TA-54

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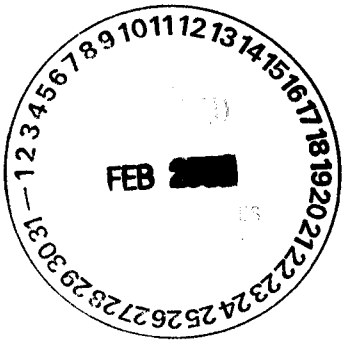
Date: February 11, 2003
Refer to: ER2003-0101



Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

SUBJECT: SUBMITTAL OF RESPONSE TO THE SUPPLEMENTAL INFORMATION REQUEST FOR THE ADDENDUM TO THE RFI REPORT FOR MATERIAL DISPOSAL AREA H AT TECHNICAL AREA 54

Dear Mr. Young:

This letter and enclosure comprise the Los Alamos National Laboratory (LANL) Risk Reduction and Environmental Stewardship Remediation (RRES-R) Project's response to the Request for Supplemental Information (RSI) for the Addendum to the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report for Material Disposal Area (MDA) H at Technical Area (TA) 54. The RRES-R Project Office received the RSI from the New Mexico Environment Department's Hazardous Waste Bureau (NMED-HWB) on January 22, 2003. Our response consists of answers to each NMED-HWB comment (Enclosure 1).

If you have any questions, please contact John Hopkins at (505) 667-9551 or Woody Woodworth at (505) 667-5820.

11784

Sincerely,

David McInroy, Acting Program Manager
Remediation Program
Los Alamos National Laboratory

Sincerely,

Everett Trollinger, Project Manager
Department of Energy
Office of Los Alamos Site Operations

DM/ET/JH/dv

Enclosure 1: Supplemental Information Request for the Addendum to the RFI Report for MDA H at TA 54

Cy:(w/enclosure)
P. Bertino, RRES-R, MS M992
J. Hopkins, RRES-R, MS M992
J. Pope, RRES-R, MS M992
N. Quintana, RRES-R, MS M992
E. Trollinger, OLASO, MS A316
W. Woodworth, OLASO, MS A316
P. Allen, NMED-HWB
N. Dwahan, NMED-HWB
J. Davis, NMED-SWB
J. Kieling, NMED-HWB
S. Yanicak, NMED-OB
L. King, EPA Region 6
M. Wetovsky, RRES-R, MS M992
RRES-R File, MS M992
CT File #879
IM-5, MS A150
RPF MS M707

Cy:(w/o enclosure)
D. McInroy, RRES-R, MS M992
B. Ramsey, RRES-DO, MS J591
J. Bearzi, NMED-HWB
J. Parker, NMED-OB

Response to
Supplemental Information Request for the Addendum to the RFI Report for MDA H at TA 54, dated January 15, 2003
Los Alamos National Laboratory

EPA ID#NM0890010515, HWB-LANL-01-001

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. Los Alamos National Laboratory's (LANL's) responses follow each NMED comment.

GENERAL COMMENTS

NMED Comment

1. Section 2.2, Channel Sediments, Page 6

NMED Comment: Include in the discussion why the sediment sample taken in March 2001 had to be collected again in September 2002. The sample taken in March 2001 was inadvertently not analyzed for alpha spectroscopy, gamma spectroscopy, strontium-90 and tritium as specified in the supplemental RFI sampling plan submitted to NMED. Also, include the communication record (dated September 26, 2002) that documented the discussion between the Permittees and NMED in the Addendum to the RFI Report as an Appendix.

LANL Response

1. As stated in NMED Comment 1 above and documented in the September 26, 2002 record of communication (ROC) (LANL 2002, 73766), the supplemental channel sediment sample collected in March 2001, in accordance with the "Plan for Supplemental Sampling for the RFI at MDA H," (LANL 2001, 70035) was inadvertently not analyzed for gamma spectroscopy, alpha spectroscopy, strontium-90, and tritium as specified in the supplemental MDA H RFI sampling plan. NMED was notified of this oversight on September 26, 2002. An additional sediment sample was subsequently collected on September 27, 2002 from the identical location of the March 2001 sediment sample and submitted to an offsite fixed analytical laboratory for analysis of gamma spectroscopy, alpha spectroscopy, strontium-90, and tritium with a 10-day turnaround time. The data was incorporated in the Addendum to the MDA H RFI Report submitted to NMED on October 22, 2002 (LANL 2002, 73766). The September 26, 2002, ROC is provided as Attachment 1.

NMED Comment

2. Section 2.5.1.1, Evaluation of Tritium Data, Page 6-7

LANL Statement: "Tritium was detected in both pore gas samples collected at the 50-ft depth from both new boreholes."

NMED Comment: There is a discrepancy between the above statement and Table 2.5-2 on page 7. According to the Table 2.5-2, tritium was detected in pore gas at 98 and 245 feet in boreholes 54-15461 and 54-15462 respectively. Additionally, Table 2.5-2 in the draft report (June 2002) shows that pore-gas samples were taken at 50 ft for both the boreholes. Clarify whether the samples were taken at 50 feet or at 98 and 245 feet.

LANL Response

2. The information in the final MDA H RFI Addendum dated October 2002 is correct. Pore-gas samples were collected from the bottom of the two new boreholes (total depth of 98 ft in borehole 54-15461 and total depth of 245 ft in borehole 54-15462) and analyzed for tritium. These results are confirmed in Table D-2.0-8, pages D-17 and D-22 of the RFI Addendum.

NMED Comment

3. Table 2.5-9, Page 16

NMED Comment: Table 2.5-9 reports a value of 12 pCi/m^3 for tritium for a sample taken on 12/17/01, whereas the table in the Draft Addendum to the RFI Report for MDA H (June 2002) reported that no samples were taken at that time because of LANL winter closure. Clarify, if the sample was indeed collected on 12/17/01 or if it was erroneously reported as 'no sample taken' in the draft report. In the draft report, Table 2.5-9 showed 95% UCLs for tritium concentrations, provide a rationale for using UCLs in the draft report and then utilizing actual concentrations in the final report. Also explain how the UCLs were calculated.

LANL Response

3. Due to the Laboratory's holiday shutdown between December 24, 2001 and January 2, 2002, the tritium air sample with a start date of 12/17/01 was collected for a three-week period that ended on 1/7/02, versus the normal two-week collection period for the other samples.

The tritium data presented in the MDA H RFI Report Addendum dated October 22, 2002, are correct. The tritium data reported in the draft MDA H RFI Report Addendum (LANL 2002, 73270), provided to the MDA High Performing Team (HPT) members for review, were incorrectly reported as 95% upper confidence levels (UCLs). During the quality assurance (QA) review of this data with RRES-Meteorology and Air Quality (MAQ) staff in September 2002, it was determined that 95% UCLs for tritium were not applied to the tritium data since each tritium value represented a single measurement for the specified collection period.

In addition, the tritium data reported in the draft MDA H RFI Report Addendum were calculated using Laboratory-wide, not site-specific, absolute moisture content. RRES-MAQ error corrections for residual moisture and tritium were not provided to the ER Project until September 2002 and were therefore not applied to the tritium data presented in the draft RFI report addendum. These two corrections applied to the tritium data resulted in the tritium data value differences between the draft and final MDA H RFI Report Addendum. For the October 2002 MDA H RFI Report Addendum, the concentration of tritium per volume of ambient air was calculated by multiplying the measured concentration of the water in the silica column (pCi/ml) by the average absolute moisture content (ml/m^3) for the specific period of measurement. The absolute moisture data was gathered at the LANL meteorological station closest to MDA H at TA-54. In addition, corrections applied for residual tritium and moisture content remaining on the silica after drying resulted in a 3% increase in measured tritium concentrations.

NMED Comment

4. ***Section 4.1, Human Health Screening Assessment, Page 18***

LANL Statement: "Both the average and maximum tritium concentrations are below the target dose of 15 mrem/yr, which is recommended by EPA for dose-based decisions (EPA 1997, 58693) and by DOE for the unconditional release of real property (DOE 2000, 67153)."

NMED Comment: NMED assesses radionuclides using carcinogenic risk based on the radionuclide carcinogenic slope factors as recommended in both the OSWER Directive 9200.4-31P (EPA 540/R/99/006, December 1999 document) and the accompanying cover memo for that directive and not on comparison to annual dose guidelines. Risk from radionuclides can be calculated using the EPA Radionuclide Preliminary Remediation Goals (PRGs) for Superfund calculator (OSWER No. 9355.01-83A). The level of tritium reported in soil (0.11 pCi/g on page 44 of the RFI Report) is below the concentrations given in the EPA table for 10^{-6} risk (i.e. 2.28 pCi/g for residential and 4.23 pCi/g for outdoor worker). The reported tritium activity is at an acceptable level but is not in an acceptable format (risk instead of dose). Revise the risk assessment to include the risk based on lifetime carcinogenic risk.

The current maximum tritium concentration measured in ambient air at the surface at MDA H is 70.1 pCi/m^3. Using the EPA September 2002 final radionuclide PRG calculator cancer slope factor for inhaled tritium of 1.99x 10^{-6} risk/pCi and the applicable NMED soil screening level (SSL) exposure parameters, the lifetime excess cancer for a resident associated with chronic (30 years) exposure to this concentration of tritium in air would be 2.9x10^{-6}. For an outdoor industrial worker using NMED default values, the lifetime excess cancer risk associated with chronic (25 years) exposure to this concentration of tritium in ambient air would be 1.7x10^{-6}. Using the NMED parameters and EPA slope factor, the airborne tritium concentration corresponding to the NMED excess target risk level of 10^{-5} would be 239 pCi/m^3 for a residential scenario and 402 pCi/m^3 for an outdoor industrial worker scenario. The risk due to measured concentration of tritium in the air at the site is below the NMED risk guidelines for both the residential and industrial scenario. This level is based on the inhalation pathway alone, if other airborne carcinogens were also present at the site, the level would have to be lower in order to meet the NMED goal for total excess risk from carcinogens. In addition, please note that the calculated levels are for a person exposed to tritium in ambient air and must be recalculated for scenarios that include confined spaces, basements and houses.

LANL Response

4. Tritium is evaluated for the Human Health Screening Assessment based on dose pursuant to the applicable DOE Orders, 5400.5 and 435.1, because DOE is the regulating authority for the management and remediation of radionuclide materials and waste at the facility. The tritium data is provided to NMED for informational purposes in accordance with DOE policy. NMED's requested response exceeds the agency's authority under the New Mexico Hazardous Waste Act. LANL is subject to DOE's authority under the Atomic Energy Act for radioactive materials at corrective action sites, and declines to revise the text as requested.

NMED Comment

5. **Table D.2.0-7, Page D-4**

NMED Comment: Since data for organic chemicals is also included in Table D.2.0-7, revise the table heading to read "Inorganics, Organics and Radionuclides Data for the Channel Sediment Sample, June 2001."

LANL Response

5. The table heading has been revised and the first page of the table is provided as Attachment 2.

REFERENCES

DOE/AL (US Department of Energy/Albuquerque Operations Office), June 13, 2000. "Procedure for the Release of Real Property Containing Residual Radioactive Material," memorandum from Constance L. Soden, Director, Environment, Safety and Health Division, to D. Glenn, I. Triay, M. Zamorski, E. Sellers, D. Gurule, and D. Bergman-Tabbert, Albuquerque, New Mexico (DOE/AL 2000, 67153)

EPA (US Environmental Protection Agency), August 22, 1997. "Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination," OSWER No. 9200.4-18, Washington, DC. (EPA 1992 58693)

LANL (Los Alamos National Laboratory), May 2001. "Plan for Supplemental Sampling for the RCRA Facility Investigation at Material Disposal Area H," Los Alamos National Laboratory document LA-UR-01-2516, Los Alamos, New Mexico. (LANL 2001, 70035)

LANL (Los Alamos National Laboratory), September 2002. Los Alamos National Laboratory record of communication to N. Dhawan (NMED) from P. Bertino (LANL RRES-R Program), Los Alamos, New Mexico. (LANL 2002, 73766)

LANL (Los Alamos National Laboratory), October 2002. "Addendum to the RFI Report for Material Disposal Area H, (Solid Waste Management Unit 54-004) at Technical Area 54," Los Alamos National Laboratory document LA-UR-02-0382, Los Alamos, New Mexico. (LANL 2002, 73270)

Attachment 1

ENVIRONMENTAL RESTORATION PROJECT
COMMUNICATION RECORD

Date: 09/26/02	**Time:** 3:00 p.m.	**Recorded By:** P. Bertino
To: Neelam Dhawan	**From:** P. Bertino	**Telephone No.:** 665-2198

Affiliation: NMED-HWB

Other Parties:
Dave Cobrain, NMED-HWB
Rich Mirenda, John Hopkins and Dave McInroy, LANL RRES-R, and Woody Woodworth OLASO

Discussion This communication record documents LANL's notification to Neelam Dhawan of NMED-HWB and an MDA HPT member, regarding an unanticipated delay in the submittal of the Addendum to the MDA H RFI Report. The supplemental channel sediment sample collected in March 2001, in accordance with the "Plan for Supplemental Sampling for the RFI at MDA H," (LANL 2001, 70035) was not analyzed for gamma spectroscopy, alpha spectroscopy, strontium-90, and tritium as was specified in the supplemental RFI sampling plan. An additional sediment sample will be collected on September 27, 2002 from the identical location of the March 2001 sediment sample and submitted to an off-site fixed analytical laboratory for analysis of gamma spectroscopy, alpha spectroscopy, strontium-90, and tritium with a 10-day turnaround time. LANL will contact NMED-HWB upon receipt of the data. The data will be incorporated into the Addendum to the MDA H RFI Report and the addendum submitted to NMED-HWB before the end of October 2002.

Pursuant to the MDA HPT schedule, the addendum was scheduled to be submitted to NMED-HWB on September 30, 2002. Note: the Addendum to the MDA H RFI Report is not an ER Project FY02 performance measure nor was it included on an approved IWP Work Schedule.

Action Items:

Deliver communication record for Neelam Dhawan to initial and distribute the record.

Thoroughly document any and all deviations from the approved Supplemental Plan for Supplemental Sampling for the RFI at MDA H (LANL 2001, 70035), NMED request "Additional Fieldwork at MDA H, 54-004 (NMED 2001, 71294), June 28, 2001 Record of Communication regarding implementation of the supplemental sampling plan (LANL 2001, 73428), and Citizen's Advisory Board request to sample for high explosives (NNMCAB 2001, 73430) in the Addendum to the MDA H RFI Report.

Contact NMED-HWB upon receipt of analytical results from the supplemental sediment sample, incorporate the results into the Addendum to the MDA H RFI Report and submit the Addendum to NMED-HWB on or before October 31, 2002.

Distribution:
N Dwahan & D. Cobrain, NMED-HWB
P. Bertino, J. Hopkins, R. Mirenda & D. McInroy, RRES-R
L. Woodworth, OLASO
RPF – Catalogue # 2002-0702

DI-4.3, R0	**LOS ALAMOS** **Environmental Restoration Project**

Attachment 2

Table D-2.0-7

Inorganics, Organics, and Radionuclides Data for the Channel Sediment Sample, June 2001

Location ID	Sample ID	Depth (ft)	Eval Class	Analyte	Result	Units	Qualifier
54-15460	MD54-01-0167	0-0.5	SED	Pentachlorodibenzofurans (Totals)	0.00016	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Hexachlorodibenzofuran[1,2,3,4,7,8-]	0.000015	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Hexachlorodibenzofuran[1,2,3,6,7,8-]	0.000015	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Hexachlorodibenzofuran[2,3,4,6,7,8-]	0.000016	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Hexachlorodibenzofuran[1,2,3,7,8,9-]	0.000016	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Hexachlorodibenzofurans (Total)	0.000015	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Heptachlorodibenzofuran[1,2,3,4,6,7,8-]	0.000019	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Heptachlorodibenzofuran[1,2,3,4,7,8,9-]	0.000024	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Heptachlorodibenzofurans (Total)	0.000019	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Octachlorodibenzofuran[1,2,3,4,6,7,8,9-]	0.000055	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Bromide	0.3	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Fluoride	0.021	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Mercury	0.0057	MG/KG	J
54-15460	MD54-01-0167	0-0.5	SED	Chloride	0.723	MG/KG	J
54-15460	MD54-01-0167	0-0.5	SED	Sulfate	0.483	MG/KG	—
54-15460	MD54-01-0167	0-0.5	SED	Perchlorate	0.0144	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Oxalate	0.438	MG/KG	J
54-15460	MD54-01-0167	0-0.5	SED	Cyanide (Total)	0.52	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Nitrate-Nitrite as N	1.4	MG/KG	—
54-15460	MD54-01-0167	0-0.5	SED	Trinitrotoluene[2,4,6-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Dinitrotoluene[2,4-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	RDX	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Amino-2,6-dinitrotoluene[4-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	HMX	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Amino-4,6-dinitrotoluene[2-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Tetryl	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Dinitrotoluene[2,6-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Nitrotoluene[2-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Nitrobenzene	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Nitrotoluene[3-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Trinitrobenzene[1,3,5-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Dinitrobenzene[1,3-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Nitrotoluene[4-]	0.08	MG/KG	U
54-15460	MD54-01-0167	0-0.5	SED	Uranium-238	1.19	PCI/G	—