its permitting decisions" at the end of the sentence to reiterate that this EIS will serve as BLM's decision document for its various decisions.
0	1-4	1.3		3	 In Section 1.3 of the DEIS (p. 1-4, third paragraph), the purpose and need language tracks the comparable language on p. 4 of the Alternatives Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis (Appendix B to the DEIS). However, it appears that a line of text from the alternatives analysis was inadvertently omitted, and that portions of two separate sentences have been combined. To track the alternatives analysis exactly, the current second sentence would have to be broken into two sentences, as follows (new language shown in all capital letters): "Capacity to deposit approximately 750 million tons is required TO ALLOW FOR FULL UTILIZATION OF THE MINERAL RESOURCE AT THE RAY MINE. A PEAK PRODUCTION RATE OF approximately 45,000 tons per day (tpd), representing the maximum design capacity of the current Ray Mine Concentrator, has been assumed in analyzing tailings transport requirements Although this was not specified in the EIS, it would be accurate to add the word "sulfide" before "mineral resource," as the milling process is only used on sulfide ore (oxide ore is leached). The resource estimates provided by Asarco were for only the sulfide resource at Ray.
7	1-4		Footnote 4	1	The word "not" is missing between "do" and "involve."
8	1-5	[.4		3	We suggest that the first bullet also reference the Corps' ability to issue a permit for a project that has been modified somewhat from that originally proposed (e.g., by adding "for a modified project" at the end of the current language). As currently stated, it almost sounds like the only permit the Corps could issue would be for the exact project configuration proposed by the applicant. In fact, as noted in section 2.4 of Appendix A, the precise parameters of the proposed action may change somewhat before the EIS is finalized (as a result of the EIS process itself, or other parallel permit proceedings).
9	1-5	1.5	1	5	Suggest noting that another primary purpose of an EIS is to inform decision-making by the agency (or agencies) preparing the EIS.
10	1-6	1.5.2		3 (and footnote 7)	The text and/or footnote 7 could be made more specific. There are no alternatives being evaluated in the DEIS that involve BLM approvals other than the action alternatives being considered. Both action alternatives would require BLM approval. Ripsey would require authorization for the project pipelines and powerline, Arizona Trail realignment, and mineral materials sale. Hackberry would require a Mine Plan of Operations (even if the land exchange goes through, a 750 million ton facility as currently configured would lie partly on BLM land, and no current plan of operations covers this area), mineral materials sale and reclamation plan.
11	1-10	1.8	Table 1-2		(1) The Arizona State Land Department (ASLD) Minerals Section has concluded that the condemnation drilling conducted by Asarco in support of the ASLD land acquisition has established a lack of economic mineral potential within the within Asarco's proposed ASLD acquisition area where the State controls the mineral estate. (Please see ASLD letter dated July 12, 2012 regarding ASARCO Ripsey Wash: Results from Exploration Permit Nos.08- 114311, 08-114312, and 08-114673 for Condemnation Drilling in T4S, RI3E, Sections 2, 10, 16) No condemnation drilling has been conducted within the section of the sectio

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment
					the portions of the Ripsey Wash Project Area and the ASLD Acquisition Area where the mineral estate is Federal. Asarco has filed mining claims on all of these lands in accordance with applicable mining laws. Based upon Asarco's extensive understanding of the regional geology and the results of exploration drilling programs conducted throughout the region, Asarco has determined that the potential for an economic mineral resource to occur at the proposed Ripsey TSF or at the Hackberry Gulch TSF alternative is unlikely. (2) We suggest Footnote 10 also be updated to include reference to this information. 2072 (3) We also suggest the ASLD letter be included in the References Section 7.0 (Arizona State Land Department. 2012, Letter from John H. Schieffer, R.G. (Geologist, ASLD Mineral Section) to Don Applebee (ASARCO LLC) regarding <i>ASARCO Ripsey Wash: Results from Exploration Permit Nos.08-114311, 08-114312, and 08-114673 for Condemnation Drilling in 74S, R13E, Sections 2, 10, 16 (dated July 12, 2012).</i>
12	2-1	2.1		2	Last sentence states" the Corps conducted public scoping to determine the range of issues to be addressed in the EIS". This statement should also address the internal review and analysis the Corps conducted to determine the range of issues.
13	2-1	2.3		7	 (1) Last sentence - Ripsey Wash Alternative 3 is actually considered one of five practicable alternatives, not two. There were 3 alternatives evaluated at the Ripsey Wash site and 2 alternatives evaluated at the Hackberry Gulch site. (Please see the Alternatives Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis dated July 17, 2015; Appendix B of the DEIS). (2) We also suggest removing "in the context of the Clean Water Act" and instead referencing the 404b1 guidelines (40 C.F.R. Part 230).
14	2-2	2.3.2		4	 (1) In the fifth bullet, suggest deleting "tailings" before "containment pond." The pond will be designed to also hold reclaim water if needed, not just tailings. (2) Please also note that the term used in Figure 2, "tailings drain-down pond", should be changed to "drain-down pond" or "containment pond" to be consistent.
15	2-2	2.3.2	2-1		 Suggest briefly explaining the distinction between "offsite TSF infrastructure" and "onsite tailings infrastructure". Based on the current surface disturbance calculations provided by WestLand Resources on June 18, 2015, the offsite TSF infrastructure includes the tailings delivery and reclaim water pipelines, fresh water pipeline and tank, project powerline, pipeline bridge, drain down pond, and associated infrastructure from the tailings thickeners to the State land boundary. 20 - 244 (2) Suggest explaining that "Florence-Kelvin Highway paving" (10 acres) represents paving of existing roadway in its current alignment, as opposed to the portion being realigned and paved.
16	2-3	2.3.2	Table 2-1		The Ripsey Wash Main Starter Embankment is presented on Drawing A103 of the engineering drawing set that was submitted for the APP application. The total embankment volume was calculated to be 5.15 million cubic yards, which will be about 8 to 8.5 million tons. The current table incorrectly references 5.2 million tons needed for this purpose.
17	2-4	2.3.2.3		7	We suggest noting that the trail realignment would be on BLM land and that authorization from BLM would be required, and referencing Figure 8.
18	2-4	2.3.2.1		1	A portion of the Florence Kelvin Highway is also paved from SR 177 (near Kelvin) to the State Land boundary.
19	2-5	2.3.2.5		4	(1) The Upgradient Diversion Starter Dam configuration is presented on Drawing A603 and the Ultimate Upgradient Diversion Dam is presented on Sheet A605 of the APP application drawings. The post-closure configuration of the Diversion Dam in relation to the TSF is presented on Drawing A 20-24 (2) Suggest replacing the second to the last sentence, that starts with "Upon permanent closure of", with something like: "During the operational life of the Ripsey Wash TSF, the detention dam would be raised from elevation 2380 feet to 2440 feet and would be capable of detaining the stormwater volume from the probable maximum precipitation (pmp) event, and would remain as a permanent feature."

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Commant
20	2-5	2.3.2.6		8	(1) The Ripsey Wash Main Starter Embankment is presented on Drawing A103 of the engineering drawing set that was submitted for the ADD amplication
					 (2) To be consistent with this drawing, we suggest revising the discussion of the Ripsey Wash starter dam in this paragraph to read something like this: "As part of pre-tailings storage construction activities, Asarco would construct a starter dam for the Ripsey Wash TSF. The starter dam would be approximately 150 feet high, with a crest elevation of 2050 feet, located in Ripsey Wash near where the Florence-Kelvin highway currently crosses the wash. Approximately 5 million cubic yards of alluvium, colluvium and Ruin Formation granite bedrock would be used to construct this starter dam." (3) The East Starter Embankment is presented on Drawing A123 of the APP application drawings. The progression of the Ripsey Wash TSF basin filling is presented on Sheets A003 and A005. 20-7 To be consistent with this drawing, we suggest revising the discussion of the East Starter Embankment in this paragraph to read something like this: "By the third year of deposition, the second starter dam will be constructed in an unnamed drainage on the eastern side of the facility; approximately 400,000 cubic yards of alluvium/colluvium and Ruin granite would be used to construct this starter dam. This starter dam will be approximately 400,000 cubic yards of alluvium/colluvium and Ruin granite would be used to construct this starter dam. This starter dam will be approximately 40 feet high, with a crest elevation of 2125 feet."
21	2-6	2.3.2.7	1	8	(1) The Hackberry Fault seepage mitigation is presented on Drawing A307 of the engineering drawing set that use submits of factly a DB
					(2) At Hackberry, only the embankment on the starter dam alignment will receive a geomembrane on the upstream face. Suggest revising the last sentence in the paragraph to read something like this: "At this site, the up-drainage side of the dam (for the length of the fault zone) would be lined with an 80-mil (or equivalent) liner."
22	2-6	2.3.2.7		9	 (1) The Ripsey Wash main seepage collection trench design is presented on Drawing A303 and the East seepage collection design is presented on Drawing A305 of the APP application engineering design drawings. (2) Suggest using the phrase cutoff "trench" rather than "wall" because it is subsurface, and using "flows" rather than "runoff" because the liquid being diverted is subsurface rather than surface.
23	2-7	2.3.2.10		6	As outlined in the APP application, the monitoring wells have already been installed.
24	2-7	2.3.2.11		8	As noted above, the drain down pond is also designed to hold reclaim water if needed (not just tailings), should the reclaim water pipeline need to be drained for maintenance or repairs.
25	2-8	2.3.2.12		2	We suggest discussing the avoidance and minimization measures taken in the design of the pipeline bridge. Waters of the US and wetlands would not be permanently impacted. Efforts were made to minimize impacts to the vegetation. Access will be gained from the north and south of the river to construct the pipeline to avoid impacts to the river channel to the extent possible. The design follows Pinal County's bridge design to allow for pier placement in line with the proposed new County bridge.
26	2-8	2.3.2.14		7	Consider providing a figure that shows the subject access roads. Access exists today on the roads crossing State lands. The second and third sentences state that future public access into the upper reaches of Ripsey Wash from the Florence-Kelvin Highway would be via existing two-track roads and the existing two-track roads would remain open to the public. Asarco currently does not hold any legal instrument that ensures public access on roads within State lands, and does not intend to acquire any such instrument for access on public lands as part of the development of the Project. [This issue is discussed in two technical memoranda: WestLand Resources, Inc. 2014. Technical Memorandum regarding <i>Ripsey Wash Tailings Storage Facility, Access to Upper Ripsey Wash</i> , prepared for ASARCO LLC (August 28, 2014), and WestLand Resources, Inc. 2015. Technical Memorandum regarding <i>Ripsey Wash</i> . <i>Tailings Storage Facility, Maintaining Access on Existing Roads on State Lands</i> , prepared for ASARCO LLC (July 13, 2015).]
27	2-11	2.3.3.2		1	Figure 7 seems to be incorrectly referenced in this section. Reference should be to Figure 12.

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
28	2-11	2.3.3.3	1	2	Section 3.1 of the proposed APP requires a sealed engineer's certificate of completion to be filed with ADEO (verifying that the facility was constructed)	
22					as designed). We believe this is relevant to a discussion of quality control related to TSF construction.	
29	2-11	2.3.4		7	Suggest addressing ADOT permitting requirement for the tailings delivery and reclaimed water pipelines crossing SR 177 in this section.	
30	2-12	2.3.6.1		2	Because this section does not discuss facilities, we suggest it be titled "Site Service Roads"	
31	2-13	2.3.6.3	1	1	(1) The conceptual reclamation plan for the Ripsey Wash TSF is presented on Drawing A703 of the APP application engineering design drawings.	
			-		(2) Stockpiling of cover rock would occur upstream from the TSF footprint between the TSF and the eastern diversion channel. 20-26	
32	2-13	2.3.7		5	We suggest clarifying that Asarco's rights under the referenced decree are to water from the Gila River.	
33	2-13	2.3.8		10	We suggest replacing the phrase "detention pond" in the first sentence with "detention facilities" in order to improve the accuracy of the statement. In addition to ponds, there are dams and pipes included in the detention system.	
34	2-14	2,3,10,1		7	Last sentence - We suggest replacing this sentence with "The compensatory mitigation for the Project would be implemented per the Corps' and EPA's Final Compensatory Mitigation Rule dated April 10, 2008," or something similar.	
35	2-15	2.3.10.4		2	Tackifier also would be used during lift construction. Please see WestLand Resources, Inc. 2015. Ripsey Wash Tailings Storage Facility Environmental Protection Measures and Monitoring (Corps File No. Spl-2011-1005-MWL). June 19, 2015. Prepared for US Army Corps of Engineers, Phoenix Office on behalf of ASARCO LLC. 200	
6	2-15	2.3.10.6		4	Vegetation removal outside the breeding and nesting season of SWFL and YBC has been proposed by Asarco as a conservation measure and is part of the proposed action. This conservation measure is only proposed for activities associated with the construction of the pipeline bridge crossing of the Gil River because only those activities affect habitat for these species. Section 2.3.10.6 should note these points.	
7	2-15	2.3.10.6		5	In the second sentence of the third bullet point, Asarco suggests ending the sentence after "nesting season." The balance of the sentence refers to the potential for incidental take under the MBTA as a result of vegetation clearing. However, the Ninth Circuit has made clear that the term "take" for purposes of the MBTA describes "physical conduct of the sort engaged in by hunters and poachers, conduct which was undoubtedly a concern when the statute was enacted in 1918," and not conduct undertaken for another reason that has the incidental effect of harming birds. Seattle Audubon Society v. Evans, 952 F.2d 297, 302 (9th Cir. 1991). Therefore, the language after "nesting season" suggests an incorrect legal standard and should be deleted. The balance of the bullet point adequately describes the proposed actions to minimize impacts to listed species.	
8	2-16	23.11		1	Asarco has already conducted ambient groundwater sampling in order to characterize existing groundwater quality. The initial results (from the first sample, collected in February 2014) are provided in Table 3-37.	
9	2-16	2.3.12		3	Some of the facility will need to be maintained perpetually. Asarco would continue to maintain and operate the detention dams and stormwater pumping and piping system designed to route stormwater around the west side of the Ripsey Wash. Please see WestLand Resources, Inc. 2015. <i>Ripsey Wash</i> <i>Tailings Storage Facility Environmental Protection Measures and Monitoring (Corps File No. Spl-2011-1005-MWL)</i> . June 19, 2015. Prepared for US Army Corps of Engineers, Phoenix Office, on behalf of ASARCO LLC.	
U	2-17	2.3.12.2		2	As part of the APP permit a plan would be submitted and approved by ADEQ for Temporary Cessation (Also See Section 2.8 of the APP application, section 2.8 of the proposed APP, and A.A.C. R18-9-A209(B)).	

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Commant	
41	2-17	2.3.12.3.1		5	Asarco plans to control dust emissions during the 7-10 year period when tailings are during and before planement of first even at a 1 st of	
					tackifier. The supernatant pond is smaller during this period.	
42	2-18	2.3.12.3.3		2	It should be clarified that Asarco does not intend to allow runoff from the top of the tailings to enter the diversion channels until after cover has been placed on the top of the impoundment, in order to ensure consistency with AZPDES program requirements.	
43	2-19	2.4		5	Last sentence - Hackberry Gulch Alternative 2 is actually considered one of five practicable alternatives, not two. There were 3 alternatives evaluated at the Ripsey Wash site and 2 alternatives evaluated at the Hackberry Gulch site. (Please see the Alternatives Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis dated July 17, 2015; Appendix B of the DEIS).	
4.4	2.10	221227			(2) We also suggest removing "in the context of the Clean Water Act" and instead referencing the 404b1 guidelines (40 C.F.R. Part 230)	
14	2-19	2.3.12.3.6		1	Footnote 15 refers to the BLM 3809 regulations, which will not apply to the Ripsey Wash TSF or the pipelines pursuant to 43 C.F.R. 3809.2. Therefore, the first sentence of footnote 15 should be deleted. The second sentence is accurate at this time (it is not clear if financial assurance will be required for the small stretch of pipeline crossing BLM land).	
15	2-20	2.4.1		3	Suggest that this discussion be expanded to include a description of centerline transition to upstream and the timing of that transition as described in Section 4.6.2.1 (p. 21-22) of the Alternatives Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis dated July 17, 2015; Appendix B of the DEIS.	
6	2-22	2,4.2.1		6	The second stilling basin would be installed at the end of Belgravia Wash at (not prior to) its confluence with the Gila River. Please see Figures 2, 3 and 7 in Ray Mine Tailings Storage Facility, Hackberry Gulch Alternative 2 and Ripsey Wash Alternative 3 Analysis of Impacts to Proposed and Designated Critical Habitats (Appendix E in the 404b1).	
7	2-23	2.4.2.5		7	Suggest providing a schematic for seepage trenches and reclaim ponds (like Figure 5 for the Ripsey Wash Alternative), and discussing the distance from the reclaim ponds to the Gila River.	
8	2-26	2.4.8		6	We suggest noting in the description of the Hackberry alternative stormwater management discussion that this alternative would necessitate reconfiguring the already approved diversion channel that currently is required to be built upon closure of the Elder Gulch TSF (as a condition of the Elder Gulch 404 permit and the facility APP).	
9	.2-27	2.4.12.1		4	We suggest noting that concurrent reclamation under the Hackberry alternative starts later in the facility life than it would for the Ripsey Wash alternative.	
0	3-1	3,0		2	First sentence - the "individual resource areas" discussed are the key issues that were identified in Chapter 1We suggest replacing "individual resource areas" with "key issues identified in Chapter 1" to use consistent terminology and better track the analysis through the DEIS.	
1	3-2	3.1		4	May want to state that areas of concern include: (1) compliance with federal, state, and local air quality standards (because Pinal County has standards)	
2	3-5	3.1.1.3		1	Suggest revising the first sentence to state that the Ripsey Wash TSF and Hackberry TSF are located in an area that is non-attainment for PM10. This discussion focuses on the Ray Mine when it should be focusing on the alternatives being evaluated.	
3	3-6	3.1.2.2.1		5	(1) The references to the national emissions inventory cite 2005 data. There are 2008 and 2011 NEIs available at EPA's web site. If this represents newer data than what is referenced in the DEIS, the data should probably be updated.	
					(2) Also, the appropriate NEI probably should be cited in Chapter 7.0 (references). The NEI is not currently cited there now. 20-28	
4	3-6	3.1.1.5		1	The Title V Operating Permit will be amended to include the TSF as an area source.	

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
55	3-7	3.1.2.2.1		1.	A portion of the Florence-Kelvin Highway would be paved. That should be discussed as a project element that would reduce dust in the project area.	
56	3-7	3.1.2.2.1		3	Tackifier would be used to control dust generation on the inactive tailings impoundment. ASARCO plans to provide the Corps with a separate Technical Memorandum outlining dust control strategies for an inactive Tailings Storage Facility 20-28	
57	3-9	3.1.2.2.1		2	Section 3.1.2.2.1 (p. 3-9, paragraph 2) discusses the lack of expected impacts from the negligible HAPs emissions from both TSF alternatives, even though Hackberry has not yet been discussed at this point in the chapter. Suggest simply referring to the Ripsey alternative here. This same comment applies to paragraph 1 on p. 3-13 – we suggest referring to just the Hackberry analysis in the Hackberry section.	
58	3-10	3.1.2.2.3		4	 (1) The conclusion is that the Ripsey alternative would have a negligible effect on climate change, but would contribute incrementally to climate change. "Negligible" impacts are described on p. 3-2 as having "barely measurable" consequences. It is not clear that the Ripsey alternative would have any MEASURABLE consequences on climate change. The EMISSIONS are measurable (or can be modeled), but climate change science is not sufficiently advanced to be able to say that the CONSEQUENCES of those emissions are measurable in any way. Suggest instead stating that emissions are negligible in comparison to state, national and worldwide emissions, and that those emissions are not expected to have detectable influence on overall GHG emissions and resulting climate change impacts. (2) Also suggest clarifying in the text (not just a footnote to table 3-6) that the values shown are for the highest single year of projected GHG emissions (year 2 of construction), and that later years (e.g., the much longer operational period) would have much lower emissions. It might even be useful to have a table showing anticipated emissions during operations as a percentage of state, national and global emissions, or to at least allude to that in the text. (3) This same comment applies in Section 3.1.2.3.3 for Hackberry 	
59	3-11	3.1.2.3.1		4	For clarity, we suggest noting that at final closure rock material would need to be placed only on the top and final lift because concurrent reclamation is planned.	
60	3-13	3.1,2.3,1		2	While it can be assumed that any mitigation plan for Hackberry would be similar to the conceptual mitigation plan developed for Ripsey, it should be made clear that a mitigation plan specific to Hackberry has not been developed.	
61	3-19	3.2.2.2		4	(1) The soils section implies that soils will be collected below the TSF Starter Dam and used for TSF starter dam construction. Soils on the site are generally very shallow and poorly developed and will not be used for construction purposes. (2) Borrow areas to collect rock suitable for construction of the starter dams will include substantial portions of the TSF footprint, not just the areas below the starter dam.	
62	3-20	3.2.2.2		ι	The removal of grazing from the mitigation areas provides a beneficial effect on soils that should be discussed in this section.	
63	3-22	3.3.1.4		7	It should perhaps be noted here (or elsewhere in Section 3.3) that the majority of the data in this section on expected seepage quality applies to both Ripsey and Hackberry because the same material would be placed at either location (although borrow materials used in construction would be somewhat different). As discussed below, however, Asarco does not believe the <i>effects</i> of seepage at the two locations should be considered similar because of the uncertain ability to effectively control seepage at the Hackberry site.	
64	3-21	3.3.1.1.2		1	In describing the Alluvial Deposits, it should be clarified that there is an unnamed drainage (sometimes referred to as the East Drainage) that is tributary to the Gila River within the project area in addition to Ripsey Wash and its tributaries, Zelleweger wash and its tributaries, and the Gila River. 20-293	
65	3-33	3.3.1.4.7			It is suggested to more clearly recognize that the HCT samples tested for acidity were at non-detect levels after the 37 th week, as presented in Graph 3-6.	

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Commant
66	3-40	3.3.2.2		5	Although it is true that ADEQ has considered stability concerns in making a preliminary decision to issue an APP to Asarco for the Ripsey Wash TSF, it would nevertheless be appropriate for the EIS to very briefly discuss the demonstration of stability that was made in the APP application, rather than including no discussion on that topic. Asarco plans to provide a separate Technical Memorandum for a discussion of the required BADCT procedures for demonstrating stability analyses of a Tailings Storage Facility under the State of Arizona Aquifer Protection Permit program.
67	3-43	3.4.1.2		6	For the Ripsey alternative, the proposed pipeline crossing of the Gila River would be located within the impaired water segment. No fill will be placed in the river as part of that project.
58	3-47	3.4,1,4		7	There were some intermittent flows identified within some of these drainages in 2013 and 2014. See WestLand's Surface Water Feature and Functional Assessment reports prepared for the Hackberry Alternative.
69	3-48	3.4.1.5		For clarity, we suggest revising entire paragraph to read in a fashion similar to the following: "Water use in Arizona is administered by the ADWR and claims to surface water resources may be located in the ADWR database (ADWR 2014). It should be noted that registering a surface water right with the ADWR does not mean that the right is valid or has b that there is an appropriable surface water right at that location found on ADWR's website or as claimed by an applicant. In addition, the point of diversion provided to ADWR are usually only accurate to within 10 acres of the claimed location of diversion and use. Fo of use where nothing is found on the surface, it is possible that no surface water source has been appropriated."	
/0	3-48	3.4.1.5.1.		4	We suggest noting in or after this paragraph that Asarco has not filed an Application to Appropriate Surface Waters for either the Ripsey Wash TSF or the Hackberry Gulch TSF. All surface water to be utilized by Asarco has been previously appropriated and adjudicated by Decree in the Globe Equity 59 case.

Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment
71	3-76	3.6.2.3.3		3	 (1) Some of the well data presented in the DEIS for the Hackberry site is in error. ADWR provides its well location information within the quarter quarter quarter of a Section. Often the coarse level mapping provided by ADWR will locate these wells in the center of a section when a well registrant has not provided the appropriated quarter quarter location within the Section, therefore, the actual location of the wells could be as much as ½ mile or more from that point. There are not nine wells owned by others within the footprint of the Hackberry TSF that would have to be abandoned if this alternative were selected (WestLand 2014, <i>Ray Mime Tailings Storage Facility Hackberry Guleh Alternative 2 Project Area Surface Water Features Survey</i>, May 8 2014). The only well within the footprint of the TSF is a well owned by Asarco and operated by one of its lessees for cattle. The eight other wells referenced in the DEIS are located downgradient of the TSF on private lands. (2) The title of this Section (and Section 3.6.2.2.3) refers to impacts to groundwater "rights." This may be somewhat confusing to readers. The wells discussed in the DEIS are located outside of an Active Management Area and no groundwater "right" is needed to pump groundwater so long as the well is registered with ADWR and that water is not considered to be regulated subflow of a surface water source (in which case a surface water right would be needed to pump the water). The extent of subflow in the Gila River has not yet been adjudicated. Therefore, we suggest the title of this Section (and section 3.6.2.2.3) be changed to "potential impacts to wells" or something similar. If this change is made, it may also be prudent to word the "areas of concern" language in section 3.6 (p. 3-60) in a similar fashion. (3) Here and elsewhere, the DEIS equates reduction in recharge or flow to the relative total surface disturbance of the TSF at Ripsey or Hackberry (less than 0.62 percent of the Gila River basin in each case).
· · · · ·					overstates those effects.
72	3-52	3.4.2.2		1	The impacts would be more clearly stated if the paragraph was rewritten to eliminate "would alter the surface water regime of ephemeral watersheds where the TSF would be constructed and" from the sentence and add "and post closure" to the end of the sentence.
73	3-52	3.4.2.2		2	Suggest that the term "zero surface water discharge facility" be changed to "zero stormwater discharge facility." The notion of "zero discharge" generally applies to the capture of impacted storm water, which is how Asarco uses the term. Unimpacted upstream surface water will be diverted around the facility and continue to flow toward the Gila River. In addition, it may also be relevant to note that the design of the rectaim ponds is intended to preclude discharge of impacted storm water for all events up to and including the 100-year, 24-hour event. Events larger than that could result in water being released from those ponds. Surface water controls are discussed in AMEC's Surface Water Controls Technical Memorandum, dated May 12, 2014 (AMEC 2014c).
74	3-51	3.4.2.2		8	Last sentence - We suggest expanding the discussion on planned erosion control practices. The localized and minor erosion that may occur from such storm events are normally addressed by ADEQ's mining MSGP permit and the associated storm water pollution prevention plan. Asarco will provide additional information as needed to define planned erosion control practices.
75	3-56	3.5,1,1.1		6	The Project pipeline crosses the Gila River and should be mentioned in this section.
76	3-57	3.5.1.1.2		2	The functional classes should be defined as provided in WestLand Resources, Inc. 2015. <i>Ripsey Wash Tailings Storage Facility Functional Assessment of Impacted Waters and Proposed Mitigation Sites: ASARCO LLC</i> . Revised November 5, 2015. Prepared for US Army Corps of Engineers, Phoenix Office, on behalf of ASARCO LLC. The same definitions are provided in WestLand Resources, Inc. (WestLand). 2015. <i>Hackberry Gulch Alternative 2 Functional Assessment of Potential Waters of the United States: ASARCO LLC</i> . Report dated August 29, 2014.
0	3-58	3.5.1.2.3		8	The wetlands were delineated using Corps guidelines for delineating wetlands. In addition, the site contained areas of intermittent/perennial flows that were not wetlands.

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment			
78	3-58	3.5.1.2.3	Figure 43	4	The wetland areas are not mapped in Figure 43. It may be beneficial to include a separate figure(s) showing the location of the wetlands. Their locations are found in WestLand. 2014. Ray Mine Tailing Storage Facility, Hackberry Gulch Alternative 2 Project Area, Surface Water Features Survey. May 8, 2014. Prepared for ASARCO LLC.			
79	3-59	3.5.2.2		3	Last sentence it is true that some value would be retained within the dewatered drainages. Nevertheless, the proposed mitigation plan contemplates full impact of those drainages and mitigation is provided for the complete functional loss of the dewatered drainages.			
80	3-59	3.5.2.3		6	Suggest noting that the Hackberry alternative also would impact perennial/intermittent waters, as well as ephemeral waters and wetlands.			
81	3-60	3.5.2.3		2	If a mitigation plan needs to be developed for the Hackberry alternative, it would have to also account for lost functions associated with the wetlands and perennial/intermittent waters present at this alternative location. Features of this type are not present at the Ripsey location and so their values were not addressed in the mitigation plan for the Ripsey Wash alternative.			
82	3-73	3.6.2.2.1		k	 (1) The Upgradient Diversion Starter Dam, presented on Drawing A603 of the APP application design drawing set, presents a cross section of embankment. The core of the embankment will extend through the alluvium to control seepage gradients through the embankment and to combankment settlement. The core cutoff will include geomembrane liners but is not expected to (and is not designed to) fully stop shallow ground flow beneath the dam. It is unlikely that groundwater flows in the alluvium would emerge and comingle with surface water flows, except when the alluvium is saturated, which is likely only after major storm episodes. (2) In the context of diverted surface flows, suggest using "unimpacted stormwater" or "upgradient stormwater" rather than "stormwater runoff." term "runoff" often connotes stormwater that has been impacted (i.e., contacted the TSF or other disturbed areas). Such water will be contained i site ponds and not allowed to flow to the Gila River. 			
83	3-77	3,7,1,4		7	Second sentence - The A Diamond Ranch is located north of the Florence-Kelvin highway, not south.			
.84	3-79	3.7.1.7		1;-	This section describing Land Use Plans and Policies discusses the Arizona Trail, which is also discussed under Section 3.7.1.5 and Section 3.9 and Appendix G. The discussion of the Arizona Trail should be discussed under Recreation (Section 3.9) for tracking purposes and it should be addressed in full as part of the analysis of the Ripsey Wash Alternative.			
85	3-79	3.7.1.7		1	This section discusses Pinal County planning designations and BLM authorities, but does not mention the current ASLD administration of the Ripsey Wash alternative area.			
86	3-80	3.7.2.2		6	May be appropriate to add the following language to the end of the sentence: " as would the local and state taxing authorities."			
87	3-80	3.7.2.2		7	There would be direct effects to land uses in the Ripsey Wash alternative area and additional areas outside the Project would go from being public lands to privately owned lands. Discussion of changed land uses in those areas in addition to the direct project impacts may be appropriate.			
88	3-80	3.7.2.2		9	There would be indirect effects on adjacent land uses. Both of the alternatives would affect access to adjacent areas. We suggest discussion to address indirect impacts.			
89	3-82	3.7.2.3		1	(1) This paragraph discusses the land exchange and seems out of place in the discussion of environmental consequences. It would be more appropriately 20-3/8 (2) The first sentence of the paragraph should refer to Asarco potentially acquiring "portions of" the site for the Hackberry alternative as currently configured. Presently, the Hackberry alternative would require development of 1,149 acres of BLM lands (according to Figure 32). Even if the land exchange is consummated, development of the Hackberry alternative would impact approximately 105 acres of BLM-administered land as the southeast			

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Table 1. ASARCO LLC Specific Co	omments on the Ray Mine Tailings Storage	Facility DEIS - March 31, 2016

Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment	
					corner of the TSF and a portion of the stormwater diversion infrastructure occurs on BLM-administered lands outside the Ray Land Exchange parcel (RM-18)	
90	3-85	3.8.1.2		1	An estimated background noise level range is provided for the Ripsey alternative, but not for the Hackberry alternative. A range should be provided for the Hackberry alternative also.	
91	3-85	3.8.2.2		4	This section should include a qualitative discussion of noise associated with the realignment of the Florence-Kelvin highway and changes in noise associated with that realignment. Would levels change in the vicinity due to the relocation of the highway on a ridgeline?	
-92	3-88	3.8.2.3		6	The AZ Trail would not be realigned as part of the Hackberry alternative, so this paragraph should be reworded to address effects along the existing trail alignment.	
93	3-96	3.9.2.2		4	This description of the existing AZ Trail that would be replaced as part of the project is confusing. There are 2 segments of the existing Trail on BLM lands that would be replaced and they are east of the State Lands, not north. Consider providing a reference to a figure when describing the trail.	
94	3-96	3.9.2.2		6	The parking areas discussed in this paragraph and identified in Figure 41 have been included in the APE Class III survey area and incorporated into the APE Summary Report and HPTP for section 106 review.	
95	3-96	3.9.2.2		3	We suggest providing the length of the existing and realigned AZ Trail that would have views of the Ripsey alternative.	
96	3-97	3.9.2.3		3	We suggest providing the length of the existing AZ Trail that would have views of the Hackberry alternative.	
97	3-100	3.10.1.2		4	 (1) The compensatory mitigation sites are part of the APE for the Ripsey alternative. Although no mitigation plan has been developed for the Hackberry Gulch alternative, it is likely the same sites would be used for that mitigation as well. (2) It should then also be noted 3.10.1.4.2 (page 3-103), dealing with the Hackberry alternative, that no cultural sites were located in the proposed mitigation areas that would likely form at least part of the mitigation if this site is selected for the TSF. 	
98	3-104	3.10.2.1		6	Under the no action alternative, neither the Ripsey Wash nor the Hackberry Gulch TSF would be constructed. Cultural resources would continue to be exposed to natural geomorphic processes or other disturbances associated with current and expected future recreation and ranch management activities in this 20-3277 area	
99	3-106	3.10.2.2		2	We suggest that some additional discussion be added here to discuss unexpected discoveries. Unexpected discoveries are defined as either any human or potentially human remains and/or associated artifacts. Pursuant to the provisions of A.R.S. § 41-865, human remains discovered on private lands must be treated according to legal protocols. In addition, burial remains and/or burial-related remains found on federal lands must be treated in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA) 25 U.S.C. § 3001, et seq. The procedures to be followed in the event of an unanticipated discovery are identified in the Historic Properties Treatment Plan for the proposed action.	
100	3-106	3,10.2.2		5	(1) The stormwater management from the upgradient diversion dam and western stormwater detention impoundments is described in the Surface Water Control Technical Memorandum, dated May 12, 2014 (AMEC 2014c), which was submitted as part of the APP application. The impounded fluids will be moved from the detention facilities through the use of pumps and piping, ultimately being delivered to Zelleweger Wash. Rock riprap will be placed at the pipe outlet to protect the wash from any erosion. The pumping rates are of a much lower order of magnitude relative to the peak stormwater discharge of Zelleweger Wash and pumping would likely occur after the Zelleweger Wash peak flows occurred, so erosion impacts are not expected. This should prevent undue bank erosion that could adversely impact the two sites adjacent to the wash.	

Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment
101	3-114	3.11.2.1		4	Add "and the Hayden Smelter" after the words Ray Mine to line 3. The closing of Ray Mine would directly impact Hayden Smelter. Also, may want to note the reduction of potential property taxes that would be collected by the County should the TSF not be permitted. The land currently is not taxed at all under state and federal ownership but if permitted, substantial taxes will be paid as part of an operating mine.
102	3-116	3.11.2.2.6		4	Have the concerns listed in the first sentence been expressed by the public? In other words, is this discussion paraphrasing comments received or just identifying "typical" concerns? If the latter, the sentence may not be necessary, as the following two sentences address comments specific to this project.
103 3-116 3.11.2.2.7 6 (1) The discussion of cumulative effects should be included in section 4, not in this section. (2) Noting that there is no difference between Ripsey and Hackberry with respect to environmental justice does no impact to minority or low income populations. To the extent this paragraph is articulating that position, the languabelieve that the Hackberry Gulch alternative will be readily visible and a much more pronounced feature of the Landscape vie communities of Riverside and Kelvin. All three communities may qualify as having EJ populations. We underst Kearny that a recent survey in the community determined that sixty percent of its population qualify as low to m DEIS the Hispanic population in Census Tract 23 which contains these communities is substantially higher than Hispanic population is 41.6 percent, compared to the state at 29.6 percent and Pinal County at 28.5 percent.		(1) The discussion of cumulative effects should be included in section 4, not in this section. (2) Noting that there is no difference between Ripsey and Hackberry with respect to environmental justice does not mean that there is no disproportionate impact to minority or low income populations. To the extent this paragraph is articulating that position, the language should be modified. Moreover, we believe that the Hackberry Gulch alternative has a much greater potential to have disproportionate adverse impacts to EJ populations. For example, the Hackberry Gulch alternative will be readily visible and a much more pronounced feature of the Landscape viewed from the town of Kearny and the communities of Riverside and Kelvin. All three communities may qualify as having EJ populations. We understand from discussions with the Town of Kearny that a recent survey in the community determined that sixty percent of its population gualify as low to moderate income and as identified in the DEIS the Hispanic population in Census Tract 23 which contains these communities is substantially higher than for Pinal County. And in Kearny the Hispanic population is 41.6 percent, compared to the state at 29.6 percent and Pinal County at 28.5 percent.			
04	3-117	3.12.1.1		5	Reference is made to the two-lane section of US 60 starting approximately 7 miles west of Superior. ADOT has design plans to widen this portion of US 60 to a four-lane section, all the way into Superior, in the near future.
05	3-118	3.12.2.2		7	Suggest addressing the effects to the level of service as a result of increased traffic levels.
06	3-122	3,13.1.2		3	In Section 3.13, we suggest adding language detailing the current conditions of the mitigation lands as a part of the affected environment section (3.13.1.2), as well as the environmental consequences of not conducting the restoration and improvements associated with the proposed mitigation should the no action alternative be selected in Section 3.13.2.1.
07	3-124	3.13.1.5		5	Species screening analyses were conducted by WestLand for both Ripsey and Hackberry separately and they should be described in the DEIS separately. Please see WestLand. 2014. Ray Mine Tailings Storage Facility – Ripsey Wash Analysis Area – Endangered Species Act - Listed Species Screening Analysis (WestLand 2014g) and WestLand. 2014. Ray Mine Tailings Storage Facility – Hackberry Gulch Analysis Area – ESA – Listed Species Screening Analysis (WestLand 2014i). 20-331
08	3-124	3.13.1.5		7	We suggest defining the categories used by WestLand, "present", "possible", "unlikely", or "none", as defined in WestLand 2014g. Ray Mine Tailings Storage Facility – Ripsey Wash Analysis Area – Endangered Species Act - Listed Species Screening Analysis, and WestLand. 2014i. Ray Mine Tailings Storage Facility – Hackberry Gulch Analysis Area – ESA – Listed Species Screening Analysis.
09	3-126	3.13.2.2		3	The effects of this alternative are generally similar to those for the Ripsey Wash Alternative in terms of surface disturbance, but it would be reasonable to note that the Ripsey alternative would impact 2,574 acres and Hackberry alternative impact 2,290 acres, with a difference of 284 acres.
10	3-131	3.14.1.3.1		4	Suggest providing the distance to the Tortilla Mountains. 20-339
	3-135	3.14.1.4.3		3	Line 4 - Confirm that this is referring the portion of the highway to be relocated as part of this proposed project. Also, this last sentence should be moved to the environmental impacts discussion.
12	3-142	3.14.2.3		.3	The last sentence of this paragraph (discussing effects specific to the Hackberry alternative) references visibility of the TSF from the "realigned" Arizona Trail. No Trail realignment would occur under the Hackberry alternative. 20-34.

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment			
113	3-142	3.14.2.3		5	Suggest the last 2 sentences be deleted. Discussion of the land exchange is not relevant in this section.			
114	3-145	3.15.1.1.1		4	Revise reference to threatened yellow-billed cuckoo to identify it as the western DPS. Scientific name should be revised to "Coccycus americanus"			
115	3-148	3.15.1.4		4	Suggest a more in-depth discussion of lack of evidence for maternal and hibernation roosts. The elevations of both TSF sites are likely too low for hibernation roosts, and WestLand found no evidence of maternity roosts, such as lactating females or young. Please see <i>Ray Mine Tailings Storage Facility, Ripsey Wash Analysis Area, Abandoned Mine Feature Survey</i> prepared by WestLand Resources, Inc., dated February 6, 2014.			
116	3-152	3.15.1.9	_	1	The DEIS states that WestLand performed surveys for SDT at both TSF sites. We suggest the results of these surveys and habitat assessments be discussed in this section. The references are WestLand 2014s and WestLand 2014t.			
117	3-158	3.15.1.12.2		5	The habitat description for the western DPS of the yellow-billed cuckoo should be revised to include ephemeral drainages that support large mesquite and oak trees. Although suitable habitat at both TSF sites is limited to the Gila River, suitable habitat characteristics for the DPS as a whole are considerably wider than described by USFWS in its listing analysis and there is much more available habitat for the DPS than is acknowledged by USFWS. Thus any potential effects to the Gila River from the proposed action is very small given the available habitat in the Southwest, particularly southern Arizona. Please see WestLand. 2015a. Asarco LLC Ripsey Wash Tailings Facility threatened and endangered species effects analysis. January 30, 2015. Unpublished report submitted to ASARCO LLC and on file with the U.S. Army Corps of Engineers, Phoenix Office.			
118	3-158	3.15.1.12.1		5	We suggest a discussion of the existing conditions within mitigation sites in the affected environment section, so beneficial effects can be discussed in the environmental consequences section (Section 3.15.2.2.15). We also suggest similar discussion for yellow-billed cuckoo in Sections 3.15.1.12.2 and 3.15.2.2.15, and Northern Mexican gartersnake in Sections 3.15.1.12.3 and 3.15.2.2.15. Please see WestLand. 2015. ASARCO LLC Ripsey Wash Tailings Facility threatened and endangered species effects analysis. January 30, 2015. Unpublished report submitted to ASARCO LLC and on file with the U.S. Army Corps of Engineers, Phoenix Office.			
119	3-160	3.15.2.2.1		3	The statement and inferred effect of habitat loss from fragmentation and isolation along the Gila River requires justification. No or very limited effects to the Gila River riparian corridor is expected from either alternative and wildlife movement and utilization of the Gila River Corridor is not expected to be measurably affected by construction of the new County bridge or the bridge proposed as part of the Ripsey TSF alternative for the tailings and reclaimed water pipelines. There is no evidence presented in the DEIS and we are aware of no evidence to support the notion that the proposed action will fragment and isolate populations of wildlife species that inhabit the Gila River corridor. Please see <i>WestLand. 2015a. Asarco LLC Ripsey Wash Tailings Facility threatened and endangered species effects analysis. January 30, 2015.</i> Unpublished report submitted to ASARCO LLC and on file with the U.S. Army Corps of Engineers, Phoenix Office; and <i>Ray Mine Tailings Storage Facility Hackberry Gulch Alternative 2 and Ripsey Wash Alternative 3 Analysis of Impacts to Proposed and Designated Critical Habitats. Technical Memorandum prepared June 29, 2015 (Appendix E in the Alternative Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis).</i>			
120	3-164	3.15.2.2.11		4	Suggest inclusion of discussion that the tailings pipeline and bridge construction would span most if not all of the riparian habitat such that impacts to riparian BCC species would be minimal.			
121	3-166	3,15.2.2.15		6	The DEIS states that no evidence of YBC breeding has been observed by any of the surveys conducted within the Ripsey Wash TSF project area. This statement should be revised to indicate that evidence of possible breeding, following the USFWS approved protocol has been observed; however, there is no direct evidence confirming breeding in the Ripsey Wash TSF. Please see WestLand. 2015c. 2015 Yellow-billed cuckoo survey portions of the middle Gila River, Pinal County, Arizona. September 28, 2015. Unpublished report submitted to ASARCO LLC and on file with the U.S. Army Corps of Engineers, Phoenix Office.			
122	3-171	3.16.2.2.2		Ľ	We suggest the last sentence of the paragraph be modified to simply state that any leakage in the Hackberry Fault zone is expected to be captured by the downgradient seepage collection system. Any such collected seepage will report to the reclaim ponds and be sent to the Ray Mine, not the TSF.			

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Commant			
123	3-171	3.16.2.2.3		3	(1) As noted above, Asarco plans to provide a separate Technical Memorandum containing a discussion of the demonstration made to satisfy the APP program's BADCT requirement regarding stability of the proposed TSF. It may be appropriate to include or reference some information on this topic in this section 3.16.2.2.3 or its subsections.			
					(2) This section does not distinguish between the two alternatives. It seems that the impact of a catastrophic failure might be different at Hackberry than Ripsey, given its proximity to a state highway (as opposed to the county road near Ripsey), as well as the fact that it is located somewhat closer to the Gila River than is the Ripsey alternative.			
124	4-6	-4.6		1	There is information on previously impacted waters of the US in the Hackberry watershed in the Alternatives Screening and Clean Water Act Section 404(b)(1) Alternatives Analysis dated July 17, 2015 (Section 5.2.3, pages 32-33). This would seem to be relevant from a cumulative impacts analysis standpoint, in looking at the potential for differing effects of the 2 action alternatives being considered.			
125	7-1	7		9	AMEC 2014a has been updated. The current version is dated July 10, 2014 20-354			
126	8-4	8.2			Definition of Acid Plant - change the word "tailings" to "mine." Sulfuric acid is not used in any process related to tailings, and is used only in the leaching of oxide ore.			
127	8-25	8.2		5	The definition of Tailings Storage Facility as infrastructure needed to "manage and separate tailings slurry from water" is overbroad. By that definition, the thickeners and even the concentrator could be considered part of a TSF. Suggest instead stating that a TSF is a dam or infrastructure designed to safely, efficiently and successfully store tailings.			
128			Figure 14		This figure does not show the latest plan for the Belgravia Wash stilling basin. Please see Figures 2, 3 and 7 in Ray Mine Tailings Storage Facility, Hackberry Gulch Alternative 2 and Ripsey Wash Alternative 3 Analysis of Impacts to Proposed and Designated Critical Habitats (Appendix E in the 404b1).			
129			Figure 30		MW-1 is mistakenly identified as a compliance monitoring well on Figure 30. It is not. The compliance monitoring wells are MW-1A, MW-1B, MW-2 and MW-3, as correctly noted in the text on p. 3-74.			
130			Figure 47		We suggest removing "Surface Wetland Areas" in legend and adding "Surface Water Areas" or similar. These areas include wetlands, but they are not all wetlands.			
131	A-3	App. A, Sec. 2.2.4		9	 (1) The second sentence of this paragraph could be read to suggest that the alternative with the "lesser" degree of impact will always be selected. That is not the case. NEPA merely requires that impacts be analyzed and disclosed. It would be more accurate to say that the evaluation of impacts of various alternatives "is considered by the action agency in making a decision on the proposed action," or words to that effect. (2) In the third sentence, environmental controls and operational technology that mitigate effects are not really "evaluation measures." It would be more accurate to say that measures that would mitigate an effect of a proposed action are considered as part of the action agency's evaluation. 			
132	C-2	App. C, Sec. 2	1		ADOT should be added to the "State of Arizona" portion of the table because it will have to approve an encroachment permit for pipelines to cross state highway rights of way.			
133	C-2	App C, 2.0	Table 1		Under BLM Permits and Approvals, suggest including "Mineral Material Sale Contract for use of saleable minerals." In addition, it should be noted that that "Mining Reclamation Plan for mineral estate sale" would only be required for the Hackberry Gulch Alternative (because the area from which the salable materials would be removed at Ripsey is within the footprint of the planned TSF).			
134	C-3	App. 2, Sec. 2	1		In the Pinal County section of the table, consider adding a reference to the Pinal County Flood Control District. Tailings facilities are exempt from the requirement to obtain a floodplain use permit, pursuant to A.R.S. 48-3613(B)(3) and Article V, Section 5.6(2)(C) of the Pinal County floodplain management ordinance. However, pursuant to those same authorities, the District will be provided the opportunity to review and comment on the			

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment
					construction plans before construction commences. This probably qualifies as something that could be added under the "Miscellaneous Involvement and Responsibilities" column of the table.
135	C-5	App. 2, Sec. 4.0		1	In the third sentence from the end of the carry-over paragraph, it would be more accurate to state that Asarco "may be" required to submit mining and reclamation plans. That is the language used in 43 C.F.R. 3601.40. Moreover, because the area from which salable materials will be recovered ultimately would be covered by tailings at the Ripsey Wash site, a reclamation plan is not expected to be required by BLM as part of a salable materials contract for that site. Were the Hackberry alternative selected, a reclamation may be required plan may be required by BLM as part of a salable materials contract for any material quarried from BLM land outside the ultimate footprint of the TSF.
136	C-6	App. C, Sec. 9.3	-	5	The last sentence of section 9.3 is unclear. What other "state-adopted plans and rules" would ADEQ review in making a Section 401 certification? Pursuant to A.R.S. 49-202(C), ADEQ's authority is limited to assessing compliance with state surface water quality standards.
137	C-6	App. C, Sec. 9.4		6	 (1) The last sentence of Section 9.4 largely tracks the definition of "stormwater associated with industrial activity" in 40 C.F.R. 122.26(b)(14). However, it may be worth noting that at a mining operation, permits are not required for stormwater runoff that has not been contaminated by contact with, or that has not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations. 33 U.S.C. 1342(1)(2); 40 C.F.R. 122.26(a)(2)(i). The storm flows diverted around the proposed TSF would fall in this category. (2) It may be worth noting that a stormwater permit is required for any discharges from a construction operation that is greater than 1 acre in size. A mining entity in Arizona may secure coverage for such construction activities under the construction general permit or the mining multi-sector general permit. (See Part 8.G.4 of the 2010 Mining MSGP.)
138	C-8	App. C, Sec. 13.0		2	 (1) It may be worth noting in this section that mining operations greater than 5 acres in size are exempt from county zoning requirements pursuant to A.R.S. 11-811(C)(2) and section 2.05.050 of the Pinal County Development Services Code. (2) It may not be accurate to describe the County as having "regulatory requirements" related to the possible trail relocation (described section 13.2). As noted in Table 1 of this appendix, the county has an advisory and coordination role, not a regulatory one. (3) It may be worth adding a brief section discussing the County Flood Control District's review and comment role under the floodplain management statutes and ordinances (as discussed above in our comments on table 1 of this appendix).
139	D-3	App. D, Sec. 2.1		4	Elder Gulch's expected life is now through 2021-2023 depending on production rates. Suggest not referencing the number of years to avoid the need for future revisions.
140	D-4	App D, 2.2		7	The US Forest Service has initiated NEPA review of this project. See 81 FR 14829 (March 18, 2016).
141	D-5	4.0		3	Suggest providing clarification as follows: The Hayden Smelter, located adjacent to the town of Hayden, Arizona, is owned and operated by Asarco. This smelter is one of three remaining copper smelters in the United States6. It has the capacity to process approximately 700,000 tons of copper concentrates per year, which are received from Asarco's Ray and Hayden Concentrators, Asarco's Mission Complex, and outside suppliers. The Hayden Smelter is located in a non-attainment area based on the 2010 National Ambient Air Quality Standard (NAAQS) for SO2. In December 2015, Asarco entered into a consent decree with the United States Environmental Protection Agency (EPA) regarding modifications to the Hayden Smelter. The planned Converter Retrofit Project will improve sulfur capture and control efficiency from 95% to 99% at a cost in excess of \$128 million, and will result in attainment of the 2010 SO2 NAAQS."
142	D-5	4.0		4	Suggest deleting this paragraph in its entirety. The information contained in it is addressed in the language suggested in the previous comment. 20-371

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Comment #	Page #	Section	Figure/Table #	Paragraph #	Comment
143	D-5	4.1		1	Suggest providing clarification as follows:
					"Copper concentrates are introduced into the oxygen flash furnace, along with oxygen and siliceous flux. The mixture becomes a molten bath that separates into two layers called matte and slag. The flux combines with iron and other impurities to form the upper layer (slag) which is periodically skimmed from the bath and transported to an outside storage area. A portion of the slag is recycled back through the Hayden Concentrator to recover remaining copper. Most of the copper remains with the lower layer (matte) and is transferred to a converter furnace for the next process step."
144	D-6	4.1		Ĺ	Suggest providing clarification as follows: "In the converter furnace, air is combined with the matte to burn away remaining iron and sulfur. The resultant molten metal, known as blister copper, is more than 98% pure. Sulfur dioxide gas (SO2) that is formed by the combustion of sulfur in the oxygen flash furnace and converters is routed to the acid plant where it is converted into sulfuric acid. The converter furnace product, blister copper, is moved to an anode refining furnace for further processing before being cast into copper anodes, two-inch thick slabs weighing approximately 800 pounds each. The anodes are transported to Asarco's Amarillo Texas refinery by rail and/or trucks for final processing."
145	D-8	App. D, 6.4		7	Suggest removing "In late 2014," from the beginning of this paragraph as construction has not commenced. 20-374
146	D-9	App. D, 6.4		1	Suggest removing "and will be completed by 2015". We do not know what the current schedule is for the construction of the highway bridge.
147	D-14	App. D, Sec. 10.2		3	The second sentence of Section 10.2, relating to Asarco's call rights, relates to the San Carlos Reservoir, not the Ashurst-Hayden Dam. The sentence should be moved up to the end of Section 10.1.
148	D-14	App. D, 11.0	FN 7		This indicates that if the exchange is not completed and the Hackberry alternative is selected, ASARCO will have to obtain approval of a plan of operations from the BLM. An MPO will be required even if the exchange is completed, because the selected land doesn't include all of the land needed for the TSF as currently configured.
149	D-15	App. D, 11.0		2	Suggest deleting "late 2015 or early 2016" in the second sentence. We do not know when the draft supplemental EIS will be released.
150	G-1	App G., 1.0			 We suggest updating this report or retaining the original date. If the report is updated please note the following: In Section 1.0 (page G-1, paragraph 2) in the last sentence we suggest noting the social and economic effects are also evaluated under NEPA In Section 2.0 (page G-2, paragraph 2) in the second sentence we suggest replacing "in the process of being transferred to" with "that is proposed for acquisition by". In Section 2.0 (page G-2, paragraph 3) the penultimate sentence of the paragraph refers to agency meetings that "will be conducted in 2014." Suggest updating as appropriate. In Section 2.0 (page G-2, paragraph 4 we suggest clarifying that technically the BLM would not be approving the construction of the TSF, but they are a cooperating agency and would need to authorize the trail relocation, the right-of-way for portions of the project pipelines and power line, and the sale of salable materials. It seem appropriate to clarify this point. In Section 2.0 (page G-2, paragraph 5) in the first sentence we suggest specifying in which RMP (Phoenix) the subject lands occur. There are numerous RMPs and this paragraph reads as if there is only one. In Section 2.0 (page G-4, paragraph 2) the first sentence states that "although the Ripsey Wash TSF would directly affect the 5.1 miles of the trail within the state land parcel, another 8.2 miles south of the state land boundary may be affected by the relocation, depending on the bypass route selected", but this statement is not explained. We do not understand how an additional 8.2 miles south of the project. Moreover, earlier in the Appendix it states that 5.8 miles of the trail would be affected (not 5.1 miles).

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COMMENT DOCUMENT #20 (Part 4 of 4) (A) ASARCO LLC (JAMES STEWART, TECHNICAL SERVICES MANAGER)

Comment Document #20 Part 4 of 4 (A)

Ray Mine Tailings Storage Facility

January 29, 2016

461 States 146.2

20-38

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Table ES-2, Summary of Hackberry Gulch TSF Alternative

BASIC CRITERIA FOR FULL CAPACITY				
Overall Facility Capacity (million tons)	750			
Final Tailings Embankment Crest Elevation (feet above mean sea level)	2,535			
Final Tailings Embankment Height (feet)		610		
Number of Washes Needing Starter Dam Embankments	7			
Rock Material Required for Starter Dam Embankments (million tons)	8.2			
ength of Tailings and Water Pipelines (feet/miles)	4,620/0.9			
ESTIMATED SURFACE AREA DISTURBANCE AT FULLCAPACITY	ACRES)			
ailings Storage Facility		1,996		
tormwater Diversion Infrastructure	-	116		
Insite TSF Infrastructure		96		
Iffsite TSF Infrastructure	28			
orrow Areas	54			
Total	2,290			
PROPOSED CONCEPTUAL MITIGATION AREA FOR WATERS	OF US (ACR	ES)		
tes A,B,C and D (San Pedro River Valley)		97.9		
tes E (Gila River Valley)		124.9		
Total		222.8		
LAND OWNERSHIP/ADMINISTRATION AT FULL CAPACITY	ACRES	PERCENTAGE (%)		
rivate	1,141	49.9%		
ate of Arizona ⁽¹⁾	0	0.0%		
ureau of Land Management	1,149	50.2%		
Total	2,290	100%		
WATERS OF THE UNITED STATES ⁽²⁾		Acres		
rea of Direct Waters of U.S. Disturbance at Full Capacity (Estimated)		51.70		
rea of Indirect Disturbance to Waters of the U.S. at Full Capacity (Estimated	ted) 19.80			
rea of Jurisdictional Wetlands Disturbance at Full Capacity (Estimated)		0.62		
lotes:	a Sunna			
 The Hackberry Gulch site is partially located on lands administered by I Management (BLM). Asarco is currently pursuing a land exchange with Hackberry Gulch TSF would be located on "private property" owned by Exchange is pending. The placement of tailings at this site is independ the exchange is finalized, the facility would be Asarco property. If the Asarco would file a Section 3809 plan of operation with the BLM for th A formal delineation of Waters of the U.S. was not performed for this a Waters of the U.S. was estimated from a review of aerial photography 	the Bureau of In the BLM suc- Asarco. The ent of the land land exchange e facility. alternative. The of the alternative.	Land h that the BLM Ray Land d exchange. If e does not occur, he extent of tive footprint		

5.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED EVALUATION

The Corps focused its formulation of TSF alternatives on where and how to develop tailings storage capacity for 750 million tons of tailings, which would accommodate future operations at the Ray Mine and meet the purpose and need for the project (see Section 2.0, Purpose and Need). In addition, the Corps conducted public scoping to determine the range of issues to be addressed in the EIS, and these issues helped shape the assessment of TSF alternatives (see Section 4.0, Issues and Concerns).

ES-12
Table E-3, Cord Ray Mine Tailings Storage Facility

January 29, 2016

	A Designed	1 marine and	-
PARAMETER	NO ACTION ALTERNATIVE	RIPSEY WASH TSF (PROPOSED ACTION)	HACKBERRY GULCH TSF
Potential changes in the functions and values of down-drainage wetlands and waters of the U.S. along Gila River.	Negligible. Area would continue to be exposed to natural geomorphic processes or other disturbances associated with recreation and ranch management.	Unlikely to change functions and values of down-drainage wetlands and waters of the U.S. along Gila River. TSF footprint about 0.02% of Gila River watershed at confluence of Zelleweger Wash (immediately down- drainage of TSF).	Same as Proposed Action. TSF footprint about 0.02% of Gila River watershed at USGS Kelvin gaging station (immediately down-drainage of TSF).
Froundwater Hydrology			
otential to alter existing own-gradient groundwater ydrologic systems by ailings disposal	None – proposed tailings facilities would not be constructed.	Negligible with proper design, construction and operation.	Negligible with proper design, construction and operation.
Changes in down-gradient Illuvial or bedrock groundwater chemistry from ailings disposal	None – proposed tailings facilities would not be constructed.	Minor with proper design, construction and operation. Modeling indicates down- gradient compliance with Arizona Aquifer Water Quality Standards.	Minor with proper design, construction and operation. Down-gradient compliance with Arizona Aquifer Water Quality Standards is expected.
ffectiveness of Seepage ontrol	Not applicable – proposed tailings facilities would not be constructed.	Good given "valley-fill" nature of TSF. Two seepage control points down- gradient (Ripsey Wash and East Wash) keyed to low- permeability Ruin Granite formation. Control of seepage expected with design safeguards for Hackberry Fault.	Difficult given "side-hill" construction and incised nature of seven drainages where seepage control would be implemented.
pacts on existing oundwater wells gistered with Arizona apartment of Water sources	Negligible. Area would continue to be exposed to natural geomorphic processes or other disturbances associated with recreation and ranch management.	Minor as most wells owned or controlled by Asarco. 13 wells to be eliminated within TSF footprint. 18 wells located down-gradient (within 0.5 miles). Most wells for Asarco exploration or for baseline monitoring purposes. CHECK	Major as many wells <u>not</u> controlled by Asarco. 19 wells to be eliminated within TSF footprint. 23 wells located down-gradient (within 0.5 miles). Possible impact to 7 private (non- Asarco) down-gradient wells. CHECK
nd Use			
tal operational turbance area (acres)	None – proposed tailings facilities would not be constructed.	2,574 acres	2,290 acres
ital operational sturbance by ownership cres/%) Private State BLM	None – proposed tailings facilities would not be constructed.	48 acres / 1.9% 2,517 acres / 97.7% 97.8% 9 acres / 97.4% D.39 »	49.8 1,141 acres / 49.9% 0 acres / 0% 1,149 acres / 50.1%

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Table E-3, conit

> If # is adjusted to 2,720 90 should be adjusted to 11.790 > Reported as 2,425 in Ch.3, Table 3-42 Chower, that table also has incorrect

		1 (1000	y - 1 mai table ape	#s)
ENVIRONMENTAL PARAMETER	NO ACTION ALTERNATIVE	RIPSEY WASH TSF (PROPOSED ACTION)	HACKBERRY GULCH TSF	
Effects on livestock grazing in the area	Negligible. Area would continue to be exposed to natural geomorphic processes or other disturbances associated with recreation and ranch management.	Minor to grazing allotments. Remove land from following allotments: <u>A Diamond</u> : 2,381 acres or about 11.5% of allotment; and <u>Rafter Six</u> 149 acres - about .06% of allotment. If this # is	Minor to grazing allotments. Remove land from following allotments : <u>Rafter Six</u> : 2,267 acres or about 8.4% of allotment; and <u>Troy</u> : 23 acres or about .04% of allotment. 15 this is be	20-384
Changes in future (post- project) land use	Negligible. Area would continue to be exposed to natural geomorphic processes or other disturbances associated with recreation and ranch management.	Fran Table 3-49, 8h Irreversible from present condition. Tailings would be covered with rock so substantial lower value for wildlife use and dispersed recreation values.	Same as Proposed Action.	0.496
Noise	1			
Construction Noise Effects	None – proposed tailings facilities would not be constructed.	Minor to residents of Kelvin and Riverside that are over one mile from proposed TSF site. Noise would be blocked by Tortilla Mountains, but some noise during construction of pipeline, pumping station, and supply trucks. Closest residence = 2,000 feet (Noise blocked by Tortilla Mtns.)	Moderate to major to residents of Kelvin and Riverside, as some residents within 0.25 mile of construction activities. Persistent daylight noise levels could increase up to 30 dBA over background noise levels for up to three years. Closest residence = 500 feet (noise <u>not</u> blocked)	
Operation Noise Effects	None – proposed tailings facilities would not be constructed.	Negligible to residents of Kelvin and Riverside.	Minor to moderate to residents of Kelvin and Riverside	
Noise effects on wildlife	Negligible. Area would continue to be exposed to natural geomorphic processes or other disturbances associated with recreation and ranch management.	Minor to moderate. Some displacement expected during construction activities. Construction of pipeline bridge could affect species along Gila River.	Minor to moderate. Some displacement expected during construction activities.	
Noise effects on recreational users, especially on ARIZONA TRAIL	Negligible. Area would continue to be exposed to natural geomorphic processes or other disturbances associated with recreation and ranch management.	Moderate during construction and closure. Minor during operations. During construction, hikers on Arizona Trail would be exposed to some noise during construction of Ripsey Wash detention dam and East Wash diversion channel. During closure, noise associated with rock placement over tailings.	Negligible. Limited construction or operational noise to hikers on Arizona Trail.	

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Table 2-1, Summary of Ripsey Wash TSF Alternative

2.3.2.1 Florence-Kelvin Highway

The Florence-Kelvin highway is a 32-mile long, two-lane road that connects State Highway 79 south of the town of Florence to State Highway 177 near the community of Kelvin and near the entrance to the Ray Mine. Approximately 12 miles of this highway is paved with asphalt from its junction with State

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BASIC CRITERIA FOR FULL CAPACITY			7 - MALLIA alde
Overall Facility Capacity (million tons)	1	750	- 5340961 STOR
Final Tailings Embankment Crest Elevation (feet above mean sea level)		750	746.2
Final Tailings Embankment Height (feet)		2,535	-
Number of Washes Needing Starter Dam Embankments		610	-
Rock Material Required for Starter Dam Embankments (million tons)		82	-
Length of Tailings and Water Pipelines (feet/miles)		4 520/0.0	-
ESTIMATED SURFACE AREA DISTURBANCE AT FULLCAPACITY	ACRES)	4,020/0.3	-
Tailings Storage Facility	(ACTES)	1.000	
Stormwater Diversion Infrastructure		1,996	-
Onsite TSF Infrastructure		116	
Offsite TSF Infrastructure		90	
Borrow Areas		54	
Total	1	2 200	
PROPOSED CONCEPTUAL MITIGATION AREA FOR WATERS	DE US (ACR	2,250 FSI	-
Sites A, B, C and D (San Pedro River Valley)	97.9		Specific to Ri
Sites E. (Gila River Valley)	124.9		11,40800
Total		222.8	INSMINCE
LAND OWNERSHIP/ADMINISTRATION AT FULL CAPACITY	ACRES	PERCENTAGE (%)	Hack berry
Private	1,141	49.9%	20-38
State of Arizona ⁽¹⁾	0	0.0%	
Bureau of Land Management	1,149	50.1%	
Total	2,290	100%	
WATERS OF THE UNITED STATES ⁽²⁾		Acres	
Area of Direct Waters of U.S. Disturbance at Full Capacity (Estimated)		51.70	
Area of Indirect Disturbance to Waters of the U.S. at Full Capacity (Estima	ted)	19.80	
Area of Jurisdictional Wetlands Disturbance at Full Capacity (Estimated)		0.62	20-30
 The Hackberry Gulch site is partially located on lands administered by th Management (BLM). Asarco is currently pursuing a land exchange with Hackberry Gulch TSF would be located on "private property" owned by Exchange is pending. The placement of tailings at this site is independen the exchange is finalized, the facility would be Asarco property. If the la Asarco would file a Section 3809 plan of operation with the BLM for the A formal delineation of Waters of the U.S. was not performed for this alt Waters of the U.S. was estimated from a review of aerial photography of 	e Bureau of L the BLM such Asarco. The B It of the land nd exchange of facility. ernative. The	and that the SLM Ray Land exchange. If does not occur,	An MPO will be required in an ble the scleet

2 **Diversion Structures**

As part of pre-tailings storage construction activities, Asarco would construct detention dams and diversion channels to divert stormwater from the undisturbed watershed areas above the proposed Hackberry Gulch TSF around the facility. See Appendix I, Applicant Project Mitigation.

Asarco would install detention dams in the washes up-drainage of the ultimate footprint of the Hackberry Gulch TSF. See Figure 14, Site Plan Layout - Hackberry Gulch TSF.

The purpose of these detention dam structures would be to prevent up-drainage stormwater runoff from entering into the tailings impoundment area. These detention dam structures would be designed

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currently configured

Parameter	Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature	1	60.9	64.1	68.5	76.4	86.1	95.6	97.7	95.4	92.3	82.5	69.8	61.6	79.2
(°F)	2	64.2	68.2	73.3	81.0	89.5	99.2	99.3	96.7	93.6	84.4	72.6	64.1	82.2
Average Min. Temperature	1	43.2	45.4	48.2	54.4	62.7	72.0	75.7	74.2	71.2	62.0	51.1	44.0	58.7
(°F)	2	31.2	33.8	38.5	42.9	49.9	59.8	69.5	67.8	60.6	47.6	36.6	30.8	47.4
Average Daily Temperature	1	52.0	54.7	58.4	65.4	74.4	83.8	86.7	84.8	81.7	72.3	60.5	52.8	69.0
(°F)	2	47.7	50.9	55.9	61.9	69.7	79.5	84.4	82.2	77.1	65.9	54.6	47.5	64.8
Average Total	1	2.00	1.98	2.02	0.80	0.34	0.26	1.91	2.80	1.48	1.18	1.41	2.11	18.30
(in)	2	1.36	1.06	0.98	0.46	0.32	0.30	2.04	2.69	1.31	1.03	0.86	1.38	13.79
	3	1.72	1.56	1.29	0.43	0.24	0.17	1.40	2.12	0.94	0.80	0.97	1.58	13.21
	4	1.59	1.35	1.58	0.53	0.27	0.19	1.42	2.19	1.35	1.22	1.10	1.63	14.41
Average Pan Evaporation (in)	5	3.12	4.03	7.00	9.98	12.4	13.9	11.19	9.84	9.56	7.51	4.31	2.94	95.78

Table 3-1, Temperature, Precipitation and Pan Evaporation

Winkelman 6 S, AZ, 1893-1980—Source: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl/az9420

Kearny, AZ, 1984-2013-Source: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl/az4590

Winkelman 6 S, AZ, 1893-1980—Source: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl/az9420 ⁵Winkelman 6 S, AZ, 1942-1980—Source: <u>www.wrcc.dri.edu/htmlfiles/westevap.final.html</u>

Aug. total precip, she Kelvin Station

Same Source. Based on

Annual average precipitation is typically around 13 to 14 inches, with most amounts occurring during July and August, which are part of the aforementioned monsoon season. The summertime rain can be sporadic and locally intense, often associated with passing thunderstorms.

The Ripsey Wash and Hackberry Gulch TSF sites are located in complex terrain where winds are strongly affected by local topography, the time of day, and the season. Winds typically flow down the Gila River valley during the cooler night-time hours, but the general wind direction generally follows a north-south pattern during the day. High wind and gusts can occur during the monsoon season, associated with approaching thunderstorms, and these high winds and gusts, especially over desert areas, can lead to substantial fugitive dust.

The average annual pan evaporation rate measured at the town of Winkelman, which is approximately 14 miles southeast of the Ray Mine, was nearly 96 inches for the period of record 1942 to 1980. See Table 3-1, Temperature, Precipitation and Pan Evaporation.

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Table 3-2, Nationa	l, State of Arizona and I	Pinal County Ambier	nt Air Quality Standard	ds 7	On standard	a thr of g. 12
Pollutant	Averaging Time	Nat	tional	Arizona	Counties	7 AZ
		Primary	Secondary	Primary (unless noted)	Primary (unless noted)	
Ozone	1 hour	None	None	0.12 ppm-	None	1
(O ₃)	8 hour	0.075 ppm	Same as Primary	0.075 ppm	0.08 ppm	-
Carbon Monoxide	1 hour	35 ppm	None	35 ppm	35 ppm	20-3
(CO)	8 hour	9 ppm	None	9 ppm	9 ppm	
Nitrogen Dioxide	1 hour	100,6pb	None	100 pob	None	Ding Si
(NO ₂)	Annual	0.053 ppm	Same as Primary	0.053 ppm	0.053 ppm	- unism
Sulfur Dioxide	1 hour	75 ppb	None	75 ppb	None	- add da
(SO ₂)	3 hour	None	0.5 ppm	0.5 ppm ⁽³⁾	0.5 ppm ⁽²⁾	to footnot
	24 hour	None	None	0.14 ppm	0.14 ppm	
in the second second	Annual	None	None	0.03 ppm	0.03 ppm	H3. asi
Particulate Matter	24 hour	150 µg/m ³	Same as Primary	150 µg/m ³	150 µg/m ³	is scone
(as PIVI10)	Annual	None	None	None	50 µg/m ³	10 000
Particulate Matter	24 hour	35 μg/m³	Same as Primary	35 µg/m ³	None	1
(as PM _{2.5})	3-year average of weighted annual mean concentration	None	None	None	15 μg/m³	
	Annual	12 μg/m ³	15 μg/m ³	15 μg/m ³	None	
	3-year average of 98 th percentile of 24-hour concentrations	None	None	None	65 µg/m³	
Lead	Quarterly Arithmetic Mean	None	None	None	1.5 μg/m³	
Lead	Rolling 3-Month Average	0.15 μg/m ³	Same as Primary	0.15 μg/m ³	None	

The Ray Mine is located in an area that is non-attainment for PM₁₀. Therefore, increment consumption and PSD review would not apply. The facility is subject to non-attainment new source review.

3.1.1.4 Regional Air Quality

The existing air quality conditions for Ripsey Wash and Hackberry Gulch TSF sites are primarily the result of meteorological conditions and existing emission sources in the region. The TSF sites are located in an area where ambient air quality slightly exceeds the PM₁₀ standard; this area, referred to as the "Hayden, AZ" area, is currently classified as "non-attainment" for PM₁₀ emissions.

 PM_{10} monitoring was conducted in the town of Kearny for nearly three years (2009 – 2011) by Pinal County. The highest PM_{10} value from this monitoring was 51 µg/m³, which is a value that slightly exceeds the Pinal County AAQS for PM_{10} , which is 50 µg/m³.

January 2016

	PM ₁₀ (tons per year)	PM2.5 (tons per year)	
Initial Site Preparation and	Construction		1
Year 1	85	7	1
Year 2	94	7	
Year 3	92	8	1
Annual Average	C98 5 90:3	15 7.3	20-394
Centerline Tailings Operation	ons	1.0 4.5	
Annual Average	12	2	
Upstream Tailings Operatio	ns		1
Annual Average	16	2	1
Closure and Reclamation ⁽²⁾			1
Annual Average	9	2	
Notes: (1) Source: ERM Consulta (2) There will be minimal (mainly periodic mainten emissions during this acti-	nts. 2017 # Cl Asarco activity at the site followin ance of pumps for water diversion vity would be negligible.	g closure and reclamation infrastructure). Any air	Quest citations as u 20-395

Table 3-3, Estimated Fugitive Dust Emissions for Ripsey Wash TSF(1)

The highest annual fugitive dust emissions (specifically PM₁₀ and PM_{2.5} in this case) and gaseous emissions would be generated during early site development and construction activities, which are estimated to take approximately three years and would utilize equipment such as drills, front end loaders, trucks, bulldozers, excavators, and motor graders. The early site development and construction work would involve road building, detention dam and diversion ditch installation work, construction of tailings starter dams, and installation of seepage trenches and seepage collection ponds.

Tailings disposal operations would generate PM₁₀ and PM_{2.5} fugitive dust and gaseous emissions, although at a reduced level from those during early site development and construction work. These emissions would be generated from traffic on unpaved roads, from ongoing centerline and upstream tailings dam construction using equipment such as bulldozers and excavators (long-reach backhoes), and from wind erosion on the tailings surface.

Final closure and reclamation activities would generate PM₁₀ and PM_{2.5} fugitive dust emissions from final grading work and placement of rock material over the tailings impoundment, using equipment such as front end loaders, trucks, bulldozers, excavators, and motor graders. There would also be windblown fugitive dust from the closed tailings impoundment, which would lessen once rock is placed on tailings surface.

Gaseous emissions would result from the fuel combustion in the on-site support vehicles and heavy equipment used to support TSF construction, operations and closure. Gaseous emissions include oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), volatile organic compounds (VOC), carbon dioxide (CO₂), methane (CH₄) and nitrogen oxide (N₂O), the later three considered greenhouse gases that contribute to global warming. All gaseous emissions result from mobile equipment; there are no gaseous emissions associated with stationary sources for this project.

The estimated annual gaseous emissions for the Ripsey Wash TSF are set forth in Table 3-4, Estimated Gaseous Emissions for Ripsey Wash TSF.

onices note	d. wy Wine Toilings Store	ge rocins therwise	i timissions i most values c	would be \$)	lonuory 2	2026
ar 1= 0.01	un 3-3, estimoted Ani	Initial Site Preparation and Construction	Operations (Centerline Construction)	Operations (Upstream Construction)	Closure and Reclamation	
10-1000-	Benzene	<0.01	<0/02 10:01	<0.04 0.01	<0.01 -	-
Fing wit	Toluene	<0.01	<0/01	<0.02 0.01	<0.01	These are
10tal = 0.04	Xylenes	50.01 0	<0/01	<0/01 //	10.01	Tomas as like
-	Formaldehyde	<0.01	<0.02 0.01	<0/05 0.00	<0.01	Linde of the
	Acetałdehyde	<0.01	<0.01 th	<0/03 p=01	-0.01	the annual
12-	Acrolein	0	0	0	40.01	ava.
	Naphtha	0	0	0	0	0
or1=0.01	orce, chivi consultants. 20	14.				1
a12=001 0	zone formation due	to atmosphere trans	sformation of NO. and	SO, from oither TCE		-
13: 0.01 W	ould be negligible.	NOs and SO2 can read	t in the atmosphere v	vith ammonia to form	action alternative	
pa	articles" that form a	haze that can impac	t vicibility at leasting	in annihoma to iom	secondary	

No adverse effects are expected to air quality from the relocation of the Arizona Trail or the work in the areas proposed for waters of the U.S. mitigation. See Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan.

Most of the new Arizona Trail would be constructed or cleared using manual labor, although there may be the short-term need for small equipment such as a skid-steer or compact track loader and a compact excavator to assist in constructing switchbacks or moving large rocks for the relocated trail. This equipment would create some minor fugitive and gaseous emissions, but these emissions would be short-term, localized and negligible.

As explained in Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan, Mitigation Sites A, B, C, D and E would require active management to enhance the riparian habitat values; this action would primarily involve fencing and seeding. A mechanical posthole digger mounted on an off-road vehicle would be used for fence construction. A farm tractor with a cultivator and a drill seed would be used for seeding, although hand seeding could also be used. For Mitigation Site E, and where needed on other proposed mitigation sites to remove tamarisk, a bulldozer (Caterpillar D6 or equivalent) would probably be used to clear and grub burned trees and stumps. The equipment used for riparian habitat improvements would produce some minor fugitive and gaseous emissions, but these emissions would be short-term, localized and negligible.

Indirect air quality impacts associated with the Ripsey Wash TSF alternative would be short-term and negligible, primarily associated with vehicular traffic of contractor employees and their families that might reside in the region during the early construction phase of the project. It is expected that such traffic would be scattered throughout surrounding communities, such as Kearny, Hayden, Superior, Gold Canyon and Apache Junction, and would not be concentrated in the vicinity of the proposed TSF sites.

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3.1.2.2.3 Climate Change Associated with Ripsey Wash TSF Alternative

According to the EPA (http://www.epa.gov/climatechange/basics), human activities over the past century have released large amounts of greenhouse gases (CO₂, CH₄ and N₂O) into the atmosphere. EPA purports that the majority of greenhouse gases come from use of fossil fuels, deforestation, industrial processes and agricultural practices.

Greenhouse gases act like a blanket around Earth, trapping energy in the atmosphere and causing it to warm. This phenomenon is called the greenhouse effect and is natural and necessary to support life on Earth. However, the buildup of greenhouse gases can change the Earth's climate and result in effects to the Earth's ecosystems.

Vehicles and construction equipment used for TSF activities would use diesel and gasoline, and the combustion of these fuels would create greenhouse gases. Although the greenhouse gas emissions generated from the Ripsey Wash TSF would have a negligible effect on climate change, these emissions would contribute incrementally to climate change.

CO₂ is the greenhouse gas commonly presumed to be the foremost contributor to climate change. Construction, operational and closure activities at the TSF would contribute CO₂ and other greenhouse gases to the atmosphere, with the highest annual CO₂ emissions occurring during year 2 of construction. These projected TSF greenhouse gases would incrementally contribute to the estimated worldwide production of greenhouse gases. See **Table 3-6**, **Projected Ripsey Wash TSF CO₂ Emissions Comparison**.

So	ource Category	ce Category Estimated Annual CO ₂ Emissions Percentage of Worlds (tons per year)				
Rip	sey Wash TSF ⁽¹⁾	3,605	0.00001%			
Sta	te of Arizona ⁽²⁾	100,600,000	0.026% 2.21			
U	nited States ⁽³⁾	7,194,000,000	18.9%			
Tot	al Worldwide ⁽⁴⁾	38,030,000,000	100.0%			
otes:						
(2)	emission for the Rip: lesser CO ₂ emissions From State Energy C www.epa.gov/statel emissions was conve	sey Wash TSF, reported for Year 2 of the proje O2 Emissions, US Environmental Protection Ag ocalclimate/documents/pdf/CO2FFC_2012.pd rrted to tons from the metric tonnes that were	ct. Other years of the project would have gency, for Arizona 2012. (F. For consistency, this volume of e reported in the reference.			
(3)	EPA 2012 estimate. It this volume of emiss	www.epa.gov/cimatechange/ghgemissions/us ions was converted to tons from the metric to	inventoryreport.html. For consistency, onnes that were reported in the reference.			
(4)	Reported 2012 CO ₂ e CO ₂ Emissions 2013 I metric tonnes that w	emissions from PBL Netherlands Environmenta Report. For consistency, this volume of emissi rere reported in the reference.	al Assessment Agency, Trends in Global ions was converted to tons from the			

Table 3-6, Projected Ripsey Wash TSF CO2 Emissions Comparison

3.1.2.3 Effects of the Hackberry Gulch TSF Alternative

The air quality effects of the Hackberry Gulch TSF would essentially be the same as described in Section 3.1.2.2, Effects of the Ripsey Wash TSF Alternative.

3.1.2.3.1 Hackberry Gulch TSF Fugitive and Gaseous Emissions

The estimated annual PM₁₀ and PM_{2.5} fugitive dust emissions for the Hackberry Gulch TSF are set forth in Table 3-7, Estimated Fugitive Dust Emissions for Hackberry Gulch TSF.

Given the proximity of the Hackberry Gulch TSF to State Highway 177 and the communities of Kelvin and Riverside, fugitive dust emissions (particularly on windy days during site construction work) could create short-term adverse effects to travelers on this highway and residents in these communities.

The estimated annual gaseous emissions for the Hackberry Gulch TSF are set forth in Table 3-8, Estimated Gaseous Emissions for Hackberry Gulch TSF.

	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	SO ₂ (tons/yr)	CO ₂ (tons/yr)	CH4 (tons/vr)	N ₂ O (tons/vr)
Initial Site Preparation and (Construction						1 (10/10/11/
Year 1	1	<0.1	9	<0.1	817	<0.1	<01
Year 2	35	5	47	<0.1	2815	<0.1	<0.1
Year 3	18	3	27	<0.1	2186	<0.1	<0.1
Annual Average	18	3	28	<0.1	2273 19	51<0.1	<0.1
Centerline Tailings Operation	ns						
Annual Average	0.3	0.1	2	4	183	<0.1	<01
Upstream Tailings Operation	ns						
Annual Average	0.3	0.1	2	4	182	<0.1	<01
Closure and Reclamation							10.1
Shaping Work	2	<0.1	14	<0.1	2535	<01	<01
Rock Placement	2	1	19	<0.1	1370	<0.1	<0.1
Source: ERM Consultants. 2014.						-0.1	10.1

Table 3-8, Estimated Gaseous Emissions for Hackberry Gulch TSF⁽¹⁾

EPA's NEI estimated that the 2005 Pinal County emissions were 12,545 tons per year for NO_x, 757 tons per year for SO₂, and 9,217 tons per year for VOC. The primary sources for these emissions are:

- NO_X vehicle combustion of diesel and gasoline;
- SO₂ diesel combustion; and,
- VOC vehicle combustion of gasoline.

The estimated average annual Hackberry Gulch TSF gaseous emissions for initial site preparation and construction when compared to Pinal County 2005 emissions would be approximately 0.1% for NO_x, 0.02% for SO₂, and 0.03% for VOC.

The release of HAPs, such as benzene, toluene and formaldehyde, would be negligible for the Hackberry Gulch TSF alternative (ERM 2014) and would not cause any short-term or long-term health problems. See Table 3-9, Estimated Annual or Total Hazardous Air Pollutants (HAPs) for Hackberry Gulch TSF.

Table 3-9, Estimated Annual Hazardous Air Pollu	utants (HAPS) for Hackberry Gulch TSF
-------------------------------------------------	---------------------------------------

	Initial Site Preparation and Construction	Operations (Centerline Construction)	Operations (Upstream Construction)	Closure and Reclamation
Benzene	<0.04	<0.02	<0.04	< 0.05
Toluene	<0.01	< 0.01	<0.02	< 0.02
Xylenes	<0.01	< 0.02	<0.01	<0.02
Formaldehyde	<0.012	<0.02	< 0.06	<0.07
Acetaldehyde	<0.01	<0.01	<0.04	<0.04
Acrolein	0	0	0	0
Naphtha	0	0	0	0
ource: ERM Consultants. 20)14.			•

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Ozone formation due to atmosphere transformation of NOx and SO2 from either TSF action alternative would be negligible. NOx and SO2 can react in the atmosphere with ammonia to form "secondary particles" that form a haze that can impact visibility at locations distant from the emission source. However, the TSF emissions that cause regional haze are low and would dissipate within a short distance from the TSF sites given the relatively rugged terrain that surrounds both sites. Therefore, the NOx and SO2 emissions from the TSF action alternatives would have a low or negligible effect on regional haze.

No adverse effects are expected to air quality as a result of the work in the areas proposed for waters of the U.S. mitigation. As explained in Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan, the proposed five mitigation sites would require active management to enhance the riparian habitat values; this action would primarily involve fencing and seeding. A mechanical posthole digger mounted on an off-road vehicle would be used for fence construction, and a farm tractor with a cultivator and a drill seed would be used for seeding, although hand seeding could also be used. For Mitigation Site E, and where needed on other mitigation sites for tamarisk removal, a bulldozer (Caterpillar D6 or equivalent) would probably be used to clear and grub burned trees and stumps. The equipment used for riparian habitat improvements would produce some minor fugitive and gaseous emissions, but these emissions would be short-term, localized and negligible

3.1.2.3.7 Indirect Impacts Associated with Hackberry Guich TSF Alternative

Indirect air quality impacts associated with the Hackberry Gulch TSF Alternative would be similar to those associated with the Ripsey Wash TSF Alternative. See Section 3.1.2.2.2, Indirect Impacts Associated with Ripsey Wash TSF Alternative. Indirect air quality impacts would be short-term and negligible, primarily associated with vehicular traffic of contractor employees might move reside in the region for the initial site preparation and construction phase of the project. It is expected that such traffic would be scattered throughout surrounding communities, such as Kearny, Hayden, Superior, Gold Canyon and Apache Junction, and would not be concentrated in the vicinity of the proposed TSF sites.

3.1.2.3.3 Climate Change Associated with Hackberry Guich TSF Alternative

The discussion about climate change as related to the Hackberry Gulch TSF would be similar to the discussion associated with the Ripsey Wash TSF Alternative. See Section 3.1.2.2.3, Climate Change Associated with the Ripsey Wash TSF Alternative. Also see Table 3-10, Projected Hackberry Gulch TSF CO² Emissions Comparison.

	Source Category	Estimated Annual CO ₂ Emissions (tons per year)	Percentage of Worldwide Total			
	Hackberry Gulch TSF ⁽¹⁾	Sulch TSF ⁽¹⁾ 2,815 0 00001%				
	State of Arizona ⁽²⁾	100,600,000	0.975% 12 71.8	120		
	United States ⁽³⁾	7,194,000,000	18.9%			
	Total Worldwide ⁽⁴⁾	38,030,000,000	100.0%			
(1) SC Hi (2) F W fro	incleic ERM Consultants 2014. For co inckberry Gulch Wash TSF, reported fu 'om State Energy CO ₂ Emissions, US f ww.epa.gov/statelocalclimate/docur om the metric tonnes that were repo	Imparison purposes, the table shows the highest ar or Year 2 of the project. Other years of the project invironmental Protection Agency, for Arizona 2012 nents/pdf/CO ₂ FFC_2012.pdf. For consistency, this	nual estimated CO ₂ emission for the would have lesser annual CO ₂ emissions. volume of emissions was converted to toos			

For consistency, this volume of emissions was converted to tons from the metric tonnes that were reported in the reference.

Table 3-10, Projected Hackberry Gulch TSF CO2 Emissions Comparison

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3-13, CDVA) Mine Tailings Storage Facility

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ANALYTE ⁽¹⁾	DIABASE 1	DIABASE 2	PINAL SCHIST 1	PINAL SCHIST 2	DECANT	AAWQS(5)
Field Measurements(2)	1					
Lead	<0.015	<0.0073	<0.015	< 0.0073	< 0.0073	0.05
Manganese	<0.01	0.23	0.14	<0.0022	0.14	
Mercury	< 0.0005	< 0.00003	< 0.0005	< 0.00003	< 0.00003	0.002
Nickel	<0.01	< 0.0014	<0.01	< 0.0014	< 0.0014	0.1
Selenium	0.026	0.016	0.019	0.017	0.013	0.05
Thallium	<0.001	<0.001	<0.001	<0.001	< 0.001	0.002
Zinc	< 0.05	<0.0052	<0.05	< 0.0052	< 0.0052	
Radiochemicals ⁽⁴⁾						
Gross Alpha	2.0±0.9	3.0±1.8	<1.0	3.3±1.3	0.6±0.2	XI
Radium 226 + Radium 228	1.4±0.1	<0.7	1.2±0.1	1.0±0.3	1.4+0.9	XXX
Total Uranium	<1.6	2.9±0.4	3.4±0.5	<0.4	1.2±0.3	

Notes:

(1) Parameters are same as required by Arizona DEQ under existing Ray Mine Consolidated Aquifer Plan (APP) permit.

(2) The pH, electrical conductivity (EC) and temperature were measured at the time of collection. The pH in standard unity (s.u.); EC in microslemens per centimeter (us/cm); and temperature in degrees Centigrade (°F).

(3) General inorganics and dissolved metals reported in milligrams per liter (Mg/I).

(4) Radiochemicals reported in picoCuries per liter (pCi/I).

(5)AAWQS are Arizona Aquifer Water Quality Standards set by Arizona DEQ.

3.3.1.4.3 Borrow Materials

Samples of alluvium and bedrock materials that would be used in the TSF construction and for reclamation were collected for analysis using standard penetration testing (SPT) methods and open-end drive samples. Bedrock samples were collected using diamond coring methods and grab samples from outcrops exposed within the proposed TSF footprint. Two samples for each of the following rock types were collected and tested as part of the alluvium and borrow material analytical program for the TSF sites¹⁹:

- Quaternary alluvium
- Quaternary older gravels
- Tertiary cobble conglomerate
- Tertiary tuffaceous sandstone
- Precambrian Diabase
- Precambrian ruin granite
- Big Dome conglomerate

3.3.1.4.4 X-Ray Diffraction

Samples of both Diabase and Pinal Schist were analyzed by Asarco's Bruker D2 Phaser X-Ray Diffraction (XRD) Spectrometer to identity the mineralogy of the material. The Diabase analyses detected the presence of the acid-neutralizing mineral Calcite and the acid-generating minerals Alunite and Pyrite. The Pinal Schist analyses detected the presence of the acid-neutralizing mineral Calcite and the acid-generating minerals Alunite, Pyrite and Chalcopyrite.

3 3.1.4.5 Acid Base Accounting

Acid base accounting (ABA) is a geochemical analytical procedure that assesses the acid-generating potential (AGP) and acid-neutralizing potential (ANP) of the material being analyzed. AGP is a

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¹⁹ All samples, except for the Big Dome conglomerate were taken at the Ripsey Wash TSF site. The Big Dome conglomerate samples were taken at the Hackberry Gulch TSF site.

determination of acidity based upon the amount of pyritic sulfur present in the sample while ANP is a measure of the carbonate available to neutralize that acidity. Because it provides no information about the speed (or kinetic rate) with which acid generation or neutralization might proceed, ABA is recognized as "static testing" and used as a screening tool to assess whether kinetic testing is needed to further characterize the potential for acid generation.

ABA averages and ranges for the various tested materials are summarized in Table 3-14, ABA Values for Tailings and Alluvium/Borrow Materials.

		TAILINGS		RIPS	EY WASH	HACKBERRY GULCH	
	Diabase ⁽¹⁾	Pinal Schist ⁽²⁾	Composite ⁽³⁾	Alluvium ⁽⁴⁾	Borrow ⁽⁵⁾	Big Dome ⁽⁶⁾	1
Paste pH (sta	ndard units)						1
Average	8.3	8.1	8.2	8.3	8.5	8.3	
Range	8.13-8.41	7.85-8.30	8.21-8.25	8.3-8.38	7.92-9.79	8.13-8.40	1
Pyritic Sulfur	(%)						
Average	1.28	0.70	0.98	<0.01	0.11	<0.01	
Range	1.05-1.79	0.38-1.39	0.82-1.13	<0.01	<0.01-0.95	<0.01	7
Acid Neutraliz	ing Potential (AN	P) as TCaCO3/KT					
Average	39.0	29.7	36.5	11.3	36.7	29.6	
Range	27.0-52.0	12.2-54.6	34.2-38.8	9.2-13.3	13.3-91.8	17.6-41.6	
Acid Generatin	g Potential (AGP) as TCaCO ₃ /KT		_			
Average	40.0	21.8	30.5	<0.3	4.3_3.5	<0.3	20-4
Range	32.8-55.9	11.9-43.4	25.6-35.3	<0.3	<0.3-29.7	<0.3	
Net Neutralizin	g Potential (NNP) as TCaCO ₃ /KT					
Average	-1.0	+7.81	+6.1	+12.3	+ 38.5	+29.3	
Range	-18.9 to +6.0	-5.3 to +14.7	+3.5 to +8.6	+9.2 to +13.3	27.5 +13.3 to +62.1	+17.3 to +41.3	
cid Neutralizin	g Potential (ANP)	to Acid Generatir	g Potential (AGP) Ratio			
Average	1.0:1	1.4:1	1.2:1	37.5:1	81.3:1	98.7:1	
Range	0.6:1 to 1.3:1	0.7:1 to 2.2:1	1.1:1 to 1.3-1	30:1 to 44:1	3.1:1 to 181:1	58-1 to 138-1	
otes: (1) Seven i (2) Eight in (3) There v (4) Alluviun (5) Borrow conglor	ndividual tailings sa dividual tailings sar vere two composite n sample consisted material consisted nerate (tcg), two sa	mples derived from t nples derived from t tallings samples cof C of two samples of C of two samples of Q mples of Tertiary tu	the Diabase rock t the Pinal Schist roc mprised of 65% Dia Waternary alluvium waternary older gr ffaceous sandstone	ype were collected k type were collec abase and 35% Pin n (Qal). avels (Qog), two sample a (Trt), two sample	d and tested. ted and tested al Schist. amples of Tertiary co	obble abase (Pdb), and	
					11	-Alala an	Laff

Table 3-14, ABA Values for Tailings and Alluvium/Borrow Materials

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	SCHIST(5)	COMPOSITE ⁽⁶⁾	GULCH DECANT(7)	TAILINGS SLURRY WATER(7)	AAWQS	
7.5	7.8	7.8	6.0	9.0		
26	26	26	28	30		
26	26	26	28	14	-	
<6.0	<6.0	<6.0	<6	20	-	
<6.0	<6.0	<6.0	<6	<6.0		
467	567	560	560	570		_
37	45	40	180	195		
0.85	0.93	0.87	2.9	3.4	4	
19	30	26	35	32-21-1		
<1.0	<1.0	<1.0	2.9	5.8	10	1.500
<1.0	<1.0	<1.0	0.58	0.57	1	5
<2.0	<2.0	<2.0	3.5	5.9	10	12
34	48	39	47	60		
143	130	140	360	380		
1500	1800	1750	2100	2200		
2400	2800	2750	3500	3500		
	40.00	24				
<0.003	<:003	<0.006	<0.0021	0.0035	0.005	
<0.003	<0.006	<0.006	<0.0036	0.012	0.05	0.01
0.053	0.041	0.05	0.050	0.075	2	
<0.001	<0.001	<0.001	<0.0002	<0.001	0.004	
<0.001	<0.001	<0.001	<0.0005	<0.001	0.005	
<0.01	<0.01	<0.01	<0.0012	0.008	0.1	
<0.04	<0.04	<0.04	<0.0009	<0.04		
<0.01	<0.01	<0.01	<0.0062	0.028		
0.015	<>0.015	< >0.015	<0.0073	<0.015	0.05	
0.053	0.123	0.074	0.14	0.096	0.00	
<0.0002	<0.0002	<0.0002	<0.00003	<0.0005	0.002	
<0.01	<0.01	<0.01	<0.0014	<0.01	0.1	
0.0066	0.0067	0.0067	0.013	0.02	0.05	
<0.001	<0.001	<0.001	<0.001	<0.001	0.002	
<0.05	<0.05	<0.05	<0.0052	<0.05		
		the second of	1			
<0.5	<0.5	<0.5	0.6±0.2	1.1±0.2	5	
1.17±0.5	1.03±0.5	2.5±0.5	1.4±0.9	2.3±1.3	15	
2.7±0.6	3.5±0.6	1.5±0.6	1.2±0.3	2.1±0.5		
	7.6 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 37 0.85 19 <1.0	7.6 7.8 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 26 <6.0	7.6 7.8 7.8 26 26 26 26 26 26 26 26 26 26 26 26 26.0 <6.0	7.6 7.8 7.8 6.0 26 26 26 28 26 26 26 28 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <6.0 <467 567 560 560 37 45 40 180 0.85 0.93 0.87 2.9 19 30 26 35 <1.0 <1.0 <1.0 2.9 <1.0 <1.0 <1.0 0.58 <2.0 <2.0 <2.0 3.5 34 48 39 47 143 130 140 360 1500 1800 1750 2100 2400 2800 2750 3500 <0.003 <0.006	7.5 7.8 7.8 6.0 9.0 26 26 26 26 28 30 26 26 26 28 14 <6.0	7.6 7.8 7.8 6.0 9.0 26 26 26 26 26 26 26 28 14 <6.0 <6.0 <6.0 <6 20 <6.0 <6.0 <6.0 <6 20 <6.0 <6.0 <6.0 <6 <6.0 <6.0 <6.0 <6.0 <6 <6.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0

Table 3-15, Meteoric Water Mability Procedure Results for Tailings

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Analyte	Ripsey Wash Alluvium (Qal)	Ripsey Wash Borrow (Qog) ⁽⁴⁾	Ripsey Wash Borrow Material ⁽⁵⁾	AAWQS
General Inorganics (1)		1	Princer isit.	-
Alkalinity as CaCO3	71	99	34	
Biocarbonate Alkalinity as CaCO ₃	<6.0	99	34	
Carbonate Alkalinity as CaCO ₃	46.0	<6.0	<6.0	
Hydroxide Alkalinity as CaCO₃	<6.0	<6.0	<6.0	
Calcium	17	21	4.7	
Chloride	16	40	42.20	
Fluoride	2.5	2.9	0.6	4
Magnesium	2.2	2.8	<2.0	
Nitrate-Nitrite as N(2)	<2.0	<2.0	<2.0	10
Potassium	<2.0	<2.0	2.2	
Sodium	36	76	15	
Sulfate	28	61	8.2	
Total Dissolved Solids	180	320	67	***
Dissolved Metals ⁽¹⁾		1		
Antimony	<0.003	<0.003	0.004400	0.006
Arsenic	0.0101	0.0225	0.0056	0.05
Barium	0.11	0.119	0.13756	2
Beryllium	<0.001	<0.001	<0.001	0.004
Cadmium	<0.001	<0.001	<0.001	0.005
Chromium	<0.01	<0.01	<0.01	0.1
Cobalt	<0.04	<0.04	<0.04	
Copper	<0.01	0.012	<0.01	
Lead	<0.015	<0.015	<0.015	0.05
Manganese	<0.010	0.017	0.010	
Viercury	<0.0002	<0.0002	<0.0002	0.002
Nickel	<0.01	<0.01	<0.01	0.1
Selenium	<0.002	<0.002	0.0039 26	0.05
hallium	<0.001	<0.001	<0.001	0.002
linc	<0.05	<0.05	<0.05	
ladiochemicals ⁽³⁾			1.1.1	
ladium 226 + Radium 228	<0.5	<0.05	<0.05	5
iross Alpha	0.9±1.3	2.4±1.0	0.8±0.4	15
otal Uranium	3.7±0.7	1.7±0.5	4.8+0.5	

Table 3-16, Meteoric Water Mobility Procedure Results for Ripsey Wash Alluvium and Borrow Materials

Nitrate and nitrate were not analyzed separately because of laboratory holding times. (2)

 (3) Radiochemicals are reported in picoCurles per liter (pCi/l)
 (4) These results are the average of the results from two two Quaternary old gravels (Qog) samples. (5)

These results are the average from two samples of Tertiary tuffaceous sandstone (Trt), two samples of

Precambrian Diabase (Pdb), and two samples of Precambrian ruin granite (Prg).

Humidity Cell Testing 3.1.6.7

Humidity cell testing (HCT) using ASTM D5744-13 is the most widely used test to mimic natural oxidation reactions of the field setting. The HCT was designed to enhance or accelerate the rate of acid generation in sulfide-bearing materials. HCT better evaluate variables such as reaction rates and the availability of neutralizing alkalinity at mid-range pHs than ABA. Consequently, they are useful to determine whether materials having uncertain ABA acid generating status (ANP:AGP ratios between 3:1

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Analyto	Tailings ⁽¹⁾ Alluvium ⁽²⁾		um ⁽²⁾	Method D	etection Limit	AAQWS	
	Min	Max	Min	Max	Min	Max	
		0	Dissolved Metals				_
Antimony	0.00034	0.0052	0.00027	0.0064	<0.0021	<0.012	0.006
Arsenic	0.00083	0.062	0.0015	0.012	<0.0007	<0.012	0.05
Barium	0.0021	0.06	0.028	0.084	<0.01	<0.1	2
Beryllium	<0.0002	<0.001. ?	<0.0002	<0.001	<0.0002	20.001	0.004
Cadmium	0.00011	0.00054	0.00014	0.00022	<0.0001	<0.001	0.005
Chromium	0.0005	0.024	0.0075	0.011	<0.0005	<0.025	0.1
Cobalt	0.00047	0.0019	<0.0003	<0.04	<0.0003	<0.05	
Copper	0.00092	0.042	0.0012	0.015	<0.003	<0.01	
Lead	0.00012	0.015	0.00013	0.025	<0.0001	<0.015	0.05
Manganese	0.0016	0.42	0.0011	0.076	<0.0008	<0.1	
Mercury	<0.00003	<0.0002	<0.00003	<0.0002	<0.00002-	<0.0002	0.002
Nickel	0.00039	0.15	0.0014	0.022	<0.01	3 <0.01	0.1
Selenium	0.00026	0.016	0.012	0.015	<0.002	<0.008	0.05
Thallium	<0.0002	0.00024	<0.0002	<0.004	<0.0002	<0.004	0.002
Zinc	0.0055	0.031	0.0062	0.025	(<0.01)	<0.05	

Table 3-18, Dissolved Metals Humidity Cell Test (HCT) Results for Tailings and Alluvium Materials

 Tailings minimum and maximums were evaluated from standard and modified test samples D1/D2 Comp, P1/P2 Comp, D65/P35-1 Comp and D65/P35-2 Comp.

(2) Alluvium minimums and maximums were evaluated from standard and modified test samples Qal-1 and Qal-2.

Arsenic concentration changes over time are presented in **Graph 3-8**. There was one exceedance of the AAWQS that occurred at week one in a standard test composite tailings sample of 65% Diabase and 35% Pinal Schist, sample D65/P35-1 Comp. Arsenic followed a slight decreasing trend in concentration over time for all but one sample. Sample P1/P2 Comp mod, a modified test on a composite tailings sample of Pinal Schist had slightly variable concentrations. Other than the one exceedance concentrations of arsenic were less than the AAWQS in all tests.

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Constituents (in mg/I unless noted)	Min	Median	Mean	Max	Number measurable results ⁽¹⁾	Number of samples with non detect	Percent sample with measurable concentration	Period of record
Sulfate, Total	(7)	· · · · · · · · · · · · · · · · · · ·					1	
Nitrogen, mixed forms (NH3), (NH4), organic, (NO2) and (NO3), Dissolved	0.125	0.425	0.58	1.8	33	15	69%	1977-1998
Hardness, Ca-Mg ⁽⁸⁾	(7)							
Hardness, Ca-Mg, Total	(7)							
Total hardness SDWA NPDWR, mg/I CaCO3 ⁽⁹⁾	84.6	370	477	2600	1033	0	100%	1950-2006
Suspended sediment concentration (SSC), Suspended	5	417.5	11096	200000	326	0	100%	1960-2006

Notes:

 $(1) \ \ One half of the detection limit was used for calculations for constituents reported as less than detection.$

(2) Notdetected in any samples.

(3) Nodetection limit listed in data from 1974-1980. Not used for statistics.

(4) Notations in data suggesting "detected, not quantified" from 1974 - 1981. Not used for statistics

(5) No detection limit listed for data from 1975-1979. Notused for statistics

(6) No detection limit listed for data from 1975-1977. Notused for statistics

An additional two years of data have been collected by Arizona DEQ at their station designated 21ARIZ_WQX-MGGLR313.73, Gila River at Kelvin. Data from the period 2008 through 2009 are summarized in Table 3-21, Gila River Water Quality from Kelvin (AZ) Gaging Station (Arizona DEQ-21ARIZ-WQX-MGGLR313.73).

Table 3-21, Gila River Water Quality from Kelvin (AZ) Gaging Station (Arizona DEQ-21ARIZ-WQX-MGGLR313.73)

Constituents (in mg/l unless noted)	Min	Median	Mean	Мах	Number measurable results ⁽¹⁾	Number of samples with Non detect	Percent sample with measurable concentration	Period of record
Antimony, Dissolved(2)	0.0025	0.0025	0.0025	0.0025	0	22	0%	2008-2009
Arsenic, Dissolved(2)	0.0025	0.0025	0.0033	0.005	0	22	0%	2008-2009
Barium, Dissolved	(3)							
Beryllium, Dissolved(2)	0.00025	0.00025	0.00025	0.00025	0	22	0%	2008-2009
Cadmium, Dissolved(4)	0.00025	0.00025	2.23	(49)	1	21	5%	2008-2009
Chromium, Dissolved	(3)							
Chromium, total(2)	0.005	0.005	0.005	0.005	0	28	0%	2008-2009
Copper, Dissolved	0.0001	0.0038	0.0036	0.0056	16	17	48%	2008-2009
Lead, Dissolved	0.000025	0.000055	0.001038	0.0025	16	17	48%	2008-2009

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49 is calcium 345 there were no detectable levels of cadmium during this time.

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Comment Document #20 Part 4 of 4 (B)

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ephemeral washes. Ephemeral drainages were sorted into three classes of ephemeral water features based on the frequency of flow and the size of the drainage. A qualitative functional assessment was performed for these waters based on eleven functions (four hydrologic functions, two chemical functions, and five biotic functions. A qualitative approach was used because there are no approved quantitative methods available for use in this region.

Table 3-28, Waters of the U.S. - Ripsey Wash TSF Footprint, provides a summary of the classes of ephemeral waters located within the Ripsey Wash TSF footprint. In addition, the total score for each class is provided as determined in the functional assessment.

Table 3-28, Waters of the U.S. - Ripsey Wash TSF Footprint

Acres	Functional Score ⁽¹⁾
68.03	20
45.90	20
20.45	17
	Acres 68.03 45.90 20.45

_		0.000	
1 7	20-	20	7
4	.0	TU	1

3.5.1.1.3 Wetlands

No seeps or springs were found at the Ripsey Wash TSF site. No isolated open water or vegetated wetlands occur within Ripsey Wash where the TSF is proposed. The only wetlands in the vicinity of the project consist of adjacent wetlands along the Gila River outside of the project footprint.

3.5.1.1.4 Compensatory Mitigation Sites

Five mitigation sites have been identified for potential use for compensatory mitigation. These sites and the activities planned for each site are discussed in Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan. A functional assessment was conducted at each of these sites as part of the process for calculating mitigation for the loss of waters of the U.S. See Table 3-29, Summary of Functional Values for Each Mitigation Site.

Table 3-29, Summary of Functional Values for Each Mitigation Site

Mitigation Site	Functional Score ⁽¹⁾				
PZ Ranch Site A	36				
PZ Ranch Site B	28				
PZ Ranch Site C	32				
PZ Ranch Site D	34				
Site E (Preservation component)	48				
Site E (Restoration Component)	37				
Note: (1) Total functional scores ranges points maximum per function)	from 0 to 55 points (5				

3.5.1.2 Potential Waters of the U.S. - Hackberry Gulch TSF Site

No formal jurisdictional determination report has been made by the Corps for the Hackberry Gulch TSF site. Existing information and data along with some field verification were used to assess this site and estimate the extent of jurisdictional waters for the purpose of comparison with the Applicant's proposal (WestLand 2014e).

The field wetland delineations completed by WestLand followed approved Corps procedures (U. S. Army Corps of Engineers 1987, 2008). Other sources of information including data gathered during previous

Groundwater accounts for approximately 84% of the water supply demand in the Southeastern Arizona Groundwater Planning Area (ADWR, 2009).

3.6.1.1 Ripsey Wash TSF Site

The Ripsey Wash TSF site is located in the Donnelly Wash Groundwater Basin, which is a small 293 square mile basin in the northwestern portion of the Southeastern Arizona Groundwater Planning Area. See Figure 29, Groundwater Basins of the Southeastern Arizona Planning Area. There have been exceedances of drinking water standards in this basin for arsenic, fluoride and nitrates (ADWR, 2009).

The Gila River flows east to west through this basin and is drained by numerous washes, including Ripsey and Zelleweger washes. See Section 3.4, Surface Water. In general, groundwater flow follows surface water drainage patterns, flowing toward the Gila River. At the Ripsey Wash TSF site, the direction of groundwater movement is northward toward the Gila River, at a gradient of approximately 3.5 feet per 100 feet (or about 0.035 ft/ft). See Figure 30, Groundwater Hydrology - Ripsey Wash TSF.

Eleven monitoring wells and nineteen piezometers were used at the Ripsey Wash TSF site to evaluate the hydrogeological characteristics of the site and to monitor groundwater quantity and quality. See Figure 30, Groundwater Hydrology - Ripsey Wash TSF.

Monitoring well information, including depth to groundwater, is summarized in Table 3-31, Monitoring Well Information – Ripsey Wash TSF Site.

	98 (4 A)	MIN/1	1.4	MW-18		New a	6/196-4	-169.5	NW-6	100 T	ene e	44181-0	
	Total Well Depth (ft)	200	80	172	72	265	141	161	250	345	180	70	
	Depth to Bedrock (ft)	18	71	71	0	85	8.5	8	90	20	30	64	
Inci	Static Water Level (ft) ⁽²⁾	89	56	62	44	154	32	65	96	97	80	Dry	20-408
. working	Completio	bedroc	alluvia	bedroc	bedroc	bedroc	bedroc	bedroc	bedroc	bedroc	bedroc	alluvia-	1

Table 3-31, Monitoring Well Information – Ripsey Wash TSF Site (1)(2)

Information about the piezometers, including their specific purposes and depths to groundwater, is set forth in Table 3-32, Piezometer Information – Ripsey Wash TSF Site.

			The Result Commissions (1	(Transmission))
MW-1	Ruin Granite	1.5	1 37x10.5	12.6
MW-3	Lower Member of San Manuel and Ruin Granite	3.6	1.33x10-4	138.5
MW-4	Upper Member of San Manuel	0.25	6.72×10.7	17
MW-5	Ruin Granite	1.2	3.02x10-6	57
NW-6	Upper Member of San Manuel	1.8	1.19x10-6	5.7
NW-7	Ruin Granite	1.5	1.98x10-6	6.7
MW-8	Lower Member of San Manuel	1.4	3 50v10-6	7.2
(2)	See Figure 30, Groundwater Hydrology - Ripsey Was	h TSF, for monitoring well lo	cations.	
(2) (3)	See Figure 30, Groundwater Hydrology - Ripsey Wash Hydraulic conductivity is the ease with which water of permeability of the material and the amount of satur	h TSF, for monitoring well lo can move through rock pore ration.	cations. spaces and fractures, and depen	nds on the
(2) (3) (4)	See Figure 30, Groundwater Hydrology - Ripsey Wash Hydraulic conductivity is the ease with which water of permeability of the material and the amount of satur Transmissivity is the rate at which water is transmitted per 100 ft (or 0.035 ft/ft) for the Ripsey Wash TSF site	h TSF, for monitoring well lo can move through rock pore ration. ed through rock under a uni e.	cations. spaces and fractures, and deper t hydraulic gradient, which is app	nds on the proximately 3.5 ft
(2) (3) (4) (5)	See Figure 30, Groundwater Hydrology - Ripsey Wash Hydraulic conductivity is the ease with which water of permeability of the material and the amount of satur Transmissivity is the rate at which water is transmitted per 100 ft (or 0.035 ft/ft) for the Ripsey Wash TSF site Abbreviations:	h TSF, for monitoring well lo can move through rock pore ration. ed through rock under a unit e.	cations. spaces and fractures, and deper t hydraulic gradient, which is app	nds on the proximately 3.5 ft
(2) (3) (4) (5)	See Figure 30, Groundwater Hydrology - Ripsey Wasl Hydraulic conductivity is the ease with which water of permeability of the material and the amount of satur Transmissivity is the rate at which water is transmitted per 100 ft (or 0.035 ft/ft) for the Ripsey Wash TSF site Abbreviations: gpm = gallons per minute	h TSF, for monitoring well lo can move through rock pore ration. ed through rock under a unit e.	cations. spaces and fractures, and depen t hydraulic gradient, which is app	nds on the proximately 3.5 ft
(2) (3) (4) (5)	See Figure 30, Groundwater Hydrology - Ripsey Wash Hydraulic conductivity is the ease with which water of permeability of the material and the amount of satur Transmissivity is the rate at which water is transmitted per 100 ft (or 0.035 ft/ft) for the Ripsey Wash TSF site Abbreviations: gpm = gallons per minute cm/s = centimeters per second	h TSF, for monitoring well lo can move through rock pore ration. ed through rock under a unit e.	cations. spaces and fractures, and depen t hydraulic gradient, which is app	nds on the proximately 3.5 ft

Table 3-33, Pump Test Results - Ripsey Wash TSF (1)

The pumping test results for the bedrock wells were relatively consistent, with the exception of the results for MW-3, which was advanced through the Hackberry Fault zone. As explained in Section 3.3, Geology and Geochemistry, this fault zone underlies the western portion of the Ripsey Wash TSF and occurs along the contact between the Lower Member of the San Manuel Formation and the Ruin Granite.

Packer tests were conducted in borings within and surrounding the Ripsey Wash TSF site to obtain hydraulic conductivity values for the bedrock. The tests revealed relatively low hydraulic conductivity values in the overall (non-fractured) bedrock. See Table 3-34, Hydraulic Conductivities of Bedrock Units - Ripsey Wash TSF Site.

Table 3-34, Hydraulic Conductivities of Bedrock Units - Ripsey Wash TSF Site(1)(2)

Wolfsold Lune	Hyd	20-409		
an oracle range	Maximum	Minimum	Average	
Ruin granite	8.49 x 10 ⁻⁵	5.06 x 10 ⁻⁷	1.10 x 10 ⁻⁵	1
Diabase	6.06 x 10 ⁻⁷	1.01 x 10 ⁻⁷	3.45 x 105 - C	utside the min max
Lower Member San Manuel	3.87 x 10 ⁻⁴	2.20 x 10-7	3.60 x 10-5	vanae
Upper Member San Manuel	1.06 x 10 ⁻⁶	1.21 x 10 ⁻⁷	6.06 x 10 ⁻⁷	
Notes: Source: AMEC 2014. These hydraulic conductivity values Fault zone. Abbreviation: cm/s = centimeters per second	represent (non-fractured	l) bedrock and do not inclu	de values for Hackberry	

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Hackbarrent	Sull/Exect allos Condu		20-410
Maximum	Minimum	Average	
1.6 x 10 ⁻⁴	1.6 x 10 ⁻⁴	4.77 × 165	outside min max
4.23 x 10 ⁻⁴	5.83 x 10 ⁻⁶	3.94 x (0-4)	range
		L-791	hauld be an exponentia
	Maximum 1.6 x 10 ⁻⁴ 4.23 x 10 ⁻⁴	Maximum Minimum 1.6 x 10 ⁻⁴ 1.6 x 10 ⁴ 4.23 x 10 ⁻⁴ 5.83 x 10 ⁻⁶	Maximum Minimum Average 1.6 x 10 ⁴ 1.6 x 10 ⁴ 4.77 x 10 ⁵ 4.23 x 10 ⁴ 5.83 x 10 ⁻⁶ 3.94 x 10 ⁻⁴

Table 3-35, Hydraulic Conductivities of the Hackberry Fault Zone - Ripsey Wash TSF Site

Based on packer tests in piezometers P-16 and P-17, the Ripsey Fault zone, which underlies the eastern portion of the Ripsey Wash TSF site, has hydraulic conductivity values similar to those of the overall non-fractured bedrock. See Table 3-36, Hydraulic Conductivities of the Ripsey Fault Zone - Ripsey Wash TSF Site. These values indicate that the Ripsey Fault zone does not act as a preferential pathway for groundwater movement.

Table 3-36, Hydraulic Conductivities of the Ripsey Fault Zone - Ripsey Wash TSF Site

	1 B(Ne) F)	INT Phytometric Conductin	NIV (OR / GAR)
	Maximum	Minimum	Average
Ruin Granite	8.5 x 10 ⁻⁵	1.9 x 10 ⁻⁶	1.2 x 10 ⁻⁵

The bedrock underlying the Ripsey Wash TSF site is recharged by infiltration of precipitation, which is estimated to be 5 to 15% of annual precipitation. Infiltration from local washes contributes to recharge, but all washes in the Ripsey Wash TSF site are ephemeral, so infiltration is seasonal. Bedrock water is mostly under unconfined conditions and, as explained previously, can be affected by fault zones, in particular the Hackberry Fault zone.

Groundwater quality data from MW-1B though MW-8 at the Ripsey Wash TSF site are presented in Table 3-37, Groundwater Quality - Ripsey Wash TSF Site.

	militati	70.00-200		MW-1		MIN	MMAS			+AWOR+
Field Measuren	nents ⁽²⁾						1			
pН	7.1	8.0	7.6	6.2	6.8	6.5	7.2	6.6	74	
Electrical Conductivity	2730	1648	2772	1530	1030	1150	780	2880	590	
Temperature	76.3	77.4	77.4	84.2	79.6	87.3	90.9	85.6	89.7	
General morga	and to						50.5	05.0	03.7	
Alkalinity as CaCO3	260	50	200	180	230	280	230	90	170	
Biocarbonate Alkalinity as CaCO ₃	260	50	200	180	230	280	230	90	160	
Carbonate Alkalinity as CaCO3	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	10	
Hydroxide Alkalinity as CaCO3	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	
Calcium	260	79	77	180	87	130	94	270	12	
Chloride	260	120	140	180	30	120	40	60	25	
Fluoride	1.7	2.2	4.6	1.5	13	17	11	26	55	
Magnesium	36	8.8	12	29	45	27	2.2	130	7.5	4

Table 3-37, Groundwater Quality - Ripsey Wash TSF Site

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Allovial Hydrogeology and throundwater Quality at Hackberry Gulch 151 3.6.1.2.2

Similar to the Ripsey Wash TSF site, alluvial groundwater is found in the Quaternary sediments along the Gila River. Given the small areal extent and limited thicknesses of alluvial sediments within the Hackberry Gulch TSF site, it is expected that the volume of water contained in these sediments is low. The direction of flow in these deposits follows surface topography. Hydraulic conductivities of the Quaternary deposits typically range between 1 x 10⁻³ and 1 x 10⁻⁵ cm/sec (Freeze and Cherry, 1979).

3.6.1.2.3 Existing Groundwater Wells at Hackberry Gulch TSF Site

Based on ADWR data, there are 42 registered wells located within 0.5 miles of the Hackberry Gulch TSF and supporting infrastructure (site roads, diversion structures, pipelines, seepage trenches, reclaim ponds, etc.). See Table 3-40, Registered Wells within 0.5 Miles of Hackberry Gulch TSF Site.

(Ser) Mannable	-ADWR Registry (D)	Alteli thomas	Wall Type	salari Gaarin	1. Wind Logariton
HW-1	529319	Southwest Gas	Exploration	105	Down-gradient of TSF
		Corp			
HW-2	627462	Sanchez	Exempt	60	TSF Footprint
HW-3	641992	Guilliams	Exempt	54	TSF Footprint
HW-4	642519	Wixom	Exempt	65	Down-gradient of TSF
* HW-5	645205	Taylor	Exempt	52	TSF-Footprint
₩ HW-6	803149	McNees	Exempt	60	TSE Feetprint
HW-7	647746	Hoyt	Exempt	35	Down-gradient of TSF
HW-8	646209	Henley	Exempt	55	Down-gradient of TSF
HW-9	646210	Payton	Exempt	56	Down-gradient of TSF
😽 HW-10	649441	London	Exempt	52	TSE-Enotoriet
HW-11	646286	Leyba	Exempt	40	Down-gradient of TSF
HW-12	648733	Hatfield	Exempt	32	ISEEnothrint
HW-13	646769	Fraley	Exempt	35	Down-gradient of TSE
HW-14	646770	Baca	Exempt	47	Down-gradient of TSE
HW-15	649234	Hayes	Exempt	32	CTSE-Footowint
HW-16	646462	Sisemore	Exempt	230	-TSF-Footprint
HW-17	809560	Pfahl	Exempt	420	Down-gradient of TSE
HW-18	809596	Stein	Exempt	85	Down-gradient of TSE
HW-19	526274	Asarco	Exploration	NR	Down-gradient of TSE
HW-20	527945	Asarco	Exploration	NR	Down-gradient of TSE
HW-21	529600	Asarco	Monitor	NR	Down-gradient of TSF
HW-22	529601	Asarco	Monitor	NR	Down-gradient of TSF
HW-23	529602	Asarco	Monitor	NR	TSE Footprint
HW-24	531832	Asarco	Monitor	300	Down-gradient of TSE
HW-25	533677	Asarco	Monitor	160	Down-gradient of TSF
HW-26	533678	Asarco	Monitor	200	TSE Footprint
HW-27	535160	Asarco	Monitor	NR	Down-pradient of TSE
HW-28	534346	Asarco	Monitor	205	TSE Footprint
HW-29	549782	Asarco	Monitor	83	TSF Footprint
HW-30	549783	Asarco	Monitor	23	TSE Ecotorint
HW-31	915124	Asarco	Monitor	300	Down-gradient of TCC
HW-32	915125	Asarco	Monitor	258	Down-gradient of TSF
HW-33	915126	Asarco	Monitor	40	TSE Ecotoriot
HW-34	915365	Asarco	Monitor	NIP	TSE Footprint
HW-35	915366	Asarco	Monitor	NR	TSE Footprint
HW-36	915367	Asarco	Monitor	NR	TSE Footprint

Table 3-40, Registered Wells within 0.5 Miles of Hackberry Gulch TSF Site

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3-71 * These & wells are located in Kelvin Townsite on the Riverside Community per ADWR Emaged Ricords of the wells. No quarter section description was given to ADWR for these wells only hot Ros. w/in the Townsite/Comm.

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(VIII) Monogan	And in case of the local diversion of the loc				-	
HW-37	915368	Asarco	Monitor	NID		
HW-38	219671	Morris Land &	Exempt	500	TSF Footprint TSF Footprint	
H\M/_39	E40P1D	Cattle			UP-gradient of	TSF
HW-40	540818	Tucker	Exempt	320	Down-gradient of TSF	
LIM/ 41	543984	Weeks	Exempt	365	Down-gradient of TSF	10- A:
HW-41	549930	O'Hara	Exempt	360	Down-gradient of TSF	120-46
rivv-42	63/740	Santos Ranch	Exempt	565	Down-gradient of TSF	
(1) Source: Ari (2) Abbreviatio	zona Department of Wate	r Resources (ADWR) (201	4). edby more is	lient of Tsi Land & Cettle	Fon ASARCO Isno	146
Southwest Gas C Of the twenty the ootprint of the SF. Of the dow completed in be	Company and regist Company and regist Pree wells not owne Hackberry Gulch TS n-gradient wells, se drock.	ic and/or livestock ered for exploration of by Asarco, mmu F and fourteen are even are completee	use of the groun on. are located within a located down-g d in Gila River Qu	ndwater. One we n or immediatel radient of the H raternary deposi	all is registered to y adjacent to the ackberry Gulch its, and seven are	20-41-
.6.2 ENVIRO	MENTAL CONSEQ	UENCES			5	_
.6.2.1 Effects o	f the No Action Alt	ernative				
Inder the no act onstructed. Ran In the area of the roundwater.	ion alternative, nei ach management a proposed TSF site:	ther the Ripsey Wa ctivities (livestock p s, but these activit	ash nor the Hack grazing) and disp ies would not hav	berry Gulch TSF ersed recreatior ve any significan	would be n would continue t effect on	
.6.2.2 Effects o	f the Ripsey Wash	TSF Alternative				
.6.2.2.1 Poten	tial Impacts to Gro	undwater Hydrold	ogy			
he Ripsey Wash he basin (or valle nd containment eepage trench w valley-fill" natur roundwater see	TSF is essentially a ey) that is the lower for groundwater (p rithin Ripsey Wash e of the Ripsey Was page from the tailir	"valley-fill" facility r watershed of Rip. predominantly allu immediately down sh lessens the num ogs facility.	where most of t sey Wash. For th vial groundwater -gradient of the t ber of control an	the tailings woul his type of facility r) can be concen tailings impound hd containment	d be contained in y, the controls trated in the Iment. This points for	
onstruction and the Quaternary ast Wash would uaternary depos use. This activit ashes. The loss the watershed cation, the loss	operation of the Ri deposits within the be designed and co sits beneath the TSI would eliminate of recharge would area of the Gila Riv	psey Wash TSF wo e TSF. The down-g onstructed to capto F, and this water w recharge to the Gil be proportional to er up-drainage of l	uld decrease and gradient seepage ire groundwater ould be returned a River alluvium the surface area ts confluence wit	d eventually elim trenches in Rip: movement thro to the Ray Con from the two af covered by the th Zelleweger W	ninate recharge sey Wash and the ugh the centrator for orementioned TSF as compared 'ash. At this	

3.7.2.2 Effects of the Ripsey Wash TSF Alternative

Although mining has historically occurred in this region, the construction and operation of the Ripsey Wash TSF facility would introduce a noticeable land use change within the immediate area. On a more regional basis, a new TSF at the Ray Mine would not change other land uses in Pinal County.

Acreage disturbance for the Ripsey Wash TSF are set forth in Table 2-1, Summary of Ripsey Wash TSF.

The construction and operation of TSF sites would cause permanent impacts to rangeland, wildlife habitat, and dispersed recreation on land uses within the footprint of the Ripsey Wash TSF. Available livestock forage would be lost in the grazing allotment areas that would be affected by the construction and operation of the TSF. Site access restrictions would occur during this time frame, primarily because of land ownership patterns; it is expected that only sparse vegetation would reemerge on the area where tailings are placed, and not to the conditions that currently exist. The closed tailings site would likely never have the species composition or density of vegetation that exists today.

Post-project land use of the area where tailings are placed would be quite different from pre-project land uses, and the area, being covered with rock material, would lack long-term value for wildlife habitat, dispersed recreation and livestock grazing. Placement of rock material over the tailings facility would be employed for site stability.

A 6.8-mile segment of the existing Arizona Trail would be lost, but plans have been made to replace this segment of trail with a 6.4-mile segment to the east of the proposed Ripsey Wash TSF site. The existing trailhead on the Florence-Kelvin Highway would also be replaced with a new trailhead near the intersection of Riverside Road and the Florence-Kelvin highway. See Figure 41, Proposed Trailhead & Parking.

Two BLM grazing allotments (the A Diamond and Rafter Six allotments) would be affected by the Ripsey Wash TSF. See Table 3-42, Grazing Allotment Impact - Ripsey Wash TSF.

Allotment Name and BLM Designation Number	Estimated Allotment Area (acres)	Allotment Areas Physically Disturbed by Ripsey Wash TSF	Percentage of Allotment Directly Disturbed	20-415
A Diamond (06120)	20,779	2 425	11	11 790
Rafter Six (06067)	26.961	140	10%	101110

Table 3-42, Grazing Allotment Impact - Ripsey Wash TSF

Asarco plans to purchase acreage for the Ripsey Wash TSF from the ASLD. This would mean that land would be transferred from state of Arizona ownership to private ownership. Arizona would benefit financially from the sale of this land.

The relocation of the Arizona Trail and the fencing and general upgrade (seeding and removal of tamarisk) of the riparian habitat within the proposed mitigation areas would not create any noticeable land use change in the areas of the relocated trail and the mitigation sites (see Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan).

No indirect effects are expected.

3.7.2.3 Effects of the Hackberry Gulch TSF Alternative

The land-use effects of the Hackberry Gulch TSF would essentially be the same as described in Section 3.7.2.2, Effects of the Ripsey Wash TSF Alternative. Acreage disturbance for the Hackberry Gulch TSF are set forth in Table 2-2, Summary of Hackberry Gulch TSF.

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Allotment Name and BLM Designation Number	Estimated Allotment Area (acres)	Allotment Areas Physically Disturbed by Ripsey Wash TSF	Percentage of Allotment Directly Disturbed		
Rafter Six (06067)	26 961	(acres)	the second se		
Trov (06016)	5 210	2,267	8.4%		
	5,319	23	224% 0.4		

Table 3-43, Grazing Allotment Impact - Hackberry Gulch TSF

Asarco is currently working with the BLM on a land exchange that would involve the BLM-administered lands, including the site proposed for the Hackberry Gulch TSF. The work on this land exchange has been underway since 1994. Transfer of BLM-administered land to Asarco would mean that the federal land would become private ownership. The BLM would benefit from this land exchange by receiving other acreages in the state of Arizona deemed valuable for scenic, wildlife, and recreation purposes. See Appendix D, Regional Activity.

The fencing and general upgrade (seeding and removal of tamarisk) of the riparian habitat within the proposed mitigation areas would not create any noticeable land use change in the areas of the mitigation sites (see Appendix J, Clean Water Act Section 404 Conceptual Mitigation Plan).

3.8 NOISE

Identify noise impacts. Areas of concern include: (1) level of noise from construction traffic and development activities; (2) level of noise during operations; (3) compliance with federal, state and local noise standards; (4) disruptions caused by noise to recreational users and wildlife.

3.8.1 AFFECTED ENVIRONMENT

3.8.1.1 General Overview

Noise is defined as an unwanted, disturbing sound. The impact of a noise source depends on the levels and characteristics of background sounds, as well of the characteristics of the actual sound. Sound is transmitted through the atmosphere as low-intensity pressure waves. People can detect sounds differently and can respond to a wide range of sound intensities and frequencies.

The logarithmic decibel (dB) scale is used to indicate the intensity of sound. To measure sound on a scale that approximates the way people hear, more emphasis must be placed on those sound frequencies (or pitch) that people hear. EPA recommends the use of "A-weighted" sound pressure levels, expressed as A-weighted decibels of dBA, for analyzing community noise issues.

The threshold of human hearing is set at 0 dBA. Quiet whispers and birdcalls produce about 25 to 40 dBA. Emergency vehicles can reach as high as 100 dBA, while if standing close to a jet airplane the sound may reach 140 dBA.

The range of everyday sounds is shown on Table 3-44, Typical Range of Common Sounds.

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activities have been performed, in part, in coordination and consultation with both the ASLD and the Arizona SHPO.

Data recovery activities had not been completed when Asarco submitted their 404 permit application, and they were suspended at the Corps' request once the application was submitted and Section 106 requirements were triggered within the permit area.

3.10.1.2 Permit Area

As described above, the Corps established a permit area for the proposed Ripsey Wash TSF alternative that identifies a physical area for evaluation of direct and indirect effects to historic properties. See **Figure 53, Ripsey Wash Area of Potential Effect**. The SHPO was also consulted regarding the permit area established by the Corps. The permit area has been determined to consist of the entire physical footprint associated with the Ripsey Wash TSF and associated infrastructure and facilities. The APE includes approximately a 100-foot-wide buffer from the edges of the project footprint, and extends along affected washes downstream of this TSF to their confluence with the Gila River. In addition, the Corps has included the realigned segment of the ANST and compensatory mitigation sites within the permit area because of their direct connection to the project.

A permit area was not established for the Hackberry Gulch TSF Alternative; however, an analysis area was developed that included the alternative footprint for this TSF and its supporting infrastructure.

3.10.1.3 Cultural Resource Investigations

3.10.1.3.1 Ripsey Wash TSF Site

WestLand (Asarco's consultant) has conducted cultural resource surveys both in support of Asarco's acquisition of State lands for the proposed project and for the larger permit area associated with the 404 permit application. WestLand prepared a summary document that details the previous investigations that have occurred within the permit area and provides a summary of the status of each archaeological site (Jerla 2013).

Table 3-49, Previous Cultural Resource Survey Projects within the Ripsey Wash TSF Permit Area, summarizes the previous cultural resources survey projects within the permit area. One additional survey project for the mitigation sites is pending preparation of the survey report. 7 Updale according

Agency No	D.	Company	Project Name	Project Tunn	
1963-8.ASM	1	ASM Cultural Resources Management Division	Buttes Dam Site Survey	Class III Survey	120-417
1973-2.ASM	2	ASM Cultural Resources Management Division	Buttes Reservoir Survey	Class III Survey	
1975-5.ASM	3	ASM Cultural Resources Management Division	Buttes Reservoir Phase II	Phase II Data Recovery	
1990-178.ASM	4	SWCA Inc.	ASARCO Tailings Pipeline	Class III Survey	

Table 3-49, Previous Cultural Resource Survey Projects within the Ripsey Wash TSF Permit Area 🛥

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Table 3-49, cont. Ray Mine Tailings Storage Facility

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wgency w	0.	Company	Project Name	Project Type
1993-369.ASM	5	Unknown	Unknown	Class III
1995-127.ASM	6	Archaeological Research Services, Inc.	State Route 177/Kearny-Ray	Class III Survey
1997-59.ASM	7	AZTLAN	Arizona Trail Survey	Class III
1997-416.ASM	8	SWCA Inc.	Mineral Creek Survey	Class III
1998-213.ASM	9	Dames and Moore	Arizona Trail Archaeological Survey	Class III
2003- 1172.ASM	10	Gila River Indian Community, CRMP	SCIP Survey of Power Line near Riverside	Class III
2003- 1178.ASM	11	Gila River Indian Community, CRMP	SCIP Survey of Coolidge-Hayden 69-kV	Class III
2003- 1201.ASM	12	Gila River Indian Community, CRMP	SCIP Historical Assessment of Power Line in Vicinity of Riverside	Class III Survey
2007-19.ASM	13	Logan Simpson Design,-Inc.	AZ Trail White Canyon Passage	Class III Survey
WRI 203.20	14	WestLand	ASARCO Tailings Dam Class	Class III Survey
WRI 203.20	15	WestLand	Archaeological Data Recovery and NRHP Eligibility Evaluation Plan for 28 Sites on Arizona State Trust Land in the Northern Tortilla Mountains	Data Recovery and Eligibility Plan
WRI 203.23	16	WestLand	Ripsey Wash Drill Pads	Class III Survey
WRI 203.25	17	WestLand	Ripsey Wash Pipeline Survey	Class III
5WCA 6369- 187	18	SWCA Inc.	Phases I and II Data Recovery Plan for Portion of AZ V:13:33(ASM)	Phases I and II Data Recovery Plan
WCA 6369- .87	19	SWCA Inc.	Living along the Gila River: Results of Archaeological Investigations at AZ V:13:33(ASM)	Phases I and II Data Recovery
WCA 6369- 76	20	SWCA Inc.	A Cultural Resources Survey of Approx. 8 Acres along Kelvin Bridge	Class III Survey
SM ACC 1111	21	Donald Tuohy	Arehaeological Survey and Excavation in theGila Biver Channel between Earven Dam Site and Buttes Reservoir Site, Arizona	Phase II Data Recovery
VRI 203.25	22	WestLand	Cultural Resources Inventory in Support of Projects for the Ray Mine near Kelvin, Pinal County, Arizona	Class III Survey



This section provides an overview the socioeconomic conditions of Pinal County, with particular focus on the communities of Kearny, Superior, Gold Canyon, Hayden, and Winkelman. Other communities in the vicinity of the TSF sites are Kelvin and Riverside, although little to no data are available for these small communities. To aid comparison of the nearby communities, statistics from both the state of Arizona and the entire Pinal County are included.

3.11.1.1 Population and Demographics

As of 2010 census, the population of Pinal County was 375,770 people, making it the third most populous county in Arizona. At the 2000 census, the population of Pinal County was 179,727 people. Census populations for 1990 through 2010 for Arizona, Pinal County, Kearny and other nearby communities are set forth in the Table 3-52, Historic Population.

Place	1990	2000	% Change 1990-2000	2010	% Change 2000-2010	[20.1
Arizona	3,665,228	5,130,632	40%	6.392.017	250/	120-71
Pinal County	116,379	179,727	54%	375 770	100%	
Kearny	2,262	2,249	(-1%)	1.050	109%	wit
Superior	3,501	3.254	(-7%)	2,550	(-13%)	DISPOS
Gold Canyon	NA	6.029	(-776) NA	2,837	(-13%)	Troport
Hayden	909	802	(2011)	10,159	((67%))	-10 me
Winkelman	676	632	(-2%)	662	(-26%)	apport
Source: U.S. Departmen	t of Commence O	443	(-34%)	353	(-20%)	P

Table 3-52, Historic Population

For the ten year period between 2000 and 2010, Pinal County population increased by nearly 110%. The majority of this population increase is located in the western portion of the county and results from suburban growth from the greater Phoenix area and northward from the Tucson area.

However, over that same 20 year period, the populations of the communities of Kearny, Superior, Hayden and Winkelman have decreased. This changes tend to parallel changes in employment activity, individuals leaving the smaller towns to relocate in other areas, and new employees (particularly at Ray Mine) deciding to live closer to the Phoenix metropolitan area.

Arizona and Pinal County expect population growth into the future, with projected population growth in Pinal County predicted to be more than double the overall statewide rate. See Table 3-53, Population Trends. Table 3-53, Population Trends

instant restrict						
2010 x 1000)	2020 (x 1000)	2030 (x 1000)	2040 (x 1000)	2050 (x 1000)	Total Growth (2010-2050)	Average Annual Growth (2010-2050)
6,392	7,225 - 7,698	8,156 - 9,419	8,997 - 11,236	9,708 - 13,164	206%	5.2%
376	465 - 517	596 - 752	767 - 1,076	962 - 1,480	439%	11.0%

Pinal County Source:

Arizona

Place

U.S. Department of Commerce, Bureau of the Census (1)

Arizona Department of Administration, Office of Employment and Population Statistics: Arizona State and County Population Projections, (2) 2012-2050: Methodology Report, December 7, 2012.

The demographic characteristics for the area are set forth in Table 3-54, General Demographic Characteristics: 2010.

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Table 3-55,	Housing Status: 2010	
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Housing Status	Arizona	Pinal County	Kearny	Superior	Gold Canyon	Hayden	Winkelman
Total Housing Units	2,844,52	159,222	878	1,465	6,874	301	163
Occupied	2,380,99	125,590	756	1,103	4,888	236	136
Percent Occupied	83.7%	78.9%	86.1%	75.3%	71 1%	78 /0/	02 40/
Owner Occupied	1,571,68	95,629	616	797	4,358	190	99
Population in Owner-Occupied	4,134,11	254,864	1,589	2,079	8.807	514	250
Average Household Size of Owner- Occupied	2.63	2.67	2.58	2.61	2.02	2.71	2.53
Renter-Occupied	809.303	29.961	140	206	E20		
Population in Renter-Occupied	2,118,51	94,661	361	758	1,352	148	103
Average Household Size of Renter- Occupied	2.62	3.16	2.58	2.48	2.55	3.22	2.78
Vacant	463,536	33,632	122	362	1.086	CC .	27
Vacant for Rent	120,490	4.887	23	79	122	20	21
Vacant for Sale	64,407	5,660	23	37	202		8
Vacant for Seasonal or recreational use	184,327	15,499	26	53	1 487	6	2
Homeowner Vacancy Rate (%)	3.9%	5.5%	3.6%	4.4%	1,40/	0 50/	3
Rental Vacancy Rate (%)	12.9%	13.9%	14.1%	20.3%	18.3%	6.1%	2.0%

Kearny has a higher occupancy percentage than Arizona and Pinal County, but the towns of Superior and Gold Canyon report lower occupancy percentages than the state or county.

Average rental vacancy rates are higher in Kearny, Superior, Gold Canyon and Winkelman than the Arizona and Pinal County averages, but the average rental vacancy rate in Hayden is less than half of the statewide and county averages.

3.11.1.3 Employment

The percentage of the population over 16 not in the labor force is higher in Kearny, Superior, Gold Canyon, Hayden and Winkelman that for the state of Arizona (38.6% not in the labor force). Statewide unemployment rate is 6%. Kearny has the lowest unemployment rate at 2.7%. See Table 3-56, Employment (2008-2012).

Subject	Arizona	Pinal County	Kearny	Superior	Gold Canyon	Hayden	Winkelman
EMPLOYMENT			1			-	
Population 16 Ye	ears and Older						
Total	4,967,615	281,615	1.878	2.364	9 430	601	201
Percentage	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.00/
Employed Civilia	n Labor Force	+400- likely 131	,612		100.070	100.076	100.0%
Total	2,733,537	1131512	907	999	3 754	287	126
Percentage	55.0%	46.7%	48.3%	47.3%	39.8%	17 90/	24.0%
Armed Forces					55.070	47.070	54.9%
Total	19,750	348	0	0	0.1	01	

Table 3-56, Employment (2008-2012)(1)

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Subject	Arizona	Pinal County	Kearny	Superior	Gold Canyon	Hayden	Winkelman
EMPLOYMENT					1		
Percentage	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Unemployed			1				
Total	296,132	17.028	51	106	250	22	
Percentage	6.0%	6.0%	2.7%	A 5%	2 90/	52	22
Not in Labor For	ce		2.770	4.576	5.6%	5.5%	1.8%
Total	1,918,196	132,727	920	1 250	- AE 120	202	0.07
Percentage	38.6%	47.1%	49.0%	E2 20/	545 5,130	. 282	20/
INDUSTRY		111210	43.070	33.370	50,4%	46.9%	57.3%
Agriculture, Fore	estry and Mining						
Percentage	1.4%	3.0%	22.00/	10.00/	1 1 001		
Construction		5.576	52.970	10.8%	1.0%	36.2%	40.5%
Percentage	7.2%	7 5%	2 00/	C 10/	0.000		
Manufacturing	11210	7.576	2.5%	0.1%	8.2%	4.2%	11.9%
Percentage	7 5%	10.1%	4 10/	4 704			
Wholesale Trade	7.570	10.1%	4.1%	1.2%	6.7%	12.2%	4.0%
Percentage	2 5%	2.2%	2.00/	0.001			
Retail Trade	2.370	2.270	2.0%	0.3%	4.2%	0.0%	0.0%
Parcentage	12 20/	11 50/	6 mm 1				
Franchastation a	12.570	11.5%	6.2%	9.8%	11.0%	3.1%	0.0%
Porcontage	nu warenousing	, and Utilities					
Fercentage	4.9%	5.0%	2.6%	4.4%	2.8%	0.0%	0.0%
Demation	1.001						
Percentage	1.9%	2.0%	2.2%	3.2%	3.4%	0.0%	0.0%
-Inance , Insuran	ice and Real Esta	te					
Percentage	8.0%	6.6%	3.2%	2.6%	11.3%	0.0%	2.4%
Professional, Scie	entific, Managem	ent and Administrativ	e				
Percentage	11.4%	8.7%	4.9%	7.7%	13.1%	9.1%	3.2%
ducational Servi	ices and Health C	are			State of the second		
Percentage	21.8%	20.4%	16.1%	18.9%	20.2%	13.6%	24.6%
Arts, Entertainmo	ent, Recreation,	Accommodation and F	ood Services				
Percentage	10.5%	8.8%	8.9%	6.9%	5.8%	0.0%	0.0%
Other Services, E	xcept Public Adm	inistration					
Percentage	4.9%	4.1%	2.0%	5.9%	6.0%	4.9%	0.0%
Public Administra	ation						0.070
Percentage	5.7%	9.2%	12.1%	16.1%	6.2%	16.7%	13 5%
CLASS OF WORKE	RS						20.070
rivate Wage and	Salary Workers						
Percentage	78.4%	73.8%	73.6%	59.6%	73.2%	68.6%	64 3%
iovernment Wor	kers	and the second se			10.274	00.070]	04.576
Percentage	15.4%	20.9%	24.5%	34.1%	12.4%	30.3%	22.20/
elf-Employed in	Own Not Incorpo	orated Business Worke	rs			50.578	55.570
Percentage	6.1%	5.1%	1.9%	4.3%	14.2%	1.0%	2.4%
npaid Family W	orkers						
Percentage	0.1%	0.2%	0.0%	2.00/	0.200	0.000	
ource: U.S. Departr	ment of Commerce,	Bureau of the Census, 20	08-2012 America	n Community Serv	0.2%	0.0%	0.0%

(1) Employment rates are averaged over a 5-year period from 2008-2012.

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cumulative impact assessment for the Ripsey Wash or the Hackberry Gulch TSF alternatives. See Table 4-2, Relevant Activities and Resources Evaluated for Cumulative Impacts.

Activity ⁽¹⁾	(yes or no)	General Basis of Selection for Evaluation	Resources Evaluated ⁽²⁾
Exploration, Mining and Related	Industrial A	ctivity	
Ray Mine	Yes	Mining expected to continue into the future (50+ years).	1-18
Resolution Copper Project	Resolution Copper Project Yes This proposed mining project has estimated life of 60+ years.		1, 2, 5, 8, 12,
Hayden Concentrator	Yes	The Hayden concentrator will continue to operate into the future.	5
Hayden Smelter	Yes	The smelter is projected to operate into the future.	1
Transportation and Utilities			
U.S. Route 60	Yes	This highway will continue to be used into the future.	9, 14
State Highway 77	No	Outside the area studied for transportation.	None
State Highway 177	Yes	This highway will continue to be used into the future.	9, 14
Florence Kelvin Highway	Yes	This highway will continue to be used into the future.	9, 14
Florence Kelvin Bridge over the Gila River	Yes	This new bridge is scheduled for construction in the near future and will replace an existing bridge that will remain as part of Arizona Trail.	9, 14
Copper Basin Railroad	Yes This railroad will continue to operate into the future.		8, 9, 14
SCIP 69 kV Electric Line Yes A portic Hackber		A portion of the powerline to be re-routed if the Ripsey wash TSF is constructed. No alignment change under Hackberry Gulch TSF.	8
APS 500 kV Electric Line	No	Outside the areas studied for visual resources, recreation and noise.	None
Recreation and Wilderness			
Dispersed Recreation	Yes	Dispersed recreation to continue into the future.	1,2, 5, 7
Arizona National Scenic Trail	Yes	Recreationalists to continue to use this trail into the future.	3, 8, 15, 16
BOYCE Bryce Thompson Arboretum	No	This facility is outside of area studied for recreation.	None
Superstition Wilderness	No	Outside of area where air quality, visual and recreation effects expected.	None
White Canyon Wilderness	Yes	Recreationists will continue to use this nearby wilderness into the future.	15,16
Needle's Eye Wilderness No Outside of effects ex		Outside of area where air quality, visual and recreation effects expected.	None
Aravaipa Canyon Wilderness	No	Outside of area where air quality, visual and recreation effects expected.	None
ommunities			
Apache Junction	No	Outside economic area of influence for TSF alternatives.	None
Gold Canyon	Yes	Within economic area of influence for TSF alternatives.	8, 12
Hayden	Yes	Within economic area of influence for TSF alternatives	8.12

Table 4-2, Relevant Activities and Resources Evaluated for Cumulative Impacts

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Appendix C

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Table 1, Potential Permits, Approvals, and Other	Responsibilities (Coordination and Consultation)
for the Ray Mine Tailings Storage Facility	, construction, and construction,

FEDERAL GOVERNMENT	Permits and Approvals	Miscellaneous Involvement and Responsibilities (Coordination and Consultation)	
U.S. Army Corps of Engineers	- Section 404 Permit (Dredge & Fill)	- NEPA Compliance – Lead Agency - 404(b)(1) Compliance	1
Environmental Protection Agency	- None	 NEPA Compliance – Cooperating Agency Clean Water Act – Section 404 oversight 	
Bureau of Land Management ⁽¹⁾	Right-of-way approval for pipelines Right-of-way approval for Arizona Trail reroute on BLM property <u>Mining/reclamation plan for mineral</u> estate-sale- Approval of Of	- NEPA Compliance - Cooperating Agency Sposition of Sale	20-424 able
San Carlos Irrigation Project ⁽²⁾	- Powerline realignment easement approval	- NEPA Compliance - Cooperating Agency	mineral
Forest Service ⁽³⁾	- None	- Coordination on Arizona Trail relocation	
U.S. Fish & Wildlife Service	- None	- Threatened and Endangered Species Consultation (Section 7 Consultation). This could include a Biological Opinion.	
Mine Safety and Health Administration	 Mine Identification Number Legal Identity Report and Ground Control Plan 	- Miner Safety and Training Plans	
STATE OF ARIZONA	Permits and Approvals	Miscellaneous Involvement and Responsibilities (Coordination and Consultation)	
Department of Environment Quality	 Aquifer Protection Permit, including: Closure Financial Assurance Facility Closure Plan Strate Water Quality Certification (Corps 404 permit) Industrial Stormwater Permit 	Ynformal consultation on NEPA work	20-425
State Mine Inspector	- Reclamation Plan and Financial Assurance	- None	
Department of Water Resources	- Dam Safety Permit, if needed - Water Rights, if needed	- None	
Department of Game and Fish	- None	Input related to wildlife resources	
State Historic Preservation Office (SHPO)	- Cultural (SHPO) clearance	- Section 106 consultation	
Department of State Lands	- State Land Sale (Ripsey Wash Area)	 Consultation with SHPO Informal consultation on NEPA work 	

COMMENT DOCUMENT #21 LOWER SAN PEDRO WATERSHED ALLIANCE (PETER ELSE, CHAIR)

Comment Document #21



Mr. Michael Langley Senior Project Manager U.S. Army Corps of Engineers, Arizona-Nevada Office 3636 N. Central Avenue, Suite 900 Phoenix, Arizona 85012-1939

Subject: Arizona File No. SPL-2011-01005-MWL

March 8, 2016

Dear Mr. Langley:

The Lower San Pedro Watershed Alliance (LSPWA) appreciates the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Ray Mine Tailings Storage Facility, Pinal County, Arizona. The Mission of the LSPWA is to unite conservation-minded individuals, groups, and agencies in the lower San Pedro region to protect a threatened riparian ecosystem and its supporting watershed. The LSPWA promotes conservation initiatives and educational programs, fosters a resilient local economy, and resists proposals for large scale or inappropriate development that would cause ecosystem fragmentation, degrade wildlife habitat, devalue conservation investments, and threaten sustainable rural lifestyles. The LSPWA has 194 members, 95 of whom are landowners in the lower San Pedro region, representing over 9,200 acres in private land and over 70,000 acres in leased lands associated with three ranches.

Assuming that you have eliminated siting alternatives that are truly not practicable, as indicated in Appendix B of the DEIS, our primary concern is with the inadequacy of the mitigation component associated a site that is significantly less disturbed and more ecologically functional than some of the alternatives. Please see our attached comments. If you have any questions concerning our comments, please contact Ms. Diane Laush at <u>dlaush@cox.net</u>.

Sincerely,

P. 2. Else

Peter Else Chair, Lower San Pedro Watershed Alliance P.O. Box 576 Mammoth, AZ 85618 Phone: 520-487-1903
RAY MINE DEIS COMMENTS

The Corps of Engineer's (COE) "Jurisdictional Determination" is based on the definition of the ordinary high mark. Xeroriparian systems, such as those found at Ripsey Wash, are typically excluded as a jurisdictional area when the COE completes a Jurisdictional Determination. We believe that in the desert southwest xeroriparian habitat has important aquatic functions that should be protected by the Clean Water Act. However, the COE jurisdictional area typically only considers the dry, unvegetated wash bottoms on ephemeral drainages and not the adjacent xeroriparian vegetation. Since the xeroriparian vegetation occurs outside of the jurisdictional area, it is not considered when the adverse impacts are determined. WestLand Resources, Inc. mapped 407 acres of xeroriparian vegetation that would be adversely impacted by the Ripsey Wash Tailings Storage Facility (TSF) (Figure 43). The COE, however, determined that only 130 acres of xeroriparian habitat would be adversely impacted (Table 2-1) under the jurisdictional determination. Xeroriparian vegetation is one of the most important functional values of an ephemeral system. In fact, the COE considers this habitat valuable enough that the preservation or restoration of xeroriparian habitat is considered as suitable mitigation for impacts to jurisdictional areas. Therefore, the Lower San Pedro Watershed Alliance (LSPWA) requests that the DEIS be revised to include mitigation for the loss of the xeroriparian habitat at Ripsey Wash.

In addition to undercounting the adverse impact acreage at Ripsey Wash, application of the COE's Mitigation Ratio-Setting Checklist (MRSC) inherently devalues the functional value of the ephemeral drainage. The MRSC evaluates 11 hydrologic, chemical, and biologic functions to determine the compensatory mitigation required to offset impacts to Waters of the United States (U.S.) from a proposed project. The five biological functions measured include: aquatic invertebrate fauna, presence of fish and fish habitat structure, riparian/wetland vegetation structure, age class distribution of woody riparian or wetland vegetation and native/nonnative vegetation species. Three of these functions (aquatic invertebrate fauna, presence of fish and fish habitat structure, and riparian/wetland vegetation structure) are never, or rarely in the case of riparian habitat, present in an ephemeral drainage. This results in an artificially low score and consequently a reduced mitigation ratio when determining compensation for the adverse impacts with large components of xeroriparian habitat such as Ripsey Wash. The Arizona Game and Fish Department (AGFD) utilizes the Species and Habitat Conservation Guide (SHCG) for nontribal lands across Arizona to evaluate wildlife conservation potential. The SHCG model is intended to identify areas of wildlife conservation potential at a landscape/statewide scale to guide the AGFD's strategic wildlife goals and objectives. One of the five model indicators upon which SHCG mapping values are based is: The importance of the landscape in maintaining biodiversity - represented by the Species of Greatest Conservation Need. The AGFD rated the bottom of Ripsey Wash "10 out of 10" for this indicator.

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The LSPWA believes that the mitigation ratio (1.2:1) attached to Mitigation Sites A and D is too low. Mitigation sites A and D consist of preserving existing habitat (no restoration actions will be performed, only management actions, will be taken on the sites). Mitigation Site A and D occur within an existing fenced mitigation area. The DEIS states that active management of these areas will exclude cattle, restrict fuel wood harvesting, and restrict off-road vehicle access to the site. However, these actions are already restricted at the sites due to their location within a monitored, fenced mitigation site. It is highly unlikely that any of these areas. This seems unlikely due to the increased amount of fencing that would be required. We agree that ASARCO should be given mitigation credit for these parcels; but we believe that the mitigation credit should be less than proposed in the DEIS. Similarly mitigation credit for the preservation of 11.4 acres of Site E should also be reduced.

We saw no discussion in the DEIS that takes into account the lag time between the loss of habitat and the associated functions and values at Ripsey Wash and the realization of the full functions and values at the restoration sites. In addition, there appears to be a discrepancy with the mitigation acreage for Site E. The total acreage for Site E is referenced in various places throughout the document as 124.9 acres (113.5 acres of restoration and 11.4 acres of preservation). Appendix A: Summary of Offsite Mitigation Areas, Table 9 (page 15) breaks down Site E into Ephemeral Classes. When the acreages of the four areas are added together they total 163.81 acres. This is 38.91 acres over the acreage listed in all other tables. Please explain this discrepancy and revise the DEIS as needed.

In addition, Mitigation Site E is located immediately adjacent to the Gila River and within the Gila River floodplain. The mitigation site will be subject to potential flooding which could remove all vegetation from the mitigation site. The Revised Conceptual Mitigation Plan (Mitigation Plan) considers this potential as unlikely; however, no justification is given for this determination. The Mitigation Plan has a Dedicated Account to deal with unforeseen management and maintenance issues. This account will be paid up in 10 years and no further contributions by ASARCO will be required. It does not appear that any contingency has been made for complete replacement of the restoration area if it is lost during a flood event. The Ripsey Wash habitat will be permanently lost; however, only monitoring and maintenance issues are guaranteed at Mitigation Site E as described below (Appendix A, Page 11):

Once the Dedicated Account is funded, Asarco, its successors, or assigns (including the AGFD or other third-party conservation entity) shall not be required to expend any additional funds for annual monitoring and maintenance activities. In the event that extraordinary circumstances require the significant expenditure of funds that would threaten the integrity of the Dedicated Account, Asarco, its successors, or assigns (including any third-party conservation entity) shall notify the Corps of the specific circumstances. Asarco, its successors, or assigns and the Corps will jointly consider the specific circumstances and will mutually agree upon the appropriate

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action(s) to be taken and how to fund these action(s). This may include Asarco, or its successors or assigns, voluntarily contributing additional funds and/or the Corps, Asarco, and its successors or assigns working cooperatively to seek outside funding to accomplish the extraordinary maintenance actions.

Section 2.3.7 (page 2-13) describes the "water use and management" for the Ripsey Wash TSF. The DEIS does not disclose the amount of water expected to be utilized over the life of the project. The water will be taken from the Hayden well field located at the confluence of the Gila and San Pedro Rivers. There was no discussion of the potential impacts to riparian vegetation from the additional withdrawal of groundwater in this area. The DEIS should be revised to include an estimate of the water requirements for the Ripsey Wash TSF. This should be feasible based on figures from the Elder Gulch TSF. The DEIS should also be revised to analyze the potential adverse impacts to riparian vegetation along the Gila and San Pedro Rivers from the increased water withdrawal.

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Finally, the DEIS states that there will no impact to Zelleweger Gulch or the unnamed drainage to the east from the diversion of Ripsey Wash flows into these drainages. This conclusion is based on the determination that upstream detention basins will detain Ripsey Wash flood waters which can then be slowly released into Zelleweger and the unnamed drainage. However, detention of the water in the basins will permit the sediment load to drop out. The subsequent release of this "hungry" water would result in increased erosion and scouring of Zelleweger Wash and the unnamed channel to the east. The DEIS should be revised to include a full analysis of the adverse impacts to Zelleweger Wash and the unnamed wash to the east from the diverted flows of Ripsey Wash. Impacts to these areas must also be considered for mitigation.

In conclusion we believe that the proposed mitigation for adverse impacts at the Ripsey Wash Tailings Facility is inadequate for the following reasons:

The Jurisdictional Determination does not consider the total amount of xeroriparian vegetation [2/-8] impacted at Ripsey Wash;
 The COE's Mitigation Ratio-Setting Checklist has inherent flaws which arbitrarily reduce the [2/-9] value of xeroriparian habitat;
 The mitigation value attached to the preservation of existing habitat is over-inflated; [2/-10] 2/-10
 The COE did not consider the lag time between habitat loss at Ripsey Wash, Zelleweger Gulch and the unnamed drainage and the restored functions and values of the mitigation habitat;
 The mitigation acreage attached to Site E was increased by 38.91 acres when the mitigation acreage attached to Site E was increased by 38.91 acres when the mitigation [2/-12] 2/-12

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6) There are no long-term plans to revegetate Mitigation Site E if it is lost due to natural flooding 21-13 of the Gila River; 7) No analysis was conducted on the adverse impacts to riparian vegetation along the confluence 21-14 of the Gila and San Pedro Rivers from the additional ground water withdrawal at the Hayden well field utilized to support the Ripsey Wash TSF. 8) The COE did not consider the adverse impacts to Zelleweger Gulch and the unnamed drainage to the east from the diversion of Ripsey Wash flows around the Tailings Storage Facility. The 21-15 EIS should be revised to include a full analysis of the adverse effects to these drainages from the diversion of Ripsey Wash flows. An alternative would be to place Ripsey Wash flows in a contained drainage system and route them either underneath or adjacent to tailings storage facility, returning them to the unaltered portion of Ripsey Wash just prior to the Gila River. SPECIFIC COMMENTS EXECUTIVE SUMMARY (NOTE: page numbers refer to actual document page not pdf page number) 21-16 Page ES-3; line 4: Footnote 6 - missing word (not) from sentence Page ES 21 -Cultural Resource impacts to Hackberry wash very confusing. 21-17 Page ES 24 (6.15.1; paragraph 3), next to last sentence: Missing word "beaver" after "American". Page ES 25 - Sharp-shinned Hawk is not a year-round resident. Why does Golden Eagle have scientific name in parentheses but other species do not? Page ES-35 - spelling "Pina" Indian Mallow should be "Pima" 21-20 Page ES-30 (Indirect Impacts to WUS) - Although not downstream, the "functional value" of Zelleweger Wash will be altered due to the increased flows diverted from Ripsey Wash. Ripsey 21-21 Wash covers 18.1 sq. mi. whereas Zelleweger Wash covers only 4.2 sq. mi. The increased flows into Zelleweger will result in increased erosion of the streambed, loss of adjacent vegetation thereby reducing the value of the system to wildlife. Page ES-36 - Loss of roost sites for CA Leaf-nosed bat and Pocketed Freetail bat were not 21-22 considered. Page ES-37 - How can impacts to BLM sensitive species be determined as minor to moderate if 21-23 you don't know what species are actually present?

SPECIFIC COMMENTS TO MAIN DEIS

Section 3.13.1.2 (Upland Vegetation Ripsey Wash) - Vegetation types other than upland (i.e. riparian) are discussed. Possibly change category heading to simply "Vegetation".
Correct spelling of following scientific names: catclaw acacia (<i>Senegalia greggii</i>) desert hackberry (<i>Celtis ehrenbergiana</i>); looks like they refer to it as spiny hackberry now whitethorn acacia (<i>Vachellia constricta</i>)
Section 3.13.1.3 (Upland Vegetation Hackberry Gulch): Vegetation types other than upland (i.e. riparian) are discussed. Possibly change category heading to simply "Vegetation".
Correct spelling of scientific name for creosote bush (Larrea tridentata) 21-27
Section 3.13.1, Page 3-121, Table 3-61 and throughout document - Replace Xenoriparian with 21-28 Xeroriparian throughout the document.
Section 3.15.1.7, Page 3-150- add word "be" near end of second sentence. (likely to be similar) 21-29
Section 3.15.1.8, Page 3-150- capitalize "G" in gila woodpecker 21-30
Section 3.15.1.12.1, Page 3-158 - range of breeding SWF should read: including Colorado River, near mouth of Little Colorado River downstream to Yuma (not south of Yuma).
Section 3.4.2.2, Page 3-52, Paragraph 5 - Statement "Diversion of flows into adjacent washes" 2/-32. "could" result in increased erosion. Replace "could" with "would".
Section 3.4.2.2, Page 3-52 - Construction of detention basins to hold flood waters from Ripsey prior to release into Zelleweger would result in the sediment load dropping out. The subsequent release of this "hungry" water would result in increased erosion and scouring of Zelleweger Wash and the unnamed channel to the east. The DEIS should be revised to include a full analysis of the adverse impacts to Zelleweger Wash and the unnamed wash to the east from the diverted flows of Ripsey Wash. Impacts to these areas must also be considered for mitigation.
Section 3.15.1.5, Page 3-148 - Sharp-shinned hawks are not year-round residents; they are J 21-34 winter residents of the area.
<u>3.15.2.2.2. Page 3-161</u> - The statement: after mine closure and reclamation adjacent unaffected habitat would be more fully utilized - However, the time frame of 20-50 years makes the potential mitigative nature of this statement negligible.

<u>3.15.2.2.4</u>, Page 3-162- Response to "no documented mortalities at Elder Gulch site". Was the area surveyed on a regular basis? If so, where did the survey take place and how far from tailing facility. It's unlikely that wildlife would "drop dead" in plain sight at the tailings facility. Sick wildlife would tend to find a secluded spot to rest. So just because no wildlife were observed doesn't preclude the fact that there could have been mortalities. With respect to the presence of mosquitofish - they can survive very inhospitable conditions.

<u>3.15.2.2.11. Page 3-164</u>- Lawrence's Goldfinch are erratic and irregular fall and winter visitors. Instances of breeding have been very limited and not documented since 1980 according to the Arizona Breeding Bird Atlas. Remove references to Lawrence's Goldfinch breeding in the area. It is also unlikely that gray vireos breed in the area. They are typically found in pinyon pine/juniper habitat. Gray vireos breed between 3500-6800 feet in elevation.

<u>3.15.2.2.14. Page 3-15</u> - The impact to bat species was not thoroughly evaluated. Bat populations are becoming increasingly imperiled throughout the United States. Despite the fact that no major roost sites were present in the project area, there was no discussion of the closest roost site for any species. The DEIS just mentioned potential roost sites in nearby mountains. Bats can travel long distances to forage. The nearest roost and maternity sites for each species should be determined via AGFD files and the loss of 2000 acres of potential foraging habitat for each species should be evaluated.

Appendix J- Clean Water Act Section 404 Conceptual Mitigation Plan AND Appendix A (under Appendix J) - Ripsey Wash Tailings Storage Facility Mitigation Ratio-Setting Checklist

<u>Appendix J, Sub Appendix A, Table 2, Page 4, Summary of Offsite Mitigation Areas</u>: Acreage for Site E (124.9) does not match the acreage listed for Site E in Table 9, Page 15 (Final Mitigation Credits Applied by Impact Drainage Class and Mitigation Site) of 163.81 acres. Where did the additional 38.91 acres of habitat in Mitigation Site E come from? In addition, removing the additional acreage results in a shortage of mitigation credit of 6.83 acres.

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COMMENT DOCUMENT #22 SUPERSTITION HORSEMAN'S ASSOCIATION AND THE EAST VALLEY BACK COUNTRY HORSEMAN

(DARYL CROSS, CHAIR)

 From:
 rktmn@netzero.net

 To:
 Langley, Michael SPL

 Subject:
 [EXTERNAL] & Ray Mine Tailings Storage Facility Draft EIS File No. (SPL-2011-01 005-MWL)

 Date:
 Sunday, March 13, 2016 8:40:52 PM

 Attachments:
 DRAFT Environmental Impact Statement.odf

Attention Michael Langley,

Please find attached to this email our response from both Superstition Horseman's Association and the East Valley Back Country Horseman to the Ray Mine Draft EIS.

Sincerely, Darryl Cross: Chairman;SHA PO Box 2120 Apache Junction, AZ 85117 602-820-9583 sha4horses@gmail.com <<u>mailto:sha4horses@gmail.com</u>>

DRAFT Environmental Impact Statement Proposed Tailings Storage Facility Ray Mine – Pinal County, Arizona File No. SPL-2011-1005-MWL

March 13, 2016

Michael Langley, Senior Project Manager, U.S. Army Corps of Engineers, Arizona-Nevada Office, 3636 N. Central Avenue, Suite 900, Phoenix, Arizona 85012-1939; telephone (602) 230-6953 Michael.W.Langley@usace.army.mil.

The Superstition Horsemen's Association (SHA) in conjunction with the East Valley Chapter (EVBCH) of the Back Country Horsemen of America (BCHA) which has over 14,000 members in 32 states and is heavily involved with Tonto National Forest in both the Mesa and Globe Ranger Districts, present the following response to the EIS draft. Both SHA and EVBCH are Trail Stewards for sections of the Arizona Trail.

We oppose the proposed tailings storage facility and recommend that a "No Action" be implemented regarding the draft EIS. As an alternative, our only acceptable alternative would be the Hackberry Gulch Tailings Storage Facility (TSF) location. For the following reasons and in addition to others, the Ripsey Wash TSF alternative location should NOT be considered in part or whole. We are absolutely opposed to the Ripsey Wash TSF.

The Arizona Trail (AZT) is part of the "Newly Identified National Trail Right of Way". The AZT is one of eleven such trails in the United States designated as such by Congress. The location of the AZT trail and establishment of this trail is the result of 100's, if not 1000's, of people dedicating 1000's of hours to its creation. It is by no coincidence that the AZT is located in Ripsey Wash. Although minor deviations occurred during its building, its current location has been approved by not only Congress but also by its unchallenged (in the court of law) existence as an established trail. To relocate the AZT to the (preferred) eastern side of the Ripsey TSF alternate should require Congressional approval. Additionally, the relocation of AZT to the east would have it going

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across a federally patented mining claim. There is nothing that prevents the AZT from being moved again in the future if the Ray Mine chooses to mine that section. By not allowing the TSF to be located in Ripsey Wash, these issues are non-existent.

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The EIS draft cites numerous issues at both Hackberry Gulch and Ripsey Wash. The following are unacceptable issues affecting the Ripsey Wash TSF:

-Disruption of and to, threatened and or endangered species as identified on pages 265-267, Sec. 3.15.2.2.15 we find no need to disrupt endangered species or their habitat for the financial gain of a private corporation.

- The cumulative impact on recreation as identified on page 284, Sec. 4.10 and pages 274-276 Sec. 3.17.2.2 and Sec. 3.18.2. The Ripsey Wash offers a tremendous amount of public recreation that will be lost permanently.

- Climate change is a worldwide issue. As briefly discussed and dismissed as a non-issue; Sec. 4.2 page 281, we believe this to be a short sighted conclusion at best. No one predicted a 1000 year flood in the New River, Arizona water shed just a couple years ago. Yet, the destruction it caused was far reaching. These types of deluge events are occurring on a regular basis worldwide. To pass it off as negligible is not appropriate.

-Reclamation, restoration and re-vegetation is nonexistent. EIS Draft states that habitat loss will be permanent and that re-growth of vegetation will be sparse at best because the tailings will be mainly crushed rock. SHA and EVBCH proposes that should the Ripsey Wash TSF or Hackberry Gulch site be chosen, a guarantee of full restoration, backed by an acceptable performance bond issued by at least a AA financial institution, shall be required to be issued on behalf of ASARCO/Ray Mine.

A Ripsey Wash TSF permanently shuts down several wells, destroys numerous archeological sites and
prevents substantial water run-off from entering the Gila River. Water is the life blood of the southwest and should
never be forsaken. The EIS only states that a small percentage of run-offs would be affected. The study should
identify what this amount of water loss would be in gallons or acre feet of water per annum.

These are just a few reasons that SHA and EVBCH are opposed to the Ray Mine Tailings Storage Facility. We ask that a selection of "No Action" be chosen. As an alternative, the selection of the Hackberry Gulch TSF alternative site is preferable and should be chosen.

Under no circumstance, do we approve the Ripsey Wash TSF alternative site being selected for the Ray Mine TSF.

Respectfully Submitted, Darryl Cross: Chairman, SHA (602)820-9583 P.O. Box 2120 Apache Junction, AZ 85117 sha4horses@gmail.com <<u>mailto:sha4horses@gmail.com</u>> Stephen McClintock: President, EVBCH (480)729-4725 steve.w.mcclintock@gmail.com

NowBuzzing

Explosive Pictures of Hilarious Athlete Fails

<Blockedhttp://thirdpartyoffers.netzero.net/TGL3232/56e63259b91ed32597f8ast01duc> Blockedhttp://thirdpartyoffers.netzero.net/TGL3232/56e63259b91ed32597f8ast01duc

COMMENT DOCUMENT #23 RON DORN

U.S. Army Corps of Engineers Arizona-

Nevada Office

3636 N. Central Avenue, Suite 900

Phoenix, Arizona 85012-1939:

Attention: Michael Langley.

Michael.W.Langley@usace.army.mil

Dear Dr. Langley,

I have read the Ray Mine Tailings Storage Facility Draft EIS in the context of my expertise in environmental geochemistry. I am a geomorphologist at Arizona State University with a long research history of understanding geochemical variability at Earth's surface. In other words, my research combines basic geomorphology surficial processes such as sediment transport, mineral decay (weathering) and the study of geochemical variability. This is my CV: <u>Blockedhttp://alliance.la.asu.edu/dorn/dorncv.html</u>

I think it would be highly foolish to place tailings on the south side of the Gila River. I make this statement because I have conducted research on the geochemical mobility of the existing tailings of Ray Mine that have "escaped" into the natural system. In other words, my sampling did not involve any collection from the existing mine, but rather contaminants that have moved into adjacent public lands.

Heavy metals from the tailings move adsorbed to sediments that are transported by groundwater, fluvial (water) and eolian (wind) processes. The heavy metals particularly favor iron. The broken edges of iron-bearing minerals act as micron-scale sites for heavy metal scavenging. Then, when these minerals are moved out of the existing tailings area, they can then be released into biotic systems. This release occurs at the nano-scale. The roots of annual and perennial plants access the broken edges of minerals and in addition to acquiring such nutrients as potassium or magnesium, the plants also uptake heavy metals.

You are very aware of bioaccumulation, where plants containing contaminant levels of heavy metals are eaten by herbivores and thus this begins the classic bioaccumulation chain.

My own research has not involved bioaccumulation in animals. Rather, I have just studied the processes of heavy metal transport and then accumulation in annual and perennial plants in the region being explored int he EIS.

I am convinced that it would be a serious mistake to move tailings into a completely different **23-4** region, on the south side of the Verde River. This action would very likely end of

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contaminating the region around the proposed Ripsey Wash Tailings Facility Alternative site. The contamination would involve the obvious groundwater issues that the EIS begins to explore (but not really the micron-scale or nanoscale geochemical interactions), fluvial transport, and then widespread eolian transport associated with monsoon gravity waves (dust fronts).

The most common-sense strategy would be to continue to place the tailing at the current sites and seek an engineering solution to deal with the extra volume.

At the very least, if a choice must be made between Hackberry Gulch and Ripsey Wash this is no choice at all. Ripsey Wash Tailings Facility Alternative must be removed from consideration because of the geochemical migration of heavy metals not considered in the Draft EIS. Please do not put an entirely different region of public lands in the bulls-eye of a classic geochemical contamination. Don't make a new public-lands disaster. Please contain the contamination of our natural ecosystems.

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Sincerely,

Ron

Professor Ronald I

Dorn Guggenheim

Fellow

Geological Society of America Fellow

Arizona-Nevada of Academy Sciences Fellow

COMMENT DOCUMENT #24

 From:
 Diebolt, Sallie SPL

 To:
 Langley, Michael SPL

 Subject:
 FW: Los Angeles District Contact Form: Tailings Storage EIS, File SPL-2011-1005-MWL (UNCLASSIFIED)

 Date:
 Wednesday, February 17, 2016 8:03:30 AM

FYI.

-----Original Message-----From: Palmer, James D SPL Sent: Wednesday, February 17, 2016 7:23 AM To: Diebolt, Sallie SPL <Sallie.Diebolt@usace.army.mil> Subject: Los Angeles District Contact Form: Tailings Storage EIS, File SPL-2011-1005-MWL (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

This is interesting... not sure it is an addressable issue for us.

-----Original Message-----From: mike.gasparek@gmail.com [mailto:mike.gasparek@gmail.com] Sent: Tuesday, February 16, 2016 5:02 PM To: SPL, PublicAffairs SPL <PublicAffairs.SPL@spl01.usace.army.mil> Subject: [EXTERNAL] Los Angeles District Contact Form: Tailings Storage EIS, File SPL-2011-1005-MWL

This message was sent from the Los Angeles District website.

Message From: Mike Gasparek

Email: mike.gasparek@gmail.com

Response requested: Yes

Message:

mike gasparek

After review of the environmental impact study for Tailings Storage for Ray Mine in Pinal County, Az, I was concerned that the water tank in Ripsey Wash was never mentioned. The study does talk about a realignment of the Arizona Trail, which is my concern but it does not mention how the availability of water for hikers will be addressed. When I hiked this section there was water in a tank in Ripsey Wash that could be purified and used as drinking water. It was the only water to my knowledge within several miles. I was hiking south to north and the Gila RIver water was too silty to pass through a filter. My question is, if the Ripsey site is selected and the Az Trail is re routed will a new water source be made available south of the Gila River? If you can't answer this question who can I ask?

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CLASSIFICATION: UNCLASSIFIED

COMMENT DOCUMENT #25 FRED GAUDET

Comment Document #25

U.S. Army Corps of Engineers PUBLIC SCOPING MEETING/PUBLIC HEARING **Ray Mine Proposed Tailings Facility Draft EIS**

REQUEST TO SPEAK/WRITTEN COMMENT FORM

NAME (Please print): to Saylo	t			
DO YOU WISH TO SPEAK AT THIS MEETING?	D YES	DN R		
DO YOU WISH TO PRIVATELY GIVE VERBAL C ADDRESS (Spreet and Number): 276 S. Va	OMMENTS Vista	TO A COURT REPORTER?	□ YES	DN D
CITY: Apache Tunetin		STATE AZ	manna &	C116
TELEPHONE NO .: 480-9830112		EMAIL ADDRESS:	Beleard	let 1 agmail.co
CITY: A puck & Jame Fin TELEPHONE NO.: 480-9830112	U VGJA		ZIP CODE:	15/19 lot 1@ gm/ail.c

REGARDLESS OF WHETHER YOU PROVIDE VERBAL COMMENTS TODAY, IF YOU WOULD LIKE TO PROVIDE WRITTEN COMMENTS ON THIS PROJECT, YOU MAY RESPOND BELOW AND SUBMIT THIS SHEET TO A CORPS REPRESENTATIVE OR WRITE TO THE CORPS BY MARCH 14, 2016 AT: U.S. ARMY CORPS OF ENGINEERS, REGULATORY DIVISION, ATTN: MICHAEL LANGLEY, 3636 N. CENTRAL AVE, SUITE 900, PHOENIX, AZ 85012-1939 . ALTERNATIVELY, YOU MAY EMAIL COMMENTS TO THE FOLLOWING ADDRESS: MICHAEL.W.LANGLEY@USACE.ARMY.MIL BY MARCH 14, 2016.

COMMENTS 25-1 16

AUTHORITY: 33 CFR 327

DATA REQUIRED BY THE PRIVACY ACT

PRINCIPAL PURPOSE: Distributed at Public Meetings and Workshops to provide a record of attendees, and to develop a mailing list for future public meetings in keeping with the policy of OCE to conduct Civil Works Program in an atmosphere of public understanding, trust and mutual cooperation. All interested individuals and agencies are to be informed and afforded an opportunity to be heard and their views considered in arriving at conclusions, decisions, and recommendations in the formulation of civil works proposals, plans, projects, and on the proposed uses of navigable waters. ROUNTINE USES: Utilized for determining attendance at Public Meetings; determining who desires to speak at Corps Public Meetings and developing mailin lists for various Corps studies.

DISCLOSURE: Voluntary. Failure to provide information may result in not being contacted for future public meetings, etc.

U.S. Army Corps of Engineers PUBLIC SCOPING MEETING/PUBLIC HEARING Ray Mine Proposed Tailings Facility Draft EIS

REQUEST TO SPEAK/WRITTEN COMMENT FORM

NAME (Please print): DO YOU WISH TO SPEAK AT THIS MEETING? C YES CYNO. DO YOU WISH TO PRIVATELY GIVE VERBAL COMMENTS TO A COURT REPORTER? □ YES 图 NO S. Val 276 Vista ADDRESS (Street and Number):trache June CITY STATE ZIP CODE: TELEPHONE NO: 480-983-0112 EMAIL ADDRESS: REGARDLESS OF WHETHER YOU PROVIDE VERBAL COMMENTS TODAY, IF YOU WOULD LIKE TO PROVIDE WRITTEN COMMENTS ON THIS PROJECT, YOU MAY RESPOND BELOW AND SUBMIT THIS SHEET TO A CORPS REPRESENTATIVE OR WRITE TO THE CORPS BY MARCH 14, 2016 AT: U.S. ARMY CORPS OF ENGINEERS, REGULATORY DIVISION, ATTN: MICHAEL LANGLEY, 3636 N. CENTRAL AVE, SUITE 900, PHOENIX, AZ 85012-1939 . ALTERNATIVELY, YOU MAY EMAIL COMMENTS TO THE FOLLOWING ADDRESS: MICHAEL.W.LANGLEY@USACE.ARMY.MIL BY MARCH 14, 2016. COMMENTS

DATA REQUIRED BY THE PRIVACY ACT

AUTHORITY: 33 CFR 327

PRINCIPAL PURPOSE: Distributed at Public Meetings and Workshops to provide a record of attendees, and to develop a mailing list for future public meetings in keeping with the policy of OCE to conduct Civil Works Program in an atmosphere of public understanding, trust and mutual cooperation. All interested individuals and agencies are to be informed and afforded an opportunity to be heard and their views considered in arriving at conclusions, decisions, and recommendations in the formulation of civil works proposals, plans, projects, and on the proposed uses of navigable waters. ROUNTINE USES: Utilized for determining attendance at Public Meetings; determining who desires to speak at Corps Public Meetings and developing mailin

DISCLOSURE: Voluntary. Failure to provide information may result in not being contacted for future public meetings, etc.

COMMENT DOCUMENT #26 MIKE KOTRAS

U.S. Army Corps of Engineers PUBLIC SCOPING MEETING/PUBLIC HEARING Ray Mine Proposed Tailings Facility Draft EIS

REQUEST TO SPEAK/WRITTEN COMMENT FORM

NAME (Please print):	MIKE	COTTRACT	2				
DO YOU WISH TO SPE	CAK AT THIS	MEETING?	□ YES	DX NO			
DO YOU WISH TO PRI ADDRESS (Street and N	VATELY GIV	O. Box	COMMENT	STO A COURT REPORTER		KA NO	
CITY: KEARing				STATE AZ	ZIP CODE: -	85137	
TELEPHONE NO .: 4	520. 247	.2839		EMAIL ADDRESS:	ALKE KOTEAGA	A Aou.con	

REGARDLESS OF WHETHER YOU PROVIDE VERBAL COMMENTS TODAY, IF YOU WOULD LIKE TO PROVIDE WRITTEN COMMENTS ON THIS PROJECT, YOU MAY RESPOND BELOW AND SUBMIT THIS SHEET TO A CORPS REPRESENTATIVE OR WRITE TO THE CORPS BY MARCH 14, 2016 AT: U.S. ARMY CORPS OF ENGINEERS, REGULATORY DIVISION, ATTN: MICHAEL LANGLEY, 3636 N. CENTRAL AVE, SUITE 900, PHOENIX, AZ 85012-1939. ALTERNATIVELY, YOU MAY EMAIL COMMENTS TO THE FOLLOWING ADDRESS: MICHAEL.W.LANGLEY@USACE.ARMY.MIL BY MARCH 14, 2016.

COMMENTS

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DATA REQUIRED BY THE PRIVACY ACT

AUTHORITY: 33 CFR 327

PRINCIPAL PURPOSE: Distributed at Public Meetings and Workshops to provide a record of attendees, and to develop a mailing list for future public meetings in keeping with the policy of OCE to conduct Civil Works Program in an atmosphere of public understanding, trust and mutual cooperation. All interested individuals and agencies are to be informed and afforded an opportunity to be heard and their views considered in arriving at conclusions, decisions, and recommendations in the formulation of civil works proposals, plans, projects, and on the proposed uses of navigable waters. ROUNTINE USES: Utilized for determining attendance at Public Meetings; determining who desires to speak at Corps Public Meetings and developing mailin

lists for various Corps Fublic Meetings and developing mailin lists for various Corps Fublic Meetings and developing mailin

DISCLOSURE: Voluntary. Failure to provide information may result in not being contacted for future public meetings, etc.

RECEIVED

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COMMENT DOCUMENT #27 JASON REYNOLDS

 From:
 Reynolds

 To:
 Langley, Michael SPL

 Subject:
 [EXTERNAL] SPL-2011-01005-MWL Ray Mine Tailings Disposal Facility Draft EiS

 Date:
 Sunday, March 13, 2016 9:43:56 AM

US Army Corps of Engineers:

I am an Oregon resident who spends winters hiking in Arizona. Diverting the Arizona Trail in order to pollute the Ripsey Wash with mine tailings is an utterly disgusting proposal. In Oregon such an idea would not be welcome. In Arizona, however, standards are different and the Army Corps of Engineers appears eager to take advantage of the ignorance and indifference of the public in this region towards environmental values, including preservation of wildlife habitat and scenic and aesthetic considerations.

27-1

Jason C Reynolds 3570 SW Gold Flower Ave. Tucson, AZ 85735 503-701-1916