



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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*Barbara
pls coordinate
comments w
Frank Buss
Bento*

JUL 15 1994

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Mr. Joseph C. Vozella, Chief
Environment, Safety and Health Branch
Department of Energy
Los Alamos Field Office
Los Alamos, NM 87544

*notice
to review
signature -
7/28/94*
*Teri, please
peruse and
summarize
for me
ljk
(Any comments)*

Re: Notice of Deficiency, RFI Work Plan OU 1140
Los Alamos National Laboratory
NM0890010515

Dear Mr. Vozella:

The Environmental Protection Agency (EPA) has reviewed the RCRA Facility Investigation (RFI) Work Plan for Operable Unit 1140 (OU 1140) dated August 19, 1993 and found it to be deficient. Enclosed is a list of deficiencies which need to be addressed within thirty (30) days of receipt of this letter.

Should you have any questions, please contact Barbara Driscoll at (214) 655-7441. After August 1, 1994 Barbara's number will be changed to (214) 665-7441.

Sincerely yours,

William K. Honker, P.E., Chief
RCRA Permits Branch

Enclosure (1)

cc: Mr. Benito Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau ✓
New Mexico Environment Department

Mr. Jorg Jansen, Program Manager
Environmental Restoration Program
Los Alamos National Laboratory, M992

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**List of Deficiencies
Operable Unit 1140
Los Alamos National Laboratory**

General Comments:

1. All work plans submitted should be third-party executable. This work plan could not be carried out by a third-party. The following information should be included in any work plan:

A. Background description of the SWMU with all sampling information.

B. Information about the unit from the visual site inspection (staining, debris, current status of unit) prior to writing the work plan.

C. A list of laboratory analysis by constituent to be conducted for each unit or group of units if it is the same.

D. Numbers of samples to be analyzed as indicated in the Analytical Tables and text should match.

E. More information should be provided on actual sample collection. For example: A sample of the surface soil will be collected at 0-6 inches by the spade and scope method (LANL SOP ***) at the location of the highest field screening reading (using field screening methods...) or areas of staining. Based on the on-site inspection five areas of staining were noted, the most prominent three will be sampled. If staining continues below 6 inches than an additional sample will be collected at 18 inches and every foot below that until the bottom of the contamination has been reached.

2. For units which had more than one component such as SWMU 46-003(f) with a septic tank, surface sampling and outfall, the work plan would be much better if all this information was including in one sampling plan. As presented in the work plan the following problems were noted with the information presented on SWMU 46-003(f): Figure 5-1-12 shows borehole samples to be taken for the septic tank portion of the unit. Figure 5-3-8 shows surface soil samples for the same unit; however, none of the sampling from Figure 5-1-12 is indicated on Figure 5-3-8. The reader must go back and forth between descriptions of the unit which has to be repeated several times and the proposed sampling (which is vague). In addition, the third component which is the outfall FF does not appear to be related to the actual SWMU 46-003(f) in any manner. Outfall FF appear to be off a drainage ditch which is closely located to the SWMU yet may not receive any waste from the unit. It would greatly improve the quality of the work plan to have the background and description of the SWMU followed by all the sampling to be associated with the unit. This would reduce redundancy and

make it much easier for the reader to follow proposed sampling. Not to mention the paper and time on additional figures and text that would have been saved.

3. Numbers of samples in analytical tables does not match text. All tables should be revised to indicate the number of samples undergoing laboratory analysis.

4. **No Further Action requests:** LANL may request the following units be removed from the permit by a Class 3 permit modification.

46-004(a)

46-008(c)

Additional units discussed in Chapter 6 which are not currently in the permit do not need to be added. It should not be construed by LANL that approval for not adding SWMU 46-008(misc) to the permit is approval of any actions for SWMUs 46-008(a-g).

Specific Comments:

1. **Figure ES-1, p. ES-6** - The time frame for the submittal of the final RFI report is not acceptable. LANL shall provide schedules for Phase I sampling by SWMU. Baseline schedules as provided are not acceptable, and LANL shall supply specific final RFI report dates for each SWMU, groups of SWMUs or SWMU aggregate. EPA recently sent LANL a letter dated June 27, 1994 on this issue for which a response is due to EPA on August 5, 1994. The response to this deficiency may be incorporated in the August 5 submittal.

2. **1.3 Description of OU 1140, p. 1-8, last sentence** - EPA approval of this workplan does not have the effect of delisting from the Laboratory permit all SWMUs proposed for no further action (NFA) in Chapter 6. LANL shall note that if a SWMU is listed in the permit for investigation, that unit may only be removed from the permit following the completion of a Class 3 permit modification, and agreement by EPA.

3. **3.5.2.3 Perched Aquifers and 3.5.2.4 Main Aquifer, p. 3/12** - Text indicates that perched aquifers may be produced in the Cerros Del Rio basalts or within the Puye Formation. Text indicates that the main aquifer is located in the same locations as the perched aquifers. LANL shall clarify text concerning the location of each aquifer.

4. **4.2 Site Characterization Decision Model, p. 4-4, paragraph four** - The primary goal of the RFI should be to determine if a release of hazardous waste or hazardous constituents has occurred and to then define the extent of that release. If hazardous constituents are found at levels above background but below screening action levels, additional sampling may be required to define the extent of contamination.

The site should not automatically be recommended for no further action (NFA). LANL should submit sampling results from Phase I sampling in the RFI report, and EPA will determine if additional sampling is required independent of exceedences of the SALs. This applies to all data quality objectives for this work plan.

5. **4.3.1 Potential Contaminants of Concern, p. 4-11** - LANL may not reduce their analysis as indicated in Table 4-2 until preliminary phase I analytical data has been evaluated by EPA. LANL must use EPA approved methods listed under SW 846 for VOCs, SVOCs, metals and pesticides. This applies to all portions of the work plan. LANL shall revise their text accordingly, and provide a revised table indicating all constituents for which analysis will be conducted.

6. **4.3.3 Potential Human Receptors, p. 4-14** - Until future land use scenarios are agreed upon then a residential scenario shall be used for a baseline risk assessment when a decision of no further action is requested. LANL shall revise text. This applies to all sections of the work plan where risk assessment is used or proposed.

7. **4.3.3.2 Potential Human Exposure, p. 4-17** - If measured concentrations of contaminants are found to be above background (no relation to SALs) then LANL shall be required to determine the extent of the contamination. LANL shall revise text accordingly.

8. **4.3.3.2.1 Continued Laboratory Operations, p. 4-18, second paragraph** - EPA considers surface contamination to include the top two feet of soil rather than the top six inches of soil as indicated in text.

9. **4.5.1 Sampling Strategies, p. 4-23** -

a. LANL may not use average values rather than maxima to drive the decision where voluntary corrective actions are anticipated. VCA's work plans should be approved by EPA prior to implementation, as EPA approval is required for cleanup levels and confirmation sampling. LANL shall revise text accordingly.

b. LANL's use of error tolerances has not been approved by EPA. There seems to be no consistency in how this method is used by the lab in any of the RFI work plans reviewed to date. EPA continues to evaluate the proposed sampling plans for each SWMU based on the adequacy of the sampling proposed, and may recommend additional samples be collected.

10. **4.5.3 Analytical Methods, p 4-30** -

a. LANL shall use SW846 methods for all laboratory analysis of metals, semi-volatiles, volatiles and pesticides. LANL shall revise text accordingly.

b. paragraph five - Any PRS specific list of analytes should be included in the RFI work plan and not determined at a later date. This information is an important part of the sampling plans, and should have been taken into account already. See comment #5. LANL shall revise text accordingly.

c. Section 7 of Appendix D indicates that LANL is using a reduced list of metals for analysis: beryllium, cadmium, lead, chromium and silver. EPA will evaluate the process at each unit and determine if this list needs to be expanded.

11. 5.1.1.1 Description and History, p. 5-7 -

a. LANL shall provide a description of the size of each septic tank.

b. LANL does not indicate when several units stopped receiving wastes. Some units may have received RCRA listed hazardous waste after November 19, 1980, and therefore, may be considered regulated units. The following units may be RCRA units and therefore subject to RCRA closure: 46-003(g), and 46-004 (c-e and p). LANL shall provide adequate information for a determination to be made as to the status of these units.

12. 5.1.2 Remediation Decisions and Investigation Objectives, and 5.1.3 Data Needs and Data Quality Objectives, pp. 5/17-5/29 -

a. EPA does not agree and will not approve the majority of assumptions made in this section. The entire write-up is extremely confusing. Should LANL propose a voluntary corrective action (VCA) at one of these SWMUs then LANL should present a work plan which includes cleanup levels and confirmation sampling with a diagram of all samples to be collected. The format should be as agreed upon by EPA and LANL. In the future LANL should exclude such long discussions of their data quality objectives from the work plan and include detailed discussions of what actual sampling and work is to be conducted at each unit.

b. LANL needs to provide Figure 5-1-6 mentioned on page 5-29.

13. 5.1.4 Phase I Sampling and Analysis Plan, p. 5-29 - EPA does not approve the list of analytes presented. Descriptions of this units allow for multiple contaminants therefore LANL shall analyze for metals (all), semivolatiles, volatiles and PCBs, using SW846 metals for all.

14. 5.1.4.1.1 Septic Tank, Distribution Box, and Dry Well - Preliminary Screening, p. 5-47, second paragraph -

a. LANL shall collect a sample from within each septic tank or distribution box as possible. LANL may not homogenize five feet of

core for one sample. If sampling within the septic tank, dry well or distribution tank is not possible, LANL shall take a 6- inch sample beneath the inflow and outflow pipes to the tank, dry well or distribution tank. In addition, at least one sample should be collected from underneath the septic tank.

b. Text on page 5-47 indicates that LANL will be collecting one sample for every 5 feet of core up to probably 15 feet of core. Therefore there should be a maximum of 3 samples for each corehole. The number of samples being analyzed for each SWMU does not correlate with the number of samples undergoing analysis in Table 5-1-7. LANL shall clarify the number of samples being collected and undergoing laboratory analysis.

c. LANL shall clarify where the septic system boreholes will be collected. Are these boreholes located around the septic system?

15. 5.2.1.1 Description and History, p. 5-54 - These lagoons (SWMU 46-002 and 46-005) may have received RCRA listed waste after July 1982, and therefore, may be RCRA regulated units subject to closure requirements. LANL shall provide information clarifying this issue.

16. 5.1.4.1.2 Drain Field Sampling - Preliminary Screening, p. 5-48 - LANL shall collect a sample adjacent to the end of each drain line, and an additional sample 5 feet below that. These samples should be analyzed for Appendix VI constituents. Several boreholes should be collected for each leachfield with a minimum of four samples being sent for laboratory analysis.

17. 5.2.4.2 PRS Sampling Summaries, p. 5-65 - This entire sampling section needs to be rewritten. Too much emphasis is being placed on the DQOs and not on actual work being done (sampling plans). At a minimum the following information should be provided:

a. LANL shall provide the depth of sampling for all samples to be collected. This information is not in the work plan.

b. LANL shall provide a figure which illustrates the cross section of the sand filters for SWMU 46-002 and the entire SWMU 46-005.

c. Text in the second paragraph indicates that three samples from near the center surface of each compartment of the sand filter will be collected; however, Figure 5-2-4 only shows one sample per filter compartment as does Table 5-2-5.

d. What are the square structures off the southeast corner of the Sewage lagoon and sand filter, S-78? Why are these structures not being sampled.

e. Is LANL collecting a sample every 5 feet along the borehole cored under 46-002?

f. A list of hazardous constituents for which laboratory analysis is being conducted should be provided.

g. Table 5-2-5 - See general comment #3.

h. Table 5-2-5 - Why are samples from the lagoon system (46-002) not being analyzed for VOAs? Why are the samples from the soil/tuff interface for the solar ponds (46-005) not being analyzed for VOAs or mercury? LANL shall provide an explanation.

18. 5.3.4.1 Sampling, p. 5-94 -

a. It is not appropriate to use the analytical results from the outfall aggregate investigation to determine the analysis for the surface release. Outfalls may be located over 100 feet away from the actual surface source of the contamination. Contaminants do not migrate at the same rates and dilution may occur prior to the points of outfall sampling being reached. The location of outfall should be noted on each figure. This applies to all units discussed in this section.

b. LANL shall analyze all samples from the units in this section using SW846 methods for the full range of metals (including mercury), SVOCs, VOCs and pesticides as indicated in Table 5-3-1.

c. Does LANL mean sampling of the top 6 inches when it refers to surface soil sampling?

5.3.4.2.1 Hand Augered Sampling:

19. LANL makes the statement several times within this portion of the work plan that sampling at one SWMU will confirm no further action recommendations for other SWMUs. Unless the sampling proposed occurs at the actual SWMUs being recommended for NFA then data from this sampling will not support a NFA. NFA recommendations for SWMUs will be evaluated based on the data currently presented for that unit.

20. SWMU 46-006(a), p. 5-95 - At what depth will the augered samples be collected, and how will the locations of the samples be determined? LANL shall take two additional samples at a point located adjacent to the storage area in the ditch. These additional samples should be collected at 0-6 inches and at two feet depth or bedrock (whichever is reached first). This will increase the number of samples to be collected and analyzed at this SWMU to four.

21. SWMU 46-008(g), p. 5-95 - How will the location of each sample be determined? Three samples is not adequate for such a large area. Additional samples should be collected at areas of any surface staining. A surface sample (0-6 inches) should be collected at the previous location of the drums and analyzed as

using SW846 for metals, SVOCs, VOCs and PCBs. Why was uranium determined to be of potential concern? At one location in the ditch the top 6 inches should be analyzed separately from the bottom 6 inches, creating two samples from one auger position.

22. SWMU 46-003(h), p. 5-100 - Text on page 5-76 indicates that there is a concrete slab under the outfall which acts as a splash guard. Sampling should occur adjacent to this concrete slab unless it no longer exists. In addition, LANL shall take two additional samples by hand auger at 18 inches depth in the same location as the two surface samples under the outfall. Analysis should be for volatiles, semi-volatiles and metals.

23. SWMU 46-006(b), p. 5-100 - What is the depth of sample collection for the borehole? Text on page 5-77 for this unit indicates that there was visible oil staining in the storm drain and at the outfall. Additional surface samples should be collected at areas of visible staining especially if these are in the storm drain. LANL shall provide information about additional stains from recent field observation.

24. SWMU 46-006(d), p. 5-100 - Based on the description of this SWMU provided on page 5-78, deeper samples will be necessary for this unit especially where the washdown drain discharges and areas of oily accumulation. LANL shall revise the sampling plan to indicate sampling at depth. LANL shall explain how the locations of the surface soil samples were selected. The location of the washdown drain should be noted on Figure 5-3-12. Included in the current description should be an indication if staining is obvious now.

25. SWMU 46-006(f), p. 5-79 - LANL shall provide a description of the visual inspection of this area. Is there a reason to suspect discharges in and around this building?

26. SWMU 46-007, p. 5-107 - LANL shall collect an additional 0-6 inch surface sample at the location of the green stain at the head of the ditch as described on page 5-80. What is the depth of the staining? An additional sample should be collected below the staining if it extends deeper than 6 inches. It is not obvious how sampling of the ditch will confirm a NFA recommendation for SWMU 46-010(a), as background text indicates that multiple contaminants have been released to this ditch by operations in the building.

27. SWMU 46-008(b), p. 5-107 - LANL shall explain how the location of the surface samples are selected.

28. SWMU 46-008(d), p. 5-107 - LANL shall provide a current description of this site, as text on page 5-81 indicates that there are old 55 gallon drums and vessels as well as an oily spill at this site. If the oily spill is still visible then it should also be sampled.

29. SWMU 46-008(f), p. 5-114 - Text on page 5-81 indicates that the drainage direction is unclear; therefore, LANL shall take an additional surface sample. Sample locations should be based on field screening or visual inspection of the area. How is outfall RR related to this SWMU? There does not appear to be a drainage ditch close to this unit which reaches outfall RR.

30. SWMU 46-010(d), p. 5-114 -

a. LANL shall provide a current description of this site (staining?). How will the location of the two surface samples be selected?

b. Table 5-4-4 on page 5-138 indicates that outfall AO will not be sampled; therefore, explain how data from this outfall will provide information about the above SWMU. The outfall location should be provided on Figure 5-3-21.

5.4 Outfalls:

31. 5.4.4.2 Sample Collection, p. 5-148 - Information in this section needs to be clarified prior to EPA review of the proposed sampling for each outfall.

a. First Paragraph - What is the depth to the tuff bedrock? Analytical samples are to be removed at the surface, middle and bottom of each augered hole; however there is no depth of reference by which to evaluate this statement. The third sentence indicates that the analytical sample intervals will be a minimum of 0.2 ft in length, which contradicts the last sentence of the paragraph which indicates that a minimum of 6 inches of sample material must be collected for each sample submitted for analysis. LANL needs to clarify this paragraph.

b. Second Paragraph - LANL needs to indicate the depth of sample collection for the sediment trap in the center of the trap, and the sample to be collected on the lateral border.

c. Third Paragraph - LANL needs to provide the depths of the surface sediment samples.

d. Figure 5-4-14 indicates sediment/sludge samples will be taken at outfalls Y and AA, yet there is no discussion of this type of sample collection. LANL shall revise text to discuss this.

e. When a figure such as Figure 5-4-5 indicates that the outfall is sampled does that mean that a sample is taken from three depths? There is a different symbol for hand augered samples which are somewhat described in this section. LANL needs to clarify the type of sample being collected at the outfall and the depth(s) of collection.

32. Table 5-4-9 - Sample numbers in table should correlate to text. LANL shall revise table.

5.5 Landfills:

33. 5.5.1.2.1 Existing Information on Nature and Extent of Contamination, p. 5-166 - When LANL indicates that the levels of metals from previous sampling events were below EPA guidelines under 40 CFR 261.24, this only means that the metals do not exhibit the characteristic of toxicity, and therefore, the waste is not considered a hazardous waste. This is a very different type of measurement than what is required under Subpart S which is to compare the metal level with an action level. A metal may not exhibit toxicity and still exceed an action level.

34. 5.5.4.2 PRS Sampling Summaries, p. 5-179 -

a. SWMU 46-009(a) -

i. What is the anticipated depth of the six boreholes to be drilled? How many samples does LANL anticipate collecting and submitting for analysis from these boreholes?

ii. There is no discussion of the hand augered four samples holes in the landfill near the canyon bottom (SWSC Canyon). LANL shall describe how many samples will be collected, where samples are collected, and the method of collection for these four holes.

5.6 Stack Emissions:

35. SWMU 46-004(d2) - An examination of the proposed sampling locations and the location of the stack in building 24 from which the release of beryllium occurred show no correlation. LANL should be sampling areas closer to the stack. LANL shall provide an explanation as to why there are no locations closer to this stack which may be analyzed or field screened for beryllium.

Chapter 6:

36. 6.1.1 Listed PRSs Recommended for DA, p. 6-1 - EPA does not approve deferred action until decommissioning for these drain lines. Should results of sampling at outfalls and septic systems indicate release of hazardous constituents at significant levels then LANL will be required to evaluate these drain lines for possible leakage and breaks in the lines prior to decommissioning.

37. 6.1.2.2 SWMU 46-004(b), p. 6-7 - Has LANL made a visual inspection of the locations of the tank to determine if there are any visible signs of leakage from the tank? In the last sentence first paragraph on page 6-8, the sampling plan should be in Subsection 5.3.4.2.2.

38. 6.1.2.2 SWMU 46-003(e), p. 6-8 - EPA does not approve NFA for this component of a larger SWMU. Pending on the results of the sampling of the other components of this SWMU, LANL may request removal of the SWMU in its entirety.

39. Table 6-5, p. 6-9 - SWMU 46-010(d) is currently listed in the HSWA portion of the RCRA permit for investigation. As there is no discussion of this unit in the text, EPA assumes the unit was included in this table by error. LANL shall revise the table or provide an explanation for the inclusion of this SWMU.