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Mr. David Cobrain
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Dr. E, Bldg 1
Santa Fe, NM 87505

RE: Draft Technical Review Comments on the North Canyons Investigation Report,
Los Alamos National Laboratory, dated June 2009

Dear Mr. Cobrain:

Attached are draft technical review comments on the risk assessment portions of Los Alamos National Laboratory's (LANL) North Canyons Investigation Report dated June 2009.

Overall, the risk assessments were well done, with only a few minor comments noted. A different approach, using ratios, to determining constituents of potential concern (COPCs) was applied in the report. While difficult to follow and different from methodologies applied in other reports, the approach is acceptable and no comments were drafted concerning this issue.

There were a few discrepancies noted in toxicological data applied for some of the inorganic constituents. However, as more conservative data were applied, the assessments were deemed conservative and comments were not generated.

The screening levels for the residential receptor were primarily based on the 2006 NMED soil screening levels. A check against the new August 2009 data was conducted. While differences in screening levels were noted, the overall conclusions of the risk assessment using the 2009 data would be the same as those applying the 2006 data.

For comparison of surface water concentrations, tap water screening levels from the Regional Screening Level (RSL) tables were applied. If a datum was not available, a maximum contaminant level (MCL) was applied. It is not clear why New Mexico-specific tap water screening levels were not applied. However, in reviewing the screening levels against New Mexico-specific data, there would be no change in conclusion in the risk assessment. However, it is suggested that LANL apply New Mexico screening levels over RSLs where available.

Typically, a comparison of soil/sediment concentrations to soil-to-groundwater screening levels is conducted to assess whether there is potential for contaminants to migrate to groundwater. Neither a qualitative or quantitative analysis of this pathway was provided in the report. While



groundwater was not identified as a complete exposure pathway for the recreational receptor, this the potential for contamination via migration from soil/sediment should still have been addressed. It is assumed that this pathway will be addressed with the individual Solid Waste Management Units (SWMUs) and/or Areas of Concern (AOCs) that are the source(s) for the contamination in the upper canyons. Concentrations from the source areas would most likely be greater than in the canyons and provide a more conservative assessment of whether contaminants could migrate to groundwater. However, if this assumption is incorrect, NMED may wish to consider adding this as a comment.

If you or any of your staff have questions, please contact me at (801) 451-2864 or via email at paigewalton@msn.com.

Thank you,



Paige Walton
AQS Senior Scientist and Project Lead

Enclosure

cc: Dan Comeau, NMED (electronic)
Joel Workman, AQS (electronic)

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1. The primary current and future receptor for the human health risk assessment was identified as recreational receptors. The residential scenario was conducted for background purposes only. As noted in Section 1.4 of the report, portions of the north canyons down-canyon from solid waste management units (SWMUs) and areas of concern (AOCs) are used by the Pueblo de San Ildefonso for various native uses, including hunting. In reviewing the constituents of concern (COCs) carried forward in the risk assessments, several of the COCs show a tendency to bioaccumulate. As such, risks to the people of the Pueblo de San Ildefonso via ingestion of potentially contaminated game, and specifically a subsistence hunting scenario, should have been identified as a current and reasonably foreseeable future land use in the north canyons and should have been evaluated. Please revise the assessments to include an evaluation of the subsistence hunting scenario.
2. For the screening evaluations, lead was retained as a noncarcinogen and a hazard quotient was calculated and summed with other noncarcinogens. The result is an overestimation of noncarcinogenic risk, as inclusion of lead in the hazard index (HI) is incorrect. Lead screening levels are based upon blood lead levels unlike most noncarcinogens which have screening levels based on more traditional toxicological data (e.g., no-observed adverse effect levels) and should be evaluated independently. As exclusion of lead from the HIs will not result in the overall conclusions of the risk screenings, a revision to the document is not required. However, for future evaluations, please assess lead independently from noncarcinogens.
3. There is concern that a thorough review of available ecological toxicity has not been conducted, resulting in the omission of several constituents of ecological concern (COECs) from being qualitatively evaluated in the ecological assessments (see Table 8.1-31). Only data that are currently provided in the ECORISK database were applied. As noted with similar comments, exclusion of data from the ECORISK database is not sufficient justification for exclusion of the evaluation of a COPC. While Section 8.1.8 of the report indicates there are uncertainties associated with the exclusion of certain chemicals due to no toxicity reference data in the ECORISK database, there is no discussion as to how the overall conclusion may be influenced. Please provide a more detailed discussion of how exclusion of the COECs listed in Table 8.1-31 potentially impacts the risk evaluations.

Editorial Note: There is a duplication of paragraphs on page 54 of the report.