UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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NOV 17 1993

Joseph C. Vozella, Chief
Environment, Safety and Health
Branch
Department of Energy
Los Alamos Area Office
Los Alamos, New Mexico 87544

TA-1

Re: RFI Sampling Plans for D Building and Hillsides 138 and 140
Notice of Deficiency Operable Unit 1078 (OU 1078)
Los Alamos National Laboratory NM0890010515

Dear Mr. Vozella:

The Environmental Protection Agency (EPA) has reviewed the sampling plans for D Building and Hillsides 138 and 140 which were submitted to EPA on October 8, 1993, and determined them to be deficient. Enclosed is a list of comments and deficiencies, you have thirty (30) days to respond to the deficiencies. Please provide two copies of all requested maps.

Should you have any questions, please contact Barbara Driscoll at (214) 655-7441.

Sincerely,

William K. Honker, P.E.
Chief
RCRA Permits Branch (6H-P)

Enclosure

cc: Benito Garcia, NMED
Robert Vocke, EM-13, LANL

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## Comments and List of Deficiencies

**D Building**

**Comments:**

1. **1.1 Background for the D Building Subarea SWMUs, p. 3 -** The work plan indicates that if the health risk calculated for the entire SWMU aggregate is below the level of concern, then NFA will be proposed for all SWMUs in that group. DOE may propose individual SWMUs for NFA, but the risk assessment for each individual SWMU should meet the requirements of no risk at a target risk of $10^{-6}$.

2. **2.3 Composite Pilot Study, p. 12 -** Composite samples may dilute or otherwise misrepresent soil concentrations at specific points and therefore, should be avoided as the only inputs to risk assessment. Composite soil samples may only be used to assess the presence or absence of contamination (Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), EPA, December, 1989).

EPA risk assessment guidance calls for calculating the 95 percent upper-confidence limit (95% UCL) on the arithmetic mean of site contamination (Guidance for Data Useability in Risk Assessment (Part A), U.S. EPA Publication 4285.7-09A, 1992). Composites may be used in the risk assessment only to represent average concentrations. Therefore, composite soil samples would not provide the necessary analytical data to use in a risk assessment. To properly calculate the 95% UCL, discrete grab samples of soil would be required. In addition, the use of discrete samples allows for the determination of the vertical and horizontal extent of contamination at the site.

3. **3.1.2 D Building (Stratum 1) Decisions, p. 18 -** LANL's definition of contaminant of concern (COC) is confusing. A hazardous constituent is still a hazardous constituent independent of it's concentration. Too much emphasis is being placed on the importance of screening action levels at the RFI stage. The primary objective should be to determine if a release has occurred and the extent of the release.

4. LANL should not use the term full suite of chemical analyses unless they are completing analyses for Appendix IX. Nor should the term total metals be used when the actual metal analysis is a subset of SW 846 method 6010. The use of these terms is misleading, and may imply that more analyses is being performed than is actually occurring.

**Deficiencies:**

1. **1.0 Introduction, p. 1 -** This work plan does not include a sampling plan for Stratum 2 which is the northern portion of former D building. Text on page 1 indicates that Stratum 2 was sampled in

March, 1993, as construction work was occurring at the Los Alamos Inn. Because EPA had significant comments on the March, 1993 work plan, DOE unofficially requested that EPA not submit a Notice of Deficiency on the work plan, but rather DOE would rewrite the work plan to address EPA concerns. Does DOE now want EPA to review the portion of the original March, 1993 work plan which addresses the sampling plan for Stratum 2? If not, then DOE should provide a work plan which addresses Stratum 2 area.

2. **2.1 Sampling for Screening Assessment, p. 8 -** A rough comparison between Figure 1-2 (Ahlquist verifications sampling performed in the mid-1970's) and Figure 2-1 (currently proposed sampling locations) would indicate that many of the sampling locations chosen are not located where anticipated higher concentrations of contaminants might be. This contradicts the August 1993 work plan which says sampling is focused on locations for which there is a greater chance that contamination exists. LANL shall provide a map overlaying proposed new sampling locations with those in Figure 1-2. Figure 2-1 is so busy that it is difficult to determine the actual sampling locations. This new map should also indicate the six sampling points which are located in potential areas of residual contamination.

**Hillsides 138 and 140**

**Deficiencies:**

**1. Tables 1 and 2, data -** LANL shall provide an explanation of the data as presented in these two tables. Specifically, for the data which is presented as being less than a certain number (e.g. <5.8), does this mean less than the detection limit or less than the quantification limit? An overall explanation of what type of data is presented is required. Data which is considered estimated should also be indicated. The detection limits for each metal should also be indicated.

2. LANL shall provide a comparison between analysis results for metals and what is normal levels for the same metals in background samples. Background information must be provided with all analysis results.

**3. J2/TU, Hillside 140 FY92 Surface Soil Sampling Summary, p. 4 -**

a. LANL shall provide a map indicating the location of all fifty-nine samples which were analyzed for metals and SVOCs. This map shall also indicate any samples which exceeded action levels for metals (antimony and thallium).

b. The information presented in "Table 2, Hillside 140 Soil Samples Exceeding Criteria", does not correlate with information presented in Figure 1, Hillside 140. The information presented in Table 2 and Figure 1 both for Hillside 140 should match. There are 18 points on Figure 1

indicating sample results exceeding action levels for antimony; whereas, there are only 8 samples indicated in Table 2 as having exceeded action levels. Table 2, for Hillside 140 should include all the data which exceeded action levels for metals, even if that data is questionable. The questionable data may be indicated with an explanation in the table.

c. LANL shall provide a complete explanation of why the data for the seven antimony values is questionable.

4. **2.3 SE Los Alamos Inn, Hillside 138 FY92 Surface Soil Sampling, p. 5 and Table 2 -**

a. The tables in the work plan are misnumbered and revised tables should be submitted with the correct numbers (Table 1 is Hillside 138 and Table 2 is Hillside 140).

b. LANL may propose action levels which are more stringent than those proposed in Subpart S, but they may not propose action levels which are any less stringent than those proposed in Subpart S. The action level for antimony should be changed to 30 ppm.

c. The action level for mercury is 20 ppm in the proposed Subpart S, and that is the action level which should be used by Los Alamos. A comparison of this action level (20 ppm) with the data presented for Hillside 138 indicates that all but two of the samples analyzed exceeded the action level for mercury.

d. While the transportation and migration rates of some metals may closely parallel that of some radioactive isotopes, no conclusions concerning collocation and codeposition of metals and radioactivity may be drawn from the sampling results from the Hillside samples. The original hillsides sampling plan was not developed to demonstrate collocation of metals and radioactivity, rather the sampling plan was designed to locate points of above background radioactivity and additional analysis was conducted at those points for metals and SVOCs. In fact, the presence of above background radioactivity in the drainage where no action levels for metals was exceeded might tend to indicate that certain species of radioactivity are more mobile than some of the metals of concern. Therefore, the sentence indicating the initial data suggests codeposition and collocation of metals and radioactivity in this section is inaccurate and should be removed.

e. LANL shall provide a map indicating the location of the 44 samples analyzed for metals for Hillside 138. Samples exceeding action levels should be indicated.

5. **Section 3.1.2 Scope of Surface Sampling, p. 7 -** LANL shall provide a map which shows the location of the proposed sampling

grid including potential sampling points.

6. **Section 3.1.3 Field Screening and Sample Analyses, p. 8 -**

a. How will field screening be implemented with the XRF? An explanation of the manner in which this instrument will be used should be provided.

b. Sample selection for metals analysis should be based on field screening results with the XRF rather than on radioactivity of greater than 17,000 counts per minute. The extent of the metals contamination should be defined, and samples should be taken preferentially near areas with confirmed contamination rather than randomly selected.

7. **Section 3.2.3 Field Screening and Sample Analyses, p. 10 -** The same comment as 6.b. above. LANL should not presume that all metals are collocated with areas of above background radioactivity.