



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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November 8, 2006

Rod Lentz  
Area Mining Geologist  
US Forest Service  
Colville-Okanogan National Forests  
1240 2nd Avenue S  
Okanogan, WA 98840-9723

Jim Alexander  
US Department of Agriculture  
Office of General Counsel  
1220 SW Third Avenue, Room 1734  
Portland, OR 97204

RE: Azurite Mine ECCA Comments

Dear Rod and Jim:

Ecology has recently completed a review of the *Draft Final Engineering Evaluations/Cost Analysis, Azurite Mine and Millsite*, dated September 21, 2006. The review of this document focused primarily on the question of "which of the alternatives proposed by ASARCO would be acceptable as a non-time-critical removal action?"

We agree that the waste rock piles, tailings, and associated seeps appear to be the major sources of problems and need attention during a removal action. However, none of the three alternatives considered appears to be adequate<sup>1</sup>. So, we propose that Alternative 2, the on-site cover, be modified/improved upon to make it acceptable as a removal action. The modified Alternative 2 would be as follows:

Move the impacted soils from the mill building area to the tailings pile. Then utilize the waste rock pile by moving it to the tailings pile and strategically placing it to help in stabilizing the tailings pile and provide erosion protection in key areas, under a cover. For the cover, combine 12" soil and 12" talus rock, and design in a capillary layer to move water over and away from the combined tailings and waste rock pile. Combining the piles and closing them in this manner will accomplish a few critical needs; it will remove the materials away from direct contact with Mill Creek; it will avoid the reliance on rip rap at the base of the waste rock piles, which will need long term maintenance; and it should provide for a much greater reduction in both seep size and concentrations.

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<sup>1</sup> Please let me know if you would like a list of specific detailed comments.



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Removal of the waste rock pile and the subsequent elimination of the seep should address the highest concentrations of Al and CU and other metals to Mill Creek.

It is advised that further evaluation of this alternative be completed including a HELP model run with a cover system including a geomembrane to determine anticipated reductions in infiltration. I think that a well designed cover will provide well over the 20% reduction predicted in the current draft EECA.

As a final note, any closure completed at the site will need to meet the Washington State Minimum Functional Standards (WAC 173-350) for a special purpose landfill. This means that the cover must meet stability requirements and provide not only protection from exposure by terrestrials and plant uptake, but also prevent infiltration of both air and water.

Please contact me at (509) 454-7841 or [rroe461@ecy.wa.gov](mailto:rroe461@ecy.wa.gov) if you have questions about this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Rick Roeder". The signature is fluid and cursive, with a long horizontal stroke at the end.

Rick Roeder  
Site Manager  
Toxics Cleanup Program