



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

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LARS F. SOHOLT

Mr. Theodore J. Taylor
Program Manager
Department of Energy
Los Alamos Area Office
Los Alamos, NM 87544

Re: RFI Report for SWMUs at Technical Area 1
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Taylor:

The Environmental Protection Agency (EPA) has reviewed the RCRA Facility Investigation Report for Technical Area 1, and found it to be deficient. Enclosed is a list of deficiencies which you have ninety (90) days from receipt of this letter to respond to.

2/14/96

Should you have any questions, please feel free to contact Ms. Barbara Driscoll at (214) 665-7441.

Sincerely,

David Neleigh
David Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

cc: Mr. Benito Garcia
New Mexico Environment Department
Mr. Jorg Jansen
Los Alamos National Laboratory, MS M992



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**List of Deficiencies
RFI Report Technical Area 1
Los Alamos National Laboratory**

General Comments:

1. In the RFI Report for Solid Waste Management Unit Technical Area-1 (TA-1), LANL is proposing no further action (NFA) for two potential release sites (PRS) at TA-1. These two sites are 1-001(d) and 1-006(h). It is unclear what soil sampling has been completed at site 1-006(h), a stormwater outfall for several buildings formerly located at this site. Ahlquist et al. (1977) reported finding "puddles" of elementary mercury in this storm drain. This storm drain serviced several buildings in the area including Building V (a uranium and beryllium machine shop), Building Y (a physics and cryogenics lab that handled radioactive materials) and Building K (a chemical stock room where mercury spills were reported to have occurred). Given this information, it would appear that sampling should have been performed around the outfall of PRS 1-006(h).

The document states that the area was not sampled because results of the investigation conducted down gradient on Hillside 138 (the outfall area for PRS 1-001(d) would reveal any potential contamination at PRS 1-006(h). What is the rationale for this statement? The figures provided indicate that PRS 1-001(d) and PRS 1-006(h) are separate outfalls. No mention is made of common drainage between PRS 1-001(d) and PRS 1-006(h). Was hot spot sampling conducted for the immediate area surrounding stormwater drain outfall point 1-006(h)?

2. It is recommended that this report be revised to incorporate risk-related agreements concurred on by EPA and LANL at EPA Region 6 offices on September 18-19. For example, background values proposed by LANL at the aforementioned meeting do not correspond to those provided in this report. In addition, the upper tolerance limit (UTL) used in this ER project is the 95% upper confidence bound on the estimated 99th percentile. The EPA and LANL agreed upon the use of the 95% upper confidence bound on the estimated 95th percentile for the UTL for determination of background values given that the proper statistical assumptions stipulated for calculation of the UTL are met.

Specific Comments:

3. **3.0 Data Assessment and Analysis Approach, p. 9** - In the last sentence on page 9, LANL states that background comparisons to soil concentrations is preferable to screening action level (SAL) comparisons. Comparing soil concentrations to background is acceptable as long as risk due to background based on a SAL is provided. This is in keeping with the understanding established at meetings between EPA and LANL held in Dallas, Texas, on September 18-19, 1995.
4. **Figure 3-1, p. 10** - Suggest that Figure 3-1 be revised to reflect decisions with respect to COPC concentrations greater than background.
5. **3.2.1 Background Comparisons, p. 19** - Please refer to comment number 2 above.
6. **Figure 3-2, p. 22** - Suggest that Figure 3-2 be revised to reflect decisions with respect to risk-related agreements concurred on by EPA and LANL at EPA Region 6 on 9/18-19/95.
7. **3.2.4 Ecotoxicological Screening Action Levels Comparisons, p. 24** - Revise utilization of ecotoxicological screening action levels (ESALs) per comments received on the draft LANL Ecotoxicological Risk Screening Methodology document.
8. **Figure 4-2, p.** Sampling locations 01-6077 and 01-5228 are listed in Figure 4-2 and subsequent sampling figures but no data are provided for these locations in Appendices A1-4.
9. **4.1.3.1.1 Inorganics, p. 57** - The second paragraph states "The results for nickel and beryllium also are not surprising considering the large number of non-detects (greater than 66%) in each of these data sets." LANL then removes these constituents based on background comparisons. The highest sample of beryllium (50 mg/Kg) is located at the sampling locations closest to the septic outfall. The next set of sampling locations identifying beryllium are located at the bench area where settling out of runoff would be expected. In addition, page 27 notes that Building V, formally located at TA-1, housed a uranium and beryllium machine shop which was connected to the septic system now comprising PRS 1-001(d). This strongly suggests that the beryllium concentrations identified at this location are the result of contamination, not background concentrations. LANL should consider retaining beryllium as a COPC given location and concentrations of beryllium as well as location of non-detects.

10. **Figure 4.8, p. 68-71 - Mercury concentrations are discussed on page 68. On page 71, Figure 4.8 presents sampling sites identifying those locations that exceed the SAL. Sampling site 01-5228 is listed as exceeding the mercury SAL but no data for sampling conducted at 01-5228 is provided on page 69 (Table 4-5) or in Appendix A, Table A-4. Please review the sampling location and provide appropriate sampling results.**
11. **4.1.3.3.2 Storm water, p. 75 - Mercury was detected in runoff at concentrations greater than 21 mg/L. The acute ambient water quality criterion (AWQC) for mercury is 2.4 µg/L. The concentration in runoff is about 4 orders of magnitude (10,000 times) greater than the acute AWQC. Over time, this concentration of mercury, even with dilution, may pose a problem should the runoff reach streams/sediments in the canyons. Lead was measured as high as 440 mg/L in runoff samples while the acute AWQC for lead is 0.082 mg/L. LANL should review potential for ecological risk to canyon waterbodies from runoff.**
12. **4.1.4 Ecotoxicological Screening Action Levels Comparison, p.77 - See comment number 8 above. The soil ESALs presented for metals in Table 4-9 are all at or below LANL background levels which draws into question their usefulness and validity.**
13. **Table 4-15, p.88 - The inhalation RfC is reported as 9E-05 mg/kg-d and footnoted as the value for elemental mercury. This is incorrect and Table 4-15 should be revised. The inhalation RfC for elemental mercury reported in the text on page 88 is correct (3E-04 mg/m³). Also note the units for inhalation in Table 4-15 should be mg/m³.**
14. **4.2.4.1 Nonradionuclides, p.90 - In the last paragraph of page 90, HQs for mercury are referenced to Table 4-15. The correct citation is Table 4-16.**
15. **4.2.4.1 Nonradionuclides, p. 90 - The sentence at the bottom of the page should clarify that "individual pathway HQs range from 0.006 to 0.3 for both best estimate and reasonable maximum exposure (RME) calculations." The RME HQ for mercury for all pathways for the upper bench totalled 0.6. The document should report and discuss HQs for the upper and lower benches and differentiate between HQs for best estimate and reasonable maximum exposure.**
16. **4.2.4.3.1 Site Conditions, p.92 - LANL states that the difference between mean and UCL values for the upper and lower benches is likely attributable to the small sample size and presence of outliers. Given that the outfalls of each PRS are located closer to the upper bench, the difference appears just as likely attributable to hotspots.**

17. **4.3 Conclusions, p. 94** - In the last paragraph, the document states "further evaluation of the entire data set indicates that the concentrations of these (12 chemicals) in soil samples collected downgradient of Hillside 138 are consistent with background levels." How is this possible when LANL reported that only arsenic sample concentrations at PRS 1-001(d) and PRS 1-006(h) were determined to be below background before (see page 57)?

18. **5.0 References, p.97** - The citation for RAGS throughout the text is "(EPA 1989, 0304)." In the reference section, the citation is (EPA 1989, 0305).