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February 12, 1997

Mat Johansen, DOE AIP POC
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Los Alamos Area Office, MS A316
Los Alamos, NM 87544



RE: Review of "RFI Report for Potential Release Sites, [1-002, 1-001(t), 1-007(k)]", Los Alamos National Laboratory, April 1996, LA-UR-96-1264.

Dear Mr. Johansen:

The DOE Oversight Bureau (DOE OB) has reviewed the subject document. The following comments are provided for the purpose of communicating the results of the review. They are not provided or intended for the purpose of representing the regulatory position of the New Mexico Environment Department (NMED).

General Comments:

1. This report does not include an assessment of ecological risk. Risk to ecological receptors should be evaluated before sites are proposed for No Further Action.
2. In Section 3.0, Screening Action Levels (SALs) are discussed. The report does not explicitly state the source of the SALs and the exposure scenario used for their calculation. Are the SALs from the Installation Work Plan? It is our understanding that the NMED Hazardous and Radioactive Materials Bureau (HRMB) has requested that LANL base its SALs on U.S. Environmental Protection Agency Region IX residential Potential Remediation Goals (PRGs). Are these PRGs the source of the SALs? Also, What is the source of the SALs for radionuclides?

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Small LANL fu-1/10/98/TJA-1

3. Field instrumentation alone should not be used to determine the types of analyses to be conducted. When field instrumentation is used for screening, the detection limits of the screening instruments should be provided.
4. Composite sampling should not be used for determining the presence or absence of contaminants or for determining the nature and extent of contamination. Therefore, all composite locations at PRSs 1-002, 1-001(t), and 1-007(k) should be resampled.
5. The report presents and discusses the data in the text. However, for quicker review it may help to present data for each PRS in a tabular format to supplement the text. Please see attached example tables.
6. The RFI Report should be a stand-alone document containing a tabulation of analyses results. Analytical results should replace analysis request numbers that are supplied in the summary tables of this report.

Specific comments:

1. Page 14, § 3.2

Although the report states that background values are from reports by Longmire and Purtyman, it is not clear which UTL was used for comparison at each site. The source of the UTL (soil, tuff, etc...) should be stated. Tables may help clarify comparisons to background and SALs. See general comment 5 on data presentation.

Aggregate K, Industrial Waste Line, Page 21

2. **Page 26, § 5.1.3.3, Paragraphs 1 and 2; "In January 1990, verification sampling of the industrial waste line trench between Central Avenue and Rose Street was conducted...as an interim action...(See Fig...in RFI Work Plan...) (...; LANL 1990, 09-0252)."**

The data that was generated at Rose Street and Central Avenue as a result of the interim action should be provided in table format within this report. The table should include

sample numbers, sample depth, analytical results, detection limits and comparisons to SALs and/or background. See general comment 5. Clarification should be provided regarding composite or discrete samples. LANL should provide a sample location map, a discussion of the sampling procedures, and type of analyses, and the results of both field and fixed laboratory analyses. The RFI Report should be a stand-alone document containing a tabulation of sample and analyses that were performed and/or proposed in the work plan.

3. **Page 29, Table 5.1.4-1 Summary of samples collected at TA-1, Aggregate K; "Numbers listed are request numbers for each analysis."**

See general comment 6 on analytical results

4. **Page 32, § 5.1.4.1, Paragraph 2; "One subsurface soil sample was collected at a depth between 24.5 and 26.5 ft. The second subsurface soil sample was collected from the same bore hole at a depth between 74.5 and 76.5 ft."**

LANL should clarify if the samples were soil or if they were tuff. Sample points should be located below the former industrial waste line and samples should be collected at smaller intervals such as 5, 10, and 15 feet.

5. **Page 32, § 5.1.4.1, Paragraph 2; "Both soil samples were submitted to a fixed laboratory for a suite of analyses that included isotopic plutonium, total uranium, metals, and tritium."**

Why were VOCs and SVOCs not included when "unspecified solvents" were listed on Page 22, Paragraph 3 of this report as COPCs? LANL may need to sample for VOCs and SVOCs in this aggregate.

6. **Page 32, § 5.1.4.1, Paragraph 3; "In borehole 01-4021, one subsurface soil sample was collected at a depth between 0 and 2 ft, and another... between 6 and 8 ft. In borehole 01-4022, one subsurface soil sample was collected a depth between 4 and 6 ft and a second... between 10 and 12 ft."**

What is the relationship of these varied depths to the depth of the former waste line. Sample points should be located

below the former waste line location and then samples should be collected at intervals such as 5, 10, and 15 feet.

7. **Page 32, § 5.1.4.1, Paragraph 3; " All four subsurface soil samples were submitted to a fixed laboratory for a suite of analyses that include isotopic plutonium, isotopic uranium and metals."**

See specific comment 5 on sampling for VOCs and SVOCs.

8. **Page 32, § 5.1.4.1, Paragraph 4; "All subsurface soil samples that were collected from these three boreholes were field screened for radioactivity...and ... for volatile organic vapors..."**

Field instrumentation should not be used to determine the types of analyses to be conducted. When field instrumentation is used for screening, it should be confirmed by laboratory analyses.

9. **Page 32, § 5.1.4.2, Paragraph 1; "a surface composite soil sample was collected from each pair of boreholes from a depth of 0 to 6 in."**

See general comment 4 on composite sampling.

10. **Page 34, Paragraph 2**

LANL should describe the sample collection depths at boreholes 01-4226 and 01-4227.

11. **Page 44, § 5.1.8 Ecological Assessment for TA-1, Aggregate K**

See general comment 1 on ecological risk assessment.

12. **Page 44, § 5.1.10 Conclusions and Recommendation for TA-1, Aggregate K**

The nature and extent of contamination beneath the waste lines of PRS 1-002 may not have been determined. Additional information should be provided on the interim action performed at Rose Street and Central Avenue. See specific comment 2. Discrete soil samples may need to be collected at and beneath former waste line locations and analyzed for VOCs, SVOCs, metals, and radionuclides. PRS 1-002 does not appear to be appropriate for NFA at this time.

Aggregate L, Eastern Sanitary Waste Line, Page 44

13. Page 49, § 5.2.4, Paragraph 4; "Three of these soil samples were vertical composites of a single borehole while the remaining three soil samples were composites of three to four boreholes."

See general comment 4 on composite sampling.

14. Page 50, Table 5.2.4.1 Summary of Samples collected at TA-1, Aggregate L

Soil samples from PRS 1-001(t) should be taken at the waste line depth and then at depths such as 5, 10, and 15 feet below the waste line to characterize vertical extent. See general comment 6 on analytical results.

15. Page 54, § 5.2.6; "Fixed laboratory analyses for organics were not requested... However, if field screening of the cores indicated the presence of organics then the plan called for 1) submitting samples for organic analyses,..."

See general comment 3 regarding the use of field instrumentation.

16. Page 55, § 5.2.10 Conclusions and recommendations for TA-1, Aggregate L

The nature and extent of contamination beneath the waste lines of PRS 1-001(t) may not have been determined. Additional discrete samples may need to be collected at and beneath former waste line locations as opportunities become available. NFA does not appear to be appropriate for PRS 1-001(t) at this time.

Aggregate O, Potential Subsurface Contamination At Buildings U, W, and Z, Page 57.

17. Page 58, § 5.4.3, Paragraph 2; "During the 1976 removal of plutonium contaminated soil beneath the southwest corner of the Los Alamos Inn parking lot, concentrations of tritium in soil moisture (maximum sample 690 pCi/ml) were speculatively attributed to a fire involving tritiated uranium hydride in the courtyard between Buildings U and W."

LANL should show the location of the 1976 removal of

plutonium contaminated soil. The location that is given in the sentence above does not seem to include the area that would have been between buildings U and W.

18. Page 59, Paragraphs 2,3, and 4

See general comment 4 regarding composite sampling.

19. Page 59, Paragraph 5; "Soil samples were screened for volatile organic vapors using a HNu... PID."

Soil samples discussed in paragraphs 2, 3, and 4 should have been analyzed for SVOCs. Page 7-70, Paragraph 1, of the RFI work plan discusses laboratory analyses for radionuclides, SVOC, and metals. See general comment 3 regarding the use of field screening.

20. Page 60, Table 5.4.4.1 Summary of Samples collected at TA-1, Aggregate O

See general comment 6 on analytical results.

21. Page 61, Figure 5.4.4-1

Additional samples may be needed from beneath former Building W, and from beneath the east end of former building U. Soil samples collected from these locations may help to determine the extent of any contamination associated with the fire that involved tritiated uranium hydride.

22. Page 63, § 5.4.10 Conclusions and Recommendations for TA-1, Aggregate O.

PRS 1-007(k) has not been adequately characterized. Additional samples may need to be taken at other locations within the PRS, see specific comment 21. NFA does not appear to be appropriate for PRS 1-007(k) at this time.

23. Appendix A Analytical Data

LANL should provide a tabular summary of all analytical data. See general comment 6.

If there are any questions concerning this review, please contact me at 505-672-0448 or Martyne Kieling of our staff at 505-827-1536.

Mat Johansen
Review of RFI Report
PRS 1-002, 1-001(t), 1-007(k)
February 12, 1997

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Sincerely,



Steve Yanicak, LANL POC
Department of Energy Oversight Bureau

SY:MK:mk

cc:w/attachment

John Parker, NMED, Chief, DOE OB
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Table 3-3
Summary of Detected Constituents of Concern in Site 18 Surface Soils

Analyte	Range (mg/kg)	Detection Limit (mg/kg)	Total Samples	Mean (mg/kg)	Number of Non-Detects	Samples ≤ Mean	Samples > Mean
Aluminum	3,810-7,950	10	12	5,372	0	5	7
Antimony	2.6-8	6	12	5.2	10	5	7
Aroclor-1254	0.71-36	0.33-1.3	4	2.4	0	3	1
Arsenic	2.3-3.2	1	12	2.7	0	5	7
Barium	65-123	1	12	87	0	5	7

Table 10-1
Summary of Soil Sample Analytical Results - Site 51 Excavation

Analyte	Minimum/Maximum	Sample ID	Result	Units	Detection Limit
Arsenic	Minimum	TA3/5-51-A3	1.8	mg/kg	1
	Maximum	TA3/5-51-A2	4.7		
Barium	Minimum	TA3/5-51-A1	83.8	mg/kg	1
	Maximum	TA3/5-51-A3	170		
Bis (2-Ethylhexyl) Phthalate	Minimum	TA3/5-51-A3	840	µg/kg	330
	Maximum	TA3/5-51-A2	1,400		
Chromium	Minimum	TA3/5-51-A3	2.4	mg/kg	1
	Maximum	TA3/5-51-A2	6.9		
Lead	Minimum	TA3/5-51-A1	5.6	mg/kg	5
	Maximum	TA3/5-51-A2	23		
Selenium	Single ^a	TA3/5-51-A2	1.8	mg/kg	0.57

^aSingle = Only one sample contained an analyte in excess of the MDL.

Table 11-5
Comparison of Site 78 Soil Analytical Results to Technical Areas III and V Background and Proposed RCRA Subpart S Soil Action Levels

Parameter	Maximum at Site 78 (mg/kg)	UTL or 95 th Percentile (mg/kg)	Proposed RCRA Subpart S Soil Action Level (mg/kg)	Exceeds Proposed RCRA Subpart S Soil Action Level?
Arsenic	7.4	5.6 ^a	20	No
Barium	170	341.0	6,000	No
Chromium	39.7	26.2	400	No
Lead	21.3	24.8	2,000	No
Silver	2.7	4 ^b	400	No

^aSite-wide background UTL. No TA-III/V UTL was calculated for this constituent because of the lack of background data when statistical analyses were completed.

^bSilver data were nonparametric; 4 mg/kg is the 95th percentile.