UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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CERTIFIED LETTER: RETURN RECEIPT REQUESTED

no time to review adequately - TD 8/9/94

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

Re: Notice of Deficiency, RFI Work Plan OU 1082
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 1082 (OU 1082) dated July 16, 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 with the exception of the sampling plans noted in deficiency #18 which are due within sixty (60) 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

3430

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**Notice of Deficiency**
**Los Alamos National Laboratory**
**Operable Unit 1082**

**General Comments:**

1. The baseline risk assessment should use a residential scenario with a $10^{-6}$ risk until agreement is reached with stakeholders as to future land use scenarios.

2. LANL should note that identification of potential contaminants of concern below screening action levels does not automatically lead to a determination of no further action. The extent of any release must be identified, and if this does not occur in Phase I sampling then it should in Phase II.

3. The format used for the HE sumps is very poor. The sampling plans or figures should be included with the description of each sump. In addition, text skips back and forth between different figures and sump numbers which adds confusion in reading the text. For example, all the SWMUs associated with Figure 5-4 should be discussed together rather than split up.

4. More emphasis should be placed on the actual sampling plans rather than on the data quality objectives. The sampling plans are the most important part of the work plan, and yet there is little detail in the work plan related to this. All work plans should be third party executable.

5. Engineering surveys for locating sampling points should have been conducted prior to writing the work plan. Actual sampling points should be included in the work plan.

6. Approval of any portion of this work plan by EPA does not constitute approval of a voluntary corrective action at any SWMU. LANL shall provide a work plan for each proposed VCA.

7. LANL should provide dates (as available) for when MDA's, lagoons, pits, outfall, etc. become abandoned or inactive. LANL shall indicate whether units are permitted (RCRA, NPDES etc.) or are interim status.

8. Discrete rather than composite samples should be collected in the following sections of the work plan: Section 5.4.4.3 (p.5-110), Section 5.14.4.2 (p.5-258), and Section 5.16.4.2 (p.5-278).

9. All figures of SWMUs with sampling locations or which denote the locations of SWMUs should have contour lines.

**Specific Comments:**

1. **Executive Summary, p. ES-6 Milestone Chart** - Does the five years for completion of the RFI field work include completion of field work for the additional work plans being submitted in July 1994 and 1995? In addition, the HSWA permit requires submittal of the final CMS report within 10 years of issuance of the permit which is the year 2000. LANL's schedule shows a final CMS report in May 2002 twelve years after the effective date of the permit. In a letter dated June 27, 1994, EPA requested updated and revised schedules for all OUs, LANL may include their response to this question in the August 5, 1994 response.

2. **1.3 Description of OU 1082, p. 1-10 (last paragraph)** - EPA's approval of this work plan does not demonstrate concurrence with the Laboratory units that are proposed for no further action (NFA). EPA will indicate which units do not need to be added to the permit for an RCRA Facility Investigation (RFI) and which may be requested for removal from the permit following a Class III permit modification.

3. **Figure 3-1, p. 3-3** - It is unclear where the inset map (MDA P) belongs in this figure. LANL should indicate on the map where the inset is located.

4. **3.4.3.2 Soil, p. 3-10** - The soil-tuff interface on the Pajarito Plateau has not been sufficiently characterized for LANL to state that an impermeable clay zone often forms there.

5. **Table 4-1, p. 4-8** - Are the background concentrations listed specific to this OU, or are they general for the laboratory?

6. **4.2.3 Voluntary Corrective Actions, p. 4-7** - EPA will approve VCA's on a site-by-site basis. All VCA's which are final remedies will require a Class III permit modification.

7. **4.2.4 Active Sites, p. 4-13** - EPA will evaluate corrective actions at active sites on a case-by-case basis. Inactive sites under active sites will be required to be characterized as is appropriate and may not automatically be deferred to decommissioning.

8. **4.3.1 Potential Contaminants of Concern, p. 4-15** - What is the significance of an high explosive compound being used at TA-16 in quantities greater than 10,000 lbs? Were compounds not considered which were used in volumes lower than 10,000 lbs?

9. **4.3.3.1 Conceptual Site Model, p. 4-18** - The upper two feet are considered the surface soils for purposes of the RFI investigation and not the upper 6 inches as stated in this text. LANL shall revise text accordingly.

**10. 4.4.1 Criteria for Recommending NFA, p. 33 -** No further action (NFA) requests should follow the baseline risk assessment scenarios agreed to by the Technical Assumptions Task Force of $10^{-6}$ for carcinogens.

**11. Table 4-9, Sample Sizes for Reconnaissance Sampling, p. 4-41** Until LANL can provide the standard operating procedure (SOP) for use of this table, and an explanation of how consistency in usage will be maintained, EPA cannot approve this sampling method. A review of the work plan shows that there is no consistency in use of the table; rather it appears that LANL chooses a number of samples they want to analyze and then goes to the table to determine the probability and fraction of site affected.

**12. 4.7.3 Analytical Laboratory Methods, p. 4-48 -** LANL shall provide rationale for using a subset of metals from the SW-846 6010 analysis for metals. LANL shall provide an explanation for all the analysis tables which indicate that for "E Semivolatiles (SW 8270), a full suite is PAH". LANL must request a reduction in analysis from 40 CFR Part 261 Appendix IX and provide the basis for that request prior to the initiation of field work.

**<u>5.1.1.1 Description and History, p 5-1:</u>**

**13. SWMU 16-001(c), p. 5-4 -** LANL shall provide the dimensions of this tank.

**14. SWMU 16-001(d), p. 5-5 -**

**a.** LANL shall provide information related to when this dry well was abandoned and when the floor grooves of building TA-16-208 were plugged if available.

**b.** Were pesticides ever stored in TA-16-208? If pesticides were stored in this building then they need to be added to the analytical suite.

**15. Figure 5-4, p. 5-22 -** SWMU 16-003(b) (6 inch VC pipe) is not shown on this figure. LANL shall provide a figure with the approximate location of this unit.

**16. 5.1.4 Sampling and Analysis Plans, p. 5-11 -** Text indicates that SOPs for some field screening methods are in preparation. All SOPs should be finalized prior to initiation of field work.

**17. 5.1.4.3 Sampling, p. 5-13 -** LANL shall choose a minimum of three surface samples for laboratory analysis.

**18. 5.2 HE Sumps and Outfalls, SWMUs 16-003(a-j, l-o), 16-026(b-e, v, h2,j2), 16-029(a-g), 16-001(e), p. 5-16 -** LANL shall sample all sumps and outfalls especially active sumps

which may continue to discharge hazardous constituents to the environment. LANL may not wait until these units become inactive. LANL shall submit sampling plans for the active outfalls and all sumps within 60 days of receipt of this NOD, and sampling shall occur in FY95.

**19. 5.2.1.1 SWMU Descriptions and Histories, SWMU 16-029(g), p. 5-39** - When LANL is using archival information such as an interview from a former lab employee, a location of their work place and dates worked there should be indicated. Text states "Richard Daly, a longtime employee at S-site and past group leader of WX-3 states that no plating operations were ever conducted in the building". The building in question (TA-16-450), was constructed in the early 1950's. Was Mr. Daly employed at S-Site during the early 1950's and later?

**20. 5.2.2 Remediation Decisions and Investigation Objectives, Problem Statement (DQO 1), p. 5-57** - Sampling at NPDES outfalls is conducted in order to determine if surface water quality is being impacted. If an outfall was being used prior to being permitted then there were no limits on discharges at that time. Sampling at the outfall does not take into consideration the accumulation of material in the soil at or below an outfall. This material is not sampled under the NPDES permit, and there is no corrective action authority for cleaning up contamination under the NPDES permit. How does the outfall for TA-16-340 relate to the sampling done in Water Canyon?

**21. Decision Logic (DQO Step 5), p. 5-61** - LANL has shown no correlation between the deposition of high explosives (HE) and other hazardous constituents. If LANL removes portions of the drainage based only on the HE content then additional contamination may be missed. LANL shall define the extent of the contamination.

**22. 5.2.4 Sampling and Analysis Plans, p, 5-62 -**

**a.** How will samples be collected (spade and scope)? This should be indicated in the text and the SOP should be cited.

**b.** On page 5-80, first paragraph the fourth sentence indicates that all sample locations will be analyzed for HE, metals, semivolatile organics and radionuclides. Does this mean all samples which are field screened, or does this mean the samples which are defined as clean through the HE screening? By comparing text with the analytical charts it is not clear where samples will be taken for laboratory analysis.

**c.** Will the three samples taken in the auger core be analyzed for HE, metals, semivolatile organics and radionuclides?

**23. 5.2.4.2 Sampling, p. 5-79** - SWMU 16-029(g) samples are

listed for radiation screening in Table 5-20, p. 5-66, but not listed in the text. LANL shall clarify.

**24. 5.3.2 Remediation Decisions and Investigations Objectives, p. 5-87 -**

**a.** This area is highly contaminated and sampling should not be delayed until the line is plugged. LANL shall sample this area in FY95, and this includes the sampling of the sumps and especially the feeder troughs.

**b.** LANL shall sample and analyze the effluent from the NPDES outfall permitted as EPA05A056 for all the parameters as required under permit number NM0028355. LANL shall also analyze this sample and determine the concentrations present of TNT, RDX, HMX, acetone, methyl ethyl ketone, n-butyl acetate and toluene. LANL shall indicate which methods are being used for analysis and the detection limits of those methods. Sampling should occur within thirty-days of receipt of this NOD, and the results shall be sent to EPA upon receipt from the laboratory.

**25. 5.3.4.2 Sampling, p. 5-94 -** LANL shall revise their sampling plan to include full laboratory analysis for VOCs, SVOCs, metals and HE and its by-products for every 20 feet until 100 feet from the HE pond. Then a surface sample (0-6 inches) should be collected every 60 feet for full laboratory analysis.

Also, samples deeper than 6 inches should be taken in the drainage where sediment may have accumulated. LANL should also take three samples at the 6 inch to 2 foot depth within the first 100 feet from the pond, and analysis should include VOCs, SVOCs, metals and HE products and by-products.

**26. 5.4.1 Background, SWMU 13-003 (a,b), p. 5-97 -** Action will not be deferred until decommissioning and demolition (D&D). Should sampling in the drain field or outfall indicate contamination then the rest of the system will be required to be sampled prior to D&D.

**27. 5.4.1.1 Description and History, p. 5-97 -** Figure 5-52 does not show the drain lines from TA-11-4 and TA-11-1. Only the drain field is indicated in the figure. LANL shall revise the figure to indicate the location of the drain lines, and septic tanks to the drain field. In the future, it would also be helpful that if a figure was not located with text, the page number of the figure would be included in the text (e.g. Figure 5-52, p. 262).

**28. Design Criteria (DQO Step 6) p. 5-104 through 5-107 -** The explanation for the drain field for these units is incomplete. Are the lines in the drain field perforated so that material flows out along the line, or does it only flow out at the end of

the line? The size of each drain field is not included in this work plan; therefore, LANL shall submit a figure for each drain field indicating the locations samples will be collected. EPA cannot evaluate if the sampling proposed is adequate based on the information presented. LANL may propose a similar sampling approach for these systems, but enough information should be provided for EPA to determine that the sampling proposed is adequate.

29. **5.4.4.1 Engineering Surveys, p. 5-107** - All geomorphic mapping should have been completed prior to submittal of the work plan. Actual sampling locations should be in the work plan.

30. **Outfalls, p. 5-110** - An additional sample should be collected at each outfall from the soil/tuff interface and analyzed for VOC, SVOCs, metals, HE and HE by-products.

31. **5.5.4.1 Engineering Surveys, p. 5-117** - Site mapping should have occurred prior to submittal of the work plan. A detailed figure should be included with sampling locations indicated.

32. **5.5.4.2 Sampling, p. 5-117** - One sample is not adequate for this site. An additional sample should be collected five feet from the first sample. The sample should be collected to the soil/tuff interface and analysis should be for metals, VOCs, SVOCs, and cyanide.

33. **5.6.1.2.1 Nature and Extent of Contamination, p. 5-122, second paragraph** - Explain the meaning of this sentence, "Silver concentration in the soils followed a much more erratic pattern and was always lower in silver than the sediment". In addition, the data from this report (Kasunic et al., 1985) should be included in the workplan.

34. **5.6.4.2 Sampling, p. 5-130** - The proposed sampling plans do not adequately delineate the extent of the contamination. Data excerpted from Kasunic et al. (1985) indicates that at 33 ft down channel the concentration of silver at 3-ft depth was 182 ppm. Sampling should be conducted so that a clean zone beneath the contaminated zone is delineated. Additional corings are required and samples should be collected at the surface (0-6 in.), at 3 feet depth, and at 5 feet depth beginning at the outfall and continuing every 25 feet for the first 100 feet of channel.

35. **5.6.4.3 Laboratory Analysis, p. 5-130** - How does LANL know that silver and cyanide are the only constituents of concern? Were any solvents used in the photoprocessing? What type of acids were used? LANL shall provide an explanation.

36. **5.7.3 Data Needs and Data Quality Objectives, DQO Step 4, p. 5-141** - LANL should consider a slant boring approach underneath most of these structures in order to determine if the

soil has been impacted by past releases.

**37. 5.7.4.1 Engineering Surveys, p. 5-145** - LANL shall provide figures with the field surveyed SWMUs and sampling locations. This should have been done prior to submittal of the work plan.

**38. 5.7.4.2 Sampling, p. 5-145 -**

**a.** LANL indicates that cored samples will be taken, and then indicates that these samples will be collected at 0-6 in. These statements are contradictory, LANL shall take an additional sample at the soil turf interface or at 2 feet depth which ever comes first.

**b. Page 5-147, 1st paragraph** - EPA does not understand the reasoning for drilling to three-quarters of the thickness of the Imhoff tank. If LANL is concerned that the tank has leaked then they should drill through the tank or slant drill under the tank. If LANL is concerned that the tank has absorbed hazardous material and is hazardous then, a chip from the first several inches of the bottom of the tank should be analyzed to see if the tank needs to be disposed as hazardous waste. What does LANL mean by the entire core sample will be sent to the laboratory for analysis? LANL shall provide an explanation.

**c. Page 5-147, 2nd paragraph** - LANL shall explain the rational behind Table 5-43. Randomization of samples is not appropriate for this area. Any samples which are to be analyzed for VOCs should be field screened and collected in a manner so as to not drive off the VOCs.

**39. 5.8.1.1 Description and History, Figure 5-34, p. 5-150** - LANL shall include the location of all the active units which are listed as SWMUs on this figure.

**40. 5.8.1.2 Conceptual Model, p. 5-156 -**

**a. Page 5-156, paragraph one** - LANL shall clarify the portion of the text which refers to the barium concentrations in the drainage from SWMU 16-016(c) and in the southern drainage. If available the sampling locations should be included on a figure and the results of all the samples indicated rather than a range.

**b. Paragraph two** - LANL shall provide the actual data from the single soil sample rather than indicating if SALs were exceeded (Raper and Brown et. al.).

**41. 5.8.2 Remediation Decisions and Investigation Objectives, p. 5-156**- LANL indicates that the open burn/open detonation units are operating under a permit. Technically these units are interim status and are not permitted yet.

**42. 5.8.3 Data Needs and Data Quality Objectives, p. 5-161 -** EPA does not agree with assumption number 3 [that the secondary contaminants of concern (semivolatiles, metals other than barium) do not have a different deposition and transport mechanisms than HE, uranium, and barium so field screening for these three contaminants will allow LANL to locate probable high concentrations of other potential contaminants of concern]. This assumption is not valid and may not be used.

**43. 5.8.3 Sampling, SWMU 16-010(i), p. 5-164 -** LANL should also take a sample from below the buried pipe at the end of the pipe's length.

**44. 5.8.4.2 Sampling, p. 5-167 through 5-171 -**

**a. SWMU 16-010(a) -**

**i.** LANL shall collect samples at the following depths at the locations with the three maximum barium values: 0-6 inches, two feet and five feet. These samples shall be analyzed for semivolatiles, metals, HE and cyanide. LANL shall provide information on the correlation between field screening for barium using the XRF and laboratory analysis.

**ii.** Table 5-46 - LANL shall indicate what analysis shall occur for the ten additional samples which may be collected based on HE screening (only 3 samples are indicated in this table).

**b. SWMU 16-016 (c) -**

**i.** LANL shall provide a figure indicating the location of MDA P in relation to the drainage and samples to be collected.

**ii.** Table 5-46 - LANL shall provide an explanation why the two out of four potential samples located in this unit are not be analyzed for semivolatiles and cyanide as are the samples in SWMU 16-016(a). In addition, the table shows 8 samples being analyzed. If field screening indicates barium may have been stored at this area then LANL shall take core samples at 2 feet and 5 feet and analyze for semivolatiles, metals, HE and cyanide.

**iii.** LANL shall extend the area of sampling to the intersection with Cañon de Valle rather than stopping at 210 feet. A sample should be sent for full laboratory analysis every 30 feet until this intersection occurs. Field screening may be used to potentially determine the lateral extent of barium contamination in the drainage ditch; however full delineation of the extent of contamination, including depth, will be required. Therefore, for the three

highest field screened areas for barium within the ditch, LANL shall collect samples at the two foot depth and conduct full laboratory analysis.

**c. SWMU 16-010 (h), p. 5-169 -** It is unclear from the diagrams and text here and in the rest of the chapter where the potential release of contaminants occurred. Text on page 5-152 indicates that the HE residues were emptied into a floor drain located on the south end of the building which went to the troughs. Is LANL sampling under the connections to the drainage troughs? LANL should provide a better explanation for their sampling rationale. In addition, several samples should be taken deeper than 0-6 inches.

**d. SWMU 16-010(l), p. 5-170 -** LANL shall conduct full laboratory analysis at a minimum of ten sites rather than a minimum of three sites. At the three samples with the highest field screening results an additional sample should be collected at two feet or the soil/tuff interface (3 samples at 2 feet) and undergo full laboratory analysis.

**e. South drainage, p. 5-171 -** At the three locations where sediment traps are sampled, a deeper sample at the sediment to tuff interface should also be analyzed for SVOCs, metals, HE and cyanide.

<u>Cañon de Valle</u>

**45. 5.9.3 Data Needs and Data Quality Objectives, p. 5-178 -** LANL shall explain what is meant by "realistic exposure scenarios".

**46. Design Criteria (DQO Step 6), p. 5-181 -** Text in the first paragraph indicates that 30 samples are adequate for an initial baseline risk assessment while text in the second paragraph indicates that only 10 samples will be submitted for laboratory analysis. In addition, Table 5-52 indicates that 40 sediment samples will be sent for laboratory analysis. LANL shall clarify how many samples are actually being taken and submitted for laboratory analysis.

**47. 5.9.4.2 Sampling Cañon de Valle, p. 5-184 -** Text here and under Decision Logic (DQO Step 5) indicate that subsurface sampling is being performed. The sampling indicated is not considered subsurface by EPA. The top two feet are considered surface soils. LANL shall revise text in response to this comment.

It is unclear from the text how many samples will be selected from below the 0-6 inch depth. LANL shall provide clarification.

MDA R, SWMU 16-019

**48. 5.10.1.1 Description and History, p. 5-186** - LANL shall provide a figure of the site based on the 1984 aerial photographs or indicate on Figure 5-41 the location of the original three burning areas.

**49. 5.10.1.2.1 Nature and Extent of Contamination, p. 5-187** - Why are the potential contaminants of concern (PCOC) different than the contaminants of concern listed (e.g. semivolatiles, fuel oil). Table 5-53 should include these potential contaminants. LANL shall revise the table to include all contaminants of concern.

**50. Design Criteria (DQO Step 6), p. 5-193 -**

**a. Paragraph two** - The probabilities for the statistical analysis are low; EPA would like to see a probability of 90% if 10% of the site was contaminated for the surface. Therefore, LANL shall take 22 near surface samples.

**b. Paragraph three** - The probabilities for the statistical analysis seem low; therefore, EPA would like to see a probability of 90% if 15% of the site is contaminated or 15 samples from the drainage.

**51. 5.10.4.2 Sampling, p. 5-197 -**

**a. Second paragraph,** - EPA recommends that of the randomized samples six become biased samples which will be collected at obvious drainages near the canyon rim and the topographic depressions within MDA-R. In addition, if the bottom 6 inch interval is above background for radiation, barium or HE then it should be submitted for laboratory analysis.

**b. Fourth paragraph, Eight drill cores** - If LANL only takes one of the 1-6" samples for analysis then the actual vertical extent of contamination will be hard to define. Rather, if one of the segments other than the bottom 6 inch segment has a positive reading then LANL shall also submit the bottom segment for laboratory analysis. If the bottom segment of the core segment has a positive reading then LANL shall core deeper, and take an additional sample every two feet until no positive readings are made for HE, radiation or barium. LANL shall also sample and analyze the 15 randomized three-foot cores in the same manner, thereby defining the depth of any contamination.

**52. 5.10.4.3 Laboratory Analysis, p. 5-199** - LANL shall submit a list of the semivolatile organics for which analysis is being conducted.

**5.11 Surface Waste Disposal Areas, SWMUs 16-009 and 16-016(a,b)**

**53. 5.11.1.1 Description and History, p. 5-202 -** SWMU 16-016(b) - What types of HE contamination were found in the CEARP field survey and at what amounts?

**54. 5.11.4.3 Sampling, SWMU 16-009, p. 5-210 -**

**a.** Three samples over this area (approximately 180,000 sq. ft.) is not adequate. LANL shall analyze a minimum of twenty samples from this area. If a surface soil sample indicates radioactivity or barium levels above background then the bottom portion of the 3 foot interval should also be sent in for analysis. This extra sample should be in addition to the minimum of twenty samples required. In addition, LANL does not know that this area was not used for burning HE; therefore fifty percent of the samples should at least be field screened for HE. If field screening indicates positive results then laboratory analysis should occur for those samples.

**b.** LANL shall provide a better explanation of how samples will be collected from this area. Are 6-inch sections from each three foot core being screened as in other parts of the work plan, and then will that 6 inch sample be sent for analysis if field screening indicates barium or radioactivity above background? How and over what interval will the samples be homogenized?

**c. SWMU 16-016(b), p. 5-213 -** Any surface samples with positive HE field screening results should be submitted for laboratory analysis.

**TA-16 Waste Water Ponds Aggregate, SWMU 16-007(a) and SWMU 16-008(a)**

**55. 5.12.4.2 Sampling, p. 5-222 - SWMU 16-007(a) -**

**a.** LANL shall not homogenize over the 5 ft. core interval for one sample. LANL shall obtain samples from 6 inches or less of core. This will allow for less dilution of the sample and make it easier to determine the depth of any contamination.

**b.** The original description of these ponds indicates that material was probably deposited between 8 and 10 feet depth from the surface; therefore, cores to a depth of 10 feet may not adequately define the possible contamination. LANL shall core to a depth of 15 feet at each sampling location. Should field screening not indicate any potential contaminants of concern then LANL shall submit a sample from the 8-10 ft. depth for two out of the three cores drilled in each pond. This will make a total of 8 samples sent for laboratory analysis.

**56. SWMU 16-008(a), p. 5-224 -**

**a.** LANL shall not homogenize over the 5 ft. core interval as above, but should obtain samples from 6 inch intervals. Should the bottom 6 inches of core indicate potential contaminants of concern (PCOC) then the depth of contamination should be delineated and an additional 5 ft. core should be taken. This core should also be screened and an additional sample analyzed where any PCOC are indicated. If no PCOC are indicated then the sample 2 ft. below the last positively field screened interval for PCOC should be submitted for analysis.

**b.** A comparison of Figure 5-46 and text for sampling of this SWMU is confusing. LANL shall explain the total number of cores that will be taken and field screened for PCOC.

**TA-13 (P-Site), SWMUS 13-001, 13-002, 13-004, 16-035, 16-036**

**57. 5.13.1.1 Description and History, p. 5-229 -** LANL shall provide an explanation or better history description for SWMUs 16-035 and 16-036. Why does LANL suspect contamination beneath the bunkers?

**58. Design Criteria (DQO Step 6), p. 5-234 - SWMUs 13-004, 16-035, and 16-036 -** What percentage of these SWMUs is anticipated to be contaminated? LANL indicates two very different levels of contamination and probability of detecting that contamination. LANL shall provide an explanation for the sampling size. In addition, EPA would prefer to see a minimum of 90% probability of determining if contamination is present.

**59. 5.13.4.3 Sampling, p. 5-239 -**

**a.** Figure 5-48 does not show the location of the drainage or drainage samples. LANL shall provide a figure with this information.

**b.** In addition the survey grid (Figure 5-48) does not cover the entire SWMU 13-002. LANL shall provide an explanation for this.

**c.** It is unclear from text how the 38 samples for laboratory analysis will be selected from this firing site. Shallow surface sampling (0-18 inches) in prominent drainages and topographic lows could be used to supplement the grid samples.

**d. SWMUs 13-004, 16-036, and 16-035, p. 5-240 -** Based on the response to the questions on DQO Step 6 and Description and History above, EPA may determine that additional samples will be required.

**5.14 TA-11 Firing Site Aggregate, PRSs 11-001 (a,b), 11-002, 11-003(b), 11-004(a-f), 11-006(a-d), C-11-001, p. 5-242 -**

**60. 5.14.1.1 Description and History -**

**a. SWMU 11-001(a), p. 5-245 -** What type of HE was used in experiments in the firing pit? LANL shall provide a better description of the activities which occurred at this unit.

**b.** LANL shall provide a figure with more detail of the SWMUs, as Figure 5-49 is good for an overall picture, but does not have the detail required to examine SWMU size and locations.

**c. SWMU 11-001(b), p. 5-245 -** What type of HE was used at this site?

**d. SWMU 11-004, p. 5-247 -** What type of HE has been used at this SWMU?

**e. SWMU 11-002, p. 5-248 -** Has this unit been used since 1992? Does the unit have interim status and will it receive a permit?

**61. 5.14.1.2.2 Potential Pathways and Exposure Routes, p. 5-250 -** What is the schedule for use of this site? What is the date for decommissioning this site? LANL shall submit workplans for the subsurface potential release sites within 90 days of receipt of this NOD. Based on the response to the above questions work on subsurface units may or may not be deferred until the site is decommissioned.

**62. 5.14.4.2 Sampling, p. 5-258 -**

**a.** The drainage area from SWMU 11-006(c) should also be sampled and undergo analysis for the full suite of analytes.

**b.** North and South drainages - All the samples should be submitted for a full suite laboratory analysis not just the first and last.

**5.15 TA-11 Outfalls Aggregate, SWMU 11-005(c), SWMUs 11-011(a-c)**

**63. 5.15.1.1 Description and History, p. 5-260 -** LANL should provide the dates of operation for all these outfalls.

**64. 5.15.4.2 Sampling, p. 5-268 -**

**a. Outfalls on moderate slopes -** LANL shall collect an additional sample for laboratory analysis 4-6 feet away from the outfall discharge point.

**b. Paragraph four -** Text indicates that two samples with the highest filed screening readings will be selected for laboratory

analysis. This contradicts text in Design Criteria (DQO Step 6) on page 5-266 which indicates that "three samples per core will be submitted for full laboratory analysis". LANL should clarify what analysis will be conducted.

**5.16 TA-11 Potential Surface Contamination Aggregate, SWMU 1-001(c), SWMU 11-012(a-d), C-11-002**

**65. 5.16.1.1 Description and History, C-11-002: TA-11-12, p. 5-274 -** LANL shall provide additional information on this unit. Is it visible in any of the aerial photographs reviewed. Based on the information provided it should probably be included as a SWMU and be included in the permit.

**66. 5.16.4.2 Sampling, p. 5-278 -**

**a.** LANL shall clarify the sampling procedures to be used. Will the entire 18 inches of core be analyzed as one sample. Why are 300 ml of core required?

**b.** For SWMU 11-001(c) which is a former burn pit, sampling should occur to 3 feet in depth. LANL shall take at least two samples per core.

**5.17 Decommissioned Waste Storage Area, SWMU 16-013**

**67. 5.17.1.2.1 Nature and Extent of Contamination, p. 5-286 -** LANL shall describe what is meant by the area has been cleaned. What does this include?

**68. 5.17.4.2 Sampling, p. 5-289 -** Any areas of staining should be preferentially sampled. If no samples have a positive screening for PCOC's then LANL shall send 2 samples collected from obvious down gradient portions along the edge of the asphalt pad for laboratory analysis.

**69. 5.17.4.3 Laboratory Analysis, p. 5-291 -** Why is LANL conducting laboratory analysis for VOCs when samples are being taken from the top 6 inches?

**Chapter 6**

**70. Table 6-1, p. 6-1 -** EPA does not necessarily agree with the criteria for no further action or deferred action. Each unit will be evaluated separately. Undergoing voluntary corrective action is not a reason for deferral.

**71. 6.1.1.1.1 Background, p. 6-3 -**

**a.** EPA does not approve deferral of any site which is beneath one of the open burn/detonation units (16-005(g)). These units must be sampled and a workplan submitted within 90 days detailing the

sampling of these units. Removal of the interim status units which will receive a permit will be approved with concurrence of NMED.

**b. SWMU 16-010(d), p. 6-4** - Has this unit also been converted to a burn table and is it currently active?

**72. 6.1.2.1.2 Rationale for Recommendation, Inactive Surface Impoundment. p. 6-7** - Has NMED approved the actual closure of this unit? With concurrence from NMED, LANL may request removal from the permit via a Class 3 permit modification.

**73. 6.1.3.1.1 Background, SWMU 16-010(g)** - LANL may request removal of this unit from the permit by a Class 3 permit modification. If this unit did not handle or manage solid waste then it should not be listed as a SWMU.

With approval from NMED, LANL may request removal of the following units by a Class 3 modification from the HSWA portion of the permit:

16-012 (d,i,j,l,m,n,t,u,x)
16-012(p)
16-012(a2)
11-011(c)
16-006(f)

**74. MDA P** - NMED has the lead for this unit and all activities should be covered under closure requirements. LANL may request removal of this unit from the HSWA portion of the RCRA permit by a Class 3 permit modification.

**75. 6.1.5.1.3 Rationale for Recommendation, SWMU 11-007 p. 6-14** - The reason to recommend this unit for no further action should be that it does not meet the definition of a SWMU. LANL may request removal of this unit from the permit by a Class 3 permit modification.

**76. 6.1.5.2 MDA S, SWMU 11-009, p. 6-14** - What procedures are in place to ensure there will be no release of materials from this SWMU. If the SWMU is defined by the area of the fence then investigation of this site may be deferred until completion of the experiment.

**77. 6.1.5.3.1 SWMU 16-005(n), p. 6-16** - Archival information does not appear sufficient to no further action this SWMU. This unit should be investigated and a sampling plan should be submitted within 90 days.

**78. 6.1.5.4.1 SWMU 16-005(o), p. 6-17** - Was there ever any other use for building TA-16-101 other than a guard house? If this unit only served a guard house then EPA concurs that no

further action is required.

**79. 6.1.5.5.2 Recommendation SWMU 16-006(b), p. 6-18 -** Why is this listed as an active septic system when the guard house it serves is inactive? LANL may request removal of this unit from the permit.

**80. 6.1.5.7 Rest Houses SWMUs 16-012 (a-z) and 11-010(a), p. 6-19 -** What is the function of the drains associated with the rest houses? Why do the drains lead to high-explosive sumps if there is no problem with the handling of HE at these sites. LANL needs to provide additional information prior to consideration of no further action by EPA. Figures should be provided.

**81.** The following units do not need to be added to the permit:

| | |
|---|---|
| **SWMU 16-007(b)** | **SWMU 37-001** |
| **SWMU 11-003(a)** | **C-11-003** |
| **SWMU 11-008** | |
| **SWMU 11-010(b)** | |