Los Alamos National Laboratory

ENVIRONMENTAL RESTORATION

Environmental Restoration
University of California
Environmental Restoration, MS M992
Los Alamos, New Mexico 87545
505-667-0808/FAX 505-665-4747

U. S. Department of Energy
Los Alamos Area Office, MS A316
Los Alamos, New Mexico 87544
505-665-7203
FAX 505-665-4504

Date: April 19, 1996
Refer to: EM/ER:96-220

Mr. Benito Garcia
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: FINAL ACCELERATED CLEANUP REPORTS C-00-041

Dear Mr. Garcia:

Enclosed are the final reports and Certifications of Completion for the voluntary corrective actions completed in Fiscal Year 1995. The reports with potential release sites (PRSs) listed in the Hazardous and Solid Waste Amendments (HSWA) Module of the Los Alamos National Laboratory's Resource Conservation and Recovery Act operating permit contain our request for no further action (NFA). Upon your approval of these reports, we will submit a permit modification request for NFA of these PRSs.

For PRSs not listed in the HSWA Module, reports are included as informational copies for your records.

If you have any questions, please call David Bradbury at 505-665-6208.

Thank you for your timely attention to this matter.

Sincerely,

Jorg Jansen, Program Manager
Environmental Restoration

Sincerely,

Theodore Taylor, Program Manager
Los Alamos Area Office

JJ/TT/rfr

6841

Enclosures: (1) Final Reports for HSWA: C-9-001, 6-007(f), 8-005, 16-016(b), 18-001(a), 19-002, 21-013(c), 21-013(d), 21-013(e), 21-024(d), 21-024(e), 21-024(h), 31-001, 33-016, 39-007(a), and 69-001
(2) Final Reports for non-HSWA: C-0-036(a-d), C-0-041, C-10-001, C-21-027, C-36-001, 0-032, 1-001(f), 3-003(p), 3-022, 3-047(d), 3-051(c), 9-010(a-b), 16-011, 16-016(f), 20-003(c), 21-022(j), 39-002(c), 53-010, and 57-006
(3) Certifications of Completion

Cy (w/enclosures):
B. Driscoll, EPA, R.6, 6PD-N, (2 copies of HSWA)
D. Griswold, ERD, AL, MS A906
J. Harry, EM/ER, MS M992
B. Hoditschek, NMED-HRMB
R. Kern, NMED-HRMB
N. Naraine, EM-453, DOE-HQ
M. Shaner, P&PI, MS J591 (5 copies)
N. Weber, Bureau Chief, NMED-AIP, MS J993
J. White, ESH-19, MS K490
S. Yanicak, NMED-AIP, MS J993
RPF, MS M707

Cy (w/o enclosures):
T. Baca, EM, MS J591
D. Bradbury, EM/ER, MS M992
T. Glatzmaier, DDEES/ER, MS M992
D. McInroy, EM/ER, MS M992
G. Rael, ERD, AL, MS A906
W. Spurgeon, EM-453, DOE-HQ
T. Taylor, LAAO, MS A316
J. Vozella, LAAO, MS A316
EM/ER File, MS M992

Voluntary Corrective Action Completion Report for

Potential Release Site

C-0-041
Former Asphalt Batch Plant Site

Field Unit 1

Environmental Restoration Project

March 1996

A Department of Energy
Environmental Cleanup Program

Los Alamos
NATIONAL LABORATORY

LA-UR-96-434

DESCRIPTION

Potential Release Site C-0-041 was the site of a former asphalt batch plant and was contaminated with asphalt, asphalt road mix, large concrete blocks, and miscellaneous construction debris, primarily steel. The Potential Release Site (PRS) includes part of a side slope and drainage channel that flows into Rendija Canyon, in Los Alamos County. The asphalt was visible along the channel bottom and in a thin layer on the west bank of the channel at the south end. Asphalt/aggregate road mix was present in several piles on the west bank. Several large concrete blocks were present in the north (downstream) end of the channel. Miscellaneous debris, mostly 3-gallon buckets and pieces of wire rope, was scattered along the banks.

Aerial photos indicate that the batch plant was on the site from the late 1940s until about 1958, during the time that the Atomic Energy Commission, the predecessor to the Department of Energy, owned the land. The plant was gone by 1969, when the land was transferred to the U.S. Forest Service. The Forest Service requested that DOE remediate the site since USFS regulations in effect at the time the plant was operational required that industrial sites be restored when operations ended. Further, the Surface Water division of the N.M. Environment Department considered the asphalt and concrete to be Refuse In A Watercourse and recommended its removal.

Potential Release Site C-0-041 is not included in the Hazardous and Solid Waste Amendments permit to the Los Alamos National Laboratory, EPA I.D. NM0890010515.

REMEDY

Several samples (Fig. 1) were taken on 16 March 1995 to characterize the site. A water sample was taken at the upstream end of the PRS, above the asphalt deposits, to characterize materials being washed onto the site from the road and housing construction area nearby. A sample of soil was taken from beneath the asphalt at the upstream and downstream ends of the deposit, and a sample of the asphalt was taken from the downstream location. Finally, a sample of water was taken downstream of the asphalt deposit to characterize material being washed away from the PRS. The samples were analyzed for volatile organics by method SW846-8260, PCBs and pesticides by SW846-8080, TPH by method 418.1, semi-volatile organics by SW846-8270, and RCRA metals by SW846-6010 and -7470.

Analytical results are presented in Table 1. A comparison of surface-water sample results and New Mexico State Water Quality Standards are presented in Table 2. All results were below

regulatory limits. Cleanup verification was based on analytical results and visual inspection as specified in the VCA Plan.

The cleanup followed the VCA Plan. Activities began on 14 June and ended on 23 June, 1995. Since the land is owned by the United States Forest Service, the cleanup and site restoration activities were done under the direction of a USFS representative to ensure their satisfaction.

The visible asphalt was removed from the stream channel with a backhoe. The sides of the excavation were inspected to see that no asphalt remained; if asphalt was present, more material was excavated. Along most of the drainage, the asphalt was confined to channel. At the extreme southern end of the channel, a horizontal layer of asphalt was found at a depth of 3 to 4 feet with a thickness of 0.5 to 8 inches. The excavation was widened to approximately 1500 square feet to remove this layer (see Fig. 1). Excavation was ended when the remaining asphalt had thinned to a layer approximately 1/16 to 1/4 inch thick by 3 feet wide, located at a depth of 4 feet at the southern end of the excavation. This remaining fragment of asphalt was well covered with overburden and vegetation and does not have the potential for mobilization within the subsurface.

The concrete blocks were broken up and removed with a backhoe.

The excavated asphalt-soil mixture and road mix (225 cubic yards), concrete (60 cu. yd.), and debris (15 cu. yd.) were transferred to the Los Alamos County Landfill for disposal.

Site restoration and erosion controls were implemented as directed by the USFS representative. Straw bale check dams were placed at several locations in the channel, and all disturbed soil was smoothed and mulched.

After all field work was done, the site was inspected by a USFS representative and the VCA was declared complete to the satisfaction of the USFS. See the attached closure letter from Robert Remillard of the USFS Los Alamos Area Office to Theodore Taylor, DOE, dated July 17, 1995.

TABLE 1

SUMMARY OF ANALYTICAL RESULTS, AREA OF CONCERN C-0-041, FORMER ASPHALT BATCH PLANT

SAMPLE INFORMATION		ORGANIC ANALYSES				METALS (RCRA)							
SAMPLE ID	LOCATION	VOCs (ppb)[1]	SVOCs (ppb)	PCB/ Pesticides (ppb)	TPH (ppm)	Silver (ppm)	Arsenic (ppm)	Barium (ppm)	Cadmium (ppm)	Chromium (ppm)	Mercury (ppm)	Lead (ppm)	Selenium (ppm)
AAC 4117	Tar at Downstream Location	ND (TCLP)	ND (TCLP)	ND	NA	*<0.0029*[1] (TCLP)	0.04 (TCLP)	0.629 (TCLP)	*<0.0019* (TCLP)	*<0.0057* (TCLP)	0.0014 (TCLP)	0.0321 (TCLP)	*<0.0328* (TCLP)
AAC 4118	Soil beneath tar at downstream location	ND	ND	ND	NA	*<0.07*	3.2	75.8	*<0.20*	3.9	*<0.05*	14.2	*<0.71*
AAC 4119	Soil beneath tar at downstream location (Dup of 4118)	ND	ND	ND	NA	*<0.07*	3.1	77.0	*<0.22*	3.9	*<0.05*	13.7	*<0.71*
AAC 4120	Soil beneath tar at upstream location	ND	ND	ND	NA	*<0.08*	*<1.3*	*<38.5*	*<0.22*	2.6	*<0.05*	19.6	*<0.74*
AAC 4121	Downstream Water	ND	Bis(2-ethyl hexyl) phthalate 70[3]	ND	1.3	Dissolved:[5] *<0.0003* Total: *<0.0003*	Dissolved: *<0.0023* Total: *<0.0057*	Dissolved: *<0.0448* Total: *<0.0685*	Dissolved: *<0.00051* Total: *<0.0004*	Dissolved: *<0.0003* Total: *<0.0077*	Dissolved: 0.00047 Total: 0.00055	Dissolved: *<0.002* Total: 0.0035	Dissolved: *<0.0029* Total: *<0.0029*
AAC 4122	Upstream Water	ND	ND	ND	0.73	Dissolved: *<0.0003* Total: *<0.0003*	Dissolved: *<0.0046* Total: *<0.0032*	Dissolved: *<0.0716* Total: *<0.0744*	Dissolved: *<0.00066* Total: *<0.00059*	Dissolved: *<0.0003* Total: *<0.0003*	Dissolved: *<0.00014* Total: *<0.00046*	Dissolved: *<0.0015* Total: *<0.0015*	Dissolved: *<0.0032* Total: *<0.0029*
AAC 4123	Trip Blank	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Background	Pajarito Plateau[4]	NA	NA	NA	NA	1.61	5.04	459.05	1.50	34.74	NA	28.36	NA
TC Limits[6]	40 CFR 261.24, Table1	None Exceeded[7]	None Exceeded	None Exceeded	NR	TCLP: 5.0 Total: 100	TCLP: 5.0 Total: 100	TCLP: 100 Total: 2 000	TCLP: 1.0 Total: 20	TCLP: 5.0 Total: 100	TCLP: 0.2 Total: 4.0	TCLP: 5.0 Total: 100	TCLP: 1.0 Total: 20

ND = No analytes detected above laboratory detection limits
NA = Not Available
NR = Not Regulated

[1] Parts per billion (ppm)/parts per million (ppm)
[2] Analyte is below the detection limit shown to the right of (<) symbol
[3] Bis(2-ethylhexyl)phthalate is a common analytical-laboratory and field contaminant.
[4] Source: DRAFT - Natural Background Geochemistry, Geomorphology, and Pedogenesis of Selected soil Profiles and Bandelier Tuff, Los Alamos, NM, January 1995, LANL LA-12913-MS
[5] Dissolved metals are analyzed from filtered water samples. Total metals are analyzed from unfiltered water samples.
[6] Results of analyses by the TCLP are below the maximum concentration of contaminants allowed under the Toxicity Characteristic (TC) (40 CFR 261.24, Table 1). Results of totals analyses are compared to Table 1 of 40 CFR 261.24 by dividing the analytical result by a factor of 20. This is used as a guideline to determine if values for "totals" analyses are near the TCLP limit for hazardous waste designation. None of the analytes exceed these limits.
[7] None of the RCRA-regulated analytes exceed the TC limits.

TABLE 2

COMPARISON OF WATER SAMPLE RESULTS AND NEW MEXICO WATER QUALITY STANDARDS

ANALYTE	SAMPLE AAC 4121 UNFILTERED (mg/L)	SAMPLE AAC 4121 FILTERED[1] (mg/L)	SAMPLE AAC 4122 UNFILTERED (mg/L)	SAMPLE AAC 4122 FILTERED (mg/L)	GROUND-WATER STANDARD (UNFILTERED) (mg/L)	SURFACE-WATER STANDARD[2] (FILTERED) (mg/L)	DRINKING-WATER STANDARD (mg/L)
Aluminum	13.3	0.662	<0.173[3]	<0.107	NA	5.0	No Standard
Arsenic	<0.0057	<0.0023	<0.0032	<0.0046	0.1	0.2	0.05
Barium	<0.0685	<0.0448	0.0744	<0.0716	1.0	No Standard	1.0
Boron	NA	NA	NA	NA	No Standard	5.0	No Standard
Cadmium	<0.0004	<0.00051	<0.00059	<0.00066	0.01	0.05	0.01
Chromium	<0.0077	<0.00030	<0.0003	<0.0003	0.05	1.0	0.05
Cobalt	<0.0024	<0.0012	<0.0012	<0.0017	No Standard	1.0	No Standard
Copper	<0.0097	<0.0128	<0.0025	<0.0098	No Standard	0.5	No Standard
Lead	0.0035	<0.0020	<0.0015	<0.0015	0.05	0.1	0.05
Mercury	0.00055	0.00047	0.00046	<0.00014	0.002	0.01	0.002
Nitrate (as N)	NA	NA	NA	NA	No Standard	No Standard	10
Selenium	<0.0029	<0.0029	<0.0029	<0.0032	0.05	0.05	0.05
Silver	<0.0003	<0.00030	<0.0003	<0.0003	0.05	No Standard	0.05

TABLE 2 (CONTINUED)

COMPARISON OF WATER SAMPLE RESULTS AND NEW MEXICO WATER QUALITY STANDARDS

ANALYTE	SAMPLE AAC 4121 UNFILTERED (mg/L)	SAMPLE AAC 4121 FILTERED[1] (mg/L)	SAMPLE AAC 4122 UNFILTERED (mg/L)	SAMPLE AAC 4122 FILTERED (mg/L)	GROUND-WATER STANDARD (UNFILTERED) (mg/L)	SURFACE-WATER STANDARD[2] (FILTERED) (mg/L)	DRINKING-WATER STANDARD (mg/L)
Vanadium	<0.0153	<0.0074	<0.0036	<0.0038	No Standard	0.1	No Standard
Zinc	0.0394	0.0386	<0.0166	0.0202	No Standard	25.0	No Standard
Radium-226 + Radium-228	NA	NA	NA	NA	NA	30pCi/L	30 pCi/L
Tritium	NA	NA	NA	NA	NA	20,000 pCi/L	20,000 pCi/L
Gross Alpha	NA	NA	NA	NA	NA	15 pCi/L	15 pCi/L
VOCs[4]	ND[8]	ND	ND	ND	WQCC Regs.[10]	NM Standards.[2]	NM Standards.[2]
SVOCs[5]	ND[9]	ND	ND	ND	WQCC Regs.	NM Standards.	NM Standards.
PCB/Pest[6]	ND	ND	ND	ND	WQCC Regs.	NM Standards.	NM Standards.
TPH[7]	1.3	NA	0.73	NA	No Standard	No Standard	No Standard

[1] Dissolved metals are analyzed from filtered water samples. Total metals are analyzed from unfiltered water samples.
[2] Water Quality Standards for Interstate and Intrastate Streams in New Mexico, WQCC 91-1, Amendment 1, New Mexico Water Quality Control Commission. Limits for specific constituents are listed for surface water and drinking water.
[3] Analyte is below the detection limit shown to the right of (<) symbol
[4] Volatile Organic Compounds
[5] Semi-Volatile Organic Compounds
[6] PCBs and Pesticides
[7] Total Petroleum Hydrocarbons
[8] The analytes were not detected (ND) above laboratory detection limits
[9] Bis(2-ethylhexyl)phthalate was detected at 0.07 mg/L. This is a common field and lab contaminant. No other SVOCs were detected.
[10] New Mexico Water Quality Control Commission Regulations, WQCC 82-1, Amend. 4, Oct. 1993. Limits are listed for ground water.

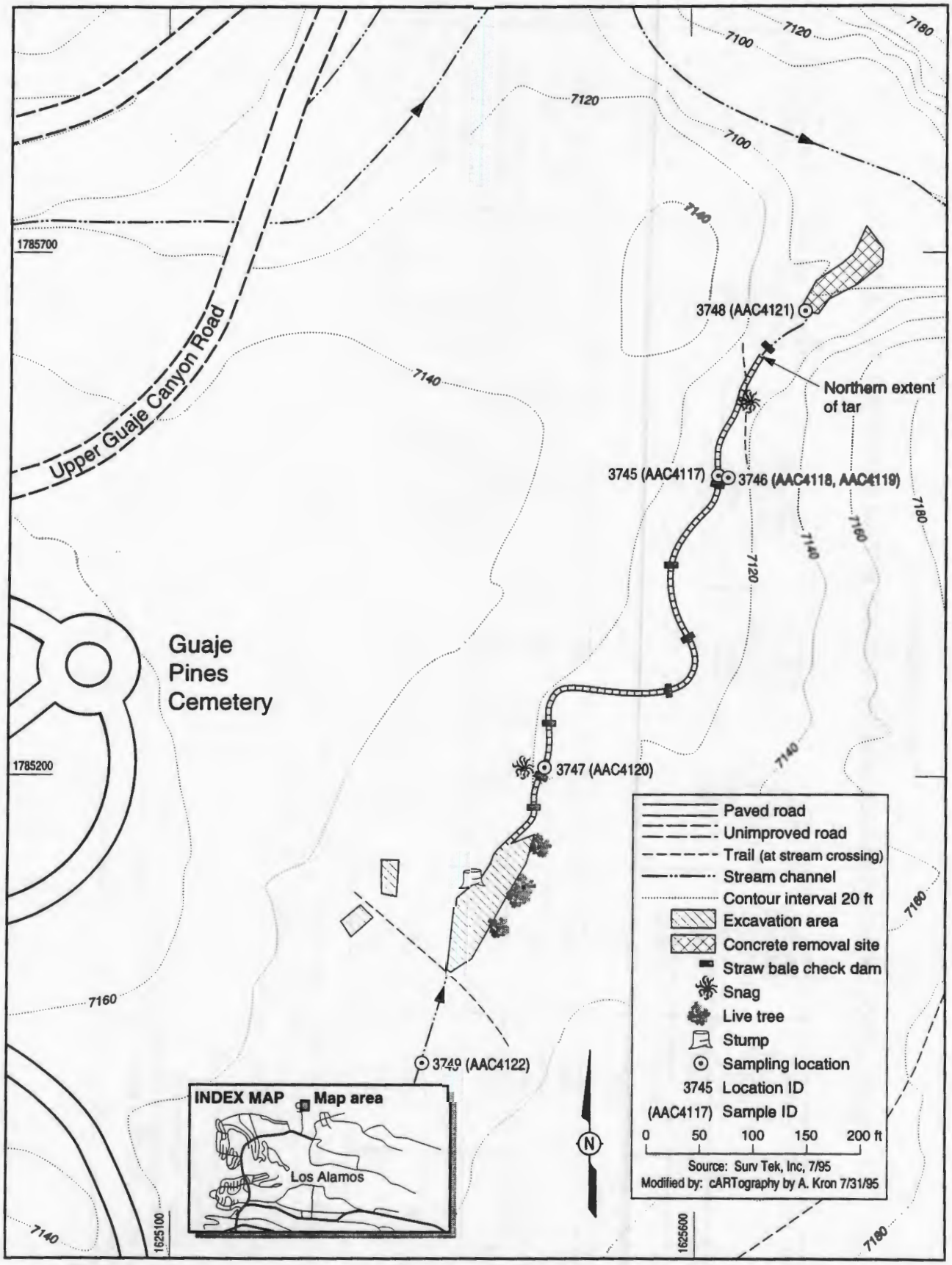

Fig. 1. Excavation and sampling locations for C-0-041.