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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

January 26, 2009

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Federal Project Director
Los Alamos Site Office
Department of Energy
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David McInroy
Remediation Services Deputy Project Director
Los Alamos National Laboratory
P.O. Box 1663, MS M992
Los Alamos, NM 87545

**RE: NOTICE OF DISAPPROVAL
PHASE II INVESTIGATION WORK PLAN FOR MIDDLE LOS ALAMOS
CANYON AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY (LANL),
EPA ID #NM0890010515
HWB-LANL-08-051**

Dear Messrs. Gregory and McInroy:

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) *Phase II Investigation Work Plan for Middle Los Alamos Canyon Aggregate Area* (Plan), dated November 2008 and referenced by LA-UR-08-7154/EP2008-0558. NMED has reviewed the Plan and hereby issues this Notice of Disapproval.

General Comments

- 1) The enhanced visual representation of contaminant concentrations using the EarthVision program does not effectively convert a three-dimensional image to a two-dimensional figure. In some cases, sampling points appear to 'float' in the middle of the figure (e.g., Figure C-12, Distribution of Mercury at AOC 21-028(c), page C-12), making it difficult to understand this depiction of contaminant concentrations. Presentation of the Permittees' proposed sample locations is better



portrayed in Figures F-2.1-1 through F-4.1-5 of the *Middle Los Alamos Canyon Aggregate Area Investigation Report, Revision 1* (Report).

Specific Comments

1) Section 3.1.1, Site Remediation and Proposed Sampling within the TA-02 Core Area, Site Remediation, page 9, paragraph 1:

a) Permittees' Statement: "The presence of elevated concentrations of some COPCs at TA-02 indicates that remediation is warranted in the following areas. The proposed confirmation sampling locations (1-14) are shown on Plates 2 and 3."

NMED Comment: NMED acknowledges that proposed sampling locations 1-14 are *shown* on Plates 2 and 3; however, these locations are not labeled on Plate 2. The Permittees must label locations 1-14 on Plate 2 or revise the text so it references Plate 3 only.

b) Permittees' Statement: "Additional confirmation samples may be collected at the excavation sites if the excavation area is larger than anticipated. Table 3.1-1 provides a summary of the proposed sampling locations and depths, the objectives each sample addresses, and the analytical suites."

NMED Comment: NMED does not approve the proposed confirmation sampling locations at Areas of Concern (AOCs) 02-004(a), 02-004(f), 02-010, and 02-011(a) because the Permittees did not provide maps identifying the boundaries of the proposed excavation sites. The Permittees must revise the Plan to include figures which depict the proposed excavation site boundaries and the proposed confirmation sampling locations.

2) Section 3.1.1, Site Remediation and Proposed Sampling within the TA-02 Core Area, Proposed Sampling, page 10, paragraph 1:

Permittees' Statement: "A reevaluation of the data indicated further sampling for some COPCs was not warranted. For VOCs, 227 of 41,598 VOC results were detects (0.5%), with a maximum concentration of 0.133 mg/kg; 91% of the detects were at or below the estimated quantitation limits (EQLs). Nitrate and perchlorate were detected at low concentrations across much of the site (90% of detected nitrate concentrations were less than 5 mg/kg, within the expected range of naturally occurring nitrate; 99% of detected perchlorate concentrations were less than 0.05 mg/kg). These distributions and concentrations are not indicative of operational releases and do not warrant further investigation. Therefore, proposed sampling suites do not include VOCs, nitrate, or perchlorate."

NMED Comment: Based on the data provided in the Report, NMED concurs that further sampling is not warranted for VOCs, nitrate, and perchlorate within the TA-2 core area. However, the Permittees' statement concerning operational releases is misleading. NMED relies on analytical results, not conclusions regarding the origin of the contaminants, to determine whether or not the objectives of the investigation were achieved. In this case,

lateral and vertical extent was adequately defined for VOCs, nitrate, and perchlorate. The Permittees must remove this statement from the text.

3) Section 3.1.1, Site Remediation and Proposed Sampling within the TA-02 Core Area, Proposed Sampling, page 10-12, bullet 7:

NMED Comment: Based on the data presented in the Report, samples collected from Location 21 must be analyzed for TPH-DRO and semi-volatile organic compounds (SVOCs).

4) Section 3.1.1, Site Remediation and Proposed Sampling within the TA-02 Core Area, Proposed Sampling, page 12:

Permittees' Statement: "A total of 21 locations (39-59 on Plate 2) will be sampled surrounding the TA-02 core area, including to the west toward the boundary of TA-41, and to the east toward the boundary of TA-53/TA-21. These locations will be approximately 150 ft apart, except the locations to the west that will be approximately 200 ft apart."

NMED Comment: The Permittees have not adequately explained why the sampling locations to the west require a greater distance (200 feet versus 150 feet) between sampling points. The Permittees must provide additional justification (*e.g.*, site features, access restrictions) as to why the sampling locations to the west require a larger distance between sampling points.

5) Section 3.2.3, Extent of Contamination and Proposed Sampling at AOC 21-028(c), North Side, page 17, bullet 6:

Permittees' Statement: "The lateral and vertical extent for cesium-137, isotopic uranium, and tritium are defined."

NMED Comment: According to Section F-3.2.6, *Nature and Extent of Contamination at AOC 21-028(c)*, in the Report "[a]dditional sampling is necessary to define the vertical extent of ...tritium and isotopic uranium." This contradicts the above assertion. Samples collected at AOC 21-028(C) must be analyzed for tritium and isotopic uranium, or otherwise resolve the discrepancy between the Report and the Plan.

6) Section 3.2.3, Extent of Contamination and Proposed Sampling at AOC 21-028(c), East Side, page 18, bullet 6:

Permittees' Statement: "Lateral extent is not defined for americium-241 and isotopic plutonium to the north, west, east, and southeast. However, lateral extent of americium-241 and isotopic plutonium to the northwest, southwest, and south is defined by DP Site Aggregate Area locations 21-601120, 21-601117, 21-601129, and 21-601116 of Consolidated Unit 21-023(a)-99."

NMED Comment: The locations within DP Site Aggregate Area (referenced above) being used to define the lateral extent of americium-241 and isotopic plutonium to the northwest, southwest and south of AOC 21-028(c) have increasing concentrations of isotopic plutonium with depth. For this reason, additional sampling to define the extent of isotopic plutonium was proposed in the DP Site Aggregate Area Phase II Investigation Work Plan. Because the extent of isotopic plutonium is not defined at Consolidated Unit 21-023(a)-99, and therefore not defined to the northwest, southwest, and southern portions of AOC 21-028(c), the Permittees must elaborate on whether or not the additional samples proposed in the DP Site Aggregate Area Phase II Investigation Work Plan for Consolidated Unit 21-023(a)-99 will be used to determine the extent of americium and plutonium and eventually be used in the risk assessment for AOC 21-028(c). The Permittees may also propose additional sampling locations to determine the lateral extent of isotopic plutonium, rather than relying on data from the DP Site Aggregate Area Phase II investigation.

7) Section 3.3.1, Extent of Contamination and Proposed Sampling at TA-26, Mesa Top, page 20:

Permittees' Statement: "The extent of contamination was evaluated based on the results from the 17 locations on the mesa top."

NMED Comment: NMED assumes that the 17 mesa top sampling locations referenced above are the following boring locations referenced in the Report: 26-600910-600920, 26-600924 and 26-600925, 26-600928, 26-600929, and 26-600773 and 26-600774. However, as other sections in the Plan (e.g., Section 3.2.3, *Extent of Contamination and Proposed Sampling at AOC 21-028(c), North Side*, page 17) the Permittees must identify the sample locations from the Report used to make decisions regarding additional sampling.

8) Section 3.3.1, Extent of Contamination and Proposed Sampling at TA-26, Canyon Slope, page 22:

Permittees' Statement: "The TA-26 site is located on the mesa top above the lower portion of Los Alamos Canyon reach LA-2 East, as reported in the "Evaluation of Sediment Contamination in Upper Los Alamos Canyon: Reaches LA-1, LA-2, and LA-3" and the "Los Alamos and Pueblo Canyons Investigation Report". The COPCs identified for TA-26 are similar to those in reaches LA-1, LA-2, and LA-3. Because similar contaminants are identified in all three canyon reaches, including those upstream and downstream of TA-26, the extent of contamination is defined for TA-26 in the downslope direction to the main drainage channel of Los Alamos Canyon. No additional sampling is warranted in the downslope direction to the canyon."

NMED Comment: The reaches are designed to identify contaminants in sediment in the canyons, not to define the extent of SWMUs and AOCs on the mesa top or canyon slope. The Permittees must therefore provide additional or alternative justification supporting the assertion that the extent of contamination is defined at TA-26 or obtain samples from the two additional locations proposed on Figure 3.3-1 (attached). Samples must be collected at the

same intervals and analyzed for the same analytical suite established for the "Canyon Slope" samples in Table 3.3-1 of the Plan.

9) Section 6.0, Schedule, page 26:

Permittees' Statement: Based on the schedule, the Middle Los Alamos Canyon Aggregate Area Phase II Investigation Report will be submitted 24 months after NMED approves this work plan."

NMED Comment: NMED will provide the due date for the Middle Los Alamos Canyon Aggregate Area Phase II Investigation Report in its approval of the Plan.

10) Appendix B, Section B-2.3, Drill Cuttings, page B-2, paragraph 2:

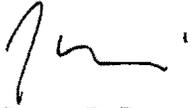
Permittees' Statement: "The cuttings may be land-applied if they meet the criteria in the NMED –approved notice of intent (NOI) decision tree for land application of investigation-derived waste solids from construction of wells and boreholes."

NMED Comment: NMED concurs with the use of drill cuttings, which meet the residential SSLs/SALs and land disposal restrictions, for use as overburden, road construction material, and other appropriate uses in accordance with the NOI decision tree. However, the Permittees may not use the drill cuttings to backfill boreholes. The boreholes must be properly plugged and abandoned in accordance with Section X.D of the Order.

The Permittees must address all comments and submit a revised Plan by February 27, 2009. 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. In addition, the Permittees shall submit a redline-strikeout version that includes all changes and edits to the Plan (electronic copy) with the response to this NOD.

Please contact Kathryn Roberts at (505) 476-6041, should you have any questions.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
K. Roberts, NMED HWB
S. Yanicak, NMED DOE OB, MS J993
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File: Reading and LANL '08, TA-2 [02-003(a-e), 02-004(a-g), 02-005, 02-006(a-e), 02-007-00 (02-007, 02-009(a-c), 02-009(e)), 02-008(a), 02-008(c), 02-009(d), 02-010, 02-011(a-e), 02-012, 21-004(b)-99 (21-004(b), 21-004(c), 21-004(d)), 21-006(e)-99 (21-006(e), 21-006(f)), 21-011(b), 21-022(b)-99 (21-022(b-e), 21-022(g)), 21-028(c), 26-001, 26-002(a-b), 26-003]

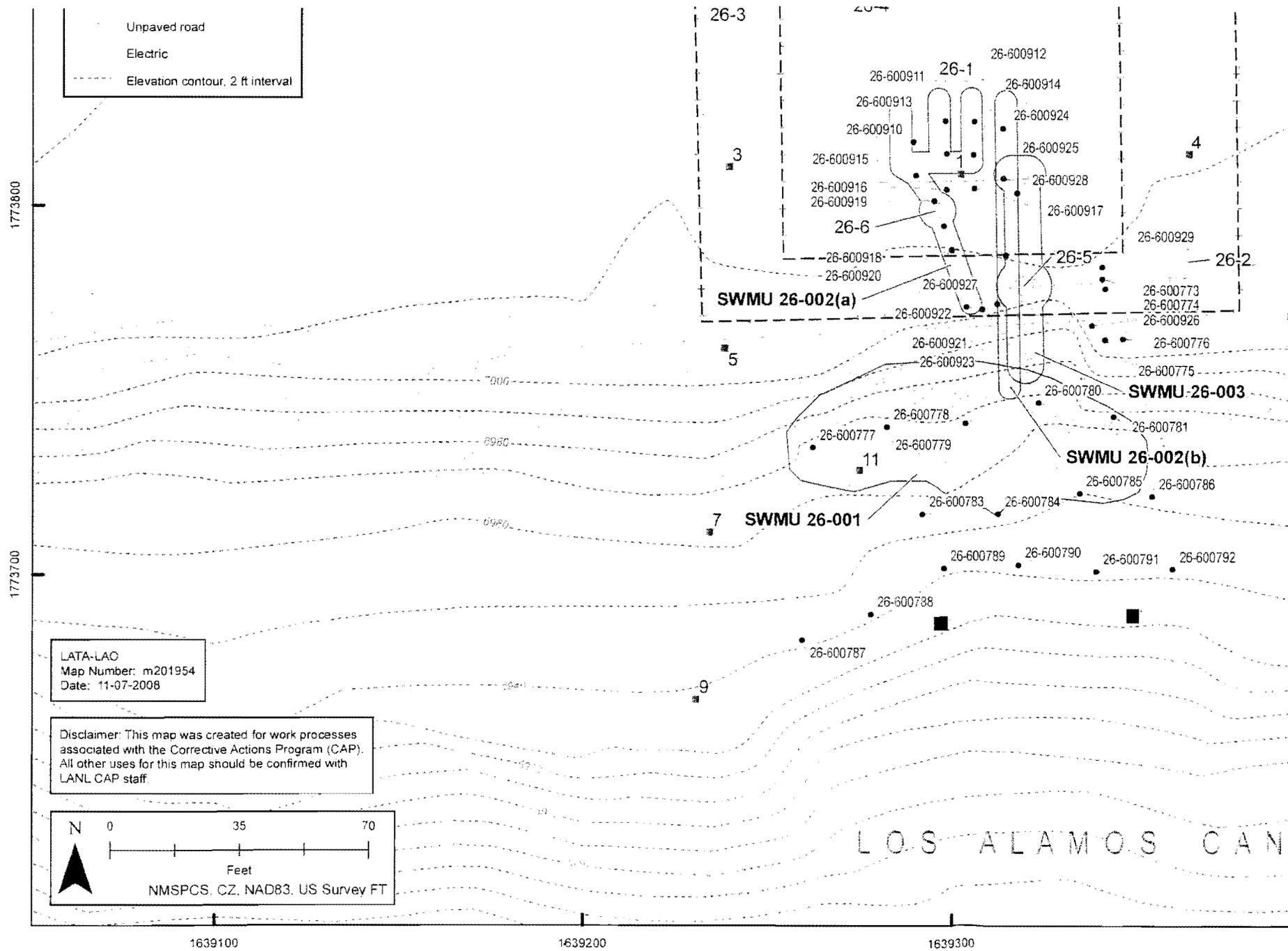


Figure 3.3-1 Proposed sampling locations at TA-26