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NEW MEXICO
ENVIRONMENT DEPARTMENT

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EP2012-5166

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 28, 2012

P. Maggiore, Assistant Manager
Environmental Projects Office
DOE/NNSA
Los Alamos Site Office
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Los Alamos, NM 87544

Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Security, L.L.C. P.O.
Box 1663, MS M991
Los Alamos, NM 87545

U1201428

RE: DISAPPROVAL
INVESTIGATION REPORT FOR CAÑON DE VALLE AGGREGATE AREA, TECHNICAL AREA 14
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-12-004

Dear Messrs. Maggiore and Graham:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security L.L.C.'s (LANS) (collectively, the Permittees) *Investigation Report for Cañon de Valle Aggregate Area, Technical Area 14* (IR), dated January 2012, received January 30, 2012, and referenced by LA-UR-12-0072 and EP2012-0005. NMED has completed review of the IR and hereby issues this Disapproval.

General Comments:

1. In Section 5.3 of the IR (*Inorganic Chemicals Detected in Qbt 4 at [technical area]TA-14 Sites*), the Permittees indicate that concentrations of inorganic constituents in weathered Qbt 4 at TA-14 are not statistically different from background concentrations in soil. However, the box plots (provided as Figures G-14 through G-36 on IR pages G-7 through G-18) show that concentrations of inorganic constituents at TA-14 sites are elevated compared to Qbt 2, 3, and 4 background, but are slightly lower than soil background. Review the IR text and revise as necessary to ensure the text is consistent with what is illustrated in the box plots.

Specific Comments:

2. **Section 6.7.4.3, Soil and Rock Sample Analytical Results, Organic Chemicals, first paragraph, page 30:**

   Permittees' Statement: "All 30 samples (17 soil and 13 Qbt 4) were analyzed for explosive compounds and [semi-volatile organic compounds] SVOCs, 6 samples (2 soil and 4 Qbt 4) were analyzed for [polychlorinated biphenyls] PCBs, and 15 samples (4 soil and 11 Qbt 4) were analyzed for [volatile organic compounds] VOCs."

   NMED Comment: The potential for migration of dioxins/furans was not addressed in the IR although a limited number of samples were analyzed for PCBs. PCBs were not found at detectable concentrations at Area of Concern (AOC) 14-001(g). When manufactured, PCBs are often contaminated with dioxins/furans.

   Include a discussion in the Permittees' response to this Disapproval concerning the likelihood that dioxins/furans may be present at this active firing site and firing sites in general. In the event the discussion concludes dioxins/furans may be present, include evaluation for these compounds in the Phase II work plan for the Cañon de Valle, TA-14 Aggregate Area.

3. **Section 6.9.1.4, Site Contamination, Organic Chemicals, first paragraph, page 60:**

   Permittees' Statement: "All 12 samples (8 soil and 4 Qbt 4) were analyzed for explosive compounds and SVOCs, 6 samples (5 soil and 1 Qbt 4) were analyzed for PCBs, and 10 samples (6 soil and 4 Qbt 4) were analyzed for VOCs."

   NMED Comment: Although Section 6.9.1.1 (*Site Description and Operation History*) of the IR indicates building 14-5 was of wood frame construction and that the wood portions of the building were destroyed by the Cerro Grande fire in

2000, none of the collected soil samples were analyzed for dioxins/furans. Include a proposal in the Phase II work plan for the Cañon de Valle, TA-14 Aggregate Area to collect soil samples from at least two locations within the footprint of former building 14-5 and from at least two locations directly south of the building that are representative of areas that receive site drainage. The samples must be analyzed for dioxins/furans.

Acknowledge this requirement in the Permittees' response to this Disapproval.

4. **Section 6.14.4.1, Soil and Rock Sampling, second bulleted item, page 98:**

Permittees' Statement: "Ten samples were collected from five locations within and around the structure footprint at 0–1 ft and 3–4 ft bgs. Samples were analyzed for TAL metals, total cyanide, nitrate, perchlorate, explosive compounds, PCBs (20% of samples), SVOCs, and VOCs (excluding surface samples)."

NMED Comment: Although Section 6.14.1 (*Site Description and Operation History*) indicates the wood-framed magazine was destroyed by burning in 1963, no samples were analyzed for dioxin/furans. Include a proposal to collect soil samples from at least one location within the footprint of former building 14-1 and from at least four locations outside the building footprint in the Phase II work plan for the Cañon de Valle, TA-14 Aggregate Area. The samples must be analyzed for dioxins/furans.

Acknowledge this requirement in the Permittees' response to this Disapproval.

5. **Section 6.20.4.3, Soil and Rock Sample Analytical Results, first paragraph, page 120:**

Permittees' Statement: "All 10 samples (2 soil and 8 Qbt 4) were analyzed for explosive compounds and SVOCs, 2 Qbt 4 samples were analyzed for PCBs, and 5 Qbt 4 samples were analyzed for VOCs."

NMED Comment: Section 6.20.1 (*Site Description and Operation History*) indicates the magazine was destroyed by burning in 1960 but no samples were analyzed for dioxin/furans.

Include a proposal to collect soil samples from at least one location within the footprint of former building 14-13 and from at least two locations directly south of the building that are representative of areas that receive site drainage in the Phase II work plan for the Cañon de Valle, TA-14 Aggregate Area. The samples must be analyzed for dioxins/furans.

Acknowledge this requirement in the Permittees' response to this Disapproval.

6. **Section 7.1, Nature and Extent of Contamination, sixth paragraph, page 124:**

   Permittees' Statement: "As a result, it was concluded that the nature and extent of contamination have been defined or further sampling to define extent is not warranted for seven sites:…"

   NMED Comment: Analyses of dioxins/furans must be performed on samples collected from Solid Waste Management Unit (SWMU) 14-003 and AOC C-14-001.

7. **Figure 6.12-1, SWMU 14-006 Site Map and Sampling Locations. Page 159:**

   NMED Comment: An industrial waste line is illustrated on the figure. It appears to run underneath the decommissioned sump and outfall associated with SWMU 14-006 at several locations but does not appear to be connected at either end to any buildings or other structures associated with the SWMU. As illustrated, the line appears to discharge into a canyon area at an approximate elevation of 7,362 feet. The waste line is not mentioned in the IR text.

   Include information about this waste line in the revised IR. Indicate the material composition of the line and what type(s) of waste(s) have been or are currently discharged to the line. Indicate what the Permittees' plans are for future investigation or excavation and removal of the line and describe the anticipated confirmation sampling and analyses that will be completed after the line is removed.

8. **Section H.3-3, Exposure Point Concentration Calculations, page H-7:**

   NMED Comment: The acronym for exposure point concentrations (EPCs) is incorrect. Modify Section H.3-3 to display the correct acronym for EPCs.

9. **Section H-5.4.4, Comparison with Background Concentrations, pages H-18 and H-19:**

   NMED Comment: Several inorganics were eliminated as constituents of potential ecological concern (COPECs) based on a comparison of EPCs with background concentrations, as shown on Tables H-5.4-1 and H-5.4-2. This is not an appropriate screening tool to be used to eliminate COPECs from further evaluation in the ecological risk assessments for the following reasons:

   a. Site-to-background comparisons were already conducted and resulted in the lists of constituents of potential concern (COPCs) to be retained for analysis in the risk assessments;

   b. It is not appropriate to compare 95% upper confidence limits (UCLs) with individual background concentration terms. In cases where statistical tests concluded that site

concentrations of COPCs were elevated compared to background, EPCs based on 95% UCLs would be greater than 95% UCLs that could be calculated for the background data set. Therefore, it is incorrect to assume that exposure to EPCs (based on 95% UCLs) for inorganic COPCs would be the same as exposure to background levels.

c. Refinement of inorganic COPECs should include application of area use factors and use of soil screening levels based on lowest observed adverse effects levels (LOAELs).

Remove the discussion comparing EPCs with background concentrations from the ecological risk assessments. Retain all inorganics that were eliminated as COPECs based on a comparison of EPCs with background concentrations. Modify the ecological risk assessments to utilize the accepted methods for refining COPECs, such as the application of area use factors and use of ecological screening levels based on LOAELs.

10. Table H-5.3-3, Minimum ESL Comparison for SWMU 14-003, page H-53:

NMED Comment: The hazard quotient listed for tetranitro-1,3,5,7-tetrazocine(1,3,5,7-) (HMX) is incorrect in the minimum ESL comparison for SWMU 14-003. HMX should be eliminated as a COPEC since the hazard quotient would be less than 0.3. It is noted that the correct values were presented in subsequent calculations and this inconsistency does not affect the results. Nevertheless, modify Table H-5.3-3 to display the correct hazard quotient and show that HMX was eliminated as a COPEC at SWMU 14-003.

11. Attachment H-2, Johnson and Ettinger Model Spreadsheets, (On CD):

NMED Comment: The toxicity data for methylene chloride used in the Johnson and Ettinger model for the vapor intrusion pathway are not current. For example, the inhalation unit risk factor of 4.7E-7 $(\mu g/m^3)^{-1}$ and the reference concentration of 3.0 $\mu g/m^3$ used in the model are not consistent with the inhalation unit risk factor of 1.0E-8 $(\mu g/m^3)^{-1}$ and the reference concentration of 600 $\mu g/m^3$ currently listed in US EPA's integrated risk information system (IRIS). It is noted that the values used result in a more conservative soil screening level and this inconsistency does not affect the conclusions of the risk assessment at SWMU 14-003. However, in the future ensure that current toxicity data are used in the Johnson and Ettinger model. No response is required.

The Permittees must address all comments and submit a revised IR by **July 31, 2012**. As part of the response letter that accompanies the revised IR, include a table that details where all revisions have been made to the IR and that cross-references NMED's numbered comments. All submittals (including maps) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the Order. The Permittees must also submit a redline-strikeout

version that includes all changes and edits to the IR (electronic copy) with the response to this disapproval.

If you have any questions regarding this letter, please contact Daniel Comeau at (505) 476-6043.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: N. Dhawan, NMED HWB
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