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Date: December 21, 1999  
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HSNA LANT 2/1093/18

Mr. John Kieling  
NMED-HRMB  
P.O. Box 26110  
Santa Fe, NM 87502

**SUBJECT: RESPONSE TO REQUEST FOR SUPPLEMENTAL INFORMATION  
CONCERNING THE VCM PLAN FOR PRSs 18-003(a-h)**

Dear Mr. Kieling:

Enclosed is the Los Alamos National Laboratory's response to the New Mexico Environment Department Hazardous and Radioactive Materials Bureau's request for supplemental information for the Voluntary Corrective Measures (VCM) Plan for Potential Release Sites 18-003(a-h) (LA-UR-99-1167). The VCM work is presently scheduled to begin in fiscal year 2003 based on prioritization under the new aggregation and watershed approach.

If you have any questions, please call Dave McInroy at (505) 667-0819, Danny Katzman at (505) 667-0599, or Joe Mose at (505) 667-5808.

Sincerely,

Julie A. Canepa, Program Manager  
Los Alamos National Laboratory  
Environmental Restoration

Sincerely,

Theodore J. Taylor, Program Manager  
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Enclosure: VCM Plan for PRSs 18-003 (a-h)

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**Response to Request for Supplemental Information  
for 18-003 (a—h) Voluntary Corrective Measure Plan  
Los Alamos National Laboratory (0890010515)**

**INTRODUCTION**

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The comments are divided into general and specific categories as presented in the letter. Los Alamos National Laboratory's (LANL's) responses follow each NMED comment.

**GENERAL COMMENTS**

**NMED Comment**

1. *The VCM plan generally addresses identifying and characterizing areas for soil remediation in the vicinity of septic tanks and drain fields. It states that "a project best management practice is to remove inactive septic tank systems that occupy canyon-bottom settings in order to mitigate potential environmental issues that may remain if not managed. Exceptions to this practice may occur if the system is inaccessible (due to facility operations) or if removal is unwarranted from a risk perspective" (Executive Summary, page vi). At TA 18, HRMB strongly recommends the removal of all inactive septic systems including the tanks and associated drain lines, when feasible, rather than grouting them or leaving them in place. LANL should clearly state their intent and present a clear plan of action (or decision tree) regarding remediation decisions (see specific comment # 15). Regardless of any risk assessment evaluation, the best management practice should be implemented, resulting in the prompt removal of septic tanks located in areas with shallow ground water. LANL should elaborate further on any complications they anticipate that will prevent the prompt removal of the tanks. It seems most productive to focus on removing the septic systems and conducting confirmatory sampling to address nature and extent issues. Digging and trenching equipment can be used to conduct the removal and sampling activities simultaneously. If PRS accessibility and analytical data turn-around-times are of concern, LANL should consider the use of a mobile laboratory, specifically for organics analyses, which will expedite field activities. If the situation arises where it is not feasible to remove a tank or piping, then HRMB should be notified to allow for on-site confirmation of the circumstances. LANL should provide its rationale for remediation decisions to allow HRMB to determine the most appropriate course of action is being taken.*

**LANL Response**

1. The voluntary corrective measures (VCM) plan proposes to remove the septic tank and distribution box components of the septic systems because they are believed to pose the greatest potential for contaminant releases to the environment and for future misuse. The investigations leading up to excavation and removal of other septic system components, such as porous drains lines in the leach fields, are designed to determine if and where contaminants remain and provide the data necessary to conduct sound cost/benefit analysis of removal. Additionally, numerous logistical constraints on excavation may be encountered. The high-security status at Technical Area (TA) 18 may present

difficulties with identification of all subsurface utilities, and the active status of most of the facility structures and roadways may prevent sufficient access to portions of the septic systems. However, these logistical issues are considered secondary to the evaluation of the cost/benefit of removal of all components of the septic systems, based on reducing risk or potential for releases of contamination to the environment.

Removing the septic systems prior to characterization of each site as proposed in the VCM plan could result in the generation of unanticipated wastes and will create logistical problems associated with open trenches. Onsite laboratory analysis of sufficient quality for real-time decisions is not feasible because potential contaminants at these potential release sites (PRSs) include radionuclides and metals, in addition to the organic contaminants.

It is Los Alamos National Laboratory's (LANL's) intent to work closely with the Hazardous and Radioactive Materials Bureau (HRMB) during all phases of the VCM to review data and field observations in the context of formulating remediation decisions.

#### **NMED Comment**

2. *Each PRS consists of the entire septic system (inlet and outlet piping, drain field, tank, etc.); however, this VCM plan addresses portions of the systems separately. When feasible, removal of the entire system is recommended. The VCM should address a final remedy for the entire PRS.*

#### **LANL Response**

2. The VCM plan addresses each septic system as one PRS, understanding that each PRS is comprised of inlet piping, an in-ground tank structure, outlet piping, and leach field piping. The approach toward investigating each PRS is based on investigation cost and schedule efficiencies, methods used in performing the investigation, and facility-specific constraints. The intent is to develop an appropriate remediation strategy for each PRS based on the nature and extent of contamination and the cost/benefit of excavation in the context of risk and the potential for releases of contamination to the environment.

#### **NMED Comment**

3. *All figures and tables that present the results of the background comparison to previous data should be consistent unless an explanation is noted for the discrepancies (see specific comment #11).*

#### **LANL Response**

3. LANL concurs. The final report will present results of the background comparison in both tables and figures. The following paragraphs are provided to clarify each identified subsection of the VCM plan.

The last sentence in Section 2.1.3 should state: "The results of this background comparison are presented in Table 2-1. Due to the numerous analytes reported above background, suites of analytes above background rather than individual chemicals are presented in Figure 2-1. Individual chemical results are presented in Table 2-1."

The last sentence in Section 2.2.3 should state: "The results of this background comparison are presented in Table 2-2. Due to the numerous analytes reported above background, suites of analytes

above background rather than individual chemicals are presented in Figure 2-1. Individual chemical results are presented in Table 2-2."

The last sentence in Section 2.3.3 should state: "The results of the background comparison are presented in Table 2-3. Figure 2-2 presents sample locations and detected analytes retained as COPCs and COPECs."

The last sentence in Section 2.4.3 should state: "The results of the background comparison are presented in Table 2-4. Figure 2-3 represents sample locations and detected analytes retained as COPCs and COPECs."

The last sentence in Section 2.5.3 should state: "The results of this background comparison are presented in Table 2-5. Due to the numerous analytes reported above background, suites of analytes above background rather than individual chemicals are presented in Figure 2-5. Individual chemical results are presented in Table 2-4."

The last sentence in Section 2.6.3 should state: "The results of the background comparison are presented in Table 2-6. Figure 2-5 presents sample locations and detected analytes retained as COPCs and COPECs."

The last sentence in Section 2.7.3 should state: "The results of the background comparison are presented in Table 2-7. Suites of analytes above background are presented in Figure 2-6. Individual chemical results are presented in Table 2-7."

The last sentence in Section 2.8.3 should state: "The results of the background comparison are presented in Table 2-8. Suites of analytes above background are presented in Figure 2-6. Individual chemical results are presented in Table 2-8."

#### **NMED Comment**

4. *LANL should present an evaluation of risk based on a residential exposure scenario as well as on the most likely exposure scenario (industrial land use).*

#### **LANL Response**

4. The final report will present a comparison of characterization and confirmation sample results to screening action levels (SALs), therefore providing a cursory evaluation of risk for a residential-exposure scenario. A quantitative evaluation will also be presented in the VCM report for industrial land use that is the more likely exposure scenario.

### **SPECIFIC COMMENTS**

#### **NMED Comment**

1. *Section 1.1, page 1. "These systems received sanitary sewage and wash water from industrial drains and sinks. PRSs 18-003(a, b, c, d, e, and f) are permanently inactive. "Briefly describe how the connecting lines, inlets and outlets were closed (i.e., the drains were rerouted or permanently sealed with grout).*

## LANL Response

1. The TA-18 facility operations manager has stated that expanding rubber plugs were installed in the lines as they exited the buildings that were served by septic tanks 18-003 (a, b, c and d). The facility manager is uncertain how the line exiting building 18-1, served by septic 18-003(f), was plugged. In 1995, septic tank 18-003(e) was cleaned and filled with expanding cement, thereby plugging the inlet line. Only small sections of the 18-003(e) inlet line have not been rerouted to LANL's sanitary wastewater system consolidation (SWSC) drain line.

## NMED Comment

2. *Section 1. 1.3, Rationale for Proposed Remedial Action, page 4. "Documented results from field activities and confirmatory rinsate sampling results show no sludge remains in the tanks." Clarify which tanks are implied and reference documents or actions upon which this statement is based. The information provided in this VCM plan does not imply that this statement is applicable to 18-003(f and h). Previous data suggests that sludge is not present in tanks b, c, d and possibly g and h, although the latter remain active.*

## LANL Response

2. Septic tanks 18-003 (a, b, c, d, and g) were pumped and cleaned as part of the interim action conducted in 1997. The Resource Conservation and Recovery Act facility investigation (RFI) sampling effort conducted in 1994 reported that no sludge was present in tank 18-003(h). The RFI sampling effort did report that septic tank 18-003(f) contained sand fill and dried sludge. As stated previously, PRS 18-003(e) was pumped and cleaned as part of the 1995 expedited cleanup for that site.

## NMED Comment

3. *Section 1. 1.4, Alluvial Groundwater Assessment, page 4. "To date, sampling results show no elevated contaminant concentrations directly attributable to any of the septic system PRSs." Reference the data and reports which support this conclusion. The lack of timely and adequate investigations may make such a conclusion impracticable.*

## LANL Response

3. This statement is intended to demonstrate that existing alluvial groundwater-quality data do not implicate any specific PRS as the source of the alluvial groundwater contamination in Pajarito Canyon. In fact, alluvial groundwater enters the TA-18 area containing some contamination. This information is intended to provide the basis for addressing the alluvial groundwater in all of Pajarito Canyon under a separate investigation that will be conducted by Canyons Focus Area as described in the Pajarito Canyon work plan (LANL 1998, 58820.2). Existing alluvial groundwater-quality data for Pajarito Canyon was submitted to the NMED in a report, "Surface Water and Alluvial Ground-Water Chemistry Data for TA-18 and former TA-27 in Lower Pajarito and Three-Mile Canyons," dated March 25, 1999 (Environmental Restoration Project 1999, 63097).

## NMED Comment

4. *Section 2.0, Previous Site Characterization, page 6. "Inorganic and radionuclide constituent data were compared with the BVs in Ryti, et al. (1998) and organic constituent data were retained for further analysis only if the sample was deemed to be a detected concentration ..."* Clarify for what further analysis the organic data was retained (i.e., comparison to screening action levels (SALs), risk assessment, etc.). LANL should provide the detection limits for the organic data. A comparison to background values is useful, however, in the final report it will be necessary to provide a comparison to SALs as well.

#### **LANL Response**

4. LANL concurs. The VCM report will include sample locations, sample results, when the sampling event occurred, and any pertinent documents referencing removal and sampling of the PRS 18-003(b) outlet line section. In the VCM report, retained constituents will be screened by comparing to SALs and ecological screening levels (ESLs).

#### **NMED Comment**

5. *Section 2.1-2, Previous Field Investigations, page 6. "The pipe section and its contents were submitted for laboratory analysis." In the final report, reiterate when the event occurred and clarify what the sample analysis showed, identify the sample numbers and locations, etc., and reference which document contains that information.*

#### **LANL Response**

5. LANL will incorporate the information requested into the VCM report.

#### **NMED Comment**

6. *Figure 2-1, page 7 and Figure 3-1, page 30. The location for monitoring well 7 is unclear on these Figures. Its location is described in Section 2.1.2, page 6, but it is not designated with a symbol (although it appears to be in the vicinity of sample location identity number 18-1135). Clarify the correct location for this well.*

#### **LANL Response**

6. The text in Section 2.1.2, page 6, of the VCM plan correctly describes the location of monitoring well 7. Corrections to the figure will be included in the VCM report.

#### **NMED Comment**

7. *LANL should clarify the inconsistencies between the presentation of data results in Figures 2-1 and 2-4 ("Sample ID – listed are analytes > background") and Figures 2-2, 2-3, 2-5 and 3-1 through 3-5 (Sample ID – listed are COPECs or COPECs (COPECs > 1 ESL or > background when ESL < background)). The latter is not consistent with the methodology described in Section 2.0, page 6. Define ESL, if applicable. To remain consistent with the other figures and the text in Section 2.7.3, Figure 2-6 should list the analytes detected at levels greater than background as presented in Table 2-7.*

## LANL Response

7. See LANL response to general comment #3. LANL concurs. The final report will present results of the background comparison in both tables and figures. Modifications have been made to clarify analytes presented in the figures (see general comment #3).

ESL is an acronym meaning "ecological screening level." The acronym has been added to the acronym list on page v.

## NMED Comment

8. *LANL should clarify: Table 2-1, page 9; Table 2-2, page 11; Table 2-3, page 15; Table 2-4, page 18; Table 2-5, page 20; Table 2-6, page 23, Table 2-7 page 25; and Table 2-8, page 26. These tables present the analytes detected above background values in surface or subsurface soil. Clarify sample intervals describe as 0-60, 1-180, 60-120, 114-138 and 216-240 inches. Composite samples are not adequate for nature and extent characterization. Clarify the rationale for summing uranium 235 and 236. Clarify why the uranium values are included in the radionuclides section, but the inorganic background value is cited. Provide the rationale for footnote 2 of the tables, "Total thallium, thorium and uranium values are included under radionuclides."*

## LANL Response

8. Sample AAB 4560 was collected from 10 to 40 ft (120 to 480 in.). Based on the field log and borehole log, it appears that this sample was a composite collected from the beginning of the saturated alluvium to the final depth of the borehole. Table 2-3 has been corrected to reflect the actual sample interval.

Table 2-4 incorrectly states sample 0218-96-0502 was collected from 0 to 480 in. The correct sample interval is 480 to 486 in. The correction has been made to Table 2-4. Composite samples will not be collected during subsequent characterization activities at TA-18.

Uranium-235 is the commonly detected isotope of this pair. It is the parent of the actinium natural radioactive decay series; it is present in natural, depleted, and enriched uranium. Since the two isotopes have almost identical alpha particle spectra, they are not distinguishable from one another. Commercial laboratories normally list the two together since they can't rule out the presence of U-236.

Total thallium, thorium, and uranium should have been reported under the inorganics portions of the referenced tables.

## NMED Comment

9. *Table 2-2, page 10. Under Radionuclides, Location ID 18-1115 was sampled at 0-12 inches. In Ryti et al., however, for plutonium-238 in soil the background value applies only to samples collected from 0-6 inches. Provide rationale in the final report for any deviations from the background values used for comparison.*



### **LANL Response**

9. LANL recognizes that the data collected from location 18-1115 was sampled from 0—12 inches. The results presented in the VCM plan are previous data as they exist and are useful for understanding site conditions. Additional characterization for nature and extent will be determined with appropriate site data, and appropriate comparisons to background values will be conducted and included in the VCM Report.

### **NMED Comment**

10. *Section 2.6.2, Previous Field Investigations, page 21. "Sampling included the tank contents (dry sludge and sand), soils around the inlet and outlet lines, and subsurface locations inside and downgradient from the drain field." The text states that a sample(s) was collected around the inlet line, however, Figure 2-5 shows no sample location in the vicinity of the inlet line. LANL should resolve the discrepancy between the text and this figure.*

### **LANL Response**

10. LANL has reviewed the engineering drawings and the RFI report for PRSs located in former OU 1093, field unit 2, (LANL 1996, 54919). The engineering drawings indicate that the septic tank is located further west than depicted in Figures 2-5 and 3-5. Adjusting the tank location according to the engineering drawings places the surveyed sample locations at the tank inlet and outlet.

### **NMED Comment**

11. *Section 2.6.3, Results of Field Investigation at PRS 18-003(f), page 21. "Using the methodology described in Section 2.0 ... results of the background comparison are presented in Table 2-6 and Figure 2-5." Figure 2-5 is inconsistent with the information provided in Table 2-6. In Figure 2-5, location identification number 18-1253, sample numbers AAB4662 and AAB4663 do not list that uranium was detected at levels above background, although it is listed in Table 2-6. For location number 18-1254, sample number AAB4666 trichlorofluoromethane was detected, and for sample number AAB4668 trichlorofluoromethane and uranium were detected at levels above background. For location number 18-1255, sample number AAB4677 total chromium was detected at a level above background. All figures and tables should be consistent unless an explanation is noted for the discrepancies (see general comment #3).*

### **LANL Response**

11. LANL concurs. The VCM report will present results of the background comparison in both tables and figures. Text has been provided in this RSI response to reflect information presented in the figures (see general comment #3).

### **NMED Comment**

12. *Section 2.9, Basis for Cleanup Levels, page 26, paragraph 1. "Because these structures have been cleaned, they pose minimal potential risk to human health and the environment." A statement this definitive seems premature. Reference the evidence upon which this conclusion is based.*

### **LANL Response**

12. The referenced statement is intended to explain that the structures have been cleaned, which implies that the potential for contaminant releases from the structures is minimal. The intent of this investigation is to fully characterize the PRSs for nature and extent of contamination, remove the septic tanks, and excavate and remove additional portions of the septic systems, as necessary.

### **NMED Comment**

13. *Section 2.9, Basis for Cleanup Levels, page 26, paragraph 2. "Cleanup levels - for each PRS that are protective of human health will be based on an industrial land - use scenario." Although these PRSs are located in heavily secured areas on US Department of Energy (DOE) property and their only anticipated future land use is LANL operations, it is still necessary to present the residential land use scenario in the final report (see general comment #4). "The scoping process and the screening ERA will be prepared in accordance with the ecological risk assessment guidance...." Presumably these results will be presented in the final report. Clarify when this assessment will be prepared, what document it will appear in and how these results will effect the outcome of this VCM.*

### **LANL Response**

13. The final report will present a comparison of characterization and confirmation sample results to SALs, therefore providing a cursory evaluation of risk for a residential-exposure scenario. A quantitative evaluation will be presented for industrial land use that is the more likely exposure scenario.

### **NMED Comment**

14. *Section 2.9, Basis for Cleanup Levels, page 26, paragraph 3. "Although the tanks are structurally intact and do not appear to present a health threat, removal of these structures is preferred to prevent the release of COPCs that may remain in the structures." HRMB agrees that these septic systems should be removed. The entire PRS should be addressed simultaneously; the piping and lines should be removed (see general comments #1 and 2).*

### **LANL Response**

14. The VCM plan proposes addressing all portions of the septic systems with thorough characterization. The septic tanks will be removed and the characterization data from other portions of the septic systems will be used to evaluate the cost/benefit of additional excavation and removal. Subsequent actions on associated septic system structures will be proposed and may include removal, grouting-in-place, or no action. Final recommendations for each PRS will be based on all relevant information for that PRS, and will include all aspects of the PRS.

### **NMED Comment**

15. *Section 3.0, Proposed Remedial Actions, page 27, bullet 2. "Whether or not video inspection is successful, samples will be collected from soils adjacent to and beneath the pipe at key locations along the drain line and from the pipe interior at a local cross trench." LANL should describe what is meant by "key" locations or refer to where this information is provided within the plan. How do these*

*samples relate to the sample location descriptions presented in Table 3-1 and Figures 3-1 and 3-6? Do they only relate to the drain field sample locations? Are no samples proposed to be collected from the areas around the inlet and outlet piping unless video-inspection is impossible or inconclusive? The statement above becomes more confusing in light of the comment made on page 36 (Section 3.1.3, Supplemental Soil Sampling Plan): "In the unlikely event that unforeseen circumstances preclude the use of the video-inspection equipment, supplemental sampling will replace the video-inspection and sampling approach." In addition, provide a clear criteria for actions and decisions to be made based on the video-surveying results. HRMB recommends a combined removal and sampling event which may minimize the need for video-inspection of the piping (see general comment #1).*

**LANL Response**

15. "Key" locations include pipe elbows and junctions where the highest potential for leaks exists, including areas where the inlet and outlet pipes attach to tanks. Proposed locations shown in the figures are intended to schematically represent these locations. Efforts will be made to further identify precisely these key locations using the geophysical function of the video inspection (it will be possible to trace the path of the video camera mechanism using a radiodetection unit on the ground surface). In reference to the statement in Section 3.1.3, if the video survey is unsuccessful, existing information will be used to select locations for sampling along the inlet and outlet pipes. Removing inlet and outlet piping without prior characterization may result in unnecessary excavation, doesn't allow pre-planning for waste management, could result in the unanticipated generation of large quantities of waste, and potentially poses complex logistical issues in the vicinity of active structures without clearly identified environmental or risk drivers for those actions.

**NMED Comment**

16. *Section 3.1.3, Supplemental Sampling, page 36. Clarify the description of "supplemental sampling." Regardless of video-survey results, which may not adequately detect line breaches, sufficient sampling must occur in the vicinity of the entire septic system for adequate delineation of nature and extent, particularly for a no further action determination.*

**LANL Response**

16. LANL concurs. Sampling below inlet and outlet lines will be conducted unless conditions such as facility underground utilities preclude sampling. The video survey inspection will assist LANL's efforts to determine where breaks or potential breaches exist, which in turn will direct the sampling approach.

**NMED Comment**

17. *Figure 3-2, page 3 1. LANL should have sample locations in the vicinity of the tank.*

**LANL Response**

17. LANL conducted sampling at the inlet, outlet, and adjacent to the tank, and sampled the tank structure in 1997. Based on the number of samples previously collected from this small area and the suite of analytical results, LANL believes that additional supplemental sampling in the vicinity of the tank isn't necessary.

### **NMED Comment**

18. *Figure 3-3, page 32. Explain the rationale for the proximity of 4 of the proposed samples to previous sample locations.*

### **LANL Response**

18. Soil samples collected during the previous sampling effort were obtained at shallow depths. The proposed supplemental sampling will be conducted to obtain deeper soil data at depths below the current level of the tanks and drainfield, and immediately above the water table.

### **NMED Comment**

19. *Figure 3-4, page 33. LANL should have sample locations in the vicinity of the tank, along the inlet piping and at the "former outfall (removed)". This figure does not suggest that there is any sample data available in these areas.*

### **LANL Response**

19. Samples were collected at the inlet and outlet points to the septic tank during the 1994 RFI sampling effort. The data will be incorporated into the assessment of newly collected data from those locations and reported in the VCM report.

The "former outfall" applies to septic tank 18-003(g and h). Sampling of this outfall has been added to the supplemental sampling for PRSs 18-003(g and h). Table 3-1 has been modified to show the additional sampling location.

### **NMED Comment**

20. *Figure 3-5, page 34. Provide the rationale for why no samples will be collected in the area along the inlet piping.*

### **LANL Response**

20. A review of engineering plans for the septic tank and drainfield indicate the tank is located further west than presented in Figures 2-5 and 3-5. Adjusting the mapped tank location accordingly places the surveyed sample locations at the tank inlet and outlet, as described in the RFI report for PRSs located in former OU 1093, field unit 2 (LANL 1996, 54919). Numerous subsurface utilities have been reported near the inlet line. These obstructions could preclude sampling the inlet line for safety considerations; however, an effort will be made to sample the inlet line.

### **NMED Comment**

21. *Figure 3-6, page 35. Provide the rationale for why no samples will be collected in the area along the inlet piping for tanks g and h. Section 2.7.2, page 21 describes a former outfall (1944-1969) and TA 18 lagoons (1969-1992) into which g (and presumably h) discharged. Will these areas be investigated as part of this VCM or are they separate PRSs? Describe where they were located in relation to tanks g and h. Describe what investigation (past or proposed) addresses the outfall and lagoons.*

### LANL Response

21. During the RFI sampling effort for PRSs 18-003(g and h) attempts were made to sample soil near the lines, yet remain a safe distance from the numerous subsurface and overhead utility lines in the vicinity of the PRS. An effort was made by the field crew to avoid the subsurface obstructions, yet an active sanitary sewer line was inadvertently punctured. Another effort will be made to sample the inlet lines as part of the characterization under this VCM. However, it is possible that obstructions could preclude sampling the inlet lines for PRSs 18-003(g and h), based on safety considerations. Sampling the former outfall has been added to the VCM.

The TA 18 lagoons are a separate PRS. The lagoons are located approximately 1 mi east of TA-18 on Pajarito Road. Effluent from TA-18 was carried to the lagoons via the associated sewage line. The lagoons, PRS 18-001(a), and associated sewer line, PRS 18-001(b) were remediated in 1995. Remediation activities for the lagoons are presented in the VCA report for PRS 18-001(a), former sewage lagoons (LANL 1996, 54324 Remediation activities for the associated sewer line, PRS 18-001(b), are presented in the expedited cleanup completion report for PRS 18-001(b), former TA-18 sanitary sewer line, PRS 18-001(b) (LANL 1996, 54841).

### NMED Comment

22. *Section 3. There are discrepancies between the number and location of samples described in Table 3-1 and Figures 3-1 through 3-6. Please clarify which representation is most accurate or explain the discrepancies [For tank b, Table 3-1 states that one sample location for the outlet line is 5 feet below tank b, but Figure 3-1 shows it at 50 feet. The table describes 7 drain field sample locations, Figure 3-1 shows 8 locations. For tank c, the description for the drain field samples differ between Table 3-1 and Figure 3-2. For tank e, Table 3-1 does not list the proposed samples at the outfall shown in Figure 3-4.*

### LANL Response

22. LANL recognizes the discrepancies between Table 3-1 and Figures 3-1 through 3-6. The figures accurately represent the proposed sample locations.

### NMED Comment

23. *Table 3-1, page 37 describes the full suite analysis as consisting of "SVOCs, VOCs, target analyte list metals, radionuclides." Describe more specifically what analyses will be performed (i.e., isotopic uranium, total uranium). In addition for tank 18-003(c), Table 4-1, page 42 and Table 5-1, page 43 mention polychlorinated biphenyls (PCBs). Why are PCBs only suspected at this location? Explain why PCBs are not part of the full suite of analyses being performed on all samples.*

### LANL Response

23. Radionuclides will include isotopic uranium, isotopic plutonium, and gamma spectroscopy analysis for americium-241 and radium-226. PCB analysis has been added to the supplemental sampling effort for all PRSs.

#### **NMED Comment**

24. *Section 3.3.2, Restoration of PRS 18-003(b), page 36. "These sections then will be placed in B-25s for disposal." Define the term B-25s.*

#### **LANL Response**

24. "B-25" is a term used for a type of US Department of Transportation (DOT)-approved storage and transportation container.

#### **NMED Comment**

25. *Sections 3.3.7, Restoration of PRS 18-003(g) and 3.3.8, Restoration of PRS 18-003(h), pages 39-40. These PRSs consist of active septic tanks that receive wastes as they pass through to the Sanitary Wastewater System Consolidation (SWSC) lines (rather than being directly plumbed). These active PRSs will remain on the permit regardless of whether the Environmental Restoration Project or the facility manager are responsible for their operation and/or decommissioning. Unless the SWSC lines are directly connected to the sewer lines to bypass the septic tanks it is not likely that this VCM can sufficiently address these PRSs to result in a no further action determination.*

#### **LANL Response**

25. LANL will explore the technical and logistical issues associated with rerouting the drain lines as recommended by the NMED.

#### **NMED Comment**

26. *Section 4.0, Confirmatory Sampling, page 41, paragraph 1. "The grouted tank structures at PRSs 18-003 (a and e) will be left in place; therefore no confirmatory sampling is anticipated for those areas." Since the grouting of these tanks occurred in the past, their removal is not required. However, this VCM plan should address a final remedy for these PRSs. LANL should present adequate data in the final report to address nature and extent around the entire septic system. Also, in this section, LANL proposes to collect 2 samples in each tank excavation area; one at the base of the excavation and one deeper sample immediately above the water table. Provide a description of where samples will be taken if the base of the tank and excavation is located within the water table. A contingency plan may need to include the collection of water samples at the base of excavation areas.*

#### **LANL Response**

26. As described in LANL's response to NMED comment #14, the objective of this VCM is final remedy and decision for all aspects of each PRS included in the VCM plan, including nature and extent of contamination and risk.

If the base of the tank is located beneath the water table, samples will still be collected from soils at the bottom of the excavation adjacent to the tank at a depth immediately below the floor of the tank.

#### **NMED Comment**

27. *Table 4-1, Confirmatory Sampling Locations and Analytical Suites, PRSs 18-003(b,c, and d), page 42. Under a combined removal and sampling event, the confirmatory sampling and supplemental sampling presented in Table 3-1, page 37 could be combined. The pre- and post-excavation sample locations around the inlet and outlet junctions are useful. In addition, as the piping is removed, confirmatory samples at other junctions, elbows, breaks, etc., are recommended. The proposed sampling should provide adequate delineation of nature and extent, particularly for a no further action determination.*

**LANL Response**

27. See response to NMED's general comment #1 and specific comments #14 and #15.

**NMED Comment**

28. *Section 6.0, Estimated Time to Complete Action and Uncertainties, Page 45. Clarify where the source for backfill dirt is. In the instance that video-surveying is not possible, a contingency sampling plan will be initiated along the pipelines to achieve essentially the same level of confidence." Define the criteria for this level of confidence.*

**LANL Response**

28. Since various sources of backfill material are available, the specific source of backfill material that will be used for site restoration will be determined at the time the VCM is implemented. The level of confidence referred to in Section 6.0 is not a quantitative value, but is intended to indicate that sampling sufficient to establish nature and extent of contamination will be conducted along the drain lines regardless of video survey results. The sampling conducted without the added benefit of video survey results (e.g., specific locations of pipe elbows and possible breaches) will follow the approach described in Section 3.1.3.

## References

The following list includes all references cited in this document. Parenthetical information following each reference provides the author, publication date, and ER record identification (ER ID) number. This information also is included in the citations in the text and can be used to locate the documents.

ER ID numbers are assigned by the Laboratory's ER Project to track records associated with the project. These numbers can be used to locate copies of the actual documents at the ER Project's Records Processing Facility and, where applicable, within the ER Project reference library titled Reference Set for Canyons.

Copies of the reference library are maintained at the New Mexico Environment Department Hazardous and Radioactive Materials Bureau; the US Department of Energy-Los Alamos Area Office; US Environmental Protection Agency, Region 6; and the ER Project Canyons Focus Area. This library is a living document that was developed to ensure that the administrative authority has all the necessary material to review the decisions and actions proposed in this document. However, documents previously submitted to the administrative authority are not included in the reference library.

Environmental Restoration Project, March 25, 1999. "Surface Water and Alluvial Ground-Water Chemistry Data for TA-18 and former TA-27 in Lower Pajarito and Three-Mile Canyons," Los Alamos National Laboratory Report, Los Alamos, New Mexico. (Environmental Restoration Project 1999, 63097.2)

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LANL (Los Alamos National Laboratory), January 1996. "Expedited Cleanup Completion Report for Potential Release Site 18-001(b), Former TA-18 Sanitary Sewer Line," Revision 1, Los Alamos National Laboratory Report LA-UR-96-375, Los Alamos, New Mexico. (LANL 1996, 54841)

LANL (Los Alamos National Laboratory), April 1996. "Addendum RFI Report for Potential Release Sites 18-002(a,b), 18-003(a-h), 18-004(a,b), 18-005(a), 18-008, 18-010(b-f), 18-011, 18-012(a-c), 18-013, 27-002, PCO Wells, Wetlands, LACEF Monitoring Wells," Los Alamos National Laboratory Report LA-UR-95-3833, Los Alamos, New Mexico. (LANL 1996, 54919)

LANL (Los Alamos National Laboratory), September 1998. "Work Plan for Pajarito Canyon," Los Alamos National Laboratory Report LA-UR-98-2550, Los Alamos, New Mexico. (LANL 1998, 58820.2).