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

March 31, 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 the LANL VCM Completion Report for PRSs in TA-16, EPA I.D. No. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has completed a technical review of the Los Alamos National Laboratory (LANL) RCRA Voluntary Corrective Measures (VCM) Completion Report for Potential Release Sites (PRSs) 16-013, 16-025(x), 16-031(d), C-16-065, and C-16-068 in Technical Area 16, dated September 26, 1997. Based on the information provided in the report, EPA has found parts of the Report to be deficient and enclosed is a list of deficiencies. The EPA recommends that LANL conduct further investigations and submit all requested information (See Enclosure)

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 VCM COMPLETION REPORT FOR PRSs in TA-16

GENERAL COMMENTS

1. It appears from reading this Report that LANL is under the **wrong** impression that if soil sample results are under human screening action levels, then no further investigation is required. This is not correct. LANL must determine the full extent of contamination (horizontally and vertically). For example, if a soil sample result is 296 ppm for lead (at 2-2.5 feet) and the background UTL for lead is 23, then LANL must perform deeper sampling at this location. (**Best Professional Judgement, (BPJ)**)

2. It appears that LANL did not locate the lab analyzed soil samples on the appropriate map or figure. LANL did locate the soil screening (XRF) samples on the appropriate figure. **(BPJ)**

SITE SPECIFIC COMMENTS

1. Page 7, Section 1.2: It states, "A screening level of 50% of the cleanup level (preliminary remediation goal [PRG]) for HE and metals was used to determine if soil removal was necessary." However, field screening results, are less reliable than those from a fixed laboratory as stated in the comments followed. LANL should ensure that good correlations can be found between the two.

   For example, Sample 0316-97-1008 and Sample 0316-97-0001 are from the same location and/or the same sample, so was Sample 0316-97-1009 and Sample 0316-97-0002. However, the results shown in Table 2.1.3-1 (screening results) and Table 2.1.4-1 (laboratory results) are far apart. Without further verifications, which result should you believe? **(BPJ)**

PRS 16-013 - Waste Storage Site

2. General Comment: The sampling ID numbers provided in the analytical result tables do not correlate with the location ID numbers. **(BPJ)**

3. Page 9, 2nd paragraph: It states, "Screening samples 0316-97-1008 and 0316-97-1009(lab sample 0316-97-0001 and 0316-97-0002, respectively)..." Does this mean that Sample 0316-97-1008 and Sample 0316-97-0001 are the same? Same question applies to Sample 0316-97-1009 and Sample 0316-97-0002. **(BPJ)**

4. Page 8, Field Investigation: Drums containing volatiles did leak at this site into the drainage ditch. LANL did not analyze the soil samples for volatiles. Did LANL sample the leaked drum stored area? **(BPJ)**

5. Page 10, Table 2.1.4-2: All laboratory samples indicate elevated copper and lead. Copper is several times higher than the LANL background UTL. In view of Table 2.1.3-1 and Fig.1.1-2, it appears that the concentrations of copper and lead in the drainage are higher than those near the buildings. LANL shall collect more samples at the neighborhood of Sample IDs 0316-97-1005 and 0316-97-1007. **(BPJ)**

PRS 16-031(d) - Former Cooling Tower Site

6. LANL shall explain why the XRF results and the lab results are so different, and justify to EPA which one is more reliable. (See attached table)

For example: The XRF/Cu for Sample 0316-97-1003 is five times higher than that of Sample 0316-97-1008; but the Lab/Cu for Sample 0316-97-1003 is only one fifth of Lab/Cu for Sample 0316-97-1008. Please explain.

PRS	Sample ID	XRF/Cu	Lab/Cu	XRF/Pb	Lab/PB
16-013	0316-97-1008	131±57	82.6	ND*[2]	49
16-031(d)	0316-97-1003	823±48	17	5±1	ND

The fact that the XRF/Cu for Sample 0316-97-1003 is 48 times higher than the Lab/Cu makes the regulatory authority question both results. LANL should resolve the problem and provide NMED/EPA with confirmation which one (XRF's or Lab's) is correct. If XRF proves less reliable, then LANL should utilize fixed laboratory results in the future instead of XRF.

LANL shall submit duplicate samples from controversial locations, analyze them in a fixed laboratory, and examine the laboratory repeatability before the Administrative authority makes any NFA decision.

PRS 16-013

Sample ID	XRF/Cu	Lab/Cu	XRF/Pb	Lab/PB
0316-97-1005	154±59	NA*[1]	75±28	NA
0316-97-1007	171±65	NA	93±31	NA
0316-97-1008	131±57	82.6	ND*[2]	49
0316-97-1009	145±57	66.6	ND	36.6

PRS 16-031(d)

Sample ID	XRF/Cu	Lab/Cu	XRF/Pb	Lab/PB
0316-97-1000	1055±56	NA	19±3	NA
0316-97-1001	954±52	NA	24±3	NA
0316-97-1002	842±50	NA	21±3	NA
0316-97-1003	823±48	17	5±1	ND
0316-97-1004	846±48	NA	14±2	NA

PRS 16-065

Sample ID	XRF/Cu	Lab/Cu	XRF/Pb	Lab/PB
0316-97-1024	751±7	17	ND	ND
0316-97-1026	685±30	ND	66±4	ND

PRS C-16-068

Sample ID	XRF/Cu	Lab/Cu	XRF/Pb	Lab/PB
0316-97-1028	1099±53	17.8	60±5	43
0316-97-1030	703±41	NA	62±5	NA

NA*[1]: No applicable. (no test was done)
ND*[2]: No detected. **(BPJ)**

7. Page 18, 6th paragraph: Please explain the selection criteria that LANL use in selecting a lab sample from the five screening samples. Shouldn't LANL check the XRF results first? The XRF result showed that Sample 0316-97-1000 contains the highest Cu (1055 ppm) of the five samples; however, LANL selected Sample 0316-97-1003, which contains the lowest Cu (823 ppm). Isn't it true that higher XRF numbers may indicate a higher potential of release? **(BPJ)**

8. Page 18, Table 2.3.3-1: The XRF results shows that copper is elevated in every XRF analysis, ranging from 823 ppm to 1055 ppm. LANL shall collect deeper samples from 0-1 and 1-2 ft at two locations to rebut or justify the findings. **(BPJ)**

PRS C-16-065 - Former Drum Storage Platform

9. Page 22, Table 2.4.3-1: The XRF analysis indicated elevated levels of copper. LANL is required to collect deeper laboratory samples to confirm or rebut the findings.

   In addition, LANL shall provide the fixed laboratory results for the inorganics, high explosives, and VOC's, not just the results above LANL UTLs. **(BPJ)**

PRS C-16-068 - Former Build TA-16-522

10. Page 25, 2nd paragraph: It states, Two of the four screening samples with detected results are presented in Table 2.5.3-1." Please explain the results of the other two samples. **(BPJ)**

11. EPA disagrees with LANL's NFA recommendation. Two of the XRF results had elevated levels of copper ranging from 703 to 1099 ppm. Deeper sampling is needed there. The sampling plan is also flawed for volatiles, since it is very unlikely that they will show up in 0-6 inch surface samples. **(BPJ)**