

From: [John Peterson](#)
To: [DHONT, JEFF](#)
Cc: [Mike Gronseth](#); [John Peterson](#)
Subject: Iron King Mine - Humboldt Smelter Site Geochemical Technical Memorandum
Date: Thursday, June 27, 2019 10:39:39 AM
Attachments: [ikmhs_adeq_comments_draft_geochemical_investigation_tm_27_june_2019.pdf](#)

Jeff,

ADEQ and our contractor Matrix Environmental reviewed the following document prepared by Tetra Tech for US EPA:

- *Iron King Mine-Humboldt Smelter Site Geochemical Technical Memorandum.*

ADEQ comments are included in the attached PDF. If you have any questions or need additional information, please contact me.

ADEQ may add or amend ADEQ comments if evidence to the contrary of our understanding is discovered; if received information is determined to be inaccurate; if any condition was unknown to ADEQ at the time this document was signed or electronically delivered; if other parties bring valid and proven concerns to our attention; or site conditions are deemed not protective of human health and the environment within the scope of this Department.

John Peterson

Project Manager, Federal Projects Unit
Waste Programs Division
Ph: 602-771-2234



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Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

June 27, 2019
FPU 19-258

Mr. Jeffrey A. Dhont
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street Mail Stop SFD-6-2
San Francisco, CA 94105

Re: *Draft Iron King Mine – Humboldt Smelter Site Geochemical Technical Memorandum*
dated 14 June 2019.

Dear Mr. Dhont:

The Arizona Department of Environmental Quality (ADEQ) reviewed the above-referenced document and has the following comments:

GENERAL COMMENTS

1. The explanation of objectives based on DQO's clarifies the approach and direction of the memorandum however there is no clear explanation of how the DQO objectives are finally addressed as a result of the analysis performed. A table like Table 2 that summarizes the outcome of the evaluation for each principal study question would be helpful to the reader.

SPECIFIC COMMENTS

1. **Page 3, Section 3.1.1, First Paragraph, Second Sentence:** Since there are various neutralization potential estimation methods available to support ABA evaluations please provide the method used during the RI.
2. **Page 4, Section 3.1.1, Humboldt Smelter Dross, First Sentence:** This description of NNP values is the only one that does not include measured values. Please include values reported for the dross or explain why values are not available.
3. **Page 4, Section 3.1.1, Humboldt Smelter Slag , First Sentence:** This paragraph does appear to be subordinate to the Humboldt Smelter Dross paragraph and should not be bulleted.

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4. **Page 5, Section 3.1.1, Third Paragraph, First Sentence:** For clarity replace Figure 2-4 with Figures 2 through 4.
5. **Page 6, Section 3.1.2 DQO Evaluation, First Paragraph, Last Sentence:** This sentence is difficult to understand. Please clarify.
6. **Page 12, Section 5.1 Source Water, First Paragraph, Fourth Sentence:** This sentence is unclear. Please clarify
7. **Page 13, Section 5.1 Source Water, Third Paragraph, First Sentence:** This sentence ends in a colon indicating the following sentences should be bulleted. Please revise accordingly.
8. **Page 15, Section 5.3.1 Main Tailings Pile, First Bullet Item at bottom of page, First Sentence:** The phrase “Kd values were documents” should read “Kd values were documented”.
9. **Page 25, Section 6.1.1 Alternative 1 – No Action Alternative, First Paragraph, First Sentence:** This sentence suggests that Alternative 1 may not be the No Action Alternative. Please clarify under what conditions the alternative could change.
10. **Page 25, Section 6.1.2.1 Proto-Alternative 2 – Chaparral Gulch, Complete Waste Removal, First Paragraph, First Sentence:** The introduction of alternatives and proto-alternatives suggests that a proto-alternative is different from an alternative. Please include an explanation of proto-alternative 1.
11. **Page 29, Section 6.2, Summary of Proto-Alternatives Regarding Acid Rock Drainage and Leachate Generation, First Paragraph, First Sentence:** Delete extra period.
12. **Page 29, Section 6.2, Summary of Proto-Alternatives Regarding Acid Rock Drainage and Leachate Generation, First Paragraph, Last Sentence:** Table 6 is not included. Please include or delete reference.

If you have any questions or need additional information, please contact me at 602-771-2234 or peterjohn@azdeq.gov.

Sincerely,



John Peterson
Project Manager
Federal Projects Unit

cc: Mike Gronseth, Matrix Design Group