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JON GOLDSTEIN  
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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 25, 2008

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David McInroy  
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**RE: NOTICE OF DISAPPROVAL FOR THE INVESTIGATION WORK PLAN FOR  
UPPER SANDIA CANYON AGGREGATE AREA  
LOS ALAMOS NATIONAL LABORATORY  
EPA ID #NM0890010515  
HWB-LANL-08-010**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) and the Los Alamos National Security, LLC (LANS) (collectively, the Permittees) *Investigation Work Plan for Upper Sandia Canyon Aggregate Area (Plan)*, dated March 2008 and referenced by LA-UR-08-1850/EP2008-0139. NMED has reviewed this document and hereby issues this Notice of Disapproval (NOD).

**General Comments:**

1. At each site undergoing investigation, 20% of all samples must be sent for off-site laboratory analysis of polychlorinated biphenols (PCBs). The selected samples must be biased toward areas where field screening indicates the greatest presence of contamination or areas with the highest potential for contamination (*e.g.*, closest to the contamination source).
2. All figures must include pertinent features and structures, such as underground utilities, structure numbers, contour lines, canyon names, and existing well and borehole locations. All figures illustrating proposed sampling locations must be revised so that all pertinent site features are shown.



3. The Permittees referenced the drainages associated with solid waste management units (SWMUs) or areas of concern (AOCs), but did not identify these drainages on associated figures. The Permittees are required to sample the drainage(s) associated with the site. Samples must be obtained within the drainage(s) from the top of the slope to the toe of the colluvium. 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 canyon investigation procedures. 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 drainages associated with SWMUs/AOCs.
4. The Permittees make repeated statements throughout the Plan that samples have been or will be collected from the drainages downgradient of sites as part of Sandia Canyon and Canada del Buey work plan investigations. The Permittees must indicate these proposed and existing sampling locations on the relevant figures for NMED to evaluate whether additional data is needed to determine the nature and extent of contamination.
5. The Permittees have not depicted locations of drainlines that carried effluent from the buildings to the outfall and the drainages that carried effluent from the outfall to the canyons. For example, in Figure 4.1-13, the location of former NPDES-permitted outfall (SWMU 03-045(h)) is indicated, but the figure does not illustrate the orientation of drainlines that carried effluent from the cooling tower (structure 03-0187) to the outfall or the drainages that discharged effluent to the canyon from the outfall. The Permittees must revise the figures to depict the location of the outfall pipes from the influent source to the discharge point.
6. The Permittees have not depicted boundaries for some SWMUs on the figures. The sites are denoted by a small triangle on the figure, but the 'Site Description' describes much larger areas as SWMUs. For example, Figure 4.1-56 depicts SWMU 03-054(c) as a small triangle, but Section 4.1.38 describes structures 03-0156 and 03-0163 and an outfall as part of SWMU 03-054(c). Without the SWMU boundary depicted on the figure it is difficult to determine if proposed sampling locations are adequate to define the nature and extent of contamination. Figures must be revised to depict the boundaries of the entire SWMUs/AOCs.

#### **Specific Comments:**

1. **Section 4.1.3, AOC 03-003(d), Transformer Pad-PCB Only Site, page 12:** The Permittees propose to collect six samples from three locations near the pad to determine if PCBs have migrated from the concrete pad. The Permittees must collect samples from two additional locations at two depths (0-1 ft and 1-2 ft) under the concrete pad to determine if there was any vertical migration of PCBs underneath the pad. In addition, the Permittees must ensure that the concrete chip samples are collected from the old concrete pad on which PCB-containing transformers were stored and not from the concrete that was added in 1993 to extend the pad.
2. **Section 4.1.4, AOC 03-003(f), Transformer Area-PCB Only Site, page 13:** The Permittees propose to collect nine swipe samples from the basement that formerly housed PCB-containing transformers. However, since a concrete pad was poured over the old concrete in

1992, the Permittees must address any potential PCB contamination beneath the new concrete pad at the time of demolition of the building.

3. **Section 4.1.7.1, SWMU 03-009(a), Surface Disposal (Soil Fill), page 16:** The Permittees state that samples will be collected from the drainage downgradient of this site as part of the Sandia Canyon and Cañada del Buey investigations (1999 Work Plan) and refer to Section 6.3 for further information. However, Section 6.3 only reports that sediment samples were collected from 132 locations in the Upper Sandia Canyon Aggregate Area (USCAA) and submitted for full-suite analyses but does not provide any information on the sampling locations or detected chemicals of potential concern (COPCs) and their respective concentrations. The Permittees must provide a figure of the drainage downgradient of the site depicting sampling locations and detected concentrations of the COPCs for NMED to evaluate if any additional samples are required to define the nature and extent of contamination. The Permittees propose to collect additional samples during Phase 2 sediment investigations within USCAA downgradient of the site. These proposed sampling locations must also be depicted on the revised figure and must include locations from the drainage downgradient of the site to define the nature and extent of contamination.

4. **Section 4.1.7.2, SWMU 03-028, Surface Impoundment, page 16:** According to Figure 4.1-2, sampling location 03-22528 is associated with SWMU 03-028, but the Table 4.1-1 reports it as associated with AOC 03-043(b). According to Figure 4.1-2, sampling locations 03-22523 and 03-22524 (see Table 4.1-1) are not located in the former holding pond as stated in the text: they are located outside the SWMU boundary. Resolve these discrepancies and revise the Plan accordingly. The Permittees have not provided information on how the pond discharged to the outfall 03-045(g). If the pond discharged through a drainline that could have leaked, then the drainline must be located and the soil beneath the drainline must also be investigated.

5. **Section 4.1.7.3, SWMU 03-029, Landfill, page 17:** See General Comment # 4. The Permittees must provide a figure that depicts the drainages downgradient of the site and shows previous and proposed sampling locations and detected concentrations of the COPCs. This will help NMED to evaluate if any additional samples are required to define the nature and extent of contamination.

6. **Section 4.1.7.4, SWMU 03-036(a), Aboveground Tanks, page 18:** Table 4.1-1 reports that tuff samples were collected at depths of 8.0-8.5 ft, but text states that samples were collected from 8.5-9.0 ft. Resolve the discrepancy and revise the Plan accordingly.

7. **Section 4.1.7.7, AOC 03-043(b), Aboveground Tank, page 20:** According to Figure 4.1-2, sampling location 03-22528 is associated with SWMU 03-028, and sampling location 03-22537 is associated with SWMU 03-009(a). However, Table 4.1-1 reports these two locations as associated with AOC 03-043(b). No samples appear to be collected at AOC 03-043(b) according to Figure 4.1-2. Resolve the discrepancy and revise the associated text and tables. The Permittees must collect samples underneath the former aboveground tank to define the nature and extent of contamination. Stained soil was observed under the tank during excavation of the tank. Although the soil beneath the tank was removed, no confirmatory samples were collected.

8. **Sections 4.1.7.8 and 4.1.7.9, AOCs 03-043(d) and 03-043(h), Aboveground Tanks, page 20:** The Permittees state that AOCs 03-043 (d) and 03-043(e) are duplicates of SWMU 03-036(a). SWMU 03-036(a) is discussed on page 6-30 of the RFI Work Plan for OU 1114 (1993) but does not refer to these sites as duplicates of SWMU 03-036(a). The Permittees must provide the page number where this information is located in the OU 1114 Work Plan, and otherwise provide documentation supporting the assertion that these sites are duplicates.

9. **Section 4.1.13, Consolidated Unit 03-014(a)-99, page 30:** Consolidated Unit 03-014(a)-99, is the former waste water treatment plant (WWTP). The structures associated with former WWTP are still present. The Permittees must collect samples from underneath the structures at the time of demolition of structures associated with the WWTP to address any potential contamination beneath the structures.

10. **Section 4.1.13.3, AOC 03-014(b2), Outfall, page 33:** See General Comment #4. 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. Section 6.3 does not clearly provide information for NMED to determine if the samples that have been collected or will be collected during Phase 2 sediment investigations will be adequate to determine the nature and extent of contamination. The Permittees must provide a figure of the drainage downgradient of the site depicting sampling locations and detected concentrations of the COPCs for NMED to evaluate if any additional samples are required to define the nature and extent of contamination.

11. **Section 4.1.13.5, AOC 03-014(c2), Outfall, page 35:** 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 and other areas of sediment accumulation. Section 6.3 does not provide adequate information for NMED to determine if the samples that have been collected or will be collected during Phase 2 sediment investigations will be adequate to determine the nature and extent of contamination. The Permittees must provide a figure of the drainage downgradient of the site depicting sampling locations and detected concentrations of the COPCs for NMED to evaluate if any additional samples are required to define the nature and extent of contamination.

12. **Section 4.1.13.9, SWMU 03-014(g), Structure Associated with Former WWTP, page 37:** In Figure 4.1-44, structure 03-0194 is designated as SWMU 03-014(g), not structure 03-0047, as stated in the text. Resolve the discrepancy and revise the figure or text accordingly.

13. **Section 4.1.13.12, SWMU 03-014(k), Structure Associated with Former WWTP, page 39:** Sixteen samples from four depths are proposed to be collected from four locations around and downgradient of SWMU 03-014(k), SWMU 03-014(l), SWMU 03-014(m), and SWMU 03-014(n); Table 4.0-1 indicates that samples will be collected from only two depths (i.e., 4-5 and 6-7 ft). Resolve the discrepancy and revise the table accordingly.

14. **Section 4.1.13.17, SWMU 03-014(o), Structure Associated with Former WWTP, page 43:** Tritium and strontium-90 were detected in the samples collected from the sludge-drying beds during previous investigations. The Permittees must include analysis of tritium and

strontium-90 for the sixteen samples that will be collected around the beds to define the vertical and lateral extent of contamination.

15. **Section 4.1.13.19, SWMU 03-014(u), Structure Associated with Former WWTP, page 44:** The Permittees must investigate the drainlines that carried effluent from the sludge beds to the holding tanks. The Permittees must sample the drainage(s) associated with the site from the top of the slope to the toe of the colluvium. Additional samples must be collected in the drainage to define the lateral extent of the contamination.
16. **Section 4.1.17, SWMU 03-014(y), Drain Associated with Former WWTP, page 46:** PCB-containing transformers were stored in the basement of building 03-0035 (see Section 4.1.5). Since the floor drain is in the basement of the building and inaccessible at this time, potential contamination beneath the building must be investigated at the time of decommissioning and demolition of the building.
17. **Section 4.1.18.1, SWMU 03-015, Outfall, page 47:** The Permittees must collect samples beneath the former drainlines that carried effluent from building 03-0141 to the outfall. The Permittees must sample the drainage(s) associated with the site from the top of the slope to the toe of the colluvium. It is not clear from Figure 4.1-12, if the Permittees propose to collect samples along the entire length of the drainage to the toe of the colluvium. The Permittees must revise the Figure to depict the proposed sampling locations (see General Comment # 3).
18. **Section 4.1.19, AOC C-03-016, Oil Metal Bin, page 48:** The Permittees must collect samples from depths of 4 ft, 10 ft and 20 ft at historical sampling location 03-22533 instead of at depths of 17-18 and 19-20 ft. All samples must be analyzed for the suite proposed in Table 4.0-1.
19. **Section 4.1.20, SWMU 03-021, Outfall, page 50:** The Permittees must sample the drainage(s) associated with the site from the top of the slope to the toe of the colluvium. It is not clear from the Figure 4.1-28, if the Permittees propose to collect samples along the entire length of the drainage to the toe of the colluvium. The Permittees must revise the Figure to depict the proposed sampling locations (see General Comment # 3). In addition, under the Proposed Activities, the historical sampling location should be 03-03331, not 03-0331; correct the typographical error.
20. **Section 4.1.24, SWMU 03-038(c), Waste Lines, page 53:** Figure 4.1-52 depicts SWMU 03-038(c), not Figure 4.1-51; revise the text accordingly. The Permittees have not indicated the location of former drainline that carried rinse solutions to the industrial waste line on the Figure 4.1-52. The Permittees must revise the figure to depict the location of the drainline from its influent source to the discharge point. In addition to collecting samples from the location where the former drainline exited building 03-0028, the Permittees must collect samples from the location where the former drainline discharged to the industrial waste line.
21. **Section 4.1.25, SWMU 03-038(d), Waste Lines, page 53:** The Permittees did not provide any information on the type of waste that was generated in buildings 03-0032 and 03-0034, and discharged to the industrial waste line. The text states that a new line from building

03-0034 was later connected to the RLW facility, but the Permittees have not included radionuclide analyses in the proposed analytical suite. The Permittees must provide information on the nature of the waste that was discharged through the drainlines and ensure that samples are analyzed for all potential COPCs. Samples must also be collected from both locations where the former drainline exited building 03-0034. According to the Figure 4.1-55, the former drainline exited building 03-0034 at two locations; the Permittees have proposed sampling at only one of these locations.

22. **Section 4.1.26, SWMU 03-043(a), Aboveground Storage Tank, page 54:** The text states that SWMU 03-043(a) was a former underground storage tank, but the Section title states that it was an aboveground storage tank. Resolve the discrepancy and revise the text accordingly.

23. **Sections 4.1.27 & 4.1.28, SWMUs 03-043(f) & 03-043(g), Aboveground Storage Tanks, page 54:** The Permittees must provide documentation to support the assertion that the SWMUs 03-043(f) & 03-043(g) are duplicates of SWMUs 03-036(c) & 03-036(d), respectively.

24. **Section 4.1.30, SWMU 03-045(e), Outfall, page 55:** The Permittees must collect samples from the location where the drainline exited the oil pump house (Structure 03-0057). The samples must be collected at two depths and analyzed for the same analytical suite as proposed in Table 4.0-1 for SWMU 03-045(e).

25. **Section 4.1.32, SWMU 03-045(h), Outfall, page 57:** The Permittees must indicate the orientation of the outfall pipe on Figure 4.1-13 and depict the location of the drainpipe that carried effluent from the outfall pipe. Samples must be collected at the location where the outfall pipe exited the building and from beneath the location of the outfall pipe. NMED cannot make a determination of additional data needs without this information.

26. **Section 4.1.36, SWMU 03-051(c), Soil Contamination-Vacuum Pump Leak, page 59:** The Permittees did not report the total depth of excavation conducted during previous investigations. The Permittees report that this area was backfilled and samples were collected (0.0-0.5 ft) from the base of excavation, but do not report the depth below ground surface where samples were collected. The Permittees are now proposing to collect samples from the depth of 2-3 ft and 4-5 ft from two locations. It is not clear if the samples will be collected from the potentially affected area. The Permittees must ensure that samples are collected from soil/tuff underneath the clean backfill to define the vertical extent of contamination.

27. **Section 4.1.37, SWMU 03-052(b), Storm Drainage, page 59:** The Permittees must sample the drainage(s) associated with the site from the top of the slope to the toe of the colluvium (see General Comment # 3). The drainages are not clearly depicted on the Figure 4.1-17. The Permittees must revise the figure to depict the drainages.

28. **Section 4.1.38, SWMU 03-054(c), Outfall, page 60:** The SWMU is described as a former cooling tower, pump house and outfall, but is depicted on the Figure 4.1-57 by a small triangle. The boundary for the entire SWMU must be depicted on the figure. Since the locations of samples that were collected in 2004 are not depicted on the figure, it is not clear if any

samples were collected at or near the outfall. Samples must be collected at the outfall location to define the nature and extent of contamination. Drainage from the outfall must be clearly indicated on the figure and sampled. The Permittees must collect samples along the entire length of the drainage to the toe of the colluvium (see General Comment # 3).

29. **Section 4.1.41, AOC 03-056(h), Container Storage Area, page 63:** The Permittees state that several areas of potential contamination were identified for this AOC, but these areas are not delineated on Figure 4.1-56. The AOC is indicated on the figure by a small triangle. The Permittees assert that the PCB spills at the AOC were remediated in accordance with TSCA requirements. Although oil stains were visible at many of these areas, the Permittees did not investigate the site for inorganic, VOC, and SVOC contamination. The nature and extent of contamination is not defined at the site. Approximately, 10 ft of clean fill was placed over the entire site and a new building has been constructed at the site. NMED acknowledges that the site is inaccessible at this time; therefore it must be investigated at the time of demolition and decommissioning of the new building (structure 03-1400).

30. **Section 4.1.44.2, SWMU 03-059, Storage Area-PCB Site, page 67:** Tritium was detected in samples collected at the site during previous investigations, but is not included in the analytical suite. The Permittees must include tritium analysis in the analytical suite proposed for all samples to be collected at SWMU 03-059.

31. **Section 4.1.45, AOC C-03-022, Kerosene Tanker Trailer, page 67:** AOC C-03-022 has never been sampled. The Permittees must collect samples from the location of former tanker trailer to confirm that there were no releases from the tanker. The Permittees must propose to collect samples from two depths and for analysis of metals and DRO.

32. **Section 4.2.1, SWMU 60-002, Storage Area, page 69:** The Permittees state that six soil samples were collected from five locations in the central area of SWMU 60-002; Figures 4.2-7 and 4.2-8 only depict three sampling locations. Table 4.2-1 also reports data from three sampling locations. The text also states that one sample was analyzed for SVOCs, PCBs and TPH, but Table 4.2-1 reports that one sample was analyzed for VOCs, PCBs, and TPH. Resolve the discrepancies and revise the Plan accordingly.

33. **Section 4.2.2, AOC 60-004(b), Storage Area, page 70:** SWMU 60-004(d) is depicted on Figure 4.2-10, not Figure 4.2-9, as stated in the text. Correct the typographical error.

34. **Section 4.2.4, AOC 60-004(f), Storage Area, page 71:** The Permittees discuss sampling locations associated with Pad 2 and Pad 3, but did not indicate the location of Pad 2 and Pad 3 on Figure 4.2-1. Revise the figure to indicate location of the pads. Mercury was detected above BV in four tuff samples, not three as stated (i.e., from locations 60-01330, 60-01331, 60-01332, and 60-01335). Revise the text accordingly. Tritium was detected in soil, tuff, and sediment samples during RFI activities conducted in 1994. Tritium analysis must be included for all samples collected at AOC 60-004(f).

35. **Section 4.2.5, SWMU 60-006(a), Septic System, page 72:** The Permittees propose to analyze samples collected from underneath the septic tank for the full suite, but have eliminated

analysis of radionuclides, nitrates and perchlorate for samples from the seepage pit. The seepage pit was associated with the septic tank and previous investigations indicated presence of tritium in the sludge. All samples must be analyzed for the full suite of analyses. Revise the text and Table 4.0-1 to include analysis of radionuclides, nitrate and perchlorate for samples to be collected from the seepage pit.

36. **Section 4.2.7, SWMU 60-007(b), Release, page 74:** Tables 4.2-5, 4.2-6, and 4.2-7 present screening level data, not decision level data as stated in the text. Revise the text accordingly. The drainages are not clearly indicated on the figures. The Permittees must revise the figures to indicate the drainages associated with the site. The Permittees must collect samples along the entire length of the drainage to the toe of the colluvium (see General Comment # 3).

37. **Table 1.1-1, SWMUs and AOCs within the Upper Sandia Canyon Aggregate Area, pages 177-189:** The Permittees have cited "EPA 2003, 08729" as a reference for approval of no further action (NFA) for areas of concern (AOCs) 03-003(m), 03-052(d), 03-056(b), and 60-001(a). However, the reference is not included in the Section 8.1 (References). Additionally, an incorrect reference is provided for solid waste management units (SWMUs) 03-024 and 03-045(d). These SWMUs were granted NFA status in 1997, not 1998 as reported. Make the appropriate revisions to the table and include the references in Section 8.1.

38. **Table 4.1-1, Decision-Level Data from TA-03 Site Samples Collected and Analyses Requested, page 209:** Consolidated Unit 03-009(a)-00: Sampling location 03-22537 is reported for both SWMU 03-009(a) and AOC 03-043(b), but sample collected from the depth of 4.5-5.0 ft is associated with SWMU 03-009(a) and sample collected from depth of 19.5-20.0 ft is associated with AOC 03-043(b). It is not clear why two samples collected from different depths at the same location would be associated with two different sites. According to Figure 4.1-2, this sampling location should be associated with SWMU 03-009(a), and not AOC 03-043(b). Resolve the discrepancies and revise associated tables, figures, and text.

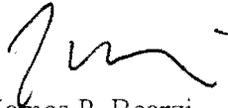
39. **Table 4.1-3, Summary of Inorganic Chemicals Detected Above BVs for TA-60 Sites page 221:** The caption for the Table 4.1-3 is incorrect. The table presents data for TA-03 sites, not TA-60 sites. Correct the typographical error.

The Permittees must address all comments and submit a revised Plan by July 25, 2008. As part of the response letter that accompanies the revised Plan, the Permittees must include a table that details where all revisions have been made to the Plan and that cross-references NMED's numbered comments. All submittals (including maps and tables) must be in the form of two paper copies and one electronic copy in accordance with Section XI.A of the Order. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Plan (electronic copy) with the response to this NOD.

Messrs. Gregory and McInroy  
June 25, 2008  
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Please contact Neelam Dhawan of my staff at (505) 476-6042 should you have any questions.

Sincerely,



James P. Bearzi  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
N. Dhawan, NMED HWB  
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S. Yanicak, NMED DOE OB, MS J993  
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S. Stiger ENV MS J591

File: LANL, Upper Sandia Canyon Aggregate Area (TA-03, -60 and -61), 2008