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TA 21

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

February 8, 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 DELTA PRIME SITE AGGREGATE AREA AT TECHNICAL AREA 21 LOS ALAMOS NATIONAL LABORATORY (LANL), EPA ID #NM0890010515 HWB-LANL-04-011

Messrs. Gregory and Nanos:

The New Mexico Environment Department (NMED) has received and reviewed the United States Department of Energy and the Regents of the University of California's (collectively the Permittees) *Investigation Work Plan for Delta Prime Site Aggregate Area at Technical Area 21*, dated August 31, 2004 and referenced by LA-UR-04-5009 (ER2004-0409). NMED hereby issues this Notice of Disapproval of the aforementioned Work Plan. 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) Figures must include all applicable features and structures, underground utilities, and existing well and/or borehole locations. This includes fence-lines, SWMU and AOC boundaries, and former structure locations. For example, Figure 1.1-11 (SWMU 21-009, waste treatment laboratory site) does not depict the location of the former building. This type of information is important to determine if proposed sampling locations are adequate or if additional samples are required. The Permittees must ensure these changes are also reflected in the Investigation Report.

2) There are several items listed in Section 9.0 (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.

3) Sections 2.3.1-2.3.4 summarize previous investigations at the SWMUs/AOC identified as investigation sites in this work plan. As a reminder, the Permittees are required to retain analytes as chemicals of potential concern (COPCs) when detected at levels above established background values (BV) or if above Estimated Quantitation Limits (EQLs).

Also, it is not acceptable for the Permittees to compare the detected concentrations to both BV and the maximum of the soil background data set. If contamination is detected at values greater than BV, the analyte must be retained at a COPC.

4) Tables 4.1-1 through 4.5-1 show the proposed soil sampling locations and analytical suites for each investigation site SWMU/AOC. There is very little information with respect to historical activities at these sites provided in Section 2.0, Background. The Permittees must complete full analytical suites for each sample at each of the investigation sites proposed in Tables 4.1-1 through 4.5-1. This suite must include, VOCs, SVOCs, explosive compounds, pH, PCBs, dioxins, furans, nitrates, perchlorate, TAL metals, and cyanide, and radionuclides.

5) The Permittees must provide a brief description of each cited SOP in accordance with Section IX.A, Standard Operating Procedures of the September 1, 2004 Proposed Consent Order (Order).

6) The Permittees must provide a map defining the boundaries of the DP Aggregate Area. The TA boundary is not synonymous with the aggregate boundary. The map must also depict the boundary of the Middle Los Alamos Canyon Aggregate Area, and all SWMUs and AOCs located within each aggregate area regardless of status e.g., NFA) for reference purposes.

7) Stormwater sampling by NMED has revealed that PCBs are present at high levels in a drainage area possibly associated with SWMUs 21-024(m) and 21-027(b). As discussed with Permittees' staff during a site visit on January 20, 2005, sampling from 21-024(m), 21-027(b), and other

SWMUs and AOCs with drainages and outfalls, which discharge to the canyon bottom, must sample from the mesa top to the toe of the colluvium. Sampling must target areas such as fine-grained sediment in outfall channels, areas of sediment accumulation, etc. A full analytical suite will be completed on all samples and the Permittees must determine the source of PCB contamination.

8) The Permittees must provide NMED with a current list of all SMWUs and AOCs (regardless of status) within the DP and Middle Los Alamos Canyon Aggregate Areas. This list must also identify in which technical area each SWMU/AOC is included. The Permittees must also provide justification for not outlining investigation or remediation of SMWUs/AOCs located within the DP Aggregate Area in the DP Aggregate Area Work Plan. As a reminder, all SWMUs and AOCs located within an aggregate area must be addressed in the work plan or justification for exclusion must be provided.

Specific Comments:

1. **Section 2.3.3, SWMU 21-024(c), Septic System, page 26:**

   Permittees' Statement: "Vertical extent for all inorganic chemicals was demonstrated in the borehole (location 21-01669)."

   NMED Comment: The Permittees have not determined lateral or vertical extent of inorganic contamination at SWMU 21-024(c). One 20 ft. borehole was drilled in 1993 outside the SWMU boundary and two surface soil samples at two locations were collected within the outfall area (up to 1.0-ft bgs). Aluminum, chromium, iron, lead, manganese, selenium, and zinc were all detected in the deepest samples taken from borehole 21-01669. These investigations are not sufficient to determine vertical and horizontal extent for inorganic chemicals. The Permittees must revise the Work Plan to resolve this issue.

2. **Section 4.0, Scope of Activities, pages 42-45:**

   NMED Comment: Because the Permittees make a distinction between Investigation sites and Corrective Action sites, the Permittees must provide clarification as to why geophysical and radiological surveys are proposed for the Corrective Action Sites and not included as part of the scope of work for the Investigation Sites in this work plan. There is insufficient historical information with respect to these sites to determine whether radiological and geophysical surveys are warranted. Alternately, these surveys should be included in the scope of work.

   Permittees' Statement: "Additional or deeper samples will be collected as necessary based on field screening results."

NMED Comment: The Permittees must be more specific about conditions under which additional samples will be obtained. The above statement is used for describing the proposed activities for all four SMWUs and the AOC under investigation. The Permittees must explain how they will determine a final sampling depth at each site. For example, the Permittees may choose to propose that sampling will continue to 10 ft below the last detected contamination.

3. **Section 4.3, Sampling and Analysis of SWMU 21-024(c), Septic System, page 44, paragraph 1:**

   Permittees' Comment: "The septic tank will be carefully excavated and inspected for evidence of leaks (e.g. stained soil, holes in the tank). One sample will be collected from the center of the floor of the excavation beneath the tank (Figure 4.3-1, location AH-1). One auger hole will be advanced in the center of the excavation and a sample collected from 10 ft below the bottom of the tank. Soil samples will be collected immediately beneath the septic tank inlet (Figure 4.3-1, location E), and outlet (Figure 4.3-1, location F) connections to the sewer line at the 0-0.5-ft and 1.5 to 2.0-ft depth intervals, and beneath the septic tank connections."

   NMED Comment: NMED does not believe that the sampling intervals proposed directly beneath the septic tank are appropriate. One sample obtained from the center of the floor of the excavation and one sample 5 ft below the bottom of the tank is acceptable if there is no evidence of obvious contamination such as leaks, stains, or cracking during the tank excavation. If there is still contamination at 5 ft below the bottom of the tank, the Permittees must sample every 2 ft until clean soil (i.e., non-detect) is encountered. Extent of contamination was not defined in previous RFI investigations. Therefore, the Permittees must determine extent during this sampling event. The Permittees must also revise Table 4.3-1 to reflect this change in the sampling intervals.

4. **Section 5.6, Progress Reporting, page 47:**

   NMED Comment: All the information included in the proposed "progress reports" should be included in, and formatted in the same manner as, Section 4.0, Scope of Activities for Investigation Sites. Another separate document submittal is not appropriate. The Permittees must therefore revise Section 5.0, so that it describes in detail the activities proposed at the Corrective Action Site SWMUs.

5. **Section 5.7, Structure Excavation and Removal, page 47, paragraph 1:**

   Permittees' Statement: "The septic tanks, sumps, and other subsurface structures will be carefully unearthed and inspected, to the extent possible, for structural flaws or evidence of

releases (e.g., stained soil, cracks in the tank or associated piping, and elevated field screening results from the floor and sidewalls of the excavation, etc.)."

NMED Comment: NMED understands that field conditions will dictate "the extent possible" for inspecting subsurface structures, however, the Permittees must explain what field conditions may alter inspection efforts, i.e., under what conditions septic tanks, sumps, and other subsurface structures would not be completely inspected and how the Permittees plan to address possible contamination in areas that were not inspected for one reason or another.

6. **Section 6.1.3, Collecting Soil and Rock Samples, page 50:**

Permittees' Statement: "Samples will be field screened for radioactivity and organic vapors (see Section 6.1.4), photographed, then places in Ziploc bags and/or samples jars as grab samples derived from hand augers, scoops, or chiseling devices in accordance with the sampling guidance document and appropriate SOPs (see Section 5.0, LANL-ER-SOP-01.01-01.08 series)."

NMED Comment: The Permittees must cite what sampling guidance document they are referring to in this section so that NMED can properly review the work plan.

7. **Section 6.1.4, Field Screening, page 51:**

NMED Statement: The Permittees must follow the field-screening methodology outlined in Section IX.B.2.d of the Order.

8. **Section 6.2.4, Trenching, page 52:**

Permittees' Statement: "Trenching will be completed using the same protocols and equipment as the excavations. Trenching will assist in locating subsurface structures if geophysical surveys are inconclusive. Trenching will be conducted to remove lifts of soil in areas of suspected subsurface features to allow identification of disturbed soil of non-native material."

NMED Comment: The Permittees must provide additional information regarding the methods and procedures that will be utilized for proposed trenching activities. This information must include at which SMWUs/AOC trenching is anticipated, to what depth trenches are likely to be excavated, and how depths will be determined in the field.

9. **Section 6.2.7, Borehole Abandonment, page 53:**

   Permittees' Statement: "Backfilling (abandonment) of investigation boreholes will be conducted according to procedures outlined in LANL-ER-SOP-05.03. The use of backfill materials, such as bentonite and cement, will be documented in a field logbook with regard to volume (calculated and actual), intervals of placement, and additives used to enhance backfilling."

   NMED Comment: The Permittees must follow the borehole abandonment procedures outlined in Section X.D of the Order. Alternately, the Permittees must provide a description of the borehole abandonment procedures in addition to the reference to the SOP.

10. **Section 7.0, Monitoring and Sampling Program, page 53:**

    Permittees' Statement: "No monitoring is currently performed at any of the investigation or corrective action sites. It is anticipated that no further sampling or monitoring will be required at all the sites after these work plan activities are completed."

    NMED Comment: While this initial assumption may be valid, the Permittees are advised that, depending on what is found during implementation of this work plan, monitoring wells, sampling, and a monitoring plan my be required. NMED shall determine if monitoring is needed and/or required based on the results presented in the investigation report.

11. **Table 2.3-8, SWMU 21-024(c) 1994 Investigation, Radionuclides Greater than BVs or FVs, page 127:**

    NMED Comment: The date of the investigation at 21-024(c) was not 1994, as displayed in the title of Table 2.3-8. The investigation took place in 1993. This correction must be reflected in the investigation report.

13. **Table 4.1-1, Summary of Proposed Soil Sampling at SWMU 21-013(c) page 130:**

    NMED Comment: See NMED Comment # 3 for specific sampling requirements.

14. **Appendix C Management Plan for Investigation-Derived Waste, page C-1-C-2:**

    NMED Comment: The Permittees must provide brief descriptions of the methods and procedures used to manage and characterize the waste streams. As stated in section IX.A of the Order, the Permittees cannot substitute a reference to their SOPs and website for a description of procedures.

The Permittees cannot use previous sampling data for the purpose of characterizing newly generated waste streams. The Permittees must collect samples of all newly generated waste streams related to IDW and submit the samples for laboratory analysis.

The Permittees did not provide information on how drill cuttings will be handled during and after the investigation. The Permittees must describe how this waste stream will be managed and characterized, and where it is anticipated to be disposed.

Please contact Kathryn Chamberlain at (505) 428-2546 should you have any questions.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

JPB: kc

cc: K. Chamberlain, NMED HWB
D. Goering, NMED HWB
C. Voorhees, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
L. King, EPA 6PD-N
J. Vozella, DOE LASO, MS A316
K. Hingis, LANL RRES/DO, MS M591
N. Quintana, LANL E/ER, MS M992
D. McInroy, LANL E/ER, MS M992
file: Reading and LANL '04 (SWMUs; 21-003-99, 21-006(c)-99, 21-009, 21-012(b), 21-013(c), 21-017(a)-99, 21-022(h)-99, 21-023(a)-99, 21-024(a-e, g-h, j-k, n, o), 21-024(l)-99, 21-026(a)-99, 21-027(a), 21-027(c))

DP Aggregate Missing References:

Cavazza 1989, 21501
Christensen & Maraman 1969, 04779
EarthVision 2002, 85608
EPA 1994, 65280
EPA 2002, 76866
EPA 2003, 81724
Francis 1995, 87271 (Drawing)
Francis 2001, 76211 (Memo)
LANL, 2002, 85609
Longmire 1993, 40222.5
MacFadden 1977, 21569
Purtymun et al. 1977, 11846
Self et al. 1986, 21579
Smith 1960, 48819
Smith 1960, 48820
Spell et al. 1996, 55542
Stix et al. 1988, 49680

*The reference to Vaniman 1991, 9995 needs clarification. The Reference Set for TA-21 lists another document for ER ID 9995. The Permittees must provide the correct reference so that it can be changed in the Table of Contents for the TA-21 Reference Set.