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**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

November 26, 1997

Mr. Theodore Taylor, Project Manager
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

Dr. Sigfried Hecker, Director
Los Alamos National Laboratory
P. O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

**RE: Request for Supplemental Information
Installation Work Plan for Environmental Restoration Program
Revision 6, December 1996
Los Alamos National Laboratory
NM0890010515**

Dear Mr. Taylor and Dr. Hecker:

The RCRA Permits Management Program (RPMP) of the New Mexico Environment Department has reviewed the Installation Work Plan for Environmental Restoration Program, Revision 6 (LA-UR-96-4629), dated December 1996, and requests the attached supplemental information.

LANL must respond to the request for supplemental information within thirty (30) days of the receipt of this letter. If LANL does not submit a complete response to this request within thirty (30) calendar days, LANL should be advised that a Notice of Deficiency will be issued.

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HSWA LANL G/P/197

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RPMP is reserving comment on Chapter 3.0 (*Technical Approach to Environmental Restoration*) at this time. Comments regarding this Chapter will be made under separate cover concurrent with comments regarding LANL's proposed RFI Report Framework (ER/ER: 97-061).

This Installation Work Plan for Environmental Restoration Program references LANL's Environmental Restoration Standard Operating Procedures (SOPs) which are currently under review. RPMP also intends to provide specific comments to these SOPs under separate cover.

Should you have any questions regarding this letter, please contact me or Mr. John Kieling, RPMP's LANL Facility Manager, at (505) 827-1558.

Sincerely,



Robert S. (Stu) Dinwiddie, PH.D., Manager
RCRA Permits Management Program

RSD:bt

attachment

cc w/ attachment:

- J. Canepa, LANL EM/ER, MS M992
- B. Garcia, NMED HRMB
- T. Glatzmaier, LANL DDEES/ER, MS M992
- M. Johansen, DOE LAAO, MS A316
- J. Kieling, NMED HRMB
- M. Leavitt, NMED GWQB
- H. LeDoux, DOE LAAO, MS A316
- D. McInroy, LANL EM/ER, MS M992
- D. Neleigh, EPA 6PD-N
- J. Parker, NMED DOE OB
- G. Saums, NMED SWQB
- B. Toth, NMED HRMB
- J. Vozella, LAAO, Ms A316
- S. Yanicak, NMED DOE OB, MS J993

File: HSWA LANL G/P/97
Track: LANL, 11/26/97, NA, DOE/LANL, HRMB/Dinwiddie, RE, file

ATTACHMENT
Request for Supplemental Information
Installation Work Plan
December 1996

General Comments:

1. LANL should revise the hydrogeology and geology information presented in Chapter 2.0 to assure consistency with information presented in the Hydrogeologic Workplan dated December 6, 1996.
2. LANL should provide explanation for the "reason codes" to the qualifiers and discuss the expected impact on the true result value of each and all qualified data.
3. LANL should identify and describe mechanisms inherent in the streamlined verification/baseline validation process that assure adequate data quality for the Environmental Restoration (ER) Project.
4. LANL should not obtain composite samples without prior RCRA Permits Management Program (RPMP) approval. The appropriate method of sample collection for the purposes of site characterization is to obtain discrete samples by depth intervals. Compositing is one of the sampling methodologies which may be appropriate for evaluating average waste characteristic properties for disposal purposes. Composite sampling should **not** be used as the only input to risk assessment; discrete soil depth intervals are needed to characterize site contaminants to determine or predict exposure.
5. LANL should review and revise the analytical/radiochemical methods and detection limits used to assure that the detection limits are below the levels of human and ecological health concern for all environmental media samples.
6. The use of Analytical results based on the Toxicity Characteristic Leachate Procedure (TCLP) is inappropriate for the purpose of site characterization. TCLP should **not** be used for the following activities:
 - (a) site characterization in determining the nature, rate, and extent of contamination, screening action levels (SALs), standards, etc.);
 - (b) release determination;

- (c) risk assessment;
 - (d) soil screening action levels; or
 - (e) confirmation sampling.
7. LANL should discuss its Contract Laboratory Program (CLP) assessment procedures (including performance assessment, analytical requirements, etc.) to meet ER Program objectives and identify if and how these data are readily available to the Administrative Authority (AA) and public.
 8. In accordance with the Hazardous and Solid Waste Amendments (HSWA) Module VIII, the LANL Installation Work Plan (IWP) should contain the potential release sites (by task), prioritization of sites/tasks, and a work schedule.

Specific Comments:

9. *Chapter 2.0, Installation Description, Section 2.3.2.3, Wetlands* refers to 2 figures found on pages 2-7 and 2-8. These figures depict only a portion of the LANL property boundary for location reference. The figures should identify major roads and canyons. Also, the figures should delineate between palustrine and riverine wetlands and include legends which define all symbols used.
10. *Chapter 4, Section 1.0, Document Purpose and Context, page i* should indicate if the Generic Quality Assurance Project Plan LANL 1991, 2360 has been approved by the AA.
11. *Chapter 4, Section A1, Title and Approval Sheet, page A-1.* LANL should revise Section A1 to include names, titles, and signatures of DOE ER Program Manager, LANL ER Project Manager, ER Quality Assurance Officer, and New Mexico Environment Department, Water and Waste Management Division Director and approval dates. Submission of at least two original approval pages is recommended.
12. *Chapter 4, Table of Contents, page A-7* should be referred to as Section A2 per the U.S. EPA's Region 6 "Interim Draft Requirements for Quality Assurance Project Plans" (EPA QA/R-5, 1994).
13. *Chapter 4, Section A3, Distribution List, page A-9.* Please add: "and Organization" to the third column heading and revise the section accordingly.

14. *Chapter 4, Section A4, Project/Task Organization, page A-10.* Figure 1-1 and relevant text in Appendix I should include other data users who are outside of the organization generating the data, but for whom the data are intended (e.g., modelers, risk assessors).
15. *Chapter 4, Project/Task Description, Section A6, page A-12* should include a synopsis of applicable technical, regulatory, or program-specific quality standards, criteria, or objectives to be incorporated in the Sampling and Analysis Plan (SAP).
16. *Chapter 4, Quality Objectives and Criteria for Measurement Data, Section A7, page A-12* should include the geographical area for which the conclusions and decisions will apply.
17. *Chapter 4, Quality Objective and Criteria for Measurement Data, Section A7, page A-12* should include a statement of the project quality objectives and state these objectives in quantitative terms. If there is no basis for these objectives, it should be explained as such.
18. *Chapter 4, Quality Objective and Criteria for Measurement Data, Section A7, page A-12* should include the sensitivity, precision, bias, and completeness criteria for each measurement planned for each sample matrix. These criteria are expected to assure adequate selection of analytical methods to meet the measurement goals.
19. *Chapter 4, Quality Objectives and Criteria for Measurement Data, Section A7, page A-12, first bullet.* LANL should revise the first bullet in the second grouping of bullets to read "... (e.g., analytes, concentrations/radioactivities, physicochemical parameters, exposure model parameters)" (delete the word "risk").
20. *Chapter 4, Quality Objectives and Criteria for Measurement Data, Section A7, page A-12, last bullet.* LANL should revise the last bullet in the second grouping of bullets to read "... e.g., screening action levels (SALs) and basis for deriving them ..." (substitute the word "or" for "and").
21. *Chapter 4, Quality Objectives and Criteria for Measurement Data, Section A7, page A-13, second bullet.* LANL should define "risk-based exposure units" and clarify how they will be established and used.
22. *Chapter 4, Quality Objectives and Criteria for Measurement Data, Section A7, page A-13, fifth bullet.* LANL should explain the difference between SALs and

preliminary remediation goals (PRGs) and clarify how SALs and PRGs will be used to make corrective action decisions.

23. *Chapter 4, Documentation and Records, Section A10, page A-14.* LANL should specify which sections in the IWP describe the reporting format for data which will be included in all corrective action documents.
24. *Chapter 4, Documentation and Records, Section A10, page A-14.* LANL should specify record retention time and physical location.
25. *Chapter 4, Documentation and Records, Section A10, page A-14.* LANL should:
 - (a) specify whether or not the Facility for Information Management, Analysis, and Display (FIMAD) data base is available for routine access to potential external users, and if not, what plans are in progress to provide said access and when it is anticipated;
 - (b) refer to plans, if any, to develop features or mechanisms supporting user-friendly access (e.g., query and information retrieval) to the FIMAD data base;
 - (c) describe the procedure, including point of contact or organization to be contacted, for obtaining an on-line or other access to the FIMAD data base; and
 - (d) specify the process and typical time frame of data acquisition to validation and finally, their availability through FIMAD to the external data users such as regulators and the public.
26. *Chapter 4, Documentation and Records, Section A10, Figure A-1, Project Data Flow for the Environmental Restoration Project, page A-15.* LANL should identify the principal users of the data.
27. *Chapter 4, Environmental Sampling Plan Design, Section B1.1, page B-1 through B-3.* LANL should include a discussion of the following activities: 1) field decontamination procedures and materials needed, 2) sampling equipment, 3) how sampling locations are determined, 4) strategies and criteria for sample type selection, and 5) criteria for well installation design (see the *Hydrogeologic Workplan, Section 4.1.1, Well Types*).
28. *Chapter 4, Environmental Sampling Plan Design, Section B1.1, page B-1.* LANL should include the classification of measurements as critical (required to achieve project objectives) or non-critical (information purposes only).

29. *Chapter 4, Sampling Methods Requirements, Section B2, Sampling Methods Requirements, page B-2 and Section B4, Analytical Methods Requirements, page B-5.* LANL should include a definition of a failure in the sampling or measurement system and the analytical system and discuss what will be done if there is a failure. This definition should also be included in Appendix V Glossary.
30. *Chapter 4, Sample Handling and Custody Requirements, Section B3, page B-3.* LANL should include examples of sample documentation forms, such as sample labels, custody seals, and chain-of-custody forms.
31. *Chapter 4, Quality Control Requirements, Section B5, page B-6* lacks information concerning acceptance criteria for analytical results and general requirements for precision, bias, and detection limits.
32. *Chapter 4, Section B5, Quality Control Requirements, page B-7, second paragraph.* This paragraph describes the procedure for replicate sampling yet fails to address air and source material quality control samples, as well as, background quality control sampling frequencies. Therefore, LANL should:
 - (a) revise *LANL-ER-SOP-1.05, Rev.0 (Field Quality Control Samples)* such that it complies with the current EPA guidelines for recommended frequencies of quality control samples for field sampling programs;
 - (b) define field duplicate (replicate) samples (see *LANL-ER-SOP-1.05, Rev.0 Field Quality Control Samples, page 2 of 7*) to reflect the difference between collocated and replicated samples;
 - (c) revise the title for Attachments A and B to *LANL-ER-SOP-1.05, Rev.0*, to read: "Quality Control Sample Summary for Radiological Samples" and "Quality Control Sample Summary for Nonradiological Samples", respectively;
 - (d) explain the QC procedure applicable to air and source material sample collection activities.
33. *Chapter 4, Instrument/Equipment Testing, Inspection, and Maintenance Requirements, Section B6, page B-8.* LANL should provide the following information:
 - (a) discussion of how inspections and acceptance testing, including the use of QC standards and reference materials, or environmental sampling and measurement systems and their components must be performed and documented to assure their intended use as specified by the design;

- (b) identification and discussion of how acceptance shall be performed by independent personnel (e.g., personnel other than those performing the work);
 - (c) a discussion on how deficiencies are to be resolved when acceptance criteria are not met and how re-inspection will be performed as necessary;
 - (d) identification of the equipment requiring routine maintenance and its maintenance/inspection schedule. Please include the routine schedule in a table format (see Comment number 34); and
 - (e) a discussion on how the availability of critical spare parts will be assured and maintained.
34. *Chapter 4, Instrument Calibration and Frequency, Section B7, page B-8.* LANL should provide the following information in a table format:
- (a) identify all tools, gauges, instruments, and other sampling, measuring, and test equipment used for data collection. This list should include frequency of calibration;
 - (b) identify the certified equipment and/or standards used for calibration;
 - (c) ensure that calibration of instruments using certified equipment and/or standards with known valid relationships to nationally recognized standards is documented in the IWP. If no nationally recognized standard exists for an instrument, then LANL should document the basis for the calibration; and
 - (d) ensure that instrument manufacturer directions for calibration are physically attached to the applicable SOP/SAP (rather than cited only).
35. *Chapter 4, Data Management, Section B10, p. B-10.* LANL should include examples of forms or checklists used for data management.
36. *Chapter 4, Data Management, Section B10, page B-10.* LANL should include the following:
- (a) criteria and procedures for the review of data entered into FIMAD;
 - (b) identify and discuss the control mechanisms for detecting and correcting potential data entry errors in the electronic data base; and
 - (c) provide examples of checklists to be used for data and records management.

37. *Chapter 4, Assessments and Response Actions, Section C1, pages C-1 through C-3.* LANL should include the following:
 - (a) identify the number and frequency of each type of assessment activities needed for the project;
 - (b) identify the organization and person(s) that will perform the independent assessments;
 - (c) discuss how and to whom the results of the assessments will be reported;
 - (d) define explicitly the unsatisfactory conditions under which the assessors are authorized to act; and
 - (e) discuss how response actions to "non-conforming" conditions will be addressed and by whom.
38. *Chapter 4, Reports to Management, Section C2, page C-3.* LANL should identify the frequency, content, and distribution of quality assurance reports; the responsible organization(s) that will prepare the reports; and specify the recipients of the reports.
39. *Chapter 4, Quality Assurance Reports, Section C2.2, page C-3.* LANL should define the criteria established to determine "significant quality problems".
40. *Chapter 4, Data Review: Verification and Baseline Validation, Section D1, page D-1.* LANL should include further information:
 - (a) describing how the FIMAD data base will be used for data quality assessment;
 - (b) stating the criteria used to review and validate (i.e., accept, reject, or qualify) data in an objective and consistent manner; and
 - (c) providing examples of forms or checklists used to review/verify and validate the data.
41. *Chapter 4, Data Review: Verification and Baseline Validation, Section D1, page D-4.* LANL should clarify how the streamlined verification/baseline validation process will assure adequate data quality for the ER Project.

42. *Chapter 4, Focused Data Validation, Section D2, page D-4.* LANL should include the data chain-of-custody procedures throughout the project, as well as, how analytical results are conveyed to users.
43. *Chapter 4, Focused Data Validation, Section D2, page D-4.* LANL should state the focused data validation criteria to determine "unusual, excessive, or potentially fatal deficiencies" and describe the mechanism developed to trigger focused data validation and provide relevant examples.
44. *Chapter 4, Focused Data Validation, Section D2, page D-4.* The first sentence of the second paragraph states: "Figure D-3 depicts where focused validation usually occurs in the DQA process." LANL should identify possible exceptions to the data quality assessment process shown in Figure D-3.
45. *Appendix II, Introduction, Section 1.0, page II-1, first paragraph.* LANL should clarify criteria for determining the true contaminant distribution at the site and how this determination will impact "Decisions concerning the possibility of taking NFA or of having to remediate a site ...".
46. *Appendix II, Introduction, Section 1.0, page II-1, second paragraph.* LANL should describe how contaminants of potential concern (COPCs) are identified prior to identifying sampling locations and depths and the criteria and methodologies for selecting sampling locations, types, and depths for various environmental and waste media.
47. *Appendix II, Factors Affecting Sampling Tool Selection and Sample Handling, Section 2.0, item 2, page II-1, last paragraph and page II-2, first paragraph.* LANL should revise these two paragraphs to be consistent with comment number 4.
48. *Appendix II, Section 2.0 Factors Affecting Sampling Tool Selection and Sample Handling, item 4, page II-2.* The Sampling Point Coordinates discussion should not only include sampling time but also sampling date.
49. *Appendix II, Section 2.0 Factors Affecting Sampling Tool Selection and Sample Handling, item 8, page II-3.* This item should mandate that samples be analyzed before holding times are exceeded and delineate chain-of-custody procedures.

50. *Appendix II, Factors Affecting Sampling Tool Selection and Sample Handling, Section 2.0, item 8, page II-3, third paragraph, last sentence.* LANL should verify that using sodium bisulfate or hydrochloric acid is the appropriate method to preserve water samples for volatile organic contaminant/compound (VOC) analyses and reference the appropriate guidance document.
51. *Appendix II, Factors Affecting Sampling Tool Selection and Sample Handling, Section 2.0, item 8, page II-3, fourth paragraph, last sentence.* LANL should rewrite the sentence to read: "If an insufficient amount of preservative is added, the preservative might be consumed before the sample is analyzed".
52. *Appendix II, Factors Affecting Sampling Tool Selection and Sample Handling, Section 2.0, page II-3.* LANL should 1) address potential failures in the sampling or measurement system and the party responsible for correcting the action and 2) the preparation and decontamination of sampling equipment.
53. *Appendix II, The Sample Collection Method Selection Process, Section 3.0, item 1, Soil and Sediment Sampling, page II-4.* LANL should discuss soil and sediment sampling depth selection strategies and criteria under various source-term conditions (e.g., leach field, surface impoundment, waste pile, firing site, etc.). Sediment sampling techniques and procedures should also be described.
54. *Appendix II, The Sample Collection Method Selection Process, Section 3.0, item 1, Soil and Sediment Sampling, page II-5, Table II-2.* The table should be entitled: "Sediment Sampling Tools Useful for Sampling in Flowing Water".
55. *Appendix II, The Sample Collection Method Selection Process, Section 3.0, item 1, Soil and Sediment Sampling, page II-6, Table II-3.* The table should be entitled: "Sediment Sampling Tools Useful for Sampling in Standing Water".
56. *Appendix II, Section 2.0, The Sample Collection Method Process, item 2, Water Sampling, page II-6.* LANL should discuss rinsing sample containers with the surface water to be sampled prior to collecting the sample and should discuss disturbing the sediments and potential impact of this disturbance on analytical results.
57. *Appendix II, Section 3.0, Table II-6, page II-8.* The table should be entitled: "Tools Useful for Sampling Groundwater, Soil and Water".
58. *Appendix III, Section 1.0, Introduction, p.III-1.* LANL should:
 - (a) define "the estimated detection limit (EDL)" concept;

(b) discuss the EDL relation to commonly used practical quantitation limits (PQLs), detection limits (DLs), estimated quantitation limits (EQLs), method detection limits (MDLs), and "Contract Required Detection Limits" (CRDLs); and

(c) address the nature and level of uncertainty associated with each of these measures.

59. *Appendix III, Section 1.0, Introduction, page III-1, second paragraph.* LANL should revise this paragraph and avoid the current reporting practice (i.e., EQLs and data for soil/sediment are reported based on dry and wet sample weight, respectively) by using common reporting basis (i.e., dry or wet sample weight).
60. *Appendix III, Section 2.0, Routine Analytical Services, page III-1.* LANL should review the analytical methods selected for metal analyses and update them where appropriate according to *SW-846 EPA Test Methods for Evaluating Solid Waste; Volume IA: Laboratory Manual Physical/Chemical Methods*.
61. *Appendix III, Section 2.0, Routine Analytical Services.* LANL should review the analytical/radiochemical methods and detection limits used to ensure that the detection limits are below the levels of human and ecological health concern for all environmental media samples. For instance, Table III-1 on page III-2 indicates that the EDL for cadmium in water is 5 $\mu\text{g/L}$ which exceeds the ecological health-based threshold of 1 $\mu\text{g/L}$ (for hardness of 100 mg/L as calcium carbonate).
62. *Appendix III, Section 2.0, Routine Analytical Services.* The use of Analytical results based on the TCLP is inappropriate for the purpose of site characterization. (See Comment number 6).
63. *Appendix IV, Section 2.0, Considerations in Selecting Analytical Methods and QC, Sample Holding Times, page IV-3.* Because it is a regulatory requirement, holding times should not be exceeded regardless of the "scientific basis". Therefore, LANL should strike the last paragraph from the text on page IV-3.
64. *Chapter 6.0, Health and Safety Plan.* It is LANL's responsibility to maintain working conditions that ensure worker health and safety pursuant to 29 Code of Federal Regulation (CFR), Section 1910.120. Therefore, liability for operations relating to worker health and safety remains with the facility. [No response is required].

Mr. Taylor and Dr. Hecker
Attachment
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65. *Chapter 7.0, Public Involvement Plan.* In this Section, LANL should detail how the public will be notified about Community Meetings, tours of ER Sites, etc. For example, the paragraph concerning public involvement in the budget process should include information about how the public will obtain copies of the budget.