

TA-09

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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

February 9, 2007

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**SUBJECT: APPROVAL WITH MODIFICATIONS
INVESTIGATION WORK PLAN FOR
CAÑON DE VALLE AGGREGATE AREA
LOS ALAMOS NATIONAL LABORATORY
EPA ID # NM0890010515
HWB-LANL-06-019**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the United States Department of Energy and the Los Alamos National Security, LLC's (collectively, the Permittees) *Investigation Work Plan for Cañon de Valle Aggregate Area* (the Plan), dated September 29, 2006 and referenced by LA-UR-06-4960/ER2006-0224. NMED has reviewed the document and hereby issues this Approval with Modifications. This approval must not be construed to imply that NMED will not require additional phases of investigation at any SWMU or AOC in the future, based on available or newly acquired information. The following comments must be addressed in subsequent documents and/or implemented as part of this site investigation as directed below.

The organization of the modifications are as follows: I) action required for future submittals; II) additional investigation activities; III) comments and corrections to be incorporated in the subsequent



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Investigation Report; and IV) further justification required for SWMUs and AOCs recommended for no further characterization or investigation (Appendix B of the Plan).

The Permittees must respond where specified within 30 days of the receipt of this letter to comments in categories I and II. The Permittees must include the results of additional investigation activities (category II), incorporate all comments and corrections (category III), and provide further justification for SWMUs and AOCs not addressed in the Plan (category IV) in the Cañon de Valle Aggregate Area Investigation Report.

I. General Comments – Action Required for Future Submittals

- 1) The first section of the Plan is difficult to follow. It is organized with an introduction, followed by the general site information, the general conceptual site model, investigation scope, and the objectives for the entire aggregate area. Subaggregate 1 is then briefly introduced. The subsequent 11 pages consist of descriptions of surface and subsurface conditions for the entire aggregate. On page 17 the text refers back to the X-ray buildings at Subaggregate 1, then proceeding in an orderly fashion.

To facilitate NMED's review of future aggregate area work plans, it is preferable to describe general surface and subsurface conditions for the entire aggregate, and to reference those descriptions when addressing sites within a specific subaggregate. For example, the heading for Subaggregate 1 should have been introduced subsequent to the description of general site conditions for the aggregate as a whole. The Permittees must incorporate these changes to future aggregate area work plans.

- 2) Many of the SWMUs and AOCs being investigated and/or undergoing remediation are shallow structures, such as piping, sumps, septic systems, or the locations of former buildings. For many of these sites, the proposed investigative sampling depths are one to three feet bgs. In accordance with Section IX.B.2.b.i of the March 1, 2005 Order on Consent (Order), the Permittees must advance boreholes five feet below the last detected contamination based on field screening, laboratory analysis and/or previous investigations at shallow structures.
- 3) The statement, "All detections of organic chemicals and inorganic chemicals greater than BVs were below the current SSLs..." appears more than 30 times in the document. For the purposes of defining nature and extent, the primary concern is whether, and by how much, contaminants exceed background values (BVs). Soil screening levels (SSLs) are more appropriately addressed in the Investigation Report. The fact that detections of certain contaminants may be present above background levels but below SSLs does not necessarily preclude the need for further investigation.
- 4) In Section 7.7.2.2, page 81, paragraph 2, the Permittees state, "Based on the historical sampling performed at SWMU 16-025(b), the nature and extent of surface and subsurface contamination of metals and radionuclides have been defined..."

The Permittees attempt to define vertical and lateral extent on the basis of a single surface sample collected in 1997. NMED does not agree that one sample can define nature and extent in this case. The issue is moot, however, because the Permittees have proposed additional sampling at SWMU 16-025(b) that includes five new locations at four sample depths.

- 5) Tables 2.9-2, 3.6-1, 4.7-1, 5.10-1, 6.6-1, 7.9-1, 8.9-1, 9.11-1, 10.11-1, 11.7-1, and 11.7-2 provide the proposed sampling locations for each of the 10 subaggregates. One of the columns in each table is entitled "Sampling Justification." This title implies that an explanation of how sampling locations were chosen would be provided. Instead, the Permittees provide the objective of the sampling (*e.g.*, sampling to define nature and extent of contamination) rather than the rationale for sample placement. In future submittals, the Permittees must include the rationale, rather than just the objective.
- 6) Many of the sampling locations for SWMUs and AOCs throughout the aggregate are proposed in order to determine lateral extent for a particular site. However, no contingencies are proposed in the event that contaminants are detected above SSLs. If the extent of contamination is not fully defined, an additional phase of investigation will be required. The Permittees must consider such a possibility in future submittals.
- 7) In Section 12.0, page 175, and Section C-2.0, page C-1, the reader is referred to a website in order to access current versions of Standard Operating Procedures (SOPs) and Quality Procedures (QPs). The website has changed from that which was originally included in the Plan. The new website, <http://erinternal.lanl.gov/procedures.shtml> requires a Los Alamos National Laboratory (LANL) Z-number and password and is, therefore, inaccessible to anyone lacking the required security measures. The Permittees have included a table in the Plan describing the SOPs and QPs. If the Permittees reference SOPs or any other documented as presented on the LANL website, pursuant to the Section IX.A of the Order, the website must be accessible to the general public.
- 8) Table 2.9-1 lists general sampling strategies for the site functional groups at the Cañon de Valle aggregate area (*e.g.*, MDAs, outfalls, storage buildings, septic tanks). The Permittees must include PCBs (and dioxins/furans where applicable) in the analysis for samples to be collected from MDAs and any other areas where the nature of potential releases to the environment or disposed waste is unknown.
- 9) NMED concurs with the proposed submittal of multiple investigation reports for the Cañon de Valle Aggregate Area (one report for the TA-16 subaggregates, one for the TA-15 subaggregate, and one for the TA-14 subaggregate). NMED suggests that the submittals be staggered to expedite the review with due dates of January 15, June 15, and December 15, 2012 for the Investigation Reports for TA-16, TA-15, and TA-14, respectively.

The Permittees must confirm their agreement to modify the Order schedule in writing within 30 days of the receipt of this letter. NMED will adjust the Order schedule upon receipt of written agreement.

In addition, NMED recommends that the Permittees submit the risk assessments for the investigations following approval of the Investigation Reports. This will eliminate the need to revise the risk assessment if additional work is required to define nature and extent of contamination.

II. Specific Comments – Additional Investigation Activities

- 1) The following references included in the Plan were not found in the Administrative Record:

- a. LANL, May 2004. "Final Well CdV-16-3(i) Completion Report," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 2004, 87645)
- b. LANL, September 1997. "Voluntary Corrective Action Completion Report for Potential Release Sites 14-002(a) Firing site 14-010 Sump Field Unit 2," Los Alamos National Laboratory document, Los Alamos, New Mexico. (LANL 1997, 56611)
- c. USAF (U.S. Air Force), November 22, 1958. TA-9 and TA-6 Aerial Photograph, Los Alamos National Laboratory Environmental Programs Records Processing Facility, Los Alamos, New Mexico. (USAF 1958, 05855)

The Permittees must submit the above documents to NMED within 30 days of the receipt of this letter to be included in the Administrative Record.

2) Section 2.2 Surface Water, page 7, paragraph 2:

Permittees' statement: "HE...and RDX...were also detected at gaging stations E256, E257, and E262 (LANL 2006, 92600, Attachment 2, Table A9). RDX did not exceed the wSAL, no wSAL is available for the other HE..."

NMED comment: Table A9 of the Storm Water Pollution Prevention Plan (SWPPP vol. 1) reports that RDX was detected at the gaging stations listed above, but Table A9 does not have a column for wSALs. Table 3-3 (p. 3-9 of the SWPPP vol. 1) provides a summary of LANL Storm Water Screening Action Levels (wSALs), but does not include RDX. The Permittees must submit a copy of the appropriate table in the SWPPP or other applicable document within the 30 days of receipt of this letter.

3) Section 2.5.1, Site Description and Operational History, page 17, paragraphs 1-3:

NMED comment: A report prepared by Border Demolition and Environmental, Inc. (2005, 92461) has been provided as a reference for removal of buildings 16-224, 16-226 and 16-220. The Report documents work performed at TA-15, not TA-16. The Permittees must provide the correct reference that includes work at TA-16 within 30 days of receipt of this letter.

4) Section 2.5.2, Historical Investigations, pages 18-19:

NMED comment: The data obtained from decontamination and decommissioning (D&D) confirmatory sampling has been utilized as decision-level data for the Plan. For each of four subsequent sections describing the SWMUs associated with the X-ray building drainlines and outfalls, the Permittees state that the analytical results of the sampling activities have not been documented in any laboratory report.

NMED does not accept data that does not meet minimum standards (see Section IX of the Order). For example, no information is provided on the sample collection methods, analytical methods, and/or data quality exceptions. The data can only be used as decision-level data if the Permittees can demonstrate that it meets all standards outlined in EPA Guidance and the Consent Order. Otherwise, these locations must be resampled.

5) Section 2.9.1, X-Ray Buildings Drainlines and Outfalls: SWMUs 16-026(i), 16-026(j), and Consolidated Unit 16-026(l)-00, page 27:

NMED comment: The Permittees must collect additional samples in the footprints of the buildings, if existing data cannot be defended (see comment #4 above). At least two

additional sampling locations must be selected within the footprints of each of the former buildings (i.e., 16-220, 16-224, and 16-226) as shown in the attached map of revised Figure 2.9-1. Samples must be collected near the locations of former drainlines, pipeline connections, sumps, and catchbasins. Samples must be collected from at least two depths at each location, including at the surface and at the fill/native soil or tuff interface.

6) **Section 2.9.2 Building 16-222 Outfall: SWMU 16-020, Silver Outfall, page 28, paragraph 1:**

Permittees' statement: "Samples will be collected from two depths (1.5-2 feet into the tuff and 2.5-3 feet into the tuff) in locations 14 through 20 and analyzed for TAL metals and SVOCs. Samples will be collected from four depths (0-0.5 feet bgs (soil), 1-1.5 feet bgs (soil), 1.5-2 feet into the tuff, and 2.5-3 feet into the tuff) in locations 21 through 23 and analyzed for TAL metals and SVOCs."

NMED comment: Figure 2.5-2, page 212, shows the highest concentrations of silver, a primary chemical of potential concern (COPC) at the Silver Outfall, at the soil surface. The Permittees must include surface samples for locations 14 through 20, because surface conditions may have significantly changed since the collection of the historical data. In addition, samples from locations 14 through 20 should be collected from the same four depths as those planned from locations 21 through 23.

The Permittees must collect additional samples in the footprints of the buildings, if existing data are questionable (see comment #4). At least two additional sampling locations must be selected in the footprint of former building 16-222 as shown in the attached map of revised Figure 2.9-1. Samples must also be collected near the locations of former drainlines, pipeline connections, sumps, and catchbasins. Samples must be collected from at least two depths at each location, including at the surface and at the fill/native soil or tuff interface, where possible. The Permittees must ensure that samples are collected from the appropriate potentially-contaminated media, because site restoration activities conducted at the site in 2000 included placing clean fill at the outfall area.

7) **Section 2.9.3, Surface Disposal Area SWMU 16-016(d), page 28, paragraph 1:**

NMED comment: SWMU 16-016(d) was a surface disposal site, and could have been used to dispose of a variety of materials. Polychlorinated biphenyls (PCBs) could be present and may be a chemical of potential concern. The Permittees must include analysis for PCBs in the analytical suite for all of the samples collected at SWMU 16-016(d). See general comment #8.

8) **Section 3.6, Scope of Investigation Activities, page 35:**

NMED comment: The Permittees have proposed a total sample depth of three feet into the tuff for borings BH1 through BH14, and 15 feet into the tuff for borings BH15 through BH23 at MDA R. The proposed maximum depths may not be sufficient to define the vertical extent of contamination at MDA R. Historical data indicate the presence of contaminants at depth (e.g., RDX, 77 mg/kg at 1.67-2.08 feet at location 16-06508; barium 4500 mg/kg at 2-3 feet at location 16-06511; barium 6800 mg/kg at 3-4 feet at location 16-06506; and lead at 1900 mg/kg at 2.5-5 feet at location 16-06533). In addition to the proposed sampling depths, the

Permittees must collect samples at depths of 7.5 and 10 feet bgs from borings BH1 through BH14.

Borings 1 through 14 are not sufficient to adequately characterize the lateral extent of the landfill. The Permittees must add another sampling location between proposed locations 4 and 7, an additional sampling location in the center of proposed locations 1, 2, 4 and 5, and an additional sampling location between proposed locations 3 and 6 in order to adequately characterize lateral extent, as shown on the attached revised map of Figure 3.6-1. Depth intervals shall be consistent with sample depths required above.

All samples must be field-screened for PCBs. A minimum of 20% of randomly selected PCB field screening results must be confirmed by laboratory analysis by EPA Method 8082. If PCBs are detected by field screening, then all samples must be submitted to an analytical laboratory for the analysis of PCBs by EPA Method 8082. See general comment #8.

9) Section 6.6, Scope of Investigation Activities, pages 74-76:

NMED comment: The purpose of all proposed sampling locations at T-site (subaggregate 5) is to further characterize the extent of contamination at former building sites. All samples at T-site are proposed to be collected at two depth intervals: 1.5-2 feet and 2.5-3 feet into the tuff. If contamination is found at the three foot depth, the Permittees must continue advancing boreholes to five feet below the last detected contamination as specified in general comment #2.

10) Section 7.8.2 Historical Investigations, page 85, paragraph 2:

NMED comment: For SWMUs 16-025(i), 16-025(j), and 16-029(h2), the Plan describes samples that were collected in 1998 and subsequently incorporated into the ER Project Database. The sample analytical results for the three SWMUs are discussed on page 87, and presented in Tables 7.8-1, 7.8-2, and 7.8-3. The Permittees state on page 85 that no documents were located that discussed collection of the samples.

NMED cannot rely on data that lacks supporting documentation. If no information is provided for the sample collection methods, analytical methods, or data validation processes, the data can only be used as a screening tool. The Permittees must demonstrate that all data meets EPA Guidelines and all NMED requirements outlined in the Consent Order, pursuant to Section XI.B.11 (see comment #4).

11) Section 7.9.4 HE-Machining Buildings and Associated Structures: Consolidated Units 16-029(h2)-99, 16-029(q)-99, pages 94-97:

NMED comment: The proposed boring locations at SWMU 16-029(h2)-99 (shown in Figure 7.9-3, page 243) are not adequate for the purposes of characterizing nature and extent of contamination. Only one sample location is proposed at each former building location. This is in contrast to the proposed sampling at consolidated SWMU 16-029(q)-99, shown in Figure 7.9-2 (page 242), which proposes several boring locations for each site. The Permittees must collect at least one additional set of samples (i.e., one additional boring location at four depths, consistent with other proposed sampling) from each of the five former HE machining buildings to further define vertical and lateral extent as shown in the attached map of revised Figure 7.9-3.

In addition, the Permittees must clarify which former structures are indicated by 16-125, 16-126, 16-127, and 16-128. These former structure designations surround the former west, north, east, and south HE machining buildings (i.e., 16-095, 16-096, 16-097, and 16-098), but are not referenced in either the Historical Investigation Report (LANL 2006, 91697) or the Plan.

12) Section 8.9.4 Scope of Investigation Activities, Underground Storage Tanks: AOCs 16-033(g) and 16-033(h), page 110, bullet 3:

Permittees' statement: "Samples will be collected using mechanical drilling methods after the excavation has been backfilled."

NMED comment: If the USTs in question are located, they must be removed. Confirmatory samples must be collected from the base and sidewalls of the excavation, and at intervals of 5-5.5 feet, 10-10.5 feet, and 15-15.5 feet directly beneath the base of the center of the tank excavation.

13) Section 10.11.1, Waste Characterization and Nature and Extent Sampling, page 160, bullet 1:

Permittees' statement: "Two locations (1 and 2, Figure 10.11-1) will be sampled from SWMU 15-008(c) and from AOC C-15-001 (3 and 4, Figure 10.11-1)."

NMED comment: The two sampling locations proposed for SWMU 15-008(c) are not sufficient to define the lateral extent of contamination. The Permittees must collect at least one additional sample near historical sampling location 15-02343 consistent with the other proposed sampling depths to define lateral extent.

Additional samples must be collected along the entire length of the drainage at a minimum of 100 foot intervals extending to the toe of the colluvium because contamination may have migrated to the canyon bottom over time. Sample locations in the drainage must be selected based on geomorphic relationships and sedimentary packages in accordance with canyon investigation procedures. Justification for the selected sampling locations must be included in the Investigation Report.

14) Section 10.11.2, Confirmatory and Nature and Extent Sampling, page 162:

NMED comment: The proposed samples for MDA Z are insufficient to define the extent of contamination. The Permittees must collect additional samples at a minimum of 100 foot intervals in the drainage extending to the toe of the colluvium. Samples must also be collected outside the footprint of the landfill to define lateral extent. See the attached revised map of Figure 10.11-2. If contamination is detected in samples collected from 2.5-3 feet, then the Permittees must collect samples at depths greater than three feet at sampling locations 6 through 13 in accordance with the requirements outlined in the Section IX.B.2.b.i of the Consent Order. Sample locations in the drainage must be selected based on geomorphic relationships and sedimentary packages in accordance with canyon investigation procedures. Justification for the selected sampling locations must be included in the Investigation Report.

15) Section 10.11.3, Characterization, Confirmatory, and Nature and Extent Sampling, page 163:

NMED comment: The proposed samples for SWMU 15-008(d) are insufficient to define the extent of contamination. Contaminants may have been transported from the disposal area down to the canyon over the years. The Permittees must collect additional samples at a minimum of 100 foot intervals in the drainage extending to the toe of the colluvium and two additional samples outside of the footprint of the disposal area at depths consistent with other proposed samples to define lateral extent. Justification for the selected sampling locations must be included in the Investigation Report. If contamination is detected in samples collected from depths of 2.5-3 feet, then the Permittees must collect samples at depths greater than three feet for sampling locations 5-8 in accordance with the requirements outlined in the Section IX.B.2.b.i of the Consent Order. Since the nature of debris at the site is unknown, field screening for PCBs must be conducted as described in specific comment #8 above.

16) Section 10.11.4, The Hollow: Consolidated Unit 15-009(a)-00, AOC 15-014(g), and AOCs C-15-007 and C-15-010, pages 164-168:

NMED comment: Investigations to address the contamination downgradient of the Hollow must be conducted along the entire length of the drainage to the toe of the colluvium. They cannot be deferred to the South Canyons investigation. Additional sample locations are suggested as follows based on geomorphic relationships and sedimentary packages in accordance with canyon investigation procedures. NMED has not included a revised map because the locations of structures such as drainlines and manholes may have not yet been identified.

SWMU 15-009(a): A single proposed borehole to be drilled at SWMU 15-009(a)-00 is inadequate to define the extent of contamination. The Permittees must collect at least two additional samples under the inlet and outlet drainlines of the septic tank at depths consistent with those proposed for other sample locations to be evaluated for evidence of contamination.

The borehole to be drilled in the footprint of the septic tank need only be drilled to 60 feet rather than 100 feet. If contamination is detected at 60 feet, drilling should proceed to 25 feet below the last depth where contamination is detected by field screening in accordance with Section IX.B.2.b.i of the Consent Order.

The Hollow: Locations of manholes 15-150 and 15-151 are not depicted on Figure 10.11-4. The Permittees must collect one sample from beneath each manhole and at 50 foot intervals along the drainlines that carried waste from buildings to the manholes and from the manholes to the dry well or outfall as necessary to adequately define nature and extent of contamination. Since the exact nature of processes carried out at the buildings at the Hollow are not known, additional samples must be collected within the footprints of former buildings 15-50, 15-203, 15-213, and 15-20.

SWMU 15-011(b): The Permittees must collect two additional samples beneath the dry well, if located, to evaluate the extent of contamination. The reported depth of the dry well was 50 feet (page 148, paragraph 1). The depth of samples to be collected at the dry well location must be determined based on the results of field screening, and must be of sufficient depth to determine vertical extent of contamination.

SWMU 15-011(c): An adequate number of samples must be collected at a minimum of 100 foot intervals along the entire length of the drainage to the toe of the colluvium to define contamination that may have migrated to the canyon bottom over time. Sample locations in the drainage must be selected based on geomorphic relationships and sedimentary packages following canyon investigation procedures. Justification for the selected sampling locations must be included in the Investigation Report.

SWMU 15-011(a): The Permittees must collect an adequate number of samples at a minimum of 50 foot intervals from the soil/tuff interface with the fill underneath the drainlines and manholes that carried waste from the trenches to the dry well or outfall to define the extent of contamination.

SWMU 15-014(g): Samples must be collected at a minimum of 100 foot intervals along the drainage that received the effluent from the outfall to define the extent of contamination. Justification for the selected sampling locations must be included in the Investigation Report.

17) Section 10.11.5 Septic Systems: Consolidated Unit 15-009(f)-00, SWMU 15-009(i), pages 168-169:

NMED Comment: The 50-foot deep seepage pit associated with SWMU 15-009(f)-00 (described in Section 10.9.1, page 154) is not identified in Figure 10.11-5. The Permittees must identify the location of the seepage pit, and collect at least one sample beneath the pit to define the vertical extent of contamination. Samples must also be collected from the locations where inlet and outlet pipes were connected to the septic tanks. Samples must be collected along the entire length of the drainage and to the toe of the colluvium for SWMU 15-009(i), based on sedimentary packages and geomorphic relationships. The nature of the waste is unknown; therefore, samples must be field screened for PCBs as described in specific comment #8 above. Justification for the selected sampling locations must be included in the Investigation Report.

18) Section 10.11.6 Outfalls, Building 15-183: Consolidated Unit 15-014(a)-00, page 170:

NMED Comment: An adequate number of samples must be collected at a minimum of 100 foot intervals along the entire length of the drainage to the toe of the colluvium to define contamination that may have migrated to the canyon bottom over time. The sampling locations in the drainage must be based on sediment packages and geomorphic relationships. Justification for the selected sampling locations must be included in the Investigation Report.

19) Section 11.7.2 Organic Chemical Spill: AOC C-16-075, page 175:

NMED Comment: The proposed sampling locations for AOC C-16-075 are shown in Figure 11.7-2 (page 287). The proposed sampling locations are not adequately distributed over the entire AOC, and there is no explanation as to why the proposed locations were selected. The Permittees must sample the two additional locations shown on the attached revised map of Figure 11.7-2, and provide the rationale behind selection of the borehole locations for AOC C-16-075. See general comment #5 (sampling justification) and general comment #6 (contingency sampling).

III. Comments to be incorporated in the Investigation Report for the Cañon de Valle Aggregate Area.

- 1) “Low concentrations of PAHs were detected in several samples, although none exceed SALs (NMED 2006, 92513). (See section 7.7.2.2, page 145, paragraph 1.)

Polycyclic aromatic hydrocarbons (PAHs) are organic chemicals that are compared to SSLs for risk screening assessments. Screening action levels (SALs) are risk-based standards used by LANL and applied to radionuclides. The Permittees must make this distinction in the Investigation Report.

- 2) Appendix B of the Plan describes SWMUs and AOCs recommended for no further investigation or corrective action. However, additional investigation may be necessary because historical data may be lacking or indefensible. The Permittees must provide adequate documentation and rationale for any corrective action complete recommendation in the Investigation Report that summarizes the results of this Phase of the investigation. (See part IV of this Approval with Modifications for specific examples.)

- 3) **Section 4.2 Surface Water, page 38, paragraph 4:**

Permittees’ statement: “A water sample was not collected from CDV-SMA-1.7 in 2005 (LANL 2006, 92600, Attachment 2, Table B-1). In 2005, gaging station E257, which is associated with SWMU 16-028(a), had wSAL exceedances for arsenic and vanadium (LANL 2006, 92600, Attachment 2, Table A-2).”

NMED comment: This statement follows a discussion of surface water in the vicinity of the Burning Ground (subaggregate 3). Gaging station E257 is located at the south end of the Burning Ground adjacent to monitoring station CDV-SMA-2.5. CDV-SMA-1.7 is located to the northwest, within the boundary of MDA-R (subaggregate 2). NMED believes the Permittees meant to refer to CDV-SMA-2.5 in the above statement. The Permittees must correct the reference to CDV-SMA-1.7 in the Investigation Report.

- 4) **Section 4.7.2 Southern Drainage: SWMU 16-028(a), page 49, paragraph 1:**

Permittees’ statement: “Two locations downgradient of historical sampling locations within SWMU 16-028(a) will be sampled to determine whether lateral migration of contaminants toward the canyon has occurred. Another four locations (two each on the east and west side of the drainage near the southern extent of the SWMU) will be sampled to determine the lateral extent (i.e., width) of contamination within the SWMU.”

NMED comment: The reference for the above text is Figure 4.7-1; however, the sampling locations described above do not correlate with Figure 4.7-1. For example, the figure shows five sample locations, not six. One of the locations (25) is at the southern extent of the SWMU. Two are centered within the SWMU (21 and 23). Two more are outside the SWMU boundary (22 and 24). The Permittees must collect all six samples, and must clarify their locations within the text of the Investigation Report.

5) Section 5.2 Surface Water, page 50, paragraph 1:

Permittees' statement: "Water samples were collected from CDV-SMA-1 in 2005. The analytical results showed no wSAL exceedances (LANL 2006, 92600, Attachment 2, Table B-1)."

NMED comment: Table B1, Attachment 2, of the SWPPP provides a summary of the samples collected, not the analytical results. The Permittees must clarify which exceedances they are referring to, and provide a reference for the correct table in the Investigation Report.

6) Section 8.5.2.2 Nature and Extent of Contamination, page 101, paragraph 1:

Permittees' statements: "Inorganic chemicals were detected at most sampling locations at decreasing concentrations with increasing depth and increasing distance from building 16-280, the nature and extent of inorganic chemicals is not defined."

"HE contamination has been defined for the 280 outfalls (Figures 8.5-2 and 8.5-3)."

"The nature and extent for organic chemicals, primarily PAHs, have not been defined for the 280 outfalls."

NMED comment: Because three conflicting quotes above appear in the same paragraph, the reader cannot distinguish whether nature and extent has been defined for either organic or inorganic chemicals. The Permittees must propose how they are going to define the nature and extent of inorganic contamination near building 16-280, and how they are going to further define nature and extent for organic chemicals at the 280 Outfalls. In addition, Figure 8.5-3 presents data on organic chemical detections, including HE; however, Figure 8.5-2 depicts inorganic chemical contamination. The Permittees must revise the text of the second statement above accordingly in the Investigation Report.

7) Section 9.11.1 Active Firing Site: AOC 14-001(g), page 131:

Permittees' statement: "As a result of current Laboratory HE testing operations, the proposed investigation activities will not be implemented until testing operations impacting this AOC have ceased."

NMED comment: Table 1.1-2, page 301 of the Plan, lists active firing site AOC 14-001(g) as corrective action deferred, pending a cease in operational testing. However, 14-001(g) is listed in Table IV-1 of the Order as a non-deferred site within a testing hazard zone. In accordance with the Order, the Permittees must implement the planned activities at firing site 14-001(g), and include the results in the Investigation Report.

8) Section 10.6.2.1, Analytical Results, page 144, paragraph 1:

Permittees' statement: "Half the locations sampled contain total uranium exceeding the Region 9 industrial PRG of 200 mg/L (maximum concentration of 1378 mg/L total uranium) to maximum depths sampled of 1.5 feet bgs."

NMED comment: The units reported for Region 9 Industrial PRGs are incorrect. The correct units are mg/kg, not mg/L. Similarly, the units for the maximum reported

concentration for uranium should be 1378 mg/kg, not mg/L. The Permittees must revise the text as necessary in the Investigation Report.

9) Section 10.6.2.2, Nature and Extent of Contamination, page 145, paragraph 1:

Permittees' statement: "...half the locations sampled contain total uranium exceeding the Region 9 industrial PRG of 200 mg/L (maximum concentration of 1378 mg/L total uranium)..."

NMED comment: The units for Region 9 Industrial PRGs are incorrect (see comment #8 above), and must be revised in the Investigation Report.

10) Figure 2.5-1, page 211:

NMED Comment: Sample location IDs 16-01580 and 16-01581 appear in Tables 2.6-1 (page 318), 2.6-2 (page 320), and 2.6-3 (page 326), but are not depicted in Figure 2.5-1 (historical sampling locations for the 220 Complex). The Permittees must revise the figure to show these locations in the Investigation Report.

11) Table 1.1-1, page 289:

NMED Comment: The Permittees did not include SWMU 14-003 in the work plan because it was included in the Permit Modification Request (PMR) that was submitted by the Permittees in June, 2001. A voluntary corrective action (VCA) was conducted at the site in 1997 but the report was not submitted to NMED. However, the VCA Completion Report was included in the PMR. NMED has reviewed the PMR and does not consider the site appropriate for a no further action determination at this time. NMED issued a Public Notice for Intent to Approve a Class 3 Permit Modification on October 26, 2006 for the PMR. SWMU 14-003 was not included in the Statement of Basis because it was determined that it needed further study/investigation. SWMU 14-003 should be included in the work plan for reevaluation of human health and ecological risk.

In addition, the reference cited for SWMUs 14-005 and 16-010(b,c,d,e,f,j) (NMED 2005, 88027 in Table 1.1-1), is not included in the references listed in Section 15.1. The Permittees must include the reference in the Investigation Report as applicable.

IV. Further justification required for Appendix B SWMUs and AOCs recommended for no further characterization or investigation.

1) Section B-2.0 – B-6.0 AOCs 14-001(a-e), pages B-1 through B-2:

NMED Comment: NMED cannot consider AOCs 14-001(a-e) for no further action status at this time. The OU 1085 Workplan, May 1994, states that these units were active, and recommended deferred action. It is not clear if any investigation was performed to determine whether capacitor discharge units that were kept in the pull boxes contained PCBs. The Permittees must clarify whether or not any PCB-containing dielectric oils were used at these sites, and whether there were any investigations or documented releases of contaminants.

2) Section B-7.0 AOC C-14-008, page B-2:

NMED Comment: The data available for the site are of screening level quality. Investigation of the site can be combined with investigation of consolidated unit 14-002(a)-99. The nature

and extent of contamination must be defined, and risk assessment for human health and ecological risk conducted for the site. The site is not appropriate for a corrective action complete determination at this time.

3) Section B-8.0 AOC C-14-001, page B-3:

NMED Comment: The 1996 RFI report for OU 1085 states that HMX was detected at AOC C-14-001 (page 5-96), but the HIR for the Cañon de Valle Aggregate Area states that HE was not detected. The Permittees must resolve this discrepancy in the Investigation Report. Only two surface samples have been collected at the site. Therefore, nature and extent of contamination has not been adequately defined. Additionally, the 1996 RFI report states that an ecological risk assessment will be conducted in the future. Due to the lack of information regarding contamination at this site, it is not appropriate for a corrective action complete determination. NMED will review the results of the Investigation Report to determine if further investigation is necessary.

4) Section B-9.0 AOC C-14-002, page B-3:

NMED Comment: The Permittees state that AOC C-14-002 is located within the footprint of other Subaggregate 8 firing sites. No sampling has been conducted at this site. The site must be investigated along with other sites at Subaggregate 8. A screening assessment for human health and ecological risk must be conducted for the site and must be implemented along with other sites in Subaggregate 8. The site is not appropriate for a corrective action complete determination at this time.

5) Section B-10.0 AOC C-14-009, page B-3:

NMED Comment: Only two samples were collected at the site and the data are of screening level quality. There has not been a risk assessment conducted for human health and ecological receptors. The site is not appropriate for a corrective action complete determination at this time.

6) Section B-12.0 SWMU-16-016(b) page B-4:

NMED Comment: The Plan states that results of confirmatory sampling are summarized in section 5.8.1.5 of the HIR. There is no section 5.8.1.5 in the HIR. The Permittees must provide results of historical investigations at SWMU 16-016(b) in the Investigation Report. NMED will review the results to determine if further investigation is necessary.

7) Section B-13.0 SWMU-16-024(c) page B-5:

NMED Comment: SWMU 16-024(c) is included in the investigation work plan that was submitted for consolidated SWMUs 16-007(a)-99 and 16-008(a)-99. Ecological risk assessment at the site was deferred in the 1997 RFI Report. The need for further action will be determined by NMED after review of the Investigation Report.

8) Section B-16.0 SWMU-16-024(h) page B-6:

NMED Comment: The Permittees must provide the reasoning as to why the results of investigations conducted at SWMU 16-024(h) were excluded from the 1997 RFI Report. No subsequent investigations have been performed. NMED will review the Investigation Report for this SWMU before determining the need for further action.

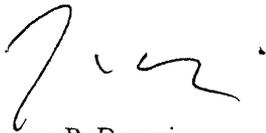
9) Section B-17.0 and 18-0 SWMUs-16-027(a-b) page B-6 and B-7 :

NMED Comment: The Permittees must provide documentation for approval of the completion of clean up for these PCB sites by EPA. These sites were not included in the list of sites that were granted NFA by EPA on January 26, 2005.

In this Investigation Work Plan, the Permittees relied on data from reports that were not reviewed or approved by NMED. It is possible that, in the future, some data presented in these unapproved documents will be determined to be unreliable or invalid and additional corrective action may be required to obtain valid information to replace the suspect or invalid data.

If you have any questions, please contact Mark Cummings of my staff at (505) 476-6043.

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:mac

cc: M. Cummings, NMED HWB
D. Goering, NMED HWB
S. Yanicak, NMED DOE OB, MS J993
L. King, EPA 6PD-N
A. Phelps, LANL ADEP, MS J591
file: Reading and LANL '06 TA 16: [Cañon de Valle Aggregate Area]

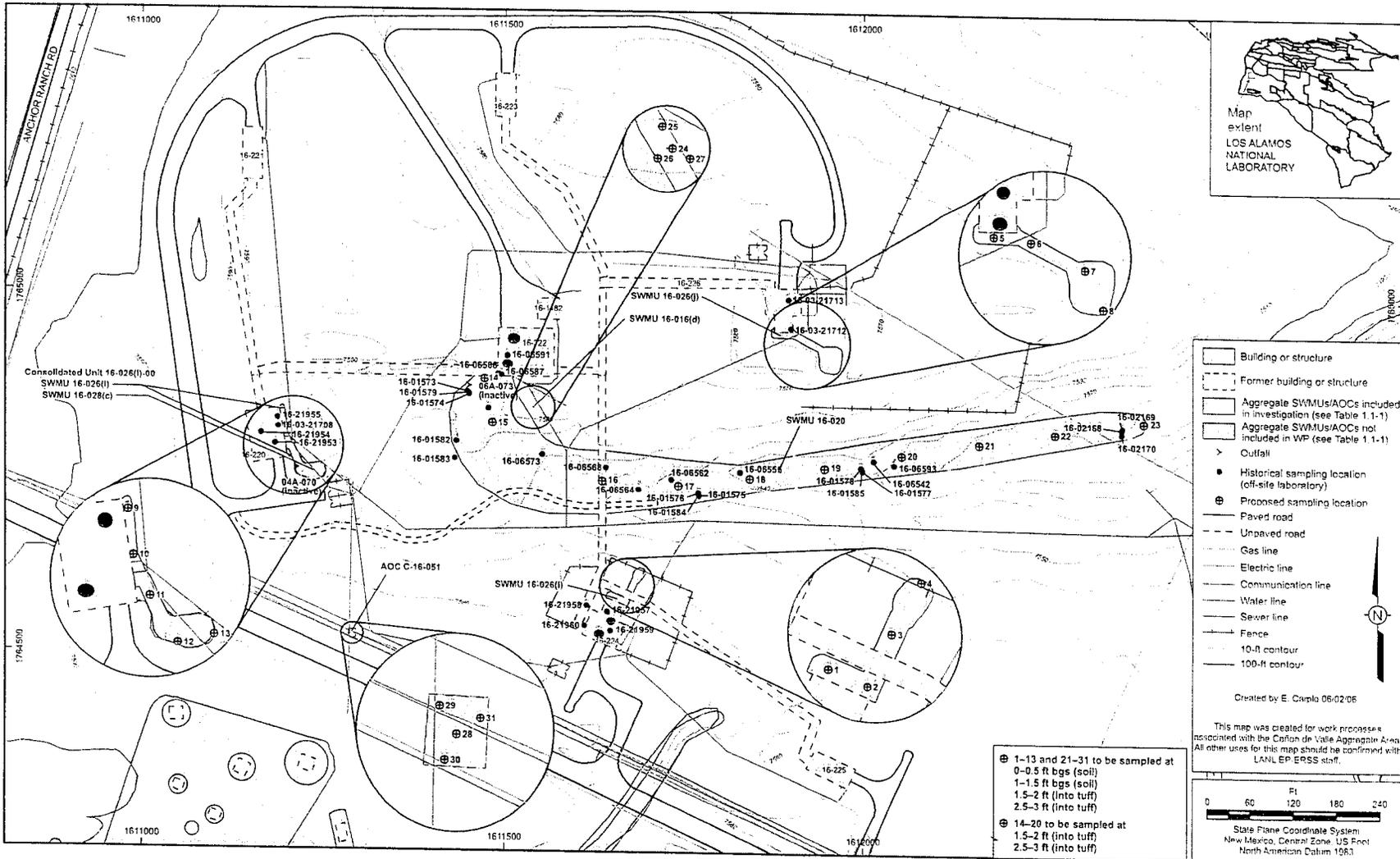


Figure 2.9-1. Subaggregate 1 (220 Complex) proposed sampling locations and depths

● NMED required sampling locations

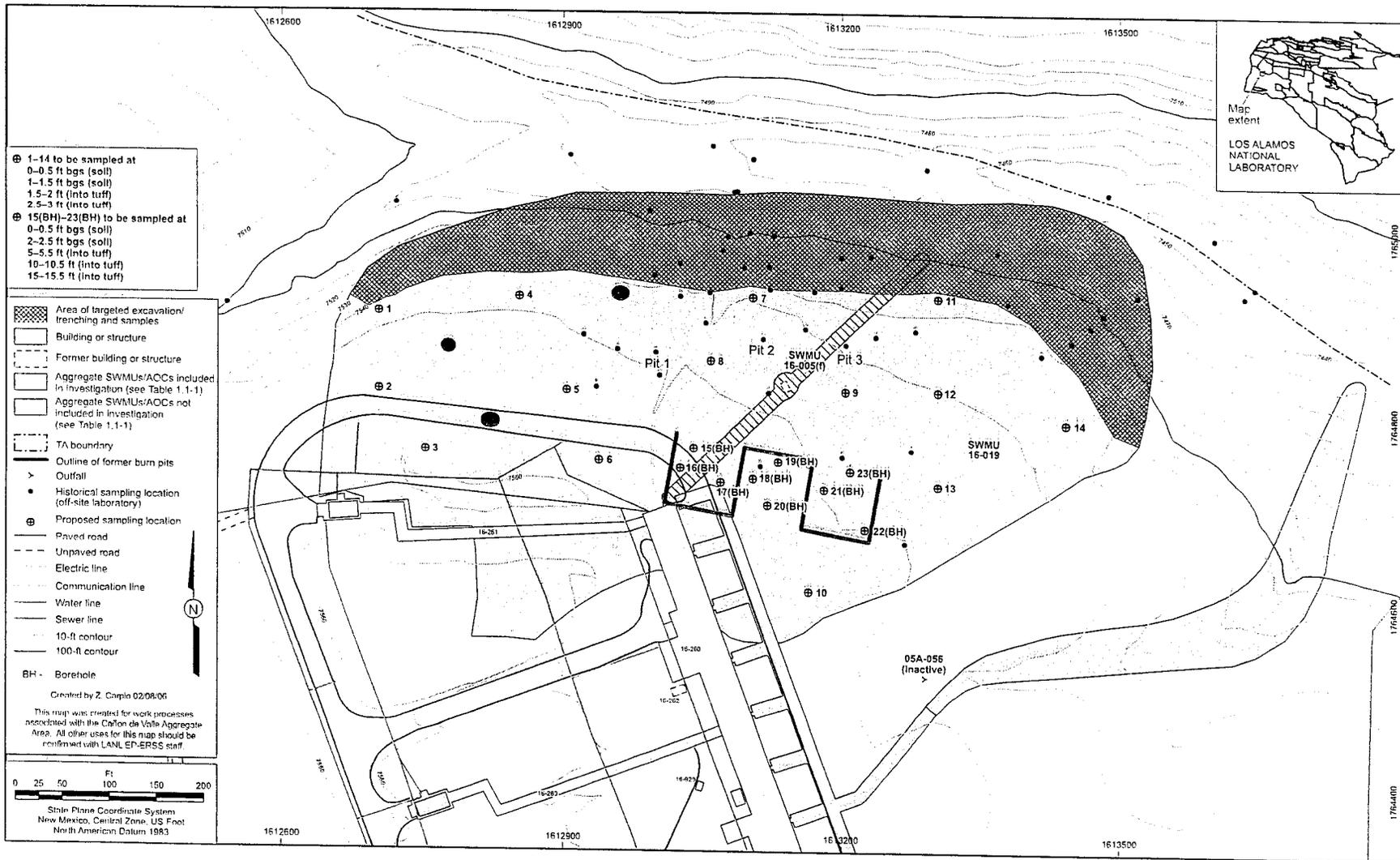


Figure 3.6-1. Subaggregate 2 (MDA R) proposed investigation and sampling locations and depths

SAP 3.6-1_SAP

● NMED proposed locations

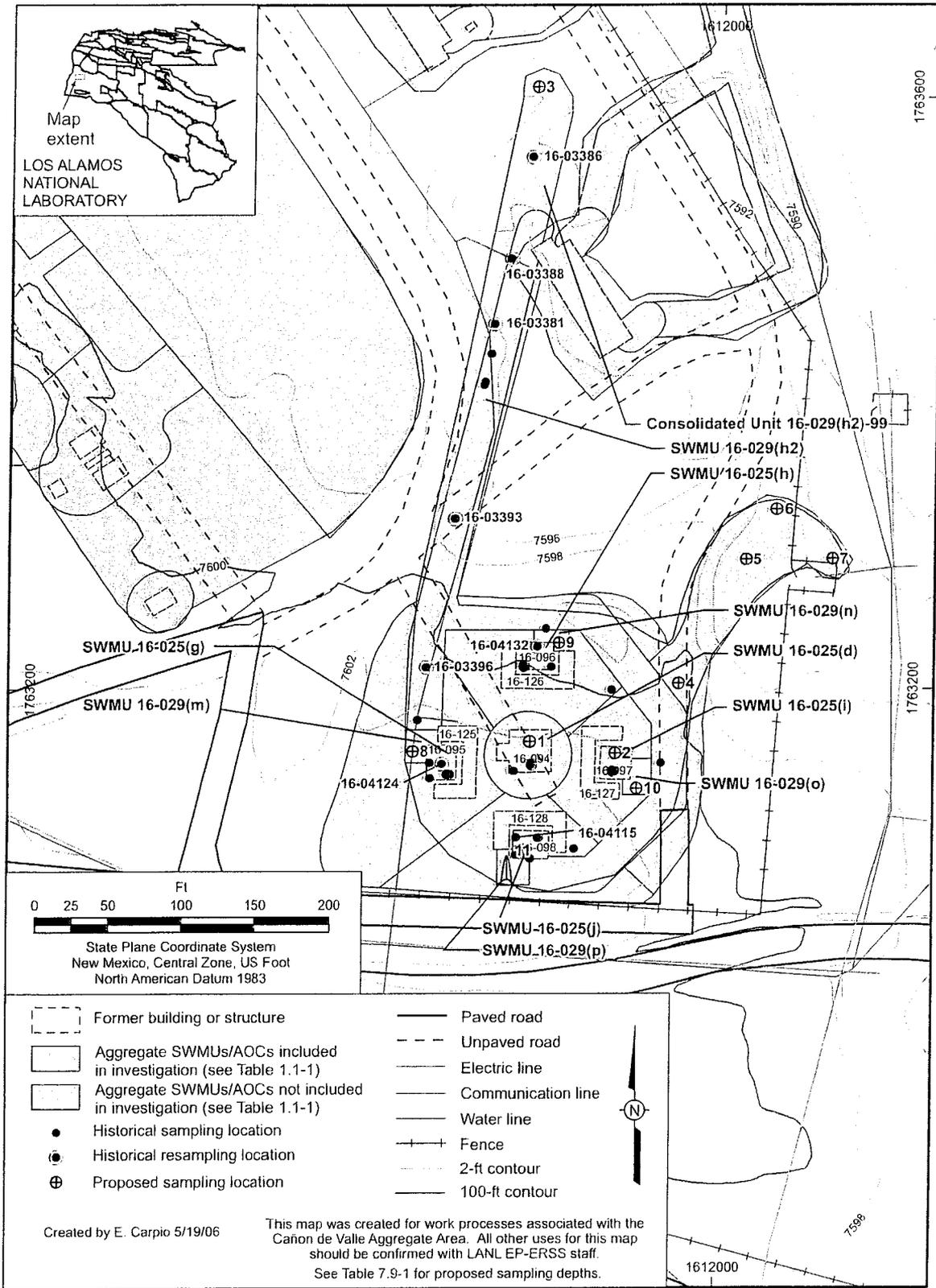


Figure 7.9-3. Subaggregate 6 (WWII GMX-3 Area East) proposed sampling locations and depths

● NMED required sampling locations

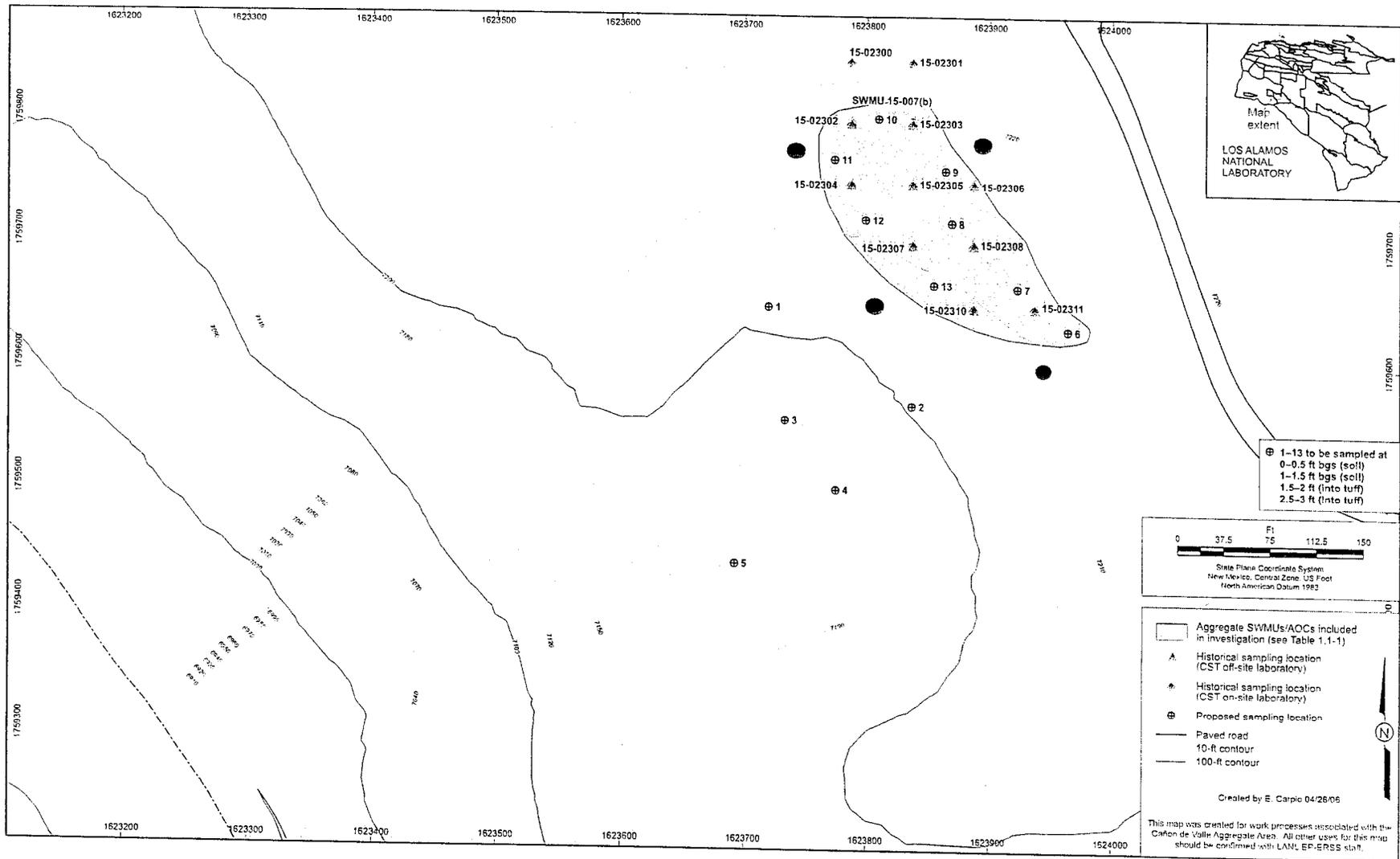
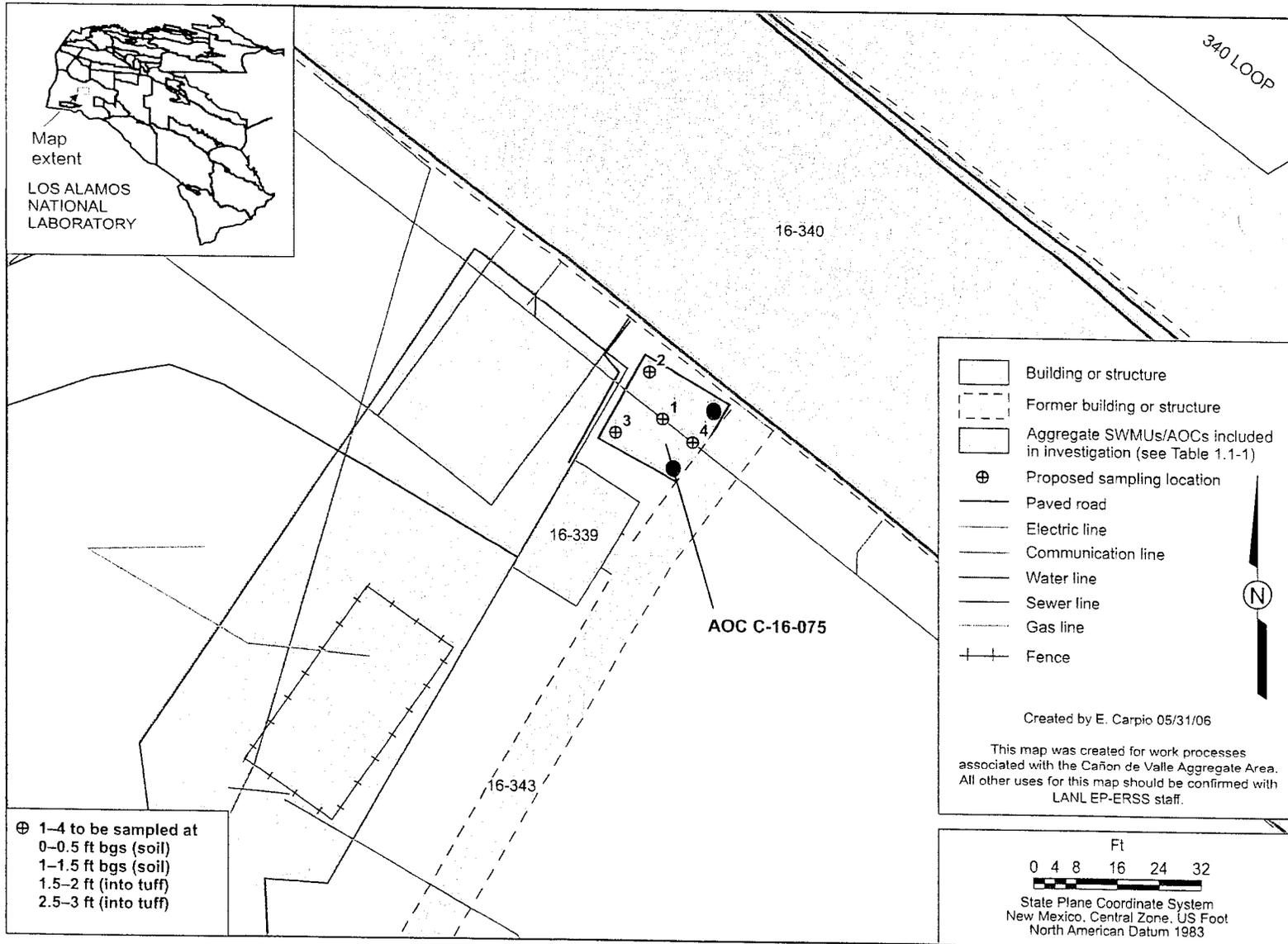


Figure 10.11-2. Subaggregate 9 (TA-15 West) proposed sampling locations and depths: MDA Z

● NMED required sampling locations



SAP_Fig11.7-2_SA10

Figure 11.7-2. Subaggregate 10 (TA-16-340 Complex) proposed sampling locations and depths: AOC C-16-075

Dhawan, Neelam, NMENV

From: Dhawan, Neelam, NMENV
Sent: Wednesday, March 21, 2007 1:43 PM
To: 'jmccann@lanl.gov'
Cc: Dave; katie
Subject: CDV IWP_TA-16 220 Complex Investigations

John,

We have received LANL's response to NMED's 'Approval with Modifications' for the IWP for Canon de Valle. The response seems adequate and we concur with the proposed submission dates for multiple investigation reports proposed in your response.

As I mentioned during our phone conversation, I reviewed the TA-16 220 complex D & D Demolition Completion Report that was provided with the response. I'm concerned with the 'Change Order Description' on page 8 of the report that states that berms that were saturated with motor oil were left in place because it would have created a hazardous waste stream and the removal and disposal would have added to the project cost. According to this report there were seven buildings at 220 complex where HE work was conducted and earthen berms were constructed next to the buildings as protection from direct accidental explosions. There is no mention of these berms in the IWP, and it is not clear whether these berms are still present or removed at some later date. Historically, samples were collected only in the footprint of the buildings.

LANL must locate these berms, remove them if they exist, and collect confirmatory samples, surface and at least at a depth of two feet at these locations and submit them for TPH (DRO [diesel range organics] extended) analysis. The IWP has not proposed any TPH analysis for samples to be collected at TA-16 220 complex.

If you have any questions or need any clarification, please call me at 476-6040.
Neelam

Neelam Dhawan
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