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2112 Deer Run Drive
South Weber, Utah 84405

(801) 476-1365
www.aqsnet.com

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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 of the Response to Notice of Deficiency Comments on the *Investigation Report for Upper Mortandad Canyon Aggregate Area*, Los Alamos National Laboratory, dated September 2009 and inclusion of responses into *Revision 1 of the Investigation Report for Upper Mortandad Canyon Aggregate Area*, Los Alamos National Laboratory, dated April 2010.

Dear Mr. Cobrain:

This letter serves as a deliverable and provides our draft technical evaluation of response to risk assessment related Notice of Deficiency (NOD) comments and review of the revisions in *Revision 1 of Los Alamos National Laboratory's (LANL) Investigation Report for Upper Mortandad Canyon Aggregate Area*, dated April 2010. Unless otherwise addressed below, the responses to the NODs were adequate as provided.

General Comment No. 6: The response to this comment was not deemed adequate. A great amount of time and effort was put into how essential nutrients should be addressed in the site attribution analysis and risk assessments. In addition, the process outlined in the NOD, was developed in corporation with and deemed acceptable by Dr. Richard Miranda. If levels of essential nutrients are detected in site media above background levels following the agreed-upon process, then a comparison of the detected concentrations to recommended daily allowances and/or upper intake limits must be conducted to justify elimination of the nutrient from further consideration. The requirement to compare the site concentrations to recommended daily allowances and/or upper intake limits does not represent a data-intensive nor time-intensive requirement and as such is not unreasonable.

Additional Comment: There were a few discrepancies noted in Table 1.6-1 as follows:

- Screening levels for carbazole were provided for the industrial scenario (15,000 milligrams per kilogram, mg/kg) and the residential scenario (1,500 mg/kg). The levels were cited as being from the December 2007 Region 6 Human Health Medium-Specific Screening Levels (MSSLs). However, in reviewing the December 2, 2007 tables, the industrial and residential soil levels listed are 2,900 mg/kg and 2,400 mg/kg, respectively and as adjusted to reflect a target cancer level of 1E-05. It is noted that use of either of



these values would not impact the conclusion of the risk assessments where carbazole was identified as a constituent of potential concern (COPC), specifically site 48-007(a)-00 and Tables J-4.2-15 and J-4.2-19. However, for future assessments, the screening data used for carbazole should be verified. No additional modifications or responses are required.

- The construction worker screening level for 1,1,2-trichloroethane is listed in Table 1.6-1 as 64,300 mg/kg. The December 2009 NMED SSL lists this value as 12,400 mg/kg. As 1,1,2-trichloroethane was not included as a COPC in any of the sites where risk assessments were conducted, there is no impact on conclusions. For future evaluations of the construction worker scenario, the screening data for 1,1,2-trichloroethane should be verified.

In Table J.4.2-30, LANL used a noncarcinogenic-based screening level for Arochlor-1254. This datum was derived from the Regional Screening Levels from the Residential Supporting Tables. Noncarcinogenic data are available for Arochlor-1254 in the Integrated Risk Information System (IRIS) database. The screening level as applied is consistent with that listed in the RSL tables.

The industrial risk screening level for 1,1,2-trichloroethane is listed in Table 1.6-1 as 94.3 mg/kg, which is consistent with the December 2009 NMED Soil Screening Levels (SSL). In reviewing Table J-4.3-1, a value of 19 mg/kg was applied, and is cited as being for an indoor worker derived from the 2007 Region 6 MSSLS. Both of these data are consistent with the appropriate guidance. In addition, Table 1.6-1 lists the construction worker SSL for phenanthrene as 7,150 mg/kg, which is consistent with the 2009 NMED SSLs.

In General Comment No.5, additional justification as to the speciation of chromium applied in the risk assessments was requested. LANL indicated that the work plan only required analytical results for hexavalent chromium for select sites. In reviewing the list of sites for which hexavalent chromium was analyzed, all of these sites require additional investigation. For those sites where the nature and extent of contamination was sufficient and chromium was included in the assessments, total chromium and the Regional Screening Level for total chromium, was applied. If site history does not indicate the potential for hexavalent chromium to be present, then the use of total chromium is acceptable. No additional comments or response was deemed needed.

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

cc: Neelam Dhawan, NMED (electronic)
Joel Workman, AQS (electronic)