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May 12, 2012

NMED
Hazardous Waste Bureau

DCN: NMED-2014-07

Mr. David Cobrain
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Dr. East
Building One
Santa Fe, NM 87505

RE: Draft Technical Review Comments on Los Alamos National Laboratory's (LANL's)
*Investigation Report for Area of Concern (AOC) 01-007(k) in the Upper Los Alamos
Canyon Aggregate Area, March 2014.*

Dear Mr. Cobrain:

Attached please find draft technical review comments on the risk assessment portion of the
“*Investigation Report for Area of Concern (AOC) 01-007(k) in the Upper Los Alamos Canyon
Aggregate Area*” dated March 2014.

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 Program Manager

Enclosure

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

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**Draft Technical Review Comments on the
Investigation Report for Area of Concern 01-007(k) in the Upper Los Alamos Canyon
Aggregate Area
Los Alamos National Laboratory, New Mexico, March 2014**

General Comments

1. Table G-4.3-1 and G-4.3-2. For the vapor intrusion pathway, it was noted that soil data were used to calculate risks and hazards to receptors in indoor air. According to US Environmental Protection Agency's (EPA) (2002) *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*, use of bulk soil data is not currently recommended because of the "large uncertainties associated with measuring concentrations of volatile contaminants introduced during soil sampling, preservation, and chemical analysis, as well as the uncertainties associated with soil partitioning calculations". Use of active soil-gas data is recommended to estimate indoor air concentrations and to assess risks and hazards from exposure to indoor air. However, it is noted that volatile organic compounds (VOCs) were not abundantly detected during the initial investigation of Area of Concern (AOC) 01-001(k) as noted in the "Investigation Report for Upper Los Alamos Aggregate Canyon" (May 2009). Because acetone and methylene chloride were the only VOCs previously detected, there was not sufficient concern to suspect a source for VOCs and to include active soil gas for this investigation. The forthcoming revision to the New Mexico Environment Department (NMED) Soil Screening Guidance includes a tiered approach for assessing VOCs and the need to conduct a quantitative assessment. Since there is no suspected source for continued release of acetone and methylene chloride, and the concentrations are decreasing with depth, the vapor intrusion pathway is potentially complete and the discussion and use of the bulk soil model are sufficient as a qualitative discussion for this pathway. Note that for future vapor intrusion investigations where the vapor intrusion pathway has been identified as a complete pathway, the use of active soil-gas data will be required.

Specific Comments

1. Section 4.1. The residential scenario is included per the Consent Order. However, since the property is private property, not under Los Alamos National Laboratory (LANL) control, residential use is a foreseeable future land use and should be evaluated regardless of the Consent Order. Please ensure risk assessments clearly identify all current and future land use. No response to this comment is required.
2. Section 4.2. Text in Section 4.2 discusses the use of the trivalent chromium soil screening level (SSL) for total chromium results. It is agreed that the use of the trivalent chromium SSL is acceptable when there is no source for hexavalent chromium. Note that NMED will be providing an SSL for total chromium and guidance on how to address chromium in risk assessments in the forthcoming revision of *Risk Assessment Guidance for Site Investigations and Remediation*. No response to this comment is required.

3. Section 6.2.3. The text states that previous sampling had not been conducted at AOC 01-001(k). This is misleading as sampling has been conducted at this site (“Investigation Report for Upper Los Alamos Aggregate Canyon” (May 2009)), but the characterization was incomplete pending removal of structures located in the area of AOC 01-001(k) addressed in this report. Clarify the text.
4. Section 6.2.4.3. Text in Section 6.2.4.3 states that nitrate was not retained as a constituent of potential concern (COPC) because it is naturally occurring, although a site-to-background comparison was not conducted as background levels for nitrate have not been established. In looking at the “Investigation Report for Upper Los Alamos Aggregate Canyon” (May 2009), nitrate was detected at low levels in AOC 01-001(k) and was retained as a COPC and included in the risk screens. While nitrates are naturally occurring, they are also indicative of sewage (old IMHOFF tanks, historic broken or leaking septic lines from buildings and structures that have been D&D, etc.). As noted in Section 6.1.2 of the current report, “potential contaminants at former TA-01 may have been released into the environment from septic systems, the industrial waste line, drainlines, and storm water drainages occurred as a result of normal site operations (e.g., discharges from outfalls) and accidental spills or releases. No documentation exists to estimate the volumes or rates of the flow of the effluent from septic system outlet pipes, industrial waste line, drainlines, or storm water drainages to outfalls.” In looking at both the current report and the 2009 report for this area, historical evidence suggests a potential source(s) for nitrates and there is reason to suspect they could be site related; stating concentrations are likely background without any discussion of how the past activities described in Section 6.1.2 support this conclusion does not provide sufficient rationale to exclude nitrates as a COPC. As such, and for consistency with the 2009 investigation for AOC 01-001(k), nitrates should be retained as a COPC. Revise the report accordingly.
5. Section 6.2.4.3. Detected polyaromatic hydrocarbons (PAHs) (benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene) were eliminated as COPCs based on the presumption that PAHs are common in urban runoff, or are related to other naturally occurring or anthropogenic background sources, as discussed in Section 5.1. It is not acceptable to eliminate PAHs as COPCs based on the reasons provided. If the PAHs are not related to site activities, then it must be shown by comparing site concentrations to site-specific background values. It is acknowledged that the PAHs were detected sporadically and at low levels. However, unless it can be shown that they are not site related in a site-to-background analysis, then they must be retained as COPCs in the risk assessments. Revise the risk assessment accordingly. (It is noted that a meeting to discuss PAHs in site characterization and risk assessments is scheduled for the 29th of May.)
6. Table G-2.3-2. The number of detects listed for lead (3) and uranium-235/236 (2) appears to be incorrect. It is acknowledged that this typographical error does not affect the results. However, modify Table G-2.3-2 to display the correct number of detects for lead (33) and uranium-235/236 (7).

7. Appendix G, Attachment G-2. In the “DATAENTER” tab of the vapor intrusion spreadsheets, clarify the source of these input values: ‘soil dry bulk density’, ‘soil total porosity’, and ‘soil water filled porosity’. It is not clear whether they are site-specific or if they are based on a default soil type; include the rationale for the selection of these variables.
8. Table G-4.2-6. The construction worker screening action level (SAL) listed for uranium-235/236 (100 picocuries per gram, pCi/g) is not consistent with the SAL of 150 pCi/g listed in Los Alamos National Laboratory’s (2012) *Derivation and Use of Radionuclide SALs, Revision 2*. Revise Table G-4.2-6 accordingly. It is noted that this does not affect the overall results of the risk assessment.