Decision Document

Solid Waste Management Unit B-19
Building 101-11 Catchment Pit
Hawthorne Army Depot
Hawthorne, Nevada

September 2000

Hawthorne Army Depot

Decision Document SWMU B-19

September 2000

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ENVIRONMENTAL PROTECTION

The selected remedy is protective of human health and the environment. It has been shown that a complete pathway to human health and the environment does not exist, and there is no potential for an exposure pathway to be completed in the future.

U. S. Army

18 OCT 2000

Anne L. Davis

Anne L. Davis
Lieutenant Colonel, U.S. Army
Commanding

State of Nevada

20 April 2001

Paul Liebendorfer

Paul Liebendorfer
Chief, Bureau of Federal Facilities

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SWMU B-19
Building 101-11 Catchment Pit
HAWTHORNE ARMY DEPOT
HAWTHORNE, NEVADA

1.0 Introduction:

This decision document describes the rationale for the proposed closure of SWMU B-19, building 101-11 Production Area, at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. This document was prepared by the U.S. Army Corps of Engineers, Sacramento District, with the help of HWAD for the Nevada Department of Environmental Protection (NDEP).

Ecology and Environmental, Inc. (E&E), was tasked by the US Army Corps of Engineers, Sacramento District (USACE), to perform remedial investigations and ground water monitoring at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. These tasks were conducted from 1993 through 1997, primarily at solid waste management units (SWMUs) designated by the Army and the Nevada Division of Environmental Protection (NDEP). The NDEP is the lead regulatory agency for environmental issues at HWAD. The purpose of the sampling was to determine the extent and degree of environmental impacts, if any, associated with activities performed at each SWMU. The primary goal of the investigation was to assess the environmental impacts and to report the findings, present conclusions, and recommend any remediation, if necessary.

With guidance from the NDEP, basewide proposed closure goals (PCGs) for soil were established as acceptable levels so that SWMU closure could be recommended and to assist in directing the investigative efforts toward those SWMUs where the target analytes were of greatest concern (Appendix A). These PCGs were used as action levels throughout this investigation and are used for comparison with the detected analytes in this report.

2.0 Site History

SWMU B19 is in the HWAD's central magazine area, on the northeast side of the 101 Production Area (Figure 1-1). SWMU B19 is an inactive unlined catchment pit located about 100 feet north of Building 101-11 (Figure 1-2). The catchment pit measures 60 by 100 feet and is up to six feet deep.

The USACE, HWAD, and the NDEP agreed to define the boundaries of each SWMU using annotated monuments and survey pins. As part of Tt's 1997 field investigations, a survey monument was constructed and surveyed at SWMU B19. A brass survey pin on the monument designates the monument number HWAAP-91-1996 and the SWMU

number B19. Three corner pins were set and surveyed to define a SWMU boundary, with the monument as the northwest corner. The location of these corner markers and the SWMU boundary are shown on Figure 1-2 and the survey data is presented in Appendix B.

The USAEHA estimated the depth to ground water in the vicinity of SWMU B19 at approximately 120 feet below ground surface (bgs).

3.0 Site Conditions

The catchment pit at SWMU B19 reportedly was in operation from 1940 to the early 1970s and received wastewater containing TNT and cyclotrimethylenetrinitramine (RDX). The wastes discharged into the catchment pit also thought to have included picric acid, Composition A, Composition B, various propellant and pyrotechnic compositions, pentaerythrite tetranitrate (PETN), and Amitol (USATHAMA 1977).

Soils encountered during E&E's remedial investigation of SWMU B19 primarily included silty sands, which graded to fine sands at five feet bgs.

Based on the past uses of the pit and on observations made during the previous site inspections, the target analytes were to be explosives and metals.

4.0 Investigations

Site inspections of SWMU B19 were conducted by the USAEHA (1988), Jacobs Engineering (1988), and RAI (RAI 1992). During these inspections, TNT-stained soil was noted in the catchment pit. No investigation activities were conducted during these inspections, and no samples were collected from the SWMU. No other soils investigations have been performed at this SWMU.

In 1994, sampling activities proposed by E&E for the remedial investigation at SWMU B19 included collecting and analyzing surface and subsurface soil samples. Both surface soil sample and a near-surface sample were collected from three locations (HA01 through HA03) inside the catchment pit, and two surface soil samples were collected from the surface of the bermed dredge piles on the south and east sides of the pit (SS01 and SS02) at SWMU B19 (Figure 3-1). The surface samples in the pit were collected at a depth of approximately six to twelve inches, and the near-surface samples was collected, using a hand auger, at a depth of five feet below the bottom of the catchment pit (E&E 1995). The subsurface investigation of SWMU B19 consisted of two CPT soundings with adjacent sample boring (CPS01 and CPS02) on the downgradient and crossgradient sides of the catchment pit, shown on Figure 3-1. The soundings at CPS01 and CPS02 were advanced to depths of 39 and 30 feet, respectively. Seven CPT subsurface soil samples, including one duplicate sample, were collected from the CPT sample borings.

In 1998 the B –19 surface soils were resampled for explosives by DZHC, when it became apparent that the field screening tests of 1994 indicating very high levels of explosives that were not being collaborated by laboratory analysis. DZHC collected ten (10) surface soil samples for laboratory analysis (Fig 4).

5.0 Investigation Results

The four surface and near-surface soil samples analyzed by the laboratory, detected arsenic (2.5 mg/kg to 8.1 mg/kg), barium (42 mg/kg to 220 mg/kg), total chromium (2.7 mg/kg to 9.6 mg/kg), and lead (1.7 mg/kg to 6.9 mg/kg) in all samples. Mercury was detected only at HA01 at a depth of five feet and at a concentration of 0.12 mg/kg. No other metals were detected in these samples. Arsenic (1.3 mg/kg to 16 mg/kg), barium (53 mg/kg to 220 mg/kg), cadmium (1.4 mg/kg to 5.9 mg/kg), total chromium (2.2 mg/kg to 97 mg/kg), and lead (1.2 mg/kg to 6.5 mg/kg) were detected in all seven subsurface soil samples.

During E&E's 1994 remedial investigation, arsenic, barium, total chromium, lead, and mercury were detected at low concentrations in surface and near-surface samples collected at SWMU B19. All of these detected metals concentrations are below the PCGs for soil and are within the range of background levels observed in the Walker Valley soils except for mercury. One detection of mercury at 0.12 mg/kg is well below its PCG of 24 mg/kg but slightly exceeds the maximum expected background level for mercury of 0.108 mg/kg (appendix C).

With the exception of total chromium, metals concentrations detected in the subsurface soil samples were below their respective PCGs. Total chromium was detected in three subsurface samples, from 20mg/kg to 97 mg/kg, exceeding the PCG for chromium of 25 mg/kg. These detections were in the sample at 17 feet bgs and duplicate sample at this depth from CPS01, and in the sample at 12.5 feet bgs in CPS02.

Based on the analytical results of these remedial investigations at SWMU B19, the surface, near-surface, and subsurface soils at this catchment pit contain detectable concentrations of arsenic, barium, cadmium, lead, and mercury that do not exceed their respective PCGs and are below their respective maximum background concentrations established during these remedial investigations (Tt 1997d). The detected high concentration of total chromium is a low-level naturally occurring anomaly and is not from a release of the metal at this SWMU. Therefore, at SWMU B19, the detected metals arsenic, barium, cadmium, chromium, lead, and mercury, which are common in the Walker Valley soils, are evaluated to be at naturally occurring concentrations near their background levels.

The surface soil samples field screening test for explosives indicated levels in excess of safe shipping concentrations. In the subsurface samples TNT and HMX were detected at concentrations of 0.23 mg/kg and 0.85 mg/kg, respectively, from location CPS02 at a depth of five feet bgs. The explosives detected in the subsurface soil samples were at concentrations that did not exceed their respective PCGs.

The results of the DZHC sampling for surface soil explosives contamination resulted in no detections of explosives above their PCG's. RDX was detected at a maximum concentration of 1.2 mg/kg . The results of the investigation analysis is presented in appendix D. Laboratory analysis indicates that SWMU B-19 does not have any explosives contamination above PCG's.

6.0 Remediation

No remediation required

7.0 Remediation Results

N/A

8.0 Public Involvement:

It is the U.S. Department of Defense and Army policy to involve the local community throughout the investigation process at an installation. To initiate this involvement, HWAD has established and maintains a repository library at the local public library. This repository includes final copies of all past studies and other documents regarding environmental issues at HWAD. As future environmental documents are made available to HWAD the repository shall be updated.

HWAD has solicited community participation in establishment of a restoration and advisory board (RAB). To date there has been insufficient response and HWAD has not formed a RAB. HWAD has held open houses to inform the public of on going environmental issues. HWAD shall continue to solicit community involvement, and will establish a RAB should sufficient community interest be obtained.

9.0 Conclusions

SWMU B-19 was backfilled with clean soil and should be closed with no restrictions and documented on the depot site master plan.

10.0 REFERENCES

Ecology and Environment. 1995. RCRA Facility Assessment Report for 24 Solid Waste Management Units, Hawthorne Army Depot, Hawthorne, Nevada. April 1995.

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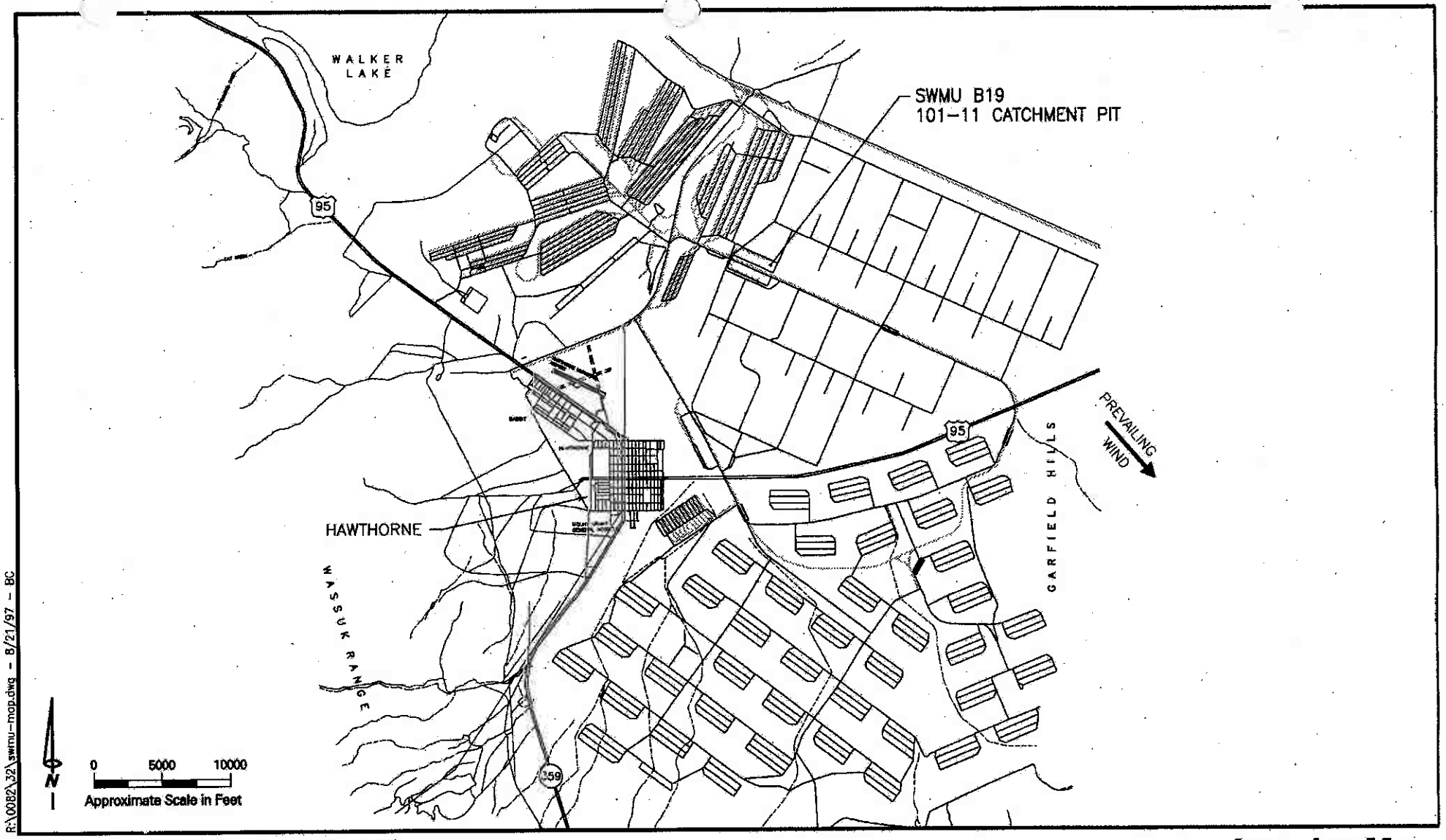
_____. 1996. Region IX Preliminary Remediation Goals. USEPA Region IX. August 1996.

WaterWork. 1990. Hawthorne Army Ammunition Plant, Area 101 Surface Impoundments, Field and Lab Data and Analysis, Attachment 1-8.



R:\0082\32\swmu-map.dwg - 8/21/97 - BC

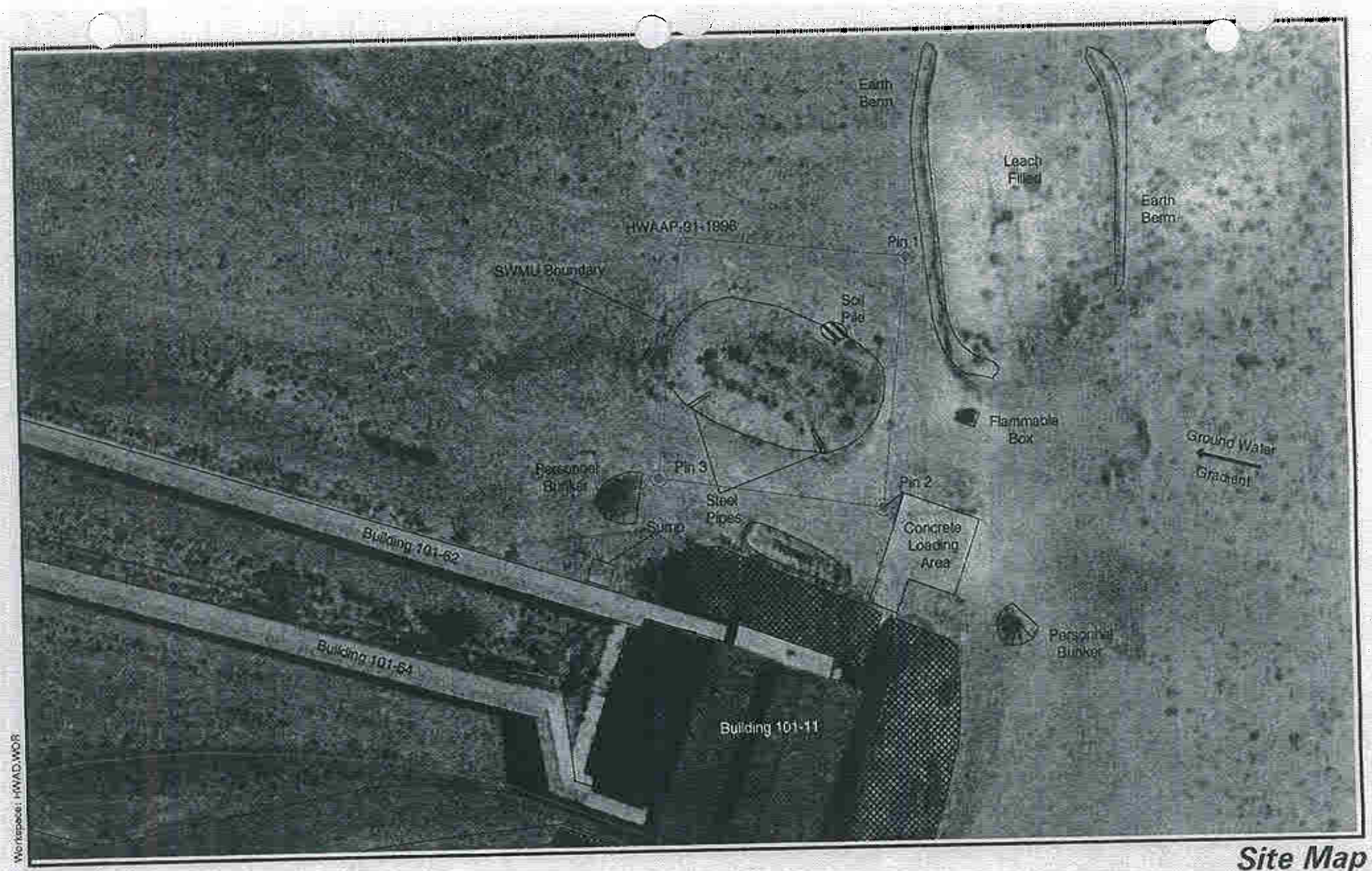
SOURCE: TETRA TECH FINAL DATA PACKAGE, 1996 (REV. 1997)

Location Map
SWMU B19
101-11 Catchment Pit

Hawthorne Army Depot
Hawthorne, Nevada

Tetra Tech, Inc.

Figure 1-1



Workspace: HWAD.WOR

Legend:

- Boundary Corner Pin
- Explosion Barrier
- Railroad
- SWMU Monument

N

0 35 70

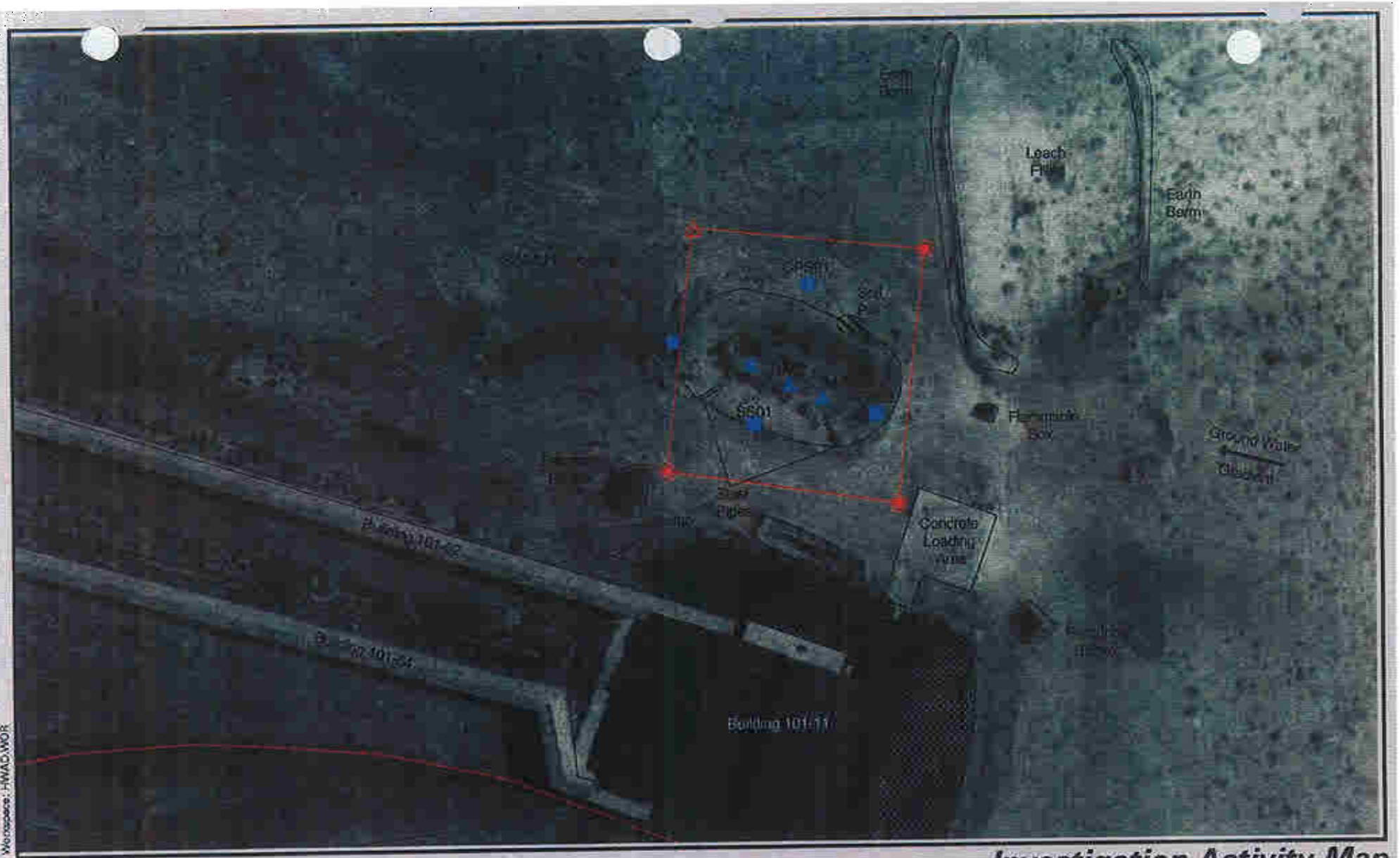
Approximate Scale in Feet

Tetra Tech, Inc.

Site Map
SWMU B19
101-11 Catchment Pit

Hawthorne Army Depot
Hawthorne, Nevada

Figure 1-2



Legend:

- Boundary Corner Pin
- Hand Auger Location
- Soil Boring Location
- Explosion Barrier
- Railroad
- Surface Soil/Sludge Sample
- SWMU Monument

N

0 35 70
Approximate Scale in Feet

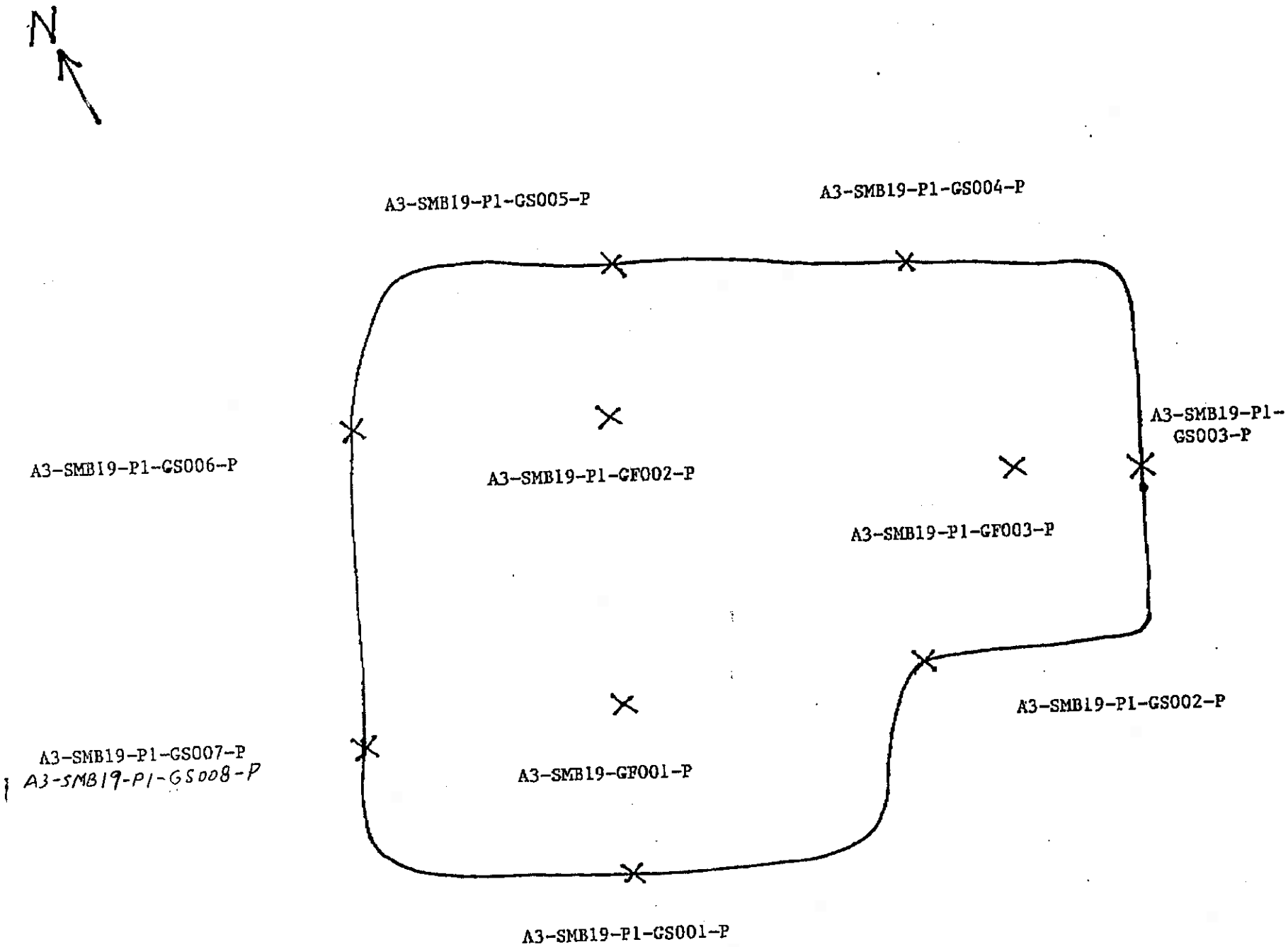
Tetra Tech, Inc.

Investigation Activity Map
SWMU B19
101-11 Catchment Pit

Hawthorne Army Depot
Hawthorne, Nevada

Figure 3-1

Workspace: HWAD.WOR


N
A3-SMB19-P1-GS005-P
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A3-SMB19-P1-GS003-P
A3-SMB19-P1-GS006-P
A3-SMB19-P1-GF002-P
A3-SMB19-P1-GF003-P
A3-SMB19-P1-GS002-P
A3-SMB19-P1-GS007-P
A3-SMB19-P1-GS008-P
A3-SMB19-GF001-P
A3-SMB19-P1-GS001-P

Fig 4

Appendix A

Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada

Constituent of Concern	Chemical Classification	Carcinogenic (C) or Non-carcinogenic (NC)	HWAD Proposed Closure Goals for Soil (mg/kg)	HWAD Proposed Closure Goal Source
Nitrate	Anion	NC	128,000	Calculated Subpart S[a]
2-Amino-dinitrotoluene	Explosive	NC	-	NA[b]
4-Amino-dinitrotoluene	Explosive	NC	-	NA
1,3-Dinitrobenzene	Explosive	NC	8	Calculated Subpart S
2,4-Dinitrotoluene	Explosive	NC	160	Calculated Subpart S
2,6-Dinitrotoluene	Explosive	NC	80	Calculated Subpart S
HMX	Explosive	NC	4,000	Calculated Subpart S
Nitrobenzene	Explosive	NC	40	Calculated Subpart S
Nitrotoluene (2-, 3-, 4-)	Explosive	NC	800	Calculated Subpart S
RDX	Explosive	NC	64	Calculated Subpart S
Tetryl	Explosive	NC	800	Calculated Subpart S
1,3,5-Trinitrobenzene	Explosive	NC	4	Calculated Subpart S
2,4,6-Trinitrotoluene	Explosive	C	233	Calculated Subpart S
Aluminum	Metal	NC	80,000	Calculated Subpart S
Arsenic (cancer endpoint)	Metal	C & NC	30	Background[c]
Barium and compounds	Metal	NC	5,600	Calculated Subpart S
Beryllium and compounds	Metal	C	1	Background
Cadmium and compounds	Metal	NC	40	Calculated Subpart S
Chromium III and compounds	Metal	NC	80,000	Calculated Subpart S
Lead	Metal	NC	1000	PRG[d]
Mercury and compounds (inorganic)	Metal	NC	24	Calculated Subpart S
Selenium	Metal	NC	400	Calculated Subpart S
Silver and compounds	Metal	NC	400	Calculated Subpart S
Acenaphthene	PAH	NC	4,800	Calculated Subpart S
Benzo[a]anthracene	PAH	C	0.96	Calculated Subpart S
Benzo[a]pyrene	PAH	C	0.10	Detection Limit[e]
Benzo[b]fluoranthene	PAH	C	0.96	Calculated Subpart S
Benzo[k]fluoranthene	PAH	C	10	Calculated Subpart S
Chrysene	PAH	C	96	Calculated Subpart S
Dibenz[ah]anthracene	PAH	C	0.96	Calculated Subpart S
Fluoranthene	PAH	NC	3,200	Calculated Subpart S
Fluorene	PAH	NC	3,200	Calculated Subpart S
Indeno[1,2,3-cd]pyrene	PAH	C	-	NA
Naphthalene	PAH	NC	3,200	Calculated Subpart S
Pyrene	PAH	NC	2,400	Calculated Subpart S
Total Petroleum Hydrocarbons as Diesel (TPH-d)	PAH	C	100	NDEP Level Clean-up[f]
Polychlorinated biphenyls (PCBs)	PCBs	C	25	TSCA[g]
Bis(2-ethylhexyl)phthalate (DEHP)	SVOC	C	1,600	Calculated Subpart S
Bromoform (tribromomethane)	SVOC	C	89	Calculated Subpart S

Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada

Constituent of Concern	Chemical Classification	Carcinogenic (C) or Non-carcinogenic (NC)	HWAD Proposed Closure Goals for Soil (mg/kg)	HWAD Proposed Closure Goal Source
Butyl benzyl phthalate	SVOC	NC	16,000	Calculated Subpart S
Dibromochloromethane	SVOC	C	83	Calculated Subpart S
Dibutyl-phthalate	SVOC	NC	8,000	Calculated Subpart S
Diethyl phthalate	SVOC	NC	64,000	Calculated Subpart S
Phenanthrene	SVOC		-	NA
Phenol	SVOC	NC	48,000	Calculated Subpart S
Acetone	VOC	NC	800	Calculated Subpart S
Anthracene	VOC	NC	24,000	Calculated Subpart S
Benzene	VOC	C	24	Calculated Subpart S
Bis(2-chloroisopropyl)ether	VOC	C	3,200	Calculated Subpart S
Bromomethane	VOC	NC	112	Calculated Subpart S
Carbon tetrachloride	VOC	C	5	Calculated Subpart S
Chlorobenzene	VOC	NC	1,600	Calculated Subpart S
Chloroform	VOC	C	115	Calculated Subpart S
Chloromethane	VOC	C	538	Calculated Subpart S
Dibromomethane	VOC	C	0.008	Calculated Subpart S
1,2-Dichlorobenzene	VOC	NC	7,200	Calculated Subpart S
1,4-Dichlorobenzene	VOC	C	18,300	Calculated Subpart S
Dichlorodifluoromethane	VOC	C	15,000	Calculated Subpart S
Ethylbenzene	VOC	NC	8,000	Calculated Subpart S
Methylene bromide	VOC	NC	800	Calculated Subpart S
Methylene chloride	VOC	C	4,800	Calculated Subpart S
2-Methylnaphthalene	VOC		-	NA
1,1,2,2-Tetrachloroethane	VOC	C	35	Calculated Subpart S
Tetrachloroethylene (PCE)	VOC	C & NC	800	Calculated Subpart S
Toluene	VOC	NC	16,000	Calculated Subpart S
1,1,1-Trichloroethane	VOC	NC	7,200	Calculated Subpart S
Trichloroethylene (TCE)	VOC	C & NC	480	Calculated Subpart S
Trichlorofluoromethane	VOC	NC	24,000	Calculated Subpart S
1,2,3-Trichloropropane	VOC	C	480	Calculated Subpart S
Vinyl chloride	VOC	C	0.37	Calculated Subpart S
Xylene Total (m-, o-, p-)	VOC	NC	160,000	Calculated Subpart S
2,3,7,8-TCDD	Dioxin	C	0.000005	Calculated Subpart S

[a] RCRA 55 FR 30870

[b] Not available

[c] Highest background concentration detected in 50 background soil samples

[d] Smucker, Stanford J. USEPA Rgion IX, Preliminary Remedial Goals, Second Half, Sep. 1995

[e] Method detection limit for Volatile Organic Compounds by EPA Method 8260 or

. Semi-Volatile Organic Compounds analyzed by EPA Method 8270

[f] Nevada Division of Environmental Protection

[g] Cleanup level for PCB spills in accordance with Toxic Substance and Control Act Spill Policy Guidelines 40 CFR 761

Appendix B

NOTES

1. FOR THE LOCATION OF THE FOLLOWING SWMU'S, REFER TO FIGURE 3-6 OF THE "FINAL R.C.R.A. FACILITY INVESTIGATION REPORT OF GROUP "A" SOLID WASTE MANAGEMENT UNITS A-04, B-16, B-21, B-24, B-26, AND H-01".

2. THE "HWAD" MONUMENTS AS SHOWN HEREIN AS "M", ARE A 1' X 1' X 2'+ CONCRETE MONUMENT WITH A BRASS CAP STAMPED AS PER SPECIFICATIONS. ALL OF THE OTHER CORNERS ARE MARKED BY A 5/8" RE-BAR WITH A PLASTIC CAP STAMPED "STINCHFIELD PLS 3631" UNLESS NOTED OTHERWISE ON THE MAPS.

3. HORIZONTAL DATUM IS BASED ON NAD 83(1994) AND MORE SPECIFICALLY, NGS STATION "W 2". "W 2" IS A FEDERAL BASE NETWORK CONTROL STATION AND IS LOCATED IN THE APPROXIMATE CENTER OF THIS PROJECT.

4. VERTICAL DATUM IS BASED ON NAVD 29. NAVD 88 ELEVATIONS HAVE BEEN SCALED AND THEREFORE ARE NOT ACCURATE. VERTICAL CONTROL USING GPS WAS USED TO ESTABLISH THE ELEVATIONS OF THE EXISTING CONTROL POINTS AND THE "HWAD" MONUMENTS. THE VALUE OF NGS STATION "W 2" WAS USED AS A BASIS FOR THE VERTICAL CONTROL.

5. COORDINATE VALUES OF EXISTING NGS CONTROL, TRAVERSE POINTS, AND HWAD MONUMENTS ARE STATE PLANE COORDINATES, WEST ZONE.

6. THE COMBINED FACTOR WAS CALCULATED USING THE FOLLOWING FIGURES. THE "MAP SCALE" AT POINT "W 2" IS 0.99990022, THE MEAN ELEVATION OF THE TOTAL PROJECT WAS TAKEN AS 4150.00 FEET ABOVE SEA LEVEL AND THE MEAN RADIUS OF THE EARTH WAS TAKEN AS 20,906,000 FEET. THE SEA LEVEL FACTOR WAS CALCULATED AS FOLLOWS: 20,906000/20,906,000 + 4150.00 = 0.999801532. THE COMBINED FACTOR (CF) WAS CALCULATED AS FOLLOWS: 0.99990022 X 0.999801532 = 0.999701772.

7. GROUND DISTANCE X CF (0.999801532) = GRID DISTANCE.

8. GRID DISTANCE X INVERSE CF (1.00298317) = GROUND DISTANCE.

9. COORDINATE VALUES OF ALL OTHER POINTS INCLUDING SWMU CORNERS OTHER THAN "HWAD" MONUMENTS, REFERENCE POINTS, TEST PIT OR HOLE LOCATIONS ETC., WERE CALCULATED USING GROUND DISTANCES AND ARE THEREFORE NOT TRUE STATE PLANE COORDINATES.

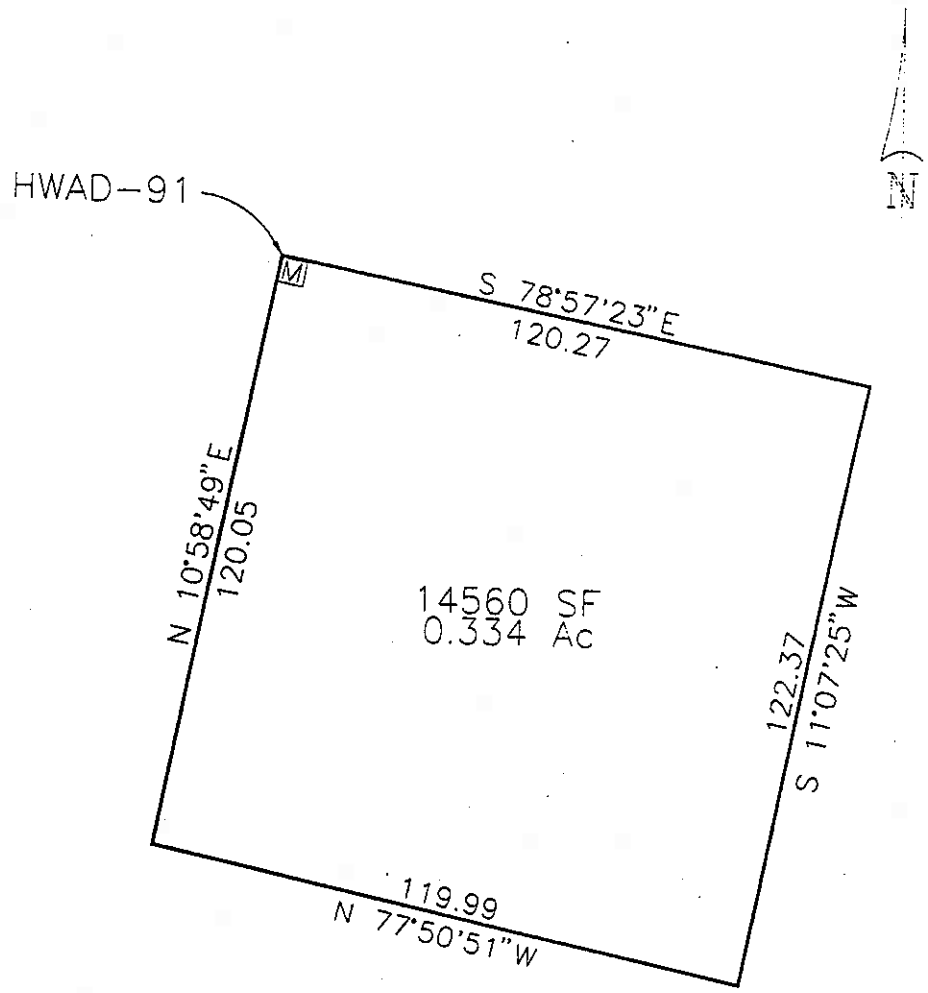
10. DISTANCES AS SHOWN ON THESE SWMU'S ARE HORIZONTAL GROUND DISTANCES.

PROFESSIONAL LAND SURVEYOR
STATE OF NEVADA
RICHARD A. STINCHFIELD
7/28/97
No. 3631

ecology and environment, inc.
International Specialists in the Environment

GENERAL NOTES
HAWTHORNE ARMY DEPOT

COMSTOCK LAND SURVEYING
777 LA RUE AVENUE, SUITE A
RENO, NEVADA 89509



NW COR	N	14513038.189	E	2623824.566	ELEV	4200.360
NE COR	N	14513015.151	E	2623942.607	ELEV	4196.952
SE COR	N	14512895.077	E	2623918.998	ELEV	4198.513
SW COR	N	14512920.336	E	2623801.700	ELEV	4200.028

PROFESSIONAL LAND SURVEYOR
RICHARD A. STINCHFIELD
7/21/97
No. 3631
STATE OF NEVADA

30 15 0 30 60 90
SCALE IN FEET

ecology and environment, inc.
International Specialists in the Environment

SWMU B-19

COMSTOCK LAND SURVEYING
777 LA RUE AVENUE, SUITE A
RENO, NEVADA 89509

SWMU B19 Survey Data
Hawthorne Army Depot
Hawthorne, Nevada

SWMU	Point ID	Northing (feet)	Easting (feet)	Elevation
B19	CPS01	1389662.03	499498.284	NE
B19	CPS02	1389641.03	499426.784	NE
B19	HA01	1389606.03	499501.184	NE
B19	HA02	1389614.03	499484.784	NE
B19	HA03	1389626.03	499466.084	NE
B19	HWAAP-91-1996	1389695.76	499441.541	4200.360
B19	Pin 1	1389672.72	499559.581	4196.952
B19	Pin 2	1389549.83	499536.00	4198.513
B19	Pin 3	1389577.91	499418.675	4200.028
B19	SS01	1389597.03	499465.084	NE
B19	SS02	1389595.03	499528.484	NE

Notes:
NE = Not established
Coordinate data based on electronic map file using the NAD 1927 datum.
Elevation data based on surveyors map using NGVD 1929 datum.

Appendix C

Nitrogen
Method 353.2 (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Nitrogen Nitrate	Ammonia as Nitroge
					mg/kg	mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	<1.1	NA
B19-HA1-1-005	HA01	5/12/94	5	ASC	1.8	NA
B19-HA1-3-005	HA03	5/12/94	5	ASC	1.7	NA
B19-SS1-2-000	SS02	5/12/94	0	ASC	1.5	NA
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	<1	NA
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	<1.1	NA
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	1.6	NA
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	2	NA
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	14	NA
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	3.1	NA
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	<1	NA

Analyses	11	0
Detections	7	0
Minimum Concentration	1.5	0
Maximum Concentration	14	0
HWAD - PCG	128000	NE
HWAD - PCG Hits	0	NE

Notes:
NA = Not analyzed
NE = Not established
Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Metals
Method 6010A (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Barium	Beryllium	Cadmium	Chromium Total	Silver	Arsenic	Lead	Selenium
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	220	<0.55	<0.55	9.6	<1.1	NA	NA	NA
B19-HA1-1-005	HA01	5/12/94	5	ASC	42	<0.55	<0.55	2.7	<1.1	7.1	1.7	<0.55
B19-HA1-3-005	HA03	5/12/94	5	ASC	170	<0.6	<0.6	6.2	<1.2	3.4	6.9	<1.2
B19-SS1-2-000	SS02	5/12/94	0	ASC	42	<0.52	<0.52	3	<1	8.1	2.1	<0.52
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	76	<0.53	3.6	6.1	<1	16	5.2	<0.53
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	140	<0.55	4.2	68	<1.1	4	3.4	<0.55
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	120	<0.52	2.7	97	<1	15	3.8	<1
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	120	<0.56	4	7.4	<1.1	8.1	6.5	<0.56
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	220	<0.54	5.9	10	<1.1	5.7	3.8	<0.54
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	170	<0.54	4.8	20	<1.1	8.3	3.2	<0.54
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	53	<0.51	1.4	2.2	<1	1.3	1.2	<0.51
Analyses					11	11	11	11	11	10	10	10
Detections					11	0	7	11	0	10	10	0
Minimum Concentration					42	0	1.4	2.2	0	1.3	1.2	0
Maximum Concentration					220	0	5.9	97	0	16	6.9	0
HWAD - PCG					2000	1	20	20	100	100	100	20
HWAD - PCG Hits					0	0	0	3	0	0	0	0

Notes:
NA = Not analyzed
Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Arsenic
Method 7060 (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Arsenic
					mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	2.5
B19-HA1-1-005	HA01	5/12/94	5	ASC	7.1
B19-HA1-3-005	HA03	5/12/94	5	ASC	3.4
B19-SS1-2-000	SS02	5/12/94	0	ASC	8.1
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	16
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	4
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	15
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	8.1
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	5.7
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	8.3
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	1.3

Analyses	11
Detections	11
Minimum Concentration	1.3
Maximum Concentration	16
HWAD - PCG	100
HWAD - PCG Hits	0

Lead
Method 7421 (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Lead
					mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	5
B19-HA1-1-005	HA01	5/12/94	5	ASC	1.7
B19-HA1-3-005	HA03	5/12/94	5	ASC	6.9
B19-SS1-2-000	SS02	5/12/94	0	ASC	2.1
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	5.2
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	3.4
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	3.8
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	6.5
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	3.8
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	3.2
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	1.2

Analyses	11
Detections	11
Minimum Concentration	1.2
Maximum Concentration	6.9
HWAD - PCG	100
HWAD - PCG Hits	0

Mercury
Method 7471 (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Mercury
					mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	<0.099
B19-HA1-1-005	HA01	5/12/94	5	ASC	0.12
B19-HA1-3-005	HA03	5/12/94	5	ASC	<0.12
B19-SS1-2-000	SS02	5/12/94	0	ASC	<0.1
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	<0.1
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	<0.11
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	<0.1
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	<0.11
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	<0.11
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	<0.11
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	<0.1

Analyses	11
Detections	1
Minimum Concentration	0.12
Maximum Concentration	0.12
HWAD - PCG	24
HWAD - PCG Hits	0

Selenium
Method 7740 (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Selenium
					mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	<1.1
B19-HA1-1-005	HA01	5/12/94	5	ASC	<0.55
B19-HA1-3-005	HA03	5/12/94	5	ASC	<1.2
B19-SS1-2-000	SS02	5/12/94	0	ASC	<0.52
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	<0.53
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	<0.55
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	<1
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	<0.56
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	<0.54
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	<0.54
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	<0.51

Analyses	11
Detections	0
Minimum Concentration	0
Maximum Concentration	0
HWAD - PCG	20
HWAD - PCG Hits	0

Note:
Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Explosives
Method 8330 (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	2,4,6-TNT	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Amino-4,6-DNT	2-Nitrotoluene	3-Nitrotoluene	4-Amino-2,6-DNT	4-Nitrotoluene	HMX	m-Dinitrobenzene	Nitrobenzene	RDX	sym-Trinitrobenzene	Tetryl
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-HA1-1-005	HA01	5/12/94	5	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-HA1-3-005	HA03	5/12/94	5	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-SS1-2-000	SS02	5/12/94	0	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	0.23 J	<1	<1	<1	<1	<1	<1	<1	0.85 J	<1	<1	<1	<1	<1
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Analyses					11	11	11	11	11	11	11	11	11	11	11	11	11	11
Detections					1	0	0	0	0	0	0	0	1	0	0	0	0	0
Minimum Concentration					0.23	0	0	0	0	0	0	0	0.85	0	0	0	0	0
Maximum Concentration					0.23	0	0	0	0	0	0	0	0.85	0	0	0	0	0
HWAD - PCG					233	2.6	80	NE	800	800	NE	800	4000	8	40	64	4	800
HWAD - PCG Hits					0	0	0	NE	0	0	NE	0	0	0	0	0	0	0

Notes:
NE = Not established
Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Picric Acid
Method 8330M (ASC)

Sample ID	Location ID	Sample Date	Depth (feet)	Lab	Picric Acid
					mg/kg
B19-HA1-1-000	HA01	5/12/94	0.5	ASC	<0.25
B19-HA1-1-005	HA01	5/12/94	5	ASC	<0.25
B19-HA1-3-005	HA03	5/12/94	5	ASC	<0.25
B19-SS1-2-000	SS02	5/12/94	0	ASC	<0.25
B19-CPS1-1-007	CPS01	5/31/94	7	ASC	<0.25
B19-CPS1-1-017	CPS01	5/31/94	17	ASC	<0.25
B19-CPS2-1-017	CPS01	5/31/94	17	ASC	<0.25
B19-CPS1-2-005	CPS02	5/31/94	5	ASC	<0.25
B19-CPS1-2-009	CPS02	5/31/94	9	ASC	<0.25
B19-CPS1-2-012.5	CPS02	5/31/94	12.5	ASC	<0.25
B19-CPS1-2-015.5	CPS02	5/31/94	15.5	ASC	<0.25

Analyses	11
Detections	0
Minimum Concentration	0
Maximum Concentration	0
HWAD - PCG	NE
HWAD - PCG Hits	NE

Notes:
NE = Not established
Zero values listed for maximum and minimum concentrations indicate a nondetect value for that analyte.

Appendix D

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APCL Analytical Report

Submitted to:
U S. Army Corps of Engineers
Attention: Tom Waldrup
1325 J Street
Sacramento CA 95814-2922
Tel. (916)557-7646 Fax: (916)557-5307

Service ID #: 801-986821
Collected by:
Collected on: 12/01-08/98

Received: 12/11/98
Extracted: 12/14/98
Tested: 12/14-16/98
Reported: 12/21/98

Sample Description: Soil
Project Description: W.101 Bioremediation

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GF001-P 98-06821-1	Analysis Result A3-SMB19-P1-GF002-P 98-06821-2
MOISTURE	ASTM-D2216	%Moisture	0.5	3.8	3.9
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
1-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.18	<0.18
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	<0.25	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.094	<0.094
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.052	<0.052
HMX	SW8330	mg/kg	0.25	0.2J	<0.26
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
RDX	SW8330	mg/kg	0.25	0.72	<0.26
TETRYL	SW8330	mg/kg	0.19	<0.20	<0.20
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	0.51	<0.25
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	0.38	<0.26
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GF003-P 98-06821-3	Analysis Result A3-SMB19-P1-GS001-P 98-06821-4
MOISTURE	ASTM D2216	%Moisture	0.5	5.6	2.9
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.18	<0.18
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	0.29	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.093	<0.093
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.053	<0.051
HMX	SW8330	mg/kg	0.25	1.0	0.38
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
RDX	SW8330	mg/kg	0.25	1.2	0.1J
TETRYL	SW8330	mg/kg	0.19	<0.20	<0.20
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	0.1J	<0.25
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	1.5	<0.26
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26

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Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS002-P 98-06821-5	Analysis Result A3-SMB19-P1-GS003-P 98-06821-6
MOISTURE	ASTM-D2216	%Moisture	0.5	2.3	1.1
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.17	<0.17
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	0.21	<0.24
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.25
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.092	<0.091
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.051	<0.051
HMX	SW8330	mg/kg	0.25	<0.26	<0.25
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.24
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.25
RDX	SW8330	mg/kg	0.25	<0.26	<0.25
TETRYL	SW8330	mg/kg	0.19	<0.19	<0.19
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	1.5	<0.24
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.25
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.25

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS004-P 98-06821-7	Analysis Result A3-SMB19-P1-GS005-P 98-06821-8
MOISTURE	ASTM-D2216	%Moisture	0.5	3.3	3.8
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.18	<0.18
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	0.25	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.093	<0.094
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.052	<0.052
HMX	SW8330	mg/kg	0.25	<0.26	<0.26
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
RDX	SW8330	mg/kg	0.25	<0.26	<0.26
TETRYL	SW8330	mg/kg	0.19	<0.20	<0.20
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	0.55	<0.25
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS006-P 98-06821-9	Analysis Result A3-SMB19-P1-GS007-P 98-06821-10
MOISTURE	ASTM-D2216	%Moisture	0.5	1.8	2.5

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Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS006-P 98-06821-9	Analysis Result A3-SMB19-P1-GS007-P 98-06821-10
NITROAROMATICS AND NITROAMINES					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.17	<0.17
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	<0.24	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.25	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.092	<0.092
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.051	<0.051
HMX	SW8330	mg/kg	0.25	<0.25	0.1J
NITROBENZENE	SW8330	mg/kg	0.24	<0.24	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.25	<0.26
RDX	SW8330	mg/kg	0.25	<0.25	0.1J
TETRYL	SW8330	mg/kg	0.19	<0.19	<0.19
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	<0.24	0.2J
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.25	0.1J
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.25	<0.26

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS008-P 98-06821-11	Analysis Result ~~A3-WR002-C001-CC002P~~ 98-06821-12
MOISTURE	ASTM-D2216	%Moisture	0.5	2.2	32.3
NITROAROMATICS AND NITROAMINES					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.17	<0.25
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	<0.25	<0.35
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.37
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.092	<0.13
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.051	<0.074
HMX	SW8330	mg/kg	0.25	<0.26	<0.37
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.35
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.37
RDX	SW8330	mg/kg	0.25	<0.26	<0.37
TETRYL	SW8330	mg/kg	0.19	<0.19	<0.28
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.35
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.37
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.37

Component Analyzed	Method	Unit	PQL	Analysis Result A3-WR002-C002-CC002P 98-06821-13	Analysis Result A3-WR002-C003-CC002P 98-06821-14
MOISTURE	ASTM-D2216	%Moisture	0.5	33.2	30.1

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APCL Analytical Report

Submitted to:
U.S. Army Corps of Engineers
Attention: Tom Waldrup
1325 J Street
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Tel. (916)557-7646 Fax: (916)557-5307

Service ID #: 801-986821
Collected by:
Collected on: 12/01-08/98

Received: 12/11/98
Extracted: 12/14/98
Tested: 12/14-16/98
Reported: 12/21/98

Sample Description: Soil
Project Description: W.101 Bioremediation

Analysis of Soil Samples

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GF001-P 98-06821-1	A3-SMB19-P1-GF002-P 98-06821-2
MOISTURE	ASTM-D2216	%Moisture	0.5	3.8	3.9
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.18	<0.18
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	<0.25	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.094	<0.094
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.052	<0.052
HMX	SW8330	mg/kg	0.25	0.2J	<0.26
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
RDX	SW8330	mg/kg	0.25	0.72	<0.26
TETRYL	SW8330	mg/kg	0.19	<0.20	<0.20
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	0.51	<0.25
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	0.38	<0.26
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GF003-P 98-06821-3	A3-SMB19-P1-GS001-P 98-06821-4
MOISTURE	ASTM D2216	%Moisture	0.5	5.6	2.9
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.18	<0.18
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	0.29	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.093	<0.093
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.053	<0.051
HMX	SW8330	mg/kg	0.25	1.0	0.38
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
RDX	SW8330	mg/kg	0.25	1.2	0.1J
TETRYL	SW8330	mg/kg	0.19	<0.20	<0.20
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	0.1J	<0.25
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	1.5	<0.26
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26

CADHS ELAP No. 1431

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Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS002-P 98-06821-5	Analysis Result A3-SMB19-P1-GS003-P 98-06821-6
MOISTURE	ASTM-D2216	%Moisture	0.5	2.3	1.1
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.17	<0.17
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	0.21	<0.24
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.25
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.092	<0.091
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.051	<0.051
HMX	SW8330	mg/kg	0.25	<0.26	<0.25
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.24
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.25
RDX	SW8330	mg/kg	0.25	<0.26	<0.25
TETRYL	SW8330	mg/kg	0.19	<0.19	<0.19
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	1.5	<0.24
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.25
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.25

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS004-P 98-06821-7	Analysis Result A3-SMB19-P1-GS005-P 98-06821-8
MOISTURE	ASTM-D2216	%Moisture	0.5	3.3	3.8
NITROAROMATICS AND NITROAMINES [a]					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.18	<0.18
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	0.25	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.093	<0.094
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.052	<0.052
HMX	SW8330	mg/kg	0.25	<0.26	<0.26
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
RDX	SW8330	mg/kg	0.25	<0.26	<0.26
TETRYL	SW8330	mg/kg	0.19	<0.20	<0.20
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	0.55	<0.25
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.26

Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS006-P 98-06821-9	Analysis Result A3-SMB19-P1-GS007-P 98-06821-10
MOISTURE	ASTM-D2216	%Moisture	0.5	1.8	2.5

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Component Analyzed	Method	Unit	PQL	Analysis Result A3-SMB19-P1-GS006-P 98-06821-9	Analysis Result A3-SMB19-P1-GS007-P 98-06821-10
NITROAROMATICS AND NITROAMINES					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.17	<0.17
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	<0.24	<0.25
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.25	<0.26
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.092	<0.092
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.051	<0.051
HMX	SW8330	mg/kg	0.25	<0.25	0.1J
NITROBENZENE	SW8330	mg/kg	0.24	<0.24	<0.25
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.25	<0.26
RDX	SW8330	mg/kg	0.25	<0.25	0.1J
TETRYL	SW8330	mg/kg	0.19	<0.19	<0.19
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	<0.24	0.2J
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.25	0.1J
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.25	<0.26

Component Analyzed	Method	Unit	PQL	Analysis Result ~~A3-SMB19-P1-GS008-P~~ 98-06821-11	Analysis Result ~~A3-WR002-C001-CC002P~~ 98-06821-12
MOISTURE	ASTM-D2216	%Moisture	0.5	2.2	32.3
NITROAROMATICS AND NITROAMINES					
Dilution Factor				1	1
4-AMINO-2,6-DINITROTOLUENE	SW8330	mg/kg	0.17	<0.17	<0.25
2-AMINO-4,6-DINITROTOLUENE	SW8330	mg/kg	0.24	<0.25	<0.35
1,3-DINITROBENZENE	SW8330	mg/kg	0.25	<0.26	<0.37
2,4-DINITROTOLUENE	SW8330	mg/kg	0.09	<0.092	<0.13
2,6-DINITROTOLUENE	SW8330	mg/kg	0.05	<0.051	<0.074
HMX	SW8330	mg/kg	0.25	<0.25	<0.37
NITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.35
3-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.37
RDX	SW8330	mg/kg	0.25	<0.26	<0.37
TETRYL	SW8330	mg/kg	0.19	<0.19	<0.28
1,3,5-TRINITROBENZENE	SW8330	mg/kg	0.24	<0.25	<0.35
2,4,6-TRINITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.37
2/4-NITROTOLUENE	SW8330	mg/kg	0.25	<0.26	<0.37

Component Analyzed	Method	Unit	PQL	Analysis Result A3-WR002-C002-CC002P 98-06821-13	Analysis Result A3-WR002-C003-CC002P 98-06821-14
MOISTURE	ASTM-D2216	%Moisture	0.5	33.2	30.1

Appendix E

B19, View into pit.

B19, View into pit.

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