TA-16 2/10/1999

PRS 16-016(c)

Barium Nitrate Storage Pile

(Considered in context of RCRA Closure of MDA-P and Burn Pad 387)

TA-16 West of MDA-P

SRS Score = 65

AP 4.5 Score = 72

HSWA Permit

6144

2-10-99

Los Alamos National Laboratory
Environmental Restoration Project

VG-98-007(1)

Goals of Briefing

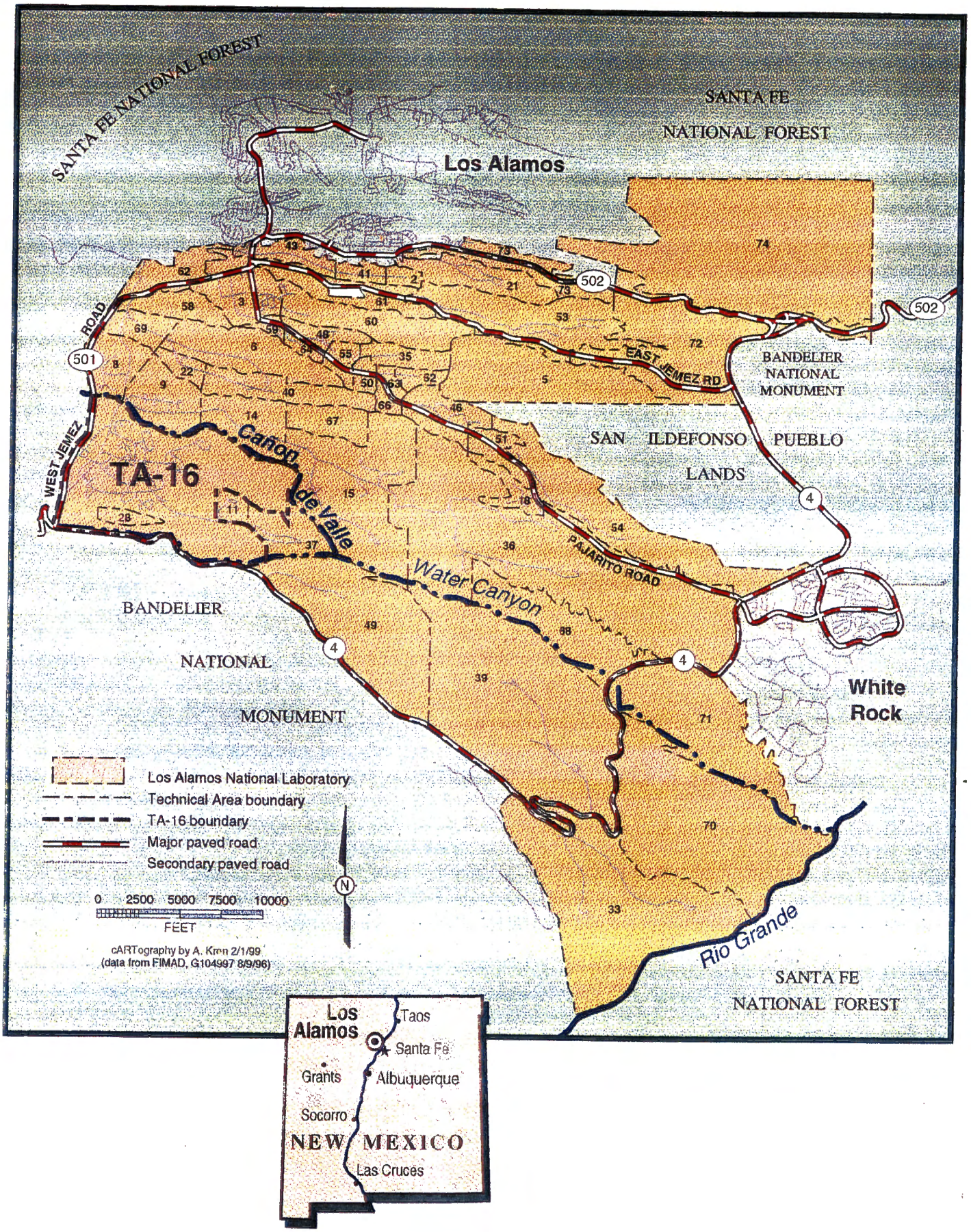
- Describe integrated cleanup approach for MDA-P, Barium Nitrate Pile [PRS 16-016(c)] , and Burn Pad 387 [PRS 16-010(b)]

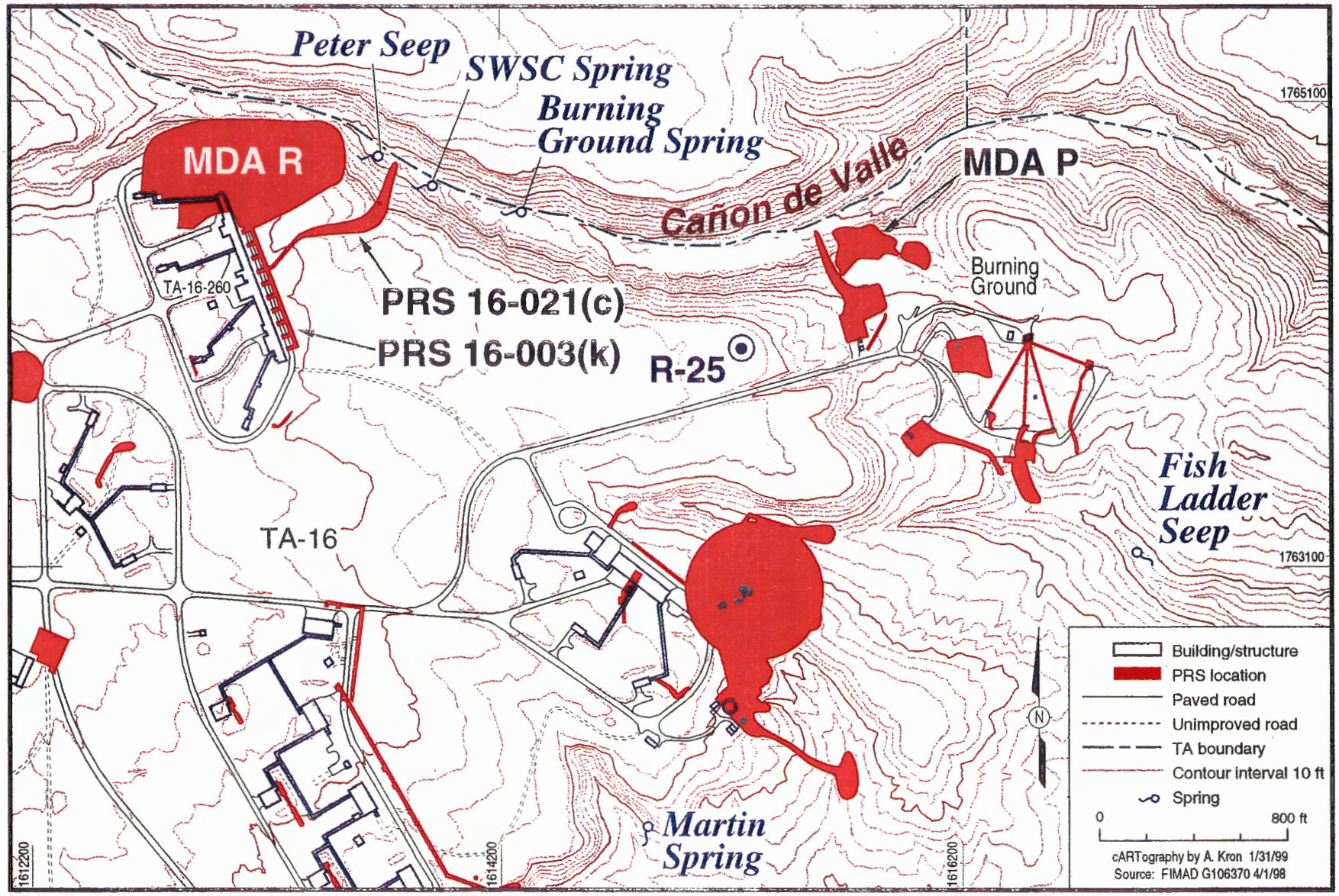
- Work with NMED to develop uniform cleanup standards (MDA-P takes the lead)

- Determine best planning and reporting strategy (VCA/VCM or IM, scope of 16-387 cleanup plan, combining plans and reports)

Objective and Scope

- Remediate PRSs on north side of TA-16 Burning Ground (Barium Nitrate Pile, MDA-P, and Burn Pad 387) at same time. Extent of residual contamination remaining in PRSs after cleanup will be defined and will not pose unacceptable human health or ecological risk.

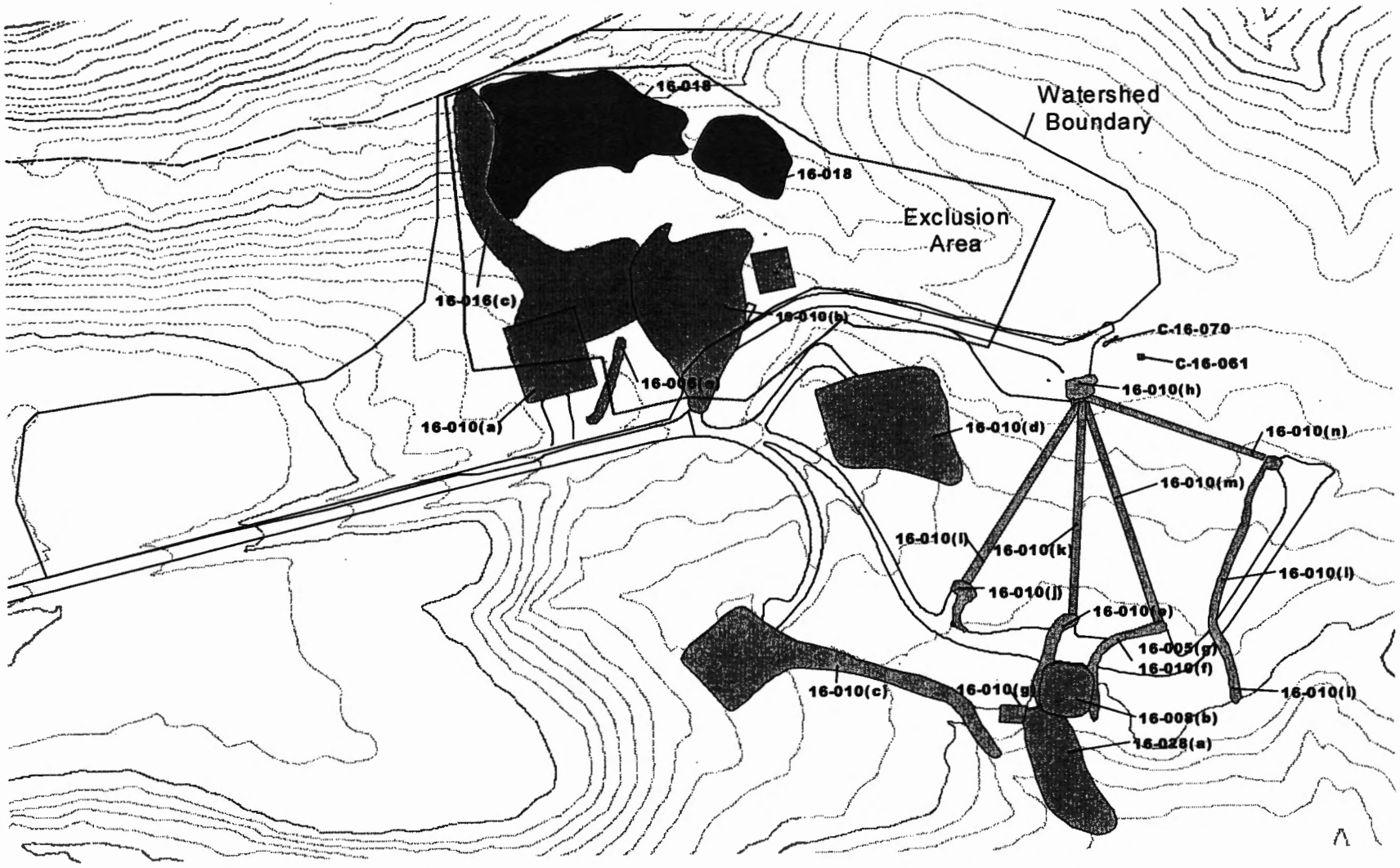

SANTA FE NATIONAL FOREST
SANTA FE
NATIONAL FOREST
Los Alamos
502
501
WEST JEMEZ ROAD
EAST JEMEZ RD.
BANDELIER
NATIONAL
MONUMENT
SAN ILDEFONSO PUEBLO
LANDS
TA-16
Cañon de Valle
Water Canyon
PAJARITO ROAD
4
BANDELIER
NATIONAL
MONUMENT
White
Rock
Rio Grande
SANTA FE
NATIONAL FOREST
Los Alamos National Laboratory
Technical Area boundary
TA-16 boundary
Major paved road
Secondary paved road
N
0 2500 5000 7500 10000
FEET
cARTography by A. Kron 2/1/99
(data from FIMAD, G104997 8/9/96)
Los Alamos
Taos
Santa Fe
Grants
Albuquerque
Socorro
NEW MEXICO
Las Cruces


Peter Seep
SWSC Spring
Burning Ground Spring
MDA R
MDA P
Cañon de Valle
Burning Ground
TA-16-260
PRS 16-021(c)
PRS 16-003(k)
R-25
TA-16
Fish Ladder Seep
Martin Spring
1765100
1763100
1612200
1614200
1616200
Building/structure
PRS location
Paved road
Unimproved road
TA boundary
Contour interval 10 ft
Spring
0
800 ft
cARTography by A. Kron 1/31/99
Source: FIMAD G106370 4/1/98

Geographic Boundaries

- North: Cañon de Valle
  - impacts within Cañon de Valle assessed with TA-16-260 CMS
- South: Watershed divide along access road above 16-387 Burn Pad
- East and West: Boundary defined by extent of significant contamination

TA-16
MDA P Closure



TA-16 Burn Area, MDA-P, and Proximal PRSs

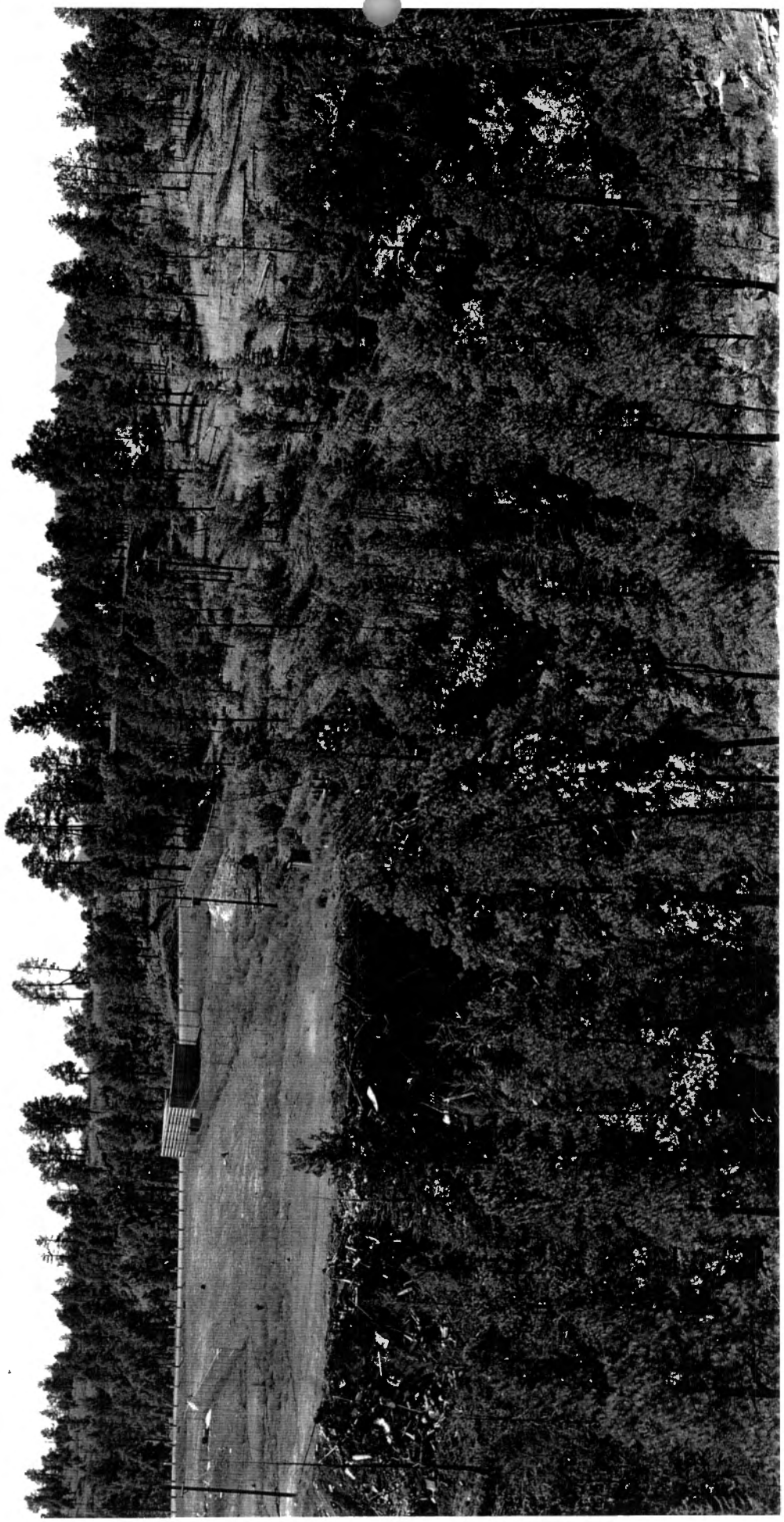
PRS Description 16-016(c)

- Barium Nitrate Storage Pile - Approx. two dump truck loads ~ 18 cu.yd.
- When mixed with TNT, yields HE Baratol
- Located on or near Burn Pad 386 and west of MDA-P
- Used from late 1940s to early 1970s
- Phase I sampling completed in 1995; extent of contamination not fully bounded
- Land use scenario - industrial
- Location - in a secured area

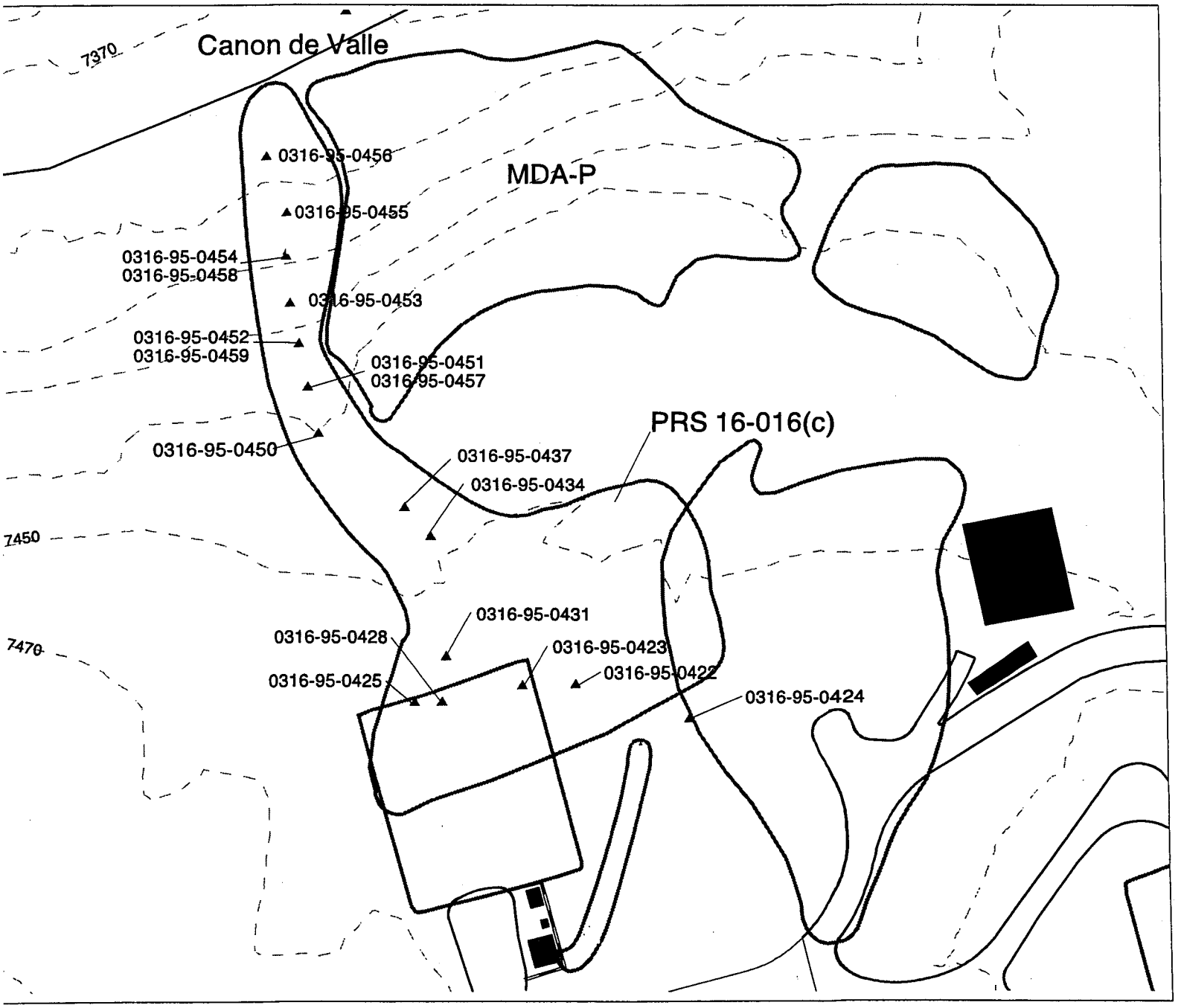
PRS Description 16-016(c) (concluded)

- Nearest water course approximately ten yards north of PRS boundary
- Land slope ~ 35%

16-000481



PRS 16-016(c) Sampling Locations for Laboratory Analyses



Sample ID
PRS Boundary

200 0 200 Feet

10 ft. contour interval

PRS 16-016(c) Analytical Data

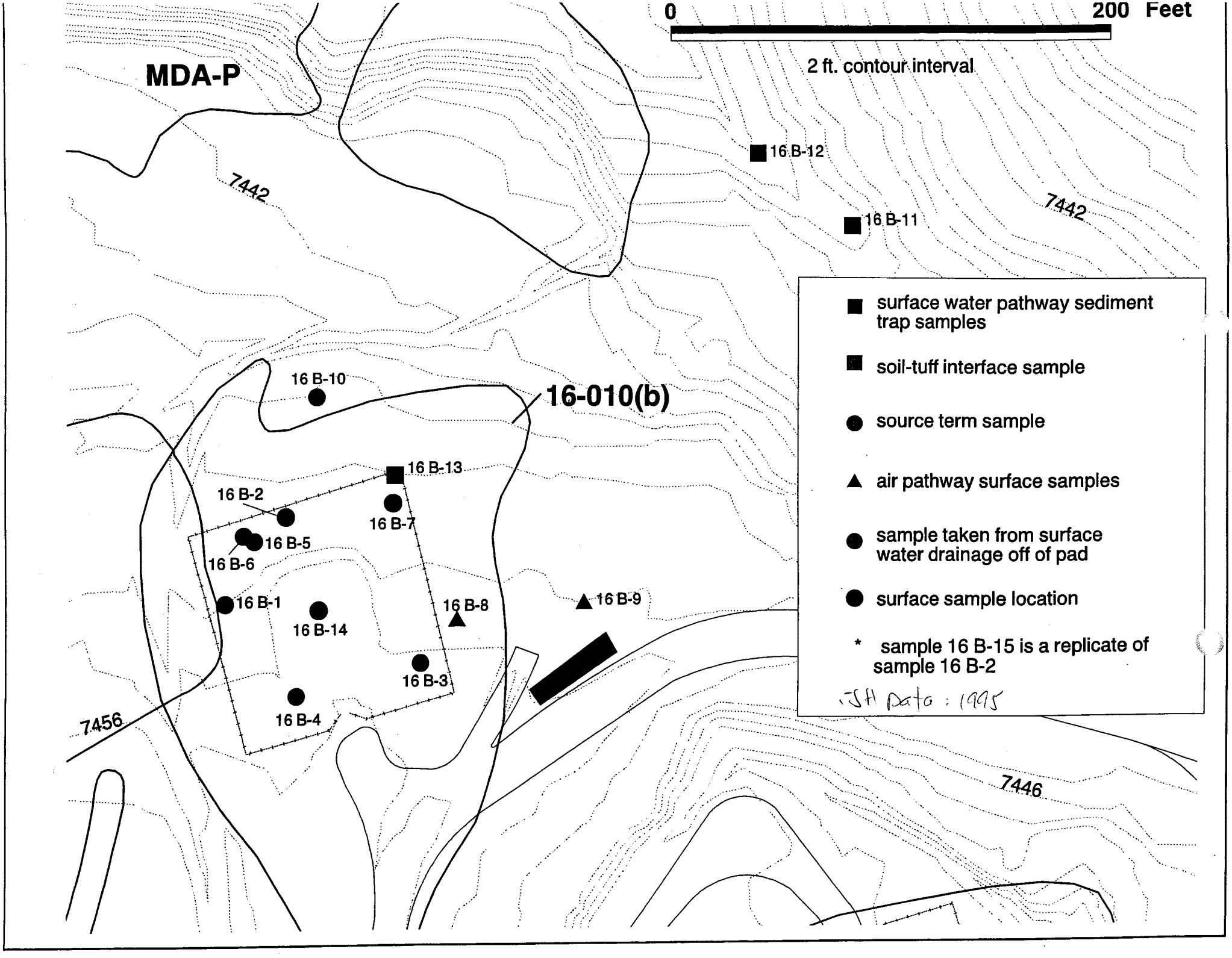
16-016(c)						
SAMPLE ID	DEPTH (ft)	LOCATION	Barium (mg/kg)	Lead (mg/kg)	HMX (mg/kg)	RDX (mg/kg)
Background Value	**NA**	**NA**	**295**	**22.3**		
0316-95-0450	0-0.5	240' dwn channel	827	36.1		
0316-95-0451	0-0.5	270' dwn channel	4210	64.6	0.458	0.341
0316-95-0452	0-0.5	300' dwn channel	3810	55.4		
0316-95-0453	0-0.5	330' dwn channel	1780	31.6		
0316-95-0454	0-0.5	360' dwn channel	3970			
0316-95-0455	0-0.5	390' dwn channel	986			
0316-95-0456	0-0.5	420' dwn channel	2420	40.8		
0316-95-0457	2	Subsurface	2160	39.4		
0316-95-0458	2	Subsurface	2170			
0316-95-0459	2	Subsurface	3370			
0316-95-0422	0-0.5	Surface				
0316-95-0423	0-0.5	Surface	895		0.667	
0316-95-0424	0-0.5	Surface				
0316-95-0425	0-0.5	Surface	10600	588		0.608
0316-95-0428	0-0.5	Surface	3440			
0316-95-0431	0-0.5	Surface	9020	1650		
0316-95-0434	0-0.5	Surface	28800	30.7	0.231	912
0316-95-0437	0-0.5	Surface	3190	51.9		

PRS Description 16-010(b)

- Burn Pad 387 - operating under RCRA Interim Status. Application submitted in 1995.
- Sampling to support Part B application in 1995
- Unit requires RCRA closure plan
  - Operating group will not okay cleanup until TA-16-388 burn pad is approved for use
- Use: Flashing HE contaminated wastes
- Located immediately north of MDA-P
- Used from 1951 to present

PRS Description 16-010(b) (concluded)

- Land use scenario - industrial
- Location - in a secured area
- Nearest water course - approx. 120 yds. North
- AP 4.5 Score = 56


0
200 Feet
2 ft. contour interval
MDA-P
7442
7442
7446
7456
16 B-12
16 B-11
16 B-10
16-010(b)
16 B-13
16 B-2
16 B-7
16 B-5
16 B-6
16 B-1
16 B-14
16 B-8
16 B-9
16 B-3
16 B-4
surface water pathway sediment trap samples
soil-tuff interface sample
source term sample
air pathway surface samples
sample taken from surface water drainage off of pad
surface sample location
* sample 16 B-15 is a replicate of sample 16 B-2
JSH Data : 1995

PRS 16-010(b) Analytical Data

Sample Location	Sample Date	Ba ug/g	Pb ug/g	HMX ug/g	HE RDX ug/g	TNT ug/g
PRS16-0108B1	7/31/95	330	9.92	NS	NS	NS
PRS16-0108B2	7/31/95	3400	20	NS	NS	NS
PRS16-0108B3	7/31/95	13000	59.6	4.4	1.45	0.479
PRS16-0108B4	7/31/95	9300	82.8	NS	NS	NS
PRS16-0108B5	7/31/95	11000	24.8	0.417	0.711	0.185
PRS16-0108B6	7/31/95	8900	622	13.7	11.8	0.709
PRS16-0108B7	8/24/95	6900	50.1	19.006	11.647	9.066
PRS16-0108B8	7/31/95	1300	20.5	1.42	0.775	<0.09
PRS16-0108B9	7/31/95	260	25.5	NS	NS	NS
PRS16-0108B10	7/31/95	2800	23.6	<0.167	<0.175	<0.09
PRS16-0108B13	7/31/95	1700	5.95	0.673	1.69	<0.089
PRS16-0108B15	7/31/95	3600	17.5	NS	NS	NS

Proposed Cleanup

- Excavate and remove using heavy equipment (use MDA-P infrastructure)
- Runoff to sites controlled under SWPPP for MDA-P
- Field screening for Metals and HE
  - continue process until XRF and Dtech indicate results < cleanup goals
- Confirm according to MDA-P Closure Phase II strategy
  - confirmation will include verification and bounding samples

Existing/Proposed Cleanup Schedule

Activity	MDA-P	16-387 Burn Pad	16-016(c) $BaNO_3$ Pile
Remediation Start Date	Underway Jan 99	Requires authorization to use 16-388	Summer '99
Duration of Cleanup	Estimated completion Summer '99	<1 month	<1 month
Confirmation/ Verification Sampling	Schedule being developed	Same as MDA-P	Same as MDA-P
Contour and Reseed	Schedule being developed	Same as MDA-P	Same as MDA-P

Waste Volume Estimate

Barium Nitrate Pile	16-387 Burn Pad
Worst Case Estimate = 1500yd3	Worst Case Estimate = 2500 yd3
Assumes one foot excavation over 0.85 acres	Assumes excavation: 120'x120'x3' deep

Summary

- LANL believes it will be cost effective and protective of the environment to cleanup the Barium Nitrate Pile, the Burn Pad and MDA-P at the same time to the same cleanup standards.

- LANL needs approval to use new burn pad (TA-16-388) prior to RCRA closure of TA-16-387.

- LANL needs determination of whether 16-016(b) cleanup is a VCA/VCM or IM.

Summary (concluded)

- LANL needs NMED determination of best planning and reporting framework. LANL would like to combine 16-016(c) VCA plan, 16-016(b) closure plan, and MDA-P Phase II into a single package, perhaps as appendices or attachments to MDA-P Phase II plan.