

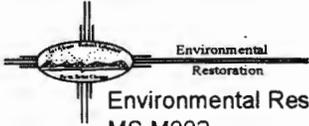
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RAK X
Teri
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Barbara
FILE

Los Alamos National Laboratory

UNIVERSITY OF CALIFORNIA



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

Date: February 16, 1996
Refer to: EM/ER:96-066

SUBJECT: RESUBMITTAL OF POTENTIAL RELEASE SITE (PRS) 16-021(C) INTERIM ACTION FINAL REPORT

To Distribution:

Enclosed please find a good copy of the final report for the interim action that took place at PRS 16-021(c), reference EM/ER:96-050, dated February 12, 1996. I apologize that the enclosure that was previously submitted was missing every other page.

Sincerely,

Gloria M. Norris

GMN/bp

Enclosure: Potential Release Site 16-021(c) Interim Action Final Report

- Cy: M. Alexander, ESH-18, MS K497
- B. Driscoll, EPA
- B. Garcia, NMED-HRMB
- D. Griswold, ERD, AL, MS A906
- B. Hoditschek, NMED-HRMB
- R. Kern, NMED-HRMB
- D. Macdonnel, ESA-FM, MS C928
- B. Martin, CST-18, MS E525
- R. Michelotti, CST-18, MS E525
- J. Mosé, LAAO, MS A316
- N. Naraine, EM-453, DOE-HQ
- R. Taylor, ESA-WMM, MS C930
- T. Taylor, LAAO, MS A316
- N. Weber, Bureau Chief, NMED-AIP

- J. White, ESH-19, MS K490
- EM/ER File, MS M992
- RPF, MS M707



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Interim Action Report for

**Solid Waste Management Unit
16-021(c)**

Field Unit 3

**Environmental
Restoration
Project**

January 1996

**A Department of Energy
Environmental Cleanup Program**

Los Alamos
NATIONAL LABORATORY

LA-UR-96-419

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1.0 OBJECTIVE

Potential release site (PRS) 16-021(c) is the National Pollutant Discharge Elimination System (NPDES) permitted outfall [Environmental Protection Agency (EPA) 05A056] from TA-16-260, the high explosives (HE) machining facility at S-Site. This PRS has undergone an interim action to stabilize the soil and prevent further migration of contaminants into Cañon de Valle. This action is being conducted at the request of the New Mexico Environment Department (NMED) and the Department of Energy (DOE) Los Alamos Area Office (see Attachment 1). The associated fact sheet can be found in Attachment 2.

2.0 SITE TYPE AND DESCRIPTION

Large quantities of explosives are processed in TA-16-260. Machine turnings are routed to the sumps as waste. Each sump flows into a trunk line that discharges to the outfall. The drainage channel from the outfall is contaminated with explosives waste, including barium nitrate, the primary ingredient in the explosive baratol. The drainage channel from the outfall flows about 600 ft to the bottom of Cañon de Valle, a drop in elevation of 80 ft (Fig. 1). A small pond approximately 55 ft long is formed by a rock dam located 93 ft from the outfall. Stressed vegetation is present in the drainage channel. Rainwater from the roadway on the northeast side of TA-16-260 also flows into the pond.

3.0 CONTAMINANTS

Existing data for the TA-16-260 outfall are extensive and show widespread HE contamination extending from the discharge point to Cañon de Valle [Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan for OU 1082, Subsection 5.3.1.1] (LANL 1993, 1094). Sediment samples were taken from the channel from 1960 through 1991. These studies analyzed soil for a distance of several hundred feet from the outfall. The highest concentrations of the high explosives HMX-RDX and TNT were found in the pond. Concentrations of total HE in the pond have remained uniformly high with a maximum of 9.8 wt % in 1960 to 34.1 wt % in 1991 (Appendix A). In 1995 RFI sampling was conducted at the TA-16-260 outfall. Surface soil samples were collected and indicated barium levels greater than the SAL of 5 340 ppm. Eleven samples were collected with barium concentrations ranging from 7 500 ppm to 26 900 ppm. Data on water and sediment samples from Cañon de Valle suggest that both RDX and barium have been mobilized from PRS 16-021(c) to the canyon. Other constituents of concern include other metals, uranium, semivolatile organic compounds, and volatile organic compounds.

4.0 INTERIM ACTION

As requested by the NMED and DOE, Field Unit 3 initiated an interim action to stabilize the soil associated with PRS 16-021(c) and prevent further release of contaminants. In coordination with the Water Quality Group (ESH-18) at LANL, the interim action consisted of three measures.

- The volume of surface flow through the drainage channel was reduced by diverting storm water runoff. Johnson Controls workers placed sandbags along the eastern edge of the asphalt apron to divert storm water runoff from the area into adjacent drainages (Fig. 1).
- ICF Kaiser Engineers covered the existing settling pond with Poly-Jute™ matting to reduce the potential for sediments within the pond to be mobilized by rainfall.
- The capacity for sediment deposition within the drainage was enhanced by installing eight straw-bale dams. ICF Kaiser Engineers constructed these dams within the steeper sections of the channel between the existing rock dam and cliff face where the drainage drops into Cañon de Valle.

The dams consist of loose straw, straw bales, and Poly-Jute™ matting. The straw bales are partially wrapped in Poly-Jute™ to maintain the bale structure. A section of Poly-Jute™ mat the width of the drainage channel and 15 ft long was placed in the drainage at each dam location. Loose straw was laid down over the mat in the location of the dam to ensure a seal between the straw bales and the bottom of the drainage channel. The mat was placed so that the upgradient edge of the mat is at or above the specified dam location. Straw bales were placed end-to-end over the loose straw across the entire width of the drainage channel at the specified dam location. The downgradient portion of Poly-Jute™ mat was wrapped over the straw bales. Any excess Poly-Jute™ mat will lay in the bottom of the drainage channel upgradient of the dam, secured in place with rocks. The entire structure is supported with rocks and a log on the downgradient side of the dam. Wire anchors the log at both ends to nearby trees. These measures will reduce mobilization and subsequent transfer of contaminants into Cañon de Valle.

PRS 16-021(c) is listed in the Hazardous and Solid Waste Amendments Module of Los Alamos National Laboratory's Part B operating permit and has undergone a National Environmental Policy Act review for categorical exclusion (B1.3).

Figures 2, 3, and 4 are photographs taken before, during, and after the interim action.

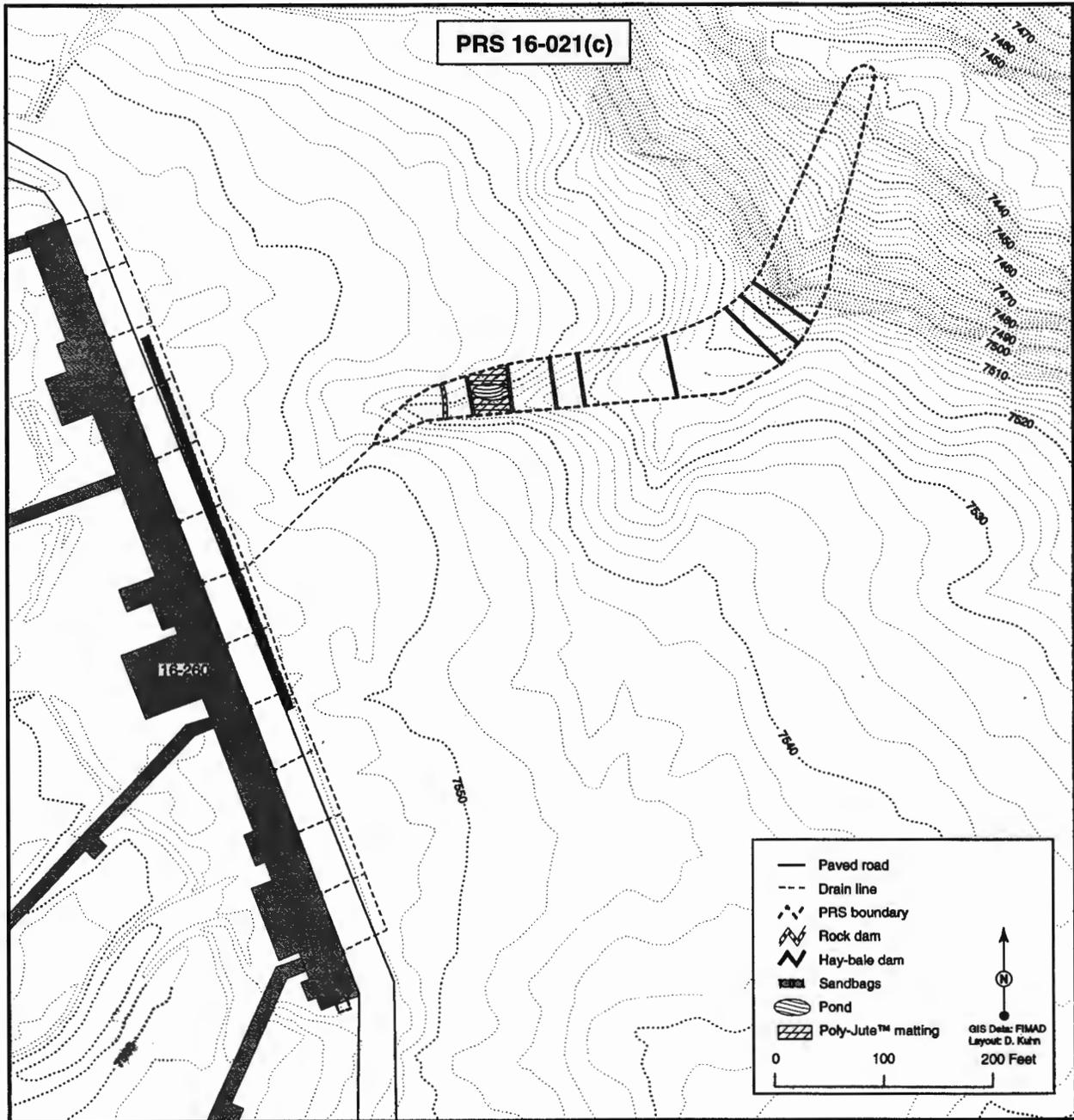


Fig. 1. PRS 16-021(c), outfall from TA-16-260.



Fig. 2. TA-16-260 outfall, before interim action.



Fig. 3. TA-16-260 outfall, during interim action.



Fig. 4. TA-16-260 outfall, after interim action.

5.0 CONFIRMATORY ACTIVITIES

The objective of confirmatory activities is to demonstrate whether the best management practice implemented was effective at reducing or preventing the migration of contaminants into Cañon de Valle.

The objective of the sampling effort is to evaluate the effectiveness of the pond stabilization and down-drainage dams in reducing the off-site migration of contaminants. One sample will be collected from along the upstream side of each of the eight dams. A geomorphologic survey and professional judgment will be used to insure that only sediments deposited after completion of the interim action are collected and analyzed. The survey will also evaluate the volume of sediment deposited within the eight reaches of the drainage as defined by the dams. Samples will be collected immediately following spring snowmelt runoff; this should insure that an adequate volume of sediment for sampling has accumulated along the dams. If it is determined during the survey that a sufficient volume of sediment has not been deposited, the site will be resurveyed and sampled following the summer rainwater runoff season. Samples will be analyzed for high explosives.

6.0 MAINTENANCE AND INSPECTION

An inspection of the Poly-Jute™ matting, straw bales, and sandbags will be conducted once every month and after storm water runoff events (Federal Register 1992, 15-16-619). If it becomes necessary to move or replace these materials ICF Kaiser engineers will take the required actions to restore the site. Inspection and maintenance reports will be placed in the project file.

7.0 WASTE MANAGEMENT

The waste generated from the interim action will be minimal. The Poly-Jute™ matting and the straw bales will eventually deteriorate. If it becomes necessary to replenish the materials, the older material will be taken to the burning ground for flash burning. The sandbags will be disposed of in the same manner.

8.0 ESTIMATED SCHEDULE AND COST TO COMPLETE

Sandbags were placed along the edge of the asphalt Friday, November 17, 1995.

The Poly-Jute™ matting was placed on the pond Friday, December 1, 1995.

Eight straw-bale dams were placed with the Poly-Jute™ matting on Friday, December 1, 1995.

**TABLE 8-1
INTERIM ACTION COST**

MATERIALS AND LABOR	COST
Poly-Jute™ matting	\$ 600
Straw bales	\$ 120
Labor for dams and pond cover	\$ 6 000
Total	\$ 8 720

9.0 REFERENCES

Baytos, J. F., August 7, 1985. "Analysis of Soil Samples for Residual Explosives from Drainage Ditches at Sump Effluent Outlets," Los Alamos National Laboratory Memorandum M-1 to A. P. Torres (WX-3) from J. F. Baytos (M-1), Los Alamos, New Mexico. **(Baytos 1985, 15-16-268)**

Baytos, J. F., June 2, 1970. "Analysis of Soil Samples for Residual Explosives from Drainage Ditches at the Sump Effluent Outlets at Group GMX-3 Operating Buildings," Los Alamos Scientific Laboratory Memorandum GMX-3 to E. Wilder from J. F. Baytos, Los Alamos, New Mexico. **(Baytos 1970, 15-16-278)**

Federal Register, September 9, 1992. "Final NPDES General Permits for Storm Water Discharges from Construction Sites, Section IV, Storm Water Pollution Prevention Plan, D, 2a," Federal Register, Vol. 57, No. 175. **(Federal Register 1992, 15-16-619)**

King, W., October 23, 1991. "Group M-1 Analytical Laboratory Report," Los Alamos National Laboratory Report, Los Alamos, New Mexico. **(King 1991, 15-16-381)**

King, W., February 7, 1992. "Group M-1 Analytical Laboratory Report," Los Alamos National Laboratory Report, Los Alamos, New Mexico. **(King 1992, 15-16-380)**

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1082," Los Alamos National Laboratory Report LA-UR-93-1196, Los Alamos, New Mexico. **(LANL 1993, 1094)**

Los Alamos Scientific Laboratory, August 1972. "Analysis of Soil Samples for Residual Explosives from Drainage Ditches at the Sump Effluent Outlets at Group GMX-3 Operating Buildings," Los Alamos Scientific Laboratory Report No. LA-4925 by J. F. Baytos, Los Alamos, New Mexico. **(LASL 1972, 15-16-275)**

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APPENDIX A SAMPLING DATA

TABLE A-1
HIGH EXPLOSIVES IN THE TA-16-260 DRAINAGE CHANNEL^{a,b}

DATE	SAMPLE LOCATION	HMX/RDX ^c	TNT ^d	TOTAL HE ^e
03/11/60	Pond center	8.5	1.3	9.8
03/11/60	Pond center	3.5	1.3	4.8
03/11/60	20 ft below dam	4.3	1.7	6.0
03/11/60	30 ft below dam	3.3	0.7	4.0
03/11/60	100 ft below dam	2.7	0.04	2.7
03/11/60	150 ft below dam	0.5	0.02	0.5
04/29/70	Outfall	7.0	0.0	7.0
04/29/70	Pond center	20.5	3.7	24.2
04/29/70	1 ft below dam	4.8	0.07	4.9
04/29/70	Between dam and cliff	12.9	0.12	13.0
04/29/70	Cliff	3.9	0.10	4.0
11/18/70	10 ft from outfall	3.2	0.0	3.2
11/18/70	Inlet to pond	14.1	0.1	14.5
11/18/70	10 ft above dam	22.1	0.5	22.6
11/18/70	5 ft below dam	14.5	0.2	14.7
11/05/71	10 ft from outfall	2.9	0.0	2.9
11/05/71	Pond inlet	10.8	0.0	10.8
11/05/71	10 ft above dam	25.7	0.0	25.7
11/05/71	10 ft below dam	22.5	0.0	22.5
08/22/73	10 ft from outfall	1.3	0.0	1.3
11/14/74	Outfall	1.7	0.0	1.7
11/14/74	1 ft above dam	17.1	0.1	17.8
11/14/74	50 ft below dam	13.7	0.2	13.9
12/05/75	10 ft from outfall	0.2	0.0	0.2
12/05/75	1 ft above dam	9.2	0.0	9.2
11/19/76	10 ft from outfall	0.2	0.0	0.2
11/19/76	50 ft from outfall	3.0	0.1	3.1
11/19/76	65 ft from outfall	26.7	0.3	27.0
11/19/76	250 ft from outfall	17.3	0.3	17.6
07/18/84	3 ft from outfall	0.3	0.0	0.3
07/18/84	30 ft from outfall	10.4	0.9	11.3
07/18/84	50 ft from outfall	16.7	2.3	19.0
09/12/85	30 ft from outfall	2.0	0.1	2.1
09/12/85	110 ft from outfall	26.6	4.8	31.4
09/12/85	230 ft from outfall	1.7	0.1	1.8

^a Quantities of explosives are given in weight percent (wt%). Surface samples were taken from the sediment. Most samples were taken along the centerline of the drainage channel. Distances are approximate. The sampling technique and analytical method are described in Baytos 1972, 15-16-275.

^b Data from Baytos (1970-1985, 15-16-278 to 15-16-268).

^c Soil SAL HMX = 3 259 ppm (0.32 wt%), RDX = 4 ppm (0.0004 wt%).

^d Soil SAL TNT = 48.4 ppm (0.004 wt%).

TABLE A-2

HIGH EXPLOSIVES IN THE TA-16-260 DRAINAGE CHANNEL, BARR-KING DATA OF 1991^{a,b}

SEDIMENT SAMPLE LOCATION ^c	HMX/ RDX	TNT	TOTAL HE	BARIUM
1 ft from outfall	3.4	0.1	3.5	ND ^d
20 ft from outfall	1.8	1.0	2.8	ND
40 ft from outfall	0.1	<0.1	0.1	ND
45 ft from outfall	2.9	<0.1	2.9	ND
50 ft from outfall, pond centerline	4.9	<0.1	4.9	ND
60 ft from outfall, pond centerline	6.4	0.1	6.4	ND
60 ft from outfall, north edge of pond	0.5	<0.1	0.5	ND
70 ft from outfall, pond centerline	9.1	0.6	9.7	ND
70 ft from outfall, north edge of pond	19.0	2.0	21.0	ND
80 ft from outfall, pond centerline	22.3	3.0	25.3	ND
90 ft from outfall, pond centerline	26.7	2.0	28.7	ND
90 ft from outfall, 12 in. from north edge	7.6	<0.1	7.6	0.85
91 ft from outfall, pond centerline	3.0	<0.1	3.0	0.43
91 ft from outfall, pond centerline, 2 in. deep	7.6	<0.1	7.6	0.53
91 ft from outfall, pond centerline, 8 in. deep	6.1	0.2	6.3	0.51
91 ft from outfall, pond centerline, 13 in. deep	13.5	0.4	13.9	0.46
91 ft from outfall, 8 in. from edge, 13 in. deep	24.8	9.3	34.1	0.33
91 ft from outfall, 12 in. from edge, 13 in. deep	27.8	1.0	28.8	0.67
110 ft from outfall	7.6	0.3	7.9	ND
135 ft from outfall	2.3	<0.1	2.3	0.35
210 ft from outfall	4.4	<0.1	4.4	0.65

^a King 1991, 15-16-381; King 1992, 15-16-380.

^b Quantities of explosives and barium are given in weight percent (wt%).

^c Surface samples were taken from the sediment along the centerline of the drainage channel, unless otherwise specified.

^d ND = Not detected..

APPENDIX B ANALYTICAL DATA

TABLE B-1

BARIUM CONCENTRATIONS ABOVE SCREENING ACTION LEVELS IN
1995 RFI SAMPLING DATA

SAMPLE NUMBER	CONCENTRATIONS (mg/kg)	SAL ^a (mg/kg)
0316-95-0030	12 700	5 340
0316-95-0031	14 600	
0316-95-0033	19 000	
0316-95-0034	11 100	
0316-95-0035	21 100	
0316-95-0036	26 100	
0316-95-0037	26 900	
0316-95-0017	7 500	
0316-95-0018	12 100	
0316-95-0019	7 750	
0316-95-0022	20 200	

^a SAL = Screening action level

TABLE B-2
HIGH EXPLOSIVE CONCENTRATIONS IN
1995 RFI SAMPLING DATA

ANALYTE	HMX (mg/kg)	RDX (mg/kg)	TNT (mg/kg)	2,4-DNT (mg/kg)
SAL	3 259	4	48.4	0.65
SAMPLE ID				
0316-95-0026	378	74.8 ^a	16.8	ND ^c
0316-95-0027	1 360	898 ^a	22.8	0.122
0316-95-0028	4 860 ^a	6 830 ^a	1 760 ^a	0.917 ^a
0316-95-0029	4 300 ^{a,b}	ND ^c	90 ^{a,b}	ND ^c
0316-95-0030	7 900 ^{a,b}	4 100 ^{a,b}	100 ^{a,b}	ND ^c
0316-95-0031	6 400 ^{a,b}	4 300 ^{a,b}	180 ^{a,b}	ND ^c
0316-95-0032	32 900 ^a	29 600 ^a	4 570 ^a	2.54 ^a
0316-95-0033	8 100 ^{a,b}	5 100 ^{a,b}	240 ^{a,b}	ND ^c
0316-95-0034	10 000 ^{a,b}	5 700 ^{a,b}	ND ^c	ND ^c
0316-95-0035	2 700 ^b	2 700 ^{a,b}	ND ^c	ND ^c
0316-95-0036	3 500 ^{a,b}	1 800 ^{a,b}	ND ^c	ND ^c
0316-95-0037	3 200 ^b	1 200 ^{a,b}	ND ^c	ND ^c
0316-95-0038	54 700 ^a	3 500 ^a	106 ^a	1.45 ^a
0316-95-0039	2 750	1 220 ^a	19.8	0.308
0316-95-0040	23 000 ^a	137 ^a	95.2 ^a	0.88 ^a
0316-95-0041	5 200 ^a	452 ^a	19.9	1.13 ^a
0316-95-0042	20 300 ^a	611 ^a	44.3	0.916 ^a
0316-95-0043	12 500 ^a	302 ^a	14.3	0.877 ^a
0316-95-2012	5 400 ^{a,b}	4 200 ^{a,b}	190 ^{a,b}	ND ^c

^a Values above SALs.

^b DX-16 data.

^c ND = Not detected.

ATTACHMENT 1 CORRESPONDENCE

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Bob - Please give this to
Everett on Wed. Ted

United States Government

Department of Energy

memorandum

Albuquerque Operations Office
Los Alamos Area Office
Los Alamos, New Mexico 87544

DATE:

REPLY TO:
ATTN OF: LAAO:EP:TJT:1.4.2.6.1.7.1
SUBJECT:

Stabilization of Solid Waste Management Unit

TO: J. Jansen, EM/ER, UC-LANL, MS M992

Attached is a letter from Steve Yanicak, New Mexico Environment Department, dated September 8, 1995, in which Mr. Yanicak expresses a concern regarding the potential for release of contaminants from solid waste management unit (SWMU) 16-021(c). Please review the letter and ask your staff to initiate any mitigation measures you believe are appropriate. Everett Trollinger will be available by phone on Wednesday, September 20, 1995, to discuss this matter with your staff. He can be reached on his digital pager at 104-8636.

Please advise me of the actions, if any, that you plan to take.

If you have any questions, please call me at 665-7203.

Theodore J. Taylor
Program Manager
Environmental Restoration Program

Attachment

- cc w/attachment:
- D. Griswold, ERD, AL, MS A906
- T. Taylor, EP, LAAO
- C. Fesmire, EP, LAAO
- E. Trollinger, EP, LAAO
- K. Zamora, EP, LAAO
- E. Merrill, EM-452, HQ
- RPF, UC-LANL, MS M707
- J. White, ESH-19, MS K498

- cc w/o attachment:
- J. Vozella, AAMEP, LAAO
- W. Spurgeon, EM-452, HQ
- T. Baca, EM, UC-LANL, MS J591

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Dept.	Phone # 5-7444	
Fax # 665-3285	Fax #	

from Everett
9/22/95

file 2.6.1.1.1

Copy for Everett
Copy sent to Jorg



State of New Mexico
ENVIRONMENT DEPARTMENT
DOE OVERSIGHT BUREAU
2044 A Galisteo Street
P.O. Box 26110
Santa Fe, New Mexico 87502

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9/14/95 11:46 a.m.

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

September 8, 1995

Joseph Vozella, Chief
Environment, Safety, and Health Branch
Department of Energy
Los Alamos Area Office
Los Alamos, NM 87544

Dan has seen
this. He has
left with it
already -K

Re: Storm water discharges into Cañon de Valle from SWMU 16-021(c)

Dear Mr. Vozella:

On August 29, 1995, 1.52 inches of rainfall in one hour (recorded at the S-site meteorological station) resulted in storm water runoff in most of the major canyon systems at Los Alamos National Laboratory (LANL). Storm water runoff samples were collected by DOE OB personnel from Mortandad, Canada del Buey, Potrillo, Ancho and Water Canyons along State Road 4. On August 30, 1995, New Mexico Environment Department (NMED), Department of Energy Oversight Bureau (DOE OB) personnel conducting field surveys observed that flash flooding had recently occurred in Cañon de Valle. There was evidence (debris piles) at the junction of SWMU 16-021(c) and Cañon de Valle that showed that this tributary may also have experienced high flows of storm water runoff.

SWMU 16-021(c) has been described as by far the most contaminated outfall at S-site with HE contamination ranging up to three orders of magnitude greater than SALs (RFI Work Plan for OU 1082, 1993). Other Constituents Of Concern (COCs) include barium and other metals, uranium, semi-volatile organics and volatile organics.

The RFI Work Plan notes that due to the continuing operation of Outfall 05A-056, field activities will be deferred until the outfall is plugged some time in 1995 or 1996. The RFI Work Plan does not mention any Best Management Practices (BMPs) for this SWMU and to this date none have been put in place.

The proximity of this SWMU and its subsequent direct discharge into Cañon de Valle is of immediate concern. The postponement of remediation, noted above, necessitates that BMPs should be put in place and maintained to mitigate the transport of contaminants from

Mr. Vozella
September 8, 1995
Page 2, 1993

(c)
SWMU 16-021[^] into Cañon de Valle. The RFI work plan notes that rain water from the roadway on the northeast side of TA-16-260 also flows into this drainage. Consideration should be given to the diversion of this runoff away from SWMU 16-021 to reduce mobilization of contaminants and subsequent transfer into Cañon de Valle. Measures must be taken to assure that COCs remain in SWMU 16-021 until remediation is completed.

(c)
These concerns are being forwarded to the NMED Surface Water Quality Bureau. If you have any questions please contact Ralph Ford-Schmid at 827-1536.

Sincerely,



Steve Yanicak,
Point of Contact/LANL,
NMED, DOE OB

cc: John Parker, Program Manager, NMED, DOE OB
Glen Saums, Program Manager, NMED, SWQB
Steve Rae, UC-LANL/ESH-18, MS K490
Ivan Trujillo, DOE/LAOC AIP POC, MS A316

Los Alamos National Laboratory

ENVIRONMENTAL RESTORATION

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

Date: **October 11, 1995**
Refer to: **EM/ER:95-562**

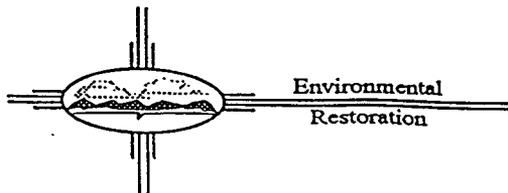
Mr. Steve Yanicak
New Mexico Environment Department
DOE-Oversight Bureau
P.O. Box 1663, MS J993
Los Alamos, NM 87545

**SUBJECT: STABILIZATION OF SOLID WASTE MANAGEMENT UNIT
(SWMU) 16-021(c)**

Dear Steve:

In a letter to the U.S. Department of Energy (DOE) Office dated September 8, 1995, you expressed concern that there was the potential for release of contaminants from SWMU 16-021(c). The Los Alamos National Laboratory's (Laboratory's) Environmental Restoration (ER) Project shares many of the New Mexico Environment Department's (NMED's) concerns.

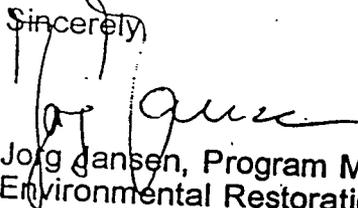
The Laboratory staff visited SWMU 16-021(c) with NMED DOE Oversight Bureau personnel on September 29, 1995. NMED personnel approved of the existing best-management practices (BMP), which consist of a sandbag run-on diversion that was implemented in June 1995 by Field Unit 3 personnel. NMED DOE Oversight Bureau also suggested additional BMPs such as installation of hay-bale check dams, jute matting, and additional run-on control. Field Unit 3 personnel agree that the suggested BMPs suggested would further decrease potential impacts to human health and the environment from transport of contaminants from SWMU 16-021(c). Field Unit 3 personnel will immediately begin implementing the suggested BMPs as interim measures. The ER Project will coordinate these activities with the Laboratory's Water Quality and Hydrology Group. Field Unit 3 will continue to inform DOE and NMED of their progress.



October 11, 1995

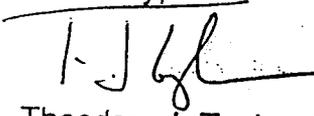
If you have any questions, please call Roy Michelotti at (505) 667-5444, or Everett Trollinger at (505) 667-5801.

Sincerely,


Jörg Jansen, Program Manager
Environmental Restoration

JJ/TT/bp

Sincerely,


Theodore J. Taylor, Program Manager
Los Alamos Area Office

Cy: T. Baca, EM, MS J591
B. Driscoll, EPA
B. Garcia, NMED-HRMB
T. Glatzmaier, DDEES/ER, MS M992
D. Griswold, ERD, AL, MS A906
R. Michelotti, CST-18, MS E525
D. McInroy, EM/ER, MS M992
E. Merrill, EM-453, DOE-HQ
S. Rae, ESH-18, MS K497
G. Rael, ERD, AL, MS A906
W. Spurgeon, EM-453, DOE-HQ
T. Taylor, LAAO, MS A316
E. Trollinger, LAAO, MS A316
J. Vozella, LAAO, MS A316
N. Weber, Bureau Chief, NMED, DOE-OB
J. White, ESH-19, MS K498
EM/ER File, MS M992
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GARY E. JOHNSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
DOE OVERSIGHT BUREAU
P.O. Box 1663, MS/J-993
Los Alamos, New Mexico 87545

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

October 11, 1995

Ivan Trujillo
Department of Energy
Los Alamos Area Office
MS-A316
Los Alamos, NM 87545

Re: Storm Water Pollution Prevention Best Management Practices
(BMPs) at the TA-16 05A056 H.E. outfall SWMU 16-021(c)

Dear Mr. Trujillo:

On Friday September, 29th NMED DOE OB staff visited the TA-16 021(c) High Explosives SWMU in conjunction with LANL ER staff in order to discuss Storm Water Pollution Prevention BMPs associated with this site. At present, the date of remediation for this site is expected to be sometime in 1997. Because of this delay in remediation it is the concern of the NMED DOE OB that contaminants from this site will be transported down the arroyo into Canon de Valle unless Storm Water BMPs are implemented. The following recommendations were expressed to ER staff at this site visit:

- * Existing BMP measures currently in place (sand bags and diversions) used to reduce the flow of water over the most contaminated portion of the SWMU should be maintained.
- * In addition to existing BMPs the following recommended BMPs should be considered:
 - 1) A series of check dams constructed of hay bales and silt fencing should be erected along intervals down canyon beginning at the earthen dam below the most highly contaminated area and continuing down the arroyo to near the junction with Canon de Valle. It is recommended that at least four such check dams be installed.
 - 2) In addition to the check dams it is recommended that a "Jute" matting also be installed over the exposed soil in the arroyo between each of the check dams. This matting would minimize mobilization of contaminated soil particles from the impact of rain drops and help trap sediment.
 - 3) Storm Water runoff from the upgradient parking lot should be diverted to prevent entry onto the SWMU site.

DOE OB staff feel that the implementation of these BMPs would significantly reduce contaminant migration due to Storm Water runoff into Canon de Valle.

If you have any further questions please do not hesitate to call Harvey Decker at 672-0459 to discuss this matter.

Sincerely,



Steve Yanicak
NMED/DOE/OB/POC

cc: Steve Rae, Group Leader, ES&H-18, MS-K497
Neil Weber, Chief, NMED, DOE OB
Steve Yanicak, NMED/AIP/POC, MS-J993
Jim Piatt, Chief, NMED, SWQB
Benito Garcia, Chief, NMED, HRMB
Brad Martin, LANL, ER/FPL/FU3, MS-E525
Everett Trollinger, DOE, FPC/FU3, MS-A316
Roy Michelotti, LANL, ER, MS-E525
Don Hickmott, LANL, ER, MS-D462
Harvey Decker, NMED, DOE OB, LANL

SY:hld

ATTACHMENT 2 FACT SHEET

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**Los Alamos National Laboratory
Environmental Restoration Project
PRS Fact Sheet for Interim Action**

Description:

PRS 16-021(c) is the NPDES permitted outfall (EPA 05A056) from the high explosives (HE) machining facility at S-Site, TA-16-260. Large quantities of explosives are processed in this building. Machine turnings are routed to the sumps as waste. Each sump flows into a trunk line that discharges to the outfall. The drainage channel from the outfall is contaminated with explosive waste, including barium nitrate, the primary ingredient in the explosive baratol. The drainage channel from the outfall flows about 600 ft to the bottom of Cañon de Valle, a drop in elevation of 80 ft. A small pond approximately 55 ft long is formed by a rock dam located 93 ft from the outfall. Stressed vegetation is present in the drainage channel. Rainwater from the roadway on the northeast side of TA-16-260 also flows into the pond.

Contaminants:

Existing data for the TA-16-260 outfall are extensive and show widespread HE contamination extending from the discharge point to Cañon de Valle (RFI Work Plan for OU 1082, subsection 5.3.1.1). Sediment samples were taken from the channel from 1960 through 1991. These studies analyzed soil for a distance of several hundred feet from the outfall. The highest concentrations of HMX-RDX and TNT were found in the pond. Concentrations of total HE in the pond have remained uniformly high with a maximum of 9.8 wt % in 1960 to 34.1 wt% in 1991 (RFI Work Plan for OU 1082, subsection 5.3.1.1). In 1995 RFI sampling was conducted at the TA-16-260 outfall. Surface soil samples were collected and indicated barium levels greater than the SAL of 5 340 ppm. Eleven samples were collected with barium concentrations ranging from 7 500 ppm to 26 900 ppm. Data on water and sediment samples from Cañon de Valle suggest that both RDX and barium have been mobilized from PRS 16-021(c) to the canyon. Other constituents of concern include other metals, uranium, semivolatile organics, and volatile organics.

Interim Action:

As requested by the State of New Mexico, Field Unit 3 is initiating an interim action to stabilize the soil associated with PRS 16-021(c) and prevent further release of contaminants. In coordination with the Water Quality Group at LANL, the interim action, also known as a best management practice to be implemented will consist of three actions.

- The volume of surface flow through the drainage channel will be reduced by diverting storm water runoff. Johnson Controls workers will place sandbags along the eastern edge of the asphalt apron to divert storm water runoff from the area into adjacent drainages (see attached figure).
- ICF Kaiser Engineers will cover the existing settling pond with Poly-Jute™ matting to reduce the potential for rainfall mobilized sediments within the pond.
- The capacity for sediment deposition within the drainage will be enhanced by installing eight straw-bale dams. ICF Kaiser Engineers will construct these dams within the steeper sections of the channel between the existing rock dam and cliff face where the drainage drops into Cañon de Valle.

The dams will consist of loose straw, straw bales, and Poly-Jute™ matting. The straw bales will be partially wrapped in Poly-Jute™ to maintain the bale structure. A section of Poly-Jute™ mat the width of the drainage channel and 15 ft long will be placed in the drainage at each dam location. Loose straw will be laid down over the mat in the location of the dam to ensure a seal between the straw bales and the bottom of the drainage channel. The mat will be placed so that the upgradient edge of the mat is at or above the specified dam location. Straw bales will then be placed end-to-end over the loose straw across the entire width of the drainage channel at the specified dam location. The downgradient portion of Poly-Jute™ mat will then be wrapped over the straw bales. Any excess Poly-Jute™ mat will lay in the bottom of the drainage channel upgradient of the dam,

secured in place with rocks. The entire structure will be supported with rocks and a log on the downgradient side of the dam. Wire will anchor the log at both ends to nearby trees. The proposed best management practice will reduce mobilization and subsequent transfer of contaminants into Cañon de Valle.

PRS 16-021(c) is HSWA listed and has undergone a NEPA review for categorical exclusion (B1.3).

Estimated Cost:

Sandbags with labor	\$2 000
Poly-Jute™ matting	\$600
Straw bales	\$120
Labor	\$6 000
Total	<u>\$8 720</u>

Schedule:

Sand bags were placed along the edge of the asphalt on Friday, November 17, 1995.

The Poly-Jute™ matting will be placed on the pond Friday, December 8, 1995.

Eight straw-bale dams will be placed with the Poly-Jute™ matting on Friday, December 8, 1995.