



ALBUQUERQUE OFFICE

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U.S. Nuclear Regulatory Commission  
Office of Nuclear Materials Safety and Safeguards  
Division of Fuel Cycle Safety and Safeguards  
Chief of Fuel Cycle Facilities Branch (Mailstop T8-A33)  
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Attn: Mr. William von Till, Project Manager – Homestake Uranium Mill

RE: Homestake Mining Company – License SUA-1471  
Docket 40-8903

***Grants Reclamation Project – Response to Comments on Site Background Water Quality Document (9/02 EPA Comments, 6/03 NRC Comments)***

Dear Mr. Von Till:

In late April, 2003 Homestake Mining Company of California (HMC) received a copy of the EPA Region VI comments on the above referenced document and associated statistical analysis support documents. We additionally received NRC comments on June 20, 2003 via FAX transmittal, which were generally reflective of the comments provided by EPA. Some further specific comments were received during our recent 6/30/03 conference call.

The EPA comments additionally referenced elements and aspects of the groundwater restoration program that should be included in a revised Corrective Action Plan (CAP). We will be addressing those comments when the revised CAP is drafted later this year. We plan to defer specific response to those comments until we have completed revision to the background water quality document and agreement has been reached on background water quality values for the alluvial and Chinle aquifer systems.

As such, HMC provides the following responses to comments along with the actions to be taken, where appropriate, in revision of the background document.

1. **Background Ground-water Quality for the San Mateo Alluvial Aquifer:**

Based upon EPA and NRC comments, we understand that the statistical analysis of alluvial background data is appropriate and that the derived 95% confidence values for the full range of alluvial aquifer water quality is supported in the analysis documents. We believe these alluvial background values are appropriate new site standards for the alluvial aquifer. In the forthcoming revision to the background document, as detailed below, the alluvial aquifer evaluation will remain essentially as presented in the December, 2001 report.

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2. **Determination of Background Water Quality for the Upper, Middle and Lower Chinle Aquifers and Related Chinle Aquifer Mixing Zones:**

HMC is agreeable to undertaking a statistical evaluation of background water quality for the Chinle aquifers to determine the range of background concentrations in their non-mixing zones of occurrence, similar to that completed for the alluvial aquifer.

We believe it is appropriate to evaluate the alluvial-Chinle aquifer contact mixing zone areas as one component and complete a statistical evaluation of chemistry for wells that are completed in the mixing zone. Wells will be selected only if the well completion records document that the well is in the mixing zone and is properly constructed. This will establish the basis of existing water quality constituents and a defensible restoration goal for the Chinle/alluvial aquifer-mixing zone near the areas where the Chinle aquifers sub-crop below the alluvium.

The Chinle non-mixing zones associated with the Upper, Middle and Lower aquifers, and the Chinle/alluvial mixing zone evaluations will be included in the revised background document.

Trend analyses will be added to the background report for the Chinle wells. A discussion of the handling of the data, detection limits used by the lab and the QA/QC program will be added to the background report. A comparison of the present day mixing zones to the pre-operation mixing zones will also be added.

3. **Utilization of Existing Wells or New Wells to Determine Background Concentrations:**

HMC believes that existing wells available at on-Site and off-Site locations are sufficient in number and quality to determine background groundwater quality in the aquifers with one exception. The Upper Chinle aquifer was determined to not have a sufficient number of wells with the necessary completion quality to determine background concentrations up gradient of the Large Tailings. As a result, two new up gradient wells were recently drilled to augment existing data on the aquifer and one set of water quality data results have been obtained. A third test hole was drilled, however, the hole did not intersect a defined Upper Chinle section (possibly eroded or washed-out during geologic deposition?)

A review and discussion of Chinle wells, and relevant available information, outside of the HMC area will be added to the background report as appropriate per our discussion during the 6/30/03 teleconference call. Well construction diagrams will be added for the Chinle wells, along with the appropriateness of the well locations.

4. **Study Inclusion – Exclusion of Data for Far-Upgradient Wells:**

It is important to point out, as we have discussed, that the water quality data for the far-upgradient wells north of the site were not used in the statistical evaluations provided in the December, 2001 report. Data from these wells were not used for the alluvial aquifer water quality background determinations.

HMC nevertheless believes that this data, and data that is to be collected at these wells in the future, is important to continue to evaluate aquifer conditions in the far upgradient area. The ground-water in this region will obviously reach the Site in the future and we believe it is important to evaluate aquifer trends. While this data is not directly utilized in the background determinations, we would prefer to leave the data in the background study for general reference purposes.

Thank you for your time and attention on this matter and we look forward to further communications as the final elements of the background evaluation study are completed. After completion and acceptance

of this document, HMC plans to immediately proceed with revision of the Corrective Action Plan for the Site. If you have any questions, please contact me in Albuquerque office at (505) 828-1621 or via cell phone at (505) 400-2794.

Sincerely yours,



**HOMESTAKE MINING COMPANY**  
Alan D. Cox

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