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NEW MEXICO
ENVIRONMENT DEPARTMENT

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Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

October 4, 2010

George J. Rael, Federal Projects Director
Environmental Projects Office
U.S. Department. of Energy / National
Nuclear Security Administration
Los Alamos Site Office
3747 West Jemez Road, MS A316
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

RE: NOTICE OF DISAPPROVAL
INVESTIGATION REPORT
THREEMILE CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-10-049

Dear Messrs. Rael 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 Threemile Canyon Aggregate Area* (Report), dated June 2010 and referenced by LA-UR-10-4358/EP2010-0269. NMED hereby issues this Notice of Disapproval (NOD) for the Report.

General Comment:

1. Numerous inconsistencies were noted between the text and the corresponding data tables. For example, the Permittees stated that the concentration of barium increased with depth at locations 12-610670, 12-610701, and 12-610787. In fact,

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concentrations of barium also increased with depth at locations 12-610647, 12-610650, 12-610654, 12-610671, and 12-610694 (see Table 4.2-2). Similarly, chromium concentrations increased with depth at locations 12-610650, 12-610668, 12-610670, 12-610697, and 12-610701 in addition to the locations mentioned in the text (see Table 4.2-2). The Permittees must conduct a thorough review of the entire document and resolve the discrepancies between the text and the data tables.

Specific Comments:

1. **Section 4.1, Background of Former TA-12, page 10:**
   Permittees Statement: "Most of former TA-12 was incorporated inside the boundary of TA-67 and the remaining area was incorporated into TA-67, and the remaining area was incorporated into TA-15".

   NMED Comment: The Permittees must revise the statement to clarify that former TA-12 was incorporated into TA-15 and TA-67.

2. **Section 4.2.1.4, Nature and Extent of Soil and Rock Contamination, page 15:** Barium was detected above background values (BVs) in the drainage sampling locations (i.e., 12-610670 and 12-610671). However, the lateral extent of barium is defined in the drainage because it was not detected in samples collected downgradient of these locations. The Permittees must clarify and revise the text accordingly.

3. **Section 6.1.2, Subsurface Conditions, page 49:** The Permittees state that structures 15-264, 15-265, 15-61, 15-62, 15-147, and 15-282 are shown on Figure 6.1-1. NMED could not locate these structures on Figure 6.1-1. The Permittees must revise the figure to depict these structures or clearly indicate where they can be found.

4. **Section 6.3, AOC 15-004(d), Firing Platforms, page 51:** The Permittees state that engineering drawings demonstrate that AOC 15-004(d) is a duplicate of SWMU 15-004(a). In Section 6.3.3.1, the Permittees propose that full characterization of AOC 15-004(d) be delayed because it lies entirely within the boundary of SWMU 15-004(a), which is deferred per Table IV-2 of the 2005 Consent Order. While AOC 15-004 (d) lies within the boundaries of SWMU 15-004(a), is not the same unit. The Permittees must revise the text to clarify that that these two sites are not duplicates; they are collocated, so full characterization is deferred for both sites.

5. **Section 6.6.1.3, Site Contamination, Organic Chemicals, page 66:** The text states that sampling locations and detected concentrations for organic chemicals are shown in Figure 6.6-3. The caption for Figure 6.6-3 indicates that it depicts organic chemicals detected at AOC 15-008(g); however, the figure shows sampling locations for SWMU 15-009(b), and not for AOC 15-008(g). The Permittees must revise the figure to present detected concentrations of organic chemicals at AOC 15-008(g).

6. **Section 6.7.1.1, Historical Releases, page 68:** The discussion in this section references SWMU 15-007(c), not SWMU 15-008(b). The Permittees must correct the error.

7. **Section 6.7.2.3, Site Contamination, Soil and Rock Sampling, page 73:** SWMU 15-007(d) and SWMU 15-007(c) are similar in nature; both consist of a 130 ft deep shaft that was used to conduct underground explosive tests. Lead shot was found on the surface at both of these sites. Appendix F (Investigation-Derived Waste Management) includes discussion on disposition of lead shot recovered from SWMU 15-007(c) but not SWMU 15-007(d). It is not clear if lead shot was removed from the surface of SWMU 15-007(d) as part of the 2009-2010 investigation. The Permittees must clarify whether or not lead shot was removed from both sites, or provide justification for not removing it at SWMU 15-007(d).

   At SWMU 15-007(c), 44 samples were collected from 22 locations at two depths (0-0.5 ft and 1-2 ft), in addition to 39 samples collected from the three 180 ft boreholes. However, no samples were collected from 0-0.5 ft and 1-2 ft depths at SWMU 15-007(d) as proposed in the approved work plan. Samples were only collected at depth from the 180 ft boreholes at SWMU 15-007(d). Results of the investigations conducted at SWMU 15-007(c) are indicative of releases of inorganic chemicals at the surface. The Permittees must propose to collect additional samples from a minimum of two depths (0-0.5 ft and 0-1 ft) to define the nature and extent of contamination at SWMU 15-007(d) during the next phase of investigations.

8. **Section 6.7.2.4, Nature and Extent of Soil and Rock Contamination, page 75:** The Permittees make contradictory statements in their discussion of nature and extent of radionuclide contamination: "The concentrations of tritium decreased with depth at both boreholes. The vertical extent of tritium is not defined" and "The lateral extent of tritium is defined because the concentrations of tritium increased laterally from location 15-610818 at SWMU 15-007(c)." The Permittees must revise the text to clarify why the vertical extent of tritium is considered not defined when the concentrations decrease with depth in both the boreholes and lateral extent is considered defined when concentrations are increasing laterally. The Permittees must also correct the typographical error; the discussion in this section is about SWMU 15-007(d), not SWMU 15-007(c).

9. **Section 6.10.3.3, Soil and Rock Sample Analytical Results, page 85:** The text indicates that Table 6.10-3 presents the detected organic chemicals at SWMU 15-009(h). Although the caption for the Table 6.10-3 reads 'Organic Chemicals Detected at SWMU 15-009(h)', the table presents results for radionuclides instead of organic chemicals. Similarly, Table 6.10-4 that is supposed to present results for radionuclides reports results for organic chemicals. The table content and captions appear to be reversed. The Permittees must revise Tables 6.10-3 and 6.10-4 accordingly.

10. **Section 8.1, Nature and Extent of Contamination, pages 120-121:** Several discrepancies were noted between the conclusions and the discussion of nature and extent for individual SWMUs/AOCs. For example, the text in Section 4.2.1.4 (pages 16 and 17) indicated that the vertical and lateral extent of nickel is not defined at SWMU 12-001(a); however, the text in this section concluded that lateral extent of nickel is defined. Similarly, the conclusions contradict previous statements in the text. For example, at AOC 12-004(a), the vertical extent of cadmium is defined and the vertical extent of calcium is not defined (page 26). The vertical extent of mercury is not defined at SWMU 15-008(b) (page 62). The Permittees must review the entire Report to ensure that conclusions drawn at the end are in agreement with the previous discussions of nature and extent. The Permittees must make appropriate revisions to the Report.

11. **Plate 26, Inorganic Chemicals Detected or Detected above BVs at SWMU 36-008 and SWMU C-36-003:** The detected concentrations of inorganic chemicals reported for sampling location 36-601824 (RE36-10-8279, 0-0.5 ft) are incorrect. Two sets of data are reported for one sample. The Permittees must revise the figure to report applicable data for sample RE36-10-8279. In addition, the Permittees must indicate sampling location 36-610584 in the figure which is currently hidden by the inset on the Plate.

The Permittees must respond to all comments and submit a revised Report by **November 3, 2010**. As part of the response letter that accompanies the revised Report, the Permittees must include a table that details where all revisions have been made to the Report and that cross-references NMED's numbered comments. All submittals (including maps and tables) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the Order. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

Please contact Neelam Dhawan at (505) 476-6042, if you have any questions.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

BRZ:nmd

cc: J. Kieling, NMED HWB
D. Cobrain, NMED HWB
N. Dhawan, NMED HWB
S. Yanicak, NMED DOE OB, MS J993
T. Skibitski, NMED DOE OB
L. King, EPA 6PD-N
W. Woodworth, DOE LASO, MS A316
J. McCann, LANS, EP-CAP, MS M992

File: 2010 LANL, Threemile Canyon Aggregate Area Investigation Report.