FEB 1998

State of New Mexico
ENVIRONMENT DEPARTMENT
Hazardous & Radioactive Materials Bureau
2044 Galisteo
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-1557
Fax (505) 827-1544

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

February 9, 1998

Mr. Theodore Taylor, Project Manager
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

Mr. John Browne, Director
Los Alamos National Laboratory
P. O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

RE: Transmittal of EPA Comments
Los Alamos National Laboratory
NM0890010515

Dear Mr. Taylor and Mr. Browne:

The RCRA Permits Management Program (RPMP) of the New Mexico Environment Department's Hazardous and Radioactive Materials is providing copies of the Environmental Protection Agency's (EPA) comments as attachments to this letter. The comments provided are detailed in the table below:

DATE OF COMMENTS	REGARDING
4/5/96	Additional Information on Newly Identified AOC
4/26/96	Comments: 16-020 Draft Expedited Cleanup Plan
5/23/96	NOD: TA 15 RFI Report
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6/7/97	NOD: 33-004(b-c, j & m), 33-006(a-b) & 33-007(a-b) RFI Report
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6/28/96	Approval: TA 32 RFI Report
6/28/96	Approval: 3-010(a) RFI Report

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6/24/96	Approval: TA 1, Agg. RFI Report NOD Response
7/1/96	Approval: 1-007(l) SAP
7/23/96	Approval: TA 45 RFI Report
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6/20/97	NOD: TA 57 RFI Report
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6/22/97	Approval: 50-006 (a-c), 50-007 & 50-008 RFI Report
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9/8/97	NOD: 21-024(e) VCA Completion Report
9/8/97	NOD: 21-024(j) VCA Completion Report
9/15/97	Approval: 8-005 VCA Completion Report
10/2/97	NOD: C-0-041 VCA Completion Report
10/2/97	NOD: 0-032 VCA Completion Report

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10/21/97	NOD: 19-002 VCA Completion Report
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12/5/97	NOD: C-3-006 and 3-054(e) RFI Report
12/5/97	Approval: C-0-043 VCA Plan
12/10/97	NOD: 36-005 RFI Report
12/10/97	NOD: 0-034(a-b), 73-001(b) & 73-004(c-d) RFI Report
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These comments are being transmitted to the Department of Energy/Los Alamos National Laboratory (DOE/LANL) by HRMB in an effort to expedite the execution of corrective action activities. The transmittal of these comments should not be construed as HRMB's approval or concurrence with EPA's comments. The administrative authority, HRMB, reserves the right to review both the documents reviewed by EPA and EPA's comments and provide additional comment and/or reject all or part of the comments provided herein.

Should you have any questions regarding this letter, please contact me or Mr. John Kieling, HRMB's LANL Facility Manager, at (505) 827-1558.

Sincerely,

Robert S. ("Stu") Dinwiddie, PhD, Manager
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau

RSD:kth

attachment

cc w/ attachment:

J. Canepa, LANL EM/ER, MS M992
B. Garcia, NMED HRMB
T. Glatzmaier, LANL DDEES/ER, MS M992
K. Hill, NMED HRMB
M. Johansen, DOE LAAO, MS A316
J. Kieling, NMED HRMB
S. Kruse, NMED HRMB
M. Leavitt, NMED GWQB
H. LeDoux, DOE LAAO, MS A316
D. McInroy, LANL EM/ER, MS M992
D. Neleigh, EPA 6PD-N
J. Parker, NMED DOE OB
G. Saums, NMED SWQB
J. Vozella, DOE LAAO, MS A316
S. Yanicak, NMED DOE OB, MS J993
File: HSWA LANL G/P/98
Track: LANL, doc date, NA, DOE/LANL, HRMB/Dinwiddie, RE, file

CERTIFIED MAIL
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January 30, 1998

Mr. Theodore Taylor, Project Manager
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

Mr. John Browne, Director
Los Alamos National Laboratory
P. O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

RE: Transmittal of EPA Comments
Los Alamos National Laboratory
NM0890010515

Dear Mr. Taylor and Mr. Browne:

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Should you have any questions regarding this letter, please contact me or Mr. John Kieling, HRMB's LANL Facility Manager, at (505) 827-1558.

Sincerely,

Robert S. ("Stu") Dinwiddie, PhD, Manager
RCRA Permits Management Program
Hazardous and Radioactive Materials Bureau

RSD:kth

attachment

cc w/ attachment:

J. Canepa, LANL EM/ER, MS M992
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M. Leavitt, NMED GWQB
H. LeDoux, DOE LAAO, MS A316
D. McInroy, LANL EM/ER, MS M992
D. Neleigh, EPA 6PD-N
J. Parker, NMED DOE OB
G. Saums, NMED SWQB
J. Vozella, DOE LAAO, MS A316
S. Yanicak, NMED DOE OB, MS J993
File: HSWA LANL G/P/98
Track: LANL, doc date, NA, DOE/LANL, HRMB/Dinwiddie, RE, file

APR 0 5 1996

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

Re: Additional Information of Newly Identified AOC
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the information provided by Los Alamos National Laboratory (LANL) dated February 7, 1996, concerning a newly identified solid waste management unit (SWMU) in Technical Area 2.

The area was determined to be a pile of metal nuggets identified now as AOC C-2-001, Metal Nugget Site. Based on the information presented, the EPA does not believe that this site should be added to the Hazardous and Solid Waste Amendments (HSWA) portion of the Resource Conservation and Recovery Act (RCRA) permit.

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

Sincerely,

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

6PD-N:BDRISCOLL:BD:4/4/96:F:\USER\BDRISCOL\LAOC2.LTR

6PD-N
OWEN
4/4/96

April 26, 1996

Mr. Benito Garcia, Chief
Hazardous and Radioactive
Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: Review of Draft Expedited Cleanup Plan, SWMu 16-020
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the draft Expedited Cleanup (EC) Plan for solid waste management unit (SWMU) 16-020 at Los Alamos National Laboratory (LANL). Enclosed is a list of comments which LANL needs to address when they revise this EC plan.

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

Sincerely,

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

Enclosure

6PD-N:BDRISCOLL:BD:4/26/96:F:\USER\BDRISCOL\LEC16.NOD

6PD-N
OWEN

Comments on Draft Expedited Cleanup Plan
SWMU 16-020
Los Alamos National Laboratory

General Comment:

1. The Environmental Protection Agency previously agreed that LANL expedited cleanup plans might equate with an RFI Report submittal for a site. If LANL chooses to follow this approach, which would be more efficient than submitting both a plan and report on the same information, then LANL should submit equivalent information to that required in an RFI Report. This plan is lacking in a review of QA/QC data from the investigation, and submittal of all pertinent data as indicated below.

2. This expedited cleanup addresses human health risk, but not eco-risk which will have to be evaluated at some point in time. This site cannot be recommended for no further action until an eco-risk approach has been approved by all parties.

3. All official documents, such as final reports and certification statements should be submitted to the New Mexico Environment Department and the EPA should be copied.

Specific Comments:

1. **2.1.2 Physical Setting, p. 6:**

   a. LANL indicates that the thick unsaturated zone of the volcanic tuff inhibits ground water recharge by surface water infiltration. Results of recent sampling from the springs in the area of Technical Area 16 have indicated the presence of high explosives. This indicates recharge from the surface to the uppermost aquifers if not the main aquifer. LANL should revise this sentence accordingly.

   b. The text states that no wells to the main aquifer have been completed at TA-16, but does not say where the closest well is. The location of the closest well completed in the main aquifer should be provided.

   c. The text states that volcanic tuff is considered to inhibit ground water infiltration. The tuff can inhibit ground water recharge, but may not prevent it. Tuff can have very high porosity and permeability, as high as sandstone. This language should be deleted unless LANL can provide information, such as vertical permeability data or hydrological studies, which support it.

2. **2.2.2 RCRA Facility Investigation, p. 8:**

a. Text in the second paragraph indicates that geomorphic mapping of the core samples was used to determine the interface between the clay horizons. This information should have been presented in this report.

b. Page 8: What is the depth to the tuff interface?

3. **2.2.3 Summary and Evaluation of RFI Analytical Results, p. 8:** LANL should be comparing the background results for the appropriate horizon from the background study to this area rather than using a soil UTL from all soil horizons.

b. **Page 10:** The PAH contamination at the outfall is described as characteristic of a single release, as opposed to repeated releases. No justification is provided for this statement. This sentence should be deleted.

c. **Page 11:** There are numerous springs in the area of this unit which would point to a perched alluvial aquifer within the area of this site. LANL should revise text accordingly.

4. **2.4.3 Cleanup Levels, p. 15:** LANL proposes a cleanup level with a target risk value of 10^{-5} for carcinogenic PAHs based on the suspected contribution of the roof drain from a large asphaltic roof. LANL should determine what the actual PAH contribution from the roof. This work is proposed in Section 3.3, Cleanup Activities.

5. **3.3 Cleanup Activities, p. 17:**

a. The text states that two soil samples were collected in February 1996 at locations guided by field screening and visual inspection. The purpose of the sampling was to check for contamination flowing down a slope outside of the drainage channel. The report should describe what type of field screening was used. Were the same screening test kits used as are being proposed for the clean-up? What were the screening results? The screening results should be compared to the analytical data, when available, and an assessment made of how well screening data correlates with laboratory data.

b. LANL indicates that soil which screens at a value of 50% of the calculated total PAH cleanup level will be removed. Since the field screening kits measure total PAH content, does this mean that anything detected over 1.5 mg/kg will be removed (Benzo[a]pyrene and Dibenzo[a,h]anthracene both have proposed cleanup values of 3 mg/kg)? Do the detection kits being proposed for use detect PAHs at less than 1ppm 100% of the time? What is the actual detection limit and limitations for the kits?

c. **Page 21:** A screening method to determine the 95% upper confidence level (UCL) for comparison with the established cleanup level for each PAH is discussed. The screening tests for the exposure units (EUs) should be done before mobilization of equipment for excavation of the known contamination areas. This will avoid delays in any required soil removal in the EUs while waiting on the laboratory results.

6. **3.5.2 Design, p. 23:** The text states that confirmatory soil samples will be collected only from the bottom of the excavation. This procedure will not confirm that the width of the excavation is adequate to remove all contaminated soil above action levels. Confirmatory samples should also be taken from the sides of the excavation.

7. **3.5.3 Design, p. 24:**

a. LANL should provide the calculated 95% UCLs for the means of the constituents for which cleanup levels have been determined.

b. Verification samples to be collected from the remediated stretches in the areas defined by exposure units (EU) should not include previously collected data. Verification samples should be collected in the remediated areas to verify that the remediation activity was complete.

c. If a third verification sample needs to be collected within the EU, how will it's location be determined?

d. LANL indicates that "Standard good laboratory practices documented by the standard data deliverable, will suffice to ensure data quality". This statement implies that LANL will not be collecting any quality assurance/quality control samples to verify sample quality. LANL should be aware that if the useability of the data is questioned then LANL will be required to resample to confirm verification analysis. LANL shall collect appropriate QA/QC samples.

8. **3.5.3 Implementation,p. 25:** Why is the tuff not being sampled?

9. **3.6 Site Restoration Plan, p. 26:**The plan does not have a provision for maintenance of the backfilled material. LANL should provide for maintenance of graded areas, including regrading as required, reseeding, etc., until revegetation has been established to prevent erosion.

10. **3.7 Acceptance Inspection, p. 26:** The plan states that the inspection checklist, containing specific items, criteria, and requirements to be inspected, will constitute acceptance

of remediation activities. A caveat should be added, which states that the inspection checklist will constitute acceptance, unless new information becomes available or unforeseen conditions are observed. LANL would then be required to either further investigate and/or remediate suspect areas.

11. **Costs, p. 28:** The costs for some of the plans is very high. A site-specific health and safety plan should have been developed for the original investigation which should need to be updated for the construction activities.

MAY 23 1996

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

Re: NOD on RFI Report for Technical Area 15
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed Los Alamos National Laboratory's (LANL) RFI Report for Technical Area 15 dated November 1, 1995, and found it to be deficient. Enclosed is a list of deficiencies which LANL needs to address.

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

Sincerely,

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

Enclosure

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6PD-N
OWEN

List of Deficiencies
RFI Report for Technical Area 15
Los Alamos National Laboratory

This deficiencies address the following Los Alamos National Laboratory RCRA Facility Investigation (RFI) Report for Potential Release Sites 15-004(a-d, f), 15-008(a, b), 15-009(e, j), C-15-004, 15-007(b), and 15-012(b). All comments are considered best professional judgement.

General Comments:

1. It is important to note that this particular RFI report is much more concise, well written and better organized than similar reports which have been recently reviewed. In addition, this reports' presentation of graphics depicting sampling locations, the descriptive tables utilized to summarize quality control issues, tables comparing data to action levels, as well as the presentation of all analytical results, including those below action levels, is much improved over previous reports. Also, the multiple chemical evaluation, with regard to additive affects of all inorganic and organic contaminants observed, is well presented and useful in determining impacts from individual PRSs. Although several specific comments and questions are provided below, this report is noticeably superior to past submittals (no response needed).

2. LANL has agreed to evaluate risk and carry forward COPCs where the sample concentrations of a COPC exceeded the screening action level (SAL) but were less than the background level. Of the arsenic samples taken at PRC 15-004f, E-F Aggregate, the maximum is 5.2 mg/Kg and the average is 3.7 mg/Kg. Of the 54 samples listed in Appendix A, twenty (20) sample analyses exceed the LANL's arsenic SAL of 0.38 mg/Kg by more than a factor of 10. LANL should calculate risk for arsenic which should be provided in the baseline risk assessment. The cancer residential soil value is 3.2E-1 mg/Kg. The Region 9 PRG cancer industrial soil value is 2.0 mg/Kg. The non-cancer residential soil value is 2.2E+1 mg/Kg.

   LANL should carry forward to the risk assessment any COPC where the sample concentration exceeded the SAL but is less than the natural background level. In the risk assessment, the risk for these chemicals should be calculated and reported.

Specific Comments:

1. **1.3 Field Activities, p. 1-16:** The report indicates soil samples were collected via hand auger. Were samples collected from the disturbed auger cuttings or was a core barrel or split spoon advanced beyond the bottom of the auger hole to collect an undisturbed sample?

2. **Table 3-1, p. 3-2:** The holding time for mercury was exceeded and the data is rejected. Is resampling planned?

3. **Table 3-2:**

   a. Page 3-3: The holding time for high explosives was exceeded and the data is rejected. Is resampling planned?

   b. Page 3-4: The holding time for mercury was exceeded. Why is the data not qualified as "R" (rejected) ?

   c. Page 3-5: The tetryl recovery was below acceptable recovery for the QC sample and the data is rejected. Is resampling planned?

   d. Page 3-6: The holding time for mercury was exceeded and the data is rejected. Is resampling planned?

4. **Table 3-4, p. 3-7:** The surrogate recoveries were less than acceptable for acid semivolitiles. Is resampling planned?

5. **Table 3-5, p. 3-8:** The holding time for mercury was exceeded and the data is rejected. Is resampling planned?

6. **Table 3-6, p. 3-9:** The antimony recovery was below acceptable recovery for the QC sample. Is resampling planned?

7. **Table 3-7, p. 3-10:** The holding time for mercury was exceeded and the data is rejected. Is resampling planned?

8. **Table 3-8, p. 3-11:** The holding time for mercury was exceeded and the data is rejected. Is resampling planned?

9. **3.1.2 Organic Analysis, p. 3-13:** Explain why organic analysis was not conducted for PRS 15-004(a,d), PRS 15-004(b,c), PRS 15-004(f) and PRS 15-008(a).

10. **3.2.3.1 Ranking of Landscape Condition and Receptor Accessibility to COPCs, p. 3-21:** Provide additional rationale for a score of zero for potential accessibility by biological receptors. Unless totally enclosed PRS, a "potential" accessibility would exist for birds and mammals.

11. **3.3 Risk Assessment Methodology, p. 3-22:** Explain why no human health risk assessments are presented in this report.

12. **4.3.3.1, Organics, p.4-27:** Only two samples taken below the former transformer location at AOC 15-004 were analyzed for PCBs. The report states that no PCBs were measured but the data is not reported. However, it appears that both samples were taken from approximately the same location within the AOC 15-004 area (see Figure 1-7, page 1-11), yet this is area appears to be approximately 20 x 15 feet on Figure 4-6, page 4-45.

    The PCB results should be reported in the appendices with other data results. LANL should state why two samples from the same location of this PRC are sufficient. Information on the sample depths of PCB soil samples should be provided.

13. **4.3.3.1 Multiple Chemical Evaluation (MCE), p. 4-28:** Since the non-carcinogenic SAL has been exceeded in the E-F Aggregate for several inorganics (copper and manganese) and a normalized value would already exceed 1 for each of these inorganics, a MCE should consider the total contribution of all non-carcinogenic analytes and to what degree each analyte contributes to the total potential hazard.

    Each individual inorganic should be investigated for its percent contribution to a normalized value of 1 and the decision to continue to include an inorganic as a COPC be based on some percentage contribution to a normalized value of 1 that the risk manager agrees to.

14. **4.3.3.1 Multiple Chemical Evaluation (MCE), p. 4-46:** Tables 4-11 lists the normalized values of the MCE for the E-F Aggregate for the cumulative maximum normalized value for the entire site. Table 4-12 lists the normalized values of the MCE for the E-F Aggregate for the sample area within the entire site with the highest normalized value. Given this, the values in Table 4-12 should be either equal to or less than the values in Table 4-11. This is not the case for antimony. The normalized values for these inorganics should be re-evaluated to verify no additional flaws exist.

    LANL needs to verify values and correct these tables where appropriate.

15. **4.3.3.4 Ecotoxicological Screening Assessment, p. 4-47:** LANL may need to reevaluate the ecotoxicological effects of this site once an eco-risk approach has been agreed to by all parties.

16. **4.4.2 Field Investigation, p. 4-60:** Why is the 6 to 18 inch interval not sampled?

17. **4.6 PRS 15-012(b) Operational Release, p. 4-86:** Did any of the washing involve solvents?

18. **4.7.2 Field Investigation, p. 4-95:** When will the addendum referenced in the paragraph be submitted?

MAY 2 4 1996

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

Re: Approval of Deferred Action for SWMU 3-037 (OU 1114)
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed a Notice of Deficiency Response for Operable Unit 1114 dated April 12, 1995. Upon review of the information presented, it appears appropriate to defer additional sampling at Solid Waste Management Unit 3-037 until the Decontamination and Decommissioning activities have occurred.

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

Sincerely,

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

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OWEN

JUN 0 7 1996

Mr. Benito Garcia, Chief
Hazardous and Radioactive
Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

RE: Review of RCRA RFI Report for Potential Release Sites (PRSs) in Technical Area 33, Los Alamos National Laboratory NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed its review of Los Alamos National Laboratories (LANL) RCRA RFI Report for Potential Release Sites (PRSs) in Technical Area 33 submitted by LANL on January 8, 1996. The report was found to be deficient. Enclosed is a list of deficiencies which EPA recommends that LANL be allowed sixty days to respond.

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

Sincerely yours,

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

Enclosure

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List of Deficiencies
RFI Report for Technical Area 33
Los Alamos National Laboratory

This RFI Report including information on the following SWMUs:

33-004(b,c,j,m)
33-006(a,b)
33-007(a,b)
33-010(a,b,c,d,g,h)
33-011(b,c)
33-014

LANL may request a Class 3 permit modification for removal of the following sites from the HSWA permit under no further action Criterion 5 (The potential release site (PRS) has been characterized or remediated in accordance with current applicable state or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use):

PRS 33-004(m), NRAO Septic Tank TA-33-179
PRS 33-006(b), East Site Shot Pads
PRS 33-010(h), South Site Surface Disposal
PRS 33-011(c), South Site Blivit Storage Area
PRS 33-014, South Site Burn Pit

General Comment:

1. RFI Reports should present all the analytical data (including those which were above either the LANL UTL or the TA-33 UTL) which was used as the basis for any decision making. **(Best Professional Judgement, (BPJ))**

2. Sites which are listed on the HSWA permit, and for which LANL is proposing a voluntary corrective action (VCA) should still have all the analytical results submitted. The VCA report may function as the equivalent of the RFI Report, provided all the sampling and analytical data is provided in the VCA. Otherwise, LANL needs to provide the RFI data. This applies to the following SWMUs: 33-010 (a, b, d, g, and h). **(BPJ)**

Site Specific Comments:

1. 1st Paragraph, Page 28: Since text indicates "Activities of thorium isotopes were not known", how could LANL tell that "but they appear to be within LANL background UTLs"? **(BPJ)**

2. Table 4.4-3, Page 30: Please specify units (mg/kg?) of the analytic results. **(BPJ)**

3. **PRS 33-004(b), South Site Septic System, Table 5.1.6-1, p.41:** Sediment samples from the tank bottom indicated several hazardous constituents including inorganics and Benzo(a)anthracene and Benzo(b)fluoranthene are higher than their respective screening action levels (SAL). LANL shall remove and properly dispose of the bottom sludge in the tank. **(BPJ)**

4. **PRS 33-004(c), East Site Septic System, 2nd Paragraph, p.43:** The septic system is currently operational under NMED Permit LA-34. Please specify what kind of permit this is (a RCRA permit or wastewater permit)? **(BPJ)**

5. **PRS 33-004(j), 1st Paragraph, p. 51:** Copper was detected above LANL and TA-33 background upper tolerance limits (UTLs), but below the SAL of 2800 mg/kg. LANL shall submit all copper results which are above background UTL. **(BPJ)**

6. **PRS 33-006(a), Table 5.5.9-1, p. 70:** Uranium and copper are widespread around the shot pad. Has LANL conducted any radionuclide activity survey to find whether the copper was contaminated with radioactivity? **(BPJ)**

7. **PRS 33-006(a), 5.5.9 Extent of Contamination, p. 70:** Text indicates two different SALs for copper. In the 1st paragraph of the page, copper's SAL is 3000 mg/kg, while in Table 5.5.9-1, the SAL is 2800 mg/kg. LANL needs to provide a correction. **(BPJ)**

8. **PRS 33-007(a), East Site Firing Area, p. 84:** Since the site is occasionally used for short-term experiments, it is not appropriate to NFA this site until decommissioning. **(BPJ)**

9. **PRS 33-007(b), 2nd last Paragraph, p. 100:** Text states, "High uranium concentrations were detected in several samples from this berm (Table 5.8.5-4). **Six samples** contained uranium only slightly above SAL." Table 5.8.5-4 showed that 3 samples were over 1000; 8 samples were between 100 and 1000; 5 samples were below 100 and above 29 (SAL). There are a total of 16 samples with results above SAL, **not 6 samples. (BPJ)**

10. **PRS 33-010(a), East Site Canyonside Disposal, p. 105:** LANL shall submit the sampling results of uranium, cadmium, and chromium that were above SALs at this site, and shall submit confirmatory sampling result for these inorganics after completion of VCA. **(BPJ)**

11. **PRS 33-010(b), East Site Canyonside Disposal, p. 106:** LANL shall submit the sampling results of uranium, cadmium, and chromium that were above SAL in this site, and shall submit confirmatory sampling result for these inorganics after completion of VCA. **(BPJ)**

12. **PRS 33-010(c), South Site Surface Disposal, p. 106:** A recreational exposure scenario may not be appropriate for this site, as chunks of uranium and copper shrapnel appear on the site, and could be picked up by a hiker. LANL should conduct a cleanup to pick up the large chunks of uranium and copper. **(BPJ)**

13. **Table 5.11.5-1, p. 109:** Results in this Table indicate copper was not analyzed; however, results in Table C-1 which is a duplicate indicate copper was found at 847 mg/kg. What is the reason for this discrepancy? **(BPJ)**

JUN 2 0 1996

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

Re: Review of Draft Expedited Cleanup Completion Reports
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed three "draft" expedited cleanup completion reports provided to EPA as a courtesy by the Los Alamos National Laboratory (LANL). The EPA has several concerns related to these reports which may affect the final versions of these, as well as, other future reports. The following are a list of concerns:

1. In prior discussions with LANL, between NMED and EPA, LANL, indicated that they would have the completeness of all cleanups verified by an independent person knowledgeable in the remediation process. Any discrepancies between what should have occurred during remediation and the final remedy would be noted by this independent reviewer and "fixed" by the LANL Field Unit Leader. EPA is concerned that the "independent" person who is certifying that these cleanups are acceptable is Mr. David McInroy, who currently works for the Environmental Restoration program at LANL. This does not appear to be an independent review.

2. Complete analytical results are not in all the documents. All confirmatory results should be submitted even if they are non-detects. In particular, EPA is concerned about a comparison between a background well and a temporarily installed well at site 18-001(b). It does not appear that complete sampling data has been provided from the background well for critical constituents such as arsenic and beryllium, as well as other metals. A review of the data as it is presented indicates that a release has occurred to the shallow aquifer in Pajarito Canyon. All the data from the background well is needed in order to determine if a release has actually occurred or if these elements are higher than action levels naturally in the ground water.

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3. The reports should detail the actual costs for the remediations. Estimated costs were presented in the expedited cleanup plans, and the completion reports should detail actual costs for the projects.

The EPA is currently preparing a draft Statement of Basis for four sites which underwent expedited cleanups in 1995, and for which a Class 3 permit modification is currently being finalized. Several of the issues listed above will need to be resolved by the New Mexico Environment Department prior to a final decision being made for these sites.

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

Sincerely,

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

Barbara Driscoll

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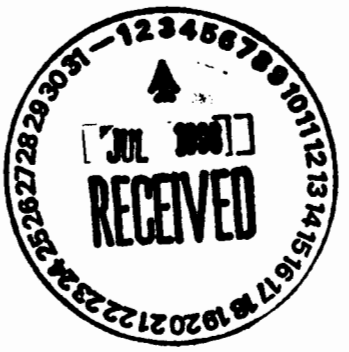
L. Owen 6/19/96

FILE LANL HSWA 1/1079/32-001; 32-002(a,b); 32-003; 32-004

Barbara ✓
Stw
MC

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



June 28, 1996

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

Re: Approval of RFI Report for TA-32
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed and recommends approval with modification of the Los Alamos National Laboratory (LANL) RFI Report for TA-32 dated June 30, 1995. This report included information on the following Solid Waste Management Units: 32-001, 32-002(a,b), 32-003 and 32-004. The approved report consists of the RFI Report dated June 30, 1995, the NOD Response dated February 29, 1996, and the following modification:

> In several of the NOD Responses, LANL indicates that sampling related to ecological concerns will be addressed when an ecorisk approach has been agreed to by NMED. It would be inefficient not to address ecological concerns at the same time as human health concerns are being addressed. Therefore, LANL shall in cases where Phase II sampling is proposed to address human health concerns or to determine the extent of contamination, also conduct sampling to address ecological concerns.

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

Sincerely,

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

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

June 28, 1996

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

Re: Approval Letter for the RFI Report for SWMU 3-010(a)
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed and approves Los Alamos National Laboratory (LANL) RFI Report for Solid Waste Management Unit 3-010(a). The approved RFI Report consists of the RFI Report dated April 28, 1995, and the NOD Response dated February 8, 1996, with the clarification noted in the next paragraph. The EPA concurs with the recommendation of no further action in regards to human health concerns. Further evaluation of this site may be warranted via an ecological risk assessment, once that approach is resolved between LANL, the New Mexico Environment Department (NMED) and EPA. The NMED may wish to evaluate requiring additional monitoring of the limited perched aquifer at this site.

In addition, EPA wants to clarify a comment made by LANL in deficiency 3A of the NOD Response. The EPA's comment at the October 18, 1996, meeting indicated that reports currently drafted did not have to be rewritten; **however**, LANL still needed to compare the recalculated upper tolerance limits (UTL) with the results from any site investigations. If the comparison indicated a change in the chemicals of potential concern, then those adjustments in any risk assessments or decisions would need to be indicated in the cover letters to those reports which were affected. In other words, while LANL did not have to rewrite the almost completed reports, LANL still needed to tabulate any differences using the recalculated UTLs, and address these differences in the report cover letters.

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

Sincerely,

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

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

JUN 2 4 1996

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

Re: NOD Response for Technical Area 1, Aggregate F
Los Alamos National Laboratory

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed Los Alamos National Laboratoy's (LANL) NOD Response received February 26, 1996, for Technical Area 1, Aggregate F. The EPA recommends approving this RFI report as the report meets the requirements of an RFI Report and defines the area of contamination for SWMU 1-001(d). The EPA does not recommend approving no further action for either SWMU 1-006(h) or 1-001(d). Enclosed is a modification which LANL needs to address.

At site 1-001(d), LANL has submitted a voluntary corrective action plan which is being reviewed by the NMED Surface Water Bureau. The EPA believes that currently no further action is not appropriate at this site due to the demonstrated release to surface water, and that removal of the highly contaminated areas is appropriate. EPA recommends that a futher determination in regards to this site wait until the VCA is completed.

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

Sincerely,

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

Enclosure

Modification
RFI Report for TA-1, Aggregate F
Los Alamos National Laboratory

1. LANL has not provided adequate documentation that no hazardous constituents may have been released at SWMU 1-006(h), nor have they provided documentation demonstrating that this area may not be sampled to provide adequate proof that no release of hazardous constituents has occurred. Archival information for Technical Area 1 has not proven to be reliable concerning the presence or absence of hazardous constituents at outfalls, and LANL needs to provide information as indicated above.

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JUL 0 1 1996

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

Re: RFI Work Plan for Technical Area 1, SWMU 1-007(1)
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the RFI Revised Sampling and Analysis Plan for Technical Area 1, Aggregate P at Los Alamos National Laboratory. EPA recommends approval with the following modification of this work plan dated March 5, 1996. EPA recommends that prior to homogenization of the core material, the core material should be examined and only material which appears to be fill material from Building D should be homogenized.

Should you require additional information, please feel free to contact Ms. Barbara Driscoll at (214) 665-7441.

Sincerely,

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

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

JUL 23 1996

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

**Re: Approval of RFI Report for Technical Area 45
Los Alamos National Laboratory (NM0890010515)**

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the NOD Response dated March 1, 1996, for Los Alamos National Laboratory's (LANL) RFI Report on Technical Area 45. The EPA recommends approval of this RFI Report which includes information on the following sites: 45-001, 45-002, 45-003, 45-004 and C-41-005. Partial information for site 1-002 was also included in this report; however, no final determination may be made for this site until all information related to this industrial waste line is provided. The approved RFI Report will consist of the RFI Report dated June 26, 1995, and the Notice of Deficiency Response dated March 1, 1996.

It should be noted that a review of the NOD Response, deficiencies, and responses, indicated how important it is that all pertinent information be included in the RFI Report. Many of the responses referred to the RFI Work Plans for pertinent information which should have been included in the RFI Report. LANL needs to ensure that the RFI Reports are stand alone documents, and all information leading to decisions is included in the report. In addition, any deviations from the approved work plan should be outlined in the reports.

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

Sincerely,

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

FILE HSWALANL 6/17/0

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

DEC 19 1996

Mr. Benito Garcia, Chief
Hazardous and Radioactive Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

RE: Technical Review of LANL's Environmental Restoration Standard Operating Procedures (SOP)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of LANL's Environmental Restoration SOP's and offer the enclosed comments.

If you have any further questions, please contact Mr. Rich Mayer at (214) 665-7442.

Sincerely yours,

Rich Mayer

for David Neleigh, Section Chief
New Mexico - Federal Facilities

Enclosure

TECHNICAL COMMENTS

ENVIRONMENTAL RESTORATION

STANDARD OPERATING PROCEDURES

LOS ALAMOS NATIONAL LABORATORY

GENERAL COMMENTS

The purpose of an SOP is to provide sufficient information for personnel to (1) obtain a basic understanding of the operations that they are asked to perform, and (2) perform the task with minimal assistance. However, most of the SOPs are incomplete and too general. For example, both X-ray diffraction SOPs discuss the term "2π"; however, they neither define the term nor discuss its significance. Other deficiencies include the following:

- ***The SOPs do not incorporate adequate quality assurance and quality control (QA/QC) management tools, such as laboratory blanks, laboratory standards, and standard reference materials. These elements are necessary, because SOPs, if properly followed, should generate reproducible results of known quality. Presently, very few of the SOPs contain, a QA/QC section. SOP-01.05, entitled "Field Quality Control Samples", addresses QA/QC issues that are unique only to analytical sampling, and does not address other QA/QC issues. Consequently, these issues should be addressed in a subsequent revision of the SOPs.***

- ***The SOPs do not include essential information needed to operate some equipment. Instead, the SOPs refer the operator to equipment manufacturer operating manuals for almost all information required for instrument operation. If operating manuals are not available, the operator would be unable to perform necessary calibrations, and may be unable to use the equipment. Therefore, the SOPs should be revised to include: (1) complete instructions for equipment operation, or (2) copies of operating manuals as attachments.***

- ***The SOPs do not adequately address health and safety issues. For example, several SOPs involve the use of hazardous chemicals or potentially dangerous levels of radiation, yet fail to specify procedures for minimizing exposure. Also, several SOPs indicate that, if exposure to hazardous contaminants is possible, field activities should not be performed. Because exposure is a possibility, the SOPs should present sufficient information concerning minimum health and safety precautions for site workers.***

SPECIFIC COMMENTS

General Instructions for Field Investigations, LANL-ER-SOP-01.01, Rev. 0, page 5 of 14, Section 6.1.A. This SOP indicates that the readiness review meetings will be conducted to prepare for field activities. However, this SOP fails to indicate whether the objectives of the RCRA facility investigation will be discussed during this meeting. This discrepancy should be addressed.

General Instructions for Field Investigations, LANL-ER-SOP-01.01, Rev. 0, page 7 of 14, Section 6.2.A.5. The SOP states, "an area designated for analyzing samples may be set up in the support zone. This area will be sheltered from the weather and will contain field analytical instruments." The SOP should explain how analytical instruments can be operated in the outdoors and achieve the necessary accuracy.

General Instructions for Field Investigations, LANL-ER-SOP-01.01, Rev. 0, page 8 of 14, Section 6.4.A. The SOP states, "where an on-site screening area is available, a representative portion of the media collected will be screened." The SOP should reference all appropriate SOPs that discuss field screening.

Sample Container and Preservation, LANL-ER-SOP-01.02, Rev. 0, page 3 of 27, Section 6.0.B. The SOP indicates that sample containers will be selected in accordance with protocols presented in EPA SW-846. The SOP should specify these protocols.

Sample Container and Preservation, LANL-ER-SOP-01.02, Rev. 0, page 4 of 27, Section 6.0, D.1.a. The SOP states that, "based on information in the sampling and analysis plan (SAP), choose a sample container that is nonreactive with the sample and the particular analytical parameter to be tested." Sample containers must be specified in the SAP; this decision should not be left to the discretion of the sampling personnel.

Handling, Packaging, and Shipping of Samples, LANL-ER-01.03, Rev. 1, page 4 of 15, Section 6.0. C. The SOP indicates that sample containers may require decontamination. It should also specify the procedures to be used for the decontamination of these

containers and explain why precleaned containers will not be used.

Handling, Packaging, and Shipping of Samples, LANL-ER-01.03, Rev. 1, page 5 of 15, Section 6.2.1. The SOP indicates that additional training is required for personnel that pack and ship hazardous samples. The SOP should specify the required training.

Sample Control and Field Documentation, LANL-ER-SOP-01.04, Rev. 3, page 3 of 20, Section 6.0, A. This SOP indicates that the sample management office will determine the required sample volumes for analytical samples. However, SOP-01.02 presented required sample volumes. This SOP should be revised to resolve this discrepancy.

Sample Control and Field Documentation, LANL-ER-SOP-01.04, Rev. 3, page 4 of 20, Section 6.0,D. The SOP indicates that field team members must follow SOPs for sample collection. The SOP should specify the procedures applicable to sample collection.

Management of Environmental Restoration Program Radioactive Materials Management Areas, LANL-ER-SOP-01.09, Rev. 0, page 2 of 5, Section 6.1.1. The SOP states that three bulleted criteria are identified as benchmarks to use in determining whether a radioactive materials management area (RMMA) is required within the site. The SOP does not address circumstances under which field screening techniques may not be sensitive enough to use in determining whether an RMMA is required.

Management of Environmental Restoration Program Radioactive Materials Management Areas, LANL-ER-SOP-01.09, Rev. 0, pages 3 and 4 of 5, Sections 6.1.2 and 6.2.2. The SOP states that standard yellow flag and tape barriers, and "Caution" postings, will be used to control radiological areas on private property. It is not clear whether an explicit warning of radiological hazard or the standard radiation symbol will be used to establish warning information at the site boundaries. Also, the criteria for using nonstandard barriers are not clearly defined. If standard radiological hazard postings are not to be used on private property, this deviation should be explained.

Land Surveying Procedures, LANL-ER-SOP-03.01, Rev. 1, page 3 of 8, Section 6.0. ***The SOP indicates that procedures from the Laboratory Survey Manual are included in this section. However, these procedures are either referenced or briefly discussed. If these procedures are important, they should be included in this SOP.***

Petrography, LANL-ER-SOP-03.04, Rev. 0, page 2 of 4, Section 6.0. ***This SOP was identified as presenting procedures for describing the petrographic characteristics of rock specimens. However, this section only references other text. This SOP should be revised to include step-by-step procedures for describing rock specimens.***

Geologic Mapping of Bedrock Units, LANL-ER-SOP-03.09, Rev. 0, page 6 of 10, Section 6.3. ***According to the SOP, "a basic assumption is that individuals applying this procedure are competent, well-trained geologic mappers." The SOP should provide the criteria by which this competence should be evaluated.***

Trenching and Logging, LANL-ER-SOP-03.10, Rev. 0, page 2 of 5, Section 4.0. ***This SOP should include requirements for health and safety precautions for trenching in potentially contaminated areas.***

Coordinating and Evaluating Geodetic Surveys, LANL-ER-SOP-03.11, Rev 0, page 3 of 7, Section 6.1. ***This SOP should include requirements for health and safety training of field personnel.***

Field and Laboratory Notebook Documentation for Environmental Restoration Earth Science Studies, LANL-ER-SOP-03.12, Rev 0, page 3 of 10, Section 3.3. ***This section should define the term "mined muck."***

Field and Laboratory Notebook Documentation for Environmental Restoration Earth Science Studies, LANL-ER-SOP-03.12, Rev 0, page 4 of 10, Section 6.1.1. ***This section and subsequent sections discuss requirements for logbooks used for laboratory work. The SOP should specify the type of laboratory—that is, analytical or geologic.***

Well Development, LANL-ER-SOP-05.02, Rev. 0, page 3 of 8, Section 4.0. *The SOP indicates that well development settles the filter pack. The filter pack should be settled during well installation, before the bentonite plug and grout are installed. One method that might be used is surging during installation of the filter pack, which will settle the filter pack material and prevent the formation of voids. The SOP should discuss methods of settling the filter pack material and preventing the formation of voids.*

Well Development, LANL-ER-SOP-05.02, Rev. 0, page 3 of 8, Section 4.0.B. *The SOP indicates that "rawhiding" is a method of well development that reintroduces development water into the well. The SOP should discuss the implications of reintroducing potentially contaminated ground water into a well.*

Well Development, LANL-ER-SOP-05.02, Rev. 0, pages 3 and 4 of 8, Section 4.0.D. *The SOP indicates that air surging can blow water out of the top of the well. The SOP should explain how this water, which may be contaminated, might be collected.*

Sampling for Volatile Organics, LANL-ER-SOP-06.03, Rev. 0, page 2 of 7, Section 4.0. *This SOP indicates that "the sensitivity of the analysis and the fragility of the samples require that all volatile samples are collected in duplicate." The wording of the sentence is ambiguous and appears to indicate that a duplicate sample is required of each volatile organic compound (VOC) sample. The SOP should be revised to indicate that a minimum of two containers are required for each VOC sample.*

Hand Auger and Thin-Wall Tube Sampler, LANL-ER-SOP-06.10, Rev. 0, page 2 of 8, Section 6.0.D. *The SOP presents a procedure for collecting composite samples with a bucket auger. However, if the bucket auger is used for the collection of grab samples, the procedure should be included in this SOP.*

Surface Water Sampling, LANL-ER-SOP-06.13, Rev. 0, page 1 of 9, Section 4.0. *The SOP indicates that an alternative method of surface water sample collection involves the use of a "breaker." The SOP should correct the term "breaker" and replace it with "beaker."*

Surface Water Sampling, LANL-ER-SOP-06.13, Rev. 0, pages 2 and 3 of 9, Section 6.0.E. ***This section of the SOP discusses collecting ground water samples with a peristaltic pump. The SOP should explain why this procedure is presented with methods for collection of surface water samples.***

Collwasa Sampler for Liquids and Slurries, LANL-ER-SOP-06.15, Rev. 0, page 2 of 8, Section 6.0. D. ***The SOP indicates that bulging containers require special handling but fails to discuss the specific handling procedures. The SOP should discuss these procedures, or health and safety concerns with handling bulging containers.***

Measurement of Gamma-Ray Fields Using a Sodium Iodide Detector, LANL-ER-SOP-06.23, Rev. 0, page 2 of 4, Section 4.0. ***The SOP describes this technique as quantitative. However, it fails to discuss or control several factors that affect the ability to make quantitative measurements, including (1) the energy distribution of the emitter(s), (2) the techniques used to calibrate the detector for different radioactivity sources, (3) the interdetector variability, and (4) the QA methods used. The survey techniques described should be considered qualitative or semiquantitative.***

Measurement of Gamma-Ray Fields Using a Sodium Iodide Detector, LANL-ER-SOP-06.23, Rev. 0, page 3 of 4, Section 6.0. ***The SOP states that a source check should be performed. However, no criteria are provided for determining that source checks are performed consistently, such as the comparability of data. The SOP should be revised to include such criteria.***

Measurement of Gamma-Ray Fields Using a Sodium Iodide Detector, LANL-ER-SOP-06.23, Rev. 0, page 3 of 4, Section 6.0. ***The SOP states that, for an accurate count rate to be obtained, an instrument reading must be obtained for at least 15 seconds (or the duration indicated in the operations manual for specific models). However, vendor manuals often fail to address the accuracy of the count rate. Fifteen seconds are not always sufficient to minimize the counting error. The SOP should be revised to state that counting time should be established in such a way that the counting error is held to a prespecified coefficient of variation, which may be prespecified for known types of***

detectors. In this way, the count variability is reduced to a small fraction of the interlocation variability.

Measurement of Gamma-Ray Fields Using a Sodium Iodide Detector, LANL-ER-SOP-06.23, Rev. 0, page 4 of 4, Section 6.0. The SOP requires that a scan rate of 1 to 2 inches per second (or the rate indicated in the operations manual for specific models). Many vendor manuals do not specify a scan rate. The SOP should be revised to state that an appropriate scan rate must be developed for specific types of surveys, considering various factors, such as the desired lower limit of detection, overburden, and radionuclide(s).

Measurement of Gamma-Ray Fields Using a Sodium Iodide Detector, LANL-ER-SOP-06.23, Rev. 0, page 4 of 4, Section 6.0. The SOP directs the surveyor to record other relevant data. It should be revised to specify the types of data or provide a reference procedure.

Fluid Level Measurements, LANL-ER-SOP-07.02, Rev. 0, page 2 of 8, Section 4.0. The SOP indicates that a steel tape can be used to obtain depth measurements that are accurate to 0.01 foot. The SOP should explain how this accuracy can be achieved.

Aquifer Pumping Tests, LANL-ER-SOP-07.04, Rev. 0, page 2 of 10, Section 4.0. This SOP discusses conducting a constant rate pumping test. However, if a constant head pumping test were used, certain changes would be required. The SOP should include the procedures necessary for conducting a constant head pumping test.

Thin Section Preparation, LANL-ER-SOP-09.01, Rev. 0, page 2 of 7, Section 6.0. This SOP was identified as presenting the procedures necessary for preparing thin sections. However, the SOP actually refers the reader to other texts for these procedures. The SOP should be revised to include these procedures.

Operation of Siemens X-Ray Diffractometer, LANL-ER-SOP-09.03, Rev. 0, page 1 of 5, Section 4.0. The title of this section is "Background and/or Cautions"; however, little background information is provided. This section should provide the basic operational principles of the X-ray diffractometer, including an exhibit showing the major components of the instrument.

Operation of Siemens X-Ray Diffractometer, LANL-ER-SOP-09.03, Rev. 0, page 2 of 5, Section 6.1. The "Calibration" section references the "Calibration and Alignment" SOP (SOP-09.04) ; however, neither SOP provides the maximum elapsed time between calibrations of the instrument. The SOP should provide this information, and calibration dates should be recorded in the instrument run log (as discussed in SOP-09.04, Section 8.0) so that the operator can verify that the instrument has been properly calibrated.

Operation of Siemens X-Ray Diffractometer, LANL-ER-SOP-09.03, Rev. 0, page 3 of 5, Section 6.2. The "Diffractometer Operation" section recommends that the samples be analyzed without a standard or standard reference material (SRM). EPA recommends that a standard or SRM be analyzed, before analysis of the samples, to verify the proper operation of the diffractometer.

Operation of Siemens X-Ray Diffractometer, LANL-ER-SOP-09.03, Rev. 0, page 3 of 5, Sections 6.4 and 6.5. Each section is too brief and contains information that is insufficient for conducting the system shutdown or data analysis.

Calibration and Alignment of the Siemens Diffractometers, LANL-ER-SOP-09.04, Rev. 0, page 1 of 9, Section 2.2. The discussion in this section is confusing and should be revised to clearly state that, although the diffractometer custodian shall align the instrument, other properly trained personnel may calibrate the instrument.

Calibration and Alignment of the Siemens Diffractometers, LANL-ER-SOP-09.04, Rev. 0, page 3 of 9, Section 6.1. The discussion in this section and section 8.0 suggests that there is a maximum elapsed time between diffractometer calibrations; however, the SOP does not specify the time. The calibration interval should be specified so that the

operator knows whether the instrument requires recalibration.

Calibration and Alignment of the Siemens Diffractometers, LANL-ER-SOP-09.04, Rev. 0, page 3 of 9, Section 6.1. The calibration procedures in this section use a silica standard to set 2π. EPA recommends that a second standard, and a sample having a more complex matrix, be analyzed after the calibration to show that the instrument is operating properly. This same standard and sample would be analyzed each day before the samples are analyzed.

Clay Mineral Separation for X-Ray Diffraction Analysis, LANL-ER-SOP-09.05, Rev. 0, page 2 of 5, Section 6.0. The SOP specifies no QA/QC procedures to be used with the clay mineral separation for X-ray analysis. EPA recommends that a blank, or a clay mineral standard of known clay type and content, be used to verify that the procedure is conducted properly. Although the QA/QC procedures are not needed for each clay separation—they should be conducted at a frequency that will identify problems and minimize the number of sample analyses that are affected.

Clay Mineral Separation for X-Ray Diffraction Analysis, LANL-ER-SOP-09.05, Rev 0, page 4 of 5, Section 6.5.1. This section should specify the approximate amount of clay mineral to be suspended.

Zeolite Purification and Separation, LANL-ER-SOP-09.06, Rev. 0, page 2 of 4, Section 6.0. The SOP specifies no QA/QC procedures to be used in the zeolite purification and separation. EPA recommends that a blank, or a zeolite mineral standard of known zeolite type and content, be used to verify that the procedure is conducted properly. Although the QA/QC procedures are not needed for each zeolite separation, they should be conducted at a frequency that will identify problems and minimize the number of sample analyses that are affected.

Screening of PCBs in Soil, LANL-ER-SOP-10.01, Rev. 0, page 2 of 5, Section 3.0. The detection limit of the polychlorinated biphenyls (PCB) screening procedure—50 milligrams per kilogram—is very high. In addition, the detection technique used in the

screening is prone to false positive identifications. Therefore, a PCB investigation should also include laboratory analyses conducted by using an approved PCB analysis procedure. Generally, 10 to 20 percent of the screened samples are sent for laboratory verification analysis.

Screening of PCBs in Soil, LANL-ER-SOP-10.01, Rev. 0, page 4 of 5, Section 6.0. The indicator discussion states that, "if there is no organic chlorine present then the mercury turns vivid purple with the indicator; if there are no chlorinates present then the mercury is tied up and no color results." Based on this information, it is difficult to determine what constitutes a positive identification. Should the procedure read "if there is organic chlorine present, then the mercury turns vivid purple"?

Fidler Instrument System, LANL-ER-SOP-10.04, Rev. 0, page 6 of 16, Section 6.1.1.8. The SOP presents an equation for calculating the correct channel number for the energy emitted from a check source. The equation presented in the SOP for the case using the 59.4 thousand electron volts (keV) X-ray emitted from Americium-241 is as follows:

59.4 keV * channel # = channel # 152

The correct equation is as follows:

59.4 keV * 1/(0.392 keV/channel) = channel # 152

The SOP should be revised to present this equation.

Fidler Instrument System, LANL-ER-SOP-10.04, Rev. 0, page 8 of 16, Section 6.2. This section states that the Instrument Control Chart is included as Attachment B. It is actually Attachment C. This statement should be revised.

Field Analysis of Total Hydrocarbons Using the Hanby Method, LANL-ER-SOP-10.05, Rev. 0, page 3 of 7, Section 6.3. The extraction procedure recommends that personnel wear appropriate chemical-resistant gloves and safety glasses while working with the

extraction solvent. Based on the toxic properties of carbon tetrachloride, respirators with organic vapor cartridges would protect extraction personnel more effectively. EPA strongly recommends that such respirators be used.

Field Analysis of Total Hydrocarbons Using the Hanby Method, LANL-ER-SOP-10.05, Rev. 0, page 4 of 7, Section 6.3. The extraction procedure recommends that aluminum foil be used to control solvent vapor. EPA recommends that, before the aluminum foil is used, it be rinsed with solvent to remove the residual oils from the manufacturing process. If extracted by solvent contact or vapors, these oils could lead to false positive results.

Field Analysis of Total Hydrocarbons Using the Hanby Method, LANL-ER-SOP-10.05, Rev. 0, page 4 of 7, Section 6.4. The extraction procedure recommends vigorous shaking and periodic venting of the funnel to release pressure in the separatory funnel. Many petroleum products, including automobile fuels, are composed of volatile hydrocarbons that may be lost by following this procedure. EPA recommends that the separatory funnel be agitated gently for a longer time period and occasionally vented.

High Explosives Spot Test, LANL-ER-SOP-10.06, Rev. 0, page 2 of 6, Section 4.0. The last paragraph of this section describes how the spot test works; however, the discussion is vague and difficult to understand.

High Explosives Spot Test, LANL-ER-SOP-10.06, Rev. 0, page 2 of 6, Section 4.0. The SOP should state that reagent 3 (N-1-naphthylethylenediamide) is light-sensitive and is to be stored in a closed box when not in use. The SOP should also specify a period of time during which this reagent can be used or specify that fresh reagent will be used for each testing event.

High Explosives Spot Test, LANL-ER-SOP-10.06, Rev. 0, page 2 of 6, Section 4.0. This section states that personnel must wear chemical-resistant gloves when handling chemicals. EPA recommends using double gloves, including an inner latex glove and an outer chemical-resistant glove, suitable for the chemicals being handled.

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 3 of 11, Sections 3.2 and 4.1. ***The SOP states that the decision amount (DA) is the activity level above which the waste is considered to be radioactive. The SOP provides direction for calculating the DA from a single measurement of background but does not explain how to calculate it for cases in which the background is determined from several samples. For cases with a variable background, insufficient sampling may lead to an elevated DA. The SOP should be revised to describe methods for evaluating local background variability.***

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 4 of 11, Section 4.1.1. ***The SOP states that field release of surface contaminated wastes is determined on the basis of whether the instrument has a standard minimum detectable activity (MDA) below the level specified by a particular U. S. Department of Energy (DOE) order. This MDA is based on counting error, because the SOP does not consider the following factors:***

- ***A specified margin by which the standard MDA must fall below the level specified by the DOE order***
- ***Error factor associated with each measurement***
  - ***Should be considered and propagated in the MDA and sample activity calculations***
  - ***Should be applied so that the resulting MDA remains conservative***
- ***Measurement for hard-to-detect nuclides, such as tritium***
- ***Effect of surface coverings, moisture, and other possible interferences***
  - ***Should be considered and addressed in the calculation of the MDA***

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 4 of 11, Section 4.1.1. ***The SOP fails to either (1) address the problem of absorption by some materials, or (2) specify the process by which materials will be considered subject only to the surface contamination screening.***

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 5 of 11, Section 6.1. ***The SOP states that the number of samples required for background determination depends upon the volume of waste or soil to be measured for radioactivity. The SOP does not provide or reference a sampling scheme, and does not consider any other relevant factors related to the production of the waste. It may be necessary to conduct a preliminary trial, before determining the final sample size, to estimate variability between samples. The need for a precise estimate of background radioactivity concentrations must be based on the data quality objectives process described by EPA, and cannot be addressed as simply as stated within this procedure. For example, the need to characterize background depends precisely on the difference between background and some action level or cleanup criteria. Where this difference is large, a small set of background measurements may be acceptable; however, where the cleanup criteria are less than or equal to the mean background, many background measurements may be appropriate. Although Section 3.0 refers generally to the use of statistically sound methods, the SOP does not discuss specific statistical methods; therefore, a review of statistical methods was not possible.***

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 6 of 11, Section 6.1.C. ***The SOP states that the MDA is calculated for field screening when an adequate MDA is available, and the DA is calculated when only field screening is performed. The MDA and DA are necessary to describe a measurement process, and both should be routinely reported. The MDA is the a priori value used to describe a measurement result. The DA is the a postiori value used with a report of an analytical result for reporting the actual detection limit or a less than value ("<"). The DA normally represents the one-sided upper tail of the distribution of background, as determined from (1) a single count (in the case of a paired test), or (2) population statistics (in the case of a series of samples that represent background). The MDA normally represents the maximum true activity that could be missed, based on a single count, at a specified confidence interval. The methodology provided within this SOP applies only to single paired count tests,***

or to a comparison of multiple measurements to a single background count. The SOP or site-specific work plans should describe the methodology for calculating MDA and DA in the case in which the background population is described by several samples. The SOP should support the use of only the MDA or the DA.

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 6 of 11, Sections 6.2 and 6.3. The SOP provides equations for calculating the MDA and DA. The SOP should provide the method for calculating the MDA and DA when the background counting time is longer than the sample counting time, which is typical. The MDA should be specified as the MDA based only on counting error. If scanning measurements are to be performed, the SOP should provide methods for calculating MDA for scanning measurements. The surveyor usually does not have the option of increasing detector area; however, the background counting time may be increased.

Field Monitoring for Surface and Volume Radioactivity Levels, LANL-ER-SOP-10.07, Rev. 0, page 7 of 11, Section 6.4.A. The SOP states that items may be classified as nonradioactive on the basis of this SOP. The SOP does not address (1) selection of an appropriate instrument for the isotope(s) of concern, (2) sample frequency (100 percent scans of surfaces), (3) handling enclosed or inaccessible surfaces or dismantling equipment, or (4) special detectors for corners that cannot be surveyed with standard detectors. The techniques for calibrating detectors are not available for review. The SOP should be revised to discuss all of these, in addition to factors that could affect the measurement process, such as self-absorption in swipes (for alpha emitters) and backscatter correction.

Operation of the Spectrace 9000 Field-Portable X-Ray Fluorescence Instrument, LANL-ER-SOP-10.08, Rev. 0, page 5 of 10, Section 6.2. This section states that the precision of each element should be determined for one sample in every batch of 20 samples. The precision is determined by repeatedly measuring the element at its action level. The precision objective is 20 percent relative

standard deviation. However, if the action level is near the instrument detection limit, instrument precision will probably not be good, and the precision objective may not be attainable. A more useful indication of precision would be multiple analyses of either an SRM (National Institute of Standards and Technology SRM 2710 or 2711) or a thoroughly characterized sample and an evaluation of the precision of the elements of interest. These precision measurements should be recorded and tracked, because a loss of precision may indicate deterioration of the source.

Radiation Scoping Surveys, LANL-ER-SOP-10.10, Rev. 0, page 3 of 5, Section 4.0.
Before the acceptability of this SOP for its specified purpose can be evaluated, sensitivity of the techniques described for various radioisotopes must be determined and specified.

The SOP states that the absolute value of exposure rates is not important. Exposure rate, which is a defined physical quantity, cannot be measured—with the equipment described—without a calibration; further, if more than one detector is used, measurements will not be directly comparable without calibration data. In addition, the operating mode (energy window) and calibration technique for the Fidler detector should be described by incorporation or reference. The energy range for the sodium iodide (NaI) detector should be specified.

Radiation Scoping Surveys, LANL-ER-SOP-10.10, Rev. 0, page 4 of 5, Section 6.2.
The SOP describes the technique for measuring the background level. It is not clear how the background location is selected to assure that the area selected for background has not been affected by operations. In the case of survey areas covered by artificial surfaces, it is not clear that the measurement techniques will have sufficient sensitivity; this assumption should be tested for the nuclides of concern.

Radiation Scoping Survey, LANL-ER-SOP-10.10, Rev. 0, page 5 of 5, Section 6.2.B. The SOP states that the background level should be redetermined every hour. A combination of time and number of points measured since the last background determination may be more appropriate. Background is normally determined to a higher precision than each individual measurement. Counting time for individual measurements, grid spacing, and internode scanning are not discussed.

Although the SOP states that it provides agreement criteria for a check source, it does not specify frequency and out-of-control actions.

Berthold Low Alpha and Beta Activity Counter Calibration, Quality Control Detection Limit and Use, LANL-ER-SOP-14.01, Rev. 0, pages 2 and 6 of 13, Sections 2.0 and 6.3. The SOP defines the lower level of detection as the minimum radioactivity concentration level necessary to be considered statistically separate from the normal background level. This definition appears to conflict with the definitions provided in other procedures reviewed. Typically, the lower level of detection, MDA, DA, and similar terms refer to detection capability. The DA value—also referred to as the critical level—refers to the minimum value that can be considered different from the background distribution. The form of equation presented in Section 6.4 also implies that the MDA is to be determined from this calculation. However, the written description implies that the equation is used to determine the critical level or DA value.

Berthold Low Alpha and Beta Activity Counter Calibration, Quality Control Detection Limit and Use, LANL-ER-SOP-14.01, Rev. 0, page 7 of 13, Section 6.4. The formula for calculating MDA is incorrect. The MDA or lower level of detection (L_D) is based on the standard deviation of the background count, not the count rate as shown in Appendix A (Table 1; see page 16). The example cited, and other sampling data, make it apparent that, for longer count times, the

MDA expressed as the sum of the background rate and the L_D decreases with increasing count times for a fixed count rate. The SOP should present the correct equation.

<u>Berthold Low Alpha and Beta Activity Counter Calibration, Quality Control Detection Limit and Use, LANL-ER-SOP-14.01, Rev. 0, pages 2 and 7 of 13, Sections 2.0 and 6.5</u>. It is not clear whether (1) this SOP is to be used solely for screening of activity before submittal to a radiochemistry laboratory, or (2) data obtained from implementing this SOP will be used for final determination of release. If this procedure is not considered sufficient for release, the SOP should so state.

TABLE 1
ILLUSTRATION OF DETECTION LIMIT QUANTITIES

Counts	Time (Minutes)	Rate (CPM)	Count Sigma (CPM)	Rate Sigma (CPM)	Count L_D (CPM)	Rate L_D (CPM)	CV (%)	MDA (CPM)
13.8	1	13.80	3.71	3.7	20.0	20.0	26.92	33.78
27.6	2	13.80	5.25	2.6	27.1	13.6	19.03	27.37
276	20	13.80	16.61	0.8	80.0	4.0	6.02	17.80
1380	100	13.80	37.15	0.4	175.4	1.8	2.69	15.55
10	1	10.00	3.16	3.2	17.4	17.4	31.62	27.41
10	2	5.00	3.16	1.6	17.4	8.7	31.62	13.71
10	3	3.33	3.16	1.1	17.4	5.8	31.62	9.14
10	5	2.00	3.16	0.6	17.4	3.5	31.62	5.48
10	10	1.00	3.16	0.3	17.4	1.7	31.62	2.74
100	10	10.00	10.00	1.0	49.2	4.9	10.00	14.92
1,000	100	10.00	31.62	0.3	149.8	1.5	3.16	11.50
10,000	1000	10.00	100.00	0.1	467.7	0.5	1.00	10.47
10,000	100	100.00	100.00	1.0	467.7	4.7	1.00	104.68
10,000	10	1,000.00	100.00	10.0	467.7	46.8	1.00	1,046.77
10,000	5	2,000.00	100.00	20.0	467.7	93.5	1.00	2,093.54
10,000	4	2,500.00	100.00	25.0	467.7	116.9	1.00	2,616.93
10,000	3	3,333.33	100.00	33.3	467.7	155.9	1.00	3,489.24
10,000	2	5,000.00	100.00	50.0	467.7	233.9	1.00	5,233.86
10,000	1	10,000.00	100.00	100.0	467.7	467.7	1.00	10,467.71

Notes:

CPM = Counts per minute
CV = Coefficient of variation
L_D = Lower level of detection
MDA = Minimum detectable activity

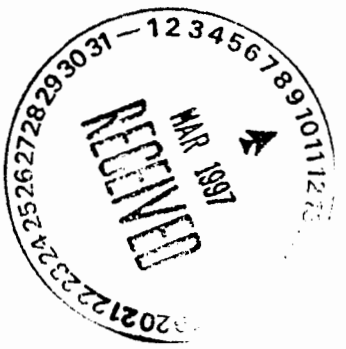
Berthold Low Alpha and Beta Activity Counter Calibration, Quality Control Detection Limit and Use, LANL-ER-SOP-14.01, Rev. 0, page 7 of 13, Section 6.5.
Because use of the provided spillover factor is not clear, the following questions are left unanswered:

- ***Because this factor will apply to evaluation of detector performance for beta emission measurements, should it be determined as part of the beta calibration?***

- ***Are the "lost counts" added back to the alpha measurement?***

The factor should be calculated by adding the net alpha counts in the alpha window to the net alpha counts in the beta window, and dividing the sum by the product of the alpha source activity and the detector efficiency. The corrected alpha count is calculated by (1) multiplying this factor by the net alpha counts in the alpha window, and (2) dividing the product by the detector efficiency. The SOP should be revised to reflect these changes.

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



MAR 0 3 1997

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

RE: Comments on LANL NOD Response of the LANL RCRA RFI Report for PRSs in Technical areas (TAs) -14 and -12/67, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a review of Response to the NOD for Los Alamos National Laboratory (LANL) RCRA RFI Report for Potential Release Sites (PRSs) in Technical Areas 14 and 12/67, submitted by LANL on October 15, 1996. The EPA agrees with LANL's explanation on these comments raised in the NOD except Comment No. 3 on PRS 12-004(b). (See Site-Specific Comment Page).

Based on the Response, EPA recommends that six more sites not be added to the LANL RCRA/HSWA permit (see attached Updated Summary Page), and that the Class 3 permit modification not be initiated by LANL until all comments have been resolved.

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

Sincerely yours,

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

Enclosure

Review Summary

RFI Report for Technical Areas 14 and 12/67
Los Alamos National Laboratory

Sites Where No Further Action (NFA) Appears Appropriate (5)
Based upon the information provided, EPA tentatively agrees with the NFA proposals for the following sites:

PRS 14-002(f), PRS 14-007, PRS 14-002(c), PRS 14-002(d), PRS 14-002(e)

Sites Where it is Appropriate Not To Add To LANL RCRA/HSWA Permit (20)
Based upon the information provided, EPA tentatively agrees the following sites are not potential SWMUs and do not need to be added to LANL RCRA/HSWA Permit:

AOC C-12-001, AOC C-12-002, AOC C-12-003, AOC C-12-005, AOC C-14-001, AOC C-14-002, AOC C-14-008, AOC C-14-004, AOC C-14-005, AOC C-14-006, AOC C-14-007, AOC C-14-009, PRS 14-004(c), Central Area Drainage, **C-12-004, PRS 12-004(a), PRS 14-006, AOC C-14-003, PRS 14-002(b) and Firing Pad Drainage***

Sites Where NFA Does Not Appear Appropriate (5)
Because these proposed sites are still active, NFA does not appear to be appropriate:

PRS 14-001(a), PRS 14-001(b), PRS 14-001(c), PRS 14-001(d), PRS 14-001(e)

Sites Where Additional Information is Needed (1)
Additional information or further investigation is required for the following sites:

PRS 12-004(b)

Sites Where VCA is Proposed or Being Undertaking (7)
Further information will need to be provided on these sites prior to a decision being finalized:

PRS 12-001(a), PRS 12-001(b), PRS 14-001(f), PRS 14-002(a), PRS 14-009, PRS 14-010, PRS 14-003

Sites Where Deferred Action is Proposed (4)
Deferred action is proposed as these sites are still active:

PRS 14-001(g), PRS 14-005, PRS 14-004(a), PRS 14-004(b)

* **Comments of these sites have been resolved.**

SITE-SPECIFIC COMMENTS

1. **Comment No. 3, PRS 12-004(b)**
Section 5.9.4.3, Page 5-25: Both samples were taken next to the aluminum pipe instead of in the pipe as specified in the Work Plan. Given that the site has no documented history, there is no knowledge of the depth of the pipe, and no knowledge of site activities, LANL shall explain the reason why they did not sample inside the pipe? **(BPJ)**

LANL RESPONSE: The approved work plan is internally inconsistent. Section 5.2.6.3 (Page 5-2-10) of the text states that one sample at 6 inches and one at the soil-tuff interface would be collected. Table 5-6 (Page 5-2-12) states that "soil in pipe" is to be sampled. In the field, the soil inside the pipe was screened for elevated radiation, and none was detected. The decision was made to sample outside the pipe, because this was the only way to sample at the soil-tuff interface. In addition, sampling outside the pipe determines whether a release has occurred, and sampling at the soil-tuff interface determines whether any mobilization of contaminants has occurred.

DISCUSSION: The EPA disagrees. LANL did conduct the investigation of the contaminant mobilization in the horizontal direction. However, LANL must delineate the possible contamination in vertical direction as well. In fact, there are three places in the approved work plan mentioned about the sampling in the pipe:

1. Page 5-2-7: The Work Plan stated,"...two samples will be taken from the center of the aluminum pipe, a surface soil sample (0-6 in) and a sample at the soil-tuff interface."

2. Page 5-2-10: The Work Plan stated,"Sampling at this SWMU will consist of the collection of one soil sample to a depth of 6 in. And at the soil-tuff interface."

3. Page 5-2-12, Table 5-6: The Work Plan stated the sample media is " soil in pipe".

Therefore, the Work Plan clearly stated that sampling would occur inside the pipe without any confusion as LANL stated in the Response to NOD. Before granting the site NFA, LANL must answer whether the site poses risk to human health and/or the environment (horizontally and vertically). LANL must re-sample the soil-tuff interface according to the Work Plan and remove the pipe.

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

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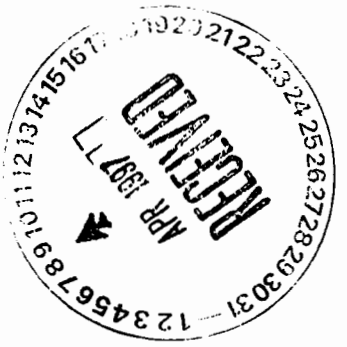

Mr. Benito Garcia, Chief
New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
2044A Galisteo St.
Santa Fe, NM 87505

RE: Technical Review of Los Alamos National Laboratory RFI Report for Potential Release Site 21-002(b) in Technical Area 21, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The U.S. Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Facility Investigation (RFI) report for PRS 21-002(b) located in TA 21, dated July 3, 1996. The EPA has found the report to be incomplete and enclosed is a notice of deficiencies.

Based upon the soil sample results presented in the report, the EPA recommends No Further Action (NFA) request not be approved until all comments have been resolved. If you have any questions or need additional information, please contact Mr. Allen T. Chang of my staff at (214) 665-7541.

Sincerely yours,

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

Enclosure

NOTICE OF DEFICIENCIES
LOS ALAMOS NATIONAL LABORATORY (LANL)
RFI REPORT FOR PRS 21-002(b) in TA-21

1. Page 15, Section 3.5.1: Risk due to background, first full paragraph: "...default exposure assumptions...described in Section 3.4.2" This section does not exist in the report and is actually Section 3.5.2. **(Best Professional Judgement (BPJ))**

2. Page 19, Section 4.1.1 Inorganic Analyses: The reviewer does not understand why the mercury data are qualified UJ because "The recommended holding time for mercury was exceeded by about 20 days." The definition of UJ (See page 18) stated: "Estimated undetected quantity. The analyte was not detected in the sample, but there were one or more QC parameters associated with this sample that were outside allowed limits."

   If mercury was not analyzed due to the holding time problem, then LANL shall resample the site for mercury. **(BPJ)**

3. Page 19, Section 4.1.2, Organic Analyses: The report states, "...one of more of the internal standards were outside acceptance criteria in samples AAC0111, AAC0114..." Please explain more clearly, and list those internal standards and its corresponding acceptance criteria. When the analytes are qualified UJ, this does not mean either the laboratory and LANL are free of responsibility. Situations like "...one or more QC parameters associated with this sample that were outside allowed limits.", or "...one of more of the internal standards were outside acceptance criteria...", then the laboratory must request new sample and re-analyze it. LANL must resubmit to the laboratory a new sample from that location. Otherwise, the investigation is not complete. **(BPJ)**

4. Page 27, Section 5.1.7.1 Screening Assessment: The reviewer questions LANL screening assessment approach used in this investigation. Multiple contaminants below SAL/AL require further evaluation due to the potential for additive or synergistic toxic effects. That is what the Multiple Chemical Evaluation (MCE) approach for. MCE assumes simultaneous exposure to all constituents by a given receptor. However, when LANL conveniently dropped some of the chemicals which have greater concentrations than their respective SAL and/or UTL priori to performing MCE, this defeated the whole purposes of MCE. **(BPJ)**

5. Page 29, 1st paragraph: The report states, "There are no known processes, past or present, at TA-21 that would have generated polycyclic aromatic hydrocarbons (PAHs) such as benzo(g,h,i)perylene, ...These chemicals are typically

associated with asphalt, fossil fuels, or products of combustion...These analytes are not retained as COPCs"." If those PAHs are from the sources as LANL described, then PAHs would show up in the background at the same level. LANL shall have no trouble in providing supportive evidence. **(BPJ)**

6. Page 29, 3rd paragraph: Lead was present in one sample at concentration equal to its SAL of 400 mg/kg. We shall not overlook the fact that lead was also found at the neighboring sample locations at several times higher than the background UTL. It looks like that lead peaks at Location 21-2507 and spreads in all directions. Besides, those samples were taken from 0 - 6 inches, it is not known whether lead already infiltrated down to subsurface. LANL shall sample both surface and subsurface from Location 21-2507 to delineate the lead contamination. **(BPJ)**

MAY 07 1997

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

RE: Los Alamos National Laboratory Sampling and Analysis Plan for PRS 33-008(c), EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The U.S. Environmental Protection Agency (EPA) has completed a technical review of the Los Alamos National Laboratory (LANL) Response to the NOD of the Sampling and Analysis Plan concerning Technical Area 33, Potential Release Site (PRS) 33-008(c) dated March 27, 1997. The EPA agrees with LANL's explanation on these comments raised in the NOD and recommends approval of the Plan which includes the Sampling and Analysis Plan for PRS 33-008(c), and the Response to the NOD, dated March 27, 1997.

Since LANL did not emphasize the use of composite samples in the Plan, composite samples are not allowed in the investigation; therefore, all samples must be grab samples. If you have any questions or need additional information, please contact Mr. Allen T. Chang of my staff at (214)665-7541.

Sincerely yours,

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

FEB 1998

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

MAY 13 1997

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

Re: TA-1 RFI Report, NOD comments on Aggregates C and D, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for TA-1, Aggregates C and D, dated March 18, 1996, and has determined the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

NOD Comments on Aggregates C and D

Page i; Executive Summary, Third paragraph: In this paragraph LANL mentions one of the chemicals of concern in TA-1 is solvents; however, there was no field screening for volatiles and no samples were analyzed in the laboratory. Please explain. **BPJ.**

General Comment #1: LANL makes background comparisons to sample soil concentrations without providing screening action level (SAL) comparisons. In tables throughout this report, LANL substitutes "NA" for the arsenic and beryllium SAL with legends identifying "NA" as "not available." SALs for arsenic and beryllium are available. LANL agreed to evaluate risk and carry forward COPCs where the sample concentrations of a COPC exceeded the screening action level (SAL) but were less than the background level. Eleven soil samples at Aggregate C detected beryllium at concentrations greater than both the SAL (1.3 mg/kg) and the reported UTL (1.95 mg/kg). Also, please note that the report was not reviewed with regards to risk associated with radionuclides.

Comparing soil concentrations to background is acceptable as long as risk due to background based on a SAL is provided. LANL should revise the RFI report to include risk due to background from those constituents which present such risk (e.g., beryllium, arsenic) in the risk characterization. This is in keeping with the understanding established at meetings between EPA and LANL held in Dallas, Texas, on September 18-19, 1995. This information is important to the risk management decision when establishing cleanup levels for Chemicals of Potential Concern (COPC's). Clean up decisions may be influenced by the existing risk from background concentrations. **BPJ.**

General Comment: In the approved workplan there is a statement that indicates that LANL will take soil samples down to 4 feet; however, it appears that the deepest soil sample taken went to only 12 inches. Please clarify. **BPJ.**

General Comment: Although there are several tables in the RFI Report containing laboratory analytical results, the way the information is presented is very awkward to review and some analytical information is missing. For each aggregate, please include the following:

> A table which includes all laboratory analytical results, not just the results that are above SALs or background levels. The table should include the sampling interval (depth), the analytical method, the detection limit, the UTLs, background concentrations for applicable constituents, and the SALs. **BPJ.**

General Comment: EPA will require deeper sampling at the following sample ID locations to determine the vertical extent of

contamination: AAA1574 (lead 186 ppm); AAA1577 (lead 50 ppm); AAA1583 (63.4 ppm); AAA1579 (lead 49 ppm); AAA1580 (lead 45 ppm); AAA1640 (lead 45 ppm); AAA0716 (3 SVOCs); AAA0717 (5 SVOCs); AAA0718 (5 SVOCs); AAA0720 (4 SVOCs); AAA0721 (3 SVOCs); and, AAA0730 (2 SVOCs). **BPJ.**

General Comment: LANL needs to get approval of the ~~their~~ ecological risk assessment methodology from NMED. As of May 1997, EPA risk assessors still had several concerns about LANL's ecological risk assessment approach. Until LANL gets approval from NMED on this issue, no further action approvals will be limited to sites in which the investigation results reveal no contaminants above background levels. **BPJ.**

General Comment: The following citations were inconsistent with the references provided in the References Section:
1 - The Environmental Restoration Project 1995, 1173 citation on pg 84 was not listed in the References section (see also pg 102).
2 - The Kennedy 1948 citation (pg 85) was not listed in the References section.
3 - The LANL 1995, 1249 citation on pg 85 was not listed in the References section. **BPJ.**

General Comment: In the revised RFI Report, please include the soil descriptions for each soil sample, which should include any noted visual or olfactory contamination and any PID/FID readings taken. **BPJ.**

Page 10; Biological Surveys: Has LANL's environmental surveillance group taken tissue samples from plants or animals in the drainageways associated with TA-1? ~~Is~~ Are there any planned for the future? **BPJ.**

Page 18; Section 4.1.1: When discussing the various problems associated with each analytical request, please include the sample numbers so that EPA can locate the sample results in the appropriate tables. This comment pertains to all paragraphs under Sections 4.1.1 and 4.1.2, 4.2. and 4.2.2 1 which discuss QA/QC problems associated with a particular analytical request. **BPJ.**

Page 18; 3rd paragraph: Were the two samples analyzed by the ICPMS method duplicates or samples taken near the same location? Also, were there only two samples analyzed by the ICPMS method or were there more? **BPJ.**

Page 27; Surface Disposal Area: In the report LANL mentions that the site could not be found after two attempts, but was found from the investigation notebook and polaroid photos. LANL mentions that solid waste items found do not support a SWMU designation and none of the items contain hazardous constituents. Please justify this conclusion. Also, LANL mentions that no investigation was performed because no SWMU was found. Please explain how items found on the surface are not evidence that this

was the SWMU that LANL's 1988 CEARP survey identified. **BPJ.**

Page 38; Section 5.1.4.2: Please include in the revised workplan a map which identifies the approximate location of the two outfall areas and the bench areas that were sampled. **BPJ.**

Page 39: Aggregate C Hillside Area: The last paragraph on this page states that "because two samples exceeded the heavy metal SALs for antimony, beryllium and thallium...five locations from Hillside 140 were resampled." However, none of the samples were analyzed for beryllium. In addition, samples taken during two separate sampling activities conducted the following year (8/19/93 & 8/23/93; see page 40) from the same area (Hillside 140) were sampled for heavy metals without including beryllium. This appears inconsistent. Please provide an explanation why beryllium was not analyzed for after previous samples reported concentrations above the SAL. **BPJ.**

Page 40; Section 5.1.4.3. Single-Stage Storm Water Samplers: Water samples were collected from Hillside 140 and sampled for metals (mercury, lead, chromium, and antimony). These samples were collected during three separate sampling activities during 1993. Since concentrations of beryllium which exceeded the SAL were analyzed for in 1992, why didn't LANL analyze the water samples for beryllium?

Please provide an explanation why the storm water samples were not analyzed for beryllium after previous soil samples from the same area reported concentrations above the SAL. **BPJ.**

Page 44; Error in paragraph on Selenium: Statement should refer to the value of 1.7 mg/kg as the "reported background value." Please modify. **BPJ.**

Page 45; Table 5.1.5-1: See general comment 1. **BPJ.**

Page 61: Please see the paragraph on Benzo(k)fluoranthene at the bottom of this page. Not all of the sample concentrations reported in this paragraph are greater than the SAL (6.1 mg/kg) as stated. Please modify. **BPJ.**

Page 67; Storm Water: Please include all the surface water sampling results, even the results that are below SALs. Please include in a table the analytical method used, the detection limit and the SAL's. This reviewer assumes that there is no background surface water data for the drainages sampled. **BPJ.**

Page 67; Discussion on PAHs and Risk Assessment: LANL provides rationale for no further evaluation of PAHs beyond the screening assessment for Aggregate C of TA 1. LANL states that the presence of these chemicals is not likely to be associated with historical operations and that concentrations are likely the result of anthropogenic sources (e.g., asphalt roads). However, it appears that the highest PAH concentrations are concentrated

around septic tank 135 and not randomly located in drainage areas off asphalt parking lots. Also, building FP served as a foundry for nonferrous metals and, depending on the foundry activities there, PAHs may be the result of historical operations. Therefore, the source of PAHs associated with this location should be carried forward and risk associated with exposure to this location assessed. It may then be determined, through risk management decisions, that no further action is required. LANL should keep the PAHs associated with septic tank 135 in the risk process through a more thorough human health exposure and risk assessment. **BPJ.**

Page 68; 3rd Paragraph: If total chromium is sampled, then EPA's risk assessment procedures require that you assume 100% of the chromium detected is hexavalent. You do not drop it as a ~~the~~ chemical of concern. **BPJ.**

Page 83; Conclusions and Recommendations - Aggregate C: LANL states that the source of the PAHs is from storm water runoff from adjacent asphalt roadways. Analysis of the sampling results suggests that the highest PAH concentrations in soil samples are associated with septic tank 135. **BPJ.**

Page 88; 2nd paragraph: When does LANL plan to sample these contaminated areas? **BPJ.**

Page 90; 1st paragraph: Please provide a map which indicates the approximate location of the outfall areas. **BPJ.**

Page 93; Table 5.2.5-1: EPA will require deeper sampling at the following samples to determine the vertical extent of contamination: AAA0740; AAA1636; and AAA1637. **BPJ.**

Page 93; Table 5.2.5-1: See general comment 1. **BPJ.**

Page 101; Conclusions and Recommendations: EPA disagrees with the no further action recommendation at this point. Deeper sampling as recommended above is needed to characterize the vertical extent of contamination at some points. Also, a surface water/sediment monitoring program may be needed to evaluate the water quality of the canyons for some time period. **BPJ.**

Page B-1; Table B-1: Under the comments column, there are several statements which read "QC results are not available, large uncertainties in data;". Please explain what is meant by this statement. **BPJ.**

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

MAY 19 1997

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

Re: TA-10 RFI Report, NOD comments, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for TA-10, dated April 18, 1996, and has determined the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

for David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

NOD Comments on TA-10 RFI Report

General Comment: EPA did not review the risk/screening assessment sections of the RFI report corresponding to each SWMU. When LANL provides the additional information/data requested by EPA and performs the investigation according to the workplan, then a review of the risk assessment sections will occur. Also, EPA recommends that LANL include a ecological risk assessment section in this and in future reports; otherwise, EPA can not approve a no further action decision, unless the site is obviously clean and the background numbers are determined to be reasonable. **BPJ.**

General Comment #2: Although there are several tables in the RFI Report containing laboratory analytical results, the way the information is presented is very awkward to review and most of the analytical information is missing. For each SWMU, please include the following:

> A table which includes all laboratory analytical results, not just the results that are above SALs or background levels. The table should include the sampling interval (depth), the analytical method, the detection limit, the UTLs, background concentrations for applicable constituents, and the SALs. **BPJ.**

General Comment: In the revised RFI Report, please include the soil descriptions for each soil boring at each SWMU, which should include any noted visual or olfactory contamination and all PID/FID readings taken. Please include the background readings for the PID/FID instrument. **BPJ.**

General Comment: From reviewing this report, LANL has some serious problems with their QA/QC program pertaining to the analytical laboratories used. There were numerous analytical requests that exceeded holding times by 30 days to 2 months. Also, there were numerous requests in which some of the constituents analyzed had poor recovery percentages and were therefore rejected. LANL must provide data of sufficient quality; otherwise, resampling will occur. **BPJ.**

Page 24; Section 4.0: LANL mentions in the analysis sections the recovery percentages for a specific constituent in a sample request number, please include the acceptable ranges for a particular constituent. For example, requests 18581 and 18583, aluminum, chromium, iron, magnesium, lead, thallium, and vanadium are qualified J or UJ for low recoveries (30-75%) in the QC sample. What are the acceptable ranges for these constituents?

Also, there are numerous mercury analysis requests (34) which missed the holding times from 30 days to 2 months that will have to be resampled in order to obtain quality data.

Under explosives, 19 analytical requests were missed, resampling

will be required to obtain acceptable data for those constituents.

In addition, the following analytical sample requests will need to be resampled: 19570; 18100; 181449; 18362; 20010. **BPJ.**

Page 29; 6th paragraph: The approved workplan indicates that SW 6010 will be used to analyze metals in soil samples. LANL mentions that most of the data produced used the correct method; however, LANL infers in this paragraph that another method is the correct method. Please clarify. **BPJ.**

Page 41; Field Investigation: What was the purpose of sampling at 3-3.9 feet interval in borehole 10-1250 if the waste in the pit was excavated to a depth of 15 feet and then filled with clean soil? **BPJ.**

Page 43; last paragraph: The approved workplan required that 50 % of the samples collected at PRS 10-002(a) be analyzed for high explosives and that all the samples be analyzed for volatile organics. Since LANL deviated from the workplan without approval from EPA, EPA will require LANL to redrill the five borings and analyze the samples for the appropriate constituents as required in the approved workplan from EPA (May 6, 1993). **BPJ.**

Page 47; Section 5.1.10: EPA disagrees with LANL's no further action recommendation since LANL did not follow the EPA approved sampling plan by failing to analyze for the appropriate constituents. Also, there is missing data/information that needs to be provided in the revised report before a final decision can be made. **BPJ.**

Page 49; 4th paragraph: It still appears that the array moved to the east did not hit the center of the waste unit. From the difficulties that LANL had finding the actual location of the unit, EPA questions if LANL knows the actual location of the unit? **BPJ.**

Page 51; 4th paragraph: Since LANL deviated from the workplan without approval from EPA, EPA will require LANL to redrill the borings and analyze the samples for the appropriate constituents as required in the workplan from EPA's approval letter dated May 6, 1993. **BPJ.**

Page 52; last paragraph: Why didn't LANL put borehole 10-1292 in the center of the waste unit? **BPJ.**

Page 59; Conclusions and Recommendations: EPA disagrees with LANL's recommendations because LANL did not follow the workplan and has not submitted all the data to EPA for review. **BPJ.**

Page 61; 3rd paragraph: Since LANL deviated from the workplan without approval from EPA, EPA will require LANL to redrill the borings and analyze the samples for the appropriate constituents

as required in the workplan in EPA's approval modification letter. **BPJ.**

Page 62; Fig. 5.3.4-1: Please include or label where each SWMU is on the map. Some of the units are located but others are not. Please revise. Also, why did LANL not drill a boring directly into the liquid waste pits and the septic fields? Is it because LANL does not know the exact location of these units? **BPJ.**

Page 73; last paragraph: Since LANL deviated from the workplan without approval from EPA, EPA will require LANL to redrill the borings and analyze the samples for the appropriate constituents as required in the workplan from EPA's approval letter, May 6, 1993. **BPJ.**

Page 80; Conclusions and Recommendations: EPA disagrees with LANL's recommendations because LANL did not follow the workplan and has not submitted all the data to EPA for review. **BPJ.**

Page 83; 2nd paragraph: Please include the PID readings. **BPJ.**

Page 90; Conclusions and Recommendations: EPA disagrees with LANL's recommendations because LANL has not submitted all the data to EPA for review. **BPJ.**

Page 92; Fig. 5.5.4-1: Please indicate on the map where the leach field was located. Also, why was a boring not taken underneath the tank, as was the case with the septic tank? **BPJ.**

Page 93; last paragraph: Since LANL deviated from the workplan without approval from EPA, EPA will require LANL to redrill the borings and analyze the samples for the appropriate constituents as required in the workplan from EPA's approval letter. **BPJ.**

Page 97; Conclusions and Recommendations: EPA disagrees with LANL's recommendations because LANL did not follow the workplan and has not submitted all the data to EPA for review. **BPJ.**

Page 103; Conclusions and Recommendations: EPA disagrees with LANL's recommendations because LANL has not submitted all the data to EPA for review. See general comment #2. **BPJ.**

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

MAY 28 1997

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

RE: Review of Radiological Addendum to the RCRA RFI Report for Technical Area 45, Los Alamos National Laboratory (EPA ID. NM0890010515)

Dear Mr. Garcia:

The U.S. Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) Radiological Addendum to the RCRA Facility Investigation (RFI) Report for PRS located in TA 45, dated March 11, 1996.

The Addendum, which was based on the results from samples collected during the Phase I investigation, provides radiological information on the radiological investigation and the dose assessments. The chemical results of the Phase I investigation was recommended for approval, July 23, 1996, by EPA.

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

Sincerely yours,

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

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

MAY 28 1997

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

Re: Notice Of Deficiency (NOD) Comments on the Resource Conservation and Recovery Act Facility Investigation (RFI) Report for Potential Release Sites (PRS) in Technical Area (TA) 1, Aggregates E and G, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for TA 1, Aggregates E & G, dated February 29, 1996, and has determined the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Nick Stone at (214) 665-7226.

Sincerely,

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

Enclosure

NOD Comments on TA 1, Aggregates E & G

General Comment A: The report fails to adequately show the absence of chemicals of potential concern (COPC) in Aggregates E & G. The report describes past remediation in vague terms indicating extensive soil replacement. All of the sampling conducted for this Phase I report must occur at the replaced soil/original soil interface, in the original soil if present, and into the bedrock soil interface. No discussion is presented to account for groundwater flow through the original soil or replaced soil though there is positive indication of lead in the stormwater runoff samples. Section 4.0 does an adequate job of outlining the QA/QC results of all the sampling activities. However, there are an inordinate number of analyses that were qualified or rejected. Holding times were exceeded, high and low recoveries of constituents, improper handling procedures, blank contaminations, insufficient volume of samples, and radiochemistry analyses were said to have errors greater than 50% in both directions. Poor sampling and lack of clarity in the report combine to make this RFI report unacceptable.

General Comment B: Similar to the comments made for the RFI report on OU 1114, this report fails to list the upper tolerance limits (UTL) used, fails to justify use of the multiple chemical evaluation (MCE) which has not been approved, and recommends no further action (NFA) for areas using sample data that fails to meet quality assurance/quality control standards.

General Comment C: The RFI report, and other RFI reports, should incorporate the latest Screening Actions Level (SAL) guidance as found in the Region 6 document, Human Health Media-Specific Screening Levels, dated October 30, 1996. This document is attcahed to this comment letter.

General Comment D: The RFI report was very difficult to review. Information regarding specific sites was scattered among different sections of the report, the report was written in vague terms, and the data presented was not complete or questionable. The Phase I RFI report must be rewritten to clearly and concisely decribe the site, the sampling, and the results.

Listed below are specific comments regarding the RFI report:

Page 15, 3.2: In the discussion of the background comparison procedure, analytes are deleted from further analysis if the analyte value falls below the UTL. The chemicals of potential concern (COPC) concentration carried forward to the screening assessment is the analyte concentration less the UTL value. The

UTL values used in the analysis are shown and their development not documented. LANL must provide documentation as to the UTL values used and that the values represent the 95th confidence level of the 95th percentile of distribution (see Agreements and Action Items from Joint Environmental Protection Agency, Department of Energy, and University of California Meeting Held on September 18-19, 1995; EM/ER:95-541).

Page 15, 3.4.1: Under the screening assessment discussion, the report describes a procedure to retain COPC's due to the combined adverse health effects of several chemicals. The procedure "normalizes" the data by dividing the COPC concentration by the screening action level (SAL) where the individual COPC concentration is less than the SAL. The chemicals with concentrations greater than the UTL are normalized and added together. If the total is greater than 1.0, then chemicals with a normalized value greater than 0.1 are retained as COPC's pending further evaluation. This procedure does not appear in the workplan. The facility must document the rationale used to justify this procedure and request comment and approval. The facility must address how the procedure adequately reflects the various toxicities of the analytes. Further, LANL must utilize the SAL values published by Region 6 in the analysis. These values are attached in the document titled, EPA Region 6 Human Health Media-Specific Screening Levels.

Page 20, 4.1.2: Thallium is listed as a possible false positive for report numbers 17491 and 17492. LANL must demonstrate certainty over sampling to ensure the health and safety of these aggregate areas. Both Aggregate E and G are near developed public areas. Resampling is required and additional sampling is required to ensure the Phase I analysis is accurate.

Page 34, 5.1.1: Solid Waste Management Unit (SWMU) number1-003(b) is recommended for no further action because the report authors could not find it. LANL must sample the area to prove that the area is uncontaminated. More diligent effort is required to ensure that the construction debris disposal site has been addressed in past remediation activities.

Page 38, 5.1.4.1 and 5.1.4.2: Soil samples were taken from the canyon rim and aggregate E hillside at 0-6 inches. Adequate sampling is required to test below the remediated fill and into the bedrock.

Page 39, 5.1.5.1: The narrative is unclear regarding the assumption that isotopic uranium is natural uranium. The process for evaluation must be clear about screening levels and background concentrations. If all uranium is considered part of the background, the Phase I analysis is flawed. The sample

analysis considers only the remediated fill. Resampling is required to ensure the undisturbed soil below the fill is not contaminated.

Page 47, 5.1.7.1: The narrative inaccurately concludes that the area is unsuitable for residential use. With the nearby motel, and retail development, residential use is already in place.

Page 49, 5.1.10: The Phase I investigation must ensure that contamination from the construction debris site, SWMU 1-0003(b), has been remediated. Refer to the comment for Page 34.

Page 70, 5.2.4.1: The is unclear if all soil was removedand replaced in a previous remediation. The determination of the tuff/fill interface is unclear. To ensure an adequate sampling, samples of fill, original soil, and tuff are required.

Page 87, 5.2.5.1: Non-parametric tests for inorganics is not justified in a Phase I report. The narrative and footnote conclude that areas with many samples tend to have higher incidence of false positives. Statistical analysis should be limited to areas where sampling cannot be conducted. It is inappropriate to discredit sampling results with statistical analysis.

Page 94-98, Table 5.2.5-2: The table fails to indicate units.

Page 100, Table 5.2.6-1: The table fails to define CRQL.

Page 104, Table 5.2.7-2: The table is missing.

Page 106, Table 5.2.7-3: The table uses the MCE process to evaluate multiple chemical risk. Because of one high sample in the composite, the narrative states the composite is inapropriate. This review requires further sampling to ensure all contaminants are addressed.

Page 107, Table 5.2.7-4: The MCE process indicates a Phase II sampling is required. The table indicates lead near the action level.

Page 110, 5.2.7.2.2.1: Further testing is required. Plutonium and lead both exceed the SAL.

Page 112, 5.2.7.2.2.3: Estimation of contaminate intake should be addressed after the required Phase II analysis.

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

MAY 28 1997

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

Re: Notice Of Deficiency (NOD) Comments on the Resource Conservation and Recovery Act Facility Investigation (RFI) Report for Technical Areas (TA) 3, 59, 60, and 61, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for TA 3, 59, 60, and 61, dated February 29, 1996, and has determined the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Nick Stone at (214) 665-7226.

Sincerely,

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

Enclosure

NOD Comments on TA 3, 59, 60, and 61

General Comment A: The RFI report, and other RFI reports, should incorporate the latest Screening Actions Level (SAL) guidance as found in the Region 6 document, Human Health Media-Specific Screening Levels, dated October 30, 1996. This document is attcahed to this comment letter.

General Comment B: The RFI report was very difficult to review. Information regarding specific sites was scattered among different sections of the report, the report was written in vague terms, and the data presented was not complete or questionable. The Phase I RFI report must be rewritten to clearly and concisely decribe the site, the sampling, and the results.

General Comment C: Section 4.0 does an adequate job of outlining the QA/QC results of all the sampling activities. There are an inordinate number of analyses that were qualified or rejected. Holding times were exceeded, high and low recoveries of constituents, improper handling procedures, blank contaminations, insufficient volume of samples, and radiochemistry analyses were said to have errors greater than 50% in both directions. Poor sampling and lack of clarity in the report combine to make this RFI report unacceptable.

Listed below are specific comments regarding the RFI report:

Page 12, 3.2: In the discussion of the background comparison procedure, analytes are deleted from further analysis if the analyte value falls below the upper tolerance limit (UTL). The chemicals of potential concern (COPC) concentration carried forward to the screening assessment is the analyte concentration less the UTL value. The UTL values used in the analysis are not consistent with the UTL values listed in the "RFI Workplan for Operable Unit 1114," dated March, 1994. LANL must provide documentation as to the UTL values used and that the values represent the 95th confidence level of the 95th percentile of distribution (see Agreements and Action Items from Joint Environmental Protection Agency, Department of Energy, and University of California Meeting Held on September 18-19, 1995; EM/ER:95-541).

Page 15, 3.4.1: Under the screening assessment discussion, the report describes a procedure to retain COPC's due to the combined adverse health effects of several chemicals. The procedure "normalizes" the data by dividing the COPC concentration by the screening action level (SAL) where the individual COPC

concentration is less than the SAL. The chemicals with concentrations greater than the UTL are normalized and added together. If the total is greater than 1.0, then chemicals with a normalized value greater than 0.1 are retained as COPC's pending further evaluation. This procedure does not appear in the workplan. The facility must document the rationale used to justify this procedure and request comment and approval. The facility must address how the procedure adequately reflects the various toxicities of the analytes.

Page 93, 5.5.10: The no further action (NFA) recommendation is not adequately supported. The sample data indicates chromium above the SAL for one sample, and within 10% of the SAL for three samples. The quality control data for the sampling indicates all of the samples required some qualification. LANL must resample this potential release site (PRS) and demonstrate the validity of a NFA recommendation.

Page 102, 5.7.10: PCB's must be retained as a COPC because of test results reported in table 5.7.6-1. Sample No. AAB5918 indicates a PCB concentration of <1.7 mg/kg which is in excess of the SAL (1.0 mg/kg). This conclusion is further supported in table 5.7.7-4 which determines the multiple chemical evaluation for carcinogenic effects as 0.978. This PRS represents the wastewater discharge site to the environment. The data presented indicates a variability of contaminants and concentrations. All soil samples were taken from shallow depths (12 inches or less). Therefore, the Phase II investigation must resample this area to determine the extent of contamination and sample the soil column into the bedrock to assure that area of contamination is fully defined.

Page 119, Figure 5.7.11-2: The figure indicates a potential area of contamination outside of the proposed sample sites. The facility must sample beyond the potential contamination area in order to establish the boundaries.

Page 129, 5.8.10: PRS 3-015 and PRS 3-053 require a Phase II RFI based on the data presented. The conclusion recommending NFA due to roadway runoff is not supported by the Phase I RFI. The highest concentrations of contaminants were indicated at the outfall which is uphill and on the inside curve of the ditch. Roadway runoff contamination would not be expected at the outfall on the far side of the ditch. Furthermore, samples taken downgrade from the outfall should indicate similar contamination if the source is roadway runoff. The Phase II RFI should sample the potential area of contamination to adequately determine the vertical and horizontal extent of contamination.

Page 130, 5.9: A Phase II RFI is required for PRS 3-033, Plating

Rinse Waste Storage. The screening indicates five PAHs at levels in excess of the SAL. The conclusion that these COPCs are present due to roadway runoff is not supported. Figure 5.9.1-1 indicates PAH contamination behind the sump structure. If roadway runoff is the source of the contamination, all sample points should show similar results. Sample site 3-2403 is behind the sump structure from the paving, yet PAHs are indicated. No PAHs are indicated for Sample site 3-2402, which is near the paving alongside the sump structure. The Phase II RFI should sample the potential area of contamination to adequately determine the vertical and horizontal extent of contamination.

Page 145, 5.10.8.1: The receptor access score of zero is not supported. It appears that PRS 59-004 sits on the edge of Two Mile Canyon. As this area is undeveloped and accessible to native wildlife, a higher receptor score is indicated.

Page 168, 5.14.4: The document indicates FID readings ranging from 4 ppm to over 1000 ppm taken in sample holes ranging from 6 to 12 inches in depth. The samples sent in for laboratory analysis were taken from 1 foot to 7 feet in depth. The FID readings, and the observation of discoloration made in section 5.14.1, indicate that the site has surface contamination. Further sampling is required to determine the extent of this surface contamination.

Page 193, 5.17.10: A Phase II RFI is required for PRS 60-007(a), Sigma Mesa Stained Soil. The RFI document indicates this PRS as a remediated site. Sample No. AAB5806 indicated PCBs at an interpolated value of 11 ppm. The Phase II RFI must sample the potential area of contamination to adequately determine the vertical and horizontal extent of contamination.

Page 208, 5.19: The Phase II RFI for PRS 61-002, Radio Repair Shop PCB Storage, requires expansion and detail. No discussion is made on the effect of alluvial water flow under the paved area to the county landfill. No effort has been made to evaluate the PCB concentration under the paved area, though strong evidence (RFI Phase I) indicates PCBs being transported down gradient to the landfill. The Phase II RFI must sample this PRS completely to determine the vertical and horizontal extent to the contamination. This PCB transport outside of LANL is significant in that it might compromise the Subtitle D status of the Los Alamos County Landfill.

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

JUN 04 1997

COPY

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

**Re: Second Notice of Deficiency for RFI Report on SWMU 0-030(g)
Los Alamos National Laboratory (NM0890010515)**

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the RFI Report dated November 13, 1995, for solid waste management unit 0-030(g) at Los Alamos National Laboratory (LANL) in conjunction with its corresponding notice of deficiency response dated March 6, 1997, and found it to be deficient. The EPA recommends that LANL be given sixty days to respond to the attached list of deficiencies.

Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

Enclosure

List of Deficiencies
RFI Report for SWMU 0-030(g)
Los Alamos National Laboratory (NM0890010515)

2.3 Hydrology

LANL contends that "the outfall drainage from Potential Release Site 0-030(g) drained down a steep bedrock slope (45 degrees)" and that "it is highly unlikely that any significant infiltration occurred on such a steep slope" (NOD Response EM/ER:97-046 of 03/06/97). However, the RFI Work Plan for SWMU 0-030(g) plainly states that "samples of channel sediments will be collected from sediment catchments adjacent to or immediately down slope of septic drain outfall points...two sediment samples will be collected as close as possible to the outfall points from sediment catchments..." Figure 5-44 shows that two sediment samples were to be collected from the outfall before the elevation dropped to 7210'. According to the work plan and NOD response dated 03/06/97, however, the first 100' of outfall channel flow remains unsampled. EPA understands that further investigation of the site revealed no sediment catchments on this slope from which to sample. However, either the site should be adequately researched to determine sampling areas before the RFI work plan is written, or all rationale for deviations from the original work plan should be documented in the RFI report. No response required.

4.1.8 Outfall Sampling Activities, and NOD Response

Outfall surface samples AAB00275 and AAB0278 tested positive in 1994 for PCBs, yet subsurface samples were not taken from these locations. The deepest outfall subsurface sample was taken at 6 inches bgs (sample AAB3573). Similarly, most of the outfall samples collected in 1996 also tested positive for PCBs, but sample depth information is omitted from the NOD response. EPA contends that although PCBs may tend to adsorb in a shallow layer of soils, LANL should take samples at a depth necessary for adequate characterization. A surface sample which contains PCBs slightly less than the SAL (1ppm) would definitely indicate the need for subsurface characterization.

4.3 Human Health Screening Assessment

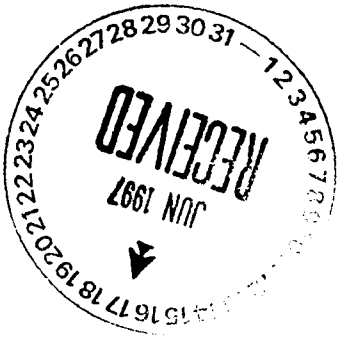
The multiple-constituent evaluation (MCE) performed on sample ID#AAB0275 is both inadequate and inaccurate. The PCB components (of highest magnitude in this sample) Aroclor 1254 and Aroclor 1260 were omitted from the MCE of carcinogenic effects. Furthermore, the normalized values of chlordane and

dichlorodiphenyl dichloroethane are incorrect. Recalculation of the MCE, including PCB concentrations, yields a normalized value almost three (3) times that of the reported value (2.87 vs. 1.04), indicating the need for further evaluation.

The statement is made (paragraph 3 of page 37) that "laboratory operations are unlikely to be the reason for the presence of these constituents at SWMU 0-030(g); furthermore, these constituents should not pose an unacceptable carcinogenic human health risk at this site even when considered in combination." Regardless of the origin of these constituents (Dieldrin, DDD, DDE, and DDT), the MCE of this sample demands that LANL submit a thorough risk assessment using this data before concluding that there is no unacceptable carcinogenic human health risk at this site. A similar statement is made ("these SAL exceedences should not pose an unacceptable risk to human health") in paragraph 1 of page 39 without addressing any risk assessment data. Discrepancies in and a general lack of data forces EPA to question the integrity of LANL's risk assessments.

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

JUN 13 1997



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

Re: TA-46 RFI Report, NOD comments, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for TA-46, dated June 25, 1996, and has determined the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

for David W. Neleigh, Chief
Facilities Section
New Mexico and Federal

Enclosure

NOD Comments on TA-46 RFI Report

Executive Summary, Page i: LANL mentions that eight of the SWMUs that were included in the OU 1140 workplan were not sampled. Please explain whether this was approved by EPA or NMED. This may not be acceptable to NMED. **BPJ.**

Further on this page, LANL mentions that PCB's are a non-RCRA constituent. PCB's are a RCRA hazardous constituent under 40 CFR 261 Appendix VIII. **BPJ.**

General Comment: Although there are several tables in the RFI Report containing laboratory analytical results, the way the information is presented is very awkward to review and most of the analytical information is missing. For each SWMU, please include the following:

> A table which includes all laboratory analytical results, not just the results that are above SALs or background levels. The table should include the sampling interval (depth), the analytical method, the detection limit, the UTLs based on background concentrations for applicable constituents, and the SALs. **BPJ.**

General Comment: In the revised RFI Report, please include the soil descriptions for each soil boring at each SWMU, which should include any noted visual or olfactory contamination and all PID/FID readings taken. Also, please include the background readings for the PID/FID instrument. **BPJ.**

General Comment: EPA did not review in detail the risk/screening assessment sections of the RFI report corresponding to each SWMU. When LANL provides the additional information/data requested by EPA and performs the investigation according to the workplan, then a review of the risk assessment sections will occur. Also, EPA recommends that LANL include a ecological risk/screening assessment section in this and in future reports; otherwise, EPA can not approve a no further action decision, unless the site is obviously clean and the background numbers are determined to be reasonable. **BPJ.**

General Comment: In several locations in the report, LANL mentions that SVOCs will not be carried through the risk screening process because the SVOCs detected in the soil samples did not come from the SWMU investigated but from roofs or from parking lots. Unless LANL has information to verify this claim, which they did not submit with this report, EPA will not accept this claim. Most of the SWMUs investigated had a history of handling wastes which contained SVOCs. **BPJ.**

General Comment: Some of the outfalls are still active. Do they have NPDES permits for the releases? **BPJ.**

Page 17; Risk Assessment: A ecological risk/screening assessment must be provided in the RFI Reports, unless no contamination is found. **BPJ.**

Page 18; Section 4.0: LANL mentions in the analysis sections the recovery percentages for a specific constituent in a sample request number, please include the acceptable ranges for a particular constituent.

Page 18; Section 4.0: What are PE samples? **BPJ.**

Page 18; 4th paragraph: EPA disagrees with LANL that the data is still acceptable since the holding times were missed for mercury. Why is LANL missing the holding times for mercury on a consistent basis? It is EPA's professional judgement that LANL meet the 28 day holding time requirement and that EPA will require LANL to resample locations that missed the holding times requirement by more than 5-10 days. **BPJ.**

Page 27; Section 5.2.4: EPA questions why samples were not taken next to the locations of this SWMU. It appears the nearest sample taken is thirty feet away. Why did LANL sample an outfall area for this SWMU when this SWMU had no outfall. The sampling points provided for in this SWMU appear wasted. Furthermore, not all of the hazardous constituents were sampled for as required in the approved modified workplan by EPA, 10/14/94. Please clarify. **BPJ.**

Page 32; Field Investigation: LANL was supposed to analyze each sample for VOC's. Also, a deeper sample was not taken at the outfall area. LANL did not follow the approved workplan of 10/14/94. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 42; Conclusions and Recommendations: LANL must ensure that the submitted information contains all the sampling locations clearly on a map, the depth intervals for each boring location, the analysis to be performed on each sampling interval, what field screening will be done, and an example of the boring descriptions to be used. Also, when (the date) will this information will be submitted to EPA? **BPJ.**

Page 44; Field Investigation: An outfall sample is supposed be taken at 6 inches and at 18-24 inches, according to the approved

workplan. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 48; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan; 2) not all the information was submitted in the report; 3) vertical extent of contamination has not been determined in some locations. **BPJ.**

Page 49; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, each sample is to be analyzed for VOCs. Just because there is tuff on the surface, it does not mean that a sample is not supposed to be taken. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 55; Field Investigation: LANL did not follow the approved workplan and did not submit all the needed information. Also, the vertical extent of contamination was not determined at some locations. EPA disagrees with a NFA recommendation and will require LANL to perform the above mentioned sampling. **BPJ.**

Page 61; Conclusions and Recommendations: EPA will approve any additional sampling for phase II. **BPJ.**

Page 62; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, one sample was not analyzed for VOC's. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 67; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan; 2) not all the information was submitted; 3) the vertical extent of contamination not determined. **BPJ.**

Page 68; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and 18-24 inch intervals. Also, all samples are to be analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 74; Conclusions and Recommendations: EPA disagrees with the no further action recommendations for several reasons: 1) Not all the work was performed according to the approved workplan;

2) not all the information was submitted; and, 3) not all the samples were analyzed for VOC's. **BPJ.**

Page 75; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, some samples were not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 80; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan; 2) not all the information was submitted; and, 3) not all the samples were analyzed for VOC's. **BPJ.**

Page 81; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, sample AAA9070 was not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 87; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and one sample was not analyzed for VOCs; 2) not all the information was submitted in the report (see general comments above) and, 3) the vertical extent of contamination was not determined since some of the .5 foot samples contained contaminants above background. **BPJ.**

Page 88; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, sample AAA9339 was not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 93; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and one sample was analyzed for VOCs; 2) not all the information was submitted in the report (see general comments above; and, 3) the vertical extent of contamination was not determined since several .5 foot samples contained contaminants above background. **BPJ.**

Page 94; Field Investigation: LANL did not follow the approved workplan. Why didn't LANL take a sample past the concrete pad, since the liquids won't remain on the pad? At the outfall area

samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, several samples were not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 98; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and several samples were not analyzed for VOCs; 2) not all the information was submitted in the report (see general comments above; 3) full extent of vertical contamination not determined in some of the .3 -.5 foot samples. **BPJ.**

Page 99; 1st paragraph: LANL mentions that the material most likely to be contaminated was not sampled. Please clarify in the revised Report. **BPJ.**

Page 99; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, several samples were not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 107; Conclusions and Recommendations: EPA has no problems with LANL's recommendation for further sampling; however, LANL should get approval from EPA and should do the work which they did not perform under phase I. That work can be incorporated into the phase II workplan. **BPJ.**

Page 108; Sampling and Analysis Design: EPA will require three intervals to be sampled at the boring taken at the outfall point. Those intervals are: 0-6 inches; 2-3 feet; and 5-6 feet from the original surface of the outfall, not the present surface. **BPJ.**

Also, for the samples on the sideslope, two sampling intervals will be used instead of one for each boring. They are: 0-6 inches and 3-3.5 feet. **BPJ.**

Page 111; Field Methods: Under sample collection, LANL should make sure that they complete boring logs and PID screening info on the logs. Also, LANL should use a sampling device that can bore into the tuff material and that doesn't compromise the integrity of the volatile samples. **BPJ.**

Page 112; Lab Analysis: Please include the methods that will be used for volatiles and semivolatiles? LANL must also make sure

that the mercury analysis do not miss the holding times! **BPJ.**

Page 113; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, 1 sample was not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 119; Conclusions and Recommendations: EPA disagrees with a no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and one sample was not analyzed for VOCs; and, 2) not all the information was submitted in the report (see general comments above). **BPJ.**

Page 121; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, 8 samples were not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 128; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and several samples were not analyzed for VOCs; 2) not all the information was submitted in the report (see general comments above); and, 3) the vertical extent of contamination was not determined at all sample locations. **BPJ.**

Page 131; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be analyzed for VOCs, 2 samples were not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 134; Conclusions and Recommendations: EPA disagrees with the no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and several samples were not analyzed for VOCs; 2) not all the information was submitted in the report (see general comments above); and, 3) full extent of vertical contamination was not determined at all sample locations. **BPJ.**

Page 135; Field Investigation: LANL did not follow the approved workplan. At the outfall area samples are supposed to be taken at 6 and at 18-24 inch intervals. Also, all samples are to be

analyzed for VOCs, 5 of the 6 samples were not analyzed for VOCs. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 139; Conclusions and Recommendations: EPA disagrees with a no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, a 18-24 inch sample was not taken below the outfall and 5 of 6 samples were not analyzed for VOCs; 2) not all the information was submitted in the report (see general comments above); and, 3) full extent of vertical contamination has not been determined at one sample location. **BPJ.**

Page 140; Field Investigation: LANL did not follow the approved workplan. All samples are to be analyzed for VOCs, 5 of the 6 samples were not analyzed for VOCs. Also, all the mercury data was rejected. EPA will require LANL to perform the above mentioned sampling. **BPJ.**

Page 146; Conclusions and Recommendations: EPA disagrees with a no further action recommendation for several reasons: 1) Not all the work was performed according to the approved workplan, 5 out of the 6 samples were not analyzed for VOCs and all mercury results were rejected; 2) not all the information was submitted in the report (see general comments above); and, 3) full extent of vertical contamination has not been determined at each sample location. **BPJ.**

Page 152; Conclusions and Recommendations: EPA is not satisfied with the quality of this investigation. .5 foot samples are not deep enough to make a determination on this site. EPA will require additional vertical sampling at each boring location. **BPJ.**

Page 153; Field Investigation: EPA does not understand LANL's logic in investigating this unit. The deepest soil samples should be taken nearest the spill. LANL did the opposite, the deepest samples were taken farthest from the unit. Were there oil stains where the deepest samples were taken? Without any reasonable explanation, EPA will require additional sampling due to inadequate sampling (too shallow). Also, if an oil spill occurred, LANL should analyze each sample for semivolatiles, not 2 out of the 6 samples. **BPJ.**

Page 155; Background Comparison: LANL mentions that mercury holding times were exceeded only slightly. Please include the number of days. **BPJ.**

Page 156; Conclusions and Recommendations: EPA disagrees due to the inadequate sampling approach used. **BPJ.**

Page 175; Sampling and Analysis: EPA will not approve the sampling and analysis plan until LANL submits the map resulting from Section 5.21.11.2.1 activities. Furthermore, the shallow soil samples (.5-1 feet) that found contamination above background must be taken deeper to define the vertical extent of contamination. Also, no proposed information will be approved until all information is "set in stone" and clearly defined. LANL must ensure that the submitted information contains all the sampling locations clearly on a map, the depth intervals for each boring location, the analysis to be performed on each sampling interval, what field screening will be done, and an example of the boring descriptions to be used. In addition, when will the revised sampling plan be submitted to EPA? **BPJ.**

Page 192; Background Comparison: LANL makes the statement that mercury results were considered valid because the holding times were only slightly exceeded. Please give the number of days? **BPJ.**

Page 193; Conclusions and Recommendations: EPA disagrees since the vertical extent of contamination has not been determined for sample AAA9268. Also, the sample depths taken were inadequate (.5,.4 and .3 feet). **BPJ.**

Page 198; Conclusions and Recommendations: EPA disagrees with LANL because all the information has not been submitted with the report (see general comment above). **BPJ.**

Page 201; Background Comparison: LANL makes the statement that mercury results were considered valid because the holding times were only slightly exceeded. Please give the number of days? **BPJ.**

Page 205; Conclusions and Recommendations: EPA disagrees since the vertical extent of contamination has not been determined for several sample areas. Also, not all the information was submitted with the report. **BPJ.**

Page 208; Background Comparison: LANL makes the statement that mercury results were considered valid because the holding times were only slightly exceeded. Please give the number of days? **BPJ.**

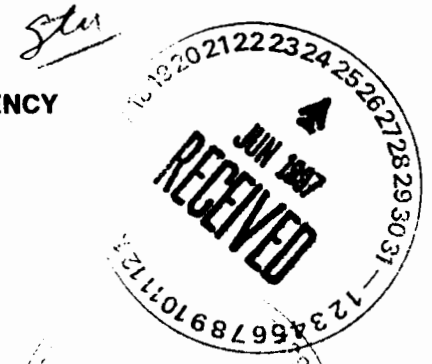
Page 210; Conclusions and Recommendations: EPA disagrees since the vertical extent of contamination has not been determined for one sampling point. Also, not all the information was submitted with the report. **BPJ.**

Page 213; Background Comparison: LANL makes the statement that mercury results were considered valid because the holding times were only slightly exceeded. Please give the number of days? **BPJ.**

Page 210; Conclusions and Recommendations: EPA disagrees since the vertical extent of contamination has not been determined for two sampling points. Also, not all the information was submitted with the report. **BPJ.**

Page 210; Conclusions and Recommendations: It appears that no further action can be approved for the air emission SWMUs; however, until all the information is submitted (see general comment), approval is not possible at this time. **BPJ.**

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



JUN 20 1997

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

RE: Review of Los Alamos National Laboratory RCRA RFI Report for PRSs in TA 57, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA RFI Report for Potential Release Sites (PRSs) in Technical Area 57, dated April 19, 1996. The EPA has found that parts of the Report to be deficient and enclosed is a list of deficiencies.

The EPA recommends: A) approval of the attached Sampling and Analysis Plan for Burns Swale Portion of PRS 57-001(b), and B) that one site, PRS 57-007, not be added to the LANL RCRA/HSWA permit. Please see attached Summary Page. If you have any questions or need additional information, please contact Allen T. Chang of my staff at (214) 665-7541.

Sincerely yours,

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

Enclosure

Review Summary
RFI Report for Technical Area 57
Los Alamos National Laboratory (LANL)

This RFI Report, dated April 19, 1996, includes information on the following sites:

57-001(b) - Settling Ponds and Outfall
Sampling and Analysis Plan for Burns Swale Portion of 57-001(b)
57-001(c) - Settling Pond GTP-2
57-002 - Sludge Pit
57-004(a) - Settling Pond
57-006 - Chemical Waste Drum
57-007 - Chemical Waste Leach Field

Sampling And Analysis Plan (SAP) Appears Appropriate
Based upon the information provided and presumed that LANL use grab samples throughout the investigation, the EPA tentatively approves the SAP for Burns Swale Portion of 57-001(b)

Site For Which It Is Appropriate Not To Add To LANL RCRA/HSWA Permit
Based upon the information provided, EPA tentatively agrees the following sites are not potential SWMUs and do not need to be added to LANL RCRA/HSWA Permit:

57-007 - Chemical Waste Leach Field

Sites For which Additional Information is Needed
Additional information or further investigation is required for the following sites:

57-001(b) - Settling Ponds and Outfall
57-001(c) - Settling Pond GTP-2
57-004(a) - Settling Pond
57-006 - Chemical Waste Drum
57-002 - Sludge Pit

Sites Where VCA is Proposed or Being Undertaking
Further information will be provided on these sites prior to a NFA decision being finalized:

57-002

LIST OF DEFICIENCIES
LOS ALAMOS NATIONAL LABORATORY (LANL)
RFI REPORT FOR PRSs IN TA-57

SITE-SPECIFIC COMMENTS

1. Page 4, Section 1.2.1.3: LANL should depict the location of pond GTP-1W (PRS 57-004(b)) on Figures 1-2, 5-5, and 5-6. This pond is discussed in Section 1.2.1.3 but is apparently not included on the figure. The discussion is somewhat confusing. Is pond GTP-1E also known as PRS 57-004(a), and is pond GTP-1W also know as PRS 57-004(b)? If so, the figures incorrectly depict what appears to be pond GTP-1W as PRS 57-004(a), when in fact it is PRS 57-004(b).

   Page 48, Section 5.4: The Report states, "PRS 57-004(a) consists of two settling ponds: a decommissioned, backfilled pond designated GTP-1E (east) and the existing 1-million-gal. capacity pond designated GTP-1W (west)." The above statement contradicts what is found in Page 4. Please explain the confusion, and update the figures to include all referenced ponds, etc. **(Best Professional Judgement (BPJ))**

PRS 57-001(b)

2. Page 11, Section 2.3.1: Surface Water: The Report states, "The Fenton Hill site slopes gently south, so the major part of the runoff is into Lake Fork Creek, which is tributary to the Rio Cebolla below Fenton Lake." LANL shall sample both surface water and sediment of Lake Fork Creek. **(BPJ)**

3. Page 27, 2nd paragraph: Based on visual observations and the relatively elevated XRF barium readings, LANL concluded that the layer of soil from 11 to 12-ft depth, **"black service material"** contains the highest constituents of COPCs. Are there any other metals also detected from XRF which supported this conclusion? The "black service material" may be aboundant of drilling materials, but it may not contain the highest level of chemicals which leached into injected waters from the hot rocks, and were pumped out of the well along with the drilling fluid.

   This sampling approach was apparently agreed to in the approved RFI Work Plan, however, an additional, deeper soil sample would definitely confirm that the "black service material" contains the highest constituent concentrations, and ensure no significant COPCs at elevated level percolated beyond this layer. **(BPJ)**

4. Page 27, Table 5-3: Barium concentrations found above the background UTL from 2 - 5 ft deep. It decreases with increasing depth. No barium concentration at the surface soil of the pond was given; but at 2-3 ft deep, barium concentration reaches 2285 mg/kg. The top soil of this pond is the backfilled soil which should be clean soil. LANL shall sample surface soil and investigate where the elevated barium comes from. **(BPJ)**

5. Page 34, Section 5.1.10: Since Burns Swale, which is part of PRS 57-001(b), will subject to a phase II investigation, NFA determination for PRS 57-001(b) is pending until the investigation is complete. **(BPJ)**

PRS 57-001(c)- Settling Pond GTP-2

6. Page 41, Section 5.2.4: LANL found a slimy, "black clay-like service material", which had strong organic odor, at 4.5 ft deep and assumed this layer contained the highest constituents of chemicals. However, XRF screening did not detect elevated barium concentrations, and no detectable amounts of VOCs were found by Hnu. Why did LANL make the decision without supportive evidence?

   At PRS 57-001(b), at least, the "black service material" was found containing the highest barium concentration. The highest Barium reading for this site is at 2-3 ft, not at 4-5 ft. (See Table 5-12) According to the criterion used in PRS 57-001(b), LANL should sample at 2-3 ft depth, not at 4-5 ft.

   Again, LANL should take an additional deeper sample to confirm whether the "black service material" contains the highest constituent concentrations, and ensure no significant COPCs at elevated level accumulated beyond this layer. LANL shall resample this site. **(BPJ)**

PRS 57-002-Sludge Pit

7. Page 44, 4th paragraph: The Report states, "...the service material...and which has been shown at these other locations to be the layer of highest constituent concentrations." The statement is questionable. Please list those locations where evidence was found to support this conclusion. The only evidence was from GTP-3W, where the highest barium concentrations was detected by XRF; LANL did not provide other evidence supporting the conclusion that "service material" at GTP-3W pond contains the highest constituent concentrations. **(BPJ)**

8. Page 45, Section 5.3.6: The Report states, "No SVOCs were detected...and to minimize the matrix effects caused by the highly organic content of this material) raised the detection limits to a point that the SVOCs were masked. However, analyses of a sample from location 57-2100 that was similar in nature(predominantly "service material") but was not diluted showed no detectable SVOCs." What is the "highly organic content"? LANL should resample this location for SVOCs. **(BPJ)**

9. Page 56, Table 5-23: Lead was found at several times higher than its UTL. Because these results were from shallow (0 - 6 inches) samples, LANL shall verify possible vertical contamination in soil by taking samples from 2 - 3 ft deep. **(BPJ)**

STen

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

JUN 22 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: Response to Additional Information to RFI Report for Potential Release Sites 50-006 (a,c), 50-007, and 50-008
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed additional information dated February 11, 1997, sent by Los Alamos National Laboratory (LANL) to supplement the RFI Report for Potential Release Sites 50-006(a,c), 50-007, and 50-008. EPA recommends approving the report in conjunction with the Notice of Deficiency Response dated May 9, 1996. However, EPA also recommends that area of contamination, not associated with these potential release sites, be given a new designation and added to the LANL RCRA/HSWA permit for further investigation. EPA believes that LANL has neither adequately characterized the extent of contamination or demonstrated that there is no unacceptable human health risk in this area. Enclosed is a list of deficiencies.

Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

Enclosure

1994, LANL 5/11/47/50

List of Deficiencies
Attachment A: TA-50 Surface Soil Issue

General Comments

EPA recommends that LANL not submit a risk assessment or risk screening analysis prior to conducting a phase II investigation. Because contaminants were found in the pipe rack area above background and SALs, the vertical and horizontal extent of contamination should first be investigated. To assure proper investigation upon discontinuation of operations, the pipe rack area shall be added to the LANL RCRA/HSWA permit. Because this risk assessment is performed prior to a phase II investigation, EPA believes that inadequate data exists to characterize site contamination and human health risk to an acceptable degree of certainty. In the future, any risk assessments performed prior to a complete phase II characterization will be deemed unsound by the EPA.

Nevertheless, EPA wishes to utilize the risk assessment performed for the TA-50 surface soil scenario to illustrate recurring shortcomings in LANL risk assessment methodology and calculation. If further, more detailed information is required regarding these issues, please contact Michael Morton at (214) 665-8329.

Risk Assessment Data and Equations: TA-50 Surface Soil Issue

1. Several footnotes are made throughout this risk screen which lack references at the end of the document. For example, citations are made to Dories (1996) on page 7 of the attachment which are relevant to industrial scenario exposure parameters, yet a copy of this reference are not supplied. EPA prefers that copies of pertinent, referenced material also be included so that LANL submittals are all-inclusive.

2. Because of the uncertainty associated with any estimate of exposure concentration, the 95 percent upper confidence limit on the arithmetic average must be used as the concentration term for intake calculation. Conservative assumptions should always be used for an initial risk screen. In the risk screen analysis performed in Attachment A, there is great variability in measured concentration values because too few samples were utilized in the analysis; the upper confidence limit on the average concentration will be high. If the upper confidence limit is above the maximum detected value, then the maximum detected value should be used to estimate exposure concentrations.

3. LANL should submit copies of the Health Effects Assessment Summary Tables (HEAST) which pertain to total chromium analysis so that EPA may determine applicability. Further, LANL should submit additional information on the 1994 reference by Miller which validates HEAST as a standard risk assessment tool. Regardless, the concentration of chromium VI must be assumed to be equal to the total chromium concentration unless the specific trivalent and hexavalent chromium ratios can be proven with laboratory analysis.

4. Although the 95% upper confidence limit on the arithmetic mean of each constituent should have been used in a risk screen analysis, LANL used the arithmetic mean. Why, then, are the arithmetic means presented in Table A-1 significantly more than the average on-site soil concentrations (which are cited as the mean chemical concentrations) in Table A-2?

5. Table A-3, "Industrial Scenario Exposure Parameters," lists both Most Likely Exposure (MLE) and Reasonable Maximum Exposure (RME) parameters. Because EPA is concerned with chronic, long-term exposure as a worst-case scenario, only the RME is necessary for initial risk screen. LANL creates a scenario of "a person spending an hour for lunch at the picnic table each working day and an hour per day working in or around the pipe rack regardless of the weather" to calculate the RME, and LANL modifies exposure parameters to reflect this scenario. EPA will not be tolerant of deviations from fixed exposure parameters which have been established to protect human health from chronic exposure. The value of FI (fraction ingested from contaminated source) should be assumed to be unity. Exposure time (ET) should be 24 hours/day. Both parameters denote acute, short-term exposure and are not used in EPA risk assessments. Intake rate (IR) should be $20 m^3/d$ ($0.83 m^3/hr$). The appropriate time to use site-specific modifications of exposure parameters is in the baseline risk assessment, not in the risk screen.

6. LANL's derivations of the dust loading factor (9×10^{-5} g/m^3) and the particulate concentration in air (9×10^{-5} mg/m^3) are unclear. To calculate the particulate emissions factor for inhalation exposure, LANL should be using the 1996 EPA Soil Screening Guidance Technical Background Document (OSWER Directive 9355.4-17A, PB96-963502).

7. The calculated risk, using LANL's assumed parameters and equations, are not reproducible. LANL should provide an appendix which includes all calculations. Using EPA guidelines and parameters, the calculated total RME cancer risk for the given samples is of questionable acceptability.

JUN 23 1997

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

Re: RFI Framework Report Comments, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Framework Report, dated March 7, 1997, and offers the enclosed comments.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

6pd-n:rmayer:6/13/97:a:RFIFRAME

COMMENTS ON LANL's RFI FRAMEWORK DOCUMENT

Page ii, Contents: Please retain the Acronyms and abbreviations Section at the beginning of the report. It has been this way in the past and has proved very helpful to the reviewer.

Page 1; Field Activities: In each RFI Report, LANL should include soil boring/logging descriptions which contain PID/OVA readings of each boring. Also, each boring description should indicate all zones of visual or olfactory contamination.

Page 7; Hydrology: LANL should include a map in each RFI Report which includes within a 1 mile radius the nearest usable groundwater wells and the depth to groundwater.

Page 7; Section 2.3.1: LANL should include all drainages, wetlands, springs, and streams associated with each SWMU on a map.

Page 7; Section 2.3.2: Make sure that the well inventory in this section includes a map which indicates the depth of each well to groundwater, the groundwater flow direction and magnitude.

Page 7; Section 2.4: If LANL has taken any biological samples for analysis this information should be included in the RFI Report either here or in the appropriate section that pertains to previous investigations. It has come to EPA's attention that LANL has taken biological samples from small rodents within one of the canyons on site. Also, LANL may have biological samples from years past that may be useful.

Page 9; Data Validation (J+Qualifier Discussion): LANL should not assume that a positive detect exists only when a result is above the SAL. The decision to retain a chemical as a COPC should not be based on the SAL, but rather on established background data. Regardless, any result which is above the background data should be thoroughly investigated before assuming it is a false positive for the convenience of not carrying the constituent forward as COPC into the risk assessment.

Page 9; Section 3.1: Describe the samples taken, do not reference them in the workplan.

Page 9; Section 3.1.1: LANL needs to indicate for each sampling interval what analytical suites were performed. The EQLs and EDLs should be included in the table of analytical results for each SWMU.

Page 10; 6th paragraph: If a result is above background but less than SAL does not mean that EPA ignores the results or assumes that the site is acceptable for no further action. LANL should be aware that the vertical and horizontal extent of contamination must be defined in the RFI process. It appears that LANL is trying to get results below SALs therefore paving the way for a

no further action.

Page 13; Organic Chemicals: Has LANL tested for SVOCs from runoff areas near paved asphalt parking lots/streets? In previous reports/investigations of SWMUs that contained SVOC waste constituents, LANL tries to discount SVOC contamination as coming from parking lots, roads or rooftops. LANL should get soil sampling information from these areas to confirm their claim of contamination from the above mentioned areas.

Page 13; Risk Based Screening Assessment: Please note in the Report if Region 9 SALs are not being used, and clarify that Indian, State or other standards are being used. In addition, LANL needs to justify or explain in the report why a COPC which has no SAL was excluded from the screening assessment process.

Also, in the 3rd paragraph of the Section, LANL mentions that a site specific evaluation may lead to eliminating the COPCs without going into a formal risk assessment. Please explain this statement. This evaluation must meet EPA risk assessment procedures or protocol.

Furthermore, LANL needs to have an eco screening/risk assessment in each RFI Report. EPA cannot approve an NFA recommendation without one.

EPA has also noticed in some of the RFI Reports reviewed that LANL ignores certain chemicals from the risk assessment process even though the chemicals are above SALs, LANL commonly does this with SVOCs and in one report with PCBs. This not acceptable to EPA. Please revise your procedures.

Page 13; Human Health Assessment: LANL needs to include the background risk in the risk screens or in the "full blown" risk assessments.

Page 13, Section 3.2.4 Risk-Based Screening Assessment: First paragraph: It states, "Inorganic chemicals and radionuclides that exceed background and organic chemicals positively identified in one or more samples require further evaluation **if they also exceed SALs.**(emphasized) "

Inorganic chemicals that exceed background and organic chemicals positively identified in one or more samples require further evaluation, regardless of whether they exceed SALs. Therefore, the if-clause should be dropped out.

First paragraph, last Sentence: It states, "The decision to identify a chemical as a COPC...on a case-by-case basis, taking into account the availability of process knowledge and toxicological information." Unlike industrial production plants where the raw materials used in the process are quite consistent, LANL, due to the nature of a research environment, may use certain chemicals for a special project, and frequently leave no

records for special reasons. EPA believes, to identify a chemical as COPC, LANL should put more emphasizes on the analytical results than on the availability of process knowledge and toxicological information. Process knowledge and toxicological information may be used to assist the investigation; it should not be used as the "sole source" to make the determination. EPA has seen this occur before at a site where LANL had no previous knowledge about a certain chemical but was later confirmed by sampling at the site.
Second paragraph: It states, "These comparisons are the last quantative steps in the screening assessment process for human health concerns. If COPCs remain after this step, then further evaluation is required."

LANL shall explain that the difference between the screening assessment process and further evaluation? Often, EPA notices that after completion of the screening assessment process, LANL continues to disqualify COPCs with justifications which are weak or contain less convincing evidence.

Page 13, Section 3.3 Human Health Assessment: Second paragraph, Section 3.3.1: It states, "Background risks are estimated for two statistics. One statistic is the median...The second statistic represents the upper range on background concentration values, and is either a calculated UTL or a maximum concentration value."

Please explain with an example how to apply the second statistical method to estimate background risk and how to get the maximum concentration value.

Page 15; Risk Assessment: If no human health risk assessment was performed, LANL needs to explain why it was not performed, such as a screening assessment was performed or that no concentrations were found above background or above acceptable detection limits.

Page 15; Eco Assessment: LANL needs to include one in each Report, otherwise, a NFA approval cannot be granted unless there is no contamination at the site.

Page 16; Results of Quality Assurance/Quality Control Activities: If holding times were missed for a sample, LANL needs to include how many days over the required holding time. This seems to occur quite frequently with mercury.

Quite often in the RFI Reports, LANL mentions that a particular request had constituent that was qualified by J, UJ, or R because of low recoveries, LANL needs to include the acceptable recovery ranges for the constituent being analyzed or discussed.

Page 17, Section 4.3 <u>Organic Analyses</u>: It states, "Unless one or more EQL values are elevated due to matrix problems, eliminate non-detected organic chemicals for which detection limits exceed

SAL values from further evaluation. (See Section 3.2.3, Organic Chemicals)."

Has LANL considered the possibility that the concentration of an organic in the sample could be higher than the SAL but lower than it's EQL? EPA needs to know what the value of the EQL used in the analysis for that specific organic to assist the decision-making process. If the EQL of a chemical is several orders of magnitude higher than its SAL, even though the result shows "undetected", the concentration of this chemical may well be above its SAL. LANL shall list the results of those organics along with their respective EQL.

Page 18; Section 5.1: LANL should include a physical description of each SWMU in the RFI Report. This way the reviewer can understand the logic in the way the SWMU was sampled. However, it may bring out the fact that there was no logic in the way the SWMU was sampled.

Page 18; Previous Investigations: Any previous sampling investigation should include all the results not just a summarization of the results or contaminants above background. All boring logs and field screening results should be included.

If a SWMU continues as an outfall, LANL needs to include all sampling data from that outfall required by a NPDES permit or by requirements of LANL or the State.

Page 18; Field Investigation: LANL needs to describe all deviations from the approved workplan and whether the deviations were approved by EPA.

Page 20; Top of page: LANL needs to include all soil boring logs/descriptions for each SWMU. Logs/descriptions should include the PID/OVA readings, the background PID/OVA readings, and should explicitly describe whether or not any visual or olfactory contamination exists.

Page 22; Table 5.1.5-1: LANL should include all inorganic results regardless of whether the result was not detected or was above background. LANL should also include the analytical method used to obtain the results.

Page 23, 3rd paragraph: It states, "If data has been rejected by focused validation using decision-specific criteria, then the data should not be used for decision-making purposes."

In any investigation, if data has been rejected by a focused validation using decision-specific criteria, LANL shall resample that location.

Page 27; Table 5.1.7-1: LANL should include all organic results regardless of whether the result (constituent) was not detected. LANL should also include the analytical method used to obtain the

results.

Page 29; Table 5.1.8-4: Under the carcinogenic effects of this table LANL calculated the effects of chemicals at a total of .9 What unit of measure is this? .9 X 10-6 or -5 or -4? This is not the proper way to determine the carcinogenic effect. Please see the Risk Assessment Guidance for Superfund in order to perform the carcinogenic calculations properly.

Page 30; Risk and Dose Characterization: LANL must include the background risk when performing the risk characterization.

Page 31; NFA paragraphs: LANL needs to make sure that the horizontal and vertical contamination is defined at a SWMU. EPA has noticed many times that LANL takes very shallow soil samples (.5 feet) from SWMUs that discharged liquid wastes for years. The sample results indicate a contaminant above background but below SAL. Say lead at 150 ppm. LANL then recommends a no further action on this SWMU. This is not acceptable to EPA. Now, if LANL had taken additional samples at 3 feet (40ppm) and at five feet (14 ppm), then EPA could agree with a NFA proposal, providing the eco numbers are acceptable.

Also, LANL needs to provide NFA justifications that are legitimate. For example, LANL samples a SWMU, that, by their own description discharged liquid SVOC waste. Then, LANL takes a shallow .5 foot soil sample and finds five SVOCs ranging from 15ppm to 5 ppm. Then, in the RFI report, LANL recommends NFA because the SVOCs came from the rooftops of nearby buildings or from nearby asphalt parking lots. Firstly, EPA does not accept this recommendation without further data, such as sampling the drainage area from the rooftops or the drainage area of the parking lots. Secondly, sampling to only .5 feet was flawed since the SWMU discharged liquid wastes, which may migrate deeper than .5 feet.

Page 32; Problem Definition: This Section is not necessary since EPA reviewer will know the problem.

Page 32; SAP design: EPA will not accept a sampling plan that has soil borings at a SWMU going to only .5 feet. At a minimum, LANL should have:

1) Locations of the soil borings on a map;
2) Indicate the vertical intervals to be sampled for each borehole;
3) Indicate the analytical method(s) to be used on each sampling interval;
4) Describe the sampling method used; and,
5) Describe the screening methods used on each borehole and include the results.

Just recently, EPA reviewed a report that contained a sampling and analysis plan (S & P) which included proposed sampling points and analytes, but then said that the proposed S & P was dependent

on a survey and that the sampling points may change dependent on the results of the survey. Do not send a S & P that is subject to change. All sampling and analysis plans must be "concrete".

Page 28, Section 5.1.8 Risk-Based Screening Assessment: EPA questions LANL's screening assessment approach used in the investigation. Multiple contaminants which are higher than their respective UTL but below SAL require further evaluation due to the potential for additive or synergistic toxic effects. That is what the Multiple Chemical Evaluation (MCE) approach is. MCE assumes simultaneous exposure to all constituents by a given receptor. The process shall include all the chemicals whose concentrations are greater than UTL and/or SAL. LANL has conveniently dropped some of the chemicals which have greater concentrations than their respective SAL and/or UTL prior to performing the MCE. In this way, the accumulative normal value is reduced; but this manipulation defeats the original purposes of MCE.

Page 33, Section 5.1.12.3 SAP Implementation: LANL shall specify what types of sampling (grab and/or composite samples) will be used in the analysis, provide the justification of the purposes, and detail how many samples will be used to form a composite sample. In the past, EPA translates "sampling" as grab sample. Unless LANL specifically prescribes that the sample will be composite sample in the work plan or sampling and analysis plan, the "sample" mean "grab sample". Please note that there will be very few instances where EPA will approve compositing of samples in a RFI.

Also, LANL shall specify how many samples will be sent to an off-site laboratory vs. how many samples will be examined at the on-site mobile laboratory.

Page 33; SAP Implementation, Field Methods: EPA does not want cites when it comes to the sampling methods.

Page 33; SAP Implementation, Measurement Methods: LANL may use field test kits to determine where to take samples; however, EPA will not accept test kits results as the only data for an RFI NFA decision.

Page C-1; Appendix C: Risk Assessment Calculations: Due to problems with risk assessment in past LANL RFIs, a short guidance on how to perform a proper MCE and exposure calculation should be included in the Appendix.

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

July 22, 1997

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

RE: Review of LANL Response to the NOD of RCRA RFI Report for PRSs in TA 35, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the NOD Response dated April 18, 1997, concerning Los Alamos National Laboratory (LANL) RCRA RFI Report for Potential Release Sites (PRSs) in Technical Area 35 and considers the Response to be deficient. Enclosed are the deficiencies for your review.

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

Sincerely yours,

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

Enclosure

Review Summary
RFI Report for Technical Area 35
Los Alamos National Laboratory (LANL)

Sites Where No Further Action (NFA) Appears Appropriate
Based upon the information provided, EPA tentatively agrees with the NFA proposals for the following sites:

PRS 35-003(h), PRS 35-009(a,b,c), PRS 35-004(b)

Sites Where it is Appropriate Not To Add To LANL RCRA/HSWA Permit
Based upon the information provided, EPA tentatively agrees the following sites are not potential SWMUs and do not need to be added to LANL RCRA/HSWA Permit:

PRS 35-016(e), PRS 35-016(f)

Sites Where Additional Information is Needed
Additional information or further investigation is required for the following sites:

PRS 35-003(j,k), 35-009(d), 35-014(a,b,d,e_2), 35-015(b) and 35-016(i)

Sites Investigation Information are Unavailable at this time
The EPA did not review those sites because investigation information is unavailable at this time:

PRSs 35-003(d,e,f,g,l,m,o,q,r), 35-008, 35-014(e_1,f), and 35-016(g,h)

NOD COMMENTS PERTAINING TO LANL NOD RESPONSE TO THE RFI REPORT FOR PRSs IN TA 35

1. **PRSs. 35-003(j and k), 35-014(a, b, and d), and 35-015(b)** - LANL Response to NOD, Nos. 1, 2, 3, 6, and 7

   LANL plans to resample those sites and a SAP will be submitted to NMED. Please specify the date of submission.

2. **PRS 35-009(d)** - LANL Response to NOD, No. 4

   LANL should indicate in the RFI report that septic tank was the subject of a voluntary corrective action (VCA) and the purpose of the water sample. The analytical result of water sample shall be included in the VCA Completion Report for PRSs 35-009(b, c, and d). NFA decision for this site is pending until NMED has completed review and approval of the VCA Completion Report.

3. **PRSs 35-014(e_2) and 35-016(I)** - LANL Response to NOD, No. 9

   LANL shall re-investigate Sample Location ID. 35-2165, and delineate the extent of contamination based on the following reasons:

   1. Zinc concentration exceeded its UTL several folded,

   2. Several other inorganics (Mn, Mi, Pb, and Ti) also exceeded their respective UTLs, and

   3. The sample was taken from 0 to 6 in. deep soil. Contaminants could have been percolated down to the subsurface. LANL has not delineated the vertical extent of contamination.

   Therefore, LANL must sample the location in one-foot interval until the concentrations of all above-mentioned metals below the background UTL.

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

July 23, 1997

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

RE: Review of LANL Response to the NOD of RCRA RFI Report for PRSs in TAs -20, -53 and -72, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The U.S. Environmental Protection Agency (EPA) has reviewed Response to the NOD, dated April 22, 1997, concerning Los Alamos National Laboratory (LANL) RCRA RFI Report for Potential Release Sites (PRSs) located in Technical Areas 20, 53 and 72, and considers the Response to be deficient. Enclosed are the deficiencies for your review.

Based upon the soil sample results presented in the Report and information in the Response to the NOD, EPA recommends (See updated Summary Page) that eight (8) sites be removed from LANL current RCRA/HSWA permit, and four (4) sites should not be added to the LANL RCRA/HSWA permit.

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

Sincerely yours,

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

Enclosure

BOLD FACE MEANS UPDATED FR CRG NOD

Review Summary

The original RFI Report dated March 15, 1996, includes information on the following SWMUs:

20-001(a, b and c), 20-002(a, b, c and d), 20-003(b and c), 20-004, 20-005, 72-001, 53-001(a, b, e, and g), 53-005, 53-008, 53-010, and 53-012(e).

Sites Where No Further Action (NFA) Appears Appropriate

EPA tentatively agrees with the NFA proposals and recommends the following sites be removed from the HSWA module of the LANL's RCRA operating permit. (NFA Criterion No. 4)**

CRG NOD #67, #7, J. YUEK SAIDOL

RELEASE CHAR OR REMED UNDER OTHER AUTH. = DOU #5

PRS 20-001(a), Landfill Area 1*
PRS 20-002(a), Recovery Pit*
PRS 20-002(b), Dumbo and Mount*
PRS 20-002(c), Firing Site*
PRS 20-004, Septic Tank TA-20-49 and Drain Line
PRS 20-005, Septic Tank TA-20-27
PRS 53-001(b), Waste Accumulation at Building TA-53-2*
PRS 53-001(e), Waste Accumulation at Building TA-53-25*

*: Comments of these sites have been resolved

Sites Appears Appropriate Not To Add To LANL RCRA/HSWA Permit

EPA tentatively agrees with the NFA proposals and recommends that the following sites are not potential SWMUs: (NFA Criterion NO. 4)**

DOU #5

NOT IN PERMIT NOW.

PRS 20-003(b), 20-mm Gun Firing Site
PRS 53-001(g), Waste Storage Shed TA-53-1031
PRS 53-012(e), Outfall*
PRS 72-001, Small Arms Firing Range

**: Environmental Restoration (ER) Project Consistency Team Policy Number 015, "No Further Action Criteria" (PCT 1995, 1116)

Sites Where Additional Information is Needed

Additional information or further investigation is required for the following sites:

PRS 20-001(b), Landfill Area 2
PRS 53-001(a), Waste Accumulation at Building TA-53-2 (Note: LANL agrees to resample this site)

Sites Analysis Information are Unavailable at this time
The EPA did not review those sites because the facility would submit the test results of these sites later. No decision is being finalized:

PRS 20-001(c), Landfill Area 3
PRS 20-002(d), Firing Site
PRS 20-003(c), Navy Gun Site
PRS 53-005, Waste Oil Pit
PRS 53-008, Boneyard
PRS 53-010, Mineral Oil Storage Area

DOING MORE WORK / UPDATE OF NOD

COMMENT PERTAINING TO LANL NOD RESPONSE TO RFI REPORT FOR PRS TA-20, TA-53 AND TA-72

1. **PRS 20-001(b), Landfill Area 2 -** LANL Response to NOD, No. 1

The way the information is presented is very awkward to review and some information is missing. A table is not just the results that are above SALs or background levels. Please list all the samples which were analyzed for inorganics including the sampling interval (depth), the result, the detection limit, the UTLs based on background concentrations for applicable constituents, and the SALs. **(Best Professional Judgement, (BPJ))**

COPY

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

File - Need to respond/Barra by 9/1/97

RECEIVED AUG 1997

July 29, 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: Response to the Request for Additional Information to the NOD Response for RFI Report for PRSs 50-004(a, c) and 50-011(a) in TA-50 (Former OU 1147)
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed additional information dated June 13, 1997, sent by Los Alamos National Laboratory (LANL) to supplement the RFI Report for Potential Release Sites 50-004(a, c) and 50-011(a). NFA Criterion 5 appears to have bet met for all three sites, as available data indicates that RCRA-regulated contaminants pose an acceptable level of risk under current and projected future land use. EPA recommends removing these sites from the LANL RCRA/HSWA operating permit.

Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

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

Stay to review
need to review
to DOE/LANL
by 10/10/97
Bennett

AUG 29 1997

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

Re: Response to the NOD Comments for the RFI Report for SWMU 21-018(a), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's Response to the NOD Comments pertaining to the RFI Report for SWMU 21-018(a), dated August 1, 1997, and has determined the Report to be complete. However, EPA disagrees with LANL's recommendation that this site meets the criteria of a No Further Action determination. EPA recommends that further sampling is needed to determine the vertical extent of contamination at some locations. Enclosed are EPA's comments and recommendations regarding this Report.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

Comments on the NOD Response to the RFI Report for SWMU 21-018(a)

General Comment: EPA disagrees with LANL's recommendation of No Further Action for the following reasons:

1. LANL did not complete all the borings required in the approved workplan, thus not thoroughly investigating the SWMU;

2. In some of the borings that they did complete, the full vertical extent of contamination was not determined; and,

3. Many of the mercury analysis performed at this SWMU exceeded the holding times by 14-180 days; resulting in data of questionable validity.

General Comment: All future bore logs/descriptions completed at LANL should include the background PID/OVA reading for each boring. On the logs submitted, LANL shows the field screening result for each interval as being background, but does not include the background reading.

General Comment: EPA approved the workplan under the assumption that all the borings (in phase I and II) would be completed. In the approved workplan, LANL was supposed to drill five inclined boreholes underneath the three absorption beds. Also, a 75 foot vertical borehole was to be completed in absorption bed 1. None of these borings were completed. LANL must notify and obtain approval from the Administrative Authority if changes are made to the work plan. If LANL makes changes to the work plan without approval from the AA, LANL is taking a risk that they may have to do the work over! There is no guarantee that the AA will sympathize with LANL for not following the approved work plan.

In this case, after reviewing the data, EPA will not require all the slanted borings mentioned above but will still require an additional 75 foot vertical boring in bed 3, preferably at the intersection of the two pipes. Also, deeper borings will be required at soil boring locations 21-04509 and 21-4505 (to at least 25 feet) and at soil boring location 21-2519 (to 100 feet) to determine the vertical extent of contamination. Soil samples shall be analyzed for the same chemical constituents and the same soil intervals as the previous investigation.

Page 11 of the Response: SW-846 requires that non-aqueous samples be refrigerated and analyzed as soon as possible, not at LANL's discretion. Also, SW-846 requires that the holding times for

solid mercury samples be 28 days. LANL must ensure that the holding times are met. It appears to EPA that LANL is not taking the holding times for mercury seriously, since there were several sampling requests that missed the holding times from 14-180 days. EPA does not have confidence that the data presented is valid. The mercury results with the missed holding times can not be used in a risk assessment.

LANL will need to resample the soil intervals that missed the holding times for mercury, especially those that were missed by 7 days or more. **NOTE to NMED:** NMED may want to require a stricter or more lenient timeframe.

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

Site Team - need to forward by 10/17/97 pm to

September 8, 1997

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

Re: NOD Comments on the Voluntary Corrective Action (VCA) Completion Report for SWMU 21-024(e), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's VCA Completion Report for SWMU 21-024(e), dated January 23, 1996, and has found the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

David W. Neleigh

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

Enclosure

NOD Comments on the Voluntary Corrective Action Completion Report for PRS 21-024(e)

General Comment: If hazardous constituents were found downslope of the outfall, then LANL would need to sample underneath the tank and any associated piping. This Report does not mention whether hazardous constituents were found. It implies that only radionuclides were found in the soil sampling. This needs to be clarified in the Report.

Page 1; 1st paragraph: LANL mentions that the only contaminant present at levels greater than the screening action levels was plutonium-239. Please clarify whether there were any contaminants above UTLs or above detection limits for organics.

Page 1; 2nd paragraph: Did LANL formally submit a Class III permit mod to EPA or NMED that included this SWMU for NFA? Also, EPA's acceptance of the NFA proposal back in March of 1995 is a tentative decision and is not final until all public participation procedures are completed and a final determination is issued. Furthermore, the draft tentative decision could be reversed in the final decision.

Page 2; Septic Tank Contents: Please provide the results on all constituents analyzed (include the detection limits)in both the solid and liquid samples. LANL provided only partial results or results that were above detection limits.

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

September 8, 1997

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

Re: NOD Comments on the Voluntary Corrective Action (VCA) Completion Report for SWMU 21-024(j), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's VCA Completion Report for SWMU 21-024(j), dated January 22, 1996, and has found the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

SEP 1997
RECEIVED

NOD Comments on the Voluntary Corrective Action Completion Report for PRS 21-024(j)

Page 1; 2nd paragraph: Was the sump constructed of concrete or native materials? Please clarify in the Report.

Page 1; Corrective Action: If the sump was made of concrete, was there any cracks or other deformities in the bottom. If the sump was made of native materials, then taking samples to only 18 inches below the bottom of the sump is not deep enough.

Page 2; 4th paragraph: LANL mentions that samples were not screened for VOCs as was originally planned because they felt they were not present at the site. This statement is inconsistent with the previous paragraph, in which LANL mentions that they will sample for organics in a fixed lab. In the future, do not deviate from the approved RFI Work Plan without approval from the Administrative Authority. Otherwise, LANL takes the risk of performing the work over.

Page 2; Results: Please include the soil boring log in the revised Report.

Page 2; Background Comparison: Please include the organic results in the revised Report. Also, were are the results for cadmium and selenium?

Page 3; Conclusions: EPA cannot agree on a NFA determination until all information and results are submitted.

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

SEP 15 1997

Sue -
Teri D -
I'd we agree with this conclusion please forward a letter to DOE/LANL with intent of NFA + permit action. Both let me know ASAP.

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

Re: Approval of the Voluntary Corrective Action (VCA) Completion Report for SWMU 8-005, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's VCA Completion Report for SWMU 8-005, dated February 27, 1996, and has found the Report to be approvable. EPA agrees with LANL's recommendation of No Further Action for this SWMU.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

Rich Mayer

for David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

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

Steve - John K - need to forward to LANL/DOE to EPA or return to EPA with reasons by 11/7/97 Benito 10/7/97

RECEIVED OCT 1997

October 2, 1997

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

RE: Review of LANL VCA Completion Report for PRS C-0-041, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)-0, Potential Release Site (PRS) C-0-041, dated March 21, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES (LOD)
LANL VCA COMPLETION REPORT FOR PRS C-0-041

1. Please include a section discussing the quality of the data. Also, LANL had no conclusion or recommendation section in the Report. **(Best Professional Judgement (BPJ))**

2. Page 2; 3rd paragraph: EPA questions why LANL left a remaining layer of asphalt approximately 1/4 inch thick by 3 feet wide, located at 4 feet in depth. It would appear to EPA that LANL should have removed this material while they were excavating. Please clarify. **(BPJ)**

3. Page 2; last paragraph: The attached letter from the USFS is not included in the Report. **(BPJ)**

4. Page 3; Table 1: Please include the soil sampling depths in the table and the detection limits for the VOCs and SVOCs. Also, please include any soil boring logs or field screening information in the revised Report. **(BPJ)**

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

Steve John K -
need to forward comments or return to EPA for appropriate response by 11/9/97
Benito 10/2/97

October 2, 1997

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

RE: Review of LANL VCA Completion Report for PRS 0-032, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)0, Potential Release Site (PRS) 0-032, dated April 30, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES (LOD)
LANL VCA COMPLETION REPORT FOR PRS 0-032

General Comments

1. The VCA completion report may function as the equivalent of the RCRA Facility Investigation (RFI) report. Besides, LANL should submit confirmation sampling and analytical results; without this information, the reviewer is unable to evaluate whether the VCA is complete and whether a No Further Action (NFA) is justified. (**Best Professional Judgement, (BPJ)**)

2. This Report is poorly written. Much needed information is omitted from the Report. Also, there is no conclusion or summary section in the Report. No decision can be made, due to lack of information. **(BPJ)**

Site Specific Comments

3. Page 2; 1st paragraph: The results of the 1994 RFI investigation needs to be included in this Report. This should include all the information that would be contained in a RFI Report, not just partial information. **(BPJ)**

4. Page 2; 3rd paragraph: LANL must submit the field screening results of the soil from within, beneath and surrounding the drain line and sump boxes, and any soil boring data to demonstrate LANL VCA is complete. Please address any deviations from approved work plan. **(BPJ)**

5. Page 2; last paragraph: LANL needs to provide the waste characterization samples in the RFI Report. **(BPJ)**

9/4/97

October 21, 1997

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

RE: Review of LANL VCA Completion Report for PRS 19-002, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 19, Potential Release Site (PRS) 19-002, dated February 12, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

6PD-N:ACHANG:ATC:10/21/97:X7541:a:\RCRA\LANL\V19_002.L
6PD-N 6PD-N
LANGLEY MAYER

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS 19-002

GENERAL COMMENT

1. This report was poorly prepared. Many pieces of important information were omitted from the report. LANL shall rewrite and resubmit the report including all the information requested. **(Best Professional Judgement, (BPJ))**

2. The NMED/EPA do not agree with LANL that the Voluntary Corrective Action (VCA) activity of this site is complete. LANL supposedly removed contaminated soil from this SWMU; however, nothing was mentioned in the introduction. Besides, the analytical results in VCA Completion Report do not support the No Further Action (NFA) request. **(BPJ)**

3. Please obtain the quality assurance and laboratory data. The report should describe how the QA/QC plan objectives were met. Were any of the samples diluted? Did the samples arrive at the laboratory in proper condition? **(BPJ)**

SITE SPECIFIC COMMENTS

1. Page 1, 2nd paragraph: It states, "...the actions taken at PRS 19-002 are presented in this report in lieu of preparing a separate RFI report." However, this report does not follow RFI report format. If this Report is taking the place of the RFI Report, LANL must provide the following information:

    1. A summary of all analytical results, not just those results above background or SALs;

    2. All soil boring logs and field screening results;

    3. A discussion of any deviation from the approved Work Plan;

    4. The depth that each analytical result was sampled from; and

    5. A map which shows the SWMU, and all sampling points in and around the SWMU. Figures 1 and 2 were omitted from the Report. **(BPJ)**

2. Page 1, SECTION 2.0: It states, "A third sample...from each of the three types of batteries found at the site...". Please explain the differences of the three types of batteries. The previous statement stated that all batteries found on the site were carbon-type batteries.(see the 4th paragraph of SECTION 1.0) **(BPJ)**

3. Page 3, 3rd paragraph: Please explain what is "the first-order drainages" **(BPJ)**

4. Page 4, 4th paragraph: TCLP should not be used to determine whether a release has occurred, or the extent of contamination at the site. LANL shall use total metals.

   LANL shall submit a sample map indicating all the sample locations and battery debris locations. LANL must sample the battery debris locations and its proximity for both surface, and underground at 1-ft interval up to 3 feet deep to ensure that no hazardous waste was left in place. If the soils are still contaminated, LANL must remove them. **(BPJ)**

5. Page 5, TABLE 1: The background UTL data in this table appear to be mixed up. Please explain why the UTLs of the inorganics vary from sample to sample, and why some site UTL values are several times higher than that of their area UTL values. The following UTLs either are not consistent from sample to sample and/or their values higher than their LANL UTLs:

SAMPLE NUMBER	ANALYTE	UTL (mg/kg)	LANL UTL (mg/kg)
0119-95-0030	Mercury	1030	
0119-95-0029	Mercury	15.7	
0119-95-0028	Mercury	0.1	
0119-95-0029	Lead	1030	23.3
0119-95-0030	Lead	39	
0119-95-0029	Selenium	101	
0119-95-0028	Selenium	1.7	
0119-95-0029	Copper	6180	
0119-95-0028	Copper	15.7	
0119-95-0030	Manganese	6180	
0119-95-0029	Manganese	5.11	
0119-95-0028	Manganese	1030	

SAMPLE NUMBER	ANALYTE	UTL (mg/kg)	LANL UTL (mg/kg)
0119-95-0030	Zinc	15.7	50.8
0119-95-0029	Zinc	39	
0119-95-0028	Zinc	101	
0119-95-0028	Cadmium	2.7	1.4
0119-95-0028	Arsenic	11.6	7.82
0119-95-0028	Nickel	26.7	15.2

6. Page 5, TABLE 1: Please explain why the UTLs for manganese (1030 and 6180 mg/kg) are higher than EPA Region IX published Preliminary Remedial Goals (PRG) of manganese for residential soil value (380 mg/kg). Please submit any documents, data, or calculations, which support the explanation. **(BPJ)**

7. Page 5, TABLE 1: The analytic results in the Table indicated that some inorganics are still higher than their respective background UTLs by one or two orders of magnitude. Because these samples were collected from 0 to 6 inches deep, one can see that contaminants still exist, which means that VCA did not remove all the contaminated soils. LANL must remove the contaminated soil and resample the proximity of those sample locations. **(BPJ)**

8. Page 6, TABLE 1 (CONTINUED) - In the row of Sample Number 0119-95-0030, three metals show SALs, UTLs, and analyte concentrations without printing their names. **(BPJ)**

9. Page 7, 4th paragraph: It states, "...the values were then compared to LANL SALs (see attached table, "Total Metals, 22 June 1995")." The table is omitted from the report. **(BPJ)**

10. Page 9; Corrective Action: LANL did not provide any confirmatory sampling data to show that the site was cleaned up. LANL needs to provide the analytical results and a map showing the sampling locations. **(BPJ)**

11. Page 9, Section 5.0 CONCLUSIONS: It states, "On the basis of analyses for VOCs, SVOCs, and metals, we conclude that no release of RCRA hazardous materials occurred at PRS 19-002 and the site should be removed from the HSWA list of solid waste management units." However, Table 1 listed several inorganics that exceeded their UTLs, and some of them even exceeded their residential risk base concentrations. LANL shall submit a work plan to clean up the contaminated soils. **(BPJ)**

12. Page 9, Section 5.0 CONCLUSIONS: It states, "See the attached Certificate of Completion from Garry Allen, Field Unit One Project Leader." The Certificate of Completion is not in the report. **(BPJ)**

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

Please respond / forward to facility by 11/28/97 or return to EPA with explanation
Benito 10/28/97

OCT 23 1997

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

Re: NOD Comments on the Voluntary Corrective Action (VCA) Completion Report for SWMU 21-024(h), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's VCA Completion Report for SWMU 21-024(h), dated February 1996, and has found the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

NOD Comments on the Voluntary Corrective Action Completion Report for PRS 21-024(h)

Page 1; 1st paragraph: LANL needs to include the sampling results for the hazardous constituents in the VCA Report. If LANL is trying to obtain a NFA determination, all information should be included in this Report, not referenced. The VCA Report should be a "stand alone" document.

Page 1; Corrective Action: In the second paragraph, LANL mentions that they did not follow their workplan by not taking a sample. Please note that if LANL does this from an approved workplan from EPA, LANL will be required to take the sample missed.

Page 2; 3rd and 4th paragraphs: EPA cannot agree with LANL's closure actions of the septic tank until reviewing the outfall sampling results. If the outfall area sampling results show organics, then EPA will require confirmatory sampling underneath the septic tank. Also, if LANL conducted a "flawed" sampling of the outfall area, EPA may require additional sampling.

Page 3; Drainage Area Samples: LANL needs to include the sampling results for the hazardous constituents in the VCA Report. The VCA Report should be a "stand alone" document.

Page 3; Conclusions: EPA cannot agree on a NFA determination until all information and results are submitted.

Page 6; Table 2: Please include all the metal results, LANL only included the Barium results. Is the second table TCLP results?

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

OCT 28 1997

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

Re: NOD Comments on the Voluntary Corrective Action (VCA) Completion Report for PRS 39-002(c), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's VCA Completion Report for PRS 39-002(c), dated January 1996, and has found the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

NOD Comments on the Voluntary Corrective Action Completion Report for PRS 39-002(c)

General Comment: LANL needs to include a section (in the revised VCA Report) on the results of quality assurance/quality control activities.

Page 1; 3rd paragraph: LANL needs to include the sampling results from the 1993 RFI in the VCA Report. If LANL is trying to obtain a NFA determination, all information should be included in this Report, not referenced. The VCA Report should be a "stand alone" document.

Page 1; Corrective Action: LANL mentions that the approved VCA plan was followed with some deviations. Who approved the plan, DOE, EPA, or NMED?

Page 2; 1st paragraph: How deep was the soil screened at each site for VOC's.

Page 2; 2nd paragraph: LANL mentions that at subsite A soil was excavated. How deep was the soil excavated? Also, was this PRS sampled for VOC's in the 1993 RFI investigation? Since this site included waste containing VOC's, VOC's should have been analyzed from the soil samples taken in 1993.

The same logic can be used for sampling VOC's at site B also.

Page 2; 5th paragraph: LANL mentions that at subsite D soil was excavated. How deep was the soil excavated?

Page 2; 7th paragraph: Confirmatory soil samples for subsites A and B should include VOC analysis, since VOC's were in the waste stored at PRS 39-002(c).

Page 3; Request for Concurrence: EPA cannot agree on a NFA determination until all information and results are submitted in a revised VCA Report.

Stu - Please forward to Frank by 12/15/97 Benito 11/13/97

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

October 31, 1997

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

RE: Review of LANL VCA Completion Report for PRS C21-027, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 21, Potential Release Site (PRS) C21-027, dated February 7, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS C21-027

1. Page 1, 2nd paragraph of CORRECTIVE ACTION: LANL states, "It was expected that any contamination was removed during decontamination and decommissioning." LANL shall briefly depict what was the problem with this site, and what were the chemicals of potential concern (COPCs) that might exist at the site in the DESCRIPTION Section. Without knowing the type of contamination that once existed, how can LANL be sure that the contamination was removed? **(Best Professional Judgement, (BPJ))**

2. Page 1, DESCRIPTION: Please describe what was removed from the below-ground section, and how deep it went. Were there any pipes buried underground? If that is the case, LANL shall sample the bottom soil along the pipe line and along the cooling tower for chromium (VI). **(BPJ)**

3. Page 1, CORRECTIVE ACTION: One sample taken for confirmatory sampling is inadequate. Note the top two samples to 12 inches were probably collected from the fill soil when the cooling tower pad was removed. (Note the two upper level samples are within the UTLs except for one calcium sample.) In addition, LANL must extend the vertical depth of sampling. **(BPJ)**

4. Page 4, Table 1: LANL shall explain how the chromium screening action level (SAL) was established. Is the value based on residential scenario or industrial scenario? Is the SAL for total chromium, chromium III, or chromium VI? The value (400 mg/kg) is much higher than both Region IX's Preliminary Remediation Goals (PRG) for either residential (30 mg/kg) or industrial (230 mg/kg). **(BPJ)**

5. Page 4, Table 1: The elevated chromium concentrations are found in sample location 21-4036. Sodium chromate (Cr^{+6}) is a corrosion inhibitor commonly used in the past in cooling tower water circulation systems. The analytical result indicated the possibility of cooling water releases to the underground soil. Because the RPGs for Cr^{+3} and Cr^{+6} are different, LANL must resample this location from 2 ft to 5 ft deep at 1-ft intervals, and an additional location from surface to 5 foot deep at 1-ft intervals to analyze Cr^{+3} and Cr^{+6}. **(BPJ)**

5TH

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

October 31, 1997

HSWA LANL 3/1122/33

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

RE: Review of LANL VCA Completion Report for PRSs 33-010(a,d,g) and 33-011(b), EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 33, Potential Release Sites (PRSs) 33-010(a, d, and g) and 33-011(b) dated June 13, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

Review Summary
VCA Completion Report for PRSs in TA 33
Los Alamos National Laboratory (LANL)

This VCA Completion Report, dated June 13, 1996, includes information on the following SWMUs:

PRSs: 33-010(a), 33-010(d), 33-010(g), and 33-011(b)

Sites Where No Further Action (NFA) Appears Appropriate

Based upon the information provided, EPA tentatively agrees with the NFA proposals for the following site:

PRS	NFA CRITERION
33-010(g)	No. 5*

*Refer to LANL publication: EM/ER:95-PCT-015, R1

Sites Where Additional Information is Needed

Additional information or further investigation is required for the following sites:

PRS 33-010(a), 33-010(d), 33-011(b)

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRSs IN TA-33

SITE-SPECIFIC COMMENTS

PRS 33-010(a)

1. Page 5, Table 2.1-2: The concentrations of lead in sample location AAA9649, and the concentrations of copper, mercury and zinc at sample location AAA9648 deserve further delineation. LANL shall investigate the proximity of these locations and sample for inorganics at 2-ft and 4-ft deep from surface. **(Best Professional Judgement, (BPJ))**

2. Page A-2, TABLE A-1: Since high zinc concentrations were found at Sample Locations 10a-26 and 10a-27 during the screening, LANL shall resample the neighborhood of these two locations. **(BPJ)**

PRS 33-010(d)

3. Page 15, Table 4.0-1: It shows that the gross volume of hazardous waste were removed from 33-010(a) and from 33-010(d), but did not specify what constituents were involved. Please explain whether LANL sampled the removed waste? **(BPJ)**

PRS 33-011(b)

4. Page A-2, TABLE A-1: Under PRS 33-011(b), one Sample ID was labeled "001(b) #14". Could it be a typo? Should it be corrected to "011(b) #14"? **(BPJ)**

Ste -
Please forward these comments to DOE/LANL by 11/12/97
Benito 11/12/97

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

October 31, 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: NOD and NFA Recommendations for TA-49 Potential Release Sites RFI Report
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the RFI Report for Potential Release Sites (PRSs) located in Areas 5, 6, 10, and 11 of Technical Area (TA) 49 at Los Alamos National Laboratory (LANL). EPA concurs with No Further Action (NFA) recommendations for 5 of these sites, as adequate phase I investigations have revealed that RCRA-regulated contaminants are not present at significant levels above background. EPA recommends removing these PRSs from the LANL RCRA/HSWA permit. EPA believes that the remaining sites require further investigation or interim action.

A list of deficiencies is attached. Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

Enclosure

Summary of EPA Review
RFI Report for TA-49 Potential Release Sites

Potential Release Sites where No Further Action (NFA) seems appropriate:

PRS 49-002
PRS 49-005(a)
PRS 49-005(b)
PRS 49-006
PRS 008(b)

Potential Release Sites where NFA may not be appropriate:

PRS 49-004 (Extent of low-level radiological contamination should be defined)

PRS 49-008(a) (Extent of Lead and PCB contamination should be defined)

PRS 49-003 (Deviation from Workplan: SVOC analysis required)

PRS 49-008(c) (Radiological contamination of small surface area should be addressed)

List of Deficiencies
RFI Report for Technical Area 49 Potential Release Sites (Areas 5, 6, 10, and 11)
Los Alamos National Laboratory (NM0890010515)

General Comments

1. EPA approved the Workplan *(RFI Work Plan for Operable Unit 1144, 1992)* for this report as an adequate Phase I investigation plan. The objective of a Phase I RFI is to determine, at a minimum, the presence or absence of contamination at each Potential Release Site (PRS). The presence of analytes at significant levels above background was established at PRSs 49-004, 49-008(a), 49-003, and 49-008(c); however, contaminants of potential concern (COPCs) were eliminated at each PRS based on "qualitative risk assessments" (Executive Summary, p. ii). EPA believes that a Phase I investigation may not necessarily yield adequate data with which to accurately characterize the contamination at a site or to conduct a representative risk screen or assessment. A Phase II investigation should be designed to further establish the nature and extent of any constituent found above background in the Phase I RFI. Once the nature and extent of COPCs have adequately been characterized at a site, a qualitative risk assessment may be utilized to determine what remediation measures, if any, are required to restore the site to background conditions. EPA will not concur with a No Further Action (NFA) decision until any COPC found in a Phase I investigation has been thoroughly characterized for nature and extent of contamination and found to be of acceptable risk to human health and ecological receptors.

2. LANL appears to confuse a screening assessment with a baseline risk assessment. The purpose of a screening assessment is to determine if analytes are present above background levels at a site. Any analyte present at significant levels above background indicates a contaminant release to the environment and is designated as a COPC. The nature and extent of each COPC (and any daughter constituents) must either be adequately characterized in a Phase I RFI or then be carried forward into a Phase II RFI. Once the nature and extent of all COPCs present at a site have been characterized, a baseline risk assessment may then be utilized to quantify the risk posed to human health and the environment by the presence, quantity, and possible transmission of contaminants.

3. Chromium concentrations, although always reported in the form of total Chromium, must always be considered in the hexavalent chromium form unless laboratory analysis proves justification for otherwise. This assumption should also be used in subsequent risk screens and assessments. Chromium was

eliminated from PRS 49-005(a) as a COPC based upon this assumption. Although EPA agrees that concentrations of chromium found at PRS 49-005(a) may not warrant further investigation, chromium concentrations approaching the hexavalent chromium SAL (31mg/kg) may necessitate the need to conduct phase II sampling.

Specific Comments

4. 5.2.2 Description. The description should include site-specific information, such as the depth to the leachfield lines at PRS 49-003. Furthermore, the history of these PRSs should be all-inclusive rather than referring to the Workplan for further detail.

5. 5.2.4.2 Soil Sampling. LANL documents the lack of SVOC testing at PRS 49-003 as a deviation from the Workplan. LANL states that "the primary contaminants from laboratory operations at this site would have been radionuclides." However, page 6.2-6 of the Workplan emphasizes the types and amounts of organics used in the radiochemistry operations. EPA disagrees with the rationale that areas of organic contamination will be co-located with areas of significant radiological contamination. LANL should follow the approved Workplan analytical suite by resampling the site for SVOCs. EPA can not concur with No Further Action for PRS 49-003.

6. 5.2.4.2 Soil Sampling. Combining data from PRSs 49-003 and 49-008(c) in sample summary tables and sample results tables confuses the review process. PRS 49-008(c) is stated to include only surface samples, however Tables 5.2.4-2 and 5.2.4-3 show that subsurface samples were taken at the interim storage area and the small-scale shot area of PRS 49-008(c). In addition, Table 5.2.5-1 incorrectly categorizes Sample ID 0549-95-0096 as a surface sample rather than a subsurface sample.

7. 5.2.11 Conclusions and Recommendations. The combined Phase I investigations of PRS 49-008(c) (leachfield surface samples) and PRS 49-003 (leachfield subsurface samples) have adequately demonstrated that radiological contamination at Location IDs 49-8039, 49-8040, and 49-8042 is confined to the surface. However, EPA believes that No Further Action for PRS 49-008(c) may not be appropriate, as Americium-241 and Plutonium-239/240 concentrations are significant and may warrant corrective measures.

8. 5.3.6 Evaluation of Radionuclides. EPA believes that LANL has not adequately characterized the extent of Uranium and Cesium-137 contamination at sample locations 49-6221 through 49-6227 in PRS 49-004. Rather than recommending No Further Action,

EPA believes analyzing subsurface samples in this limited area as a phase II investigation is appropriate.

9. 5.4.4.2 Soil Sampling. A summary of the analysis performed on samples taken at the former transformer stations (49-5090 through 49-5093) was omitted. Because these samples are considered to be a part of PRS 49-008(a), they should have been included in Table 5.4.4-1.

10. 5.4.8 Risk-Based Screening Assessment. The extent of Lead and PCB contamination at PRS 49-008(a) must first be determined before conducting a risk-based screening assessment. EPA believes that, although PCB concentrations in surface samples are below the TSCA cleanup level, subsurface samples may reveal PCB contamination at greater concentrations. EPA also believes that further investigation of the Lead contamination in the vicinity of Location ID 49-5007 is necessary, and removing the congealed lead may be necessary as an interim action. LANL claims that "the grid size and sampling locations... are adequate to determine the nature of contamination from these PRSs, as described in the work plan." However, the Workplan was designed for phase I sampling only, and the surface area of lead contamination at Location ID 49-5007 could be as high as 1600 sq ft without elevating concentrations above background in other surface samples. The extent of lead contamination at this PRS may be easily determined by analyzing surface and subsurface samples collected up to 10 ft away from Location ID 49-5007. Until the PCB and Lead contamination at PRS 49-008(a) is addressed, EPA can not concur with a No Further Action recommendation.

11. 5.5.8 Risk-Based Screening Assessment. LANL should not make conclusions regarding risk after a phase I investigation. It is more appropriate to recommend No Further Action for PRS 49-008(b) due to the fact that an adequate phase I investigation has shown no evidence of a contaminant release because no constituents were found at significant levels above background.

Steve - Please forward to DOE/LANL bb 12/15/97 Benito 11/13/97

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

November 4, 1997

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

RE: Review of LANL VCA Completion Report for PRS 16-016(f), EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)16, Potential Release Site (PRS) 16-016(f), dated January 19, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS 16-016(f)

1. Page 1, Section 2.0, 2nd paragraph: The report states that the visible asbestos and the surrounding soil in a radius of 3 ft and to a depth of 1 ft were removed. In April 21, 1995, the Memorandum issued from David Jardine states, "...12 x 12 ft around those two spots was stripped several inches deep...". Please clarify which is correct, "1 ft" or "several inches"? **(Best Professional Judgement (BPJ))**

2. Since this site is not included in the approved work plan, please explain whether this site has ever been investigated with analytical results confirming that no RCRA regulated hazardous constituents existed at this site. **(BPJ)**

Stu - Please forward to DOE/LANL 5§ 12/15/97 Benito 11/13/97

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

November 4, 1997

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

RE: Review of LANL VCA Completion Report for PRS 16-016(b), EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)16, Potential Release Site (PRS) 16-016(b), dated January 19, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS 16-016(b)

1. Page 1, Section 2.0, 3rd paragraph: How many samples were taken from the mounds and what tests have been done? Did LANL use the HE test on the mounds? LANL shall submit the analytical results of the excavated soil in the revised report. **(Best Professional Judgement (BPJ))**

2. Page 3, Table 1: Please explain whether the "background" data in the table are the "background UTL". **(BPJ)**

Stu -
Please forward to DOE/LANL by 11/15/97
Benito
11/13/97

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

November 4, 1997

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

RE: Review of LANL VCA Completion Report for PRS 18-001(a), EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)18, Potential Release Site (PRS) 18-001(a), dated January 19, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS 18-001(a)

General Comments

1. In the RFI report, LANL stated that SALs were exceeded in four manholes, which would be decommissioned along with two lagoons. Please explain why the VCA Completion Report did not mention those four manholes. Please clarify whether these manholes are part of PRS 18-001(a). Had the manholes been removed? (**Best Professional Judgement, (BPJ)**)

Site Specific Comments

1. Page 1, 6th paragraph, Monitoring Well: Please describe how the well was drilled. How deep? **(BPJ)**

2. Page 4, 1st paragraph: LANL states, "The SALs for groundwater are equivalent to the New Mexico State Water Quality Standards." Please specify which standard; surface water, or groundwater. **(BPJ)**

3. Page 4, 4th paragraph: The Report states that the measured manganese concentrations in monitoring wells PCO-1, PCO-2, and PCO-3 are 91, 1,460, and 8,800 µg/l, respectively. It is unusual for data to vary like this. Is there a laboratory problem? Has LANL verified the data? **(BPJ)**

4. Page 4, 5th paragraph: LANL believes that the measured manganese concentrations in the various wells are a function of overall water chemistry, rather than a pollution source. Please explain what it means and what are the major variables of this function. **(BPJ)**

Stu - Please forward to DOE/LANL bs 12/15/97 11/13/97

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

November 7, 1997

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

RE: Review of LANL VCA Completion Report for PRSs 20-003(c) and 53-010, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Areas (TAs) 20 and 53, Potential Release Sites (PRSs) 20-003(c) and 53-010, dated January 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS 20-003(c) AND 53-010

PRS 20-003(c) - Navy Gun Site

1. Page 2, 4th paragraph: LANL states, "As stated in the VCA plan, no chemicals of concern were identified, and therefore, no confirmatory sampling was required." However, in the *RFI Report for PRSs at TAs 20, 53, and 72 (EM/ER:96-140)*, issued March 18, 1996, LANL states, "During the Phase I RFI, the Navy gun mount was located. Based on the sampling results and screening assessment, the site was cleaned up in a VCA as a housekeeping measure... Eight samples were collected at different sample locations. All specific results...are included in the VCA Final Report."

   Results, which were presented either in the RFI Report or in the VCA Completion Report, do not justify that no COPCs are remaining at the site, therefore, the NFA request is denied.

   LANL must submit all the sampling and screening assessment results, sampling location map ...etc. as stated in a typical RFI report. **(Best Professional Judgement, (BPJ))**

PRS 53-010 - Bermed Mineral Oil Storage Area

2. Page 6, 2nd paragraph: LANL shall explain what tests (SVOC or metals) were performed on the confirmatory samples. LANL states that the only chemical of concern (COC) is 1,2,4-trimethylbenzene, but TPH was also found at elevated levels (5,100 mg/kg). Has LANL analyzed for TPH? Please submit all previously-obtained site characterization data, as well as VCA data. **(BPJ)**

3. Page 8, Table 1: Please explain how and why all soil samples are collected at "0-0 inch" depth. **(BPJ)**

Stu – Please forward them to LANL/DOE by 1/2/98 or rec'd to EPA w/ reasons by the same date / Benito

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

NOV 14 1997

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

Re: NOD Comments on the Voluntary Corrective Action (VCA) Report for PRS 16-011, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's VCA Report for PRS 16-011, dated January 19, 1996, and has found the Report to be deficient. Enclosed are the deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

NOD Comments on the Voluntary Corrective Action Report for PRS 16-011

General Comment: EPA considers this PRS to be a SWMU since the waste contained in this SWMU contains hazardous waste/hazardous constituents.

In addition, EPA cannot agree on the NFA recommendation until all information requested is provided in the revised Report.

General Comment: LANL needs to include a section in the revised Report on the results of the quality assurance/quality control activities.

Page 1; 2nd paragraph: Did this pit contain water at times or was it shielded from precipitation?

Page 1; Corrective Action: LANL mentions that they took only 2 composited samples of the soil and ash from the pit, instead of 6 planned originally, due to the fact that only HE contamination existed. However, when they took the two samples they analyzed the samples for VOCs, SVOCs and metals. Please explain the logic in the sampling methodology. In addition, VOC samples should not be composited, therefore the VOC results would not be valid.

Page 3; Table 1; Although the table provided is not clear, EPA assumes that a portion of the analytical results presented in this table were obtained using the TCLP method. Please clarify.

Page 4; last paragraph: Did LANL sample for organics in the composited sample taken from the three rolloff containers?

Page 5; 1st paragraph: Did LANL manifest the total 180 cubic yards as hazardous waste; or did they manifest only part of that amount as hazardous?

Attachment A: The semivolatile detection limits are high for several analysis. Please provide an explanation in the revised Report.

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

Steve -
If you concur with this - please forward letter to VCA contractor by 12/3/97
Benito

DEC 1997

November 19, 1997

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

RE: Review of LANL VCA Completion Report for PRS C-10-001, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 10, Potential Release Site (PRS) C-10-001, dated August 31, 1995. According to the Report, the VCA was to clean up a previous radioactive release of strontium-90, therefore, RCRA constituents were not investigated.

Based on the information presented in the report, the EPA recommends that the site VCA be accepted. If you should have any questions or need additional information, please contact Mr. Allen T. Chang of my staff at (214) 665-7541.

Sincerely yours,

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

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

November 19, 1997

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

RE: Review of LANL VCA Completion Report for PRS C-0-042, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)-0, Potential Release Site (PRS) C-0-042, dated April 30, 1996. The EPA has found the Report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS C-0-042

1. Page 5, Section 3.1 *Remedial Implementation*: LANL did not mention about the excavation activities regarding any pipelines connected to the UST. Please clarify whether any pipes exist and, if they do exist, describe any detective activities to ensure that no contamination exists along the pipeline. **(Best Professional Judgement, (BPJ))**

2. Page 6, 1st paragraph: The last sentence of this paragraph indicated that screening and confirmatory samples were collected from the middle, northeast corner and southeast corner of the excavation where the primary soil contamination was encountered. However, the report repetitively stated that the primary area of contamination is to the west of the UST, where no sample was taken, please clarify. **(BPJ)**

3. Page 6, Section 3.2: Information on sampling procedures and sample preservations prior to and during shipment should be included. **(BPJ)**

4. Page 11, Section 4.2 *Method of Management and Disposal*: LANL detailed the solid waste management in this section but did not discuss the liquid waste in the tank. Please explain how LANL manages the liquid waste. **(BPJ)**

5. Page 11, Section 4.2: Tank cleaning procedures and criteria used to verify the tank is clean should be included. **(BPJ)**

6. Please clarify whether this PRS is included in the Hazardous and Solid Waste Amendments module to the LANL RCRA permit. **(BPJ)**

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

November 19, 1997

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

RE: Review of LANL VCA Completion Report for PRS C-36-001, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 36, Potential Release Site (PRS) C-36-001, dated January 19, 1996. The PRS is a test containment vessel, which was contaminated with plutonium. No RCRA constituents were found during the VCA.

Based on the information presented in the report, the EPA recommends that the site VCA be accepted. If you have any questions or need additional information, please contact Mr. Allen T. Chang of my staff at (214) 665-7541.

Sincerely yours,

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

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

NOV 21 1997

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

Re: NOD Comments on the RCRA Facility Investigation Report (RFI) for PRS 10-008, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for PRS 10-008, dated September 1997, and has found the Report to be deficient. Enclosed are the deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

Rich Mayer D for

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

Enclosure

NOD Comments on the RFI Report for PRS 10-008

General Comment: LANL uses the logic that PRS 10-008 does not need to be sampled since it is near PRSs 10-001 (a-d). PRSs 10-001 (a-d) were sampled in 1994; therefore, those sample results can be used for PRS 10-008. LANL proposes a no further action recommendation for 10-008. EPA cannot approve a NFA determination on this site for the following reasons:

1. The RFI Report for PRSs 10-001 (a-d) has never been approved. In fact, two separate NOD letters have been issued. EPA issued an NOD letter to LANL on November 28, 1995. EPA also issued a letter to NMED recommending a 2nd NOD letter be issued to LANL (June 20, 1996). NMED issued an NOD to LANL on 7/21/97. See EPA's attached NOD letters.

2. In EPA's NOD letters, EPA found that the investigation of PRSs 10-001 (a-d) used too large of a grid size (500 foot intervals) and that the investigation performed was not specific enough to determine a release from PRSs 10-001 (a-d). EPA recommended that LANL submit a Phase II RFI sampling plan. Since EPA recommended further sampling for PRSs 10-001 (a-d), EPA cannot agree with LANL's NFA for PRS 10-008.

JUN 20 1996

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

Re: NOD Response for SWMUs 10-001(a-d): Second NOD
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the NOD Response dated February 16, 1996, concerning Los Alamos National Laboratory's (LANL) RFI Report for Solid Waste Management Units 10-001(a-d). In EPA's NOD dated November 28, 1995, EPA indicated that insufficient samples were collected in order for EPA to concur that there was no human health risk at the site. LANL responded that LANL had completed the work approved in the RFI Work Plan, and they would like to recommend these sites for no further action based on Phase I results.

The EPA still recommends that additional sampling must be conducted at these sites in order to make an appropriate determination, and LANL needs to submit a work plan to address these concerns discussed in the NOD. Therefore, EPA recommends that NMED should not approve this RFI Report until additional sampling has been conducted at these sites.

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

Sincerely,

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

6PD-N:BDRISCOLL:BD:6/208/96:L:\USER\BDRISCOL\LTA10.2NO

6PD-N
OWEN

NOV 2 8 1995

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

Re: RFI Report for Technical Area 10, Notice of Deficiency
Los Alamos National Laboratory (NM0890010515)

Dear Mr. Taylor:

The Environmental Protection Agency (EPA) has reviewed the RFI Report for Technical Area 10, Solid Waste Management Units (SWMUs) 10-001(a-d), and found it to be deficient. Enclosed is a list of deficiencies for which you have ninety (90) days from the date of this letter to respond.

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

Sincerely,

David W. 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

6PD-N:BDRISCOLL:BD:F:\USER\SHARE\LTA10.NOD

6PD-N
OWEN

List of Deficiencies
RFI Report Technical Area 10
SWMUs 10-001 (a-d)
Los Alamos National Laboratory

1. The grid size (500 foot intervals) used for sampling in Phase I may be appropriate for determining if there is gross contamination over a very large area but does not specifically address the firing pads for SWMUs 10-001 (a-d). EPA contends that an insufficient number of samples were collected to plausibly conclude that there is no human health risk at the site. LANL should sample the area around the firing pads using a statistically based or grid-based sampling plan for Phase II which will support a risk assessment.

2. Figure 1-3 somewhat alludes to the location of SWMUs 10-001 (a-d); although, SWMU 10-001(a) is mislabeled. LANL should provide a figure which clearly delineates in detail the location of each SWMU. In addition, the location of the SWMUs should also be labeled on each of the sampling figures.

3. The calculation of the upper tolerance limits should be revised to reflect 95 percent coverage of the 95 percent confidence interval.

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

NOV 2 8 1997

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

Re: NOD Comments on the RCRA Facility Investigation Report (RFI) for PRSs 0-003 and 0-012, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for PRSs 0-003 and 0-012, dated September 1997, and has found the Report to be deficient. Enclosed are the deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

Rich Mayer

for David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

NOD Comments on the RFI Report for PRSs 0-003 and 0-012

PRS 0-003

General Comment: Please include the soil boring descriptions and the PID/OVA readings for each PRS in the revised report.

Page 23; 4th paragraph: LANL mentions that the soil cuttings from the augering were visually screened; however, LANL should also screen the cuttings for VOCs. Also, LANL should not be using hand augering to obtain VOC samples, as the sample integrity would be compromised. Please clarify how the VOC samples were taken.

Page 27; Evaluation of Inorganics: Please provide all sampling results in the revised report. LANL only provided results above UTL background.

Evaluation of Organic Chemicals: Please provide the 2.5 to 3 foot and the 2.6 to 3.1 foot soil interval analytical results in the revised report.

Page 33; Conclusions and Recommendations: EPA cannot agree on a NFA determination for this PRS until the requested information is submitted.

PRS 0-012

Page 34; last paragraph: Is LANL saying that the blow-off tank never in its history of operation had effluent discharged to Los Alamos Canyon? If this is true, then why did LANL take surface soil samples from two drainage channels? Please clarify in the revised report.

Page 36; Field Investigations: Since the actual makeup/components of this PRS is different from originally conceived, EPA feels that subsurface soil samples should be taken underneath the tank to confirm that no contamination exists. EPA does not put any faith in LANL's leak test that was performed.

Page 47; Risk-Based Screening Assessment: Why is LANL performing a screening assessment on the soil samples taken from the drainage areas if the tank never released effluent to the drainage areas? Please clarify.

Page 51; Conclusions and Recommendations: EPA cannot agree on a NFA determination for this PRS until the requested information is submitted.

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

December 4, 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: Los Alamos National Laboratory
EPA ID# NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the RFI Report for Potential Release Sites (PRSs) 16-024 (c,d,f,g,k,m,o,p-s), 16-025(b2,d,g,h,j,k,m-o,y), 16-034(c-f,l,m), C-16-005, and C-16-017 located in Technical Area (TA) 16, dated September 1997. This document provides the results of surface and subsurface soil sampling at former locations of high explosive magazines and machining and storage buildings which were destroyed by intentional burning in 1960.

The RFI recommends No Further Action (NFA) at all of these sites. Based on this review, EPA concurs with this recommendation, as adequate phase I investigations have revealed that RCRA-regulated contaminants have not been released to the environment.

A list of comments is attached. Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

Enclosure

Comments
RFI Report for Technical Area 16 Potential Release Sites
Los Alamos National Laboratory (NM0890010515)

General Comments

1. LANL has proposed human-health NFA for these sites, with removal from the HSWA permit contingent upon ecological assessments. However, EPA believes that there is a general lack of evidence to suggest that contaminant releases have occurred at these sites and that ecological assessments are not needed. No HE constituents were found, and the few inorganics found above UTLs at these sites could be within background distribution. Polycyclic aromatic hydrocarbons (PAHs) found at these sites are below Estimated Quantitation Limits (EQLs) and process history suggests that PAHs were not used in operations associated with these PRSs. Therefore, EPA believes that the corrective action process, while protective of human health and the environment, may be expedited by removing these sites from the HSWA permit without required ecological assessments.

2. The LANL document *Risk-Based Corrective Action Process* (LA-UR-96-2811)nor the Multiple-Chemical Evaluation (MCE) outlined in this document have been approved by the Administrative Authority. EPA believes that the misapplication of the MCE to phase I investigation results often eliminates contaminants of concern (COCs) from further investigation before the extent of contamination has been delineated. EPA believes that, after adequate site characterization, the simplest way to account for additive effects due to multiple constituents is to compare noncarcinogens concentrations against respective SALs divided by 10.

3. LANL suggests that NFA is appropriate for these sites because constituents are below SALs. EPA believes that a site where constituents are found at significant levels above background, even if below SALs, may require further sampling and analyses in a phase II investigation. It is more appropriate to recommend NFA for these PRSs due to the fact that adequate phase I investigations have shown no evidence of a contaminant release.

Sta - Please forward to LANL/DOE by 1/9/98 on response to EPA with rationale by the same date/ [illegible] 12/8/97

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

DEC 0 5 1997

DEC 1997

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

Re: NOD Comments on the RCRA Facility Investigation Report (RFI) for PRSs C-3-006 and 3-054(e), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for PRSs C-3-006 and 3-054(e), dated September 1997, and has found the Report to be deficient. Enclosed are the deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

NOD Comments on the RFI Report for PRSs C-3-006 and 3-054(e)

PRS C-3-006 and 3-054(e)

General Comment: Please include the soil boring descriptions and the PID/OVA readings for each PRS in the revised report.

Page 22; 3rd paragraph: Is LANL saying that PRS 3-054(e) has never received any hazardous constituents (from lab operations) in the history of the PRS, except for surface water runoff from parking lots, streets, etc. Please clarify.

Page 23; 4th paragraph: Please provide the sampling locations for the 1991 sampling event in the revised report.

Page 29; Evaluation of Organic Chemicals: Please provide all organic analytical results (detected and undetected) in the revised report.

Page 32; Conclusions and Recommendations: EPA cannot agree on a NFA determination for this PRS until the requested information is submitted.

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

Steve, please forward to LANL/DOE by 1/9/98 or request to EPA of the new date with Rationale. Thanks 12/8/97

DEC 05 1997

DEC 1997 RECEIVED

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

Re: Approval of the Voluntary Corrective Action (VCA) Plan for PRS C-0-043, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's supplemental information for the VCA plan for PRS C-0-043, dated October 30, 1997, and has found the Plan to be approvable. The approved plan consists of the January 30, 1997 and October 30, 1997 submittals.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

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

Ste - Please forward to LANL/DOE by January 16th 1998 or respond to EPA the with Rationale by same date 1/15/98

DEC 10 1997

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

Re: NOD Comment on the RCRA Facility Investigation Report (RFI) for PRS 36-005, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's RFI Report for PRS 36-005, dated September 1997, and has found the Report to be deficient in one area. Below is the deficiency:

Page 5-6; **2nd paragraph:** Please explain why a deeper soil boring was not completed at location 36-3041, sample no. AAB1860. In the RFI Report, LANL mentions that additional Phase I soil samples were taken at locations which detected surface contamination. According to Figure 5.1.3-1, this sampling location contained toluene, trichloroethene, 1,2,4-trimethylbenzene, xylenes, and methylene chloride in the surface soil sample. However, LANL did not take a deeper soil sample at this location.

Should you have any questions regarding the above deficiency, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

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

December 10, 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: Los Alamos National Laboratory
EPA ID# NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the RFI Report for Potential Release Sites (PRSs) 0-034(a,b), 73-001(b), and 73-004(c,d). This document was submitted to EPA by letter dated September 30, 1997, and was received by EPA on October 20, 1997.

PRSs 0-034(a,b) are areas where concrete was manufactured and where fill dirt was stored for residential housing use, respectively. The RFI recommends No Further Action (NFA) at these sites. EPA concurs with these recommendations, as these sites have apparently never been used for the management of RCRA solid or hazardous wastes.

PRS 73-004(c) is the former airport terminal sanitary septic system. A site survey was conducted in June 1996 in accordance with the RFI Work Plan, but the location of the septic system could not be determined. The septic system was possibly removed when the airport terminal was demolished or underlies the existing airport apron. The septic system was not known to be ever handle RCRA solid or hazardous wastes. The RFI report recommends NFA at this site, and EPA concurs with this recommendation.

PRS 73-001(b) is a pit which was used for waste oil disposal. The pit is located within a debris disposal area, PRS 73-001(d). Quantitative sampling was performed at PRS 73-001(b) during the investigation of PRS 73-001(d). However, sampling information for PRS 73-001(b) is not included in this report and will be submitted in the RFI Report for PRS 73-001(d).

PRS 73-004(d) is the site of a former septic system which served the Los Alamos Airport landfill office. This site is located within the main airport landfill, 73-001(a). The RFI Work Plan states that PRS 73-004(d) will be investigated as part of PRS 73-001(a).

The RFI report recommends NFA for PRSs 73-001(b) and 73-004(d) based on NFA Criterion 1 from the *Environmental Restoration Document of Understanding* (*DOU*) (1995). This criterion states "the site cannot be located or has been found not to exist, is a duplicate PRS, or is located within and therefore investigated as part of another PRS." EPA believes that "No Further Action" means no further action is required at the indicated site. However, further investigation is needed or has been performed at PRSs 73-001(b) and 73-004(d) regardless of whether these sites are located within other sites. Granting NFA at PRSs 73-001(b) and 73-004(d) does not ensure the Administrative Authority that further investigation will take place; in fact, it implies that these sites have been adequately characterized by LANL and are known not to pose an unacceptable human health and ecological risk. For this reason, EPA believes that, in scenarios where a site is located within another site, human health and the environment are better protected by either retaining the original PRS or SWMU site designation or combining the sites through HSWA permit modification.

A review summary is attached. Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

Enclosure

Review Summary
RFI Report for Potential Release Sites
Technical Areas 0 and 73
Los Alamos National Laboratory (NM0890010515)

Sites where No Further Action appears to be appropriate:

PRS 0-034(a)
PRS 0-034(b)
PRS 73-004(c)

Sites where No Further Action is not appropriate but may be incorporated into other sites through permit modification:

PRS 73-001(b)
PRS 73-004(d)

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

December 11, 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: TA-16 Potential Release Sites RFI Report
Los Alamos National Laboratory
EPA ID# NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed the RFI Report for Potential Release Sites (PRSs) 11-012(a,b), 13-003(a), 16-006(c,d), 16-010(a), 16-021(a), 16-026(c,d,v), 16-028(a), and 16-030(g) located in Technical Area (TA) 16 at Los Alamos National Laboratory (LANL). Past and present activities at TA-16 include the development, processing, fabrication, and testing of explosive components.

EPA concurs with No Further Action (NFA) recommendations for two (2) of these sites, as adequate phase I investigations have revealed no evidence of a RCRA-regulated contaminant release. EPA believes that the remaining sites require either further investigation or interim action. Further investigation of these sites should also consider impacts to surface water and groundwater because a shallow groundwater table and several surface water bodies exist at TA-16.

A site summary and list of deficiencies are attached. Should you have any questions, please feel free to contact Mr. David Vanlandingham at (214) 665-2254.

Sincerely,

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

Enclosures

Summary of EPA Review
RFI Report for TA-16 Potential Release Sites

PRS	Human Health NFA		Rationale for Recommendation of NFA Denial/Approval
	YES	NO	
11-012(a)		X	NFA contingent on proof of workplan deviation approval
11-012(b)		X	NFA contingent on proof of workplan deviation approval
13-003(a)	X		No significant evidence of contaminant release
16-006(c)		X	Phase II investigation needed to determine vertical extent of contamination
16-006(d)		X	NFA contingent on blank contaminant concentrations
16-010(a)		X	Phase II investigation needed to determine extent of contamination; Interim action may be necessary
16-021(a)	X		No significant evidence of contaminant release
16-026(c)		X	Low-level contaminant concentrations adequately characterized; however, impacts to surface and groundwater should be evaluated
16-026(d)		X	Phase II investigation needed to determine extent of contamination
16-026(v)		X	Phase II investigation needed to determine extent of contamination
16-028(a)		X	Low-level contaminant concentrations adequately characterized; however, impacts to surface and groundwater should be evaluated.
16-030(g)		X	Phase II investigation needed to determine extent of contamination

List of Deficiencies
RFI Report for Technical Area 16 Potential Release Sites
Los Alamos National Laboratory (NM0890010515)

General Comments

1. Impacts to surface water and groundwater must be studied at those sites where evidence of a contaminant release is present. A shallow groundwater table and several surface water bodies exist at TA-16, and, according to page 12 of the RFI report, all the springs and seeps at TA-16 are contaminated at levels above background and drinking water criteria. Because so many potential release sites (PRSs) are located in TA-16, however, difficulty may arise in determining if water contamination is due to one particular source or due to the additive effect of several different sources. In any case, Los Alamos National Laboratory (LANL) should devise investigation plans in which water contamination is defined and impacts to human health and the environment are studied.

2. Chromium concentrations, although always reported in the form of total Chromium, must always be considered to be in the hexavalent chromium form unless laboratory analysis proves justification for otherwise. The hexavalent chromium SAL (31mg/kg) should also be used in subsequent screens and risk assessments.

3. The recommendation of human-health No Further Action (NFA) does not relieve LANL from conducting an ecological impact evaluation at any of these sites.

4. 3.2.4 Risk-Based Screening Assessment. The LANL document *Risk-Based Corrective Action Process* (LA-UR-96-2811)nor the Multiple-Chemical Evaluation (MCE) outlined in this document have been approved by the Administrative Authority. EPA believes that the misapplication of the MCE to phase I investigation results often eliminates contaminants of concern (COCs) from further investigation before the extent of contamination has been delineated. EPA believes that, after adequate site characterization, the simplest way to account for synergistic effects due to multiple constituents is to compare contaminant concentrations against respective SALs divided by 10.

5. 3.3.2 Risk Assessment. The comparison of site data to industrial preliminary remediation goals (PRGs) in screening assessments is inappropriate. Screening assessments compare site data to background data and SALs under various scenarios of human health and ecological exposure. Furthermore, PRGs approved by EPA Region IX are not approved by Region VI.

A comparison to PRGs is not utilized in the screening assessment to determine contaminants of concern, but is utilized after the nature and extent of contaminants of concern have been

delineated to serve as a point of comparison in the remedy management process. At that time, PRGs should be utilized at sites which only have one contaminant as the risk driver for clean-up.

Specific Comments

6. Executive Summary. The rationale is used that a site where constituents are found below SALs does not require further action. EPA believes that a site where constituents are found at significant levels above background, even if below SALs, may require further sampling and analyses or a baseline risk assessment.

7. 5.0.1.2 2-ADNT and 4-ADNT. LANL claims that the presence of 2-ADNT and 4-ADNT at levels less than 0.3 do not qualify them as contaminants of potential concern (COPCs). However, EPA believes that all constituents found above background (which is zero for organics) are COPCs.

8. 5.0.1.3 Triaminotrinitrobenzene (TATB). Mutagenicity data of TATB conducted on strains of enteric bacteria do not accurately represent the specifity of human or ecological TATB toxicological effects. EPA requests that LANL summarize DOE toxicity data for TATB and submit this information for EPA review.

9. 5.1.4 Field Investigation. LANL cites that deviations from the sampling plan for PRSs 11-012(a,b) were proposed verbally to the EPA Region VI representatives by Department of Energy (DOE) and LANL, and in writing prior to sampling. LANL further cites that the EPA representative gave verbal concurrence to these changes. EPA does not consider verbal concurrence to be formal without written record. EPA has no record of the request (Jansen and Taylor 1995, 15-16-627) or of subsequent Administrative Authority approval regarding changes at PRSs 11-012(a,b) or at other TA-16 High Explosives magazines, and requests this information be submitted. Although no contamination appears to exist from the two samples collected at PRSs 11-012(a,b), EPA can not recommend human-health NFA at these sites until the requested information is submitted.

10. 5.1.11 Conclusions and Recommendation. EPA believes that a site where constituents are found at significant levels above background, even if below SALs, may require further sampling and analyses in a phase II investigation. A site must first be adequately characterized before any conclusions regarding human health or ecological risk are made.

11. 5.2.11 Conclusions and Recommendation. EPA recommends human-health NFA for PRS 13-003(a) because a phase I investigation revealed no evidence of a contaminant release. However, EPA

requests that a schedule be submitted for the Phase II SAP and subsequent sampling at PRS 13-003(b). Information for PRS 13-003(b) should also have been supplied in Table ES-1 of the Executive Summary.

12. 5.2.4 Field Investigation. EPA believes that NFA is not appropriate at PRS 16-006(c) because significant evidence of a contaminant release exists and the extent of this contamination has not been determined. Although the approved phase I workplan required LANL to only sample proximal or distal ends of the leachfield system, the extent of polycyclic aromatic hydrocarbon (PAH) and Barium contamination must be characterized. Septic systems, properly designed, evenly distribute effluent over a leachfield area. Therefore, LANL should sample along the leachfield at the drain line depth and at the soil/tuff interface. Furthermore, the PAH contamination found at sample 0290 and the Barium contamination found at samples 0293, 0294, 0295, and 0296 have not been vertically bound. A phase II investigation should be conducted at PRS 16-006(c).

13. 5.3.8 Risk-Based Screening Assessment. LANL should not make conclusions regarding risk after a phase I investigation. The nature and extent of contamination have not been adequately characterized at PRS 16-006(c).

14. 5.3.8 Risk-Based Screening Assessment. LANL claims that contaminant concentrations of concern were collected at 2.5-4ft and 5-6ft below the ground surface at PRS 16-006(c). However, several Barium concentrations exceeding background and the Barium SAL were found in surface samples 0293, 0295, and 0296. Furthermore, LANL has not shown that there is no current viable pathway that could result in exposure of humans to soils. Pathways to groundwater and outflow runoff must be considered.

15. 5.4.7 Evaluation of Organic Chemicals. EPA requests that the concentrations of acetone, bis(2-ethylhexyl)phthalate, and trichlorofluoromethane found in blanks should be summarized and submitted. These may serve as points of comparison for the concentrations summarized in Table 5.4.7-1. Blank concentrations for these analytes in samples 0298, 0300, and 0302 will help determine if a contaminant release has occurred at PRS 16-006(d).

16. 5.5.11 Conclusions and Recommendation. EPA disagrees with LANL's assessment that the Barium contamination at PRS 16-010(a) has been bounded. Barium concentrations were found above SALs in two samples, and Barium contamination may be present at or above SALs over the entire flash pad area (grid locations [0,60], [0,80], [20,80], [40,60], and [40,80] also had particularly high screening results). LANL has not defined the extent of the contaminated

portion of the flash pad. Does LANL wish to defer the entire flash pad to PRS 16-016(c)?

EPA believes that keeping the PRS 16-010(a) designation is more protective of human health and the environment than recommending NFA for PRS 16-010(a) and administratively associating PRS 16-010(a) with PRS 16-016(c). NFA is not appropriate for PRS 16-010(a) as further investigation and, possibly, interim action is needed. EPA recommends keeping the PRS 16-010(a) designation for the flash pad and, because barium contamination is clearly linked between PRS 16-010(a) and 16-016(c), taking further corrective action at PRS 16-010(a) when contamination at PRS 16-016© is addressed.

17. 5.6 PRS 16-021(a). EPA believes that a site where constituents are found at significant levels above background, even if below SALs, may require further sampling and analyses in a phase II investigation. It is more appropriate to recommend NFA for PRS 16-021(a) due to the fact that an adequate phase I investigation has shown no evidence of a contaminant release as no constituents were found at significant levels above background.

18. 5.6.4 Field Investigation. The objective of the Phase I sampling at PRS 16-021(a) should be to determine via biased sampling if a release had occurred from the drain line, regardless of whether contamination is above action levels. The submitted verbiage implies that corrective action is needed only for contamination above action levels.

19. 5.7.11 Conclusions and Recommendations. All contaminants found at PRS 16-026(c) are at low-levels and have been vertically bound. Many PAH detects are below method EQLs, and process history suggests that PAHs were not used in this area. However, EPA believes that NFA may not be appropriate at this time for PRS 16-026© because impacts to groundwater and surface water bodies have not been characterized.

20. 5.8.11 Conclusions and Recommendations. EPA disagrees with LANL's assessment that constituents other than PAHs are bounded at depth. RDX contamination in sample 0139 has not been shown to be confined to the surface. Furthermore, the lateral extent of RDX, TNT, and ADNT has not been determined. Considering the number of positive detects of HE at this site, EPA can not recommend NFA for 16-026(d) until further HE characterization has been performed.

21. 5.9.7 Evaluation of Organic Chemicals. Substantial concentrations of triaminotrinitrobenzene (TATB) are found in surface samples 0194, 0195, and 0196. The vertical and lateral extent of TATB has not been determined at these locations. Furthermore, Section 5.0.1.3 is inadequate to determine the

toxicity of TATB. EPA requests that LANL summarize DOE toxicity data for TATB and submit this information for EPA review.

22. Table 5.9.7-2. The benzo(b)fluoranthene detect (2.5mg/kg) should be shaded to reflect the fact that it is above the respective SAL.

23. 5.9.11 Conclusions and Recommendation. EPA disagrees with LANL's assessment that contamination at this site is bounded, and recommends further investigation at PRS 16-026(v). EPA believes that the following contaminants are industrial releases which have not been characterized for vertical or lateral extent: chromium contamination found in sample 0193, SVOC contamination found in samples 0190, 0194, 0195, and 0197, and TATB contamination in samples 0194, 0195, and 0196. A phase II sampling plan should be submitted to adequately characterize PRS 16-026(v).

24. 5.10.11 Conclusions and Recommendations. All contaminants found at PRS 16-028(a) are at low-levels and have been vertically bound. Many PAH detects are below method estimated quantitation limits (EQLs), and process history suggests that PAHs were not used in this area. However, EPA believes that NFA may not be appropriate at this time for PRS 16-028(a) because impacts to groundwater and surface water bodies have not been characterized. Furthermore, NMED may wish for LANL to remove the HE hotspot which remains at samples 0363 and 0603 (depth 0-2.1ft) and replace with clean fill so that the HE hotspot will not act as a source of runoff contamination.

25. 5.11.11 Conclusions and Recommendation. EPA disagrees with LANL's assessment that contamination at this site is bounded, and recommends further investigation at PRS 16-030(g). EPA believes that the lead contamination (in excess of SAL) found in sample 0273 and HE contamination in surface samples 0273, 0275, and 0276 are due to industrial release and have not been characterized for vertical or lateral extent. A phase II sampling plan should be submitted to adequately characterize contamination at PRS 16-030(g).

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

December 12, 1997

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

RE: Review of LANL VCA Completion Report for the PRSs in TA 3, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 3, Potential Release Sites (PRSs) 3-003(p), 3-047(d), and 3-051(c), dated February 26, 1996. The EPA has found the report to be deficient and enclosed is a list of deficiencies.

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

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR TA 3

GENERAL COMMENTS

1. For each PRS, LANL shall attach a section discussing data QA/QC. Please explain why several samples were analyzed at different detection limits and resulted in two different values. **(Best Professional Judgement, (BPJ))**

2. LANL shall explain where the PRGs came from and how were they calculated. Why are some values an order of magnitude higher than their respective values found in EPA Region 6 *Human Health Media-Specific Screening Levels*, and EPA Region IX *Preliminary Remediation Goals*. **(BPJ)**

SITE SPECIFIC COMMENTS

PRS 03-003(p)

1. Page 1, 2nd paragraph: It states, "A RFI found levels of lead exceeding SAL at depths between 0-6 inches." What are the lead concentrations in the soil below 6 inches and at what depth does the lead concentrations drop below the background UTL? Please provide more details about the investigations and submit all RFI analytical results including organics and inorganics. When and how long had this site been used? **(BPJ)**

2. Page 1, CORRECTIVE ACTION: Please justify why "Field screening also eliminated the need for analysis of VOC, SVOC, and TPH". Please specify any evidences indicating that the above tests are unnecessary? **(BPJ)**

3. Page 4, TABLE 1: Please explain why the background UTL showed in this report, such as antimony (2.5 mg/kg) and lead (39 mg/kg), is higher than that found in other LANL RFI reports. If a site specific background UTL is used in this report, LANL shall explain the reason why they did not use area background UTL. **(BPJ)**

4. Page 5, TABLE 1: LANL shall explain how to get Total PCB 95% UCL of Mean (0.596). This value should be higher than the data points used to calculate the mean. **(BPJ)**

PRS 03-047(d)

5. Page 7: What are the COPCs from the screening results and at what levels? LANL shall submit all field screening results including detection levels, sample depth...etc. **(BPJ)**

6. Page 11, TABLE 2: Please explain why the background UTLs for lead and beryllium are 70% higher than that found in other LANL RFI Reports. **(BPJ)**

7. Throughout the report, Stoddard Solvent is discussed, however, the primary constituents of the solvent are not discussed. The name is not capitalized or identified as a Trademark name. LANL shall identify and discuss its compositions and properties. **(BPJ)**

PRS 03-051(c)

8. Page 15, 1st paragraph: It states, "Analysis for VOCs was eliminated because verification screening results indicated VOCs were not detected above their respective PRGs." LANL shall explain whether the results are also not detected above their respective detection limits. Please provide the verification screening results for further review.

   Most of the VOCs do not occur in the background soil. If detected, it means a release did occur, LANL shall proceed characterizing the release. The verification screening results shall be used to serve this purpose and not to be used to determine whether or not the site needs to be remediated. **(BPJ)**

9. Page 16: LANL shall submit all previously-obtained site characterization data including verification screening results, CST-12 mobile laboratory results, and VCA data along with their detection limits and sampling depth. **(BPJ)**

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

DEC 16 1997

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

Re: Additional Comments on the Supplemental Information Response to the Voluntary Corrective Action (VCA) Completion Report for SWMU 21-024(d), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's Supplemental Information Response to the VCA Completion Report for SWMU 21-024(d), dated October 30, 1997 and has additional comments. Enclosed are the additional comments.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

Rich Mayer

for David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

Additional Comments on the Supplemental Information Response to the Voluntary Corrective Action Completion Report for PRS 21-024(d)

General Comment No. 1: EPA is concerned about the sampling logic used down-gradient of the outfall for this SWMU. Sample location 21-1347, next to the outfall, only went to 6 inches and is not of sufficient depth to determine, within a reasonable amount of confidence, that the vertical extent of contamination has been determined. Secondly, sampling for VOC's in the top six inches of the soil will almost always show nothing, due to volatilization, etc. LANL must take deeper samples at his location.

At sampling location 21-1348, lead was found in the 12-18 inch sample (the most vertical sample taken) at 146 mg/kg. Deeper samples are needed at this location.

General Comment No. 2: EPA prefers or recommends that LANL use two of the four sampling locations proposed (found in the Supplemental Response, page 2) for underneath the inlet pipe to be used for deeper vertical soil samples down-gradient of the outfall area. See general comment no. 1.

General Comment No. 3: As a reminder, future VCA or RFI Reports submitted by LANL must provide the following information:

1. Boring log descriptions and PID/OVA readings;
2. All analytical sampling results (not just results above SAL or background), including any historical sampling performed before the RFI investigation;
3. Pertinent QA/QC discussion on the analytical results; and,
4. Human health and Eco screening assessments if pertinent. For example, if all results are either below acceptable detection limits for organics and below background levels for inorganics, no risk assessment info is needed.

Page 2 of Response; 1st paragraph: In future investigations, LANL should not use sampling intervals of two feet, intervals greater than 1 foot are unacceptable, unless a practical justification can be provided.

Notes to NMED

Even though EPA may have earlier given informal permission to

LANL to NFA this SWMU, this reviewer cannot in good conscience agree with a NFA recommendation until the issues found in EPA's general comments (see above) are addressed. So in actuality, LANL needs to complete the additional soil samples before a NFA determination can be considered.

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

Please forward to EPA by 2/6/98 if you concur or respond to EPA with intended by the same date 1/6/98

December 23, 1997

JAN 1998

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

RE: Review of LANL VCA Completion Report for PRS 39-007(a), EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)-39, Potential Release Site (PRS) 39-007(a), dated January 19, 1996.

A VCA completion report however, may function as a RCRA Facility Investigation (RFI) report. EPA has found the VCA report to be deficient in information, including the field screen results of the soil from within, beneath and surrounding the drain line and sump boxes, to justify the completion of VCA. The EPA recommends that LANL must submit the above mentioned data and that the NMED HRMB delay the decision of LANL No Further Action (NFA) request until thoroughly reviewing the requested information.

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

Sincerely yours,

Jane Hankinson for

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

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

December 22, 1997

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

Re: NOD Comments on the Supplemental Information to the Voluntary Corrective Action (VCA) Completion Report for PRS 36-003(b), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's Supplemental Information to the VCA Report for PRS 36-003(b), dated December 5, 1997, and has found the Report to be deficient. Enclosed are a list of deficiencies for your review.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

R. L. Mayer

for David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

NOD Comments on the Supplemental Information to the Voluntary Corrective Action Completion Report for PRS 36-003(b)

General Comment on the Response: EPA considers the sampling performed downgradient of the outfall pipe as a Phase I event. Deeper soil samples are needed to confidently say that there is no vertical contamination. VOCs probably would not "show up" in the 0-6 inch samples. If VOCs exist, they will most likely "show up" in deeper soil intervals. Therefore, even if the 0-6 inch soil samples taken in the Phase I event show no contamination, EPA will require deeper soil sampling.

Page A-73 of the Response; Appendix A: Sample ID AAB1886, at sample location 36-3104 had a copper concentration of 308 mg/kg in the 0-6 inch soil sample. If this number is correct, a deeper soil sample must be taken at 36-3104. Please clarify.

Page A-85 of Response; Appendix A: Sample ID AAB1889, at sample location 36-3107, contains several hazardous constituents above SAL values or above the analytical detection limit. Are the decimal places missing on these results? For example, for Benzo(a)pyrene the concentration result was 034 mg/kg and the SAL value is .1 mg/kg. Please clarify.

Figure 1-8 of the Response; Appendix B: In the approved RFI Workplan, LANL was supposed to have taken a soil sample near the end of the discharge pipe. In actuality, the first soil sample taken was about fifty feet downgradient from the discharge pipe. This sample location doesn't meet EPA's meaning of "near", which is no more than 5 feet downgradient from the discharge pipe.

Notes to NMED

EPA has no problems about the investigation of the septic tank. However, EPA does have a problem with the soil sampling performed downgradient of the outfall pipe. EPA has two problems with the investigation. They are: 1) The nearest sample taken to the outfall pipe was approximately 50 feet downgradient, which is unacceptable; and, 2) the soil samples taken only went to 6 inches in depth, which is also unacceptable.

Also, after further analysis, EPA recommends that NMED not issue a NOD letter but send out a letter requiring that LANL perform deeper soil samples at the same locations, except that the nearest sample downgradient of the outfall pipe be within 5 feet of the pipe, not fifty feet as in the phase I sample location. EPA feels that this would be the most efficient approach.

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

January 5, 1998

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

RE: Review of LANL VCA Completion Report for PRS 3-022, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA) 3, Potential Release Site (PRS) 3-022, dated January 22, 1996.

EPA has found the Report to be deficient and recommends NMED HRMB delay the decision of No Further Action (NFA) request for PRS 3-022 until EPA reviews the requested information. An list of deficiencies is enclosed. If you have any questions or need additional information, please contact Allen T. Chang of my staff at (214) 665-7541.

Sincerely yours,

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

Enclosure

LIST OF DEFICIENCIES
LANL VCA COMPLETION REPORT FOR PRS 3-022

GENERAL COMMENT

1. The New Mexico UST Regulations have promulgated TPH cleanup level of 100 ppm (Section 1209.D, Part 2[a]). LANL ER Project, "*Draft Evaluation and Cleanup of TPH in Soil*", drafted on March 28, 1995, also cited the above cleanup standard. LANL shall comply with 100 ppm, not 2600 ppm.

   The EPA does not believe that the VCA of this site is complete based on the facts stated in this report. LANL shall submit a plan discussing re-investigation and cleanup of the TPH contamination, including areas that are within and beyond the boundary lines. The confirmatory samples should include samples from inside and outside the boundary at various depths. (**Best Professional Judgement, (BPJ)**)

SITE SPECIFIC COMMENTS

1. Page 2, 2nd paragraph:

   a. Please specify the actual size of this site.

   b. Whenever the sample collection is mentioned in the VCA report, LANL should give the sample location ID (or FIMAD) in discussion, and show the sample location and ID on the map. For example, the locations of the four excavation guidance samples did not show up in Figure 1. If a date of sampling is mentioned in Table 2, it shall also be specified in the discussion. LANL should revise the report and make it more readable.

   c. The TPH of the four corner samples ranged from 4,066 ppm to 18,637 ppm. This indicates that contamination has been spread outside the boundary of the sump. LANL shall sample these corners at 1-ft intervals until TPH is below 100 ppm. LANL shall delineate both horizontal and vertical contamination within and beyond the site boundary **(BPJ)**

2. Pages 2 and 3: At several places in the report, "Table 2" was misquoted as "Table 1". LANL shall correct that in the revised version. **(BPJ)**

3. Page 2, last paragraph: It states, "When this part of the excavation was complete, six verification samples were collected (Figure 1) and analyzed for TPH." Later, LANL referred the same sample group, in Table 2, as "1st Set Verification Samples". Please be consistent. **(BPJ)**

4. Page 3, first paragraph: The results from the test pit and trenches indicated that TPH concentrations varies with depths and locations; therefore, additional verification samples are necessary to ensure that the VCA is complete when the site has been fully investigated. **(BPJ)**

5. Page 3, 1st paragraph: It states, "Two additional trenches were dug on the east and west sides of the sump, and the corners sampled at one-foot intervals."

   a. LANL should explain the purposes of digging two trenches and show their locations on the map.

   b. Are the trenches located by the east and west boundary lines? If not, how far are they from the boundary lines? How long are the trenches?

   c. LANL should explain whether "the corners" mean the four corners of the sump, or the ends of the trenches. Why did LANL dig two trenches and then only sample the ends of the trenches? What is the TPH at the trenches bottom other than the ends? **(BPJ)**

6. Page 6, Table 2: The sample number 219 at 4.2 feet has a concentration of 82,658 ppm of total petroleum hydrocarbons (TPH). After removals, the second set of verification samples has 3,570 ppm TPH which is above the state standard (see EPA General Comment No. 1). Based upon the results, the full extent (vertical and horizontal) investigation plan of the oil contamination must be established. **(BPJ)**

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

Sue
Please forward
to LANL/DOE
by 2/13/98 or receive
by EPA by same date
to Antonio
with Benito
1/12/98

January 5, 1998

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

RE: Review of LANL VCA Completion Report for PRS 33-016, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Action (VCA) Completion Report for cleanup activities in Technical Area (TA)-33, Potential Release Site (PRS) 33-016, dated January 19, 1996.

Based upon the information presented in the report, the EPA has found parts of the Report to be deficient and enclosed is a list of deficiencies. The EPA recommends that NMED HRMB delay the decision of LANL No Further Action (NFA) request until reviewing the requested information.

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

Sincerely yours,

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

LIST OF DEFICIENCIES
VCA COMPLETION REPORT FOR PRS 33-016

Site Specific Comments:

1. Page 1, 2nd paragraph: It states that the soil at the outfall was sampled but revealed no contamination. LANL shall include the analytical results in the VCA report. **(Best Professional Judgement (BPJ))**

2. Page 1, 2nd paragraph: The results of the RFI sampling indicated that the sludge contains several organics which were above health-based levels.

   If LANL wants to abandon the concrete sump in-place, then they should demonstrate that no sludge has leaked outside the sump by examining the sump and collecting samples from the sides and underneath the sump. The confirmatory samples did not achieve this purpose. Therefore, VCA is not complete. **(BPJ)**

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

Stan please forward to LANL/DOE by 2/13/98 or request to EPA be the same date 1/14/98

JAN 07 1998

JAN 1998

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

Re: Review of the Supplemental Information for the Voluntary Corrective Action (VCA) Completion Report for PRS 57-006, Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's Supplemental Information for the VCA Completion Report for PRS 57-006, dated December 10, 1997, and has found the Report to be complete. However, EPA disagrees with LANL's conclusion that no further investigation is required for this PRS. EPA recommends that a deeper soil sample be taken underneath the PRS to determine the vertical extent of lead contamination. Enclosed are EPA's recommendations regarding this PRS.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

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

Enclosure

EPA's Recommendations for PRS 57-006

HISTORY: PRS 57-006 was a buried chemical waste vessel that contained elevated levels of lead, mercury and a variety of spent organic solvents. It was used to collect chemical waste from a LANL chemistry laboratory from 1976 to 1989. The PRS is located on Fenton Hill. This PRS is not included in the HSWA permit.

The VCA consisted of removing the contents of the vessel and then removing the vessel out of the ground and backfilling the remaining hole. The bottom of the vessel extended to approximately 3 feet below ground surface. A soil sample (0-6 inches) was taken at the bottom of excavation (where the vessel once contacted the soil). Lead was found at 187 and 90 mg/kg (a duplicate soil sample was taken). Background levels of lead at this site are 23.3 mg/kg. LANL recommends no further sampling at this PRS and that the PRS not be included in the HSWA permit as a SWMU. EPA disagrees.

RECOMMENDATIONS: EPA recommends that LANL take a deeper soil sample (preferably at 3-3.5 feet) to ensure/delineate the extent of lead contamination at this PRS.

Also, EPA believes that this PRS is a SWMU and should be included in the HSWA permit. However, whether NMED requires LANL to incorporate this SWMU into the HSWA permit is subject to NMED's permitting interpretations, policies or procedures.

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

JAN 09 1998

JAN 1998

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

Re: Review of the Supplemental Information for the Voluntary Corrective Action (VCA) Completion Report for PRS 14-001(f), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's Supplemental Information for the VCA Completion Report for PRS 14-001(f), dated December 9, 1997, and has found the Report to be complete and approvable. For your convenience, EPA has enclosed some issues for NMED to consider regarding this PRS.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

Michael A. Owsley for

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

Enclosure

Issues Pertaining to PRS 14-001(f)

Background: This PRS consists of a steel cylindrical structure 13.3 ft. by 13.6 ft. by 8 ft. tall, and the underlying sump composed of reinforced concrete with dimensions of 13 ft. by 13 ft. by 4.5 feet deep. Various firing tests were conducted in the steel tube, with the test material usually being contained in the tube or the underlying sump. No liquid wastes (only solid materials) were placed in this PRS, except for some occasional precipition. Time of use was from the late 1970's until the mid 1990's. The VCA performed removed the materials from the cylinder and the sump. The cylinder and the underlying sump had no cracks or other deformities. No soil samples were taken underneath the sump. Only waste samples from within the cylinder and sump were taken. This PRS is not included in the HSWA permit.

Issues: For this particular PRS, EPA is accepting a no further action determination because: 1) Waste materials within the tube and sump have been completely removed; 2) the cylinder and sump showed structural integrity, with no cracks or deformities, and 3) the waste material was solid and dry. **However, as a warning, this does not mean that EPA will accept a NFA determination for all sumps that have not had soil sampling conducted underneath the structure.** It will be on a case by case basis, according to the circumstances.

Also, EPA believes that this PRS is a SWMU and should be included in the HSWA permit. However, whether NMED requires LANL to incorporate this PRS into the HSWA permit is subject to NMED's permitting interpretations, policies, procedures or other considerations.

Please fax 2/13/98
LANL/DOE by
or personal to EPA with
a estimate by the same
date. Fax to
1/12/98

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

JAN 09 1998

JAN 1998

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

Re: Review of the Supplemental Information for the Voluntary Corrective Action (VCA) Completion Report for PRS 1-003(d), Los Alamos National Laboratory (LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's Supplemental Information for the VCA Report for PRS 1-003(d), dated December 9, 1997, and has found the Report to be complete. However, EPA disagrees with LANL's recommendation of no further action on this PRS.

EPA recommends further sampling (Phase II) at this PRS to determine the vertical extent of contamination. Enclosed for your review are EPA's recommendations pertaining to this PRS. Please note that this PRS consists of two separate sites.

Should you have any questions, please feel free to contact Mr. Rich Mayer at (214) 665-7442.

Sincerely,

Rich Mayer

for David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

EPA Recommendations for PRS 1-003(d) and the Paint Spill Site

This SWMU consists of two separate sites: the Can Dump site and the Paint Spill site. The Paint Spill site is not included in the HSWA permit. Included below are the background discussions and the recommendations for each site.

CAN DUMP SITE

Background: The Can Dump site was used for surface disposal (hillside) of empty solvent and paint cans. The cans were disposed nearly 50 years ago and have deteriorated over time. The VCA consisted of the removal of all cans and associated debris from the surface or near surface. No confirmatory samples were taken, only shallow Phase I soil samples were taken before the VCA. LANL recommended no further action for this PRS; however, EPA disagrees and believes that further sampling is needed.

Recommendation: EPA recommends confirmatory soil sampling for this PRS. The reason being: The phase I sampling investigation consisted of 5 soil samples, three grab soil samples and two composite samples with each composite sample consisting of six surface samples. This investigation was approved by EPA in 1992. The approval required that the result obtained from each composite sample be multiplied by the number of samples used for the composite, and that the corresponding number obtained was considered the actual concentration. For example, in composite sample AAA0714, the antimony concentration was 22 mg/kg. Since this sample consisted of 6 samples, the actual concentration would be 132 mg/kg. The SAL for antimony is 31 mg/kg. Both composite samples taken were above the SALs for antimony. In addition, one of the three grab samples had antimony (91mg/kg) above the SAL (31 mg/kg) and had lead (119 mg/kg) above the background UTL (23.3 mg/kg). Therefore, the vertical extent of contamination has not been determined. A Phase II investigation is needed.

Also, please note that the risk assessment section was not critiqued, since the full extent of contamination was not determined. A risk assessment section will be needed in the Phase II RFI Report.

PAINT SPILL SITE

Background: While conducting cleanup activities at the can dump site, a large paint spill was observed upslope and directly north approximately 40 feet. The upper slope of the paint spill consisted of approximately 200 square feet of 1-30 inch deep dry

paint. The VCA consisted of excavating paint and soil. Upon completion of the removal activities, five confirmatory soil samples (0-6 inches) were taken. Confirmatory samples indicated metal contaminants above SALs. LANL recommended no further action for this site. This site is not included in the HSWA permit.

Recommendation: EPA recommends that a Phase II investigation be required for this site. Even though the paint areas were removed, 4 out of the 5 confirmatory soil samples (0-6 inches) had at least one metal above SALs (lead, antimony, barium, cadmium, and thallium).

This site is not included in the HSWA permit. EPA believes that this site is a SWMU and should be added to the permit.

Also, please note that the risk assessment section was not critiqued, since the full extent of contamination was not determined. A risk assessment section will be needed in the Phase II RFI Report.