



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733



May 22, 1998

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Please - final  
to LAM/DOE  
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New Mexico  
Site  
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*Handwritten:* HSWA LANL 4/11/98/35

Mr. Benito Garcia, Chief  
New Mexico Environment Department  
Hazardous and Radioactive Materials Bureau  
2044A Galisteo St.  
Santa Fe, New Mexico 87505

RE: Review of the LANL Sampling and Analysis Plan for PRSs in  
TA-35, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of the Los Alamos National Laboratory (LANL) RCRA Sampling and Analysis Plan for Potential Release Sites (PRSs) 35-008, 35-010(a through e), 35-014(e<sub>1</sub> and g<sub>3</sub>), 35-015(a), and 35-016(k, l, and o) in Technical Area 35, dated April 1997. Based on the information provided in the report, the EPA has found parts of the Plan to be deficient and enclosed is a list of deficiencies.

If you have any questions or need additional information, please contact Mr. Allen T. Chang of my staff at (214) 665-7541.

Sincerely yours,

*Signature of David W. Neleigh*  
David W. Neleigh, Chief  
New Mexico/Federal Facilities  
Section

Enclosure



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**LIST OF DEFICIENCIES**  
**LANL SAMPLING AND ANALYSIS PLAN FOR PRSs IN TA-35**

**GENERAL COMMENTS**

1. After examining the historical data (Table A), EPA found no correlation between the XRF results and either the fixed laboratory results or the mobile laboratory results. If LANL is unable to demonstrate correlations between XRF results and fixed laboratory results, XRF shall be excluded from any future sampling event. **(Best Professional Judgement (BPJ))**
2. Has the data presented in Table A been QA/QC? If not, this data should be QA/QC prior to the next round of testing so as to fill data gaps. In addition, both the SAP and the final report should contain a QA/QC section. **(BPJ)**

**SITE SPECIFIC COMMENTS**

PRS 35-008 and 35-014(e<sub>1</sub>)

1. Page 4: PRS 35-008 is described as a construction debris site. The narrative history describes the site as containing more debris than was observed during a site inspection in 1991. LANL should clarify whether this site is still in use. **(BPJ)**
2. Page 4: PRS 35-014(e<sub>1</sub>) is described as a dielectric oil spill area. Table 2.1.1-1 indicates ten samples for PCBs taken. The report should reflect the outcome of these tests. **(BPJ)**
3. Page 5, 4th paragraph: To replace the lost original sample, LANL should maintain the same sample quality as does the original sample. If all three samples were lost, LANL should sample all three depth intervals (0-1 ft, 1-2 ft, and 2-3 ft), not two depth intervals at (0-1 ft and 1-2 ft). **(BPJ)**
4. Page 14, 1st paragraph: It states, "Three samples will be collected at each location...If the depth to tuff is between 2 and 3 ft, one interval may be eliminated and, if the sediment depth is less than 2 ft, the second sampling intervals may be reduced to less than 1 ft deep, the first sample will be collected from the 0-0.5 ft interval, the second sample will be collected from the interval between 0.5 ft and the soil/tuff interface, and the third interval will be eliminated."

LANL's sampling strategy is unacceptable. Several recent reports showed that the tuff could not stop contamination percolating down through the tuff. LANL's strategy should include sample the shallow tuff and below. If the depth of tuff is between 2 and 3 ft, LANL collect the third sample at 0-1 ft below the soil/tuff interface. If the sediment (or soil) is less than 1 ft deep, LANL must collect the second sample at 0-1 ft below the soil/tuff interface, and the third sample at 2-3 ft below the soil/tuff interface.

LANL should study the site geology and the depth to reach the soil/tuff level, then decide what sample tool is best to collect the representative samples to be used in the decision-making process. **(BPJ)**

5. Page 14, 2nd paragraph: It states, "Three hand-auger holes are proposed for locations..." and "Five hand-auger holes are proposed for locations..." in the third paragraph. LANL shall provide the correct Location IDs for identification, so that the reviewer will know how many samples are to be collected at each location. **(BPJ)**
6. Page 14, 1st & 3rd paragraphs: The following sentence, "two surface samples are proposed for the mesa top to determine the presence or absence of TPH in that area.", appeared in both paragraphs. Do they mean the same place? **(BPJ)**
7. Page 14, 3rd paragraph: It states, "Five hand-auger holes are proposed for locations on the slope in areas where contaminants were identified during the 1995 sampling, in areas where samples were collected but had incomplete analytical suites, and in areas of visible oil staining." LANL shall provide the sample IDs so that they can be identified in Figure 2.1.1-2. **(BPJ)**
8. Page 15, Table 2.1.3-1: Among the proposed sample locations, none of them are near Location IDs 35-2282 and 35-2283, where TPH was found from 15,000 - 27,000 mg/kg at 0 to 2 ft deep. The Plan must delineate and evaluate the extent of oil release by sampling at 1-ft intervals until 3 ft below no detectable TPH. **(BPJ)**

PRS Nos. 35-010 (a, b, and c)

9. Page 21; Section 2.2.1, last paragraph: The report states that the soil and tuff samples recovered from below the lagoons were contaminated and the results rejected. The following problem statement in Section 2.2.2 fails to address investigation of the soil tuff interface below the

lagoons. This PRS needs complete sampling to define release boundaries. **(BPJ)**

10. Page 23, 2nd paragraph: It states, "The range in sample size to achieve 90% confidence that the true mean is within  $\pm 50\%$  of the sample mean ranged from 5 (chromium) to 30 (zinc)." Please explain why different sample sizes are required to achieve the same level of confidence. **(BPJ)**

PRS Nos. 35-010 (d and e)

11. Page 31, 4th paragraph: LANL proposed to collect surface samples for two locations beneath the plastic liner to determine if underlying soil may be contaminated, and to predict whether additional data are required to characterize residual contamination at deeper intervals below the filter beds. EPA recommends that LANL collect additional samples at 1-2 ft or 3-4 ft below the plastic liner at each location. In this way LANL would have thorough information in vertical delineation. **(BPJ)**
12. Page 31, 5th paragraph: Please explain why LANL proposes to sample beneath the liners at the areas between the beds. It seems more logical to select places inside the bed instead of between the beds. **(BPJ)**
13. Page 32, Table 2.3.3-1: Please explain what the "1" stands for in the table. Besides, LANL did not specify where those samples would be analyzed; fixed lab, mobile lab, or XRF...etc.? **(BPJ)**

PRS No. 35-014 (g<sub>3</sub>)

14. Page 33, 3rd paragraph: It states, "Eleven samples were analyzed for inorganic chemicals using XRF. Two samples were analyzed for inorganic chemicals using EPA SW-846 methods." Which two samples (Please identify the sample IDs) were analyzed using EPA SW-846? Are they analyzed in fixed laboratory or in mobile laboratory? **(BPJ)**
15. Page 36, Section 2.4.3 Sampling and Analysis Plan Design: LANL shall discuss where these samples will be submitted to: fixed laboratory, mobile lab, or field screening...etc. and the QA/QC samples. **(BPJ)**
16. Page 36, Section 2.4.3, 1st paragraph: It states, "Six hand-auger holes...the second sampling intervals may be reduced to less than 1 ft." LANL's sampling strategy is unacceptable and should be revised as stated in the Comment No. 4 of the Site Specific Comment. **(BPJ)**

PRS No. 35-015 (a)

17. Page 42, Section 2.5.2: It states, "Collection of additional data...to replace the mobile laboratory radionuclide data." Please define the term "fixed laboratory", "fixed-site laboratory" and "mobile laboratory". Then LANL shall discuss where the additional samples would be analyzed? **(BPJ)**
18. Page 43, TABLE 2.5.3-1: Please clarify what "Inorganic Fixed Lab" means. Does it mean an outside lab, or a fixed on site lab? **(BPJ)**
19. Page 40, TABLE 2.5.1-1: The 1995 sample results at sample location ID. 35-2286 indicated 44,000 ppm TPH at 1 - 2 ft and 43,000 ppm at 2 - 3 ft. Contamination would not stop at 3 ft below the ground surface. LANL must delineate the area both laterally and vertically by sampling the location and its vicinity 1-ft intervals until 3 ft below no detectable TPH. **(BPJ)**
20. Page 43, TABLE 2.5.3-1: Sample location ID. 35-2500 is the only location close to 35-2286. What is the distance between the two locations? LANL should have all three samples tested for VOCs and SVOCs. **(BPJ)**

PRS No. 35-016 (k and l)

21. Page 47, Section 2.6.3, 1st paragraph: It states, "Two hand-auger holes...the second sampling intervals may be reduced to less than 1 ft." LANL's sampling strategy is unacceptable and should be revised as stated in the Comment No. 4 of the Site Specific Comment. **(BPJ)**
22. Page 47, TABLE 2.6.3-1: LANL should specify how the samples are analyzed: XRF, mobile laboratory, fixed-site laboratory, or outside fixed laboratory. **(BPJ)**

PRS No. 35-016 (o)

23. Page 51, Section 2.7.3, 1st paragraph: It states, "Three samples will be collected at each location...the second sampling intervals may be reduced to less than 1 ft." LANL's sampling strategy is unacceptable and should be revised as stated in the Comment No. 4 of the Site Specific Comment. **(BPJ)**
24. Page 52, TABLE 2.7.3-1: LANL should specify how the samples are analyzed: XRF, mobile laboratory, fixed-site laboratory, or outside fixed laboratory? **(BPJ)**