ENVIRONMENTAL RESTORATION PROJECT

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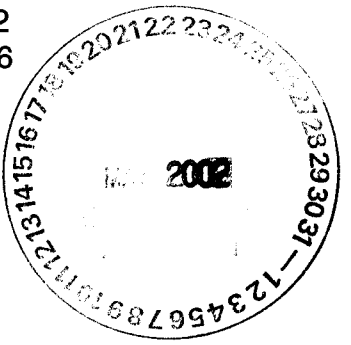
TA-21

Date: May 20, 2002
Refer to: ER2002-0366



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: RESUBMITTAL OF REVISED REQUEST FOR CLASS 1 CLOSURE PLAN MODIFICATION FOR MATERIAL DISPOSAL AREA (MDA) P LOS ALAMOS NATIONAL LABORATORY (LANL) NM0890010515 TASK NO. HWB-LANL-01-030

Dear Mr. Young:

The purpose of this letter is to resubmit the replacement pages for the MDA P Closure Plan Modification. Please discard only the replacement pages and map attached to the Los Alamos National Laboratory's (the Laboratory's) May 13, 2002 letter (ER2002-0340) and replace them with the attached pages and map. Retain the Laboratory's responses to the five items in the New Mexico Environmental Department's April 10, 2002 letter to Dr. Browne and Mr. Johansen.

If you have any questions, please call Dave McInroy at (505) 667-0819.

Sincerely,

David McInroy, Acting Program Manager
Environmental Restoration Project
Los Alamos National Laboratory

Sincerely,

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

6358

JC/ET/NR/vn

Enclosure: MDA P Replacement Pages

Cy (w/enc.):
K. Bostick, EES-10, MS M992
B. Criswell, Roy F Weston, MS M992
S. Den-Baars, The IT Group, MS K490
J. Ellvinger, RRES-SWRC, MS K490
D. Hickmott, EES-6, MS D462
M. Kirsch, RRES-ER, M992
N. Riebe, RRES-ER, MS M992
R. Romero, RRES-SWRC, MS K490
P. Schumann, RRES-ER, MS M992
S. Veenis, RRES-WQH, MS M992
E. Louderbough, Legal, MS A187
E. Trollinger, OLASO, MS A316
L. Woodworth, OLASO, MS A316
J. Davis, NMED-HWB
V. Marinville, NMED-HWB
C. Will, NMED-HWB
L. King, US EPA
G. Saums, NMED-SWQB
S. Yanicak, NMED-DOE OB, MS J993
RRES-ER File, MS M992
IM-5, MS A150
RPF, MS M707

Cy (w/o enc.):
D. McInroy, RRES-ER, MS M992
W. Neff, RRES-ER, MS M992
J. Bearzi, NMED-HWB
J. Parker, NMED-OB

REVISED REQUEST FOR CLASS 1 CLOSURE PLAN MODIFICATION, FOR MATERIAL DISPOSAL AREA P (MDA P) MDA P CLOSURE PLAN REPLACEMENT PAGES May 2002

accordance with EPA guidance (EPA, 1991a). Appendix C contains photographs of the waste pile and run-on control trench. Appendix D describes vadose-zone observations from 1998 at MDA-P. Appendix E provides historical records associated with TA-16 and MDA-P. Appendix F describes the composition of explosives produced at the Laboratory. Appendix G describes sampling procedures for MDA-P closure. Appendix H presents an evaluation of the 20 NMAC 4.1 Section 261, Appendix VIII (Appendix VIII) hazardous constituents for selection of analytical methods. Appendix I provides site-specific standard operating procedures. Appendix J describes the site geology and hydrology at TA-1 6, Area P

Compliance with specific regulatory requirements for closure are addressed in Chapter 6.0. The 20 NMAC 4.1 have incorporated, with a few minor exceptions, the Code of Federal Regulations (CFR) Title 40, Parts 260 to 266 and 268 to 270 through July 1, 1993. Most regulatory citations in this closure will, therefore, be referenced to 20 NMAC 4.1. Table 1-1 lists the regulations applicable for closure of waste piles and identifies which sections of Chapter 6.0 address compliance with these regulations.

1.1 Closure Strategy

In the past, the disposal site at Area P was referred to as a landfill. However, RCRA regulations do not explicitly provide a clean-closure option for landfills. The U.S. Environmental Protection Agency (EPA) has addressed this problem by issuing guidance that allows a landfill, if clean closed under 40 CFR 265 standards, to make an equivalency demonstration under 40 CFR Section 270.1 (c)(5), (6), by redefining the landfill as a waste pile (Lowrance 1989). Therefore, to clean close this unit and make an equivalency demonstration as described above, the Laboratory is referring to the MDA-P landfill as the MDA-P waste pile.

1.1.1 MDA-P and Nearby Potential Contaminated Sites

MDA-P is shown in Figure 1-1 (see enclosed map), which shows the area directly influenced by waste disposal activities and any possible subsequent contamination. The waste and contamination located within this area is specifically subject to the requirements outlined in this Closure Plan. Four other potentially contaminated areas are located in the vicinity of MDA-P; three of these areas (or sites) [former PRSs 16-006(e), 16-010(a), and 16-016(c)] have been consolidated into PRS 16-016(c)-99 (Figure 1-1). The fourth, PRS 16-010(b), is the 387 flash pad. Descriptions as well as regulatory status of these PRSs are briefly outlined below:

1.1.3 Technical Approach

To achieve closure, the entire waste pile, including hazardous and nonhazardous waste and soil, will be removed. A maximum of 60,000* cubic yards (yd^3) of debris and contaminated media will be excavated. The primary decontamination technique will be steam cleaning or pressure washing. The waste contained within the pile is very heterogeneous; much of it appears to be structural steel and miscellaneous debris, which cannot be easily sampled or characterized because of the impracticality of drilling through the material and the physical size of the material. Chapter 3.0 of this plan describes what is known about the waste pile, both from process knowledge and from the limited number of samples that have been taken to characterize the waste pile.

During closure, the waste will be characterized during excavation as sections of the pile are removed. For safety reasons, the debris will be decontaminated using hot water to remove potential high explosives (HE) contamination. If the HE materials cannot be effectively removed from the debris, the debris will be flashed at the TA-16 open burn pad. If a significant amount of debris is generated beyond the estimates of this plan, alternate waste treatment methods will be explored. After decontamination and/or flashing, most of the debris is expected to be designated as nonhazardous.

All debris will be steam cleaned or pressure washed prior to off-site management. Steam cleaning or pressure washing meets the alternative treatment standard for hazardous debris; thus, visual inspection will be used to verify that hazardous debris is no longer considered contaminated.

Soil, decontamination wastes (i.e., liquids and sludges), or free liquids (i.e., those liquids found in pockets or containers within the waste pile) that contain HE materials or exceed the regulatory levels for toxicity characteristic (TC) metals (e.g., barium, chromium, lead) may be treated on-site or off-site at a permitted facility. On-site treatment of this waste may include stabilization on a batch basis for metals such as barium, chromium, or lead. The batches of material will be approximately 100 yd^3. Treatment that may be conducted on-site will occur inside tanks meeting the requirements of 20 NMAC 4.1, Sections 264.192 through 264.199. This treatment will occur

* 52,187 cubic yards of media have been excavated, and 55,093 cubic yards of waste were submitted for off-site disposal; 21,500 cubic yards of waste were hazardous.

4.1.2 Sampling to Establish Baseline

Before any waste is removed, baseline levels will be established for the soil at the top of the mesa in the approximate location of the closure waste handling/management areas (e.g., staging, decontamination, treatment, storage, and loading areas). Baseline levels will be established by collecting 10 samples from locations distributed over the waste handling/management area. Baseline levels will reflect the possible presence of contaminants derived from nearby Laboratory operations that are not related to MDA-P. Baseline concentrations are represented by the 95% UTL calculated from concentrations of Appendix VIII hazardous constituents and radioactive constituents measured in soil from these areas.

Following the completion of all waste-removal operations and final equipment decontamination, the areas on top of the mesa will be resampled and the sampling data compared with baseline UTL concentrations to determine if any releases occurred during the waste-removal operations.

4.1.3 Sampling of the Waste Pile

During waste-removal operations, the waste pile will be sampled for potential contaminants to characterize the waste for selection of treatment and disposal options. The material to be sampled includes excavated soil and tuff as well as debris within the waste pile. Before and during excavation, this material will be visually inspected and spot-tested for HE to ensure safe handling.

4.1.3.1 Soil and Tuff

One composite sample will be taken from each 100 yd^3 of waste soil and tuff. Based on the estimated volume of the waste pile and contaminated media (60,000* yd^3), a total of approximately 500 composite samples will be collected. Composite sampling will provide data on the average concentration of contaminants required for selecting treatment and disposal options.

Each composite sample will consist of grab samples collected from 3 to 10 locations within the 100 yd^3 of soil and tuff. A larger number of grab samples could result in excessive dilution of contaminant concentrations. Sufficient volume will be collected for each grab sample to ensure adequate composite sample volume for the prescribed analyses. The composite samples will

* 52,187 cubic yards of media have been excavated, and 55,093 cubic yards of waste were submitted for off-site disposal; 21,500 cubic yards of waste were hazardous.

Table 4-2 Summary of Samples and Analyses

Analysis (EPA SW-846 Method except where otherwise noted)	Metals 6020 [a] 1311 [a]	Volatile Organics 8240A [b] T014A	Semi-volatile Organics 3520A, 3540A/ 8270A [c]	Reactive Cyanide/ Sulfide 9010A, 9030A [d k]	Total Cyanide 9011/ 9010A 9012A [e]	High Explosives PETN 8330 [f]	Gamma Spectro-scopy	Gross Alpha Gross Beta 9310 [g]	Total U SW 846 6020	ISO-U HASL-300	Asbestos NIOSH Method 7400 [h]	Organo-chlorine Pesticides and PCBs 8080A [h i]	Chlorinated Herbicides 8150B [h i]	pH 9020	Dioxin 8280 [h]	Perchlorates 314
Phase I Number of Samples																
Background Soil and Tuff	20	20	20	20	20	20	20	20	0	0	20	20	20	20	20	0
Baseline Soil (Staging Areas)	10	10	10	10	10	10	10	10	0	0	10	10	10	10	10	
Waste Pile Soil/Tuff	500	500	500	125	0	500	500	500	52	437	500	125	125	125	125	0
Duplicate [j]	25	25	25	7	0	25	25	25	3	22	25	7	7	7	7	0
Decontamination Water	36	36	36	36	36	36	36	36	18	14	36	36	36	36	36	6
Matrix Spike [k]	25	25	25	7	0	25	25	25	3	22	25	7	7	7	7	0
Total Samples, Phase I	616	616	616	205	66	616	616	616	76	495	616	205	205	205	205	6
Phase 2 Number of Samples																
Soil/Tuff	296	10	302	2	2	298	2	2	0	4	2	2	2	2	2	52
Boreholes AA SUMMAT	12	10	8	0	0	12	0	0	0	0	0	0	0	0	0	8
Baseline Soil (Staging Areas)	3	3	3	3	3	3	3	3	0	3	3	3	3	3	3	0
Duplicate [j]	34	1	34	0	0	34	0	0	0	0	0	0	0	0	0	10
Matrix Spike [k]	17	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0
Total Samples, Phase 2	362	24	364	5	5	364	5	5	0	7	5	5	5	5	5	70

[a] Method 3005A and 3050A is digestion for water and soil, 6020 is the analytical method for most total metals. Method 7740 is the analytical method for total selenium. Methods 7470 and 7471 are the analytical methods for total mercury. Other methods may also be used (Method 6010A and 7000A series methods) as described in Section 4.6.1. Method 1311 is the TCLP method.

[b] Method 8260 substituted for 8240A for soils. T014A for SUMMA canisters collected in Boreholes 526, 554, 557.

[c] Method 3520A and 3540A are extraction methods for water and soil 8270A is the analytical method.

[d] Determination of reactive cyanide is described is SW-846, Chapter 7, Section 7.3.3. This determination includes portions of Method 9010A. Determination of reactive sulfide is described in Section 7.3.4. This determination includes portions of Method 9030A.

[e] Method 9011 is digestion of soil for cyanide analyses. Methods 9010A and 9012A are the analytical methods for cyanide.

[f] Method 8330 modified included analysis for PETN. PETN analysis submitted during Phase I only not Phase 2.

[g] Method 9310 is for water samples. Soil samples were field screened using calibrated field instruments.

[h] Analyses for asbestos, organochlorine pesticides and PCB, dioxin, and chlorinated herbicides were performed in Phase 2 only if they were detected during Phase I sampling.

[i] Soil/tuff samples were collected from every fourth 100 cubic yard pile of waste excavated.

[j] Duplicates were collected at a frequency of one per 20 soil or tuff samples for Phase I, and one per 10 water samples. Duplicates were collected at a frequency of one per 10 soil or tuff samples during Phase 2.

[k] Matrix spike samples were collected at a frequency of one per sample delivery group per matrix with a maximum of 20 samples per delivery group.

For this project, an extension of the 90-day and 180-day closure time frames will be necessary. Removal of wastes and completion of closure activities as described in Sections 6.2.4, 6.2.5, and 6.2.6 will extend until the end of January 2003. This extended time frame is necessary because the Laboratory was unable to meet the original project schedule for waste removal due to safe operating practices at the site having to be re-evaluated when detonable pieces of HE were observed during excavation. The extended time frame is also necessary because of the following factors:

- The Cerro Grande fire delayed completion of excavation.
- The Phase II sampling and analysis plan was submitted during August 1999; supplemental information was submitted on August 10, 2000 and on April 26, 2001; verbal approval was given on May 30, 2001; written approval was given on June 7, 2001; and deviational changes to the Phase II sampling and analysis plan were submitted on August 2, 2001.
- During Phase II sampling, additional contamination was found and excavated from a small drainage on the eastern edge of the site.

For these reasons, the Laboratory requests that NMED approve the extended project schedule until January 2003 for final closure. The anticipated closure schedule is presented in Section 6.2.7.

6.1.2.2 Time Frame for Demonstrations or Extensions (20 NMAC 4.1, Section 265.113[c])

As indicated in Figure 6-2, removal of wastes and completion of closure activities will need to be extended until January 2003. If completion of final closure activities will take longer than the end of January 2003, the Laboratory will submit a closure plan amendment in accordance with 265.112(c).

6.1.3 Disposal or Decontamination of Equipment, Structures, Debris and Soils (20 NMAC 4.1, Section 265.114)

During the final closure period, all equipment, structures, debris, and soil that are contaminated above acceptable levels must be properly disposed of or decontaminated. Contaminated equipment will be decontaminated in accordance with the procedures described in Section 6.3.1. Contaminated structures and soils will be identified, decontaminated, removed, and disposed of in accordance with the procedures described in Sections 6.2.4, 6.2.5, and 6.2.6. Section 6.3.2 describes how wastes generated during closure will be managed. Section 6.3.3 describes the criteria used to determine when decontamination and closure activities have met the closure performance standard. Section 6.3.4 describes the specific sampling and analysis procedures to be used to verify that all materials remaining on-site after closure meet the closure performance standard.

ID	Task Name	Duration	Start	Finish
1	Excavate, Decontaminate & Sample	1153 days	Wed 11/5/97	Fri 4/5/02
2	Waste Disposal	884 days	Mon 12/21/98	Thu 5/9/02
3	Phase 2 Sampling	201 days	Tue 6/19/01	Tue 3/26/02
4	16-006(e) septic tank removal	26 days	Thu 4/4/02	Thu 5/9/02
5	Eco Risk Assessment	369 days	Mon 6/4/01	Thu 10/31/02
6	Final Closure Report	240 days	Mon 3/4/02	Fri 1/31/03
7	Site Restoration	116 days	Wed 5/26/04	Wed 11/3/04

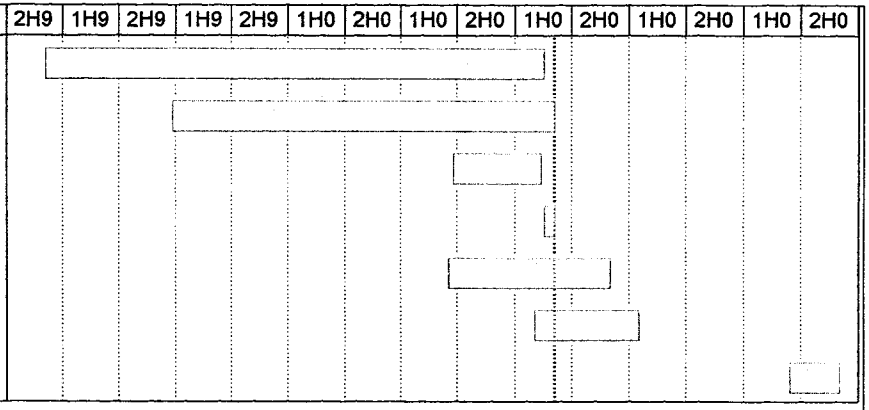


Figure 6-2:
ESTIMATED PROJECT SCHEDULE
Date: May 2002

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary

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a landfill as required by 20 NMAC 4.1, Section 265.258(b), and an amended closure/postclosure plan will be prepared and submitted to the NMED.

6.2.2 Identification of Maximum Extent of Operation [20 NMAC 4.1, Section 265.112(b)(2)]

The estimated maximum extent of operation of the waste pile is shown in Figure 1-1. The waste pile was operated from the early 1950's to 1984.

6.2.3 Estimate of the Maximum Inventory of Hazardous Waste [20 NMAC 4.1, Section 265.112(b)(3)]

The MDA-P waste pile contains an estimated maximum volume of 60,000 yd^3 of waste, debris, and contaminated media. It is estimated that 21,000 yd^3 of excavated soil will require treatment and disposal as hazardous waste at a permitted, off-site facility.

6.2.4 Detailed Description of Removal of Waste Inventory [20 NMAC 4.1, Sections 265.112(b)(3) and (4)]

Prior to the excavation of the waste, several activities will occur. A staging area will be set up for the segregation of waste material (see Figure 2-4 in pocket at the end of Chapter 2.0). This staging area will be constructed on a 200-ft by 200-ft, 80-mil high-density polyethylene (HDPE) liner overlain by a protective layer of plywood or steel. Material will be placed at this staging area, inspected, sampled, and segregated based on physical characteristics. Immediately adjacent to this staging area, a decontamination pad will be constructed of concrete covered with an 80-mil HDPE liner. This liner will be overlain by a protective layer of plywood or steel. This decontamination pad will measure approximately 40 ft by 40 ft and will have 6-in. curbing to contain any liquids. During decontamination, plastic splash guards will be placed inside the curb of the decontamination pad to prevent liquids from coming into contact with surrounding soils. This decontamination pad will be placed inside a secondary containment system constructed of 80-mil HDPE. During decontamination, the liquids in the decontamination pad will be pumped out into a container to prevent the liquid from overtopping curb levels. Nearby, two 40-ft by 40-ft evaporation ponds will be constructed

MDA-P Project Area and Adjacent PRSs

- Area of Contamination*
- Boundary, TA
- Contour, 2 foot
- Contour, 10 foot
- PRS Boundary
- Road, Dirt
- Road, Paved
- Burn Pad
- Structure / Temporary Facility
- Structure, Other
- Culvert

* Refered to as "Exclusion Zone Boundary" in "Closure Plan for the TA-16-387 Flash Pad"

6358

Run-off Control Trenches

16-018 (MDA-P)

Run-on Control Trench

East Access Road

West Access Road

Decon Pad

16-387

16-386

West Haul Road

16-010(b) TA-16-387 Flash Pad

16-016(c)-99 Consolidation of 16-016(c) (Barium Nitrate Pile), 16-010(a) (TA-16-386 Flash Pad), and 16-006(e) (Septic Tank-Drain Field-Outfall)

1764500

1764000

1615500

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1616500

FIMAD Plot ID: 200167 20 May 02

Figure 1-1, part of
MDA P closure plan
replacement pages
May 2002
LA-UR-02-2749

University of California
Los Alamos National Laboratory
Earth and Environmental Sciences Division

Cartography by: Doug Walther
Date: May 20, 2002
GISLab Plot ID: G200167

GISLab
Los Alamos National Laboratory

N

State Plane Coordinate System, New Mexico Central Zone.
1983 North American Datum

Grid provides NM State Plane coordinates in feet.
Grid interval, in feet: 500
Feet per inch on map = 75

SCALE 1:900

0 23 46 69 92
METERS

0 75 150 225 300
FEET

Basemap Sources: Boundary, structure, and utility data are from Los Alamos National Laboratory Engineering Division and Los Alamos County Utility and Engineering Departments. Contour data is from Los Alamos National Laboratory Environmental Restoration Program aerial survey, September 1991.