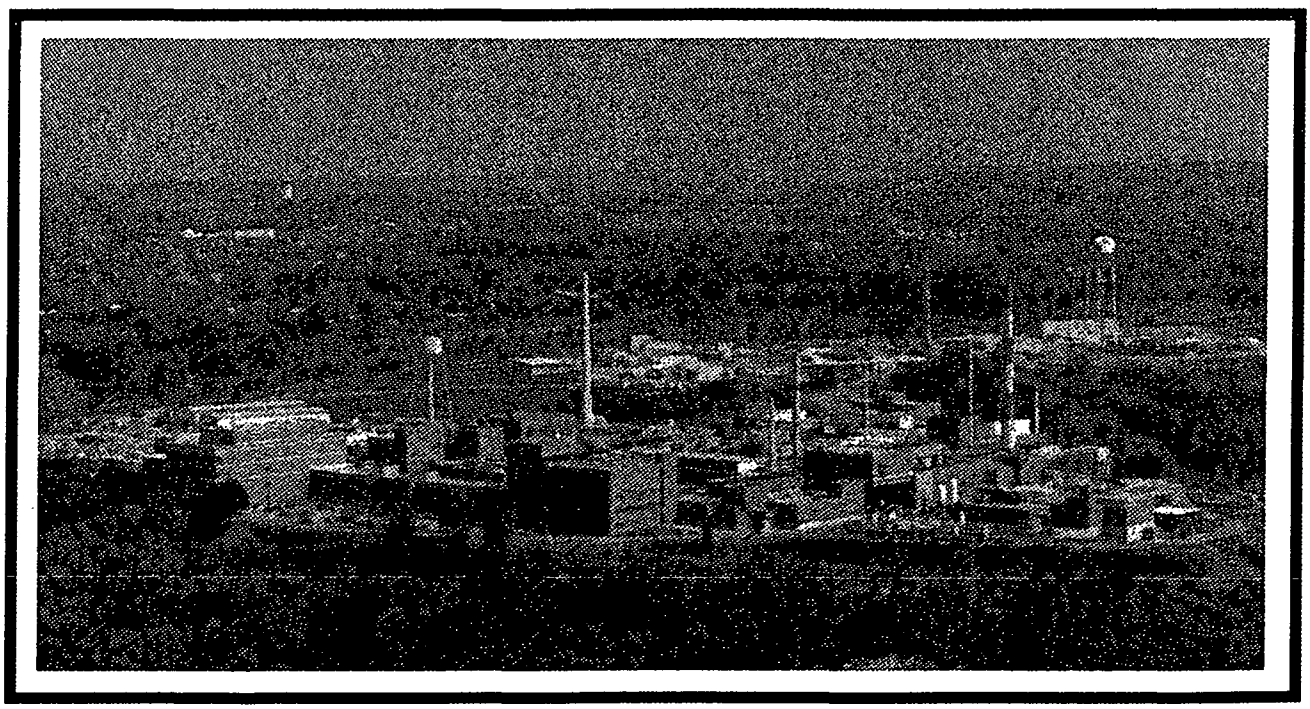
EG&G MOUND-30-03-04-02--9703050047

MOUND

Environmental
Restoration
Program

MOUND PLANT
Potential Release Site Package
PRS # 79



MOUND

Environmental Restoration Program

MOUND PLANT POTENTIAL RELEASE SITE PACKAGE

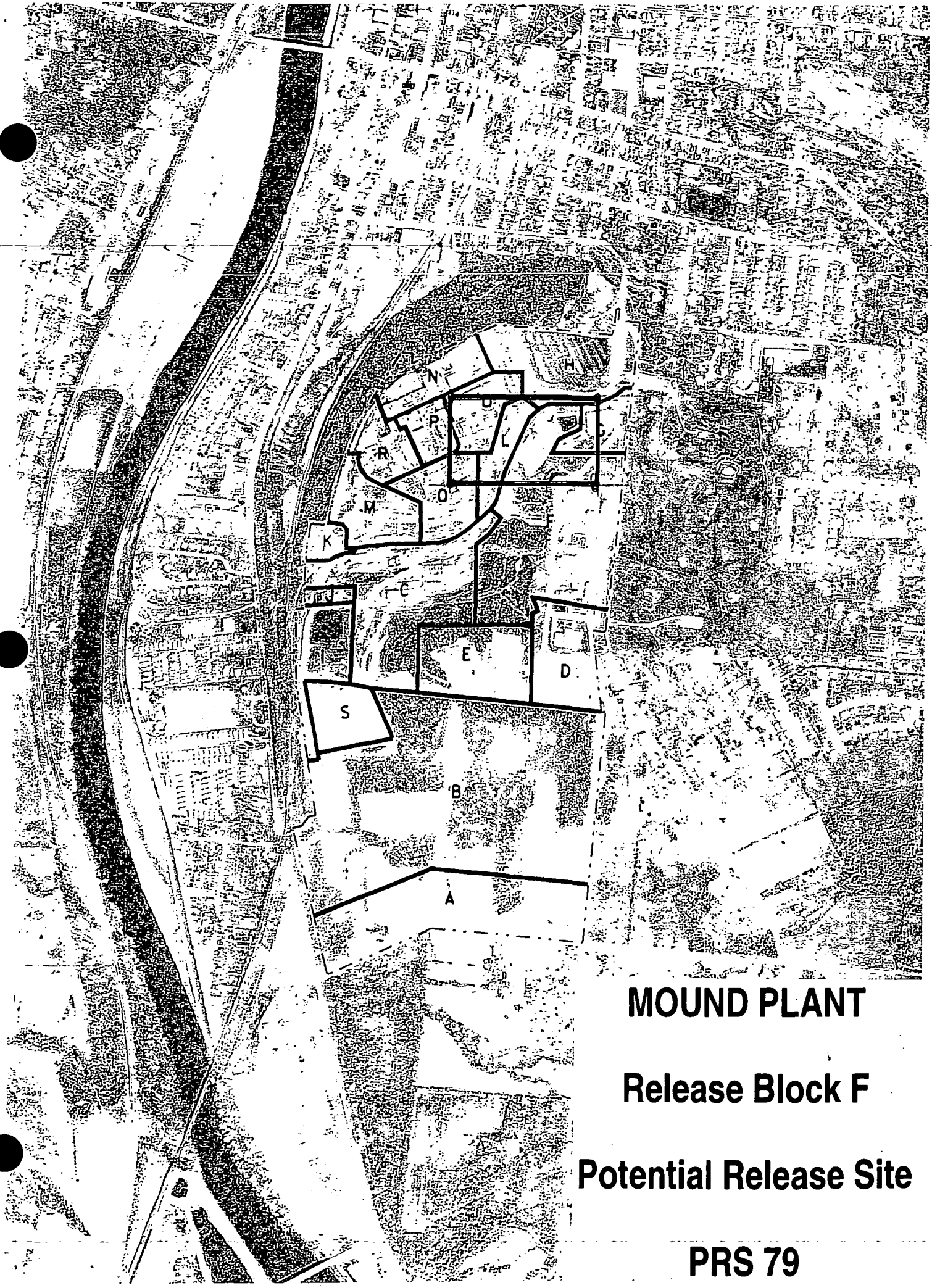
Notice of Public Review Period

The following potential release site (PRS) packages will be available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio beginning January 9, 1997. Public comment will be accepted on these packages from January 9, 1997, through February 13, 1997.

PRS 17:	Oil Burn Structure
PRS 20:	Aviation Fuel Storage Tank
PRS 42:	T Building Construction Soil Staging Area
PRS 79:	Former Waste Storage Site - Warehouse 15
PRS 82:	Diesel Fuel Storage Tank - Building 56
PRS 153:	Radioactive Wastewater Sewer Pipeline Break - Area 20
PRS 176/177/178/300:	Waste Transfer System Line, Tanks and Soil

Questions can be referred to Mound's Community Relations at (937) 865-4140.

REV	DESCRIPTION	DATE
PUBLIC RELEASE **0**	Available for comment.	**Dec. 17, 1996**
FINAL **1**	Comment period expired. No comments. Recommendation page annotated.	**Feb. 17, 1997**



MOUND PLANT

Release Block F

Potential Release Site

PRS 79

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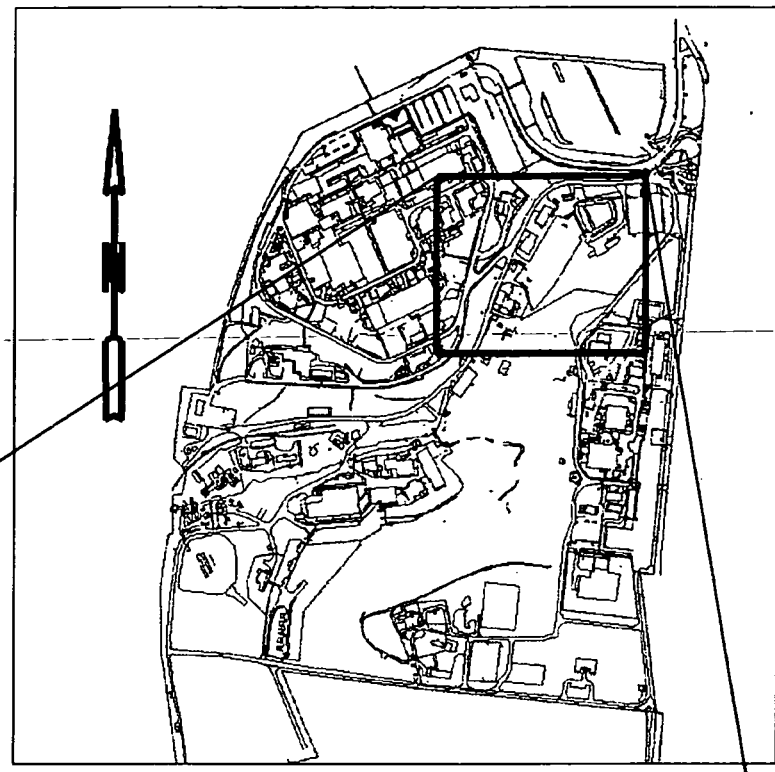
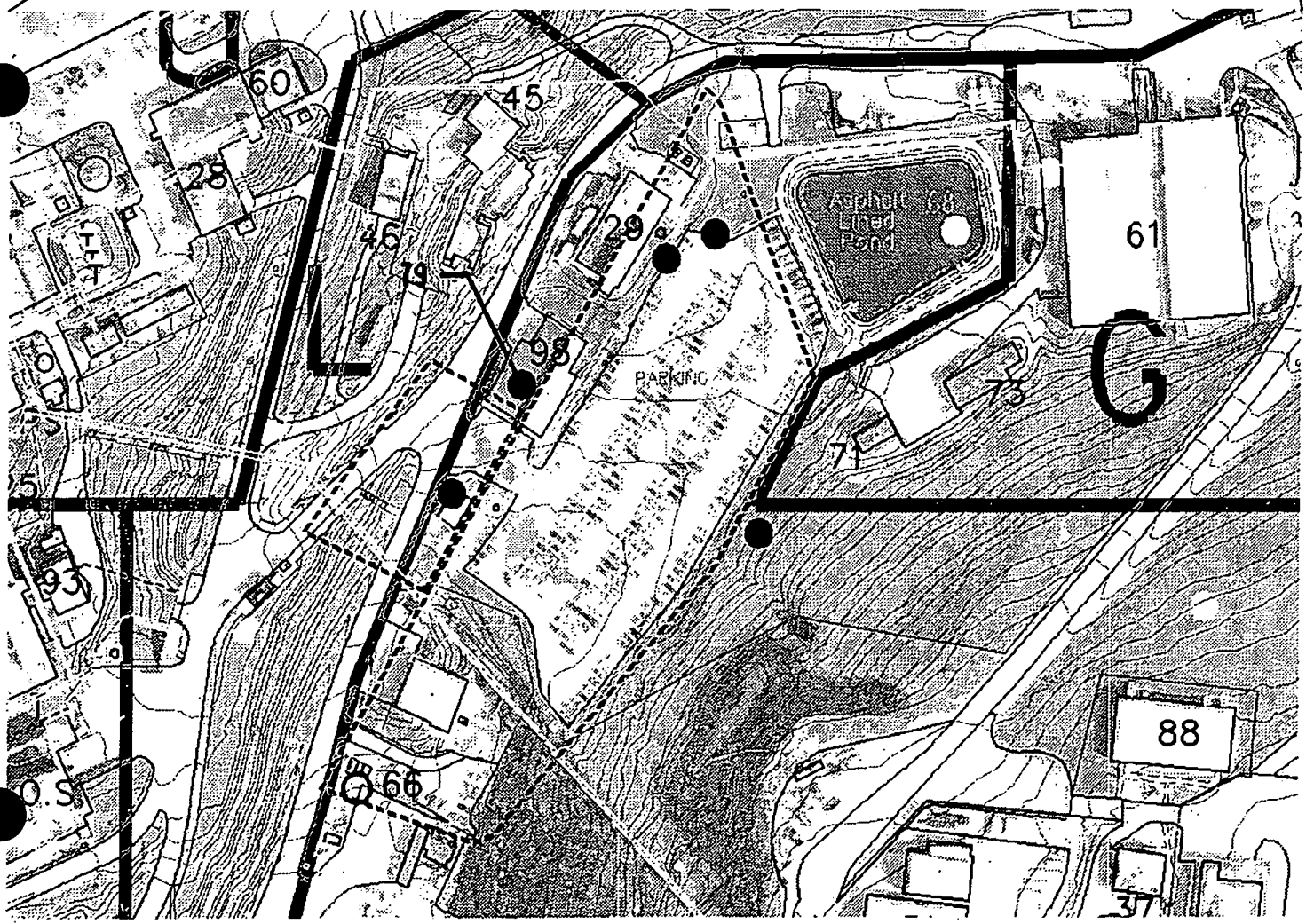
Mound Plant

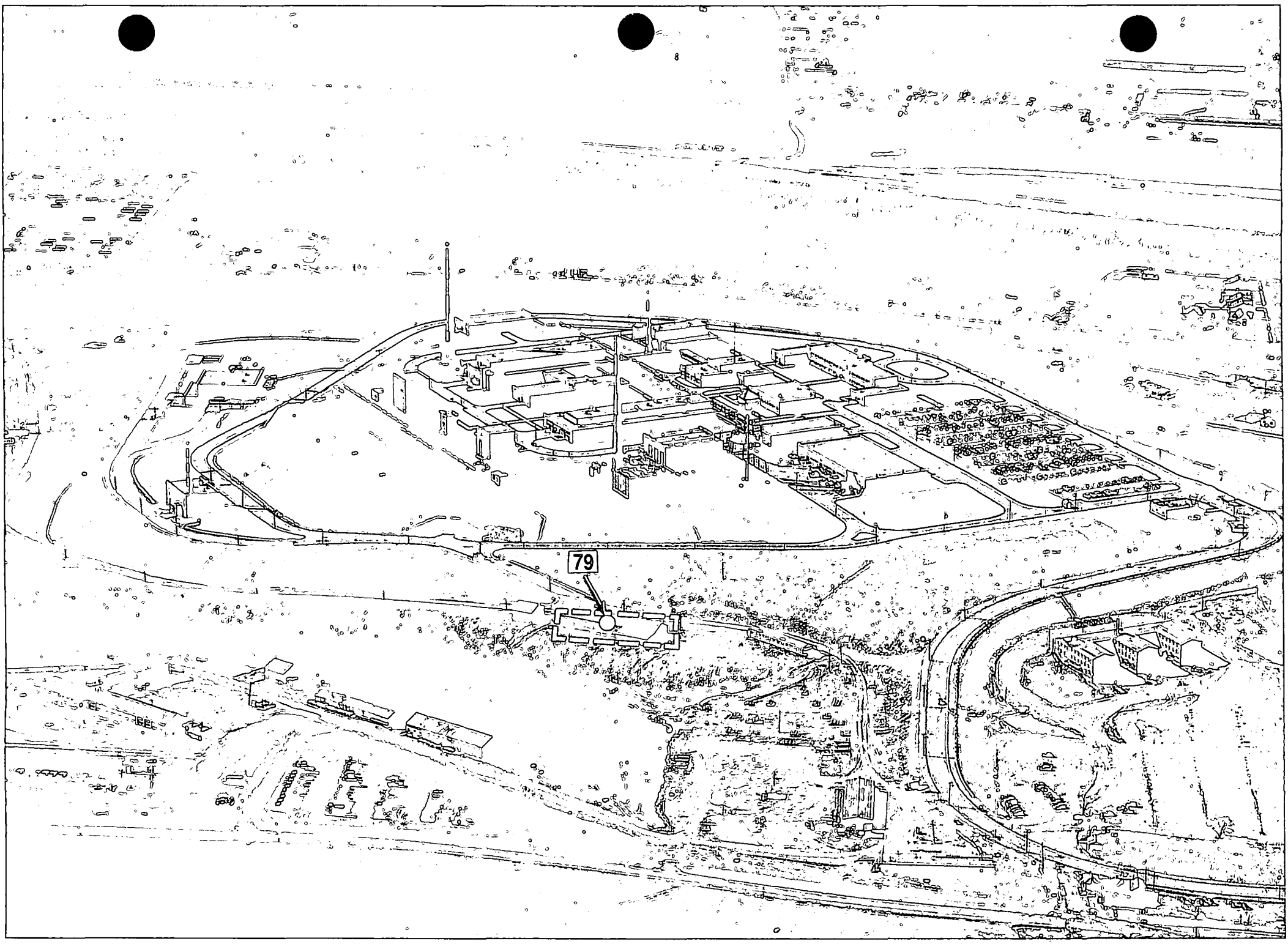
Release Block F

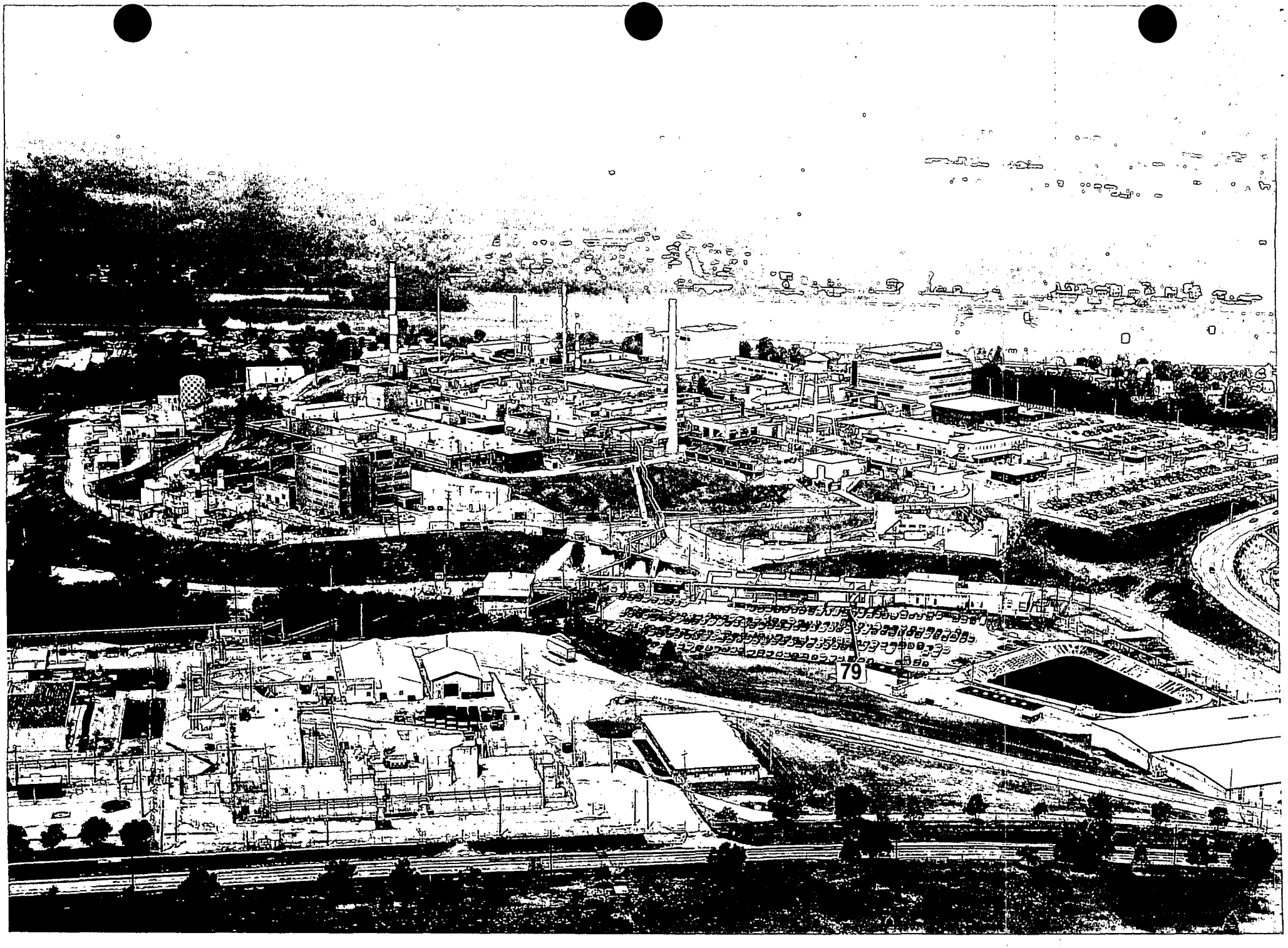
Potential Release Site

PRS 79






79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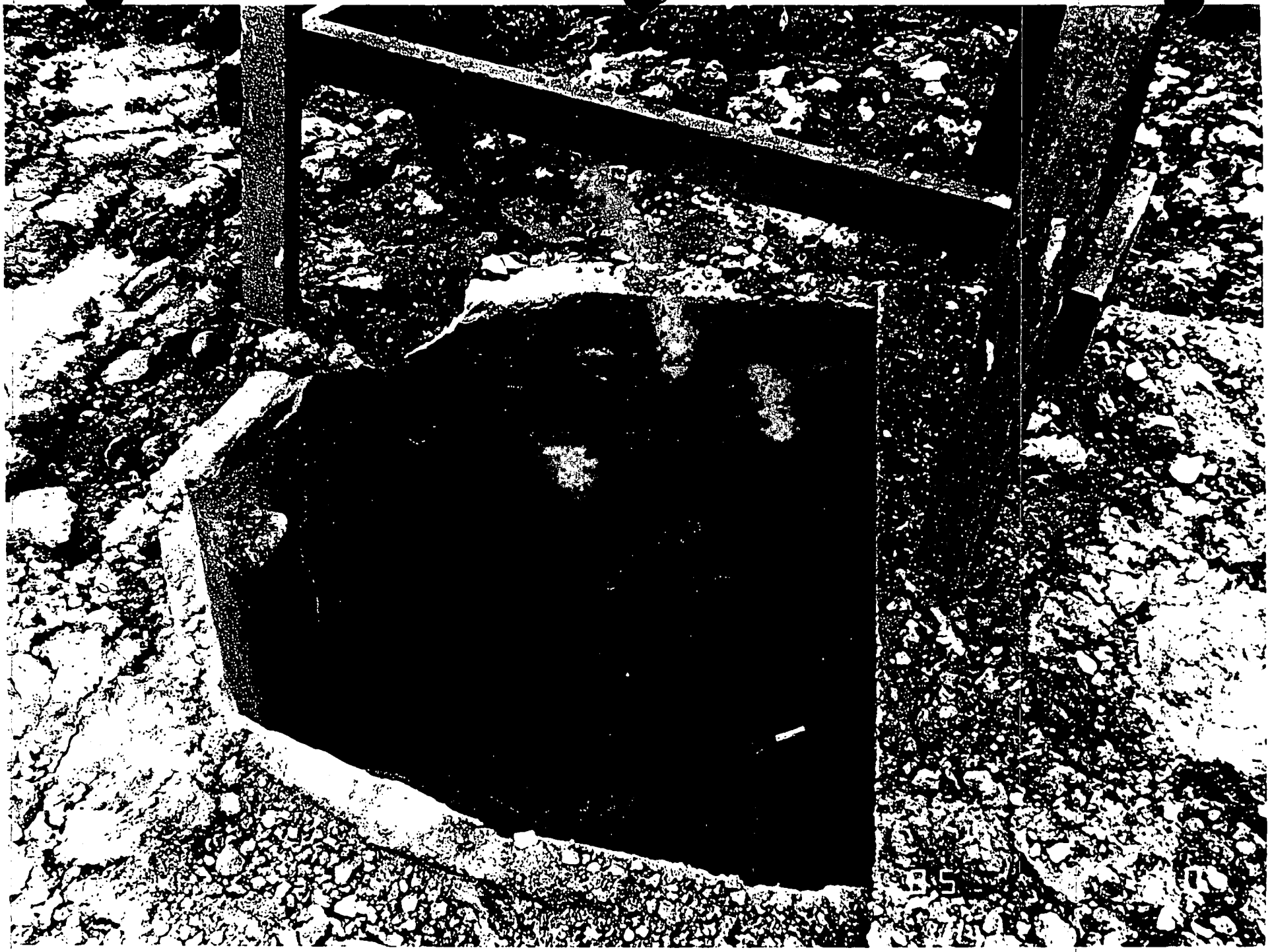

B5

PRS 79

PRS HISTORY:

PRS79 is a radiological soil location.[1] It was identified due to process history pertaining to operations performed in warehouse 15. The warehouse was built during the construction of the plant site and used for general storage (office supplies, furniture, etc.). In the mid-1950s thorium redrumming operations were conducted here, but were moved outdoors because of elevated radiation levels, possibly radon. The building was sold for salvage in the mid-1960s. The floor of the warehouse may have remained in place until it was bulldozed into the Area 7 ravine in the early 1970s. Building 98 and the entrance to the Area 7 parking lot currently occupies this location.[2] According to construction inspection daily reports for Building 98, while leveling the area prior to construction contaminated soil was found in and around a concrete pit. The contaminated soil was removed and boxed. The pit was declared clean by Health Physics and the pit was filled in with concrete. No other contamination was detected during construction.[7]

CONTAMINATION:

In 1983 or 1984 the Radiological Site Survey Project investigated the soils on the Mound Plant Site for radionuclides by:

- screening using a sodium iodide detector (FIDLER) to identify areas of suspected radioactive contamination;
- sampling of surface and subsurface soil; and
- analysis of soil samples using one or more of the following methods: radiochemical analysis for plutonium-238 and thorium isotopes, gamma spectroscopy, and liquid scintillation for tritium.

Results found:[3]

Contaminant	Maximum Concentration	Guideline Criteria
Plutonium-238	0.54 pCi/g (core)	25 pCi/g
Thorium	5.88 pCi/g (core)	15 pCi/g
Radium-226	1.0 pCi/g (core)	15 pCi/g

Note: The OU9, Vol. 12 - Site Summary Report (Table B.9.) showed a max. conc. for Thorium-232 of 10. pCi/g from the OU9, Volume 3 - Site Radiological Survey, but this data could not be located. [1]

The 1992 Soil Gas Survey of Area 7 included locations surrounding this area of concern. [4] All chemicals detected were below the calculated acceptable levels and do not represent a threat to groundwater. [6]

The 1994 OU5 Operational Area Phase I Investigation Area 7 Field Report investigated locations around the Mound Plant site where previous investigations showed the potential of contamination. Soil samples were taken and analyzed for radionuclides

Results found: [5]

Contaminant	Maximum Concentration	Guideline Criteria
Plutonium-238	10 pCi/g (surface)	25 pCi/g
Thorium-232	0.6 pCi/g (surface)	5 pCi/g

READING ROOM REFERENCES:

1) Operable Unit 9, Site Scoping Report: Volume 12 - Site Summary Report, December 1994. (pages 6-10)
2) Operable Unit 9, Site Scoping Report: Volume 7 - Waste Management, February 1993. (pages 11-14)
3) Operable Unit 9, Site Scoping Report: Volume 3 - Radiological Site Survey, June 1993. (pages15-20)
4) Soil Gas Survey and Geophysical Investigations Main Hill and SM/PP Hill Areas Reconnaissance Sampling, February 1993. (pages 21-23)
5) Operable Unit 5, Operational Area Phase I Investigation Area 7 Field Report, June 1995. (pages 24-53)

OTHER REFERENCES:

6) Screening Potential Release Sites Based on Soil Gas Readings, March 5, 1996. (pages 54-55)
7) Construction Inspection Daily Report, Central Fire House(Building 98) Long Term Storage Box # 15389. (pages 56-64)

PREPARED BY:

Dennis Gault, EG&G Technical Staff

MOUND PLANT
PRS 79
FORMER WASTE STORAGE SITE - WAREHOUSE 15

RECOMMENDATION:

Potential Release Site (PRS) 79 was the historical warehouse 15. It was identified as a PRS because of thorium redrumming operations performed in the warehouse. It was dismantled in the mid-1960s and the Central Fire House (Building 98) was constructed on the location.

According to *construction inspection daily reports* for Building 98, while leveling the area prior to construction contaminated soil was found in and around a concrete pit. The contaminated soil was removed and boxed. The pit was declared clean by Health Physics and the pit was filled in with concrete. No other contamination was detected during construction. Per the *1993: Radiological Site Survey, 1993: Soil Gas Survey and Geophysical Investigations Main Hill and SM/PP Areas,* and the *OU5: Operational Area Phase I Investigation, Area 7 Report* all Volatile Organic Compound (VOC) soil gas concentrations were below acceptable guideline criteria. All plutonium sampling results were below the guideline criteria of 25 pCi/g, and all thorium levels were below the 5/15 pCi/g regulatory standard.

Therefore, since no evidence of contamination exists at PRS 79, NO FURTHER ASSESSMENT is recommended.

CONCURRENCE:

DOE/MB: Arthur W Kleinrath 11/26/96
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 12/3/96
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 12/17/96
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 1/9/97 to 2/13/97

☒ No comments were received during the comment period.

☐ Comment responses can be found on page _____ of this package.

REFERENCE MATERIALS

PRS 79

Document Control No. _____

Environmental Restoration Program

OPERABLE UNIT 9 SITE SCOPING REPORT: VOLUME 12 – SITE SUMMARY REPORT

MOUND PLANT
MIAMISBURG, OHIO

December 1994

Final

U.S. Department of Energy
Ohio Field Office

EG&G Mound Applied Technologies

Description of History and Nature of Waste Handling						Hazardous Conditions and Incidents			Environmental Data		
No.	Site Name	Location	Status	Potential Hazardous Substances	Ref	Releases	Media	Ref	Analytes[a]	Results	Ref
72	Area 13, Polonium-Contaminated Wood from Dayton Unit IV	H-7	Historical	Polonium-210	1, 4, 5	None Suspected	S	6	14	Tables B.1 and B.9	6
73	Evaporator Storage Area (AKA Lower storage area)	H-7	Historical	Actinium-227, Cesium-137, Radium-226	4				14, 15, 16	Table B.9 RSS[c] Locations S0692 and S0697 (Appendix E in Ref. 6)	6
74	Quonset Hut (former)	H-7	Historical	Polonium-210, cobalt-60, bismuth					14	Table B.9 RSS[c] Locations S0684, S0685, and S0689 (Appendix E in Ref. 6)	6
75	Railroad Siding	G-6 G-7	Inactive	Thorium and daughters	4	Suspected thorium	S	4	14	Table B.1	6
76	Warehouse 9	G-7	Historical	Thorium-232	4	Suspected thorium	S	4	No Data		
77	Warehouse 10	G-9	Historical	Polonium-210	4	None suspected			No Data		
78	Warehouse 13	G-9	Historical	Reactor waste including Strontium-90, Cesium-137, and Nickel-63	4	Cesium 137	S	4	No Data		
79	Warehouse 15	E-8	Historical	Radioactive waste Plutonium-238 wastes and sludge Thorium sludge constituents (c)	4	Suspected	S	4	See Area 7 (No. 66)	Table B.9	6
80	Warehouse 15A	F-8	Historical	Plutonium-238, thorium	4						
81	Drilling Mud Drum Storage Areas (3 locations)	H-5 I-4	Historical	Barium	4, 5, 18	None Suspected			No Data		
82	Building 57 Diesel Fuel Storage Tank (Tank 118)	H-5	In service	Diesel fuel	3				No Data		
	'lding 2 Propane Storage Tank (Tank 122)	H-7	Inactive	Propane	3				No Data		
	uilding 56 Diesel Fuel orage Tank (Tank 223)	F-5	Historical	Diesel fuel	3	Tank Removed			No Data		

1 - Soil Gas Survey - Freon 11, Freon 113, Trans-1,2-Dichloroethylene, Cis-1,2-Dichloroethylene, 1,1,1-Trichloroethane, Perchloroethylene, Trichloroethylene, Toluene
2 - Gamma Spectroscopy - Thorium-228, -230, Cobalt-60, Cesium-137, Radium-224, -226, -228, Americium-241, Actinium-227, Bismuth-207, Bismuth-210m, Potassium-40
3 - Target Analyte List
4 - Target Compound List (VOC)
5 - Target Compound List (SVOC)
6 - Target Compound List (Pesticides/Polychlorinated Biphenyl)
7 - Dioxins/Furans
8 - Extractable Petroleum Hydrocarbons (EPH)/Total Petroleum Hydrocarbons (TPH)
9 - Lithium
10 - Nitrate/Nitrite
11 - Chloride
12 - Explosives
13 - Plutonium-238
14 - Plutonium-238, Thorium-232
15 - Cobalt-60, Cesium-137, Radium-226, Americium-241
16 - Tritium

Reference List

1. DOE 1986 "Phase I Installation Assessment Mound (DRAFT)."
2. DOE 1992a "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Final)."
3. DOE 1992c "Mound Plant Underground Storage Tank Program Plan & Regulatory Status Review (Final)."
4. DOE 1993a "Site Scoping Report: Volume 7 - Waste Management (Final)."
5. EPA 1988a "Preliminary Review/Visual Site Inspection for RCRA Facility Assessment of Mound Plant."
6. DOE 1993d "Operable Unit 9, Site Scoping Report: Volume 3 - Radiological Site Survey (Final)."
7. DOE 1993c "Operable Unit 3, Miscellaneous Sites Limited Field Investigation Report."
8. DOE 1992d "Reconnaissance Sampling Report Decontamination & Decommissioning Areas, OU6, (Final)."
9. Fentiman 1990 "Characterization of Mound's Hazardous, Radioactive and Mixed Wastes."
10. DOE 1992f "Operable Unit 9, Site Scoping Report: Volume 11 - Spills and Response Actions (Final)."
11. Styron and Meyer 1981 "Potable Water Standards Project: Final Report."
12. DOE 1993b "Reconnaissance Sampling Report - Soil Gas Survey & Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill (Final)."
13. DOE 1993d "Operable Unit 9, Site Scoping Report: Volume 3 - Radiological Site Survey (Final)."
14. DOE 1991b "Main Hill Seeps, Operable Unit 2, On-Scene Coordinator Report for CERCLA Section 104 Remedial Action, West Powerhouse PCB Site."
15. Halford 1990 "Results of South Pond Sampling."
16. DOE 1993e "Operable Unit 4, Special Canal Sampling Report, Miami Erie Canal."
17. DOE 1990 "Preliminary Results of Reconnaissance Magnetic Survey of Mound Plant Areas 2, 6, 7, and C."
18. DOE 1992a "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan (Final)."
19. Rogers 1975 "Mound Laboratory Environmental Plutonium Study, 1974."
20. DOE 1992h "Ground Water and Seep Water Quality Data Report Through First Quarter, FY92."
21. Dames and Moore 1976 a, b "Potable Water Standards Project Mound Laboratory" and "Evaluation of the Buried Valley Aquifer Adjacent to Mound Laboratory."
22. DOE 1992i "Closure Report, Building 34 - Aviation Fuel Storage Tank."
23. DOE 1992j "Closure Report, Building 51 - Waste Storage Tank."
24. DOE 1994 "Operable Unit 1, Remedial Investigation Report."
25. EG&G 1994 "Active Underground Storage Tank Plan."

Table B.9. Summary of Radiological Data[a,b]

Site Name	Radiological Contaminants															
	Potassium-40	Plutonium-239	Plutonium-238	Cesium-137	Thorium-Total	Tritium	Thorium-232	Cobalt-60	Radium-224, -226, -228	Radon-222	Americium-241	Actinium-227	Uranium-233, -234, -238	Bismuth-210m	Bismuth-207	Reference
79. Warehouse 15			0.52		<2		10.									6
80. Warehouse 15A			0.7				10.									6
85. Building 29 Solvent Storage Shed	NA	NA	0.29	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
86. Building 29 Septic Tank (Tank 224)				1.2					2.0			1,400				6
88. Tritium in Buried Valley Aquifer						20										11,18
90. Site Survey Project Potential Hot Spot Location S0425			1.08		5.74											6
91. Main Hill Seep 0601 (f)				10		1033		82								18
92. Main Hill Seep 0602 (f)						16.17										18
95. Main Hill Seep 0605 (f)						56.60										18
97. Main Hill Seep 0607 (f)						89.56										18
98. Main Hill Seep 0608 (f)						27.60										18
103. E Building Soils	NA	NA	0.25	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
106. G Bulling Soils (AKA Garage Area)	NA	NA	0.68	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
110. I Building Soils	NA	NA	1.87	NA	<2	1.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
112. Paint Shop Area							ND									7
113. Powerhouse Soils	NA	NA	0.86	NA	<2	2.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
118. M Building Soils	NA	NA	0.62	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
128. DS Building Solvent Storage Shed	NA	NA	0.12	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
129. B Building Solvent Storage Shed	NA	NA	0.64	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
130. B Building Temporary Drum Storage Area	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6
134. SW Building Drum Storage Area	NA	NA	0.96	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6

Table B.9. Summary of Radiological Data[a,b]

Site Name	Radiological Contaminants															
	Potassium-40	Plutonium-239	Plutonium-238	Cesium-137	Thorium-Total	Tritium	Thorium-232	Cobalt-60	Radium-224, -226, -228	Radon-222	Americium-241	Actinium-227	Uranium-233, -234, -238	Bismuth-210m	Bismuth-207	Reference
308. Site Survey Project Potential Hot Spot Location C0028			11.4		109.											6
309. Site Survey Project Potential Hot Spot Location S0307			5.36		6.46											6
310. Site Survey Project Potential Hot Spot Location S0647				270					1.3							6
311. Site Survey Project Potential Hot Spot Location S0706			28.9													6
312. Site Survey Project Potential Hot Spot Location S0971			0.15		5.02	2										6
313. Site Survey Project Potential Hot Spot Location S0982			0.43		14.94											6
314. Farm Trash Area			0.02				<2									7
319. Epoxy Resin Disposal																7

(a) - All units are reported in pCi/g unless otherwise noted.
(b) - Blank spaces implies not sampled.
(c) - Additional data on other analytes are available in reference 16.
(d) - Groundwater data. Unit of measure is pCi/L.
(e) - This site is the same as Site #19.
(f) - Groundwater data. Unit of measure is nCi/L.

LDL - Lower Detection Limit.
ND - Not detected.
NA - Not analzyed for.
NR - No result reported.

References:
6) DOE 1993d
7) DOE 1993c
11) Styron and Meyer 1981
13) DOE 1993d
18) DOE 1992a
24) DOE 1994

Document Control No. _____

Environmental Restoration Program

OPERABLE UNIT 9, SITE SCOPING REPORT: VOLUME 7 - WASTE MANAGEMENT

MOUND PLANT
MIAMISBURG, OHIO

February 1993

FINAL
(Revision 0)

Department of Energy
Albuquerque Field Office

Environmental Restoration Program
EG&G Mound Applied Technologies

J:\DGN\MOUND\M0488 OU9 vol 7. 122192 overlay on m0489

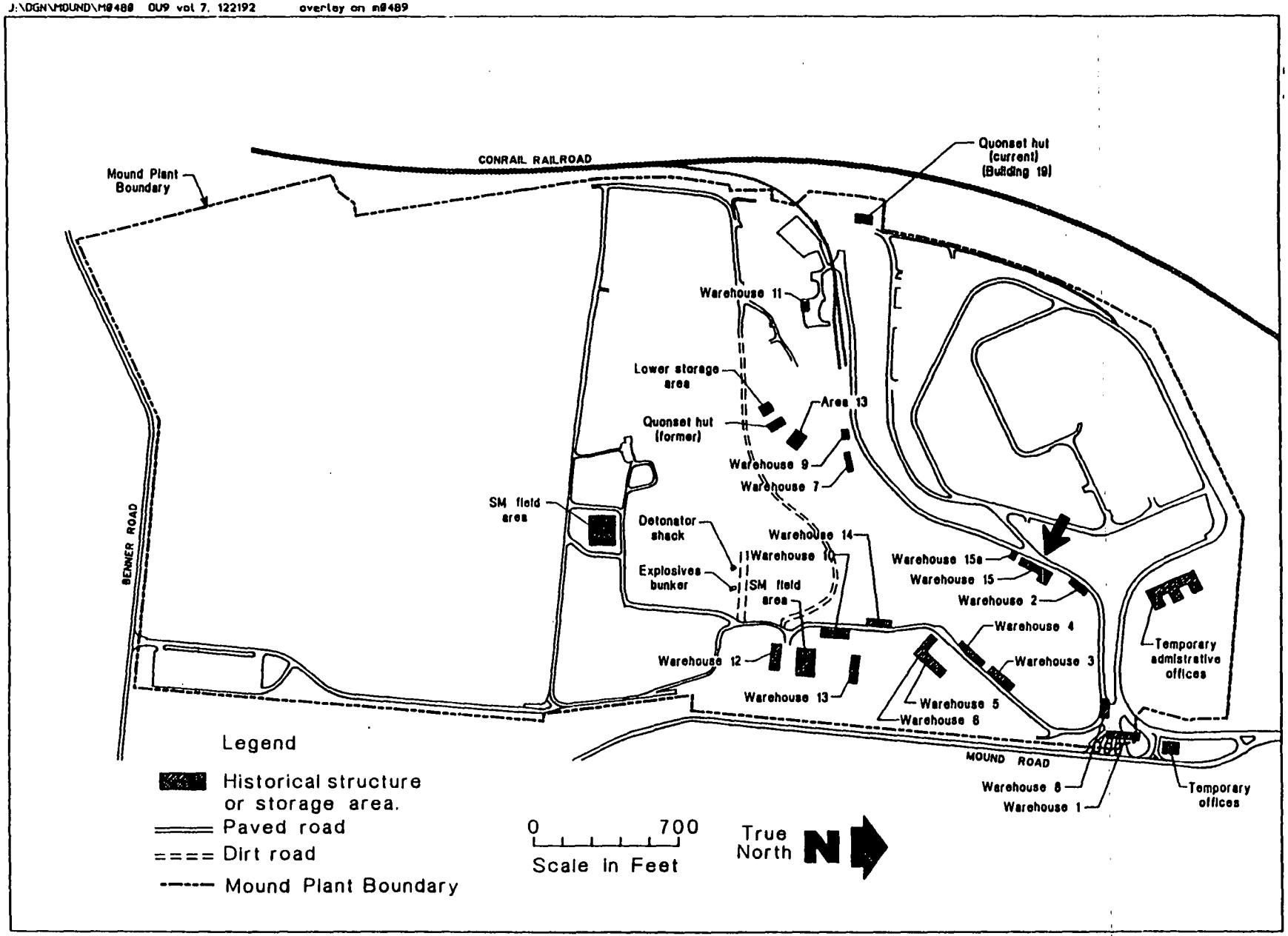
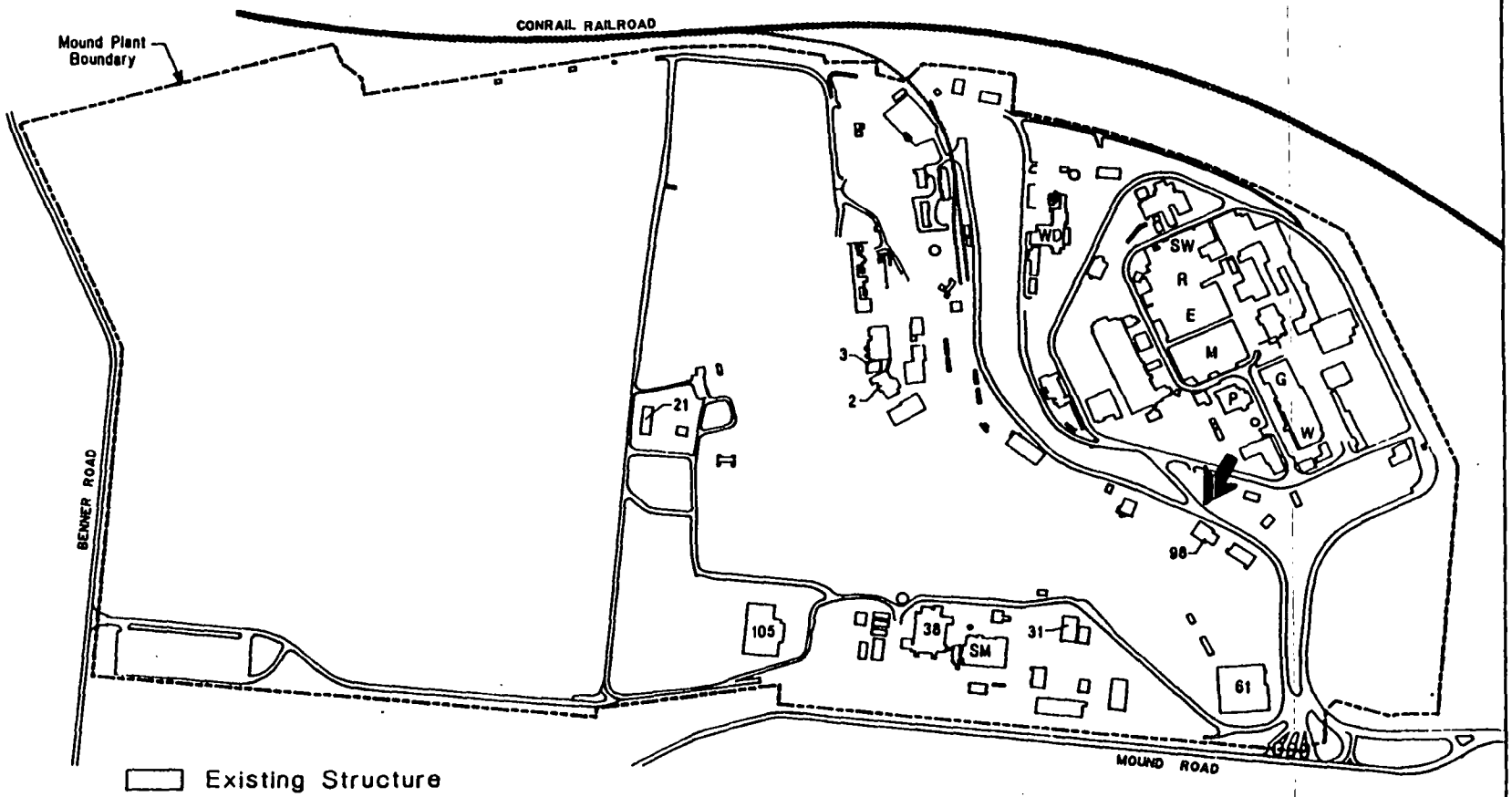


Figure 5.2. Historic buildings, structures, and storage areas.

J:\DGN\MOUND\M0489 OU9 vol 7. 061992 basemap for m0488



Warehouses 15 and 15A were located along the upper reach of the plant drainage ditch, in the approximate position of the present Building 98. Warehouse 15, the larger of the two with 6,000 ft^2, lay northeast of Warehouse 15A (Figure 5.2). These two warehouses were shown in the historical maps of the upper valley compiled in the Photo History Report (DOE 1992c) but were not labeled. Both structures were wooden construction. Warehouse 15 had a concrete floor and Warehouse 15A had a wooden floor. Because of their ease of access and location, away from the Main Hill, these warehouses were used as general storage areas for radioactive wastes and for truck loading facilities. Warehouse 15 was used as a general storage area for plant operations (office supplies, furniture, etc.). In the mid-1950s, thorium redrumming operations were conducted in Warehouse 15, but were moved outdoors because of elevated radiation levels, possibly radon. Logbooks indicate that, from December 1954 (MCC 1951-1952) through the mid-1960s, Warehouse 15A served as one of the general sites for storage and loading of radioactive waste for offsite shipment (MRC 1961-1968). Radioactive trash, plutonium sludge from SM, polonium sludge from WD, and waste from other operations were picked up from the process areas and stored until loaded into vans for shipment offsite. The floor of the warehouses were typically scrubbed with solutions of dilute hydrochloric acid to remove contamination. In April 1965, the waste storage and loading operations were transferred to the newly constructed Building 23. Both Buildings 15 and 15A were sold for salvage in the mid-1960s. The floors may have remained in place until they were bulldozed into the ravine in the early 1970s. The site of warehouse 15 is currently occupied by Building 98. The site of warehouse 15A is currently occupied by the paved parking entrance adjacent to Building 98. The ravine fill east of the old warehouses is included in the ER Program as Area 7 (DOE 1992c).

~~5.1.11. Lower Storage Area (Historical)~~

~~The lower storage area was an open storage area located behind what is now Building 2 in the lower valley area; the lower storage area was originally behind the Quonset hut (Figure 5.2). The area was used from 1955 to 1960 to store the waste evaporator equipment that had been removed from room SW-1B as part of the D&D of the radium-actinium operations. The equipment consisted of several waste liquid holding tanks and the evaporator itself. The equipment was decontaminated, capped, and stored in the open field. No data are known to exist on the level of decontamination, but a personal interview suggested that the equipment was washed externally until no wipeable levels were observed (Garner 1991). Also stored in the area were the holding tanks from the Purex pilot plant. These tanks were dismantled in March 1953 and stored in the lower area (MCC 1952-1957). Their final disposition was not determined, but they may have been shipped offsite in 1960 with other equipment. In January 1959, equipment from the decommissioned HH sludge facility was stored in the lower area (MCC 1951-1961). This equipment was probably also shipped offsite in 1960, but no record of shipment was found. The ground surface of the storage area was su~~

ENVIRONMENTAL RESTORATION PROGRAM

OPERABLE UNIT 9, SITE SCOPING REPORT: VOLUME 3 - RADIOLOGICAL SITE SURVEY

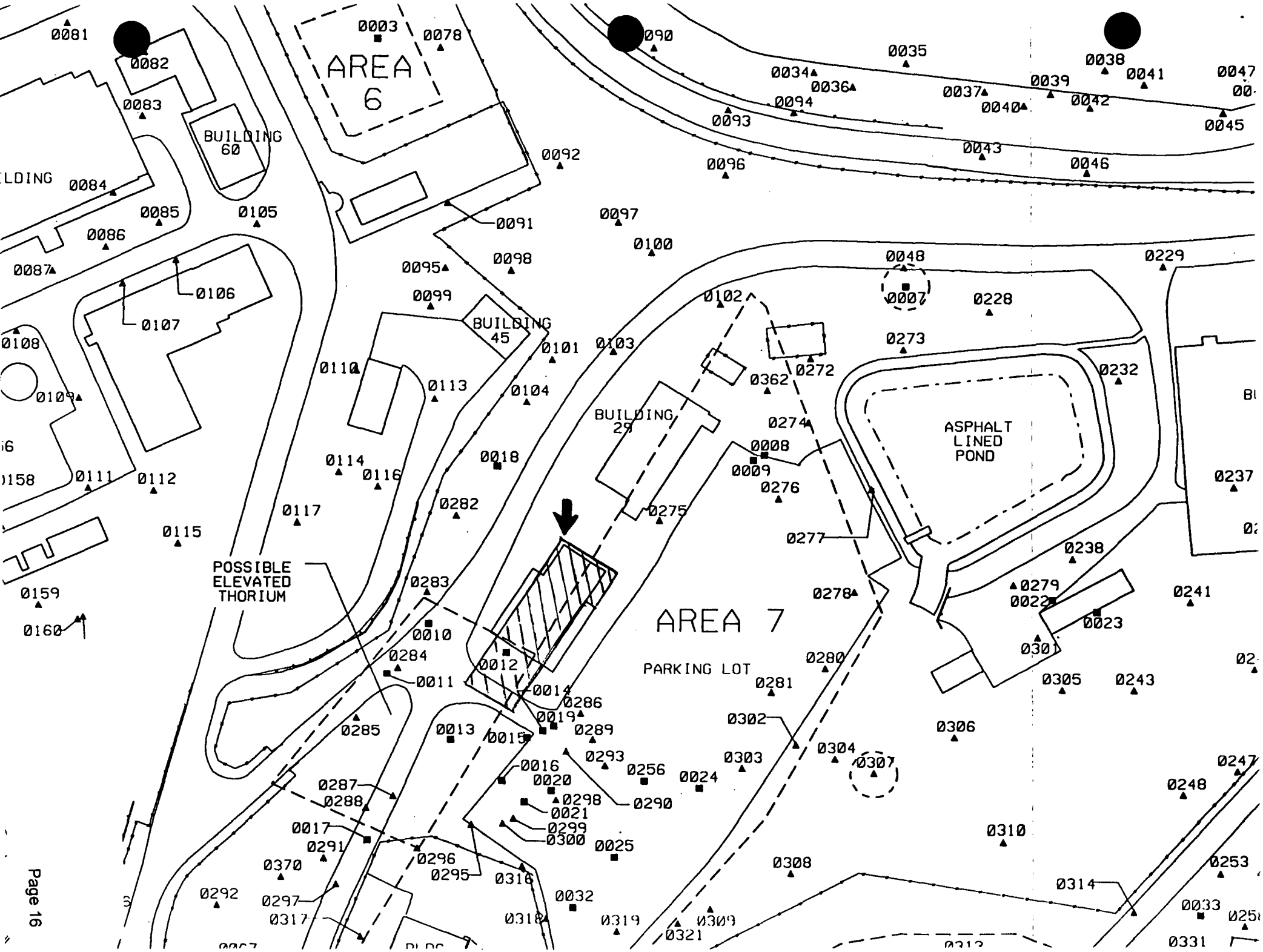
MOUND PLANT
MIAMISBURG, OHIO

June 1993

DEPARTMENT OF ENERGY
ALBUQUERQUE FIELD OFFICE

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES

FINAL


AREA 6
BUILDING 60
BUILDING 45
BUILDING 29
ASPHALT LINED POND
AREA 7
PARKING LOT
POSSIBLE ELEVATED THORIUM

Map Location[a]	Coordinates South	Coordinates West	MRC ID No.	Mo-Yr	Depth (inch)	Pu-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Am-241 (pCi/g)
			10720	09-85	126	NR	NR		LDL	LDL	0.8	LDL
			(Note: 20 pCi/g of Ac-227 was detected in this sample using gamma spec.)									
			10721	09-85	144	NR	NR					
			10722	09-85	156	NR	NR		LDL	LDL	0.7	LDL
			10723	09-85	180	NR	NR					
			10724	09-85	198	NR	NR		LDL	LDL	0.8	LDL
S0275	1900	2135	5970	07-84	0	0.29	b					
C0010	1900	2350	1734	05-83	18	0.36	b					
			1735	05-83	36	0.16	11.15					
			1736	05-83	54	NR	18.00					
			1737	05-83	90	0.03	14.41					
			1738	05-83	108	0.03[c]	27.83[c]					
			1739	05-83	162	0.01	5.76					
			1740	05-83	180	0.01	b					
			1741	05-83	198	<0.01	b					
			1742	05-83	216	0.01	5.44					
			1743	05-83	228	<0.01	b					
S0276	1925	2035	5973	07-84	0	1.27	b		LDL[e]	LDL[e]	1.5[e]	LDL[e]
C0011	1925	2400	1784	05-83	18	8.97[c]	37.69[c]		LDL	LDL	1.5	LDL
			1785	05-83	72	0.42	4.43					
			1786	05-83	90	0.20	b					
			1787	05-83	108	0.31	b					
			1788	05-83	126	0.46	b					
			1789	05-83	198	0.44	b					
			1790	05-83	216	0.84	11.13					
S0277	1950	1960	2870	10-83	0	0.53	b					
C0012	1950	2300	1725	05-83	18	0.13	b					
			1726	05-83	36	0.16[c]	5.44[c]		LDL	LDL	1.0	LDL
			1727	05-83	54	0.20	5.88					
			1728	05-83	72	0.05	b					
			1729	05-83	108	0.05	b					

Radiochemical Analysis

Map Location[a]	Coordinates South	Coordinates West	MRC ID No.	Mo-Yr	Depth (inch)	Pu-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Am-241 (pCi/g)
			1744	05-83	126	0.01	b					
			1730	05-83	162	0.03	b					
			1731	05-83	180	0.02	2.96					
			1732	05-83	216	0.02	b					
			1733	05-83	234	0.02	b					
C0013	2000	2375	1745	05-83	18	0.06	b					
			1746	05-83	72	0.05	b					
			1747	05-83	90	0.15[c]	b					
			1748	05-83	108	0.29	b					
			1749	05-83	117	0.05	3.18					
S0278	2025	2010	5974	07-84	0	5.28	b		LDL	LDL	0.9	LDL
C0014	2025	2300	1701	05-83	18	0.31	b					
			1702	05-83	36	0.02	2.07					
			1703	05-83	54	0.02	2.18					
			1704	05-83	72	0.03	b					
			1705	05-83	90	0.87	b					
			1706	05-83	108	0.27	b					
			1707	05-83	126	0.50	b					
			1708	05-83	144	0.76	b					
			1709	05-83	162	0.23	2.74					
			1710	05-83	180	0.18[c]	b					
			1711	05-83	198	0.45	2.48					
			1712	05-83	204	0.29	b					
C0020	2075	2315	1713	05-83	18	0.08	b					
			1714	05-83	36	0.01	b					
			1715	05-83	54	0.06	b					
			1716	05-83	72	0.17	b					
			1717	05-83	108	0.29	b					
			1718	05-83	126	0.12[c]	b					
			1719	05-83	144	0.08	b					
			1720	05-83	162	0.11	b					
			1721	05-83	180	0.37	b					

Radiochemical Analysis

Map Location[a]	Coordinates South	Coordinates West	MRC ID No.	Mo-Yr	Depth (inch)	Pu-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Am-241 (pCi/g)
			1722	05-83	198	0.07	b					
			1723	05-83	216	0.10	b					
			5980	07-84	0	3.10	2.55		LDL	LDL	0.8	LDL
C0015	2025	2315	1833	05-83	18	0.11	3.53		LDL	LDL	0.8	LDL
			1834	05-83	36	0.11	b					
			1835	05-83	54	0.10	b					
			1836	05-83	72	0.22	b		LDL	LDL	0.8	LDL
			1837	05-83	90	0.10	b					
			1838	05-83	108	0.08	b					
			1839	05-83	126	0.09	b					
			1840	05-83	144	0.09	b					
			1841	05-83	162	0.07	b					
			1842	05-83	180	0.07	b					
			1843	05-83	198	0.19	2.41					
			1844	05-83	216	0.34	b					
			1845	05-83	234	0.37[c]	4.84[c]					
			1846	05-83	240	0.25	b					
C0016	2050	2350	1750	05-83	81	0.19	b					
			1751	05-83	36	0.02	b					
			1752	05-83	54	0.02	b					
			1753	05-83	72	0.01	b					
			1754	05-83	90	0.08	b					
			1755	05-83	108	0.11	b					
			1756	05-83	126	0.06	b					
			1757	05-83	144	0.06[c]	2.05[c]					
			1758	05-83	180	0.11	b					
			1759	05-83	216	0.03	b					
			1760	05-83	234	0.07	b					
(The depth on the first sample from this core location should probably be 18 in, not 81 as given in the data received.)												
C0017	2050	2475	1791	05-83	18	0.59	2.29					
			1792	05-83	36	0.21	b					
			1793	05-83	54	0.51[c]	b					
			1794	05-83	72	0.22	b					
			1795	05-83	90	0.15	b					

Radiochemical Analysis

Map Location[a]	Coordinates South	Coordinates West	MRC ID No.	Mo-Yr	Depth (inch)	Pu-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Am-241 (pCi/g)
			1796	05-83	108	0.15	b					
			1797	05-83	126	0.75	b					
			1798	05-83	144	0.09	b					
			1799	05-83	162	0.22	b					
			1800	05-83	216	0.15	b					
S0279	2075	1885	2869	10-83	0	0.33	b					
S0280	2075	2060	5975	07-84	0	0.56	b					
S0281	2075	2110	5976	07-84	0	0.83[c]	4.03[c]					
C0018	1800	2240	8356	11-84	36	0.01	4.52					
			8357	11-84	72	0.02	2.53					
S0282	1825	2290	4093	10-83	0	0.26	b					
S0283	1875	2340	5987	07-84	0	0.10	b					
S0284	1925	2390	6752	08-84	0	0.03	b					
S0285	1950	2440	4092	10-83	0	0.07	b					
S0286	2025	2265	4091	10-83	0	7.40[c]	b	5.23				
C0019	2025	2290	1823	05-83	18	0.54	2.61					
			1824	05-83	36	0.29	b					
			1825	05-83	54	0.27	b		LDL	LDL	0.7	LDL
			1826	05-83	90	0.52	b					
			1827	05-83	108	0.10	b					
			1828	05-83	126	0.06	b					
			1829	05-83	144	0.14	b					
			1830	05-83	162	0.16	b					
			1831	05-83	180	0.12[c]	b					
			1832	05-83	216	0.10	b					
S0287	2025	2440	5985	07-84	0	0.95	8.94		LDL	LDL	0.8	LDL

Radiochemical Analysis

f Map Location[a]	Coordinates South	West	MRC ID No.	Mo-Yr	Depth (inch)	Pu-238 (pCi/g)	Thorium[b] (pCi/g)	Tritium (pCi/mL)	Co-60 (pCi/g)	Cs-137 (pCi/g)	Ra-226 (pCi/g)	Am-241 (pCi/g)
C0289	2422.7	2081.0	None[d]	07-84	0	NR	0.6					
			None[d]	07-84	12	NR	1.1					
			None[d]	07-84	24	NR	0.5					
			None[d]	07-84	36	NR	0.8					
			None[d]	07-84	48	NR	1.0					
			None[d]	07-84	60	NR	0.8					
C0290	2401.5	2102.1	None[d]	07-84	0	NR	0.7					
			None[d]	07-84	12	NR	0.8					
			None[d]	07-84	24	NR	0.8					
			None[d]	07-84	36	NR	0.8					
			None[d]	07-84	48	NR	0.6					
			None[d]	07-84	60	NR	0.9					
			None[d]	07-84	72	NR	0.8					
C0291	2915.3	2490.3	None[d]	07-84	0	NR	0.6					
			None[d]	07-84	12	NR	0.4					
			None[d]	07-84	24	NR	0.5					
			None[d]	07-84	36	NR	0.4					
			None[d]	07-84	48	NR	0.4					
			None[d]	07-84	60	NR	0.3					
			None[d]	07-84	72	NR	0.5					
			None[d]	07-84	84	NR	0.4					
			None[d]	07-84	96	NR	0.7					
			None[d]	07-84	108	NR	0.6					
			None[d]	07-84	120	NR	0.3					
			None[d]	07-84	132	NR	0.3					
S1092	2185	3362	8413	12-84	f	0.31	323.5[g]					

[a]C denotes core location and S denotes surface sample location on Plate 1.

[b]Thorium results of ≤ 2 pCi/g are listed as "b".

[c]Verification sample analyzed for QA/QC.

[d]No MRC ID assigned because *In situ* gamma spectrometry was performed for thorium-232.

[e]Gamma results could not be confirmed using the gamma spectroscopy printout given in this appendix.

[f]The depth for this sample was given as "SS". For mapping purposes (Plates 1 and 5), this is assumed to be a surface sample.

[g]Sample results were given isotopically for this sample and included 0.99 pCi/g thorium-228; 321 pCi/g thorium-230; and 1.5 pCi/g thorium-232, for a total of 323.5 pCi/g.

ENVIRONMENTAL RESTORATION PROGRAM

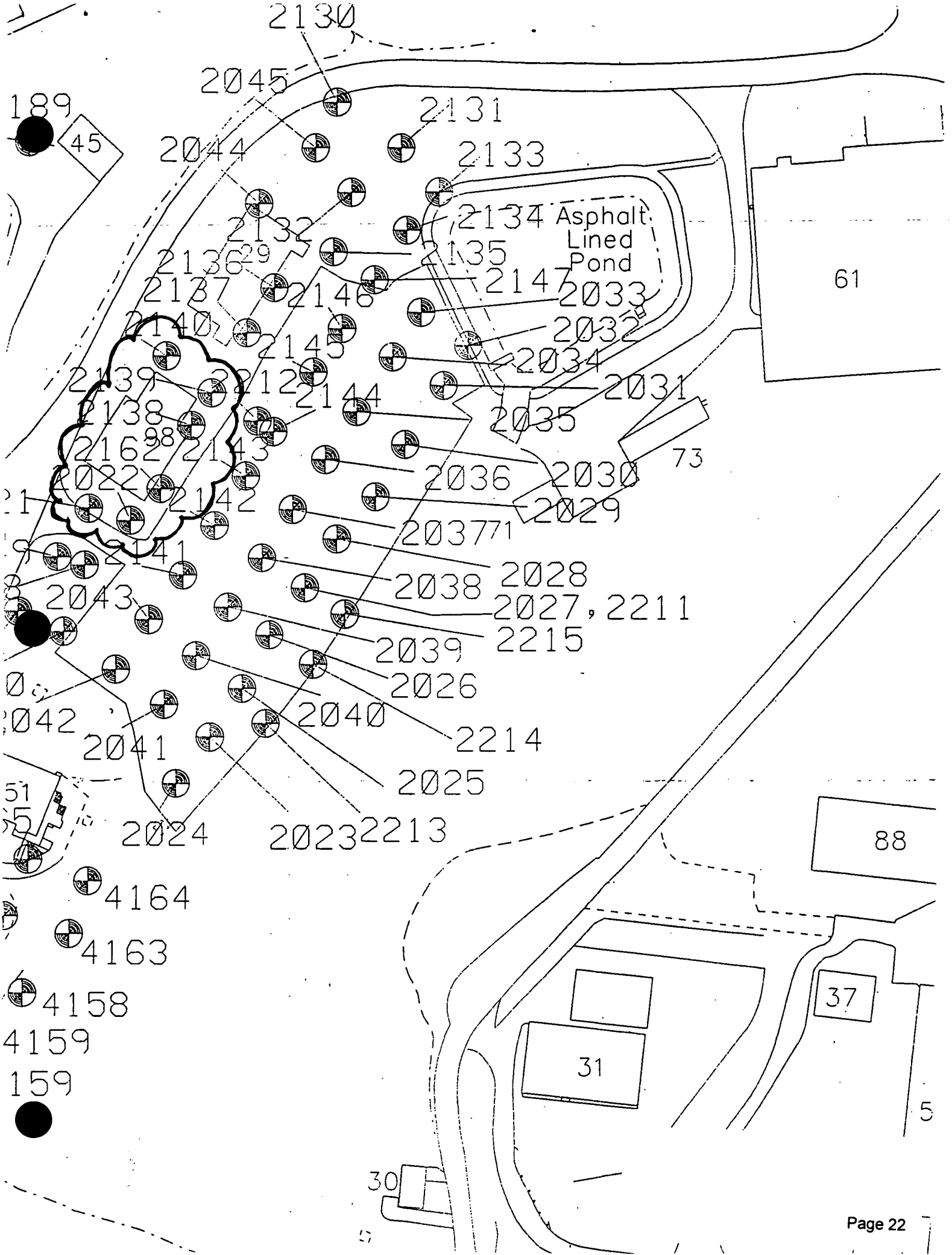
SOIL GAS SURVEY AND GEOPHYSICAL INVESTIGATIONS
MAIN HILL AND SM/PP HILL AREAS
RECONNAISSANCE SAMPLING

MOUND PLANT
MIAMISBURG, OHIO

February 1993

DEPARTMENT OF ENERGY
ALBUQUERQUE OFFICE

ENVIRONMENTAL RESTORATION PROGRAM
EG&G MOUND APPLIED TECHNOLOGIES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45
2131
2044
2133
2134
Asphalt
Lined
Pond
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2135
2136
29
2147
2137
2146
2033
2140
2032
2145
2034
2139
2128
2031
2144
2138
2035
2162
98
2143
73
2022
2036
2030
2142
2029
2037
71
2141
2028
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2043
2027, 2211
2215
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2040
2214
2041
2025
2024
2023
2213
88
4164
4163
4158
4159
159
37
31
30
5
61

TABLE II.10 SUMMARY OF POSITIVE DETECTIONS–AREA 7
(ppb)

SAMPLE ID	SAMPLE DATE	FREON 11	FREON 113	TRAN–12DCE	CIS–12DCE	111TCA	PCE	TCE	TOLUENE
MND–01–2021–0005	1 AUG 92	---	---	---	---	---	---	---	3
MND–01–2022–0005	1 AUG 92	---	---	---	---	---	---	---	3
MND–01–2023–0005	1 AUG 92	---	---	---	---	---	---	---	3
MND–01–2024–0005	1 AUG 92	---	---	---	---	---	---	---	3
MND–01–2025–0005	1 AUG 92	---	---	---	---	---	---	---	37
MND–01–2026–0005	1 AUG 92	---	---	---	---	---	---	---	133
MND–01–2027–0005	1 AUG 92	---	---	---	---	9	---	---	825
MND–01–2031–0005	1 AUG 92	---	---	---	---	---	---	---	13
MND–01–2032–0005	2 AUG 92	---	---	---	---	---	---	---	3
MND–01–2033–0005	2 AUG 92	---	---	---	---	---	---	---	3
MND–01–2034–0005	2 AUG 92	---	---	---	---	---	---	---	3
MND–01–2034–1005	2 AUG 92	---	---	---	---	---	---	---	3
MND–01–2036–0005w	3 AUG 92	---	---	---	---	---	---	---	242 *
MND–01–2036–1005w	3 AUG 92	---	---	---	---	---	---	---	218 *
MND–01–2039–0005	2 AUG 92	---	---	---	3	---	---	---	---
MND–01–2044–0005	3 AUG 92	---	---	---	---	---	---	---	13 *
MND–01–2137–1005	24 AUG 92	---	---	---	---	6	---	---	5
MND–01–2138–0005	24 AUG 92	11	---	---	---	2	---	---	80
MND–01–2139–0005	25 AUG 92	32	4	---	---	---	---	---	3 *
MND–01–2141–0005	25 AUG 92	---	---	---	10	---	---	---	5 *
MND–01–2142–0005	25 AUG 92	---	---	---	---	---	---	---	11*
MND–01–2142–1005	25 AUG 92	---	---	---	---	---	---	---	11*
MND–01–2145–0005	25 AUG 92	---	---	---	---	---	---	---	5 *
MND–01–2146–0005	25 AUG 92	---	33	---	---	---	6	---	---
MND–01–2147–0005	25 AUG 92	---	13	---	---	---	---	---	---
MND–01–2148–0005	26 AUG 92	---	---	---	---	22	---	---	---
MND–01–2149–0005	26 AUG 92	---	---	---	---	---	---	---	5 *
MND–01–2149–1005	26 AUG 92	---	---	---	---	---	---	---	5 *
MND–01–2150–0005	26 AUG 92	---	---	---	---	2	---	---	5 *
MND–01–2162–0005	30 AUG 92	7	---	---	---	---	---	---	---
MND–01–2212–0015	26 SEP 92	---	10	---	---	---	---	---	---
MND–01–2213–0005	26 SEP 92	---	---	---	---	---	---	---	11
MND–01–2214–0005	26 SEP 92	---	---	---	---	---	7	---	5
MND–01–2215–0005	26 SEP 92	---	---	---	---	---	---	---	11

Notes:

Only sample locations having positive detections are shown.
*: Associated trip, ambient, equipment or field blank contained specified compound.
B: Indicates blank sample.
w: Indicates water sample.

Soil Gas Data (Absolute)

EG&G MOUND-25-02-10-02--9602080077

Environmental Restoration Program

OPERABLE UNIT 5
OPERATIONAL AREA PHASE I INVESTIGATION
AREA 7 FIELD REPORT

MOUND PLANT
MIAMISBURG, OHIO

VOLUME I - TEXT

June 1995

Final (Revision 0)

U.S. Department of Energy
Ohio Field Office

EG&G Mound Applied Technologies

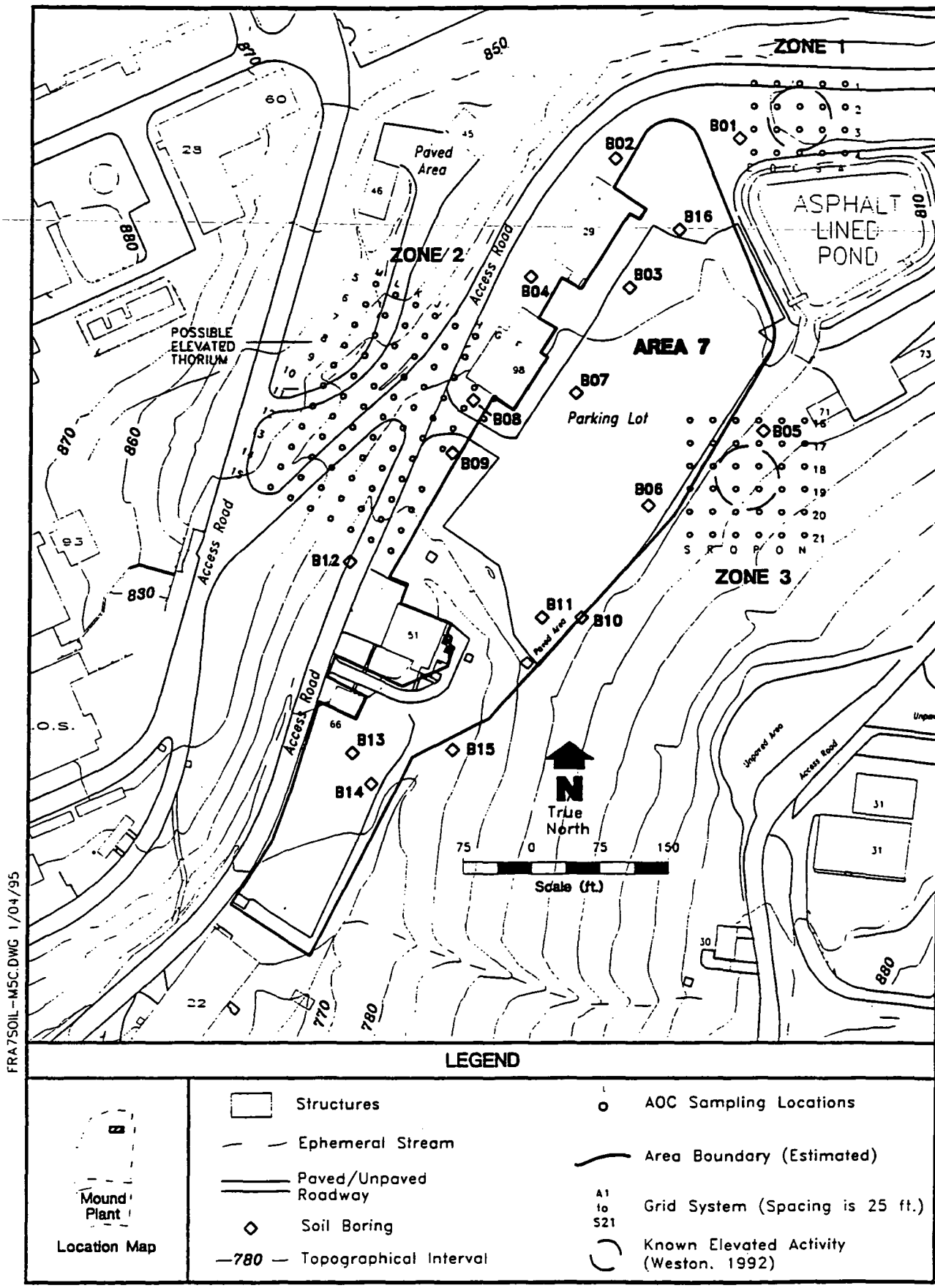


Figure 2.1. Data Collection Points for Area 7 Phase 1 and Phase 2 Investigations

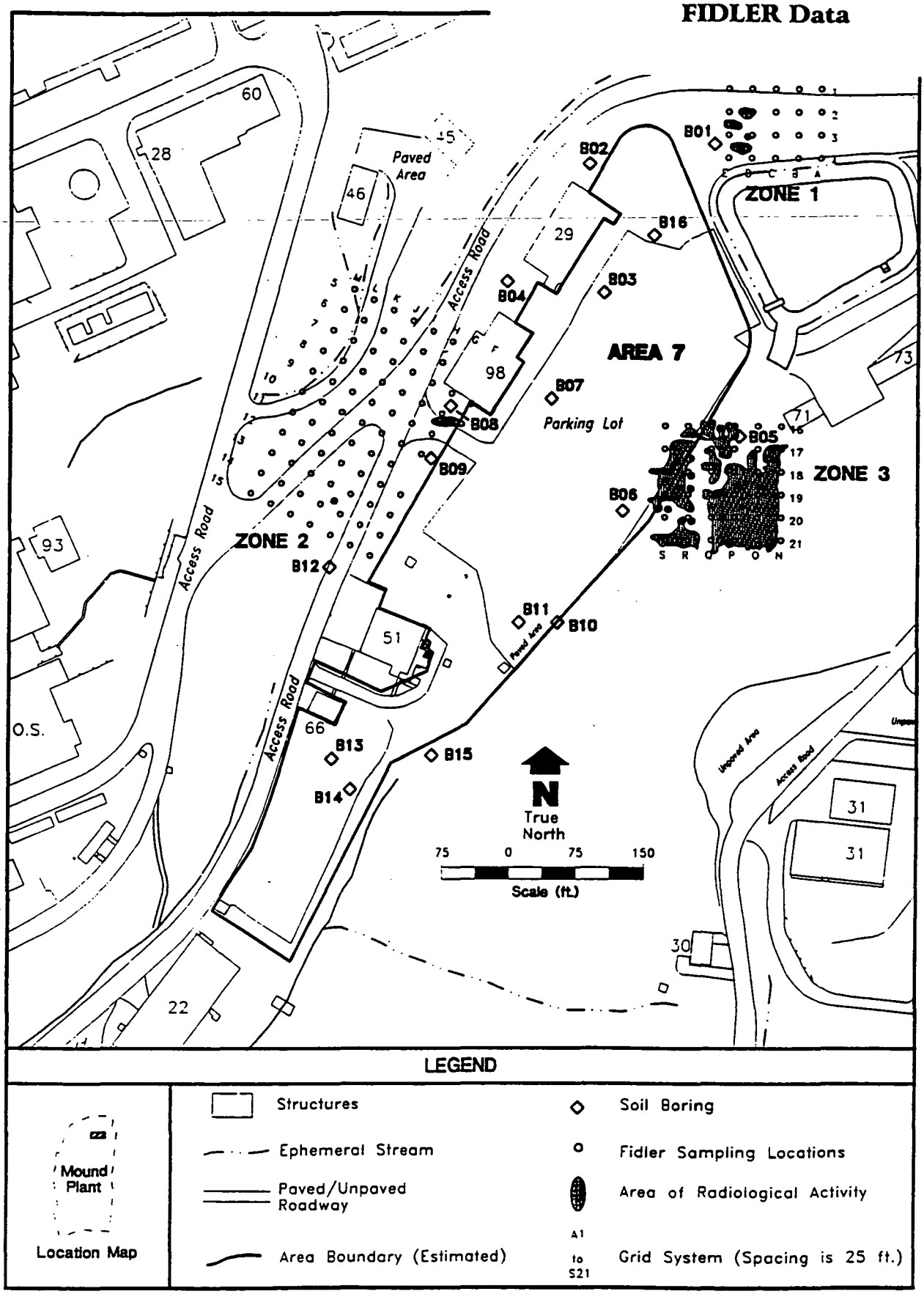


Figure 2.2. Areas of Elevated Surface Radiological Activity (FIDLER Survey)

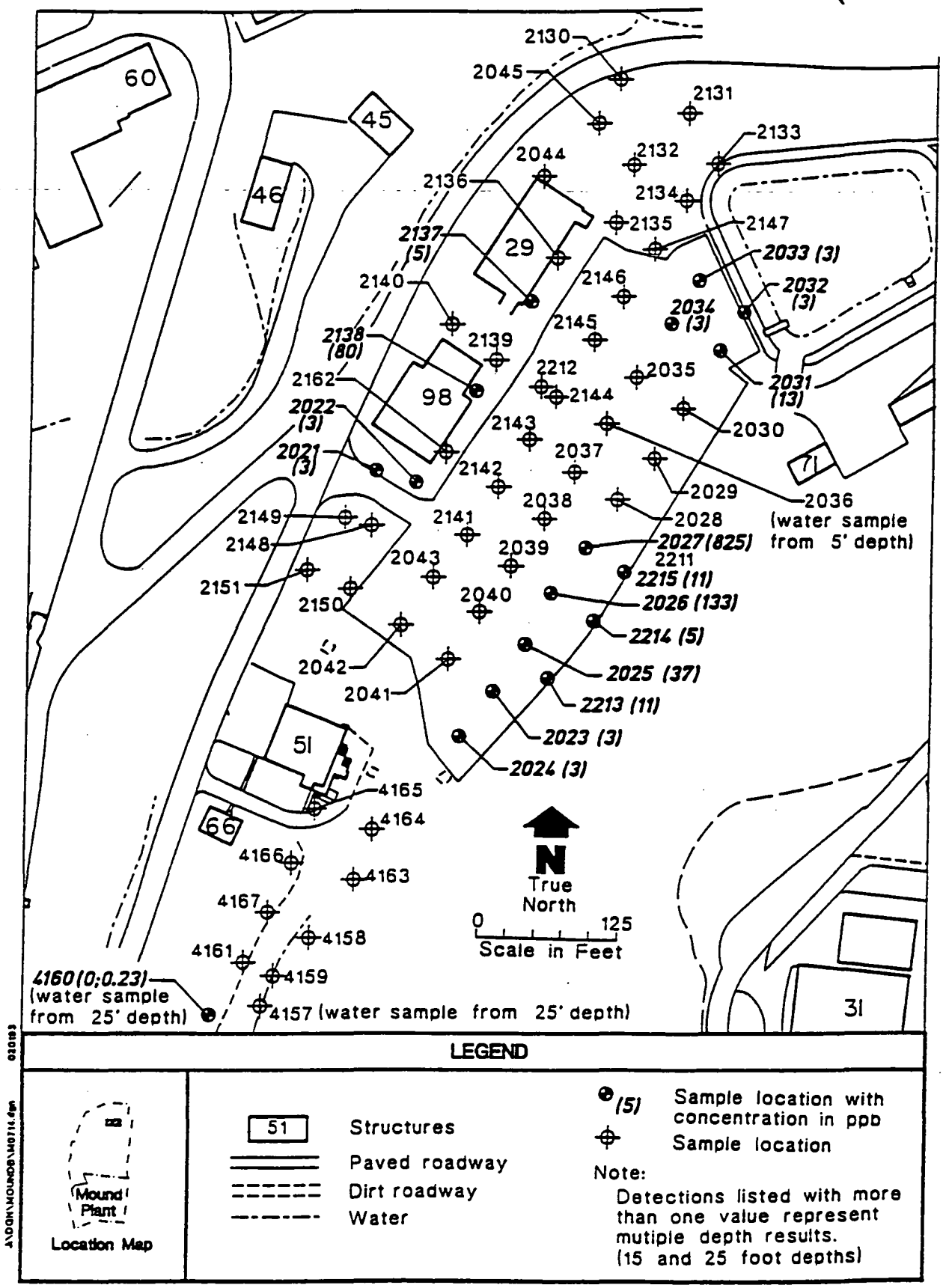


Figure 4.9. Toluene Detection Map for Area 7 from 1992 Soil Gas Survey

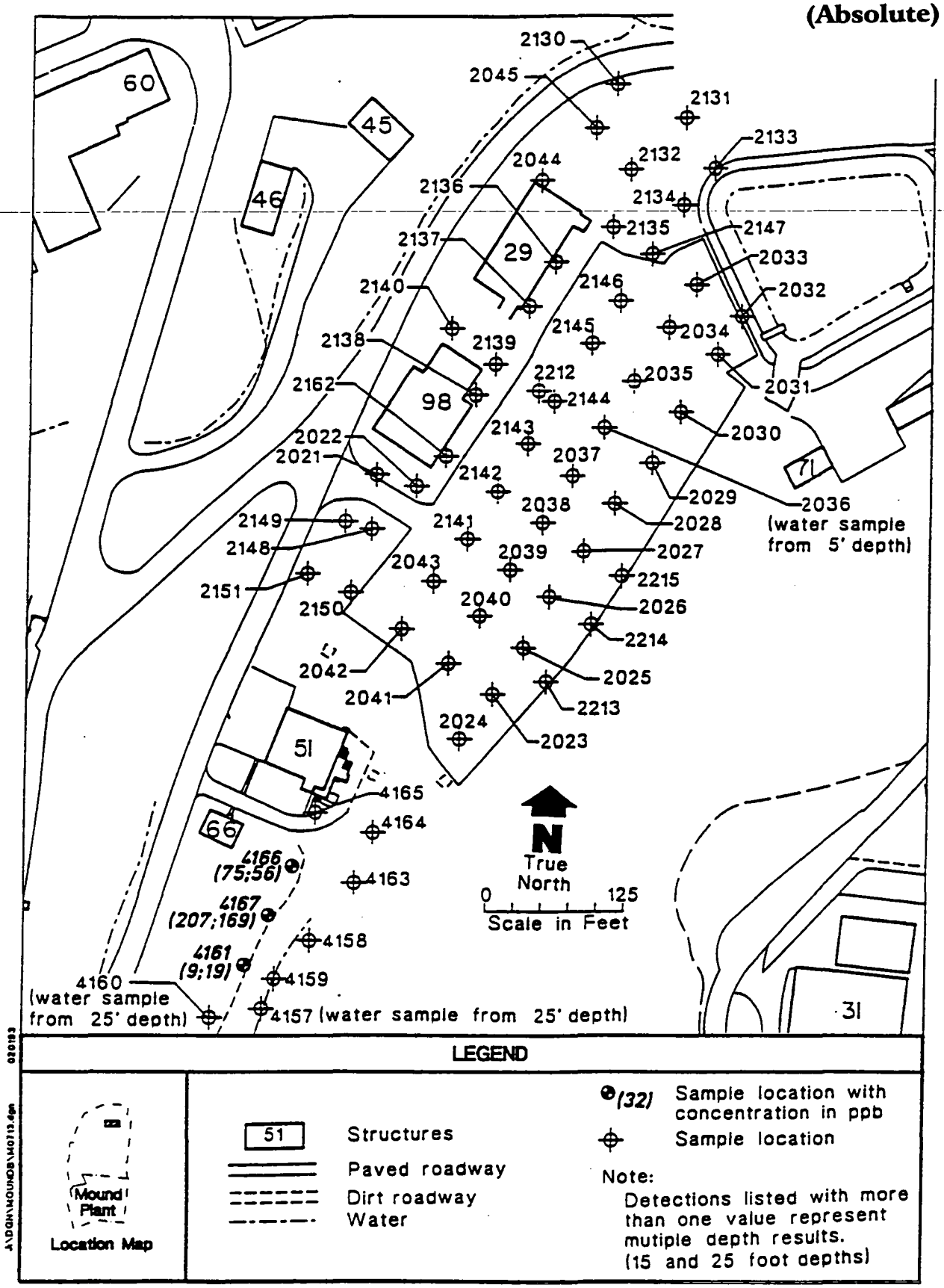


Figure 4.8. Trichloroethene Detection Map for Area 7 from 1992 Soil Gas Survey

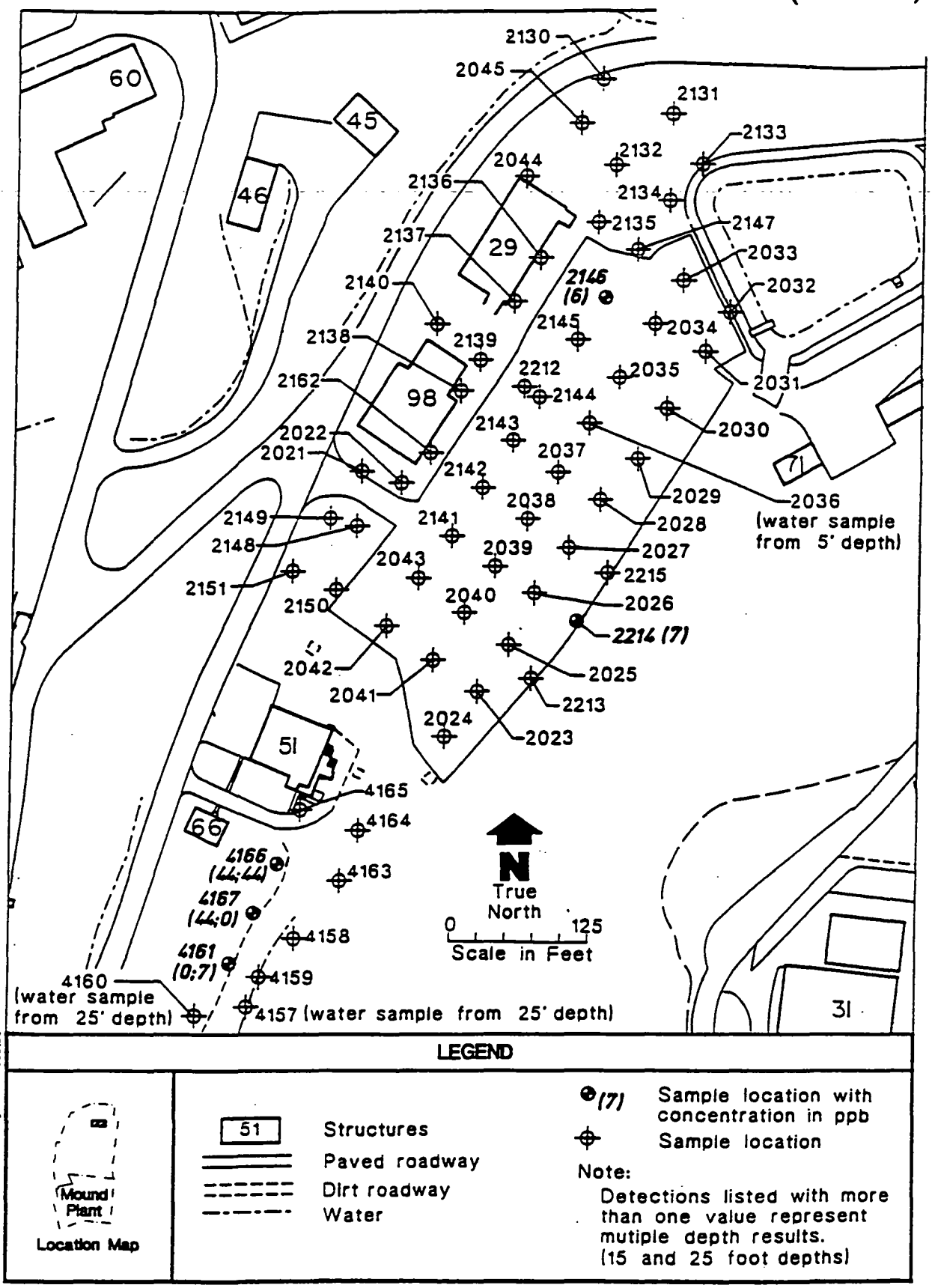


Figure 4.7. Tetrachloroethene Detection Map for Area 7 from 1992 Soil Gas Survey

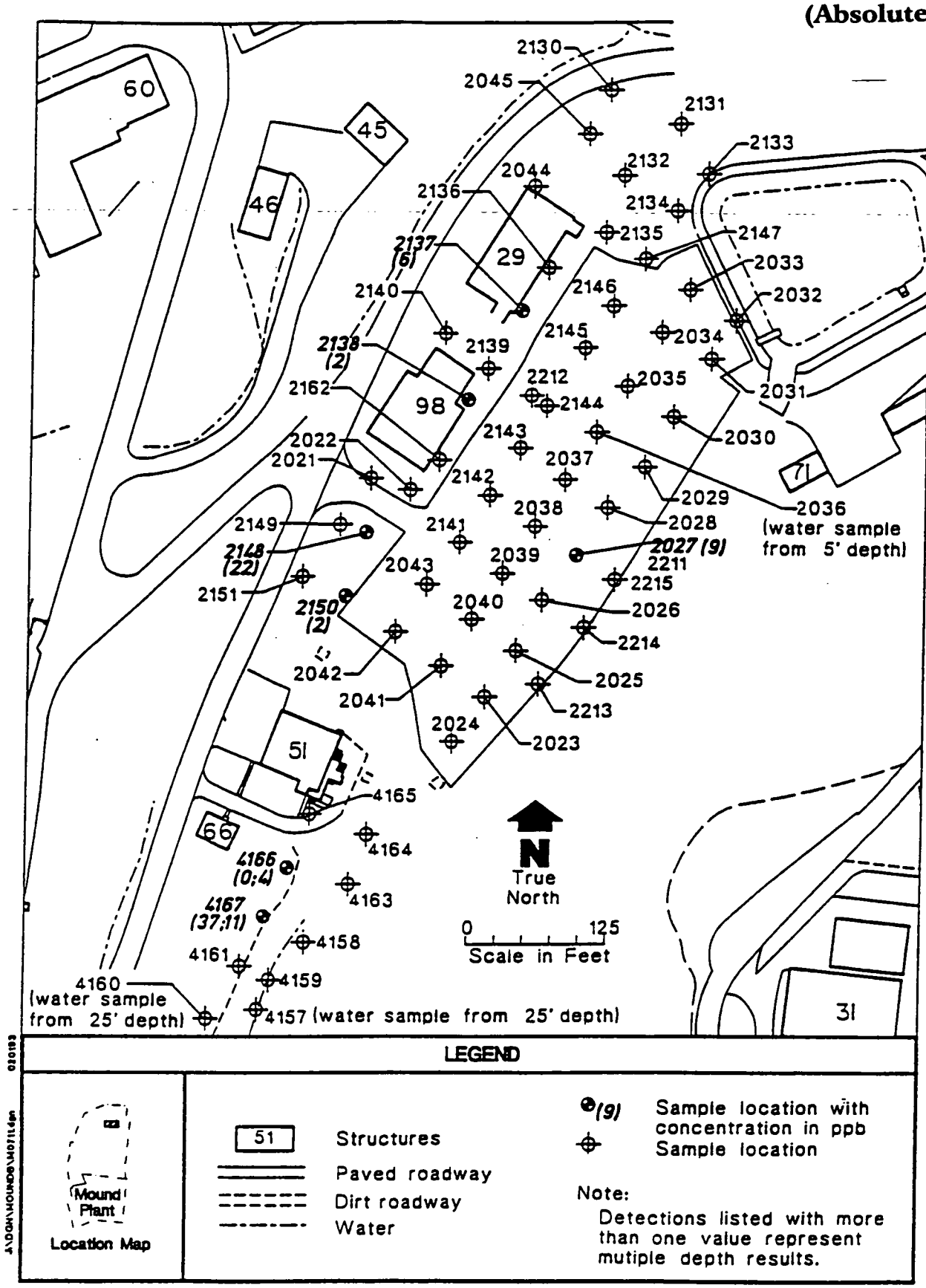


Figure 4.6. 1,1,1-Trichloroethane Detection Map for Area 7 from 1992 Soil Gas Survey

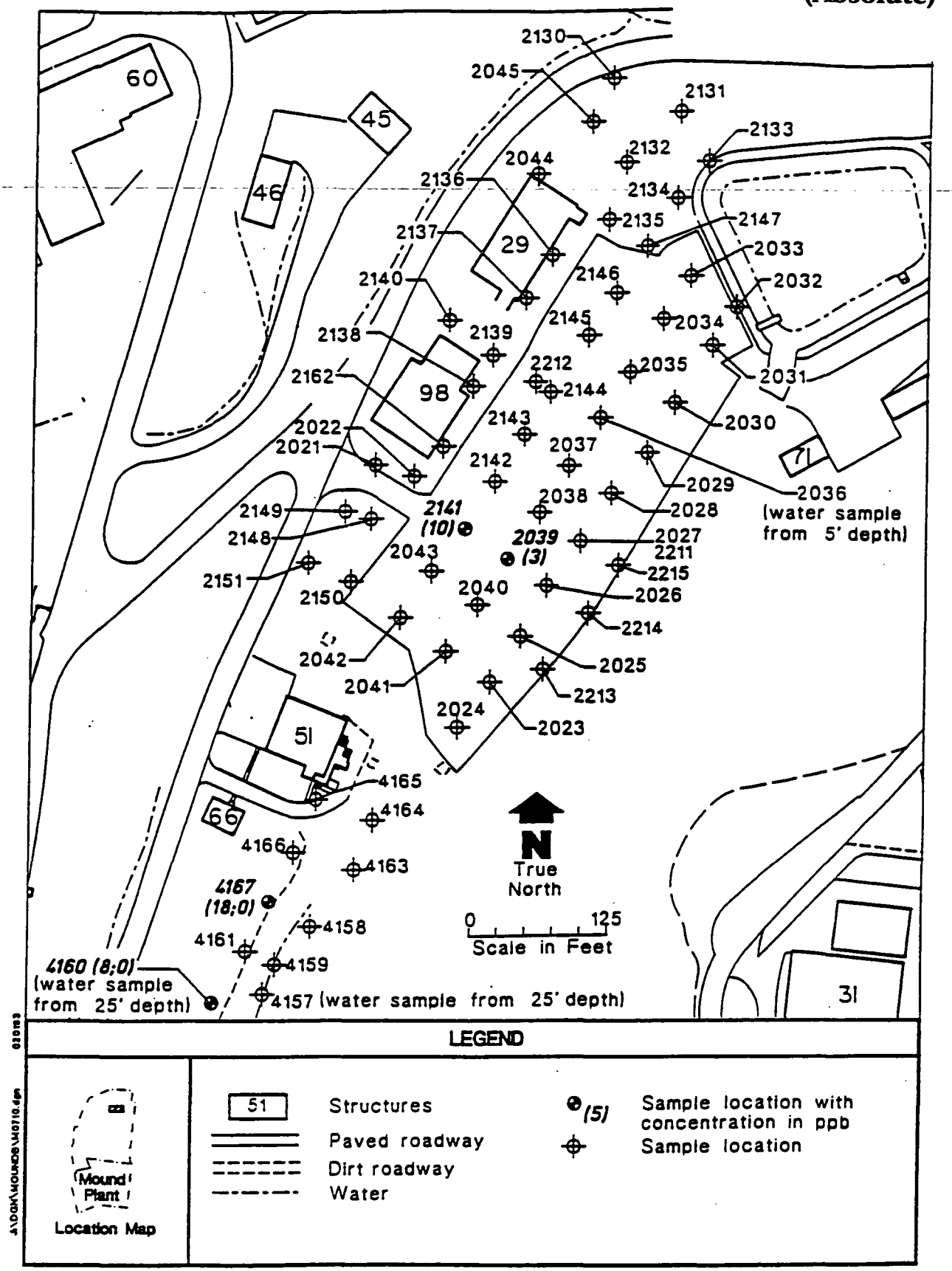


Figure 4.5. Cis-1,2-Dichloroethene Detection Map for Area 7 from 1992 Soil Gas Survey

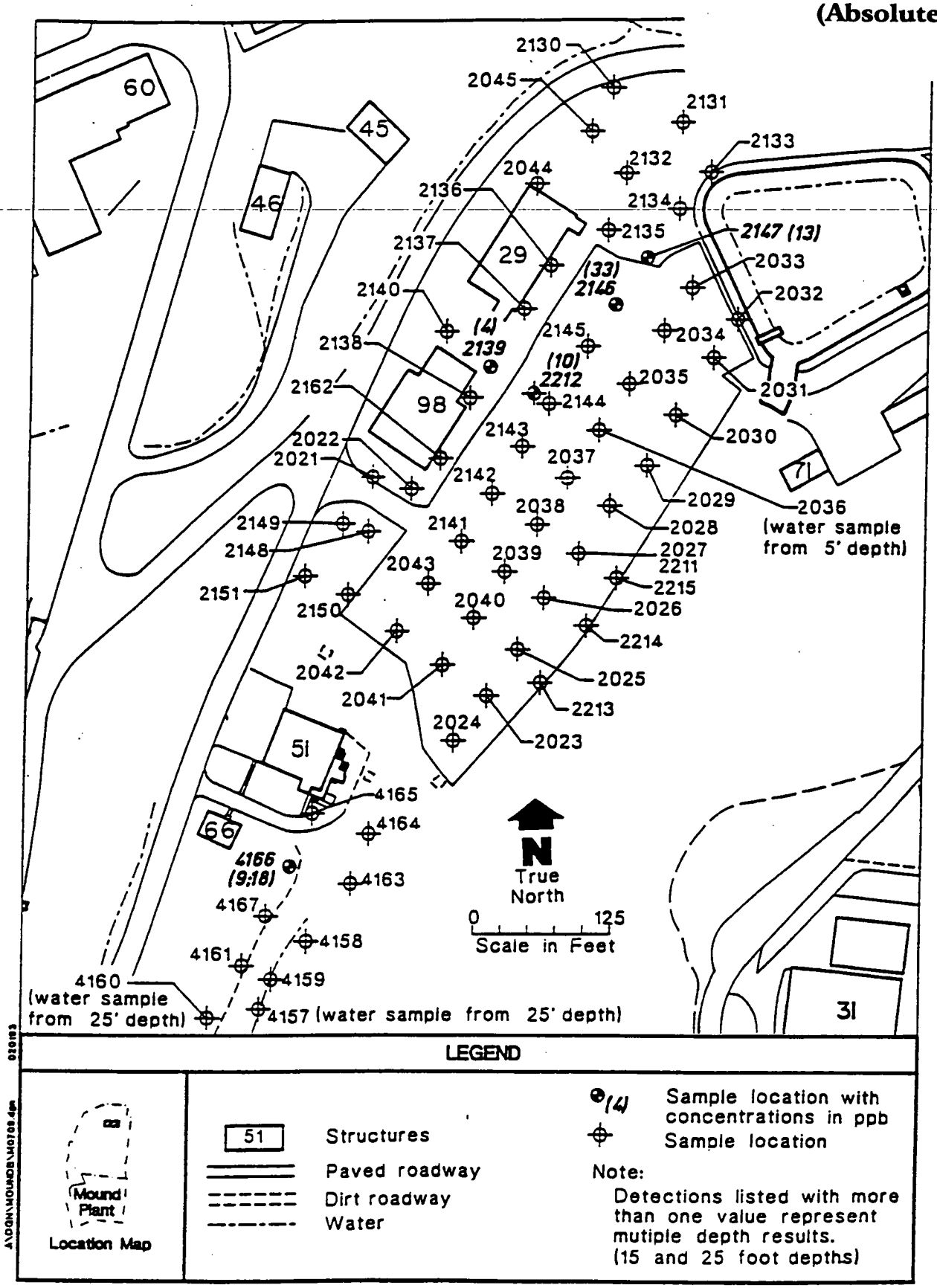


Figure 4.4. Freon-113 Detection Map for Area 7 from 1992 Soil Gas Survey

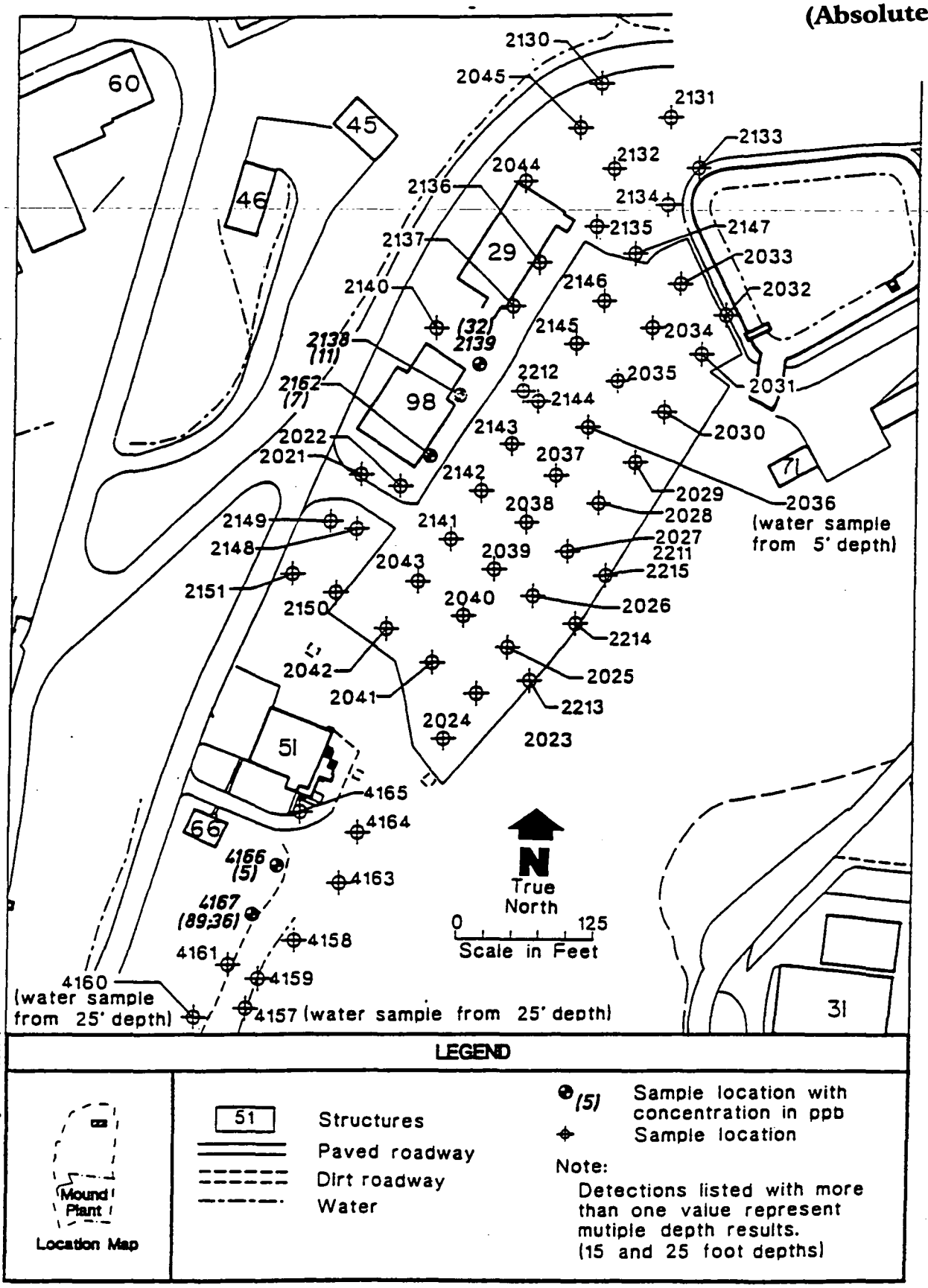


Figure 4.3. Freon-11 Detection Map for Area 7 from 1992 Soil Gas Survey

EG&G MOUND-25-02-10-02--9602280069

Environmental Restoration Program

OPERABLE UNIT 5
OPERATIONAL AREA PHASE I INVESTIGATION
AREA 7 FIELD REPORT

MOUND PLANT
MIAMISBURG, OHIO

VOLUME II - APPENDICES A-G

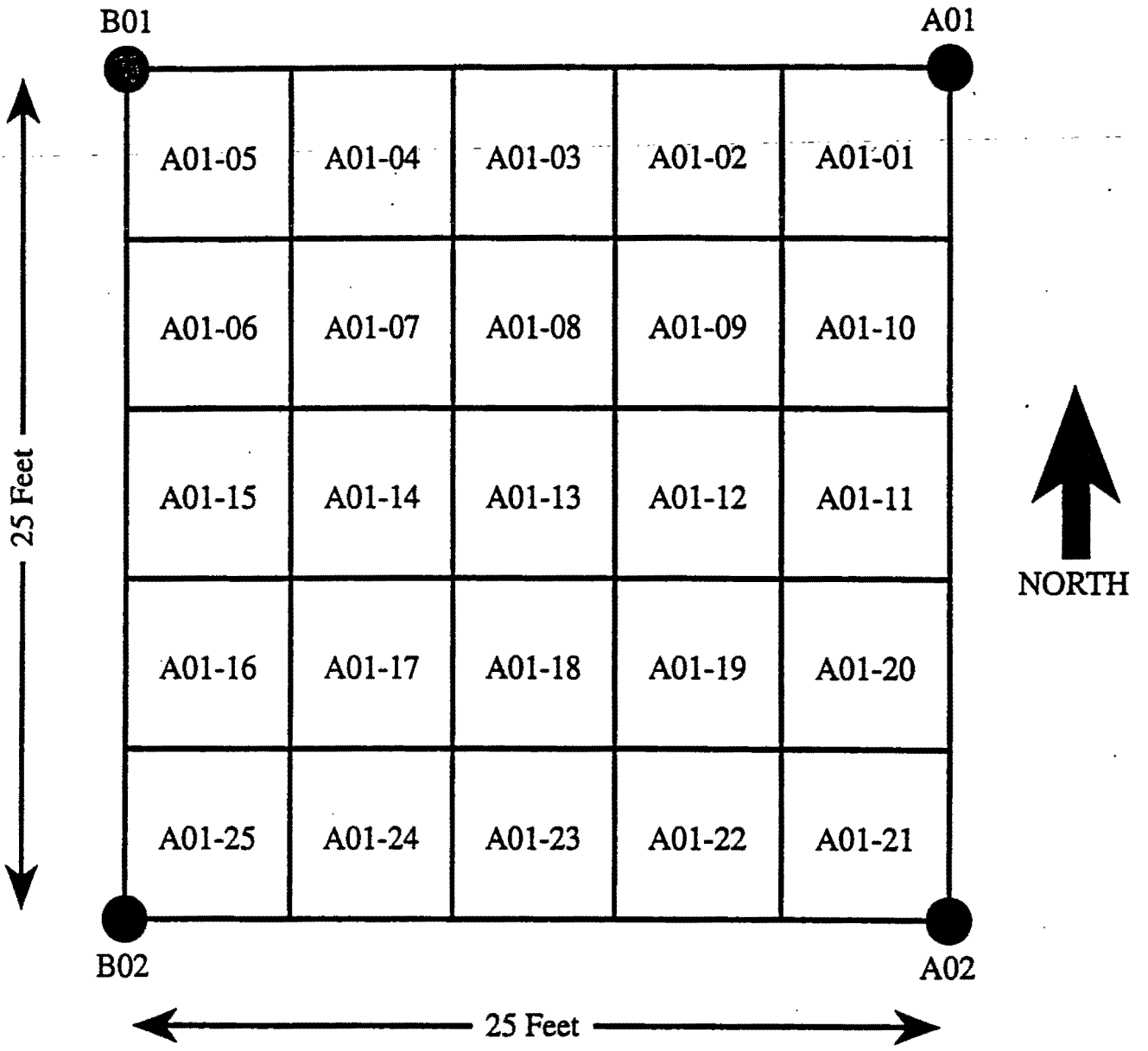
June 1995

Final (Revision 0)

U.S. Department of Energy
Ohio Field Office

EG&G Mound Applied Technologies

APPENDIX C
RADIOLOGICAL DATA
(FIDLER SURVEY & SOIL SCREENING FACILITY DATA)



Operable Unit 5, Operational Area, Phase 1 Investigation - Generic Sampling Identification Scheme for the FIDLER survey conducted in Area 7

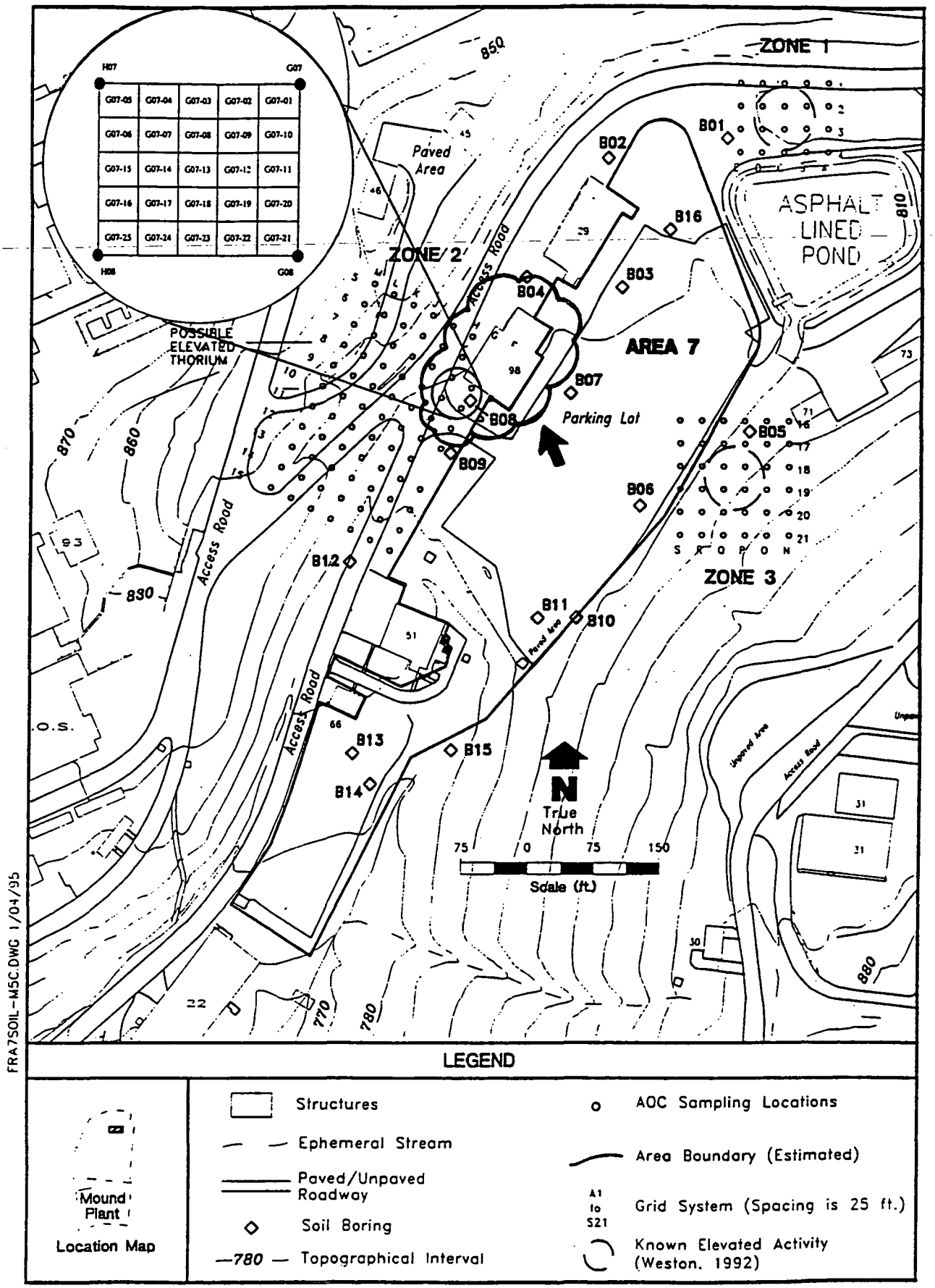


Figure 2.1. Data Collection Points for Area 7 Phase 1 and Pl

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7D03-15	182.0	NA	10.66	NA	11.7	9.0	NC		NC	
7D03-16	182.0	NA	10.66	NA	11.7	8.5	NC		NC	
7D03-17	182.0	NA	10.66	NA	11.7	8.5	NC		NC	
7D03-18	182.0	NA	10.66	NA	11.7	8.5	NC		NC	
7D03-19	182.0	NA	10.66	NA	11.7	8.0	NC		NC	
7D03-20	182.0	NA	10.66	NA	11.7	7.0	NC		NC	
7D03-21	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7D03-22	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7D03-23	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7D03-24	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7D03-25	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7D04	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7E01	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7E02	NA	NA	NA	NA	NA	NR	22		0.7	
7E03	NA	NA	NA	NA	NA	NR	18		0.8	
7E04	NA	NA	NA	NA	NA	NR	8		0.6	
7F07	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7F07-01	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-02	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-03	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-04	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-05	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-06	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-07	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7F07-08	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7F07-09	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-10	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-11	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-12	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-13	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-14	182.0	NA	10.66	NA	11.7	5.5	NC		NC	

FIDLER Data

Mound Soil Screen Data

APPENDIX C
RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7F07-15	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-16	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-17	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-18	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-19	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-20	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F07-21	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7F07-22	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7F07-23	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-24	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F07-25	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F08	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7F08-01	182.0	NA	10.66	NA	11.7	8.0	NC		NC	
7F08-02	182.0	340	10.66	60	11.7	34.0	NC		NC	
7F08-03	182.0	NA	10.66	NA	11.7	23.0	NC		NC	
7F08-04	182.0	NA	10.66	NA	11.7	17.0	NC		NC	
7F08-05	182.0	NA	10.66	NA	11.7	11.0	NC		NC	
7F08-06	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7F08-07	182.0	NA	10.66	NA	11.7	11.0	NC		NC	
7F08-08	182.0	NA	10.66	NA	11.7	15.0	NC		NC	
7F08-09	182.0	NA	10.66	NA	11.7	23.0	NC		NC	
7F08-10	182.0	NA	10.66	NA	11.7	8.0	NC		NC	
7F08-11	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-12	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F08-13	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7F08-14	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-15	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-16	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7F08-17	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-18	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-19	182.0	NA	10.66	NA	11.7	5.5	NC		NC	

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7F08-20	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-21	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-22	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-23	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-24	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7F08-25	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7G07-01	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G07-02	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G07-03	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G07-04	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7G07-05	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-06	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-07	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-08	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-09	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-10	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-11	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G07-12	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-13	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-14	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-15	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-16	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-17	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-18	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G07-19	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-20	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-21	182.0	NA	10.66	NA	11.7	6.5	NC		NC	
7G07-22	182.0	NA	10.66	NA	11.7	7.0	NC		NC	
7G07-23	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G07-24	182.0	NA	10.66	NA	11.7	5.5	NC		NC	

FIDLER Data

Mound Soil Screen Data

APPENDIX C
RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7G07-25	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G08	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7G08-01	166.4	NA	9.49	NA	11.05	8.5	NC		NC	
7G08-02	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-03	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-04	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-05	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7G08-06	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7G08-07	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-08	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-09	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-10	166.4	NA	9.49	NA	11.05	7.0	NC		NC	
7G08-11	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-12	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-13	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-14	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-15	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7G08-16	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-17	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-18	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-19	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-20	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-21	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-22	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G08-23	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-24	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7G08-25	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7G09	NA	NA	NA	NA	NA	NR	WIPE	b	WIPE	b
7G09-01	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G09-02	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7G09-03	166.4	NA	9.49	NA	11.05	6.0	NC		NC	

FIDLER Data

Mound Soil Screen Data

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7G13-24	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G13-25	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14	NA	NA	NA	NA	NA	NR	1		0.4	
7G14-01	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-02	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-03	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-04	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G14-05	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G14-06	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G14-07	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-08	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-09	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-10	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G14-11	182.0	NA	10.66	NA	11.7	6.0	NC		NC	
7G14-12	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G14-13	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G14-14	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-15	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G14-16	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-17	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-18	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-19	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-20	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-21	182.0	NA	10.66	NA	11.7	5.0	NC		NC	
7G14-22	182.0	NA	10.66	NA	11.7	4.5	NC		NC	
7G14-23	182.0	NA	10.66	NA	11.7	4.5	NC		NC	
7G14-24	182.0	NA	10.66	NA	11.7	4.5	NC		NC	
7G14-25	182.0	NA	10.66	NA	11.7	5.5	NC		NC	
7G15	NA	NA	NA	NA	NA	NR	9		0.6	
7H05	NA	NA	NA	NA	NA	NR	10		0.6	
7H05-01	166.4	NA	9.49	NA	11.05	6.0	NC		NC	

FIDLER Data

Mound Soil Screen Data

APPENDIX C

RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7H05-02	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-03	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H05-04	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-05	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-06	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-07	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-08	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-09	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-10	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H05-11	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-12	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-13	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H05-14	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H05-15	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-16	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-17	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H05-18	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-19	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-20	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H05-21	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-22	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H05-23	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-24	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H05-25	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H06	NA	NA	NA	NA	NA	NR	10		0.5	
7H06-01	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-02	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-03	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-04	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H06-05	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H06-06	166.4	NA	9.49	NA	11.05	5.0	NC		NC	

FIDLER Data

Mound Soil Screen Data

APPENDIX C
RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7H06-07	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-08	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-09	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-10	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-11	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-12	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-13	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-14	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H06-15	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-16	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-17	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-18	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-19	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H06-20	166.4	NA	9.49	NA	11.05	6.5	NC		NC	
7H06-21	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-22	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-23	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H06-24	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H06-25	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07	NA	NA	NA	NA	NA	NR	7		0.3	
7H07-01	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-02	166.4	NA	9.49	NA	11.05	6.0	NC		NC	
7H07-03	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-04	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-05	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-06	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-07	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-08	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-09	166.4	NA	9.49	NA	11.05	5.0	NC		NC	
7H07-10	166.4	NA	9.49	NA	11.05	5.5	NC		NC	
7H07-11	166.4	NA	9.49	NA	11.05	5.5	NC		NC	

FIDLER Data

Mound Soil Screen Data

APPENDIX C
RADIOLOGICAL DATA (FIDLER SURVEY & MOUND SOIL SCREENING FACILITY) FOR AREA 7

	FIDLER SURVEY DATA						MOUND SOIL SCREENING FACILITY DATA			
SMPID	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	Contamination Criteria Out Channel	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
7S19	NA	NA	NA	NA	NA	NR	12		1.1	
7S20	NA	NA	NA	NA	NA	NR	13		1	
7S21	NA	NA	NA	NA	NA	NR	17		0.9	

CH1 - Channel 1
CH2 - Channel 2
NR - Reading not recorded.
NC - No sample collected, location not at grid point.
NA - Reading not taken; contamination criteria not exceeded.
a - Mound Soil Screening Facility detection level of 25.0 pCi/g for Pu-238 and 2.0 pCi/g for Th-232 exceeded.
b - Results of the wipe sample were less than 20 disintegrations per minute.
Sampling equipment was wiped when sufficient soil for analysis could not be collected. The wipes were screened at the Mound Soil Screening Facility.
CPM - Counts per minute
KCPM - Counts per minute x 1000
pCi/g - Picocuries per gram
SMPID - Sample identification number.

F.1 Tables of Validated Detected Analytes in Soil and Groundwater

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater
Table F.1.1 Radionuclides in Surface Soil Samples from Area 7 Soil Borings

	B01	B02	B03	B04
	Value	Value	Value	Value
RADIONUCLIDES (pCi/g)				
Pu-238	ND	ND	ND	0.19
Ra-226	ND	ND	ND	0.49
Th-228	0.650 J	0.26	0.25	0.39
Th-230	1.310 J	0.1	ND	0.390 J
Th-232	0.450 J	ND	ND	0.290 J
U-235	0.060 J	0.12	0.050 J	0.04
U-238	0.910 J	0.39	0.380 J	0.62
	B05	B06	B07	B08
	Value	Value	Value	Value
RADIONUCLIDES (pCi/g)				
K-40	19.52	23.720 J	13.94	13.17
Pu-238	0.24	ND	1.36	ND
Pu-239/40	ND	ND	0.12	ND
Ra-226	ND	0.7	0.66	0.4
Th-228	1.21	ND	1.530 J	ND
Th-230	1.040 J	0.74	0.92	ND
Th-232	1.020 J	0.560 J	1.000 J	0.060 J
Tritium	ND	ND	4.7	3.4
U-234	1.19	0.79	0.44	0.63
U-235	0.23	ND	ND	0.12
U-238	1.23	0.690 J	0.790 J	0.710 J

Radiochemical Analysis

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater

TABLE F.1.2 Radionuclides in Subsurface Soil Samples from Area 7 Soil Borings

	B07				B08			
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM	
	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)
RADIONUCLIDES (pCi/g)								
K-40	11.650	10.0-15.0	19.490	15.0-17.0	15.590	5.0-10.0	16.240	10.0-22.0
Pu-238	0.300	5.0-9.0	0.540	10.0-15.0	ND	NA	ND	NA
Ra-226	0.440	10.0-15.0	0.900	15.0-17.0	0.420	5.0-10.0	0.420	5.0-10.0
Th-228	0.860 J	5.0-9.0	3.070 J	15.0-17.0	ND	NA	ND	NA
Th-230	0.290 J	5.0-9.0	0.520	10.0-15.0	ND	NA	ND	NA
Th-232	0.340 J	5.0-9.0	1.750 J	15.0-17.0	0.060 J	5.0-10.0	0.060 J	5.0-10.0
Tritium	ND	NA	ND	NA	2.400	10.0-22.0	2.500	5.0-10.0
U-234	0.550 J	10.0-15.0	2.210 J	15.0-17.0	0.520	5.0-10.0	0.710 J	10.0-22.0
U-238	0.770 J	5.0-9.0	2.280 J	15.0-17.0	0.520 J	5.0-10.0	0.650 J	10.0-22.0

	B09				B10			
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM	
	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)
RADIONUCLIDES (pCi/g)								
K-40	10.340	25.0-32.0	22.390	12.0-20.0	22.230	5.0-10.0	22.280	10.0-13.5
Ra-226	0.410	25.0-32.0	0.560	20.0-25.0	0.560	10.0-13.5	0.600	5.0-10.0
Th-232	0.150 J	5.0-12.0	0.390 J	12.0-20.0	0.100 J	5.0-10.0	0.140 J	10.0-13.5
Tritium	3.200	25.0-32.0	58.500	5.0-12.0	2.000	5.0-10.0	2.000	5.0-10.0
U-234	0.490	12.0-20.0	0.910	20.0-25.0	0.580	5.0-10.0	0.820 J	10.0-13.5
U-235	0.140	20.0-25.0	0.150	5.0-12.0	ND	NA	ND	NA
U-238	0.540 J	12.0-20.0	1.110 J	20.0-25.0	0.710 J	5.0-10.0	0.840 J	10.0-13.5

	B11				B12			
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM	
	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)
RADIONUCLIDES (pCi/g)								
K-40	19.540	4.0-10.0	23.000	15.0-20.5	21.010	6.0-10.0	24.700	12.0-23.0
Pu-238	0.090	4.0-10.0	0.090	4.0-10.0	ND	NA	ND	NA
Ra-226	0.470	15.0-20.5	0.670	4.0-10.0	0.600	6.0-10.0	0.660	12.0-23.0
Th-232	0.160 J	4.0-10.0	0.480 J	4.0-10.0	0.290 J	6.0-10.0	0.400 J	12.0-23.0
U-234	0.650	4.0-10.0	0.910	4.0-10.0	0.530	12.0-23.0	0.780	6.0-10.0
U-235	0.060	4.0-10.0	0.100	4.0-10.0	0.030	12.0-23.0	0.030	12.0-23.0
U-238	0.650 J	10.0-15.0	0.820 J	4.0-10.0	0.640 J	6.0-10.0	0.650 J	12.0-23.0

Radiochemical Analysis

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater
Table F.1.3 Organic Compounds in Surface Soil Samples From Area 7 Soil Borings

	B05	B06	B07	B08
	Value	Value	Value	Value
EXPLOSIVES (µg/kg)				
4,4'-DDE	0.390 J	ND	0.140 J	ND
4,4'-DDT	ND	ND	0.170 J	ND
PESTICIDES/PCBs (µg/kg)				
Aldrin	ND	ND	0.300 J	0.910 J
alpha-Chlordane	ND	ND	15.000 J	7.2
Dieldrin	0.790 J	0.240 J	1.000 J	ND
Endosulfan Sulfate	ND	ND	1.200 J	ND
Endrin Aldehyde	ND	0.570 J	ND	3.600 J
Endrin Ketone	ND	0.210 J	ND	ND
gamma-Chlordane	ND	ND	11.000 J	8.2
Heptachlor	ND	ND	0.250 J	ND
Heptachlor Epoxide	ND	ND	ND	0.170 J
p,p'-Methoxychlor	ND	ND	1.300 J	ND

General Chemistry

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater

Table F.1.3 Organic Compounds in Surface Soil Samples From Area 7 Soil Borings

	B05	B06	B07	B08
	Value	Value	Value	Value
SEMI-VOLATILE ORGANICS (µg/kg)				
2-Methylnaphthalene	ND	ND	40.000 J	ND
Acenaphthene	ND	ND	130.000 J	ND
Acenaphthylene	ND	ND	95.000 J	ND
Anthracene	ND	ND	170.000 J	ND
Benzo(a)anthracene	120.000 J	ND	540	ND
Benzo(a)pyrene	160.000 J	ND	810	ND
Benzo(b)fluoranthene	290.000 J	33.000 J	1400.000 J	ND
Benzo(g,h,i)perylene	110.000 J	ND	140.000 J	ND
Benzo(k)fluoranthene	430	56.000 J	3000.000 J	ND
Benzoic Acid	ND	ND	97.000 J	ND
bis(2-Ethylhexyl)phthalate	ND	ND	ND	43.000 J
Carbazole	ND	ND	98.000 J	ND
Chrysene	160.000 J	48.000 J	590	42.000 J
Dibenzofuran	ND	ND	64.000 J	ND
Fluoranthene	250.000 J	ND	1300	40.000 J
Fluorene	ND	ND	120.000 J	ND
Indeno(1,2,3-c,d)pyrene	97.000 J	ND	230.000 J	ND
Naphthalene	ND	ND	43.000 J	ND
Phenanthrene	150.000 J	39.000 J	770	57.000 J
Phenol	ND	ND	57.000 J	ND
Pyrene	240.000 J	49.000 J	1200	44.000 J
VOLATILE ORGANICS (µg/kg)				
Acetone	24.000 J	94.000 J	140	ND

General Chemistry

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater
Table F.1.4 Organic Compounds in Subsurface Soil Samples from Area 7 Soil Borings

	B07				B08			
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM	
	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)
PESTICIDES/PCB's (µg/kg)								
4,4'-DDD	0.200 J	5.0-9.0	0.200 J	5.0-9.0	ND	NA	ND	NA
4,4'-DDE	0.400 J	10.0-15.0	0.840 J	5.0-9.0	ND	NA	ND	NA
4,4'-DDT	0.970 J	15.0-17.0	0.970 J	15.0-17.0	ND	NA	ND	NA
alpha-Chlordane	2.300 J	10.0-15.0	4.500 J	5.0-9.0	ND	NA	ND	NA
Aroclor-1248	190.000	15.0-17.0	190.000	15.0-17.0	ND	NA	ND	NA
Dieldrin	ND		ND		0.170 J	5.0-10.0	0.170 J	5.0-10.0
Endosulfan Sulfate	0.190 J	5.0-9.0	0.190 J	5.0-9.0	ND	NA	ND	NA
gamma-Chlordane	2.000 J	10.0-15.0	3.700 J	5.0-9.0	ND	NA	ND	NA
SEMI-VOLATILE ORGANICS (µg/kg)								
Acenaphthene	78.000 J	10.0-15.0	78.000 J	10.0-15.0	ND	NA	ND	NA
Anthracene	43.000 J	5.0-9.0	110.000 J	10.0-15.0	ND	NA	ND	NA
Benzo(a)anthracene	140.000 J	5.0-9.0	200.000 J	10.0-15.0	ND	NA	ND	NA
Benzo(a)pyrene	170.000 J	5.0-9.0	200.000 J	10.0-15.0	ND	NA	ND	NA
Benzo(b)fluoranthene	55.000 J	15.0-17.0	270.000 J	5.0-9.0	ND	NA	ND	NA
Benzo(k)fluoranthene	110.000 J	15.0-17.0	540.000 J	5.0-9.0	ND	NA	ND	NA
bis(2-Ethylhexyl)phthalate	110.000 J	10.0-15.0	110.000 J	10.0-15.0	43.000 J	5.0-10.0	110.000 J	10.0-22.0
Carbazole	60.000 J	10.0-15.0	60.000 J	10.0-15.0	ND	NA	ND	NA
Chrysene	41.000 J	15.0-17.0	180.000 J	10.0-15.0	ND	NA	ND	NA
Dibenzofuran	52.000 J	10.0-15.0	52.000 J	10.0-15.0	ND	NA	ND	NA
Fluoranthene	41.000 J	15.0-17.0	360.000 J	10.0-15.0	ND	NA	ND	NA
Fluorene	86.000 J	10.0-15.0	86.000 J	10.0-15.0	ND	NA	ND	NA
Indeno(1,2,3-c,d)pyrene	80.000 J	5.0-9.0	100.000 J	10.0-15.0	ND	NA	ND	NA
Phenanthrene	170.000 J	5.0-9.0	390.000	10.0-15.0	ND	NA	ND	NA
Phenol	42.000 J	5.0-9.0	42.000 J	5.0-9.0	ND	NA	ND	NA
Pyrene	47.000 J	15.0-17.0	400.000	10.0-15.0	ND	NA	ND	NA
VOLATILE ORGANICS (µg/kg)								
Acetone	41.000 J	15.0-17.0	49.000	5.0-9.0	ND	NA	ND	NA

General Chemistry

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater

Table F.1.5 Inorganic Compounds in Surface Soil Samples from Area 7 Soil Borings

	B05	B06	B07	B08
	Value	Value	Value	Value
ANIONS (mg/kg)				
Chloride	ND	100.000 J	335.000 J	53.400 J
Fluoride	3.880 J	8.31	38.800 J	2.950 J
Sulfate	135.000 J	73.100 J	764.000 J	257.000 J
Nitrate-Nitrite-N	1.980 J	0.522	1.800 J	3.86
TOTAL ORGANIC CARBON (mg/kg)				
Organic Carbon	13400	21400	8320	7850.000 J
METALS (mg/kg)				
Aluminum	15500	9410.000 J	9350.000 J	5630.000 J
Antimony	2.600 J	ND	3.300 J	ND
Arsenic	6.900 J	3.400 J	5.200 J	2.5
Barium	82.100 J	36.200 J	58.400 J	12.2
Beryllium	0.8	0.430 J	0.48	0.280 J
Bismuth	10.5	33	15.8	0.880 J
Cadmium	ND	ND	ND	0.260 J
Calcium	43200	46400	97700	245000
Chromium	16.400 J	ND	11.500 J	6.800 J
Cobalt	12.000 J	ND	7.300 J	4.700 J
Copper	17	ND	13.9	3.100 J
Iron	23400	15900	14600	9650.000 J
Lead	14.800 J	6.600 J	12.900 J	4.600 J
Lithium	20.100 J	19.3	16.900 J	19.300 J
Magnesium	8870.000 J	14000	24500	17100
Manganese	756.000 J	405.000 J	373.000 J	495.000 J
Mercury	ND	0.460 J	ND	ND
Molybdenum	4.900 J	9.000 J	3.800 J	0.200 J
Nickel	20.5	ND	14	7.300 J
Potassium	2070.000 J	1850	1810.000 J	3030.000 J
Silver	ND	ND	0.530 J	ND
Sodium	113	ND	363	239
Tin	ND	3.5	ND	ND
Vanadium	25.100 J	ND	16.600 J	9.400 J
Zinc	52.700 J	36.400 J	45.900 J	22.7

General Chemistry

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater

Table F.1.5 Inorganic Compounds in Surface Soil Samples from Area 7 Soil Borings

	B05	B06	B07	B08
	Value	Value	Value	Value
LANTHANIDES (mg/kg)				
Cerium	ND	44.7	ND	23.3
Dysprosium	4.5	ND	3.5	ND
Erbium	ND	ND	8.400 J	ND
Europium	1.6	ND	1.4	ND
Gadolinium	28.900 J	ND	ND	ND
Holmium	ND	ND	2	ND
Lanthanum	15.7	ND	9.1	ND
Neodymium	26.2	29.9	19.2	32
Praseodymium	ND	ND	51.8	ND
Samarium	ND	ND	18.6	ND
Terbium	ND	ND	13.6	ND
Ytterbium	ND	ND	3.4	ND

General Chemistry

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater

Table F.1.6 Inorganic Compounds in Subsurface Soil Samples from Area 7 Soil Borings

	B07				B08			
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM	
	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)
ANIONS (mg/kg)								
Chloride	58.400 J	15.0-17.0	202.000 J	5.0-9.0	35.600 J	10.0-22.0	64.200 J	5.0-10.0
Fluoride	3.440 J	5.0-9.0	4.840 J	10.0-15.0	3.600 J	5.0-10.0	5.040 J	10.0-22.0
Sulfate	398.000 J	10.0-15.0	464.000 J	5.0-9.0	127.000 J	10.0-22.0	166.000 J	5.0-10.0
Nitrate-Nitrite-N	0.798	15.0-17.0	0.798	15.0-17.0	1.100	5.0-10.0	1.440	10.0-22.0
TOTAL ORGANIC CARBON (mg/kg)								
Organic Carbon	2720.000	10.0-15.0	32000.000	5.0-9.0	1380.000 J	10.0-22.0	7470.000 J	10.0-22.0
METALS (mg/kg)								
Aluminum	8070.000 J	5.0-9.0	12500.000	15.0-17.0	11900.000	10.0-22.0	12700.000	5.0-10.0
Antimony	2.400 J	5.0-9.0	2.600 J	15.0-17.0	ND	NA	ND	NA
Arsenic	3.100 J	10.0-15.0	19.700	15.0-17.0	2.100	5.0-10.0	2.600	10.0-22.0
Barium	43.500 J	15.0-17.0	48.800 J	10.0-15.0	30.500	5.0-10.0	36.800	10.0-22.0
Beryllium	0.400	5.0-9.0	0.560	15.0-17.0	0.540 J	10.0-22.0	0.610 J	5.0-10.0
Bismuth	16.200 J	15.0-17.0	21.400	5.0-9.0	ND	NA	ND	NA
Cadmium	ND	NA	ND	NA	0.210 J	5.0-10.0	0.210 J	5.0-10.0
Calcium	79200.000	15.0-17.0	157000.000	5.0-9.0	121000.000	5.0-10.0	165000.000	10.0-22.0
Chromium	9.200 J	5.0-9.0	14.100 J	15.0-17.0	13.900 J	5.0-10.0	14.900 J	10.0-22.0
Cobalt	6.200	5.0-9.0	9.300	15.0-17.0	7.200 J	10.0-22.0	8.100 J	5.0-10.0
Copper	8.400 J	5.0-9.0	17.100	15.0-17.0	1.600 J	5.0-10.0	3.600 J	10.0-22.0
Iron	14600.000	5.0-9.0	18200.000	10.0-15.0	17000.000	10.0-22.0	18000.000	5.0-10.0
Lead	8.400	10.0-15.0	13.000	15.0-17.0	6.000 J	10.0-22.0	6.400 J	5.0-10.0
Lithium	15.200 J	5.0-9.0	15.200 J	5.0-9.0	ND	NA	ND	NA
Magnesium	10800.000	10.0-15.0	17800.000	5.0-9.0	6620.000 J	10.0-22.0	7930.000 J	5.0-10.0
Manganese	309.000 J	10.0-15.0	506.000 J	5.0-9.0	428.000 J	5.0-10.0	584.000 J	10.0-22.0
Nickel	11.900	5.0-9.0	19.400 J	15.0-17.0	10.700 J	10.0-22.0	11.900 J	5.0-10.0
Potassium	1370.000 J	5.0-9.0	2820.000	15.0-17.0	4510.000 J	5.0-10.0	4800.000 J	10.0-22.0
Selenium	0.930	5.0-9.0	0.930	5.0-9.0	ND	NA	ND	NA
Silver	0.500 J	10.0-15.0	0.690 J	5.0-9.0	ND	NA	ND	NA
Sodium	177.000	5.0-9.0	194.000	15.0-17.0	169.000	5.0-10.0	175.000	10.0-22.0
Tin	ND	NA	ND	NA	3.800	5.0-10.0	3.800	5.0-10.0
Vanadium	12.700 J	5.0-9.0	18.000 J	15.0-17.0	13.900 J	5.0-10.0	14.200 J	10.0-22.0
Zinc	33.200 J	5.0-9.0	51.900	15.0-17.0	36.300	10.0-22.0	42.500	5.0-10.0

General Chemistry

APPENDIX F.1 Tables of Validated Detected Analytes in Soil and Groundwater

Table F.1.6 Inorganic Compounds in Subsurface Soil Samples from Area 7 Soil Borings

	B07 (CONT)				B08 (CONT)			
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM	
	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)	Value	Depth (ft BGS)
LANTHANIDES (mg/kg)								
Cerium	ND		ND		26.800	10.0-22.0	28.400	5.0-10.0
Dysprosium	2.600	5.0-9.0	3.800	15.0-17.0	ND	NA	ND	NA
Erbium	7.000 J	10.0-15.0	7.200 J	15.0-17.0	ND	NA	ND	NA
Europium	0.930	10.0-15.0	1.800	15.0-17.0	ND	NA	ND	NA
Gadolinium	68.200 J	5.0-9.0	90.700 J	10.0-15.0	88.300	10.0-22.0	88.300	10.0-22.0
Holmium	2.100	5.0-9.0	2.400	15.0-17.0	ND	NA	ND	NA
Lanthanum	29.600	15.0-17.0	29.600	15.0-17.0	ND	NA	ND	NA
Lutetium	0.550	10.0-15.0	0.550	10.0-15.0	ND	NA	ND	NA
Neodymium	20.700	10.0-15.0	25.200	15.0-17.0	15.400	5.0-10.0	26.100	10.0-22.0
Praseodymium	7.500	10.0-15.0	72.100	5.0-9.0	ND	NA	ND	NA
Samarium	19.100	10.0-15.0	19.600	15.0-17.0	ND	NA	ND	NA
Ytterbium	3.500	10.0-15.0	3.600	5.0-9.0	ND	NA	ND	NA

General Chemistry

SCREENING POTENTIAL RELEASE SITES BASED ON SOIL GAS READINGS

Soil gas readings can be utilized in the PRS screening process to identify potential release sites that may present a potential soil contamination problem for volatile organics. The soil gas survey that was conducted at Mound as part of the "Reconnaissance Sampling Report--Soil Gas Survey and Geophysical Investigations, Mound Plant Main Hill and SM/PP Hill" investigated 8 volatile compounds. The concentrations of these compounds in the in the vapor phase within the pore spaces of the soil can be correlated to the actual soil contaminant concentrations by utilizing a method developed by ICF Kaiser Engineers. This technique has been used with US EPA Region IX approval at a large Superfund site contaminated with many of the same chemicals found at relatively low levels in soils at the Mound Plant.

The soil concentration can be estimated from the soil gas values by the following equation:

$$Ct = (Cg/Pb)*[[Pb * Kd / H] + [pw / H] + [pt - pw]]$$

where

Cg	concentration of volatile chemical concentrations as soil vapor in ng/ml
Pb	Bulk density of the soil in g/ml
Kd	soil/water partition coefficient in ml/g
H	Dimensionless Henry's Law Constant
pw	water filled porosity
pt	total porosity
Ct	target soil concentration in ng/g or ug/kg (ppb)

The technique that Mound Plant will use for screening a PRS, is to compare the soil gas values obtained at a PRS with soil gas concentrations that are known to be below any regulatory or health based level of concern. The risk based guideline values for the Mound Plant (DOE, December 1995) soils are based upon 10^{-6} risk levels or a hazard index of 1. These values correspond to direct soil exposure to persons who's activities place them at the highest risk, in particular inhalation and ingestion by a Mound Plant construction worker.

Another potential exposure path must be considered, however. The potential for some of the organic contaminants to leach into ground water must be considered in developing protective soil screening levels. A "Mound Plant Soil Screening Level" paper explains the calculation of soil screening levels. For all of the chemicals that the soil gas survey identified, the calculated soil screening level soil concentrations are below the standard guideline values, therefore they are more conservative and are appropriate to be used as the basis for the soil gas calculations.

By re-arranging the equation, and using either the soil guideline values or the soil screening levels as the target soil concentration, a soil gas concentration can be calculated; this calculated soil gas concentration can be compared to the actual observed soil gas values:

$$Cg = (Pb*Ct)/[[Pb*Kd/H] + [pw/H] + [pt-pw]]$$

The values of the soil specific and chemical parameters for this equation are summarized as follows:

Pb	1.6	Bulk density of the soil in g/ml
pw	0.15	water filled porosity
pt	0.43	total porosity
foc	0.02	fraction organic material in soil (used in developing the SSL values)

Typical chemicals that are detected with soil gas sampling are:					
NAME	H	Kd	Calculated Acceptable Soil Screening Level Value	Calculated Acceptable Soil Gas Reading	Calculated Acceptable Soil Gas Reading
		ml/g	mg/kg (ppm)	ng/ml	ppb
Toluene	2.52E-01	3.42	22.06	1.56E+03	414600
Trichloroethene (TCE)	4.35E-01	2.24	0.07	1.26E+01	2400
111 Trichloroethane (TCA)	7.63E-01	2.2	3.01	9.46E+02	173400
Trans-1,2 Dichloroethene (DCE)	2.29E-01	1	0.70	1.41E+02	35700
cis-1,2 Dichloroethene (DCE)	1.85E-01	2.78	0.31	1.97E+01	5000
Freon 11	NA	NA			
Freon 113	NA	NA			
Tetrachloroethene (PCE)	7.09E-01	2.78	0.09	2.13E+01	3100

na not available

IF THE SOIL GAS READING IS BELOW THE VALUES IN THE CALCULATED SOIL GAS READING COLUMN (SHADED), THEN THERE IS NO THREAT TO GROUNDWATER FROM THIS PRS.

The soil screening level values are calculated using the Soil Screening Methodology. The Potential Release Site is assumed to be more than 100 meters from a potential drinking water source with an aquifer thickness of 15 meters and a source size of 10 meters. The hydraulic gradient is assumed to be 0.01 which is conservative for most of the Mound Plant PRSs. In special instances where the PRS lies less than 100 meters from a potential drinking water source, or the hydraulic gradient is much less than 0.01, new SSL values and new acceptable soil gas values will be calculated for that particular PRS.

19251-19275

CONSTRUCTION INSPECTION DAILY REPORT

Book 1

PROJECT TITLE Central Fire Station

PROJECT ENGINEER Paul Kleiner

CONTRACTOR J.I.M. Bldrs

INSPECTOR D. Daniel

Monsanto

MOUND
Miamisburg, Ohio 45342

operated by
MONSANTO RESEARCH CORPORATION
a subsidiary of Monsanto Company

for the
U. S. DEPARTMENT OF ENERGY
Contract No. DE-AC04-76-DP00053

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT Central Fire Station DATE 6-3-85 NO. 19255

ENGINEER P. Kleiner CONTRACTOR Jim.

WEATHER CONDITIONS: Temp. Range 69-78 Clear ✓ Rain ___ Snow ___ Cloudy ___

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent 4 Other

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

CONSTRUCTION AND RELATED ACTIVITY Cutting dirt down to below final grade. Dug into an uncharted catch basin of some type. Health physics surveyed tank and surrounding area and determined them to be "Hot". Report from health physics to follow advising as to what action will be taken.

Jim. lost about 2 hours of work time while surveying was going on.

INSTRUCTION TO CONTRACTOR

Inspector's Signature [signature]

NRC-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT Central Fire Station DATE 6-4-85 NO. 19256

ENGINEER P. Klein CONTRACTOR J.I.M.

WEATHER CONDITIONS: Temp. Range 47 — 67 Clear ___ Rain ___ Snow ___ Cloudy ___

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent 2 Other

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

CONSTRUCTION AND RELATED ACTIVITY Continued to cut to approx. 12" below final grade.

Health Physics gave OK. to remove most of dirt to spoils area.

J.I.M left about 1:30 because no dump truck had arrived to remove stocked dirt.

MRC to remove pit, 6-5-85.

Surveyor will be on hand to monitor excavations.

INSTRUCTION TO CONTRACTOR

Inspector's Signature [signature]

MRC-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT Central Fire Station DATE 6-5-85 NO. 19257

ENGINEER P. Klein CONTRACTOR J.I.M.

WEATHER CONDITIONS: Temp. Range 61 - 71 Clear ✓ Rain ___ Snow ___ Cloudy ✓

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent ___ Other ___

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

Ace Sprinkler 2

CONSTRUCTION AND RELATED ACTIVITY I had transformer (MRC) delivered to job site for temporary electric service, since insufficient 120v/lt power was found in Bldg. 29.

During excavation of North section of Bldg. the end loader caused a break in an unlocated fire water main (8"). Ace Sprinkler made repair for J.I.M. after 4:00. Frank Thomas inspected ~~[illegible]~~ after 4:00.

Before break dirt was being hauled to spoils area and excavation continued.

Approx. 2 Hrs. was lost because of "hot" earth sitting on undisturbed ground, was encountered before water main break.

Sam Ruben was delivered to job for pers

INSTRUCTION TO CONTRACTOR

Inspector's Signature [signature]

MRC-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT Central Fire Station DATE 6-6-85 NO. 19258

ENGINEER P. Klerne CONTRACTOR J.I.M.

WEATHER CONDITIONS: Temp. Range 57-77 Clear ✓ Rain ___ Snow ___ Cloudy ___

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent 1 Other

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

CONSTRUCTION AND RELATED ACTIVITY Site mostly drained but muddy. Contractor proceed for water lines (Fire & domestic) Both were found and appear to be sufficiently far enough away for bldg to miss all construction. MRC started to remove contaminated dirt from site. Did not complete by 4:00 PM. Said they would work till 8:00 p.m. + tomorrow. MRC to remove contaminated pit + surrounding dirt on Saturday. Contractor left at approx 2:00 P.M. waiting on contaminated earth removal.

INSTRUCTION TO CONTRACTOR

Inspector's Signature

C-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT Central Fire Station DATE 6-7-85 NO. 19259

ENGINEER Paul Kleive CONTRACTOR J.I.M.

WEATHER CONDITIONS: Temp. Range 61-68 Clear ____ Rain ✓ Snow ____ Cloudy ____

PRIME CONTRACTOR PERSONNEL ON JOB: ____ Superintendent ____ Other ____

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

CONSTRUCTION AND RELATED ACTIVITY Seubert Co. set trailer on job site.

No activity on contaminated dirt removal by MRC.

Dirt removal by MRC scheduled for 6-8-85 between 6-10 AM. Removal of tank and surrounding earth to be removed later, the same day.

INSTRUCTION TO CONTRACTOR

Inspector's Signature [signature]

MRC-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT Central Fire Station DATE 6-10-85 NO. 19260

ENGINEER P. Klein CONTRACTOR Jim

WEATHER CONDITIONS: Temp. Range 70-80 Clear ___ Rain ___ Snow ___ Cloudy ✓

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent 1 Other

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

CONSTRUCTION AND RELATED ACTIVITY Saturday June 8, MRC removed + brought contaminated earth from excavation. The remaining concrete tank was deemed safe by Health Physics. Tank may be filled in by contractor.

Removed more earth to spoils area. Also staked out pier centers. Surveyor scheduled for Thursday, 6-13 & Drilling rig to started setting up tomorrow.

INSTRUCTION TO CONTRACTOR

Inspector's Signature [signature]

MRC-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

19788

PROJECT Central Fire Station DATE 11/29/85 NO.

ENGINEER R. Weld CONTRACTOR J.M.

WEATHER CONDITIONS: Temp. Range 43-57 Clear ___ Rain ___ Snow ___ Cloudy ✓

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent 3 Other

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

Quality Masonry (8)

CONSTRUCTION AND RELATED ACTIVITY Started both front and back storm sewer ditches. Both were stopped by Health Physics upon encountering hot dirt in the rear area. MRC will have to finish the digging. Men moved to masonry walls and poured top bond beam of West wall.

Masons worked on interior walls.

INSTRUCTION TO CONTRACTOR

Inspector's Signature O. Claud per Cal Ryan

MRC-ML-6859 (3-83)

CONSTRUCTION INSPECTION DAILY REPORT

PROJECT CFS DATE 5-2-86 NO. 24291

ENGINEER P. Kuttler CONTRACTOR JIM.

WEATHER CONDITIONS: Temp. Range 48-53 Clear ____ Rain ____ Snow ____ Partly Cloudy ✓

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent 3 Other

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

Seubert - 1 Kenn Const. - 2
Insulators - 2 Elect. - 3

CONSTRUCTION AND RELATED ACTIVITY o Kenn Const. - working on clerestory window trim.

o Seubert - breathing air compressor piping. Brought Seubert a few misc. stainless steel pipe fittings to aid completion.

o Insulators - continue to work on duct insulation in Mech. Rm.

o Elect. - pulling wires into room 115 & connecting conduit in Rm 116.

o JIM. - painting Rm 115 & 116. Caulking drive expansion cuts. Placed gravel & compacted at SW of bldg. for sidewalk.

MRC working on stormsewer So. of bldg.

INSTRUCTION TO CONTRACTOR Told Roy D. & Brett (elect) that there are some conduits (exposed) in Rms 115, 116, and basement that are not plumb or level & will have to be altered.

Inspector's Signature [signature]

RC-ML-6859 (3-83)

PROJECT CFS DATE 6/18/86 NO. 24723

ENGINEER R Kuthen CONTRACTOR J.W.

WEATHER CONDITIONS: Temp. Range 53 – 79 Clear ✓ Rain ___ Snow ___ Cloudy ___

PRIME CONTRACTOR PERSONNEL ON JOB: 1 Superintendent ___ Other ___

SUB CONTRACTORS PRESENT ON JOB (COMPANY/NUMBER):

Blacktop – 6

CONSTRUCTION AND RELATED ACTIVITY Ray O. removed gravel from top of trenches in prep for blacktop. North storm sewer trench had large hole where backfill placed by MKC settled away. MKC added more fill. Blacktop people started in parking area, worked late – will finish tomorrow.

INSTRUCTION TO CONTRACTOR

RC[illegible]859 (3-83)

Inspector's Signature [illegible]