



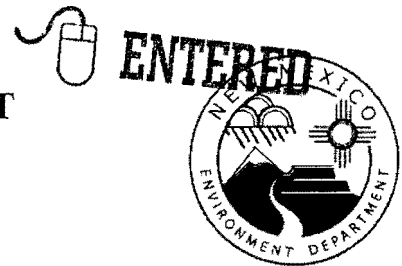
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Cabinet Secretary

BUTCH TONGATE
Acting Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

September 30, 2011

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Department of Energy/National
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Michael J. Graham, Associate Director
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**RE: NOTICE OF DISAPPROVAL
PHASE II INVESTIGATION WORK PLAN
THREEMILE CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY
EPA ID #NM0890010515
HWB-LANL-11-044**

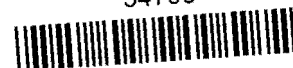
Dear Messrs. Rael and Graham:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively, the Permittees) *Phase II Investigation Work Plan for Threemile Canyon Aggregate Area (IWP)*, dated June 2011 and referenced by EP2011-0162. NMED hereby issues this Notice of Disapproval.

General Comment:

1. The Permittees must describe in detail the methods that will be used to collect the samples for volatile organic compounds (VOCs). Details must be provided for how samples will be collected from the sampling devices, the procedures that will be used to

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transfer the samples to sampling containers, the types of sample containers to be used, how the sample containers will be filled to eliminate headspace, and the method to be used for storage of the sample containers. Methods to collect samples for different media such as soil, sediment, and tuff, must be described separately. The Permittees must describe every step of sample collection in detail so NMED can determine whether the proposed collection methods will minimize the loss of VOCs during sample collection.

Specific Comments:

1. Section 4.1.1.3, Proposed Activities at Consolidated Unit 12-001(a)-99, page 8:

- a. Barium was detected at the highest concentration at location 12-610694 (407 mg/kg at 3-0-3.4 ft below ground surface (bgs)). The concentrations of barium increased with depth at this location, indicating an increasing trend. In addition, the lateral extent of barium is not defined to the west of location 12-610694. The Permittees proposed to collect additional samples at locations 12-610694, 1a-1, and 1a-2, but did not include analysis of barium for these samples. Barium analyses must be included in the analytical suite for samples to be collected from these locations, to define the vertical and lateral extent of barium.
- b. The Investigation Report for Threemile Canyon Aggregate Area (IR) concluded that the vertical extent of silver was not defined at location 12-610647. The IWP does not discuss whether additional sampling is required to define the vertical extent of silver. However, review of the data indicates that additional sampling is not warranted for silver. Revise the IWP to include discussion on determination of the vertical extent of silver at the site.

2. Section 4.1.2.3, Proposed Activities at AOC 12-004(a), page 10:

- a. The IR concluded that the lateral extent of cobalt was not defined to the north, east, and west at area of concern (AOC) 12-004(a). The IWP proposes samples to be collected only from one location (4a-7) west of existing sampling location 12-610527 for cobalt analysis. No sampling is proposed to the north and east of the existing sampling locations to define the lateral extent of cobalt. Samples must be collected to define the lateral extent to the north and east of the existing sampling locations as recommended in the IR. Revise the IWP accordingly.
- b. Section 4.1.2.2 of the IWP and the IR both concluded that the vertical extent of chromium is not defined at location 12-610539. However, additional sampling is not proposed at this location to define the vertical extent of chromium (*See* Table 4.1-2). The Permittees must either propose to collect additional samples for chromium analysis at location 12-610539 to define the vertical extent or provide an explanation for not proposing additional sampling at this location in the revised IWP.

3. Section 4.1.4.3, Proposed Activities at AOC C-12-001, page 13:

The IR concluded that the vertical extent of chromium was not defined at locations 12-610624, 12-610625, and 12-610628. The Permittees propose samples to be collected from locations 12-610624 and 12-610625, but not from location 12-610628. Explain why additional samples are not proposed at location 12-610628 to define the vertical extent of chromium.

4. Section 4.1.5.3, Proposed Activities at AOC C-12-002, page 14:

The Permittees propose to collect samples from depths of 5-6 ft and 9-10 ft bgs to define the vertical extent of contamination at locations 12-610631 and 12-610632. Additional samples are also proposed to be collected from four step-out locations (C2-1, C2-2, C2-3, and C2-4) to define the lateral extent of contamination. However, the step-out samples are proposed to be collected from only two depths (i.e., 0-1 ft and 2-3 ft bgs). The Permittees must collect samples from a depth of 5-6 ft bgs at the proposed step-out locations to ensure that the vertical extent of contamination will be defined at these locations.

5. Section 4.2.1.2, Nature and Extent of Contamination, page 16:

The first paragraph incorrectly refers to the AOC C-14-006 as AOC C-12-006. Correct the typographical error.

6. Section 4.3.3.2, Nature and Extent of Contamination, page 21:

- a. In addition to the 20 locations cited in the text, the vertical extent of chromium is not defined at location 15-610721 at solid waste management unit (SWMU 15-008(b)). The chromium was not detected above soil background value (BV) in the shallow sample (0-0.5 ft bgs) but was detected above the BV at 26.3 mg/kg in a sample collected from 1-1.9 ft bgs at this location. Revise the IWP to propose sampling to define the vertical extent of chromium at this location.
- b. The vertical extent of cobalt is not defined at location 15-610750, not 610750 as stated in the text. Correct the typographical error.
- c. In addition to seven locations mentioned in the text, the vertical extent of copper is not defined at location 15-610748 (*See IR, page 65*). Further, samples were collected from only one depth at location 15-610762; the vertical extent of copper is also not defined at this location (*See IR, page 65*). Revise the IWP to propose sampling to define the vertical extent of copper at these locations.
- d. According to the IR, the vertical extent of lead is not defined at location 15-610742, where samples were collected from only one depth (*See IR, page 65*). Revise the IWP to propose sampling to define the vertical extent of lead at this location.

- e. According to the IR, the vertical extent of uranium is not defined at location 15-610742, where samples were collected from only one depth (*See IR, page 66*). Revise the IWP to propose sampling to define the vertical extent of uranium at this location.
- f. According to the IR, the vertical extent of cesium-137 is not defined at location 15-610742, where only one depth was sampled (*See IR, page 67*). Revise the IWP to define the vertical extent of cesium-137 at this location.

7. Section 4.3.3.3, Proposed Activities at SWMU 15-008(b), page 22:

Section 4.3.3.2 identified 15-610746 as a location where the vertical extent of lead is not defined. However, section 4.3.3.3 and Table 4.3-3 do not propose lead analysis for samples to be collected from this location. Revise the text and Table 4.3-3 to correct this omission. In addition, the text must be revised in this section based on the direction provided in comment # 6.

8. Section 4.4.3.2, Nature and Extent of Contamination, page 37:

- a. The vertical extent of cadmium is not defined at location 36-610827 (*See IR page 115*) at SWMU 36-008. The Permittees must revise the IWP to include cadmium in the list of chemicals for which extent of contamination is not defined.
- b. In addition to the locations mentioned in the text, the vertical extent of chromium is not defined at locations 36-610822 and 36-610825 (*See IR page 115*). Revise the IWP to propose sampling to define the vertical extent of chromium at these locations.
- c. In addition to the locations mentioned in the text, the vertical extent of copper is not defined at locations 36-610824 and 36-610827 (*See IR page 116*). Revise the IWP to propose sampling to define the vertical extent of copper at these locations.
- d. In addition to the locations mentioned in the text, the vertical extent of total cyanide is not defined at location 36-610824. (*See IR page 116*). Revise the IWP to propose sampling to define the vertical extent of total cyanide at this location.
- e. In addition to the locations mentioned in the text, the vertical extent of mercury is not defined at locations 36-610824 (*See IR page 116*). Revise the IWP to propose sampling to define the vertical extent of mercury at this location.
- f. The vertical extent of silver is not defined at location 36-610825 and 36-610827 (*See IR page 117*). Revise the IWP to include silver in the list of chemicals for which extent of contamination is not defined.
- g. In addition to the location 36-610615 mentioned in the text, the vertical extent of uranium is not defined at location 36-610824 (*See IR page 117*). Revise the IWP

to propose sampling to define the vertical extent of uranium at this location.

- h. The vertical extent of Aroclor-1254 and Aroclor-1260 is not defined at location 36-610824 in addition to the locations mentioned in the text (*See IR page 118*). Revise the IWP accordingly.
- i. In addition to the locations mentioned in the text, the vertical extent of 4-isopropyltoluene is not defined at locations 36-610821, 36-610822 and 36-610826 (*See IR page 119*). Revise the IWP to propose sampling to define the vertical extent of 4-isopropyltoluene at these locations.
- j. The vertical extent of plutonium-238 is not defined at locations 36-610822 (*See IR page 119 and Approval with Modifications dated December 8, 2010*). Revise the IWP to propose sampling to define the vertical extent of plutonium-238 at this location.
- k. In addition to the locations mentioned in the text, the vertical extent of tritium is not defined at locations 36-610825 and 16-610826. Revise the IWP to propose sampling to define the vertical extent of tritium at these locations.
- l. The vertical extent of uranium-234 is not defined at locations 36-610824 (*See IR page 119*). Revise the IWP to propose sampling to define the vertical extent of uranium-234 at this location.

9. Section 4.4.3.3, Proposed Activities at SWMU 36-008, page 38:

The Permittees propose to collect additional samples to define the vertical extent of polycyclic aromatic hydrocarbons (PAHs) at locations 36-610607 and 36-610615. At these locations samples are proposed to be collected from depths of 5-6 ft and 9-10 ft bgs to define vertical extent. The IWP proposes to collect confirmation samples for PAH analysis from new sampling locations (8-7 and 8-8) after contaminated soil is removed. The Permittees must collect additional samples from 5-6 ft bgs at locations 8-7 and 8-8 to ensure that the vertical extent is defined at these locations. In addition, the Permittees must revise the text and Table 4.4-3 based on the direction provided in comment # 8.

10. Section 4.4.4.2, Nature and extent of Contamination, page 40:

- a. The vertical extent of silver is not defined at locations 36-610824, 36-610825, 36-610826, and 36-610827 (*See IR page 123*). However, the Permittees only state that the vertical extent of silver is not defined at locations 36-610825 and 36-610827. Revise the text to include locations 36-610824 and 36-610826, where the vertical extent of silver is also not defined.
- b. The IR concluded that the vertical extent of cadmium is not defined at location 36-610824. The Permittees contend that the vertical extent of cadmium is defined at this location because the detected concentrations are below the maximum soil

BV of 2.6 mg/kg. However, the detected concentrations indicate that at this location, there is an increasing vertical trend in detected concentrations not only for cadmium, but for copper, cyanide, and mercury. The Permittees must include cadmium in the analytical suite for samples to be collected at this location to define the vertical extent of contamination.

11. Section 4.4.4.3, Proposed Activities at SWMU C-36-003, page 41:

The Permittees state that “[E]xcavation of soil at locations 36-610824, 36-610825, 36-610826, and 36-610827 and collection of confirmation samples at these locations are described in section 4.4.3.3.” However, Section 4.4.3.3, which discusses contamination at SWMU 36-008, indicates that the confirmation samples proposed to be collected after PAH contaminated soil is removed are to be analyzed only for PAHs. The IR (*See* page 129) indicated that at SWMU C-36-003, excavation will be conducted to remove Aroclor-1254 and silver from the drainages. The general area proposed for excavation is same for both these SWMUs, but the IWP did not address removal of Aroclor-1254 and silver in the drainages. After the soil removal, the confirmation samples must be collected and analyzed for Aroclor-1254 and silver to evaluate the residual contaminant concentrations at the site. Revise the IWP accordingly.

12. Table 4.4-3, Proposed sample and Analysis at SWMU 36-008, page 116:

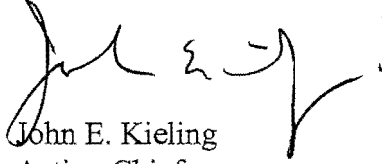
Section 4.4.3.3 indicates that samples are to be collected from two depths (3.0-4.0 ft and 7.0-8.0 ft bgs) at several locations after the contaminated soil is removed. However, the Table 4.4-3 indicates that these samples will be collected from only one depth (3-4 ft bgs). Revise the Table accordingly.

The Permittees must respond to all comments and submit a revised IWP by **October 31, 2011**. As part of the response letter that accompanies the revised IWP, the Permittees must include a table that details where all revisions have been made to the IWP 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 IWP (electronic copy) with the response to this NOD.

Messrs. Rael and Graham
September 30, 2011
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Please contact Neelam Dhawan of my staff at (505) 476-6042 should you have any questions.

Sincerely,



John E. Kieling
Acting Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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File: LANL, Threemile Canyon Aggregate Area Phase II IWP, 2011.
LANL 11-044