

**Response to the Notice of Disapproval for the Investigation Work Plan
for Delta Prime Site Aggregate Area Delayed Sites at Technical Area 21,
Los Alamos National Laboratory EPA ID No: NM0890010515, HWB-LANL-09-054,
Dated November 19, 2009**

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. Los Alamos National Laboratory's (LANL's or the Laboratory's) responses follow each NMED comment.

SPECIFIC COMMENTS

NMED Comment

1. Section 2.1.1, Land Use, page 4:

***Permittees' Statement:** "Currently, land use of the DP Site Aggregate Area is industrial. It is anticipated that the area will remain industrial and will not change in the reasonably foreseeable future, even if transferred to Los Alamos County. Public access is currently limited at TA-21 through physical controls such as fencing."*

***NMED Comment:** It is public knowledge that the Permittees intend to transfer land parcels in TA-21 to Los Alamos County (DOE Target Dates, February 12, 2002) potentially for residential use. The Permittees must therefore revise this section to include residential land use as a potential future land use scenario at DP Aggregate.*

LANL Response

1. Section 2.1.1, Land Use, was revised to include residential land use as a potential future land use scenario at DP Aggregate for comparison. The current and foreseeable land use is industrial.

NMED Comment

2. Section 2.3.4, Cleanup Standards, page 6:

***Permittees' Statement:** "Human health SSLs for chemicals and screening action levels for radionuclides that may be detected at the sites are provided in Tables 2.3-1 and 2.3-2 for the industrial and construction worker scenarios."*

***NMED Comment:** The Permittees must revise Tables 2.3-1, 2.3-2 and the text, where appropriate, to include a comparison to residential soil screening levels (SSLs) and screening action levels (SALs). Also see specific comment #1.*

LANL Response

2. Tables 2.3-1, 2.3-2 and the text, where appropriate, was revised to include a comparison to residential soil screening levels and screening action levels.

NMED Comment

3. Section 6.2.3, Scope of Activities, page 14, paragraph 3:

Permittees' Statement: "During pipe removal activities, excavation of soil, fill, and/or tuff (including any stained areas) will proceed until media with elevated levels of radionuclide and organic vapors based on field screening has been removed to a maximum depth of 10 ft bgs. Excavating to 10 ft bgs is technically practicable for the excavation equipment."

NMED Comment: Section 6.1.2 of the Plan states that "[a]lpha-emitting radionuclide contamination was left in place at approximately 15 ft bgs after the sumps were removed." NMED acknowledges that U.S. Environmental Protection Agency (EPA) guidance only evaluates risk to a depth of 10-feet below ground surface (bgs). NMED reminds the Permittees that if contamination above residential SSLs is left in place, a designation of "corrective action complete without controls" cannot be achieved and the site will not be released for unrestricted use.

LANL Response

3. LANL has noted NMED's comment.

NMED Comment

4. Section 8.0, Investigation Methods, page 24-28:

In accordance with Section XI.C.14.a, Field Methods, of the March 1, 2005 Order on Consent (Order), the Permittees must ensure that a description of the actual field activities conducted at each site is included in the investigation report. Referencing the Permittees' standard operating procedures (SOPs) is not sufficient.

LANL Response

4. LANL will ensure that a description of the *actual* field activities conducted at each site is included in the investigation report.

NMED Comment

5. Section 8.4.2, Hand Auger, page 25:

Permittees' Statement: "Hand augers may be used to bore shallow holes. The hand auger is advanced by turning the auger into the soil or tuff until the barrel is filled. The auger is removed and the sample is placed in a stainless steel bowl, homogenized, and then placed into the appropriate sample containers depending on the analytical method requirement."

NMED Comment: *In accordance with Section IX.B.2.b.ii (Soil and Rock Sampling) of the March 1, 2005 Order on Consent (Order), "[h]omogenization of discrete samples collected for analyses other than for VOC and SVOC analyses shall be performed by the analytical laboratory, if necessary." Therefore, the Permittees are prohibited from homogenizing samples in the field.*

LANL Response

- LANL will ensure homogenization of discrete samples collected for analyses other than for volatile organic compound and semi-volatile organic compound analyses is performed by the analytical laboratory, if necessary. Homogenizing samples in the field will not be conducted.

NMED Comment

6. Section 8.7.2, Organic Vapor Field Screening, page 26, paragraph 1:

Permittees' Statement: "Organic vapor field screening of subsurface core will be conducted using a portable VOC photoionization detector (PID) with an 11.7-electron volt lamp."

NMED Comment: Using a photoionization detector (PID) for field screening of VOCs is not an effective method except in limited situations (e.g., screening for VOCs with ionization potentials less than 9.5 electron volts such as benzene, TCE, or PCE) due to the propensity for PIDs equipped with more sensitive lamps to provide unreliable data under moist or dusty conditions and their inability to detect SVOCs.

LANL Response

- LANL has noted NMED's comment and recognizes the use of PID field screening is limited.

NMED Comment

7. Section 10.0, Schedule, page 29:

The Permittees intend to submit two investigation reports: the first for the Delayed Sites Investigation Report for Consolidated Unit 21-004(b)-99, SWMU 21-011(b), and the DP East building footprint investigations, and the second for the Delayed Sites Investigation Report for Consolidated Unit 21-022(b)-99, the sites at MDA T, and the DP West building footprint investigations. The Permittees state that the latter report will be submitted "by June 19, 2014, 320 working days after all the data are received." The Permittees must provide justification for the proposed submittal dates of the DP West letter work plans and the second report. Specifically, the Permittees state that the "Delayed Sites Investigation Report for Consolidated Unit 21-004(b)-99, SWMU 21-011(b), and the DP East building footprint investigations by October 3, 2011, 120 working days after all the validated data area received." The Permittees must explain why the first report will be submitted 120 days after all validated data are received and an extra 200 days (320 total) is required for submittal of the second report following receipt of validated data.

LANL Response

- LANL has used experience gained from previous DP Site Aggregate Area projects in developing schedules for the DP West letter work plans and the submittal date for the second report for Consolidated Unit 21-022(b)-99, the sites at Material Disposal Area (MDA) T, and the DP West building footprint investigations, given the unknown nature of what will be encountered in the field. The DP West letter work plans are scheduled to integrate with the current decontamination and demolition (D&D) schedules for DP West and building 257. This integration will allow field observations and field screening results taken during D&D to be incorporated into the letter work plans to provide the rationale for the placement of boreholes and the collection of samples.

The analytical data from the investigations at DP East, including the building footprint, will be less time-consuming to evaluate and compile, perform risk-screening assessments, and make recommendations for additional investigations, than the analytical data from the sites at MDA T, Consolidated Unit 21-022(b)-99, and the building foot prints of DP West (buildings 21-002, 21-005, 21-150, and 21-257).

The Delayed Sites work plan has 10 locations (23 samples) proposed for Consolidated Unit 21-004(b)-99, 43 locations (87 samples) for SWMU 21-011(b), and LANL assumes approximately an equal number of locations and samples for the DP East building footprints. This equates to a total of approximately 100 locations, with a minimum of 2 sampling depths from each location, that will have to be evaluated, compiled, have risk screening assessments performed, and develop recommendations for additional investigations in the first report submittal.

The Delayed Sites work plan has 139 locations (283 samples) proposed for 21-022(b)-99, 23 locations (57 samples) for the sites at MDA T, 45 locations (101 samples) for building 257, and LANL assumes approximately an equal number of locations and samples for the DP West building footprints of 21-002, 21-005, 21-150, and 21-257. This equates to a total of approximately 400 locations with a minimum of 2 samples from each location. There is a high likelihood there will be additional samples, as drilling and sampling will continue based on field-screening results; site knowledge indicates a high potential for contamination to be encountered in DP West and in the area of building 257. The additional time is required for the second report to evaluate and compile data, perform risk screening assessments, and make recommendations for additional investigations on over four times the amount of data contained in the first report.

In addition, the letter work plan for building 21-257 will include a new vapor-monitoring well. The vapor data from that well will be incorporated into periodic monitoring reports that will start 120 days after field work completion.

NMED Comment

8. Table 2.3-2, Screening Action Levels for Radionuclides, page 52:

The Permittees must revise Table 2.3-2 to include the residential SALs.

LANL Response

8. LANL revised Table 2.3-2 to include the residential SALs.

NMED Comment

9. Appendix B, Management Plan for Investigation-Derived Waste, Section B-2.1, Drill Cuttings, page B-2:

Permittees' Statement: *This waste stream will be characterized based either on direct sampling of the waste or on the results from core samples collected during drilling. If directly sampled, the following analyses will be performed: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), explosive compounds (if site sampling indicates the presence of high explosives), radionuclides, total metals, and if needed, toxicity characteristic metals."*

NMED Comment: *Sections B-2.2, B-2.3, and B-2.6 all state that waste will be characterized based on direct sampling or acceptable knowledge (AK). The Permittees must describe how they will*

determine which method will be utilized. The Permittees must also explain why basing the characterization on the results from the core samples is not more comprehensive since the core samples will be analyzed for a broader suite of constituents.

LANL Response

9. The first part of NMED's comment references the characterization of excavated media (Section B-2.2), excavated man-made debris (Section B-2.3) and decontamination fluids (Section B-2.6). NMED has requested clarification of whether direct sampling or acceptable knowledge (AK) will be used. AK and direct sampling are not mutually exclusive; AK may be used instead of direct sampling, to supplement direct sampling, or to assist in identifying types of analyses needed. The final decisions on how waste will be characterized are documented in each project's waste characterization strategy form (WCSF). Each waste stream for which NMED requested clarification is described below.

- *Section B-2.2.* The excavated media will be characterized by direct sampling in accordance with the work plan. Confirmatory investigation samples will be collected after the excavation is complete to document site conditions and provide analytical data to make recommendations for additional characterization, if needed. Confirmation sample analytical results will not be used as AK for the excavated media because they are expected to be less contaminated.
- *Section B-2.3.* Some debris can be directly sampled (e.g., by chip or core sampling of porous materials such as a concrete sump). However, if the debris is difficult to sample, it can be characterized using AK for an associated material that was sampled. For example, a waste determination may be made for a metal tank based on analytical results of the contents of the tank. Decisions regarding how to characterize debris often must be made on a case-by-case basis by qualified sampling personnel. The debris is usually visually evaluated before the best way to characterize it is determined.
- *Section B-2.6.* Decontamination water is direct-sampled for some constituents because the on-site wastewater treatment facilities have specific analytical requirements not covered by investigation samples. However, some AK may be appropriate. For example, for wastes expected to be radioactive, the analyses will be appropriate for the Radioactive Liquid Waste Treatment Facility. These decisions will be made when the WCSF is written.

The second part of NMED's comment references use of data from core material. Usually, it is not practicable to use the analyses of the investigation samples because decisions must be made for waste disposition before the investigation sampling results are available. Additionally, other methods such as toxicity characteristic metals may be needed for waste characterization that are not needed for investigation samples. Unless wastes are generated within an area of contamination or in small quantities that can be stored in a satellite accumulation area, waste determinations must be made in a short time frame; if the waste is determined to be hazardous, it must be disposed of within 90 days of generation. If waste is directly sampled, the samples are submitted for accelerated analysis and analyzed for the constituents needed to make hazardous and radioactive waste determinations and meet the waste acceptance criteria requirements of the receiving facility.