TA21

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 28, 2005

David Gregory, Federal Project Director
Los Alamos Site Office
Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, NM 87544

G. Pete Nanos, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, NM 87545

RE: NOTICE OF DISAPPROVAL FOR THE INVESTIGATION WORK PLAN FOR SOLID WASTE MANAGEMENT UNIT 21-017(a)-99, MATERIAL DISPOSAL AREA U, AT TECHNICAL AREA 21
LOS ALAMOS NATIONAL LABORATORY (LANL), EPA ID #NM0890010515
HWB-LANL-04-015

Dear Messrs. Gregory and Nanos:

The New Mexico Environment Department (NMED) is in receipt of the *Investigation Work Plan for Solid Waste Management Unit 21-017(a)-99, Material Disposal Area U, at Technical Area 21*, dated November 2004 and referenced by LA-UR-04-7268 (ER2004-0569). NMED hereby issues this Notice of Disapproval of the aforementioned Work Plan. The Department of Energy and the Regents of the University of California (collectively the "Permittees") must respond to all comments as outlined in this letter within thirty (30) days of receipt of this letter.

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General Comments:

1. Figure 2.1-1 in the Historical Investigation Report (HIR) is incorrectly labeled. All MDA boundaries should be in green and buildings/structures in yellow. The figure shows all MDAs in yellow except MDA V. The Permittees must ensure the legend corresponds to the figure.

2. There are a handful of items listed in Section 8.0, References that are not included in the Reference Set for TA-21. NMED cannot adequately evaluate the work plan without reviewing the references provided throughout the report. The Permittees must supply these references to the NMED for review. A list of these references is attached.

Specific Comments:

1. **Section 2.1, Operational History, page 3, paragraph 1:**

   Permittees' Statement: "In 1985 site stabilization efforts began. Excavation of material from a trench 20 ft wide, 100 ft long, and 4 to 13 ft deep was reported (Merrill 1990, 11721), a minimum of 8000 ft^3. Material above the pipelines was excavated, stockpiled, and used to backfill the pipeline trench." "Records from TA-54 indicate approximately 3000 ft^3 of material from MDA U was taken to MDA G following this excavation, indicating a significant volume of material was returned to the site (Benson 2004, 87383)."

   NMED Comment: The Permittees must provide more information regarding the trench that was dug in 1985. There is no map showing the location of the excavation and no explanation as to why records at TA-54 only show that 3000 ft^3 of material was taken for disposal at Area G. The Permittees must explain where the remaining 5000 ft^3 of material is located.

   Permittees' Statement: "The distribution box and pipelines within the absorption beds, portions of the two absorption beds, and a portion of the drainline from the cooling tower were excavated and taken to MDA G within Area G at TA-54 (LANL 1991, 07529, p. 16-19) (Figure 2.1.2)."

   NMED Comment: Figure 2.1.2 does not show the distribution lines from all buildings that contributed waste to MDA U. The Permittees must include on a figure the location of the distribution line from the cooling tower at Building 21-155 to the MDA U western absorption bed and explain if the line is part of this investigation.

2. **Section 2.5.1.2, Pre-RFI Subsurface Sampling, page 7:**

   Permittees' Statement: "In 1983, subsurface samples were collected from two boreholes north of MDA U (U-E and U-W). At each location, samples were collected at 12 depths ranging from 0 to 58 ft. The samples were analyzed for tritium, total uranium, and cesium-137."

   NMED Comment: Based on the information provided on page 5, Section 2.4, MDA U Waste Inventory, Christenson (Christenson 1973, 0440.1) suggests that the primary contaminant at MDA U is Polonium-210 followed closely by actinium-227. The Permittees must explain why these constituents were not analyzed in the 1983 subsurface sampling event.

3. **Section 4.2, Subsurface Investigations, page 14, paragraph 3:**

   Permittees' Statement: "The boreholes will be drilled 20 ft into unit 2 of the Tshirege Member of the Bandelier Tuff (Qbt2), which is anticipated to occur at approximately 100 ft bgs, for a TD of 120 ft bgs."

   NMED Comment: The Permittees must also state that if the Qbt2 unit is not reached by the estimated 120 ft bgs, the borehole will be drilled until the appropriate depth (20 ft into Qbt2) is attained. As a reminder, in accordance with Section X.B.2.b.i, Drilling, of the proposed Consent Order, the boreholes must be drilled 25 feet past the last detected contamination based on field screening, laboratory analyses, and/or previous investigations at the site.

4. **Table 4.0-1, Crosswalk between NMED Proposed Consent Order (September 2004) and LANL Response for Investigation Activities at MDA U, pages 53-58:**

   Item 3:

   NMED Comment: NMED does not agree with the justifications provided by the Permittees for this item. Boreholes proposed to the Cerro Toledo interval in the MDA A & T work plans are not suitable for assessing the conditions beneath MDA U. The eight boreholes drilled in 1998 to 75 ft, did not determine lateral or vertical extent of contamination based on the analytical results provided in various figures and tables in this work plan (i.e. Figure 2.5-6).

   Based on information provided in the HIR, the Permittees identified soil and vegetation contamination outside the MDA U fenceline in 1980 and 1984. Also, the extent of the fractured/clay interbed zone has not been defined and is a potential contaminant migration pathway. Based on this information, the Permittees must complete the additional boreholes

at the locations identified by NMED (see attached map) to determine lateral and vertical extent of contamination. If contamination is found in any of the boreholes, the Permittees must use a 'step-out' approach to determine lateral extent of contamination.

Item 6:

NMED Comment: In accordance with Section IV.C.2.f.vi of the proposed Consent Order, the Permittees must submit for review and written approval a work plan to collect subsurface vapor samples.

Item 9:

NMED Comment: Section IX.B.2.d, Soil, Rock, and Sediment Sample Field Screening of the proposed Consent Order states that "The primary screening methods to be used shall include: 1) visual examination; 2) headspace vapor screening for VOCs; and 3) metals screening using X-ray fluorescence (XRF). Additional screening for site-or release-specific characteristics such as pH, HE, or for other specific compounds using field test kits shall be conducted where appropriate." The Permittees do not include a justification as to why XRF is not included in the field screening methods. The Permittees must include XRF in their field screening procedures.

Item 13:

NMED Comment: Section 2.4, MDA U Waste Inventory, states that, "Known documentation does not provide any information on the constituents, types, or volumes of non-radioactive waste discharged to MDA U." Based on this statement, NMED recommends that the Permittees select their most contaminated sample based on field screening results and complete a full analytical suite, as described in Section IV.C.2.f.iv of the Consent Order, on the selected sample. If dioxins, furans, and HE are not detected in the sample, NMED may not require the Permittees to include them in the remainder of the analyses.

Should you have any questions, please contact Kathryn Chamberlain at (505) 428-2546.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB: kc

cc: K. Chamberlain, NMED HWB
D. Goering, NMED HWB
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N. Quintana, LANL E/ER, MS M992
D. McInroy, LANL E/ER, MS M992
file: Reading and LANL '04 TA-21 (SWMU 21-017(a)-99)

Missing References for MDA U

Benson 2004, 87383
Christensen 1973, 00940
Francis 1996, 76137
LANL 1995, 54320
LANL 2004, 87454
Walker 1981, 06277

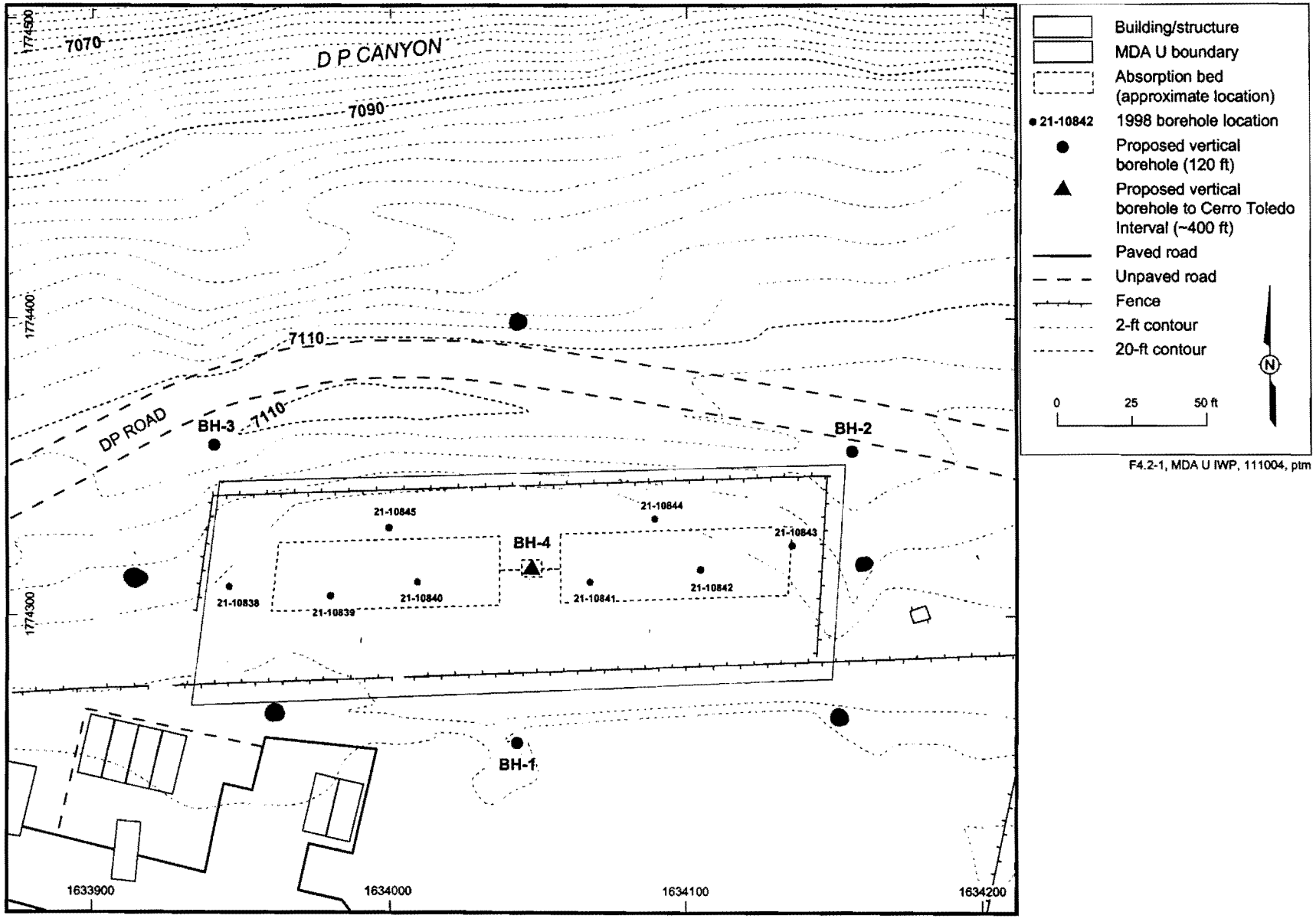

Figure 4.2-1. Proposed borehole locations at MDA U

● - NMED proposed borehole locations