Response to the "Notice of Disapproval for the Investigation Work Plan for Upper Mortandad Canyon Aggregate Area, Los Alamos National Laboratory EPA ID No: NM0890010515, HWB-LANL-07-040," Dated January 25, 2008

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The comments are divided into general and specific categories, as presented in the notice of disapproval. Los Alamos National Laboratory's (LANL's or the Laboratory's) responses follow each NMED comment. This response contains data on radioactive materials, including source, special nuclear, and byproduct material. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with U.S. Department of Energy (DOE) policy.

GENERAL COMMENTS

NMED Comment

1. *At each site undergoing investigation, 20% of all samples must be sent for off-site laboratory analysis of polychlorinated biphenyls (PCBs). The selected samples must be biased toward areas of elevated field screening or areas with the highest potential for contamination (e.g., closest to the contamination source).*

LANL Response

1. The proposed sampling has been revised to include polychlorinated biphenyl (PCB) analyses in at least 20% of samples at all solid waste management units (SWMUs) where PCB sampling was not already proposed. The proposed sampling tables have been revised to reflect the addition.

NMED Comment

2. *All figures must include pertinent features and structures, such as underground utilities, structure numbers, contour lines, canyon names, units of measure (e.g., mg/kg, pCi/L), and existing well and borehole locations. For example, Figure 5.10-1 Proposed sampling locations at SWMU 48-007(b) does not depict the outfall discharge location, the solid waste management unit (SWMU) boundary, the drainage, or contour lines with marked elevations. All figures illustrating proposed sampling locations must be revised so that all pertinent site features are shown.*

LANL Response

2. Both the outfall discharge point and the SWMU boundary are, in fact, indicated on the figure. In Figure 5.10-1, the point signifying SWMU 48-007(b) indicates the outfall discharge point because the SWMU is defined as the outfall itself. All figures have been revised as appropriate to include the required features.

NMED Comment

3. *The Permittees must pre-determine sampling locations in drainages and justify the selections. Locations must be selected based on geomorphic relationships and sedimentary packages following investigation procedures.*

LANL Response

3. Sediment sampling locations have been identified on all proposed sampling figures (for sites where sediment sampling is required). Text has been added to section 8.0, Investigation Methods, to clarify that drainage sampling locations are determined on the basis of geomorphic relationships and the presence of appropriate sediment packages. Any changes to sediment sampling locations based on field observations at the time of sampling will be documented as deviations from the plan.

NMED Comment

4. *The Permittees propose to defer several sites within the Upper Mortandad Canyon Aggregate Area. The Permittees must propose investigation activities for all sites. If the Permittees propose to defer a site, they must provide sufficient information demonstrating that there have been no releases to the environment from the sites proposed for deferral. Such information may include, but is not limited to, documentation from previous and/or ongoing line testing, visual observations, and logbooks or other records from a facility indicating that no spills have occurred. This information should form the basis for a detailed justification for deferring sites.*

LANL Response

4. NMED's comment indicates that LANL must provide sufficient information to demonstrate no releases to the environment have occurred to justify deferred investigation of a site. LANL believes that demonstration of no release to the environment is more appropriate for proposing no further action (NFA) rather than deferred investigation for a SWMU or area of concern (AOC). In fact, no release of contaminants to the environment is one of the five criteria for NFA agreed to by LANL and NMED. To support a proposal for deferred investigation, LANL believes it is more appropriate to demonstrate no ongoing releases are occurring, future release are unlikely, and any past releases are unlikely to present a risk to human health and the environment. These conditions would demonstrate that no immediate action is needed at a site and that investigation and, if necessary, remediation could be deferred until some future time. The justification for deferring the investigation should also include constraints on the ability to safely or practicably investigate a site at the current time. Finally, sufficient regulatory authority exists through the Consent Order, the corrective action provisions of the Hazardous Waste Operating Permit, or the Hazardous Waste Act to address any releases identified in the future from SWMUs and AOC that remain part of active operations.

   For sites that LANL is proposing deferred investigation, we propose additional information will be provided to demonstrate that no ongoing releases are occurring, future release are unlikely, and any past releases are unlikely to present a risk to human health and the environment. Available information to support such demonstrations is provided in responses to specific comments below. In some cases, additional nonintrusive investigation activities may be needed to collect information that is currently unavailable. For these sites, the additional information to be collected is described in the comment response and the information will be reported in the investigation report. For other sites, LANL believes that it may be possible to collect additional information, in lieu of sampling, to demonstrate that no release has occurred. For these sites, additional information to demonstrate that

no release has occurred will be collected during the investigation and presented in the investigation report. These sites will also be recommended for NFA in the investigation report.

SPECIFIC COMMENTS

NMED Comment

1. Section 1.1, Work Plan Overview, page 1, paragraph 1:

Table 1.1-1 lists 57, not 56 sites that have been investigated and/or remediated. According to Table 1.1-1, the Plan addresses 62, not 63, sites. The Permittees must resolve the discrepancy and revise the text or table accordingly.

LANL Response

1. There is no discrepancy between the text and Table 1.1-1, and no revision is necessary. Table 1.1-1 correctly lists 56 sites that have been approved for NFA; for clarity, the rows including those sites in the table are shaded. In addition, Table 1.1-1 correctly lists the 63 sites addressed in the plan.

NMED Comment

2. Section 3.2, AOC 03-003(e), Storage Area (Transformers), page 10:

The Permittees have not provided the above-mentioned plan. NMED cannot evaluate whether or not PCB contamination was detected and/or remediated. The Permittees must provide documentation to support their assertion.

LANL Response

2. A reference (DOE 1991, 065656) has been added to sections 3.2 and 3.3. This reference is a progress report for the DOE/Albuquerque Operations Office Environmental Restoration and Waste Management Five-Year Plan to replace PCB transformers and capacitors throughout LANL. According to this progress report, not only PCB-containing transformers and capacitors were removed, but spill areas were cleaned up and decontaminated. Therefore, PCB contamination at the site, if any, had been cleaned up based on the controlling standard at that time.

NMED Comment

3. Section 3.3.3, Scope of Activities for AOC 03-003(i), page 11:

The Permittees indicate in Section 3.3 of the Plan that three large concrete slabs and three 55 gallon drums of soil located below the 13 transformers were removed and disposed at TA-54 Area G. No indication was given as to the cause of the removal; NMED assumes contamination was visible or detected. NMED does not agree with the Permittees that one soil sample collected below the concrete slab is sufficient to determine the extent of PCB contamination, and does not approve delaying characterization and investigation of this site. The Permittees must revise the Plan to propose sampling locations in the vicinity of the former transformers. See also General Comment # 4.

LANL Response

3. Section 3.3.3 has been revised to indicate that soil samples will be collected from two depth intervals at one location in the floor of the former transformer vault (Figure 3.16-3). Samples will be collected from the surface and from 2.5 ft below ground surface (bgs) and will be analyzed for PCBs. The proposed samples are presented in Table 3.16-4.

NMED Comment

4. Section 3.4.2, Summary of Data for AOC 03-004(c), page 12:

The Permittees did not provide the isotopic uranium and plutonium analytical results for samples collected in 1997. The Historical Investigation Report (HIR) (page 3) states, "[t]he RFI report included the results of five asphalt samples that were analyzed for isotopic plutonium and uranium. These results are not included in this HIR because they are engineered material." NMED cannot evaluate whether or not the Permittees' seven proposed sampling locations are appropriate because no information has been provided regarding the 1997 sample locations. Furthermore, without knowing the depths where these samples were collected, NMED has no way of knowing whether the depths proposed in the Plan are sufficient to determine the extent of any potential contamination. The Permittees must revised the HIR and the Plan to include historical data for isotopic uranium and plutonium sampling.

LANL Response

4. The asphalt samples were collected at the five locations indicated on Figure 3.2-1 as existing sampling locations at AOC 03-004(c). The samples were collected from the asphalt pavement and were surface-only samples (0–0.42 ft bgs). Sections 3.4.1 and 3.4.2 have been revised to provide these details. Because asphalt samples are engineered material, the sample results have no applicable background values (BVs), cannot be directly compared to results of samples from soil or other geological media, and therefore serve only as screening-level data. Based on those screening-level data and on the lack of radionuclide analyses of soil or tuff samples at the AOC, the plan proposes sampling for radionuclides.

NMED Comment

5. Section 3.4.3, Scope of Activities for AOC 03-004(c), page 12:

The Permittees propose sampling for dioxins and furans at sampling locations 4c-2 and 4c-7 (see Figure 3.4-3). The Permittees must provide a rationale for selection of these two sample locations.

LANL Response

5. The locations were selected as a subset of the proposed sampling locations representing, respectively, the area nearest the original source of potential contamination (and the only location where organic chemicals were detected in previous investigation samples) and the area farthest downslope from the source.

NMED Comment

6. Section 3.5.2, Summary of Data for AOC 03-004(d), page 13:

The number of previous sampling locations identified in this section are not consistent with the number of samples identified in the corresponding tables and figures. For example, the first and third bullets mention six sampling locations while the second bullet mentions seven. The Permittees must revise the Plan to reflect the correct number of previous sampling locations.

LANL Response

6. The numbers of samples analyzed for different suites are different. As detailed in section 3.5.2, a total of seven sampling locations are located at this site. Not all samples from all seven locations were analyzed for the same suite. As shown in Table 3.5-1, each bullet in section 3.5.2 correctly identifies the numbers of samples and locations analyzed for a certain suite. No revision is necessary.

NMED Comment

7. Section 3.7.3, Scope of Activities for AOC 03-014(w), page 15:

According to Section 3.7 of the Plan, AOC 03-014(w) consists of an inactive floor drain, which was removed from service in 1991 and is currently plugged. Because the floor drain is inactive and no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for AOC 03-014(w) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

7. AOC 03-014(w) is an inactive floor drain in the Chemistry Metallurgy Research (CMR) Building (03-0029). The drain was installed in 1953 and effluent from CMR Building darkroom operations may have been discharged to this floor drain. The drain was connected to the Technical Area (TA) 03 sanitary sewer system and former TA-03 Wastewater Treatment Plant (WWTP). The drain was plugged in 1991. During the 1994 Resource Conservation and Recovery Act (RCRA) facility investigation (RFI), the four SWMUs that were believed to be the most likely to have received and retained any potential contaminants from the WWTP were sampled. These SWMUs included 03-014 (a, e, b2, and c2), which are two Imhoff tanks and two outfalls. However, the piping, the lift stations, and the drains leading to the WWTP were not sampled as part of that RFI, and thus, AOC 03-014(w) was not sampled. The potential for contamination of AOC 03-014(w) was assessed in conjunction with SWMUs 03-014(a, e, and b2), which were associated with this waste line. Sampling results for SWMUs 03-014(a, e, and b2) show no detects above residential screening action levels (SALs); therefore, any past releases from AOC 03-014(w) are not likely to present a risk to human health and the environment. Releases from the drain to the soil underlying the basement floor to the underlying soil, while extremely improbable, would also not pose a risk because there would be no exposure to receptors. In addition, because water is not being discharged to the soil beneath the building, there would be no hydraulic driving force present to transport contaminants to receptors.

   Because this former drain is located within an active nuclear facility, it cannot be safely or practicably investigated at the current time. The current conditions demonstrate that no immediate action is

needed at this site and that investigation and, if necessary, remediation could be deferred until some future time when the CMR Building undergoes decontamination and decommissioning (D&D).

Additional information to better document the above conditions will be collected during the investigation and included in the investigation report. Based on evaluation of this information, AOC 03-014(w) will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

8. Section 3.8, AOC 03-014(x)-Floor Drain in Sigma Building, page 16:

It is unclear in the above statement if the drain alone or the drain and ancillary equipment associated with the drain such as the sewer lines comprise the SWMU. The Permittees must revise the language in this section to specifically state what components constitute the SWMU.

LANL Response

8. This SWMU includes only the floor drain and the sewer line that connects the floor drain to the sanitary sewer system. Section 3.8 has been revised to specifically state the SWMU components.

NMED Comment

9. Section 3.8.3, Scope of Activities for AOC 03-014(x), page 16:

Because no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for AOC 03-014(x) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

9. AOC 03-014(x) is an inactive floor drain in the Sigma Building (03-0066). The drain was installed in 1959. Effluent from building 03-0066 may have included spent photoprocessing solutions. The drain was connected to the sanitary sewer and former TA-03 WWTP. The drain was plugged in 1991. During the 1994 RFI, the four SWMUs believed to be the most likely to have received and retained any potential contaminants from the WWTP were sampled. These SWMUs included 03-014 (a, e, b2, and c2), which are two Imhoff tanks and two outfalls. However, the piping, lift stations, and drains leading to the WWTP were not sampled as part of the 1994 RFI, and thus, AOC 03-014(x) was not sampled. The potential for contamination of AOC 03-014(x) was considered in conjunction with SWMUs 03-014(a, e, and b2), which were associated with this waste line. Sampling results for SWMUs 03-014(a, e, and b2) show no detects above residential SALs; therefore, any past releases from AOC 03-014(x) are unlikely to present a risk to human health and the environment. Releases from the drain to the soil underlying the basement floor, while extremely improbable, would also not pose a risk because there would be no exposure to receptors. In addition, because water is not being discharged to the soil beneath the building, there would be no hydraulic driving force present to transport contaminants to receptors.

Because this former drain is located within an active nuclear facility, it cannot be safely or practicably investigated at the current time. The current conditions demonstrate that no immediate action is

needed at this site and that investigation and, if necessary, remediation could be deferred until some future time when the Sigma Building (03-0066) undergoes D&D.

Additional information to better document the above conditions will be collected during the investigation and reported in the investigation report. Based on evaluation of this information, AOC 03-014(w) will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

10. Section 3.9.3 Scope of Activities for AOC 03-026(a), page 16:

Because no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for AOC 03-026(a) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

10. AOC 03-026(a) is an inactive sump located in the southeast corner of an open pump pit directly adjacent to, and west of, the SWMU 03-037 holding tanks in the Sigma Building (03-0066). The sump was installed to pump any liquid accumulated in the pump pit (from any kind of plumbing leak) to the acid waste line. The pump pit contains two electrically driven pumps used to remove waste fluids from the holding tanks. The pump pit measures 12 ft long × 10.7 ft wide × 8.5 ft deep, with 8-in.-thick concrete walls. The west edge of the pump pit is about 3 ft from the west wall of building 03-0066. No releases have been reported from the sump. Releases through the 8-in. thick concrete wall and basement floor to the underlying soil, while extremely improbable, would not pose a risk because there would be no exposure to receptors. In addition, since the sump is inactive, water is not being discharged to the soil beneath the building, so there would be no hydraulic driving force present to transport contaminants to receptors.

    These conditions demonstrate that no immediate action is needed at this site and that investigation and, if necessary, remediation may be deferred until some future time when the Sigma Building undergoes D&D.

    Because the sump is located within an active nuclear facility, it cannot be safely or practicably investigated at the current time. However, LANL proposes visually inspecting the integrity of the sump interior during the investigation to verify that there is no indication of past releases. The results of this inspection will be included in the investigation report. Based on evaluation of this information, AOC 03-036(a) will be recommended for deferred investigation or NFA in the investigation report.

    See also response to General Comment #4.

NMED Comment

11. Section 3.10, SWMU 03-026(c)-Above-Ground Holding Tanks, page 17:

It is unclear in the above-language what components comprise the SWMU. NMED understands the SWMU to be the 25 holding tanks, the 25 associated pumps, piping, and floor drains. The Permittees

must revise this section to more clearly define the SWMU, and propose sampling in the vicinity of all features associated with the tank system.

LANL Response

11. This SWMU includes only the aboveground holding tanks. Section 3.10 has been revised to clarify the SWMU description.

NMED Comment

12. Section 3.10.3, Scope of Activities for SWMU 03-026(c), page 17:

The Permittees have not provided an adequate rationale for not proposing investigative sampling regarding SWMU 03-026(c). As stated in Comment 11, the Permittees must revise the Plan to propose sampling activities for SWMU 03-026(c). See also General Comment # 4.

LANL Response

12. SWMU 03-026(c) consists of tanks located in the basement of the CMR Building that are part of the building's chilled water system. The tanks receive chilled water after it has been used to cool equipment and store the water until it is returned to the chillers. In the event that the pumps used to recirculate the chilled water fail, the water will drain from the tanks to floor drains that are connected to radioactive liquid waste (RLW) lines connected to the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF). Deferred investigation or NFA is appropriate for SWMU 03-026(c). These reasons are explained below and will be described in more detail in the investigation report.

    - Past, current, or future releases of contaminants to the environment are unlikely because of the nature of the materials handled in tanks comprising this SWMU. The tanks contain potable water, and contamination of this cooling water by the equipment being cooled is very unlikely. Contamination caused by leaks in the piping is unlikely because the system is under pressure and water would leak out of the piping rather than into the piping. Contamination would require the improbable combination of a leak in the pipe in contact with contaminated equipment with concurrent pump failure resulting in negative pressure in the system.
    - Water released from the tanks, even if contaminated, would be unlikely to reach the environment. The tanks are located in the basement of the CMR Building, which is a Hazard Category 2 nuclear facility designed to safely contain significant inventories of radioactive materials. The basement is designed to function as part of the building containment system to prevent the escape of the radioactive inventory to the environment in the event that a breach occurred in the primary containment system.
    - The only mode of release from the building is through floor drains connected to the RLW lines. Although the chilled water is not expected to be radioactively contaminated, any discharge from the tanks is conservatively routed to the RLW system. In accordance with DOE requirements, the RLW lines from the CMR Building to the RLWTF are double-walled with an annular leak-detection system. The leak-detection system is routinely monitored for leaks. Any current or future release to the environment from these lines is extremely unlikely.
    - Past releases, if they occurred, would not be expected to pose a risk to human health and the environment. Releases through the basement floor to the underlying soil, while extremely improbable, would not pose a risk because there would be no exposure to receptors. Also,

because water is not being discharged to the soil beneath the building, there is no hydraulic driving force present to transport contaminants to receptors. The single-walled RLW lines that were in place before the double-walled lines were installed were removed in 1982. This line-removal effort included removal of soil contaminated by past leakage. Any residual contamination would be located beneath pavement and there would be no exposure to receptors.

Additional information to better document the above conditions will be collected during the investigation and included in the investigation report. Based on evaluation of this information, SWMU 03-026(c) will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

13. Section 3.11, SWMU 03-031, Radioactive Liquid Waste System in CMR Building, page 17:

The narrative does not clarify the status of the system. The Permittees must revise this section to clearly state whether or not the system is active.

LANL Response

13. This SWMU is inactive, but the operations in the building are still active. SWMU 03-031 was active from 1953 to 1982, as stated in the text, and the new radioactive liquid waste system started operation after 1982. Section 3.11 has been revised to clarify the status of this SWMU.

NMED Comment

14. Section 3.11, SWMU 03-031, Radioactive Liquid Waste System in CMR Building, page 17:

The Permittees must revise this section to specifically state what components comprise the SWMU (e.g., numbers of tanks, number of associated sumps with the tanks, drain lines, and the number and location of vaults). The Permittees must include in this description all ancillary equipment associated with the system, (e.g., piping connected to the tanks and the RLW facility in TA-50).

LANL Response

14. SWMU 03-031 consists of vaults, tanks, and drainlines that connect the tanks to the RLW that carry waste directly to TA-50 for treatment. There are two tanks in the basement of each of five wings of the CMR Building. The text has been revised to clarify the components that comprise the SWMU.

NMED Comment

15. Section 3.11.3, Scope of Activities for SWMU 03-031, page 18:

According to Section 3.11 of the Plan, SWMU 03-031 consists of an inactive RLW collection system in the CMR Building. Because the collection system is inactive and no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for SWMU 03-03 1 or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

15. SWMU 03-031 was originally recommended for NFA in Addendum 1 to the Operable Unit (OU) 1114 RFI work plan (LANL 1995, 057590). The U.S. Environmental Protection Agency (EPA) reviewed the work plan and concurred with the NFA recommendation, indicating that LANL should request to have SWMU 03-031 removed from Module VIII of LANL's Hazardous Waste Facility Permit (EPA 1994, 055161.49). SWMU 03-031 was proposed for removal from Module VIII in a Request for Class III Permit Modification submitted to NMED in September 1996 (LANL 1996, 055035). The basis for this proposal was that no release to the environment has occurred, nor is a release likely to occur in the future. No releases from the tank vaults had been observed during visual inspection, and none had been reported in the past. Engineered controls prevent release to the environment, and the monitoring system would immediately alert the operating group to a problem. In addition, the industrial waste system is completely contained in the building with no pathway to the environment.

    NMED reviewed the Request for Class III Permit Modification and issued a notice of deficiency (NMED 1997, 056369). The notice of deficiency requested additional information related to a number of sites, including additional information related to the integrity of the waste system components comprising SWMU 03-031. In February 2002, to expedite approval of other SWMUs included in the Request for Permit Modification, LANL formally withdrew SWMU 03-031 from consideration for removal from the permit pending collection of additional information requested by NMED.

    LANL will collect the information requested by NMED during the investigation of Upper Mortandad Canyon Aggregate Area and will include this information in the investigation report.

NMED Comment

16. Section 3.12, SWMU 03-034(a)-Pump House and Associated Radioactive Liquid Waste Tanks, page 18:

The Permittees must revise this section to specifically state what components comprise the SWMU. The Permittees must include in this description all ancillary equipment associated with the system (e.g., number of associated sumps with the tanks, all drains lines, number and location of vaults).

LANL Response

16. SWMU 03-034(a) consists only of the four waste tanks. Section 3.12 has been revised to clarify the SWMU description, and the designation of this SWMU has been modified to "Radioactive Liquid Waste Tanks."

NMED Comment

17. Section 3.12.2, Summary of Data for SWMU 03-034(a), bullet 1, page 19:

While Table 3.12-2 accurately reflects the results of previously collected samples, Figure 3.4-1 does not identify the sample locations and the analytical results at those locations. The Permittees must revise Figure 3.4-1 to accurately depict the location and present the results of the sample analyses.

LANL Response

17. As shown in Table 3.12-2, all the results are nondetects (U), (i.e., they are detection limits and values with [U] are not presented in figures). Only detected values above BVs or for analytes without BVs

are shown in figures. Section 3.12.2 has been revised to state, "Figure 3.4-1 shows the sampling locations, and Table 3.12-2 presents the detection limits."

NMED Comment

18. Section 3.12.3, Scope of Activities for SWMU 03-034(a), page 19:

Figure 3.2-1 ("Site features and previous sampling locations for AOCs 03-004(c) and 03-004(d), and SWMU 03-034(a)", page 86) shows only a communication line in the vicinity of SWMU 03-034(a). If there are in fact other utility lines near the SWMU, the features must be depicted on the figures. In this case, the Permittees must propose an alternative sampling strategy.

LANL Response

18. Section 3.12.3 has been revised to indicate that samples will be collected from four locations rather than one. Figures 3.2-1 and 3.5-2 and Table 3.12-5 have also been revised to reflect this change.

NMED Comment

19. Section 3.13.3, Scope of Activities for SWMU 03-034(b), page 20:

Because no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for SWMU 03-034(b) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

19. SWMU 03-034(b) is a 10-ft × 10-ft × 11-ft-deep metal-lined, concrete secondary containment sump located outside the west side of the Beryllium Technology Facility (building 03-0141). The sump is part of the active industrial waste system for building 03-0141 and provides secondary containment for a 50-gal. metal tank and sump pump. The tank and pump are used to collect water and liquid waste that may contain small quantities of radionuclides and acid wastes and discharge these to the RLW line for treatment at the TA-50 RLWTF. A concrete bumper was constructed around the top of the metal tank to prevent damage. The sump, tank, and the pump were installed in the 1960s and have been active since that time. The sump has a level indicator and alarm and the discharge line is equipped with a backflow preventer. The sump is inspected weekly because it is part of the radioactive liquid waste system for building 03-0141.

    SWMU 03-034(b) was recommended for NFA in Addendum 1 to the OU 1114 RFI work plan (LANL 1995, 057590). The basis for this recommendation was that no release to the environment had occurred. EPA reviewed the work plan and issued a notice of deficiency that included a request that LANL clarify whether the sump was located inside or outside the building (EPA 1994, 055161.49). LANL provided a response to the notice of deficiency clarifying that the sump was located outside the building. NMED then issued a notice of deficiency for the work plan but did not comment further on the NFA recommendation for SWMU 03-034(b) (NMED 1996, 065591). NMED did not act upon the work plan or the NFA recommendation for SWMU 03-034(b).

    Because the secondary containment sump is routinely inspected and is in good condition, past, ongoing, and future releases from the system are unlikely. Because the sump is located within a

classified beryllium facility, it cannot be practicably investigated at the current time. Site conditions demonstrate that no immediate action is needed at this site and that investigation and, if necessary, remediation could be deferred until some future time when the Beryllium Technology Facility undergoes D&D.

Additional information to better document the above conditions will be collected during the investigation and reported in the investigation report. Based on evaluation of this information, SWMU 03-034(b) will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

20. Section 3.14.3, Scope of Activities for AOC 03-041, bullet 1, page 20:

The Permittees have indicated that the holding tank is underground, but have not provided information concerning its depth. NMED cannot make a determination as to whether the proposed sample depth locations mentioned above are adequate. Further, if the tank is underground, a surface sample is likely inappropriate, except to identify recent spills or overfills. The Permittees must revise this section to provide the depth and dimensions of the tank and either a justification for the sample depths, or revised depths.

LANL Response

20. Section 3.14 states that the tank is in a belowgrade concrete vault and is 15 ft high. The top surface of the concrete vault is about 1 ft above the ground surface; thus, the bottom of the vault is at least 14 ft bgs. The text in section 3.14 has been revised to clarify the depth of the vault, and the sampling depths have been revised to surface, soil/tuff interface, 15 ft bgs, and 25 ft bgs.

NMED Comment

21. Section 3.14.3, Scope of Activities for AOC 03-041, bullet 1, page 20:

Figure 3.14-1, Proposed sampling locations at AOC 03-041, page 96, illustrates only one elevation mark. NMED is unable to make a determination as to whether the three sampling locations are in fact down-slope of the holding tank. See General Comment # 2.

LANL Response

21. Figure 3.14-1 has been revised to include multiple elevation labels on contour lines for clarity and to include all features as required per General Comment #2.

NMED Comment

22. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 1:

Figure 3.15-1 indicates that the above-mentioned NPDES outfall is 03A022 and not 03A024. The Permittees must correct the typographical error, or otherwise resolve the discrepancy.

LANL Response

22. Figures 3.15-1 has been revised to correct the labels of the National Pollutant Discharge elimination System (NPDES) outfall. The outfall at SWMU 03-049(a) is 03A022, and the outfall at SWMU 03-0045(h) is 03A024.

NMED Comment

23. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 2:

The Permittees have indicated the location of the outlet pipe discharge point in Figure 3.15-1, but have not illustrated its orientation. The Permittees must revise the figure to depict the location of the pipe from its influent source to the discharge point.

LANL Response

23. Figure 3.15-1 has been revised to show the orientation of the lines associated with the outfalls.

NMED Comment

24. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 3:

The Permittees have proposed to defer investigation of the northward flow of the discharge from the cooling water outlet pipe at SWMU 03-045(h) to the Upper Sandia Canyon Aggregate Area Work Plan (USCAA). The Order requires the Permittees to investigate the entire Upper Mortandad Canyon Aggregate Area. SWMU 03-045(h) is included in the Upper Mortandad Canyon Aggregate Area; therefore the Permittees are required to investigate the entire SWMU, not just a portion of the SWMU. Therefore, the Permittees must collect two samples (surface and the soil/tuff interface) at the outlet pipe's discharge point. The samples must be analyzed at an off-site laboratory for the same analytical suite proposed in section 3.15.3 of the Plan. Pending the analytical results, NMED will make a determination concerning whether or not to defer further investigation in the USCAA scheduled for submittal in March, 2008.

LANL Response

24. The proposed sampling for the SWMU 03-045(h) portion of Consolidated Unit 03-045(h)-00 has been revised as required. A sampling location has been added to Figure 3.15-1, and Table 3.15-5 has been revised to reflect the change. Text in section 3.15.3 has been revised to include the additional sampling location.

NMED Comment

25. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 4:

The Permittees have not indicated in Figures 3.6- 1 to 3.6-3 and 3.15- 1 where and how this potential overflow from the storm drain would have pooled and flowed. Revise the figures to illustrate this information so that NMED can evaluate the four proposed sampling locations for SWMU 03-045(h).

LANL Response

25. Figures 3.6-1 through 3.6-3 and 3.15-1 have been revised to indicate the area of potential overflow and pooling.

NMED Comment

26. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 4:

The Permittees have referenced the drainages associated with SWMU 03-045(h), but did not identify these drainages on Figure 3.15- 1 or propose sampling (Section 3.15-3) in these drainages. The Permittees are required to sample the drainage(s) associated with the site. Samples within the drainage(s) must be obtained from the top of the slope to the toe of the colluvium. Sampling must target areas such as fine-grained sediment in outfall channels or other areas of sediment accumulation. The Permittees must revise the Plan to include proposed sampling in the drainage(s) associated with SWMU 03-045(h). Also see General Comment # 3.

LANL Response

26. Figure 3.15-1 has been revised to show the drainage associated with SWMU 03-045(h). Section 3.15.3 has been revised to indicate that samples will be collected in the drainage, as directed. These additional proposed sampling locations have also been added to Figure 3.15-1. Text has been added to section 8.3.3 describing the sediment sampling method.

NMED Comment

27. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 5:

The Permittees have indicated the location of the outfall in Figure 3.15-1 but have not illustrated its orientation. The Permittees must revise the figure to depict the location of the outfall pipe from its influent source to the discharge point.

LANL Response

27. Figure 3.15-1 has been revised to indicate the location and orientation of the outfall.

NMED Comment

28. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 5:

The Permittees have not indicated where structure 03-0127 is on any of the figures associated with this SWMU, including Figure 3.6-3. The Permittees must revise the figure(s) to include this structure.

LANL Response

28. The location of structure 03-0127 has been added to Figures 3.3-1, 3.6-1, 3.6-2, 3.6-3, and 3.15-1.

NMED Comment

29. Section 3.15, Consolidated Unit 03-045(h)-00-Drainlines and Outfalls, page 21, paragraph 5:

The Permittees have referenced the drainages associated with SWMU 03-049(a), yet have not identified these drainages on Figure 3.15-1 or proposed sampling (Section 3.15-3) along these drainages. The Permittees must sample the drainage(s) associated with the site from the top of the slope to the toe of the colluvium. Sampling must target areas such as fine-grained sediment in outfall channels or other areas of sediment accumulation. The Permittees must revise the Plan to include proposed sampling in the drainage(s) associated with SWMU 03-049(a). Also see General Comment # 3.

LANL Response

29. Figure 3.15-1 has been revised to show the drainage associated with SWMU 03-049(a). As indicated in section 3.15.3 and shown in Figure 3.15-1, samples are proposed in this drainage.

NMED Comment

30. Section 3.15.3, Scope of Activities for Consolidated Unit 03-045(h)-00, page 23, paragraph 3:

The Permittees have not proposed sample collection at the lowest point of the northern portion of the outlined area illustrated in Figure 3.15-1 for SWMU 03-045(h). The Permittees must revise the Plan to include at least one additional sample at this location.

LANL Response

30. Figure 3.15-1 has been revised, and text has been added to section 3.15.3 to indicate that samples will be collected at the area indicated (see response #26).

NMED Comment

31. Section 3.15.3, Scope of Activities for Consolidated Unit 03-045(h)-00, page 23, paragraphs 2 and 5:

The Permittees must specifically identify sampling locations in the Plan. See General Comment # 3.

LANL Response

31. Specific sampling locations have been identified as required on Figure 3.15-1. The second sentence of section 3.15.3 has been deleted, and text has been added to section 8.3.3 describing the method of selecting and adjusting, if necessary, the locations of sediment samples. Any changes to sediment sampling locations from those shown in the figures will be documented as deviations from the plan.

NMED Comment

32. Section 3.16, Consolidated Unit 03-049(b)-00-Miscellaneous, page 23:

See General Comment # 3 and Specific Comment # 31.

LANL Response

32. Specific sampling locations have been identified in Figure 3.16-3, as required. No revision is necessary.

NMED Comment

33. Section 3.17, SWMU 03-049(e), Outfall, page 25:

The Permittees must collect at least one sample below the location of the outfall pipe discharge point referenced above. The Permittees must revise the Plan to include this sample collection point.

LANL Response

33. Figure 3.17-1 has been revised to include an additional sampling location below the outfall discharge point. Table 3.17-3 has also been revised to include this additional sampling location.

NMED Comment

34. Section 3.17, SWMU 03-049(e), Outfall, page 25:

It is unclear whether or not the "Mortandad Canyon drainage" samples are intended to be part of the scope of activities for this SWMU. The Permittees must provide a justification to NMED if they do not intend for this to be the case, and otherwise clarify this section.

LANL Response

34. The intent is to use Mortandad Canyon drainage samples wherever practicable to facilitate the determination of nature and extent of contamination. However, no Mortandad Canyon drainage samples have been collected in the immediate vicinity of SWMU 03-049(e).

NMED Comment

35. Section 3.17.3, Scope of Activities for SWMU 03-049(e), page 25:

See General Comment # 3 and Specific Comment # 31.

LANL Response

35. Specific sampling locations have been identified as required on Figure 3.17-1. The second sentence of section 3.17.3 has been deleted, and text has been added to section 8.3.3 describing the method of selecting and adjusting, if necessary, the locations of sediment samples. Any changes to sediment sampling locations from those shown on the figures will be documented as deviations from the plan.

NMED Comment

36. Section 3.19, AOC C-03-006, page 27:

The Permittees have not provided a detailed figure indicating specifically the location of the manhole and the areas affected by overflows or spills. The Permittees must revise the Plan to provide such a figure; Figures 3.16-1,3.16-2, and 3.18- 1 are not sufficient.

LANL Response

36. Figures 3.3-1, 3.16-1, 3.16-2, 3.18-1, and 3.18-2 have been revised to show the location of the (former) manhole, and the AOC boundary has been revised to better reflect the historical documentation from the site.

NMED Comment

37. Section 3.19.3, Scope of Activities for AOC C-03-006, page 27:

The Permittees have not demonstrated that the area in which the manhole and the spill release are located are not contaminated. While clean-up of the surrounding area occurred after the spill, confirmatory samples were collected only to determine exceedances of radioactive materials, not metals and organics. Previous sampling conducted at SWMU 03-054(e), the outfall into which AOC C-03-006 drained, indicated that metals and organics were present at concentrations above background values at some locations. The Permittees must therefore revise the Plan to propose sample collection locations at the manhole and in the area of the spill release.

LANL Response

37. The area affected by the release was remediated immediately after the incident. Further excavation/remediation of the area occurred in 1984 when the manhole and the waste line were removed. Because the release consisted of radioactive liquid waste, as stated in section 3.19 of the plan, cleanup based on levels of radioactive materials was an appropriate and effective means of removing all contaminants, including inorganic and organic chemicals, associated with the release. Furthermore, because the manhole and waste line (and associated soil) were removed in 1984, additional sampling to characterize contamination associated with the original release is neither warranted nor practicable.

NMED Comment

38. Section 4.2, Consolidated Unit 42-001(a)-99-Former TA-42 Incinerator Complex, pages 29-30:

Figure 4.1-1 depicts the site features for the consolidated unit (CU) 42-001(a)-99, but does not indicate the location of former buildings or other structures. For example, the locations of former incinerator (structure 42-0001) and tanks (structures 42-0002 and 42-0003) are not depicted on the figure. The location of former structures is essential to determine if the sampling locations proposed in the Plan are appropriate. The Plan states that it is not known if the drainlines were removed. The soils beneath the drainlines must therefore be investigated for potential contamination. The Permittees must revise Figure 4.1-1 to depict locations of former structures and drainlines associated with CU 42-001(a)-99.

LANL Response

38. Figure 4.1-1 has been revised as required to show the locations of former structures associated with Consolidated Unit 42-001(a)-99.

NMED Comment

39. Section 4.2.3, Scope of Activities for Consolidated Unit 42-001(a)-99, pages 30-31:

Americium-241 was detected at most of the sampling locations during previous investigations, but is not included in the analytical suite proposed for CU 42-001(a)-99. The Permittees must include alpha spectroscopy analysis for americium-24las part of the analytical suite for samples collected at CU 42-001(a)-99.

According to the Plan, SWMU 42-003 (the septic system) potentially received hazardous and radioactive waste and the tank "possibly may have overflowed. The Permittees do not propose any sampling in the drainage downstream of the leach field. The Permittees must revise the Plan to include sampling in the drainage downstream from the septic system. Figure 4.2-3 depicts an NPDES Outfall (#03A181) upgradient of CU 42-001(a)-99. It is not clear from the figure if effluent from the outfall drains toward CU 42-001(a)-99. The Permittees must clarify the drainage and outfall discharge flow direction.

The Plan does not provide any information regarding the depth of the fill material that was placed at the site following previous investigations. The Permittees must clarify why samples are proposed for collection from a depth of 30 feet below the soil/tuff interface from all proposed locations at the site, rather than from beneath the former structures and associated drainlines and the septic system at the contacts between fill, soil, and tuff and as required by Section IX.B.2.b.i, Item 3 of the March 1, 2005 Order on Consent (Order).

LANL Response

39. Americium-241 has been added to the analytical suite for Consolidated Unit 42-001(a)-99. The text in section 4.2.3 has been revised to indicate the addition, and Table 4.2-4 has been revised to include americium-241 analyses for all samples.

    Two of the proposed sampling locations (1a-42 and 1a-43) shown in Figure 4.2-3 are drainage sampling locations, as indicated in the figure, that are estimated to be downslope of the septic system. Two additional locations have been added to Figure 4.2-3 in the mesa-top portion of the drainage associated with the septic system. Table 4.2-4 has also been revised to reflect the addition of these two locations.

    The only portion of the site where fill is known to have been placed after removal of the TA-42 structures is in the southeast corner of the site. Approximately 10 ft of fill was placed in this area, as indicated by contour lines in Figure 4.1-1. As indicated in Table 4.2-4, samples are proposed at multiple intervals at each location, with the maximum proposed depth 30 ft below the soil/tuff interface. At most locations (1a-1 through 1a-31), the surface interval also will be sampled. In the backfilled area, sampling is proposed to begin at the soil/tuff interface beneath the fill, rather than at the surface, to avoid sampling fill material unrelated to the site. The text in section 4.2.3 has been revised to clarify this.

NMED Comment

40. Section 5.2.3, Scope of Activities for AOC 48-001, page 34:

Because surface sampling proposed at TA-48 SWMUs and AOCs can be used to characterize AOC 48-001, the Permittees must collect a sufficient number of surface samples to provide adequate

sample coverage to also fully characterize AOC 48-001. Given that air emissions are ongoing, NMED will not require the vertical and lateral extent of contamination be completely defined at this time. Similar to NOD for North Ancho Canyon Aggregate Area (October 30, 2007), the objectives of the surface sampling will be to determine whether there is an immediate threat to human health and the environment and if contamination is migrating off-site. The Permittees must revise the Plan to include proposed investigation activities for AOC 48-001.

LANL Response

40. To characterize the current condition of AOC 48-001, applicable surface sampling results from all other TA-48 SWMUs and AOCs will be evaluated. Section 5.2.3 has been revised to indicate this and to state that all available surface data, including those obtained during implementation of the plan, will be used to perform risk screening assessments for AOC 48-001.

NMED Comment

41. Section 5.5.3, Scope of Activities for AOC 48-002(e), page 37, paragraph 2:

The Permittees must include two additional locations as shown on attached Figure 5.5-1 or provide justification for the proposed sampling locations. Samples must be obtained from the same three depth intervals proposed above. Additionally, the Permittees must revise Figure 5.5-1 to depict the two additional sampling locations as well as the small section of unpaved soil. Also see General Comment # 2.

LANL Response

41. The two additional locations have been added to Figure 5.5-1, as required, and the figure also has been revised to include all required structures and utilities. Section 5.5.3 and Table 5.5-2 have also been revised to reflect the additional sampling locations.

NMED Comment

42. Section 5.7.3, Scope of Activities for Consolidated Unit 48-004(a)-99, page 39:

According to Section 5.7 of the Plan, CU 48-004(a)-99 consists of inactive sumps and tanks formerly used to treat radioactive liquid waste (RLW) in the radiochemistry building. Because the sumps and tanks are inactive and no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for CU 48-004(a)-99 or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

42. SWMUs 48-004(a, b, c) were originally recommended for NFA in the OU 1129 RFI work plan (LANL 1992, 007666). EPA reviewed the work plan and issued a notice of deficiency indicating that any decision related to these sites should be deferred until D&D has been completed (EPA 1993, 010023). LANL prepared a response to the notice of deficiency that presented additional information justifying the NFA recommendation (LANL 1993, 028637). In November 1993, EPA approved the work plan and notice of deficiency response (EPA 1993, 030090). SWMUs 48-004(a, b, c) were then proposed for removal from Module VIII in a Request for Class III Permit Modification submitted to

NMED in March 1995 (LANL 1995, 045365). The basis for this proposal was that no release to the environment has occurred and site design and conditions preclude contaminants from migrating to the environment.

NMED reviewed the Request for Class III Permit Modification and issued a notice of determination indicating that supplemental information was required for SWMUs 48-004(a, b, c) (NMED 1996, 055815). LANL responded to the notice of determination and submitted additional information to demonstrate that no releases from these sites had occurred (LANL 1997, 055510). This information included the results of inspections and photographs showing the integrity of the containment features associated with these SWMUs. NMED subsequently requested additional information during the course of discussions with LANL. In February 2002, in order to expedite approval of other SWMUs included in the Request for Permit Modification, LANL formally withdrew SWMUs 48-004(a, b, c) from consideration for removal from the permit pending collection of additional information requested by NMED (LANL 2002, 071447).

LANL will collect the information requested by NMED during the investigation of Upper Mortandad Canyon Aggregate Area and will include this information in the investigation report.

NMED Comment

43. Section 5.8.3, Scope of Activities for SWMU 48-005, page 41:

According to Section 5.8 of the Plan, SWMU 48-005 consists of segments of inactive radioactive liquid waste (RLW) lines at TA-48 and an associated outfall. Because the RLW lines and outfall are inactive and the results of sampling conducted in 1997 have not been reported to NMED for this site, the Permittees must revise the Plan to include proposed investigation activities for SWMU 48-005 or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

43. Section 5.8.3 has been revised to include proposed sampling from the outfall discharge point down the slope into Mortandad Canyon. Four sampling locations have been selected and added to Figure 5.11-1 and Table 5.11-3. Each location will be sampled at three depth intervals (surface, soil/tuff interface, and 2 ft below the soil/tuff interface).

NMED Comment

44. Section 5.9.3, Scope of Activities for Consolidated Unit 48-007(a)-00, page 43, paragraph 4:

It is unclear whether or not the "Mortandad Canyon drainage" samples are intended to be part of this Plan. Regardless, the Permittees are required to sample the drainage(s) associated with the site from the top of the slope to the toe of the colluvium. Sampling must target areas such as fine-grained sediment in outfall channels or other areas of sediment accumulation. The Permittees must revise the Plan to include drainage sampling at CU 48-007(a)-00. The Permittees must also revise Figure 5.9-4 to show the proposed drainage sample locations. Also see General Comments # 2 and # 3 and Specific Comment # 31.

LANL Response

44. Mortandad Canyon drainage samples will be used as applicable to determine whether the extent of contamination has been defined. Section 5.9.3 has been revised to clarify this. Figure 5.9-4 has been revised to show the previously sampled Mortandad Canyon locations.

    Figures relating to Consolidated Unit 48-007(a)-00 have been revised per General Comment #2 to show all required features and utilities.

NMED Comment

45. Section 5.10.3, Scope of Activities for SWMU 48-007(b), page 44, paragraph 4:

See Specific Comment # 44 and General Comment # 2.

LANL Response

45. Mortandad Canyon drainage samples will be used, as applicable, to determine whether the extent of contamination has been defined. Section 5.10.3 has been revised to clarify this.

    Figures relating to SWMU 48-007(b) have been revised per General Comment #2 to show all required features and utilities.

NMED Comment

46. Section 5.11.3, Scope of Activities for SWMU 48-007(c), page 45, paragraph 4:

See Specific Comment # 44 and General Comment # 2.

LANL Response

46. Mortandad Canyon drainage samples will be used, as applicable, to determine whether the extent of contamination has been defined. Section 5.11.3 has been revised to clarify this.

    Figures relating to SWMU 48-007(c) have been revised per General Comment #2 to show all required features and utilities.

NMED Comment

47. Section 5.12.3, Scope of Activities for SWMU 48-007(f), page 46, paragraph 4:

See Specific Comment # 44 and General Comment # 2.

LANL Response

47. Mortandad Canyon drainage samples will be used, as applicable, to determine whether the extent of contamination has been defined. Section 5.12.3 has been revised to clarify this.

    Figures relating to SWMU 48-007(f) have been revised per General Comment #2 to show all required features and utilities.

NMED Comment

48. Section 5.13.3, Scope of Activities for AOC 48-011, page 47, paragraph 3:

The first sentence indicates that the Permittees will analyze samples for PCBs; the second states that samples will not be analyzed for PCBs. The Permittees must revise this section to reflect the correct analytical suite, incorporating the requirement in General Comment # 1, or otherwise revise the discrepancy.

LANL Response

48. The text has been revised to indicate that a minimum of 20% of the samples will be analyzed for PCBs.

NMED Comment

49. Section 5.14.3, Scope of Activities for AOC 48-012, page 48:

The Permittees must ensure that the proposed borehole locations are outside the perimeter, but within two feet, of the former excavation edge so that undisturbed soil is sampled rather than backfill. Also, the Permittees must conduct continuous sampling at each borehole location in order to identify the contaminated zone (expected to be between approximately three and five feet below ground surface). In addition to the intervals proposed, the Permittees must obtain samples at intervals where elevated field-screening results, staining, or odors are observed.

LANL Response

49. The outline of the AOC as indicated in Figure 5.14-1, corresponds to the limit of the site excavation, as reported in the 2003 voluntary correction action (VCA) report. The proposed locations represent the intent to sample undisturbed material from immediately outside the (now backfilled) excavation. To clarify that the samples will be collected outside the former excavation, the proposed sampling locations on Figure 5.14-1 have been revised. In addition, the text in section 5.14.3 has been revised to indicate that the sampling locations lie outside the perimeter but within 2 ft of the former excavation, that the sampled material must be undisturbed soil/tuff, and that additional samples will be collected if field-screening results are elevated or if staining or odors are observed.

NMED Comment

50. Section 6.3, AOC 50-001(b) -Waste Lines and Manholes, page 51, paragraph 2:

The Permittees have not provided documentation supporting this statement. The waste lines may have leaked over time and released contaminants to the subsurface. The Permittees are proposing to delay investigation of SWMU 50-001(b) until decontamination and decommissioning (D&D) of the waste lines. Given that two of the three waste lines identified in Section 6.3 have leak detection and vacuum-test capabilities, the Permittees must provide the documentation supporting that these waste lines did not leak in the past, nor are currently leaking.

LANL Response

50. The new waste lines transfer wastewater from TA-55 to the TA-50 RLWTF were put into service in mid-2007. These lines were connected at TA-55 in 2005 in an excavation between buildings 55-0004 and 55-0002. During the connection activities, six soil samples were collected beneath the 150 ft section of four adjacent waste lines before the lines were flushed, cut and filled with an epoxy, and ultimately removed for disposal. No visible evidence of spills, leaks, or any other contamination was found. Further, the radiological control technicians (RCTs) screening the trench and the sample containers found no evidence of radioactive contamination. Sampling data showed no inorganic chemicals or radionuclides were detected above BVs, and no organic chemicals were detected near or above NMED soil screening levels (SSLs). This information will be provided in the investigation report.

    The active waste line in service at TA-50 are all double-walled and equipped with leak monitoring and alarms at every manhole and can be pressure tested, not vacuum tested. The leak monitoring and corresponding alarm system on the active waste lines are routinely calibrated and tested, and the manholes are inspected in accordance with nuclear facility operating procedures.

    Because the waste lines are equipped with secondary containment and leak-detection alarms and the corresponding manholes are routinely inspected, past, ongoing, and future releases from the system are unlikely. Because the ongoing leak detection and inspections show no current releases from the lines, there is no source of hydraulic gradient present to transport contaminants from past releases, should any have occurred. Because the waste lines are located within an active nuclear facility, they cannot be safely or practicably investigated at the current time. However, LANL proposes to provide additional information regarding the waste lines and the sampling data for waste lines removed from service at TA-55. The information will be included in the investigation report. Based on evaluation of this information, AOC 50-001(b) will be recommended for deferred investigation in the investigation report.

    See also response to General Comment #4.

NMED Comment

51. Section 6.4.3, Scope of Activities for SWMU 50-002(a), page 53:

Section 6.4.3 refers to 50-002(a) as an AOC rather than a SWMU. The Permittees must correct the above statement to reflect that 50-002(a) is a SWMU not an AOC.

According to section 6.4 of the Plan, there were two releases of untreated wastewater to lines 55 and 67 and the outfall area at the head of Ten Site Canyon. Based on this information, the Permittees must revise the Plan to include proposed investigation activities for SWMU 50-002(a) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no additional releases to the environment. See also General Comment # 4.

LANL Response

51. The text has been corrected to "SWMU" instead of "AOC" in section 6.4.3.

    The two releases of untreated wastewater from waste lines 55 and 67 were the result of an overflow from a sump; the release was not caused by a leaking or plugged waste lines. Waste lines 55 and 67 were removed in 1981; and the sump in building 50-0002 is now equipped with a level indicator and

alarm and is inspected daily in accordance with nuclear facility operating procedures. All the tanks in building 50-0002 are equipped with level indicators and alarms, and all the tanks except the 75,000 gallon influent tank have secondary containment. Therefore, current and future releases from this SWMU are unlikely. If past releases had migrated through the concrete vault to the underlying soil, which is highly improbable, they would still not present a risk because no exposure to receptors has occurred. In addition, water is not being discharged to the soil beneath the vault so no hydraulic driving force is present to transport contaminants to receptors. Groundwater beneath TA-50 is approximately 1300 ft bgs.

Because the vault is part of an active nuclear facility, it cannot be safely or practicably investigated at the current time. Current site conditions, however, demonstrate that no immediate action is needed at this site and that investigation and, if necessary, remediation could be deferred until some future time when building 50-0002 undergoes D&D. Additional information to better document the site conditions related to the potential for past releases will be collected during the investigation and reported in the investigation report. Based on evaluation of this information, SWMU 50-002(a) will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

52. Section 6.6.3, Scope of Activities for AOC 50-002(d), page 54:

According to Section 6.6 of the Plan, AOC 50-002(d) is a decommissioned aboveground 5000-gal. stainless-steel tank located at TA-50, building 50-0001. Because the tank has been decommissioned and there have been no previous investigations at this site, the Permittees must revise the Plan to include proposed investigation activities for AOC 50-002(d) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

52. According to facility personnel, no documented releases are associated with AOC 50-002(d), the inactive nitric acid product tank adjacent to the north wall of building 50-0001 at the RLWTF. Any releases from the tank would have been captured and neutralized in the concrete sump filled with limestone beneath the tank. No releases discharged from this inactive product tank because it was deactivated and triple rinsed in 1996; future releases are unlikely. Because building 50-0001 is a nuclear facility, the outer structure, including the basement, is designed as secondary containment to prevent release of the radioactive material inventory within the building in the event of failure of primary containment systems. If past releases had migrated through the concrete sump to the underlying soil, which is highly improbable, they would still not present a risk because no exposure to receptors occurred. In addition, water is not being discharged to the soil beneath the tank containment structure so there is no hydraulic driving force present to transport contaminants to receptors. Groundwater beneath TA-50 is approximately 1300 ft bgs.

    Because the tank is located within an active nuclear facility, it cannot be safely or practicably investigated at the current time. Current site conditions, however, demonstrate no immediate action is needed at this site and that investigation and, if necessary, remediation could be deferred until some future time when building 50-0001 undergoes D&D. Additional information to better document the site conditions related to the potential for past releases will be collected during the investigation and

included in the investigation report. Based on evaluation of this information, AOC 50-002(d) will be recommended for deferred investigation or NFA in the investigation report.

NMED Comment

53. Section 6.8.3, Scope of Activities for Consolidated Unit 50-004(a)-00, pages 56-57:

Figure 6.8-1 does not depict the waste line numbers or the individual SWMU numbers (50-004(a), 50-004(b), and 50-004(c)). NMED is therefore unable to evaluate whether or not the proposed sampling is sufficient to determine the nature and extent of contamination for CU 50-004(a)-00. The Permittees must revise Figure to 6.8-1 to include the waste line numbers, the corresponding individual SWMU numbers, the location of the vault, and the direction of flow. Furthermore, according to Section 6.8, all waste lines and the former underground vault have been decommissioned with the exception of waste line 56. Because the waste lines and vault have been decommissioned, the Permittees must propose investigation activities or provide detailed justification for deferring the site, which must demonstrate that there have been no releases to the environment and that waste line 56 is not currently leaking. See also General Comments # 2 and # 4.

LANL Response

53. LANL is not proposing to defer investigation activities for Consolidated Unit 50-004(a)-00. Section 6.8.3 lists the proposed sampling activities for the site. Figure 6.8-1 has been revised to show the requested features, including flow directions.

    Waste line 56 is connected to a floor drain in Room 36 in building 50-0001 at the TA-50 RLWTF. The line is single-walled and is not equipped with leak detection. However, according to RLWTF personnel, room 36 has never been used, and no wastewater has been discharged to waste line 56; past, current, or future releases of contaminants to the environment are unlikely. The waste line was only hydrotested upon completion of the facility. No discharge to waste line 56 is planned. Additional information documenting the operating history of waste line 56 will be collected during the investigation and presented in the investigation report to provide justification for not performing sampling at this portion of the consolidated unit.

NMED Comment

54. Section 6.9.3, Scope of Activities for SWMU 50-006(a), page 58:

The Permittees have not included sufficient justification for the proposed sampling locations for SWMU 50-006(a). The Permittees must revise the Plan to include an explanation of how the sampling locations were chosen for this site.

LANL Response

54. Text has been added to section 6.9.3 indicating the rationale for the locations selected. The locations were selected to bracket the location of the former discharge point where the release occurred, to supplement existing sample locations upstream and downstream, and to confirm the partial cleanup performed in 1981.

NMED Comment

55. Section 6.10, SWMU 50-006(c) - Operational Release, page 59:

Based on the above statement, SWMU 50-006(c) consists of the surface soils at TA-50. However, Figure 6.2-1 identifies the emission sources (Buildings 50-0001, 50-0037, and 50-0069) as comprising SWMU 50-006(c). The Permittees must revise Figure 6.2-1 and the text in Section 6.10 to correctly identify the areas that are part of SWMU 50-006(c).

LANL Response

55. Figure 6.2-1 has been revised to reflect the nature of SWMU 50-006(c) as potentially contaminated surface soils resulting from air emissions from those buildings. The boundaries of the SMWU have been revised to capture potential soil contamination areas. The text in section 6.10 accurately reflects the nature of the SWMU and has not been revised; the text refers to the (revised) Figure 6.2-1.

NMED Comment

56. Section 6.10.2, Summary of Data for SWMU 50-006(c), page 59, paragraph 1:

The Permittees must revise the above text so that it references SWMU 50-006(c), not 50-004(c).

LANL Response

56. The text in section 6.10.2 has been corrected to read "50-006(c)."

NMED Comment

57. Section 6.10.3, Scope of Activities for SWMU 50-006(c), page 59:

According to Section 6.10, SWMU 50-006(c) consists of the surface soil contamination at TA-50 resulting from the deposition of radioactive contaminants from historical stack emissions. The Permittees must revise the Plan to include proposed investigation activities for SWMU 50-006(c) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there has been no subsurface contaminant migration. See also General Comment #4.

LANL Response

57. The text in section 6.10.3 has been revised to indicate that existing data from surface samples at other TA-50 SWMUs and AOCs will be used to evaluate potential contamination related to SMWU 50-006(c). All surface sample data collected for any other SWMUs or AOCs during implementation of the plan also will be used to evaluate SWMU 50-006(c).

NMED Comment

58. Section 6.11.3, Scope of Activities for SWMU 50-006(d), page 60:

The Permittees have not included sufficient justification for the proposed sampling locations for SWMU 50-006(d). The Permittees must revise the Plan to provide the rationale for the proposed sampling locations at this site.

LANL Response

58. The text in section 6.11.3 has been revised to indicate the rationale for selecting the sampling location and to indicate that results from samples collected in the Mortandad Canyon drainage during other investigations will be used as applicable to determine whether the extent of contamination has been defined for SWMU 50-006(d).

NMED Comment

59. Section 6.15.3, Scope of Activities for AOC 50-010, page 63:

According to Section 6.15 of the Plan, AOC 50-010 consists of a former vehicle decontamination bay located in Building 50-0001, Room 34B. Because the decontamination bay is no longer in use and no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for AOC 50-01 0 or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

59. The former vehicle decontamination bay located in room 34B of the TA-50 RLWTF (building 50-0001) houses two large (25,000-gal.) tanks for storing treated effluent. The bay is entirely enclosed and bermed, and the floor drain is plumbed to the tank farm housed in building 50-0002. Upon the receipt of analytical data confirming that the treated effluent meets NPDES-permit discharge requirements, the effluent is discharged to the permitted outfall.

    - Water released from the tanks, even if contaminated, would be unlikely to reach the environment. The tanks are located in an enclosed and bermed bay of building 50-0001, which is a Hazard Category 2 nuclear facility designed to safely contain significant inventories of radioactive materials. The basement is designed to function as part of the building containment system that would prevent escape of the radioactive inventory to the environment in the event that a breach in the primary containment system occurred.
    - The only mode of release from the building is through floor drains connected to the RLW lines. Although the treated effluent is not expected to be radioactively contaminated, any discharge from the tanks is conservatively routed to the tanks in building 50-0002.
    - Past releases, if they occurred, would not be expected to pose a risk to human health and the environment. Releases through the basement floor to the underlying soil, while extremely improbable, would not pose a risk because no exposure to receptors could occur. Also, because water is not being discharged to the soil beneath the building, there would be no hydraulic driving force present to transport contaminants to receptors.

    Additional information to better document the above conditions will be collected during the investigation and included in the investigation report. Based on evaluation of this information, AOC 50-010 will be recommended for deferred investigation or NFA in the investigation report.

    See also response to General Comment #4.

NMED Comment

60. Section 6.16.3, Scope of Activities for SWMU 50-011(a), page 64:

According to Section 6.1.6 of the Plan, SWMU 50-01 1 (a) consists of a former septic system that was installed at TA-50 in 1964. Because the septic system is no longer in use, the Permittees must revise the Plan to include proposed investigation activities for SWMU 50-01 l(a) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

60. In 2003, LANL implemented the approved "Sampling and Analysis Plan Addendum to the OU 1147 work plan for Waste Lines and Septic System [SWMUs 50-004(c) and 50-011(a)] at Technical Area 50," before the new pump house and tank vault were constructed in the southeast corner of TA-50. Confirmation samples were collected following the removal of soil and tuff for the new pump house. During excavation activities for the pump house foundation, the former seepage pit associated with the SWMU 50-011(a) septic system was discovered and sampled. The seepage pit was subsequently removed along with soil and tuff up to 20 ft below the bottom of the seepage pit. Sampling data show no chemicals detected above residential SALs. Documentation describing the removal of the SWMU 50-011(a) seepage and collection of confirmation samples along with the results will be included in the investigation report.

NMED Comment

61. Section 6.17.3, Scope of Activities for AOC 50-011(b), page 65:

Because no previous investigations have been conducted at this site, the Permittees must revise the Plan to include proposed investigation activities for SWMU 50-011(b) or provide sufficient information, including a detailed justification for deferring the site, which demonstrates that there have been no releases to the environment. See also General Comment # 4.

LANL Response

61. AOC 50-011(b) consists of two active sanitary wastewater lift stations and associated piping. As-built engineering drawings clearly show that only bathroom sinks, toilets, and showers in nonradiation areas are connected to these lift stations and drainlines. The lift stations pump the sanitary wastewater to the TA-46 Sanitary Wastewater Systems Consolidation (SWSC) Plant for treatment and the wastewater must meet the SWSC plant waste acceptance criteria. Sanitary lift stations throughout LANL including those at TA-50, are equipped with alarms to prevent overflow, and to date no releases to the environment from the AOC 50-011(b) lift stations have been documented.

    Because the lift stations are equipped with overflow alarms and routinely inspected in accordance with nuclear facility operating procedures, past, ongoing, and future releases from the sanitary wastewater system are unlikely. If past releases had migrated from the lift stations to the underlying soil, which is highly unlikely, they would still not present a risk because no exposure to receptors could occur. In addition, water is not being discharged to the soil beneath lift stations so there is no hydraulic driving force present to transport contaminants to receptors. Groundwater beneath TA-50 is approximately 1300 ft bgs.

Because the lift stations and piping are located within a Hazard Category 2 nuclear facility, they cannot be investigated at the current time. Additional information to document the site conditions related to the potential for past releases will be collected during the investigation and presented in the investigation report. Based on evaluation of this information, AOC 50-011(b) will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

62. Section 7.2, SWMU 55-008-Sumps and Tanks, pages 66:

The Permittees have not provided documentation supporting this statement. The tanks, sumps, and drainlines may have leaked over time and released contaminants to the subsurface. The Permittees are proposing to delay investigation of SWMU 55-008 until D&D of the building. In response to this NOD, the Permittees must provide the documentation supporting that these tanks and sumps did not leak in the past, nor are currently leaking.

LANL Response

62. SWMU 55-008 was originally recommended for NFA in the OU 1129 RFI work plan (LANL 1992, 007666). EPA reviewed the work plan and concurred with the NFA recommendation, indicating that LANL should request to have SWMU 55-008 removed from Module VIII of LANL's Hazardous Waste Facility Permit (EPA 1993, 010023). SWMU 55-008 was then proposed for removal from Module VIII in a Request for Class III Permit Modification submitted to NMED in March 1995 (LANL 1995, 045365). The basis for this proposal was that no release to the environment has occurred, and the site design and conditions preclude contaminants from migrating to the environment.

    NMED reviewed the Request for Class III Permit Modification and issued a notice of determination indicating that supplemental information was required for SWMU 55-008, including information on the materials handled in building 55-0004 and the results of sampling of the contents of the tanks and sumps (NMED 1996, 055815). LANL responded to the notice of determination indicating that much of the information related to materials within building 55-0004 was classified and offering to arrange a presentation on the unclassified part of the inventory (LANL 1997, 055510). In February 2002, to expedite approval of other SWMUs included in the Request for Permit Modification, LANL formally withdrew SWMUs 48-004(a, b, c) from consideration for removal from the permit pending collection of additional information requested by NMED (LANL 2002, 071447).

    Deferred investigation or NFA is appropriate for SWMU 55-008. These reasons are discussed below and will be described in more detail in the investigation report.

    - The sumps and tanks in the basement of building 55-0004 were constructed as part of the approximately 7-ft-thick reinforced concrete foundation of building 55-0004, a Hazard Category 2 nuclear facility. Each sump and tank in the basement of building 55-0004 is equipped with level indicators, which activate the pumps once a specific volume is reached to pump the wastewater to the TA-50 RLWTF. Each sump and tank is also equipped with surface grate through which the interior can be visually inspected, and all are reported to be in excellent condition. Signs posted next to each sump and tank state that no chemicals of any kind may be disposed of in these structures, and building personnel are trained to this requirement. The basement of building 55-0004 is occupied 24 h/d, 7 d/week by RCTs,

security staff, and KSL crafts personnel. In addition, the basement is inspected twice a day in accordance with nuclear facility operating procedures.

- Past, current, or future releases of contaminants to the environment are unlikely because of the nature of the materials handled in tanks and sumps comprising this SWMU. The tanks and sumps receive mop water and condensate and contamination of this water is very unlikely.
- Water released from the tanks and sumps, even if contaminated, would be unlikely to reach the environment. The tanks are located in the basement of the building 55-0004, which is a Hazard Category 2 nuclear facility designed to safely contain significant inventories of radioactive materials. The basement is designed to function as part of the building containment system that would prevent escape of the radioactive inventory to the environment in the event that a breach in the primary containment system(s) occured.
- The only mode of release from the building is through floor drains connected to the RLW lines. Although the wash water and condensate are not expected to be radioactively contaminated, any discharge from the tanks and sumps is conservatively routed to the RLW system. In accordance with DOE requirements, the RLW lines from TA-55 to the RLWTF are double-walled with an annular leak detection system. The leak detection system is routinely monitored for leaks. Any current or future release to the environment from these lines is extremely unlikely.
- Past releases, if they occurred, would not be expected to pose a risk to human health and the environment. Releases through the basement floor to the underlying soil, while extremely improbable, would not pose a risk because there would be no exposure to receptors. Also, because water is not being discharged to the soil beneath the building, there would be no hydraulic driving force present to transport contaminants to receptors.

Additional information to better document the above conditions will be collected during the investigation and included in the investigation report. Based on evaluation of this information, SWMU 55-008 will be recommended for deferred investigation or NFA in the investigation report.

See also response to General Comment #4.

NMED Comment

63. Table 3.4-1, Proposed Sampling at AOC 03-004(c), page 161:

Table 3.4-1 is inaccurately labeled; the table should be titled Table 3.4-4, as Section 3.4.3 references it. The Permittees must correct the typographical error.

LANL Response

63. The table number in the title has been corrected to read Table 3.4-4.

NMED Comment

64. Table 3.12-1, Samples Collected at SWMU 03-034(a) and Table 3.12-3, Radionuclides Detected at SWMU 03-034(a), page 169:

The Permittees have indicated that two samples (Location ID numbers 03-03298 and 03-03300) have been collected from the same location (see Figure 3.2-1, page 86). In the above-mentioned tables, these two sample location IDs indicate the same collection depth (0-0.83 ft), but identify different media (fill versus soil). The Permittees must resolve this discrepancy.

64. Tables 3.12-1, 3.12-2, 3.12-3, and 3.12-4 have been revised to indicate the correct media codes of "Soil" for samples at location 03-03298. Figures 3.4-2 and 3.5-1 have been revised to reflect the correct media code.

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