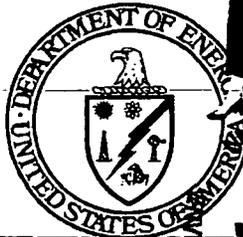


MOUND



Environmental
Restoration
Program

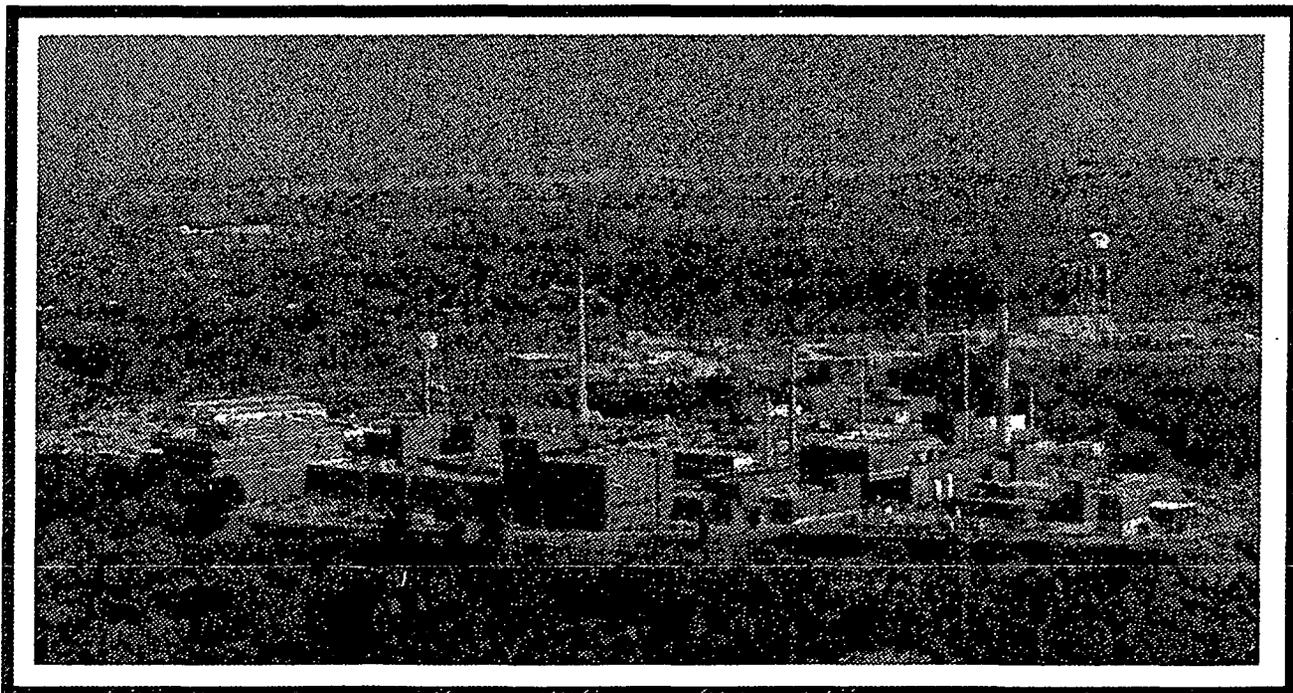


OhioEPA

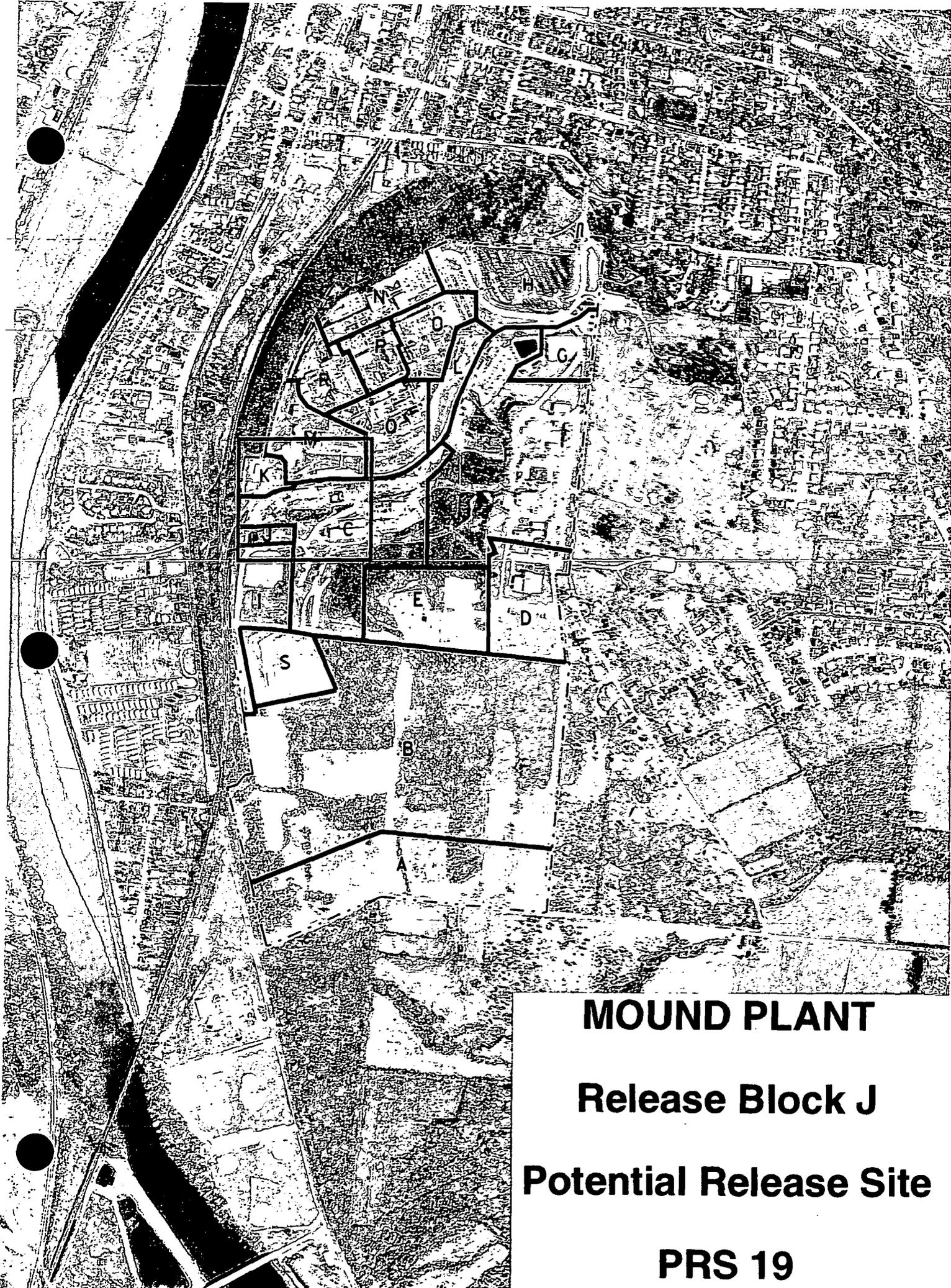
MOUND PLANT

Potential Release Site Package

PRS # 19



royal

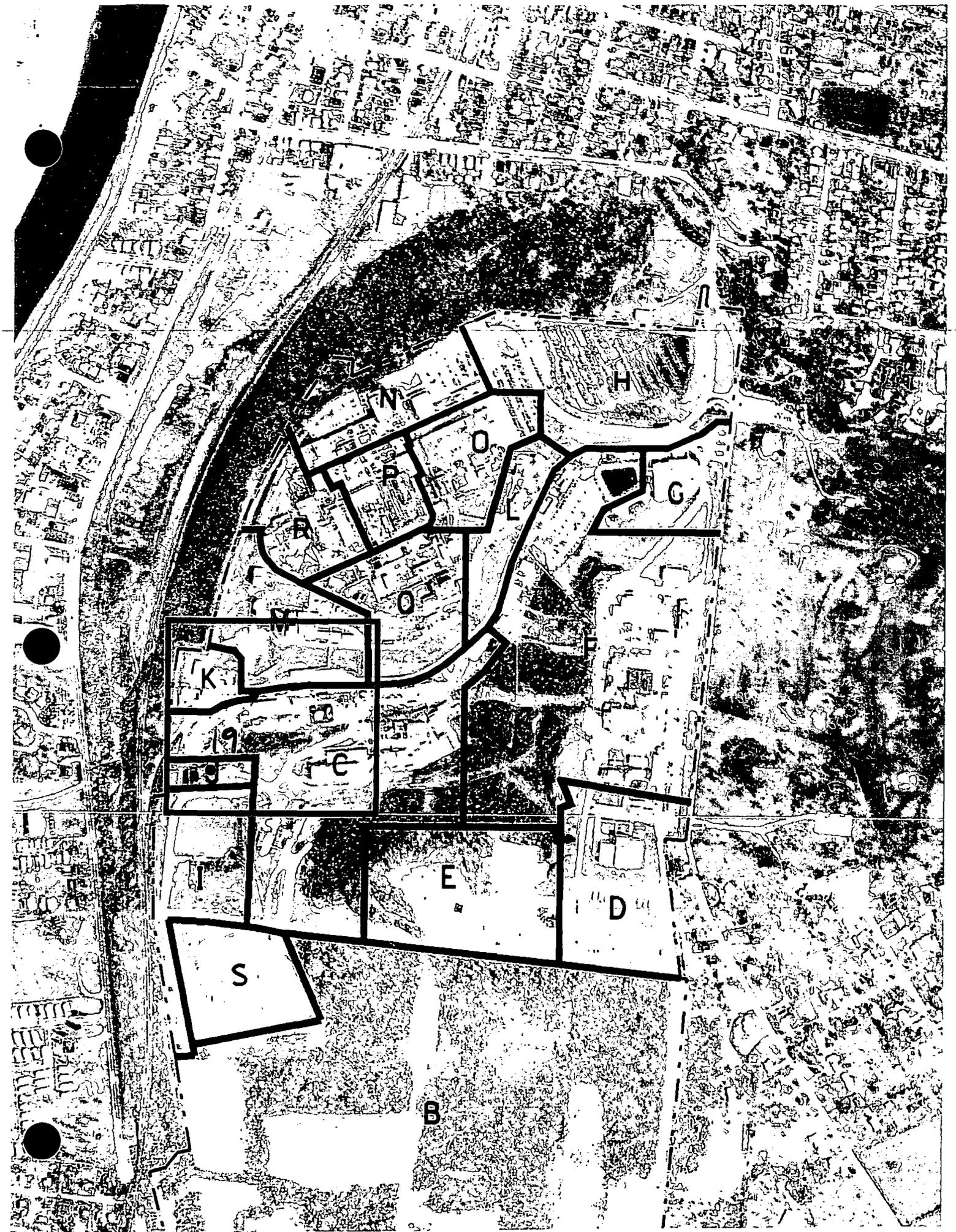


MOUND PLANT

Release Block J

Potential Release Site

PRS 19

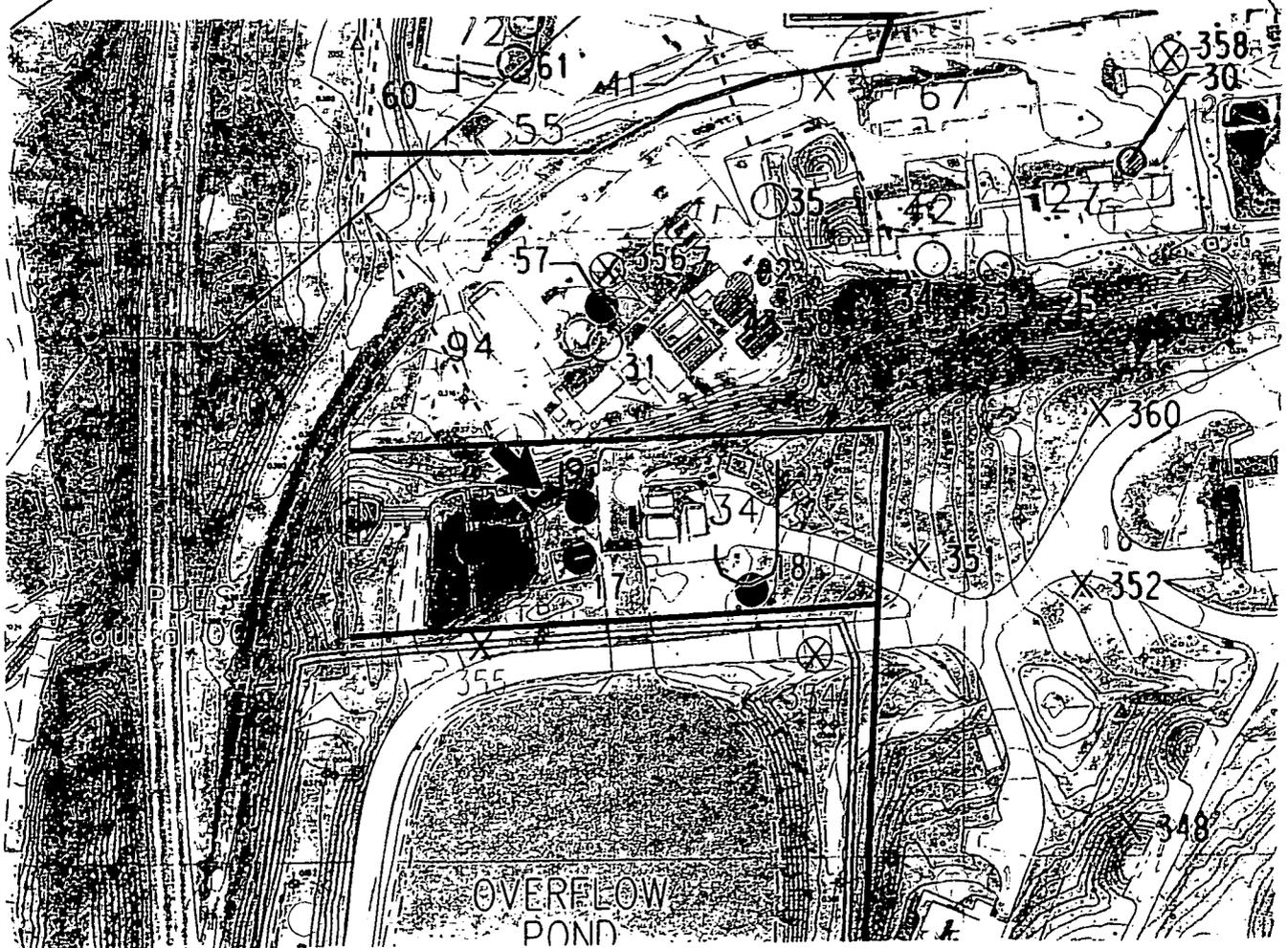
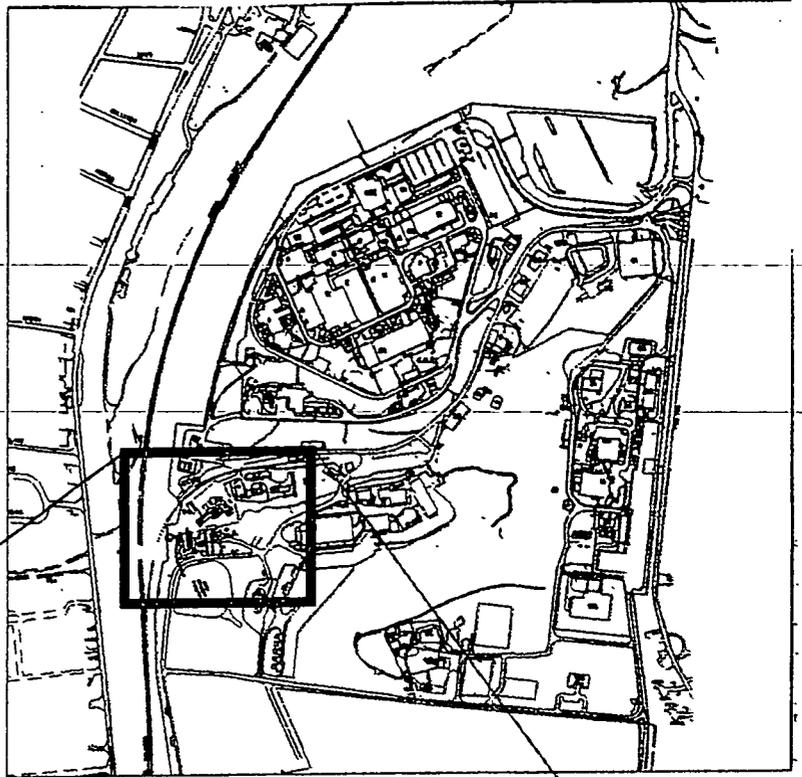


MOUND PLANT

Release Block J

Potential Release Site

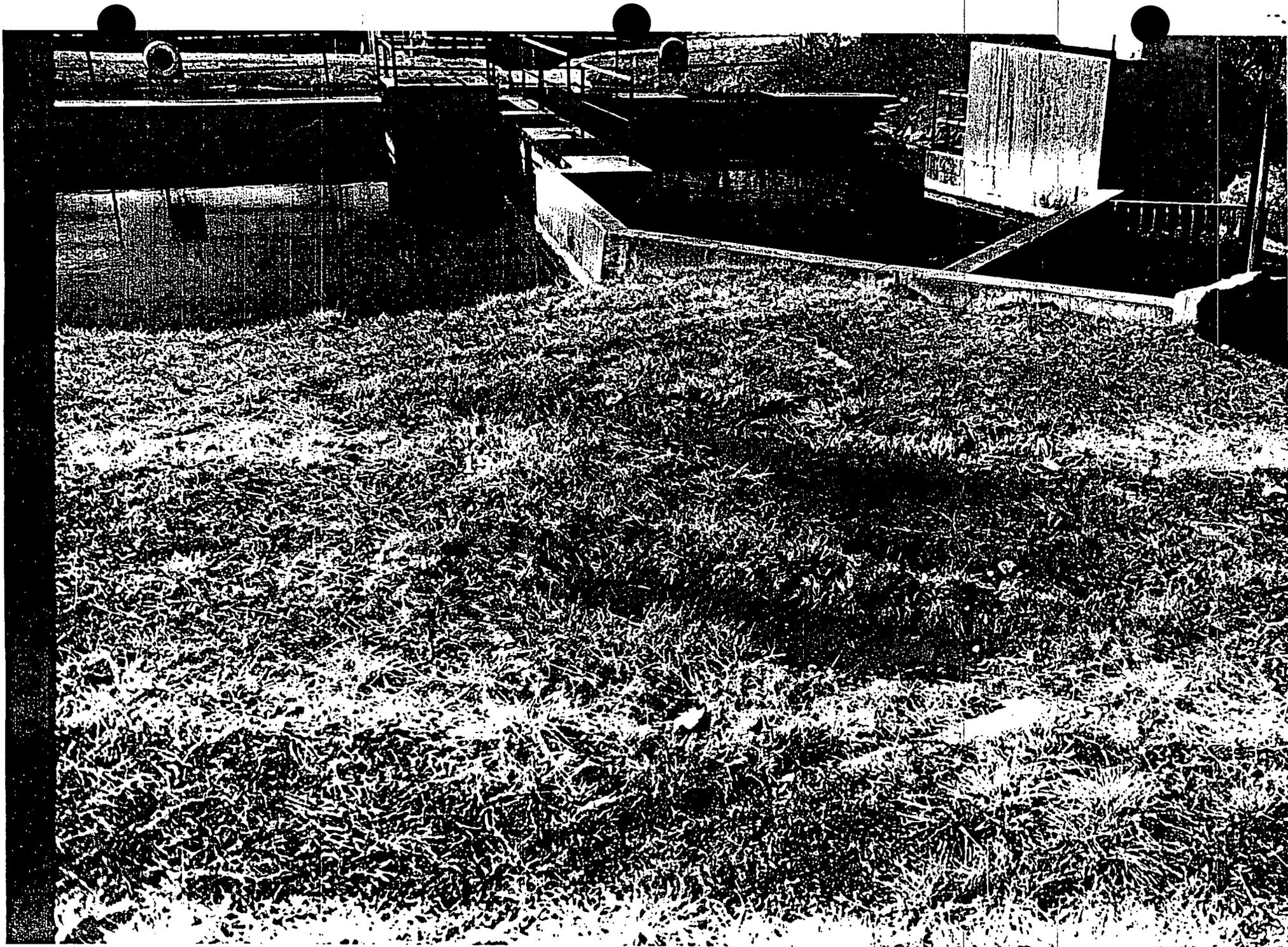
PRS 19



REV A2, SEP 27 1996

REV O OCT 07 1996





PRS 19

PRS HISTORY:

Potential Release Site (PRS) 19 is the Building 34, Historical Firefighting Training Pit. While sampling was in progress at the Building 34-Oil-Burn-Structure during the OU3 Limited Field Investigation, information became available that documented the presence of an additional historical firefighting training pit in the vicinity of Building 34 between the oil burn structure and the plant drainage ditch. It is located approximately 25 ft. northwest of the oil burn structure and is approximately 15 ft. by 10 ft. A clean-up of depleted uranium may have occurred in the area. The pit is no longer in active use but is still in place.²

PROCESS DESCRIPTION:

Diesel fuel was reportedly used in the historical firefighting training pit to create demonstration fires to train Mound fire fighters. No known RCRA-regulated materials were stored or handled at the site.²

CONTAMINATION:

The contaminant of concern for this PRS is diesel fuel. Soil gas sampling results collected as part of the Area B OU1 investigation indicated the need for further soil sampling in the area of PRS 19 by detecting compounds associated with petroleum products such as diesel fuel. The OU3 Limited Field Investigation took soil samples at two locations adjacent to the Historical Fire Fighting Training Pit to address concerns related to activities conducted there. These samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), inorganics, PCBs, lithium, dioxin/furans, extractable petroleum hydrocarbons (EPH), and gamma spectroscopy for radionuclides. Results for all analytes detected above the laboratory reporting limits were below the contaminant comparison criteria with the exception of lead (Pb) in the soil. The highest concentration of lead detected was 86.4 mg/kg which exceeds Mound's background value of 48 mg/kg. This concentration is below the 400 mg/kg USEPA guidance criteria.² Data from groundwater monitoring well 379 indicated no petroleum compounds (BTEX: benzene, toluene, ethyl benzene, xylenes) were detected in the well which is downgradient of this area. Lead was detected at or below the USEPA Maximum Contaminant Level.³ Dioxin/furan concentrations are below CDC (Center for Disease Control) proposed action levels of 20 ppb.⁵ There is no evidence of any activities occurring in the area of this PRS which may have contributed to the release of radioactive compounds.

In 1992, the OU5 Operational Area Phase I Investigation⁴ analyzed the soils in the vicinity of PRS 19 for hydrocarbon ion counts (via PETREX soil gas) and for surface thorium and plutonium contamination (via FIDLER followed by Mound Soil Screening). Results of the hydrocarbon investigation found relatively high halogenated hydrocarbon ion counts. All other hydrocarbon ion counts were typical of surrounding soils.

Results of the OU5 Operational Area Phase I Investigation's radiological study found:

Contamination	Maximum Concentration Detected	Guideline Criteria
Plutonium-238	24 pCi/g	25 pCi/g (Mound ALARA)
Thorium-232	0.8 pCi/g	5 pCi/g ⁶

NOTE: ALARA = As low as reasonably achievable, pCi/g = picocuries/gram

READING ROOM REFERENCES:

- 1) OU9 Site Scoping Report: Volume 12- Site Summary Report, December 1994. (pages 5-15)
- 2) OU3, Miscellaneous Sites Limited Field Investigation Report, July 1993. (pages 16-30)
- 3) OU9, Hydrogeologic Investigation: Groundwater Sweeps Report, April 1995. (pages 31-36)
- 4) OU5 Operational Area Phase I Investigation, Non AOC Field Report, Volume II, June 1995. (pages 55-61)

OTHER REFERENCES:

- 5) Position Paper on Dioxin in the Soils at the Mound Facility. (pages 37-54)
- 6) Code of Federal Regulations 40 CFR192.41 and 40 CFR192.12.

PREPARED BY:

Dennis J. Gault, Member of EG&G Technical Staff

**MOUND PLANT
PRS 19
HISTORICAL FIRE FIGHTING TRAINING PIT**

RECOMMENDATION:

This potential release site is the historical fire fighting training pit. It was identified as a potential release site in 1993 during the *OU3, Limited Field Investigation*.

The 1993 OU3, Limited Field Investigation showed all organics were below the 10^{-6} guideline values. Lead was detected below the USEPA residential guidance criteria of 400 mg/kg. Dioxin/furans were also detected below the Center for Disease Control proposed action level of 20 ppb. No evidence of radiological contamination was found from 3 soil samples taken in the vicinity of PRS 19 nor is there any evidence that any activities involving radioactive materials have occurred in the area.

Therefore, since no history or evidence of contamination above levels of concern exists at PRS 19, PRS 19 requires NO FURTHER ASSESSMENT.

CONCURRENCE:

DOE/MB:

Arthur W. Kleinrath 10/3/96
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA:

Timothy J. Fischer 10/3/96
Timothy J. Fischer, Remedial Project Manager (date)

OEPA:

Brian K. Nickel 10/3/96
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from _____ to _____

- No comments were received during the comment period.
- Comment responses can be found on page _____ of this package.

REFERENCE MATERIAL
PRS 19

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
11	Area 2, Thorium and Polonium-Contaminated Wastes (AKA Crusted Drums)	I-4 I-5	Historical	Polonium-210, thorium-contaminated drums, Polonium-210 contaminated sand and debris Thorium sludge constituents, Plutonium-238	1, 4, 5, 18	Thorium and daughters	S	1, 4	14 2, 3, 4, 5, 6 10, 11, 14, 16	Table B.1 (Table III.1 in Ref. 6) Tables B.6, B.7, B.8 and B.9	6 24
12	Area B Drum Storage Area	I-5	Historical	Chemical wastes	4	None Suspected			2, 3, 4, 5, 6 10, 11, 14, 16	Tables B.6, B.7, B.8 and B.9	24
13	Trash Incinerator	J-5	Historical	Solid Waste	4	None Suspected			No Data		
14	Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	H-6	Historical	VOCs	4, 5, 7	Suspected, not confirmed	S	7	3, 4, 5, 6 14	Tables B.6, B.7, B.8, and B.9 RSS ^c Location S0518 (Appendix E in Ref. 6)	7 6
15	Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal)	H-5	Historical	Lithium Hydride	4	Possible lithium residues, not confirmed	S	4, 7	2, 3, 4, 5, 6, 7, 8, 9, 10 14	Tables B.6, B.7, B.8, and B.9 RSS ^c Locations S0552 and S0553 (Appendix E in Ref. 6)	7 6
16	Area C, Past Hazardous Waste Storage Area (AKA old Building 72) see related site 345	H-6	Historical	Potential contaminants listed under Hazardous Waste Storage Area	4, 5, 18	Minor, historically remediated	S	18	4	Table B.6	18
17	Oil Burn Structure	H-5	Inactive	Aviation fuel, benzene, toluene, ethyl benzene, xylenes	5, 7, 18	Confirmed EPH, dioxin/furans		7, 18	2, 3, 4, 5, 6, 7, 8, 9, 10	Tables B.6, B.7, B.8, and B.9	7
18	Building 34, Fire Fighting Training Facility Pits	H-5	Inactive	Diesel Fuel	5, 7, 18	Confirmed EPH		7, 18	3, 4, 5, 6, 7, 8, 9, 10 14	Tables B.6, B.7, B.8, and B.9 RSS Location S0556 (Appendix E in Ref. 6)	7 6
19	Building 34, Historical Firefighting Training Pit	H-5	Historical	Diesel Fuel		Suspected Confirmed dioxin/furan	S, SW S	10 7	2, 3, 4, 5, 6, 7, 8, 9	Tables B.6, B.7, B.8, and B.9	7

- 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."

General Chemistry

Table B.6 - Target Compound List - VOC (a,b)

SITE NAME	Acetone	2-Butanone	Toluene	Benzene	Ethyl Benzene	Xylenes	1,2-Dichloroethane	Methylene Chloride	Perchloroethylene	2-Hexanone	4-Methyl-2-Pentanone	Trichloroethane	1,1,2-Trichloroethane	Carbon Disulfide	1,1,1-Trichloroethane	Chloroform	Freon 11	Freon 113	1,1-Dichloroethane	Bromo-dichloromethane	Bromoform	Reference
2. Miami-Erie Canal (south pond) (c)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.0	ND	ND	ND	ND	ND	ND	15
3. Miami-Erie Canal (north canal) (d)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	18
5. Miami-Erie Canal (south canal) (d)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16
9. G24		ND	ND	ND	ND	ND	ND	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24
10. Historic Landfill			750	160	200	6100	6700	81				970			ND							24
11. Sanitary Sewer Line				2	2																	24
12. Area B, Drum Storage Area		1	7100	160	35	160	6600		1800			490										24
14. Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)			0.018									.01			0.7		0.02	0.13				7
15. Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (g)																						7
16. Area C, Past Hazardous Waste Storage Area	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.6	ND	ND	18	ND			ND	ND	ND	18
17. Oil Burn Structure	0.64	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	ND	0.007	ND	ND	ND	ND	ND	ND	ND	7
18. Building 34, Fire Fighting Training Facility Pits	0.63	ND	0.028	0.008	0.018	0.15	ND	ND	ND	0.061	0.02	0.012	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
19. Building 34, Historical Firefighting Training Pit	0.17	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
20. Building 34 Aviation Fuel Storage Tank (Tank 219)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7,22
21. Building 1 Leach Pit (Area 1)	0.27	0.099	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
25. Building 27 Leach Pit (Area 1)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7

Table B.6 - Target Compound List - VOC (a,b)

SITE NAME	Acetone	2-Butanol	Toluene	Benzene	Ethyl Benzene	Xylenes	1,2-Dichloroethane	Methylene Chloride	Perchloroethylene	2-Hexanone	4-Methyl-2-Pentanone	Trichloroethene	1,1,1-Trichloroethane	Carbon Disulfide	1,1,1-Trichloroethane	Chloroform	Freon 11	Freon 113	1,1-Dichloroethane	Bromo-dichloromethane	Bromoform	Reference	
283. Area 1, Bulk Transfer of Thorium Drums (AKA Plutonium Recoverable Waste Storage)	96		10													24							8
285. Area 11, Contamination from SM Building Operations	23	ND	ND	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	41	ND	ND	ND	ND	ND	ND	ND	8
286. Area 16, SM Building Sanitary Sewage Septic Tank/Leach Basin								38							6	11							8
288. Area 17, SM Building Soils												21			19	10							8
300. Area 19, Underground Waste Transfer Line		13																					8
302. Area D, Acid Leach Field	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
314. Farm Trash Area	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8

- (a) - All units reported in mg/Kg unless noted otherwise.
- (b) - No soil gas data results are presented.
- (c) - Unit of measure is ug/Kg.
- (d) - No volatile organic constituents were detected in the canal. See reference 16.
- (e) - Note deleted in revision.
- (f) - This site is the same as Site #19.
- (g) - Unit of measure in g/kg
- ND - Not detected.
- Blank - Not analyzed for.

- References:
- 7) DOE 1993c
 - 8) DOE 1992d
 - 15) Halford 1990
 - 16) DOE 1993e
 - 18) DOE 1992a
 - 22) DOE 1992i
 - 24) DOE 1994

Table B.7. Target Compound List - SVOC, P/PCB, PAH, and EPH (a)

General Chemistry

SITE NAME	SVOC Bis(2-ethylhexyl)phthalate	Polycyclic Aromatic Hydrocarbons (PAH)											Pesticides, Polychlorinated Biphenyls						EPH & TPH								
		Acenaphthene	Anthracene	Phenanthrene	Pyrene	Fluoranthene	Benzopyrene	Benzofluoranthene	Benzoanthracene	Indeno(1,2,3-CD)pyrene	Chrysene 1	Benzo[g,h,i]perylene	PCBs	Chlordane	Endrin	Alpha, Beta, Delta, BHC (Lindane)	Dieldrin	4,4'-DDT, 4,4'-DDE	Extractable Petrol. Hydrocarbons	Total Petrol. Hydrocarbons	Reference						
2. Miami-Erie Canal (south pond)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	
3. Miami-Erie Canal (north canal) (b)	4.1	3.7	9.3	43	55	53	22	25	25	16	24	17	19	6.8	0.22	0.105	0.21	0.007								16	
5. Miami-Erie Canal (south canal) (b)	1.1	1.0	0.81	6.3	6.8	7.0	2.0	2.6	2.8	1.8	2.5	2.2	0.34	0.021	0.034	0.004	0.011	0.013								16	
9. Area 18, Site Sanitary Landfill Cover					120	120	140	190	90	71	95	44														24	
10. Historic Landfill		1500		7400	7200	1200	2500	4000	3400	1200	2800	850															24
11. Area 2, Thorium and Polonium Wastes						39																					24
12. Area B, Drum Storage Area					140	160	55	80	66		70																24
14. Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	1.1	ND	0.46	2.5	3.1	3.4	1.2	2.0	1.5	0.9	1.9	1.1	ND	ND	ND	ND	ND	ND									7
15. Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (c)																											7
17. Oil Burn Structure	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND									23
18. Building 34, Fire Fighting Training Facility Pits (c)	0.025	ND	38	38	46	7.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND									116.7
19. Building 34, Historical Firefighter Training Pit	ND	ND	ND	ND	0.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND									39.3
20. Building 34, Aviation Fuel Storage Tank (Tank 219)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND									7, 22

Table B.7. Target Compound List - SVOC, P/PCB, PAH, and EPH (a)

SITE NAME	SVOC	Polycyclic Aromatic Hydrocarbons (PAH)											Pesticides, Polychlorinated Biphenyls					EPH & TPH			
	Bis(2-ethylhexyl)phthalate	Acenaphthene	Anthracene	Phenanthrene	Pyrene	Fluoranthene	Benzopyrene	Benzofluoranthene	Benzoanthracene	Indeno(1,2,3-CD)pyrene	Chrysene 1	Benzo(g,h,i)perylene	PCBs	Chlordane	Endrin	Alpha,Beta,Delta, BHC (Lindane)	Dieldrin	4,4'-DDT, 4,4'-DDE	Extractable Petrol. Hydrocarbons	Total Petrol. Hydrocarbons	Reference
261. Trash Burner	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7
270. Underground Sewer Lines G6 and G7	0.89	ND	ND	3.0	3.2	5.2	1.7	1.5	1.9	1.3	2.2	1.3	ND	ND	ND	ND	ND	ND			7
279. Old Firing Range Drum Storage Area	4.2	6.8	15	73	83	98	35	5	45	23	55	19	0.56	ND	ND	ND	ND	ND			7
280. Waste Oil Drum Field Area	6.5	ND	2.8	11	9.7	11	3.6	2.8	4.2	1.9	ND	2.1	1.15	0.098	0.023	ND	ND	ND		1500	7
283. Area 1, Bulk transfer of Thorium drums (AKA Plutonium recoverable waste storage)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
285. Area 11, Contamination from SM Building Operations	4700	ND	ND	ND	5000	ND	ND	ND	ND	ND	ND	ND	ND	ND	50	50	ND	ND	ND	ND	8
286. Area 16, SM Building sanitary sewage septic tank/leach field	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
288. Area 17, SM Building soils	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
300. Area 19, underground waste transfer line			800	790	900	1,000															8
302. Area D, Acid Leach Field															20	12					8
304. Farm Trash Area	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			7

- (a) - All units are reported in mg/Kg unless noted otherwise.
- (b) - Additional data on other analytes are available in reference 16.
- (c) - This site is the same as Site #19.
- (d) - Groundwater data. Unit of measure is mg/L.
- (e) - Unit of measure is g/Kg

- References:
- 7) DOE 1933c
 - 8) DOE 1992d
 - 15) Halford 1990
 - 16) DOE 1993e
 - 18) DOE 1992a
 - 24) DOE 1994

General Chemistry

Table B.8. Target Analyte List (TAL) - Inorganics^(a)

SITE NAME	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chloride	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Nitrate	Nitrite	Silver	Thallium	Zinc	Cyanide	Lithium	Mercury	Vanadium	Reference
2. Miami-Erie Canal (south pond)	ND	9.6	104	ND	ND	NA	18	NA	34	23	NA	22	NA	NA	4.8	ND	58.4	ND	NA	0.20	22	15
3. Miami-Erie Canal (north canal) (b)	19.7	127	126	1.2	2.4	ND	145	14.3	143	248	928	31.2	ND	ND	11.8	0.6	323	ND	ND	0.78	33.1	18
5. Miami-Erie Canal (south canal) (b)	37.3	12	178	1.4	1.8	ND	334	14.4	225	579	1430	33.9	ND	ND	16.9	1.4	255	ND	ND	0.74	48.9	16
9. Area 18, Site Sanitary Landfill Cover	ND	8.8	51.9	.29	ND	9.3	9.1	5.3	14.5	10.3	389	14.9	3.3		3.9	ND	44	ND	11.1	ND	18	24
10. Historic Landfill	3.8	6.1	104	.51	0.9	32.4	13.1	9.7	681	121	470	28.4	ND		ND	ND	1330	ND	17	2.7	23.7	24
11. Area 2, Thorium and Polonium Wastes	ND	6	33.2	ND	.22	23.4	ND	ND	11.9	ND	289	ND	ND		ND	.29	ND	ND	16.2	.07	ND	24
12. Area B, Drum Storage Area	ND	4.4	33.5	ND	.31	81.2	ND	ND	42.7	10.2	372	ND	ND		ND	ND	ND	ND	18.1	.06	ND	24
14. Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	31.3	6.3	66.6	0.79	5.8		26.2	10.5	20.8	13.2	35.9	24.6			17	ND	62.5	0.14		ND	23.4	7
15. Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (c)																						7
17. Oil Burn Structure	69	9	131	0.98	24.2		92.1	28	3,100	829	107	ND	ND	17.7	0.53135	791.531	0.76791	29.1	ND	29	41.8	7
18. Building 34, Fire Fighting Training Facility Pits	38.6	10	74.8	0.77	7.5		26.58	12.3	23.4	12.8	481	29.6	ND	ND	18	ND	71.8	0.28	25.1	ND	48.8	7
19. Building 34, Historical Firefighting Training Pit	37.7	7.2	119	0.96	8.2		29.9	15.8	22.4	86.4	914	32.4			17.9	ND	88.2	ND	12.3	ND	35	7
20. Building 34, Aviation Fuel Storage Tank (Tank 219)	4.8	8.67	101	0.43	ND		9.7	5.3	15.1	9.4	264	13			ND	0.37	43.2	ND		ND	16.7	7
21. Building 1 Leach Pit (Area I)	42.8	3.6	103	0.8	8.3		33.5	16.7	41.4	18.5	862	27.1			21.5	ND	150	0.31		1.2	35.2	7
25. Building 27 Leach Pit (Area I)	44.6	3.5	43.4	0.97	9.3		112	20.7	446	15.1	691	50.8			20.5	ND	125	0.14		.53	29.8	7
26. Building 27 Concrete Flume (Tank 217)	27.1	4.8	40.4	0.99	4.8		33.1	17.3	25.3	10.0	766	29.9			15.7	ND	61.7	ND		ND	27.8	7
27. Building 27 Settling Sump (Tank 218)	20.8	3.9	65.5	0.92	ND		28.4	13.7	25.3	21.5	543	28.1			14.7	ND	62.5	ND		0.13	27.6	7

Table B.8. Target Analyte List (TAL) - Inorganics^(a)

SITE NAME	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chloride	Chromium	Cobalt	Copper	Lead	Manganese	Nickel	Nitrate	Nitrite	Silver	Thallium	Zinc	Cyanide	Lithium	Mercury	Vanadium	Reference
300. Area 19, Underground Waste Transfer Line		10.3	521	1.1	4.3		19.8	18.6	17.2	15.1	1,500	43.0			4.2		349				20.7	8
302. Area D, Acid Leach Field		11.7	584	1.8	5.5		21	20.1	20.4	25.7	545	41.1			3.9		242			0.79	28.3	8
314. East Trash Area	42.4	5.9	32.4	0.71	7.7		30.5	8.5	18	10.1	308	25.8			17	ND	40.4	0.38		ND	24.2	7

- (a) - All units are reported in mg/Kg unless otherwise noted.
- (b) - Additional data on other analytes are available in reference #19.
- (c) - this site is the same as Site #19.
- (d) - Groundwater data. Unit of measure is mg/L.

ND - Not detected.
 NA - Not analyzed for.

- References:
- 7) DOE 1993c
 - 8) DOE 1992d
 - 15) Halford 1990
 - 16) DOE 1993e
 - 18) DOE 1992a
 - 24) DOE 1994

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
1. Miami-Erie Canal (north pond)			22.3													19
2. Miami-Erie Canal (south pond)	NA	NA	2.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15
3. Miami-Erie Canal (north canal) (c)	23	7.9	530	0.45	14.9	180	3.2	<0.58	<5.6	NA	<2.0	<5.3	4.54	<0.97	<2.0	16
4. Miami-Erie Canal (runoff hollow)			31.4													19
5. Miami-Erie Canal (south canal) (c)	28	22	1000	0.52	14.3	100	2.7	<0.61	<6.2	NA	<1.6	<3.8	83.7	<1.5	0.58	16
6. Miami-Erie Canal (overflow creek)			270													19
9. Area 18, Site Sanitary Landfill Cover	10.2	.06	.21			.15	.37		.67				.87			24
10. Historic Landfill (d)	15.7	1.2	17.8	.06		32.2	.67		1.1				1.4			24
11. Area 2, Thorium and Polonium Wastes	11.7	.08	2.06	.04		.97	.52		.88				.92			24
12. Area B, Drum Storage Area	11.5	.13	.5	ND		2.1	.41		.84				1.			24
14. Area C, Waste Storage Area (AKA Drum Staging Area and Chemical Waste Storage Area)	NA	NA	1.12	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7
15. Area C, Lithium Burn Area (AKA Lithium Carbonate Disposal) (e)	NA	NA	41.7	NA	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7
17. Oil Burn Structure	19.3			0.163	1.38				1.13							7
18. Building 34, Fire Fighting Training Facility Pits	15.7		6.65		5.44	NA	NA	NA	0.901							7
19. Building 34, Historical Firefighting Training Pit	16.8				1.44				1.12							7

Table B.9. Summary of Radiological Data^(a,b)

Site Name	Radiological Contaminants														Reference	
	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
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 analyzed 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

Environmental Restoration Program

**OPERABLE UNIT 3, MISCELLANEOUS SITES
LIMITED FIELD INVESTIGATION REPORT**

**MOUND PLANT
MIAMISBURG, OHIO**

VOLUME I LFI REPORT TEXT (SECTIONS 1-6)

July 1993

FINAL

(Revision 0)

Department of Energy

EG & G Mound Applied Technologies



- MND33-0111-0001 — Interval 0.0 to 2.0 ft BGS. Two 0.0- to 2.0-ft BGS split spoon samples were necessary to obtain required sample volume.
- MND33-0112-0001 — Interval 0.0 to 2.0 ft BGS. Two 0.0- to 2.0-ft BGS split spoon samples were necessary to obtain required sample volume.
- MND33-0112-0002 — Interval 3.0 to 7.0 ft BGS. Additional sample from the 5.0- to 7.0-ft BGS interval split spoon was necessary to obtain the required sample volume.
- MND33-0112-0003 — An oil-like substance was discovered in the 8.0- to 10.0-ft BGS and the 10.0- to 12.0-ft BGS interval split spoon samples. Because of this observation, the boring was discontinued at 12.0 ft BGS.
- MND33-0113-0001 — Interval 0.0 to 2.0 ft BGS. Three 0.0- to 2.0-ft BGS split spoon samples were necessary to obtain the required sample volume.
- MND33-0113-0002 — Interval 17.0 to 20.0 ft BGS. Split spoon samples from the 17.0- to 19.0-ft and 19.0- to 20.0-ft BGS intervals were necessary to obtain required sample volume.

Surface soil sampling intervals (0.0 to 2.0 ft BGS) were collected for soil analysis at the four borings completed at the Building 34 Fire-Fighting Training Pits because of the occurrence of surface staining in each area sampled.

2.14. BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT

2.14.1. Site History

2.14.1.1. Description of the Building 34 Historical Fire-Fighting Training Pit

While sampling was in progress at the Building 34 Oil Burn Structure, information became available that documented the presence of an additional, historical fire-fighting training pit in the vicinity of Building 34 between the oil burn structure and the Plant drainage ditch (Mauzy 1992a). The Building 34 Historical Fire-Fighting Training Pit is located approximately 25 ft northwest of the oil burn structure (as shown in Figure 2.12(a)) and is approximately 15 ft by 10 ft.

2.14.1.2. Potential Area Contaminants

Diesel fuel was reportedly used in the historical fire-fighting training pit to create demonstration fires. No known materials regulated under RCRA were stored or handled at the historical fire-fighting training pit. The burning of solvents and oils at the historical fire-fighting training pit has not been documented. However,

burning events involving solvents and oils can result in possible contamination involving dioxin/furans, and these compounds have been considered as potential area contaminants.

Recently obtained information has identified the Building 34 Historical Fire-Fighting Training Pit area as a site where a cleanup of depleted uranium may have occurred.

Prior environmental soil gas samples have been collected near Building 34, one at Station 31 near the fire-fighting training facility, and at Station 30, which was near the former aviation fuel tank. The samples were collected as part of the Area B OU 1 Investigation. The samples were analyzed for TCE, 1,2-trans-dichloroethene, chloroethene, toluene, benzene, and ethylbenzene. At Station 30, toluene was found at 0.24 µg/L; and at Station 31, benzene and toluene were found at 0.07 µg/L and 0.14 µg/L, respectively.

2.14.2. Field Investigation Procedures

The objective of sampling at the Building 34 Historical Fire-Fighting Training Pit was to assess whether the site is or has been a source of hazardous contaminant releases to the environment.

The Building 34 Historical Fire-Fighting Training Pit area sampling activities were conducted by hollow stem auger drilling techniques using split spoon samplers. Soil sampling intervals and analytical parameters for the borings at the historical fire-fighting training pit were completed in a manner consistent with the OU 3 Work Plan specifications for the Building 34 Fire-Fighting Training Pits area. The field activities and analytical laboratory procedures were conducted under the approved OU 3 project protocols. Subsurface soil samples were collected from two boreholes in close proximity to the pit (Figure 2.14). The soils in the vicinity of the Building 34 Historical Fire-Fighting Training Pit are generally comprised of plastic, gravelly clay at least to a depth of 12.0 ft BGS.

Soil sampling for dioxin/furan analyses was conducted at the Building 34 Historical Fire-Fighting Training Pit as requested by U.S. EPA during review of Revision 2 of the OU 3 LFI Work Plan. Dioxin/furan analyses were requested at sites where the burning of solvents and oils may have occurred. Dioxin/furan analyses were performed on all soil samples collected at the Building 34 Historical Fire-Fighting Training Pit. All samples collected at the Building 34 Historical Fire-Fighting Training Pit were analyzed for dioxin/furan congener totals (tetra-octa) and for all 2,3,7,8- substituted isomers of dioxin/furans. All detections of 2,3,7,8- substituted isomers on the primary analytical column underwent secondary column confirmation, except for octa isomers of dioxin/furans.

Information obtained in July 1991 indicated that the disposal of lithium was not conducted in Area C as described in the OU 3 Work Plan. Instead, disposal occurred in a swampy area at the present location of

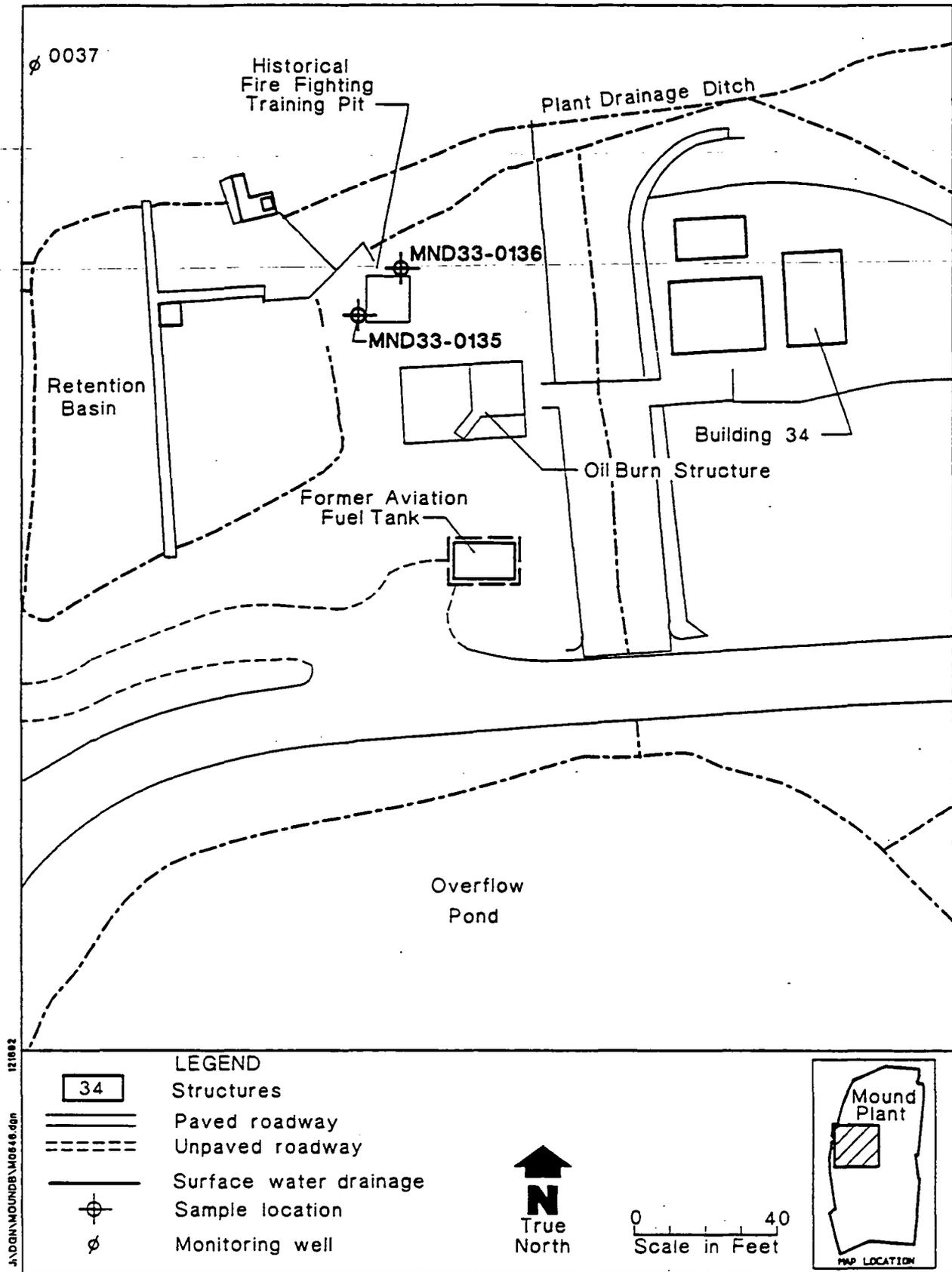


Figure 2.14. Building 34 Historical Fire Fighting Training Pits soil sample locations.

Table II.14. Building 34 Historical Fire-Fighting Training Pit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0135	MND33-0135-0001	Soil	2/12/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0135-0002	Soil	2/12/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0135-5001	Water	2/12/92	---	TCL VOCs.
MND33-0136	MND33-0136-0001	Soil	2/13/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0136-1001	Soil	2/13/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0136-0002	Soil	2/13/92	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0136-4001	Water	2/13/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.

BGS - Below Ground Surface

ft - Foot

EPH - Extractable Petroleum Hydrocarbons

P/PCBs - Pesticides/Polychlorinated Biphenyls

SVOCs - Semivolatile Organic Compounds

TAL - Target Analyte List

TCL - Target Compound List

VOCs - Volatile Organic Compounds

Building 34. Based upon this information, lithium analysis was included for all soil samples collected at the Building 34 Historical Fire-Fighting Training Pit.

Based on recently obtained information concerning a cleanup of depleted uranium at the Building 34 area, surface and near surface soils were analyzed via gamma spectroscopy. The samples, archived at IT Laboratories, were analyzed for cesium-137; potassium-40; radium-224, -226, and -228; and thorium-234, a daughter of uranium-238.

Soil sample collection at the Building 34 Historical Fire-Fighting Training Area was conducted by WESTON representatives on 12 and 13 February 1992. Samples were shipped to IT Laboratories for analysis. Table II.14 summarizes the samples collected including the sample identification number, sample depth interval, date sampled, and the analytical parameters requested. Sampling protocol at the site followed approved OU 3 LFI procedures.

2.15. BUILDING 34 FORMER AVIATION FUEL TANK

2.15.1. Site History

2.15.1.1. Description of Building 34 Former Aviation Fuel Tank

The Building 34 Former Aviation Fuel Tank was located along the western edge of the tributary valley that trends east-west and occupies a lowland at the Mound Plant. The Building 34 Former Aviation Fuel Tank was located southwest of Building 34 and directly north of the overflow pond (Figure 2.12(a)). The 5,000-gallon underground storage tank supplied aviation fuel through an underground pipe to the Building 34 Oil Burn Structure. The aviation fuel tank was placed in service in the early 1970s and was removed from service in 1975.

Approximately 230 gallons were pumped from the tank in 1988 for proper disposal, leaving approximately 20 gallons of aviation fuel and sludge in the tank until the tank's removal on 20 November 1991 (DOE 1992c; Bowser-Morner 1991). A written closure report for the tank closing was provided to OEPA (DOE 1992c). On 29 August 1991, as part of the OU 3 LFI sampling program, the Building 34 Former Aviation Fuel Tank excavation was reopened for additional soil sampling 1 ft below and directly adjacent to the concrete foundation pad (depth of 10.0 ft BGS) and under the former tank piping.

Table II.14. Building 34 Historical Fire-Fighting Training Pit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0135	MND33-0135-0001	Soil	2/12/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0135-0002	Soil	2/12/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0135-5001	Water	2/12/92	---	TCL VOCs.
MND33-0136	MND33-0136-0001	Soil	2/13/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0136-1001	Soil	2/13/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0136-0002	Soil	2/13/92	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0136-4001	Water	2/13/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.

BGS - Below Ground Surface

ft - Feet

EPH - Extractable Petroleum Hydrocarbons

P/PCBs - Pesticides/Polychlorinated Biphenyls

SVOCs - Semivolatile Organic Compounds

TAL - Target Analyte List

TCL - Target Compound List

VOCs - Volatile Organic Compounds



3.14. BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT

The Building 34 Historical Fire-Fighting Training Pit is located 25 ft northwest of the oil burn structure between the oil burn structure and Plant drainage ditch, and east of the retention basin in the west central portion of Mound Plant. Dimensions of the pit are approximately 15 ft by 10 ft. Diesel fuel was reportedly used in the historical fire-fighting training pit to create demonstration fires.

No known RCRA-regulated materials were stored or handled at the site. A summary description of the Building 34 Historical Fire-Fighting Training Pit history and field investigation procedures is presented in subsection 2.14.

Four soil samples and one duplicate soil sample were collected from two soil borings located adjacent to the pit and were analyzed for TCL VOCs, SVOCs; TAL inorganics; dioxin/furans; EPH; and lithium. Four of the soil samples were also analyzed for radioactive constituents using gamma spectroscopy. The validated analytical results for all analytes detected above the laboratory reporting limits in each sample are presented in Table III.18.

3.14.1. Volatile Organic Compounds

VOCs were detected in two soil samples collected at the historical fire-fighting training pit. Acetone and 2-butanone were detected in samples MND33-0135-0001 and MND33-0136-0001 at concentrations above detection limits but below the PRGs. The occurrence of these compounds at concentrations substantially below the PRGs does not reflect an impact to soil quality in the area. No other VOCs were detected at concentrations above laboratory reporting limits in soils from the historical fire-fighting training pit.

3.14.2. Semivolatile Organic Compounds

The SVOC fluoranthene was detected in soils from location MND33-0135-0001 at a concentration above the laboratory reporting limit but below the PRG. No other SVOCs were detected in soil samples from the site at concentrations above laboratory reporting limits. The detection of fluoranthene in one soil sample at a concentration below the PRG level is not considered an impact to soil quality in the area.

3.14.3. Pesticides and Polychlorinated Biphenyls

P/PCBs were not detected in soil samples analyzed from the Building 34 Historical Fire-Fighting Training Pit at concentrations above laboratory reporting limits.

3.14.4. TAL Inorganics

Inorganic compounds were not detected in soil samples from the Building 34 Historical Fire-Fighting Training Pit at concentrations above PRGs or proposed action levels, except for concentrations of lead in surface soil sample MND33-0135-0001 at levels above the PRG. The occurrence of lead at the reported concentration may indicate an impact to soil quality from previous site activities involving the burning of fuels.

3.14.5. Dioxin/Furans

Six dioxin/furan compounds were detected in soil samples from the Building 34 Historical Fire-Fighting Pit. The compounds heptachlorodibenzo-p-dioxin and 1,2,3,6,7,8-heptachlorodibenzo-p-dioxin were detected in samples MND33-0135-0001 and MND33-0136-0001 at concentrations above laboratory reporting limits. Heptachlorodibenzo-p-dioxin concentrations in these two samples were also above the PRG. Additional dioxin/furan compounds (octachlorodibenzo-p-dioxin, octachlorodibenzofuran, heptachlorodibenzofuran, and hexachlorodibenzofuran), were detected in soil sample MND33-0135-0001 at concentrations at least two times greater than the laboratory reporting limits.

The presence of dioxin/furan compounds in soils adjacent to the historical fire-fighting training pit indicates that site activities involving burning activities may have impacted soil quality in the area.

3.14.6. Lithium

Lithium was detected in both soil samples from sample location MND33-0135 at concentrations above the laboratory reporting limit, but below the PRG. Lithium was not detected in soils from location MND33-0136. The detected concentrations of lithium in site soils is not considered an impact to site soils from previous site activities involving disposal of lithium carbonate.

3.14.7. Extractable Petroleum Hydrocarbons

EPHs were detected in soil samples MND33-0135-0001 and -0002 at concentrations above laboratory reporting limits but below the PRG. EPH compounds were not detected in soils from sample location MND33-0136 at concentrations above laboratory reporting limits. The detected concentrations (below the PRG) of EPH do not represent an impact on area soil quality.

3.14.8. Gamma Spectroscopy

Four soil samples were analyzed for radionuclides via gamma spectroscopy. As previously discussed, a cleanup of depleted uranium was reported to have occurred in the Building 34 area. Analytical results for the samples analyzed from the Building 34 Historical Fire-Fighting Training Pit reported concentrations of thorium-234 in all four samples at levels above the laboratory reporting limit. Thorium-234 concentrations at sample MND33-0136-0001, -0002 were slightly above the PRG of 1.1 pCi/g. Detected concentrations of potassium-40 in soil and sediment samples are within background concentration levels (Eisenbud, 1987).

The detection of thorium-234 at concentrations above PRGs may reflect an impact to soil and sediment quality in the area and could be associated with previous site activities. Additional site characterization concerning radionuclide concentrations in soils at the site is recommended.

3.14.9. Summary

Analytical results for soil samples collected at the Building 34 Historical Fire-Fighting Training Pit indicate that site soil quality may have been impacted from previous site activities. Elevated levels of dioxin/furan compounds, lead, and thorium-234 were reported in site soils. Based upon these results, further site characterization to determine the extent of soil contamination is recommended.

TABLE III.18
 BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
 Location: MWD33-0135
 Summary of analytical data
 for analyte concentrations
 above reporting limits
 Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	R/L Ty:
1,2,3,4,6,7,8-HpCDD	0001	S	NG/G	.11	1.1		NA	I
2-BUTANONE	0001	S	mG/Kg	0.012	0.023	J	1.4E+04	I
ACETONE	0001	S	mG/Kg	0.012	0.094	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	12.	9090.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	12.	3360.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	6.	12.0	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	6.	37.7	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.4	7.2		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.4	4.7	J	2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.4	77.8		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.4	28.3		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.4	.81		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.4	.68		1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.4	4.		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.4	8.2		1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	4.	29000.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	4.	122000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	2.	29.9		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	2.	27.1		1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	2.	12.3		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	2.	8.7		3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	2.	22.4		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	2.	16.2		1.0E+04	I
EXTRACTABLE HYD AS DIESEL FUEL	0001	S	mG/Kg	10.	39.3	J	105. total	I
EXTRACTABLE HYD AS DIESEL FUEL	0002	S	mG/Kg	10.	21.	J	105. total	I
FLUORANTHENE	0001	S	mG/Kg	0.83	0.91	J	1.1E+04	I
HEPTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	.11	2.9		1.0E-04	I
HEPTACHLORODIBENZOFURAN	0001	S	NG/G	.11	.73		NA	I
HEXACHLORODIBENZOFURAN	0001	S	NG/G	.14	.36	J	NA	I
IRON, TOTAL	0001	S	mG/Kg	2.	17100.		NA	I
IRON, TOTAL	0002	S	mG/Kg	2.	8420.		NA	I
LEAD, TOTAL	0001	S	mG/Kg	.4	86.4		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.4	8.4		5.3E+01	I
LITHIUM, TOTAL	0001	S	mG/Kg	.2	12.3		5.4E+03	I
LITHIUM, TOTAL	0002	S	mG/Kg	.2	9.2		5.4E+03	I

PRG - Preliminary Remediation Goals (Risk Based)
 J - The associated value is an estimated quantity
 I - Initial Analysis
 S - Soil
 mG/Kg - Milligrams per Kilogram
 (1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General
 Chemistry

TABLE III.18
 BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
 Location: MND33-0135
 Summary of analytical data
 for analyte concentrations
 above reporting limits
 Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
MAGNESIUM, TOTAL	0001	S	mG/Kg	10.	12000.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	10.	55800.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.4	676.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.4	200.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	4.	32.4		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	4.	28.5		5.4E+03	I
OCTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	.16	11.		NA	I
OCTACHLORODIBENZOFURAN	0001	S	NG/G	.14	.54		NA	I
POTASSIUM, TOTAL	0001	S	mG/Kg	20.	1150.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	20.	692.		NA	I
POTASSIUM-40	0001	S	pCi/g	.5	16.7		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	11.6		NA	I
RADIUM-224	0001	S	pCi/g	.1	.991		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.484		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.782		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.646		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	1.12		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.465		5.0E+00	I
SILVER, TOTAL	0001	S	mG/Kg	2.	8.2	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	2.	17.9	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	20.	157.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	20.	276.		NA	I
THORIUM-234	0001	S	pCi/g	.5	.909		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	.948		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	2.	28.3		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	2.	24.		1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	1.	66.2		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	1.	29.8		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
 J - The associated value is an estimated quantity
 I - Initial Analysis
 S - Soil
 mG/Kg - Milligrams per Kilogram
 pCi/g - Picocuries per Gram
 (1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General Chemistry

GAMMA SPECTROSCOPY

TABLE III.18
 BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
 Location: MND33-0136
 Summary of analytical data
 for analyte concentrations
 above reporting limits
 Report Date: 03/17/93

Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Type
1,2,3,4,6,7,8-HpCDD	0001	S	NG/G	.11	.21		NA	I
2-BUTANONE	0001	S	mG/Kg	0.013	0.046		1.4E+04	I
ACETONE	0001	S	mG/Kg	0.013	0.17	J	2.7E+04	I
ALUMINUM, TOTAL	0001	S	mG/Kg	6.	14700.		7.8E+05	I
ALUMINUM, TOTAL	0002	S	mG/Kg	6.	5500.		7.8E+05	I
ANTIMONY, TOTAL	0001	S	mG/Kg	3.	9.1	J	1.1E+02	I
ANTIMONY, TOTAL	0002	S	mG/Kg	3.	30.1	J	1.1E+02	I
ARSENIC, TOTAL	0001	S	mG/Kg	.2	6.2		2.1E+03	I
ARSENIC, TOTAL	0002	S	mG/Kg	.2	5.3		2.1E+03	I
BARIUM, TOTAL	0001	S	mG/Kg	.2	119.		1.9E+04	I
BARIUM, TOTAL	0002	S	mG/Kg	.2	41.7		1.9E+04	I
BERYLLIUM	0001	S	mG/Kg	.2	.96		1.5E-01	I
BERYLLIUM	0002	S	mG/Kg	.2	0.68	J	1.5E-01	I
CADMIUM, TOTAL	0001	S	mG/Kg	.2	2.9		1.4E+02	I
CADMIUM, TOTAL	0002	S	mG/Kg	.2	5.8	J	1.4E+02	I
CALCIUM, TOTAL	0001	S	mG/Kg	2.	11900.		NA	I
CALCIUM, TOTAL	0002	S	mG/Kg	2.	106000.		NA	I
CHROMIUM, TOTAL	0001	S	mG/Kg	1.	25.1		1.4E+03	I
CHROMIUM, TOTAL	0002	S	mG/Kg	1.	28.2	J	1.4E+03	I
COBALT, TOTAL	0001	S	mG/Kg	1.	15.8		3.9E+01	I
COBALT, TOTAL	0002	S	mG/Kg	1.	11.3	J	3.9E+01	I
COPPER, TOTAL	0001	S	mG/Kg	1.	18.7		1.0E+04	I
COPPER, TOTAL	0002	S	mG/Kg	1.	17.9	J	1.0E+04	I
HEPTACHLORODIBENZO-P-DIOXIN	0001	S	NG/G	.11	.5		1.0E-04	I
IRON, TOTAL	0001	S	mG/Kg	1.	23800.	J	NA	I
IRON, TOTAL	0002	S	mG/Kg	1.	14900.	J	NA	I
LEAD, TOTAL	0001	S	mG/Kg	.2	15.2		5.3E+01	I
LEAD, TOTAL	0002	S	mG/Kg	.2	7.9		5.3E+01	I
MAGNESIUM, TOTAL	0001	S	mG/Kg	5.	5330.		NA	I
MAGNESIUM, TOTAL	0002	S	mG/Kg	5.	32600.		NA	I
MANGANESE, TOTAL	0001	S	mG/Kg	.2	914.		2.7E+04	I
MANGANESE, TOTAL	0002	S	mG/Kg	.2	444.		2.7E+04	I
NICKEL, TOTAL	0001	S	mG/Kg	2.	26.3		5.4E+03	I
NICKEL, TOTAL	0002	S	mG/Kg	2.	28.5	J	5.4E+03	I
POTASSIUM, TOTAL	0001	S	mG/Kg	10.	1740.		NA	I
POTASSIUM, TOTAL	0002	S	mG/Kg	10.	866.		NA	I

PRG - Preliminary Remediation Goals (Risk Based)
 J - The associated value is an estimated quantity
 I - Initial Analysis
 S - Soil
 mG/Kg - Milligrams per Kilogram
 pCi/g - Picocuries per Gram
 (1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General
 Chemistry

TABLE III.18
 BUILDING 34 HISTORICAL FIRE-FIGHTING TRAINING PIT
 Location: MND33-0136
 Summary of analytical data
 for analyte concentrations
 above reporting limits
 Report Date: 03/17/93

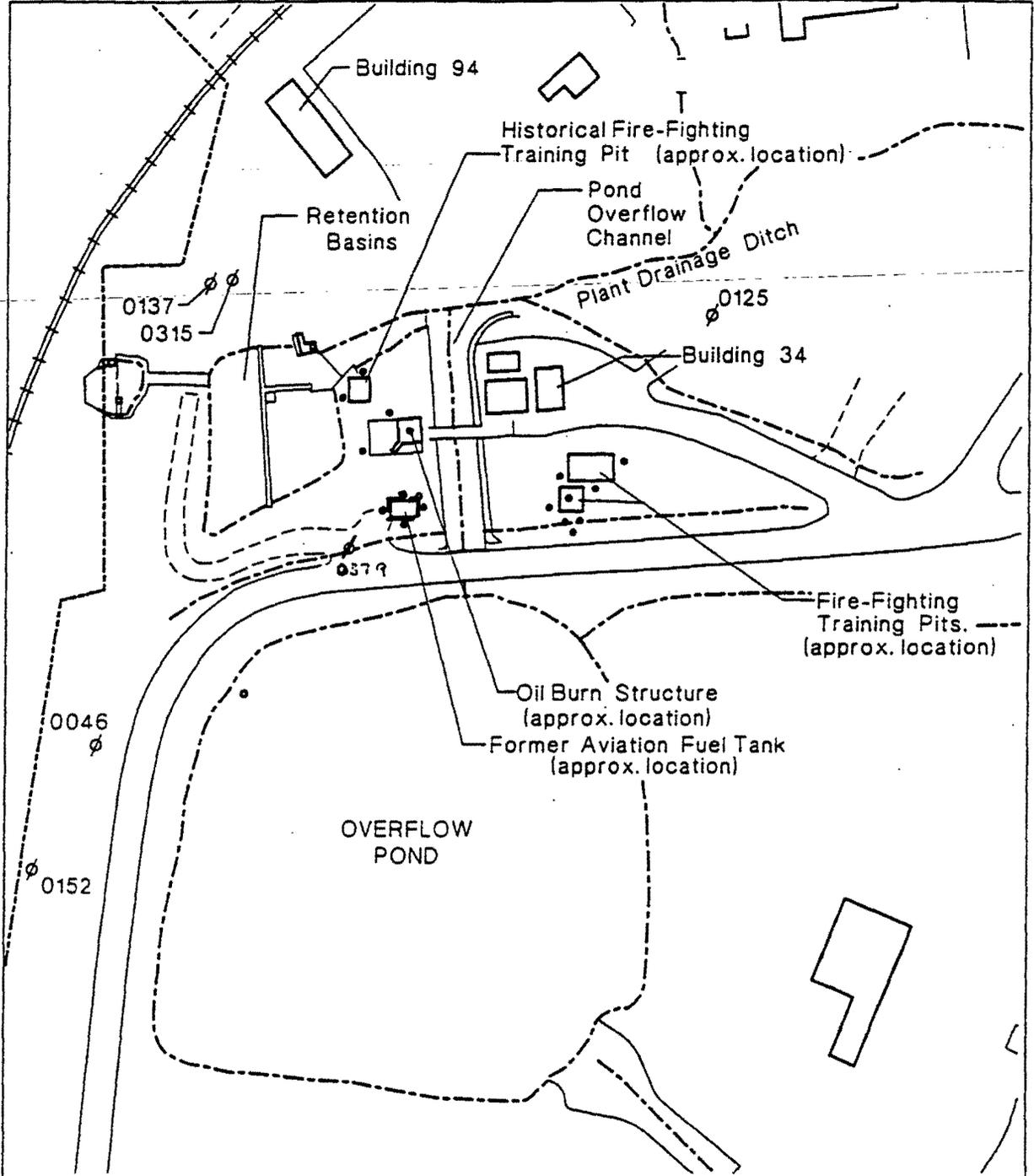
Parameter	Sample Id	Matrix	Units of Measure	Laboratory Reporting Limit	Validated Result (1)	Data Validation Qualifier	PRG	Run Typ
POTASSIUM-40	0001	S	pCi/g	.5	16.8		NA	I
POTASSIUM-40	0002	S	pCi/g	.5	13.4		NA	I
RADIUM-224	0001	S	pCi/g	.1	1.01		5.0E+00	I
RADIUM-224	0002	S	pCi/g	.1	.696		5.0E+00	I
RADIUM-226	0001	S	pCi/g	.1	.736		5.0E+00	I
RADIUM-226	0002	S	pCi/g	.1	.872		5.0E+00	I
RADIUM-228	0001	S	pCi/g	.2	.996		5.0E+00	I
RADIUM-228	0002	S	pCi/g	.2	.621		5.0E+00	I
SELENIUM, TOTAL	0001	S	mG/Kg	.2	0.83	J	1.4E+03	I
SILVER, TOTAL	0001	S	mG/Kg	1.	4.9	J	1.4E+03	I
SILVER, TOTAL	0002	S	mG/Kg	1.	17.5	J	1.4E+03	I
SODIUM, TOTAL	0001	S	mG/Kg	10.	363.		NA	I
SODIUM, TOTAL	0002	S	mG/Kg	10.	363.		NA	I
THORIUM-234	0001	S	pCi/g	.5	1.25		1.1E+00	I
THORIUM-234	0002	S	pCi/g	.5	1.44		1.1E+00	I
VANADIUM, TOTAL	0001	S	mG/Kg	1.	35.		1.9E+03	I
VANADIUM, TOTAL	0002	S	mG/Kg	1.	27.7	J	1.9E+03	I
ZINC, TOTAL	0001	S	mG/Kg	.5	65.5		5.4E+04	I
ZINC, TOTAL	0002	S	mG/Kg	.5	43.1		5.4E+04	I

PRG - Preliminary Remediation Goals (Risk Based)
 J - The associated value is an estimated quantity
 I - Initial Analysis
 S - Soil
 mG/Kg - Milligrams per Kilogram
 pCi/g - Picocuries per Gram
 (1) - This includes laboratory results that were not qualified from data validation, but were accepted by data validators

General Chemistry

GAMMA SPECTROSCOPY

NOTE: • OUS LIMITED FIELD INVESTIGATION SAMPLE POINT



121392
J:\DGN\MOUND\B\M0943.dgn

LEGEND		<p>Mound Plant</p> <p>MAP LOCATION</p>
	Structures	
	Paved roadway	
	Railroad	
	Surface water drainage	
	Mound Plant boundary	
	Monitoring well	
 True North		 Scale in Feet

Figure 2.12(a). Building 34 sites.

Environmental Restoration Program

Operable Unit 9 Hydrogeologic Investigation: Groundwater Sweeps Report

**MOUND PLANT
MIAMISBURG, OHIO**

April 1995

**Technical Memorandum
(Revision 1)**

**U.S. Department of Energy
Ohio Field Office**

EG&G Mound Applied Technologies



3. ANALYTICAL RESULTS

Table III.2. (page 7 of 9)



ANALYTE	0356	0370	0372	0373	0375	0376	0377	0378	0379	0380	0381	0382	0383
Arsenic, Soluble													
Arsenic, Total													
Barium, Soluble													
Barium, Total													
Cadmium, Soluble	/•									/•			
Cadmium, Total													
Chromium, Soluble				/■			•/•				/•		
Chromium, Total				/■			•/■						
Lead, Soluble												/■	
Lead, Total		•	/•	•		•	•		■	•			
Mercury, Soluble													
Mercury, Total													
Selenium, Soluble													
Selenium, Total													
Silver, Soluble										/•			
Silver, Total													
Tritium	/•	•/•		•/•	/•	•/•	•/•	•/•	•/•				
Plutonium-238													
Uranium-234	/•												
Uranium-235/236								•					
Uranium-238	•/•	•/•		•									
1,1,1-Trichloroethane							•/•	•/•					
1,2-cis-Dichloroethene		■/•		•/•									
1,2-trans-Dichloroethene		•											
Bis(2-ethylhexyl)phthalate				•						•			
Tetrachloroethene		■/•		■/■									
Trichloroethene		■/•		■/■	•/•				•/•				
Trichlorofluoromethane		•		•/•									
Trichloromethane		•/•		•/•									
Vinyl Chloride													

Notes:

- - indicates an analyte detection during the Fall sampling event
- /• - indicates an analyte detection during the Spring sampling event
- - shading indicates analyte detections above maximum contaminant levels

GROUNDWATER QUALITY DATA BY LOCATION
 SITE: SWP98 GROUNDWATER SWEEPS
 LOCATION: 0379
 NORTH COORDINATE: 597179.70 FT
 EAST COORDINATE: 1495153.92 FT
 09/10/93 TO 10/15/93
 REPORT DATE: 04/03/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
 HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
AMERICIUM-241	09/26/93	0001	PCI/L		.0783		REJECT	I
ANTIMONY, SOLUBLE	09/26/93	0001	UG/L	B	2.0		2.0	I
BARIUM, SOLUBLE	09/26/93	0001	UG/L	B	147.		147.	I
BARIUM, TOTAL	09/26/93	0001	UG/L	B	158.0		158.0	I
CALCIUM, SOLUBLE	09/26/93	0001	UG/L		146000.	J	146000.	I
CALCIUM, TOTAL	09/26/93	0001	UG/L		160000.	J	160000.	I
CHLORIDE	09/26/93	0001	MG/L		427.		427.	I
CHROMIUM, TOTAL	09/26/93	0001	UG/L		71.7	J	71.7	I
FLUORIDE	09/26/93	0001	MG/L		0.48		0.48	I
IRON, SOLUBLE	09/26/93	0001	UG/L		117.		117.	I
IRON, TOTAL	09/26/93	0001	UG/L		1360.	J	1360.	I
LEAD, TOTAL	09/26/93	0001	UG/L		16.0		16.0	I
LITHIUM, SOLUBLE	09/26/93	0001	UG/L	B	26.9	J	26.9	I
LITHIUM, TOTAL	09/26/93	0001	UG/L	B	28.6	J	28.6	I
MAGNESIUM, SOLUBLE	09/26/93	0001	UG/L		59700.	J	59700.	I
MAGNESIUM, TOTAL	09/26/93	0001	UG/L		63000.	J	63000.	I
MANGANESE, SOLUBLE	09/26/93	0001	UG/L	B	11.6		11.6	I
MANGANESE, TOTAL	09/26/93	0001	UG/L	B	12.7		12.7	I
MOLYBDENUM	09/26/93	0001	UG/L	B	4.6		4.6	I
MOLYBDENUM, SOLUBLE	09/26/93	0001	UG/L	B	4.0		4.0	I
NICKEL, SOLUBLE	09/26/93	0001	UG/L	B	26.3		26.3	I
NICKEL, TOTAL	09/26/93	0001	UG/L		40.9		40.9	I
NITRATE NITRITE	09/26/93	0001	MG/L		0.053		0.053	I
PLUTONIUM-239/240	09/26/93	0001	PCI/L		.136		REJECT	I
POTASSIUM, SOLUBLE	09/26/93	0001	UG/L	B	4010.		4010.	I
POTASSIUM, TOTAL	09/26/93	0001	UG/L	B	4060.		4060.	I
SODIUM, SOLUBLE	09/26/93	0001	UG/L		138000.	J	138000.	I
SODIUM, TOTAL	09/26/93	0001	UG/L		146000.	J	146000.	I
TETRACHLOROETHENE	09/26/93	0001	UG/L		2.4	J	2.4	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
 SITE: SWP98 GROUNDWATER SWEEPS
 LOCATION: 0379
 NORTH COORDINATE: 597179.70 FT
 EAST COORDINATE: 1495153.92 FT
 09/10/93 TO 10/15/93
 REPORT DATE: 04/03/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
 HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TETRACHLOROMETHANE (CCL4)	09/26/93	0001	UG/L		2.6	J	2.6	I
THORIUM-228	09/26/93	0001	PCI/L		.625		REJECT	I
THORIUM-230	09/26/93	0001	PCI/L		.365		REJECT	I
TIN, SOLUBLE	09/26/93	0001	UG/L	B	21.5		21.5	I
TIN, TOTAL	09/26/93	0001	UG/L	B	18.8		18.8	I
TOTAL DISSOLVED SOLIDS	09/26/93	0001	MG/L		1230.		1230.	I
TOTAL ORGANIC CARBON	09/26/93	0001	MG/L		0.60		0.60	I
TOTAL PHOSPHATE	09/26/93	0001	MG/L		0.11		0.11	I
TOTAL SUSPENDED SOLIDS	09/26/93	0001	MG/L		9.0		9.0	I
TRICHLOROETHENE	09/26/93	0001	UG/L		1.4	J	1.4	I
TRITIUM	09/26/93	0001	PCI/L		5680.		5680.	I
URANIUM-234	09/26/93	0001	PCI/L		.52		.52	I
URANIUM-238	09/26/93	0001	PCI/L		.44		.44	I
VANADIUM, SOLUBLE	09/26/93	0001	UG/L		16.5		16.5	I
VANADIUM, TOTAL	09/26/93	0001	UG/L		17.1		17.1	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
 SITE: SWP99 GROUNDWATER SWEEPS
 LOCATION: 0379
 NORTH COORDINATE: 597179.70 FT
 EAST COORDINATE: 1495153.92 FT
 03/08/94 TO 04/14/94
 REPORT DATE: 04/03/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
 HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
BARIIUM, SOLUBLE	03/15/94	0001	UG/L	B	142.		142.	I
BARIIUM, TOTAL	03/15/94	0001	UG/L	B	143.		143.	I
BERYLLIUM, SOLUBLE	03/15/94	0001	UG/L		0.58		0.58	I
BERYLLIUM, TOTAL	03/15/94	0001	UG/L		0.46		0.46	I
CALCIUM, SOLUBLE	03/15/94	0001	UG/L		139000.		139000.	I
CALCIUM, TOTAL	03/15/94	0001	UG/L		138000.		138000.	I
CHLORIDE	03/15/94	0001	MG/L		477.		477.	I
CHROMIUM, TOTAL	03/15/94	0001	UG/L		104.		104.	I
DIETHYL PHTHALATE	03/15/94	0001	UG/L	J	2.	J	2.	I
FLUORIDE	03/15/94	0001	MG/L		0.51		0.51	I
IRON, SOLUBLE	03/15/94	0001	UG/L		162.		162.	I
IRON, TOTAL	03/15/94	0001	UG/L		2090.		2090.	I
LITHIUM, SOLUBLE	03/15/94	0001	UG/L	B	38.8		38.8	I
LITHIUM, TOTAL	03/15/94	0001	UG/L	B	38.8		38.8	I
MAGNESIUM, SOLUBLE	03/15/94	0001	UG/L		57700.		57700.	I
MAGNESIUM, TOTAL	03/15/94	0001	UG/L		57300.		57300.	I
MANGANESE, SOLUBLE	03/15/94	0001	UG/L	B	6.6		6.6	I
MANGANESE, TOTAL	03/15/94	0001	UG/L	B	12.3		12.3	I
MOLYBDENUM	03/15/94	0001	UG/L	B	2.0		2.0	I
MOLYBDENUM, SOLUBLE	03/15/94	0001	UG/L	B	2.0		2.0	I
NICKEL, SOLUBLE	03/15/94	0001	UG/L	B	35.1		35.1	I
NICKEL, TOTAL	03/15/94	0001	UG/L		73.1		73.1	I
NITRATE NITRITE	03/15/94	0001	MG/L		0.15		0.15	I
POTASSIUM, SOLUBLE	03/15/94	0001	UG/L	B	3370.	J	3370.	I
POTASSIUM, TOTAL	03/15/94	0001	UG/L	B	3470.	J	3470.	I
RADIUM-226	03/15/94	0001	PCI/L		0.31		0.31	I
SODIUM, SOLUBLE	03/15/94	0001	UG/L		133000.		133000.	I
SODIUM, TOTAL	03/15/94	0001	UG/L		135000.		135000.	I
SULFATE	03/15/94	0001	MG/L		50.0		50.0	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

GROUNDWATER QUALITY DATA BY LOCATION
 SITE: SWP99 GROUNDWATER SWEEPS
 LOCATION: 0379
 NORTH COORDINATE: 597179.70 FT
 EAST COORDINATE: 1495153.92 FT
 03/08/94 TO 04/14/94
 REPORT DATE: 04/03/95

FORMATION OF COMPLETION: ALLUVIUM (AL)
 HYDRAULIC FLOW RELATIONSHIP: ON SITE (O)

PARAMETER NAME	LOG DATE	SAMPLE ID	UNITS OF MEASURE	PVI	LAB VALUE	PVI	VALIDATED VALUE	RUN TYPE
TETRACHLOROETHENE	03/15/94	0001	UG/L		3.2		3.2	I
TETRACHLOROMETHANE (CCL4)	03/15/94	0001	UG/L		2.8		2.8	I
THORIUM-228	03/15/94	0001	PCI/L		0.026		0.026	I
THORIUM-230	03/15/94	0001	PCI/L		0.009		0.009	I
TOTAL DISSOLVED SOLIDS	03/15/94	0001	MG/L		1260.		1260.	I
TOTAL ORGANIC CARBON	03/15/94	0001	MG/L		0.92		0.92	I
TOTAL PHOSPHATE	03/15/94	0001	MG/L		0.086		0.086	I
TRICHLOROETHENE	03/15/94	0001	UG/L		1.4		1.4	I
TRITIUM	03/15/94	0001	PCI/L		6070.		6070.	I
URANIUM-234	03/15/94	0001	PCI/L		0.450		0.450	I
URANIUM-235	03/15/94	0001	PCI/L		0.015		0.015	I
URANIUM-238	03/15/94	0001	PCI/L		0.358		0.358	I

PARAMETER VALUE INDICATOR (PVI): U - LESS THAN DETECTION LIMIT

POSITION PAPER ON DIOXIN IN THE SOILS AT THE MOUND FACILITY

INTRODUCTION

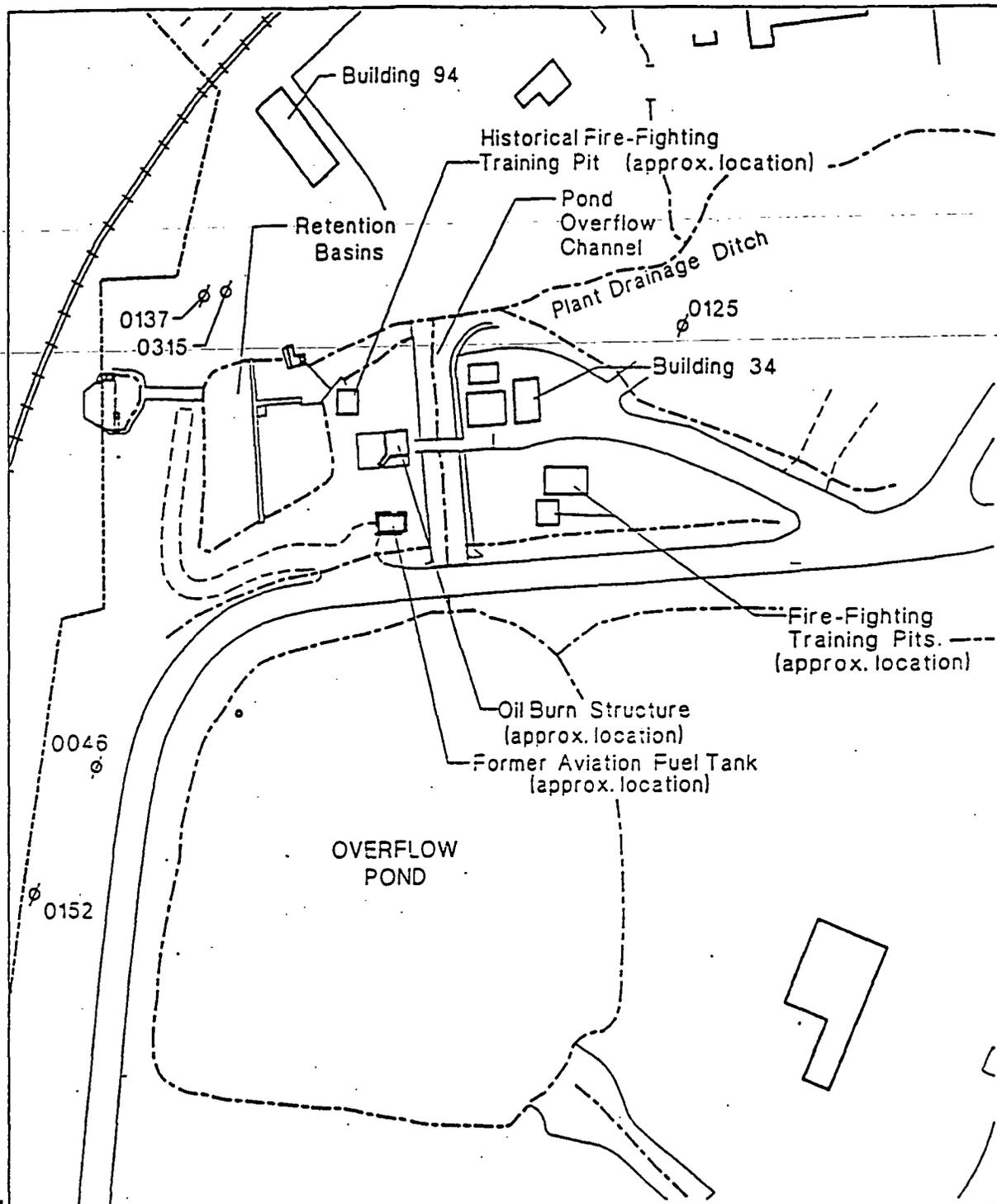
This paper summarizes the dioxin/furan analytical results at the Mound Facility. There has been concern that the burning of solvents in the OU1 historical landfill may have caused widespread surface soil dioxin/furan contamination. This paper will show that there are minor local areas of elevated soil dioxin and furan concentrations intimately associated with localized burning activities. These levels are well below typical guideline cleanup levels. Widespread air-borne dissemination of dioxin and furans from burning activities has not occurred.

EXISTING DATA

Soil, sediment, and surface water sampling for dioxin/furan analyses was conducted at the Building 34 Oil Burn Structure, the Building 34 Fire-Fighting Training Pits, and the Building 34 Historical Fire-Fighting Training Pit (OU3 Limited Field Investigation Report) as requested by the U.S. EPA. Dioxin/furan analyses were requested at sites where the burning of solvents and oils may have occurred (Figure 1). Soil samples from boreholes in OU1 were also analyzed for dioxin and furans (OU1 Remedial Investigation Report).

OU3

Dioxins and furans were not detected in any of the 7 surface water and groundwater samples analyzed under OU3 investigations. Out of the 31 soil and sediment samples collected (Appendix I), only 4 samples had detectable dioxin/furan concentrations (Table 1). The TEF adjusted concentration values (EPA 1989) are all well below the typically proposed (CDC guidelines, Paustenbach *et al*, 1986) action levels of 1 ppb (1000pg/g) for surface soils (within 1 ft of the ground surface). Proposed action levels are typically 20-25 ppb for contaminants deeper than 1 ft. The locations of all samples are shown in figures 2, 3, 4.



12/09/97
A:\DOD\N\01095\1\09543.dwg

LEGEND		<p>Mound Plant MAP LOCATION</p>
	Structures	
	Paved roadway	
	Railroad	
	Surface water drainage	
	Mound Plant boundary	
	Monitoring well	
 True North		 0 50 Scale in Feet

Figure 1 Building 34 sites.

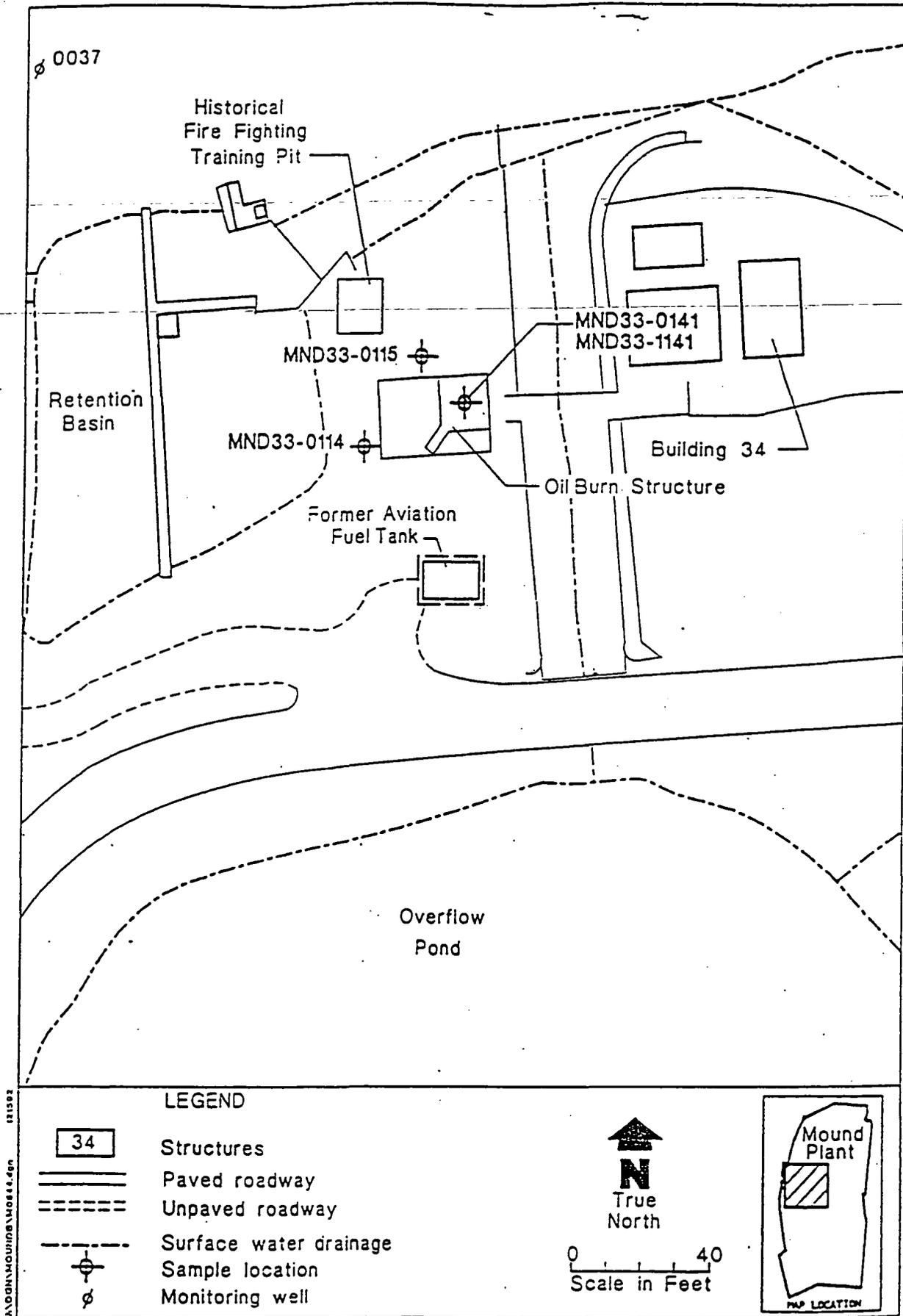
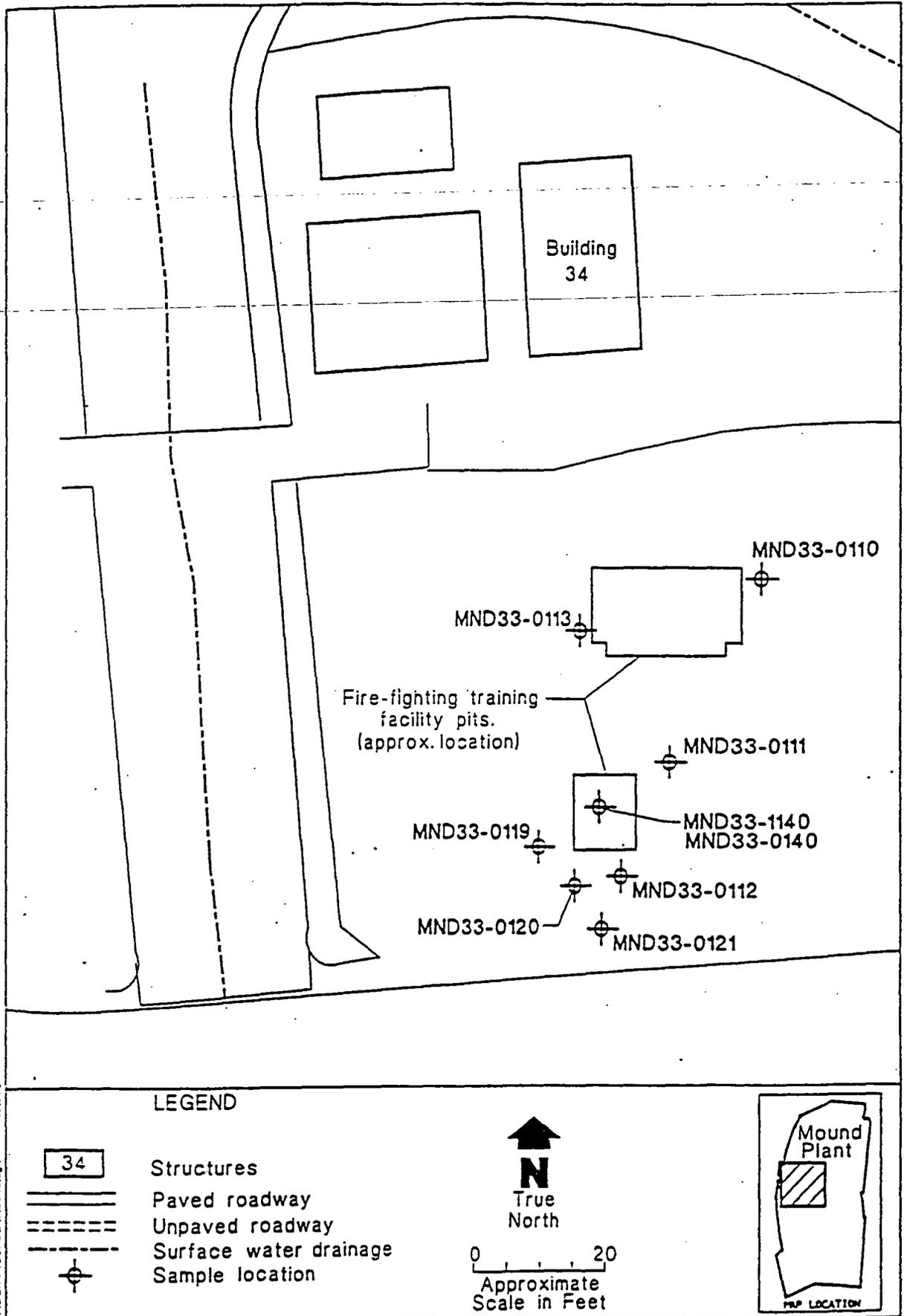


Figure 2 Building 34 Oil Burn Structure soil sample locations.



121092
A:\DD\HOUND\10948.dgn

Figure 3 Building 34 Fire Fighting Training Pits soil sample locations.

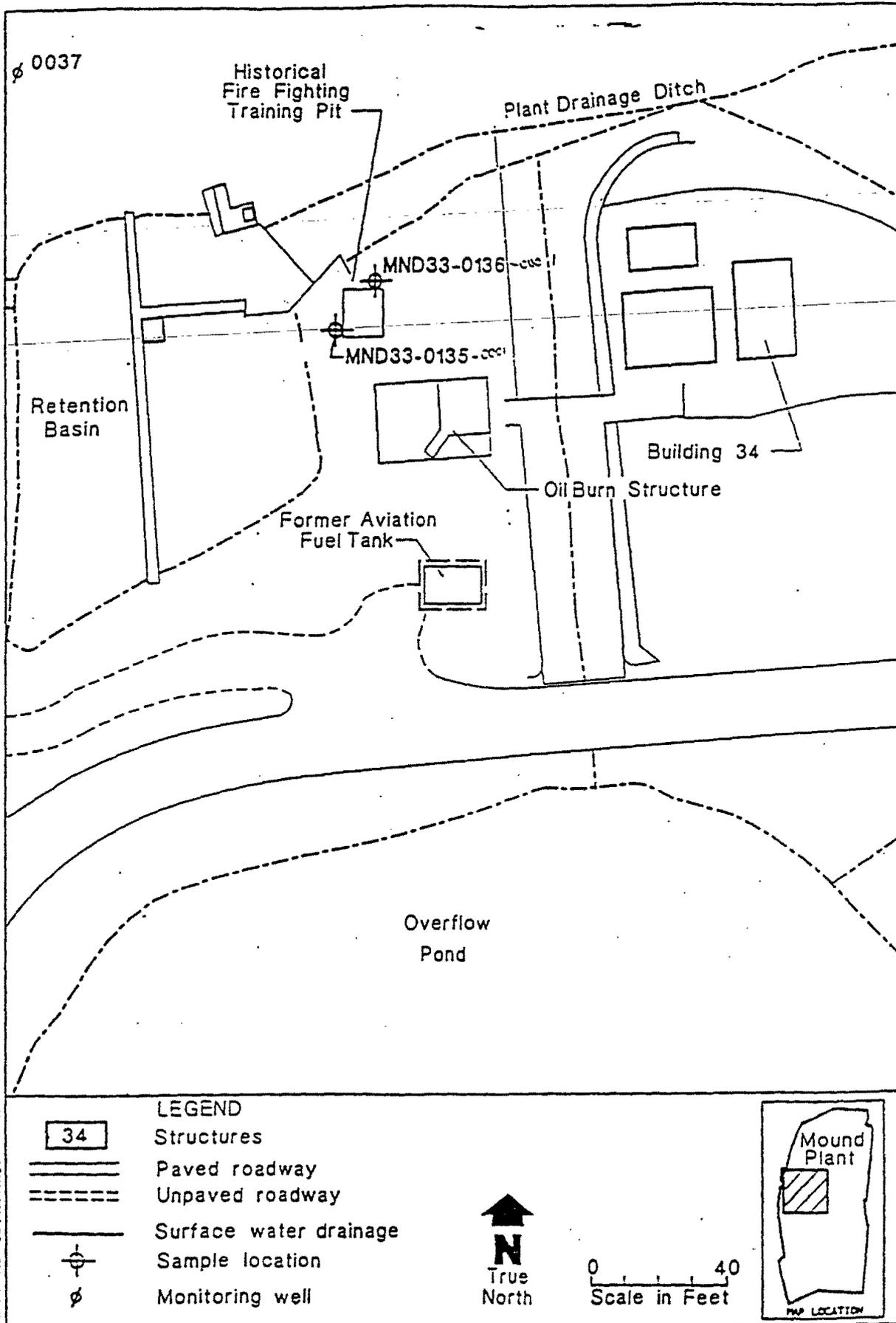


Figure 4 Building 34 Historical Fire Fighting Training Pits soil sample locations.

TABLE 1
OU3 POSITIVE DIOXIN/FURAN DETECTIONS

Sample ID	Sample Type	Chemical Name	Conc pg/g	TEF	TEF Adj Conc. pg/g
MND33-0141	Sediment	1,2,3,4,6,7,8-HpCDD	2300	0.01	23
		OCDD	16600	0.001	16.6
		1,2,3,7,8-TCDD equiv.			39.6
MND33-0111-001	Soil 0-2' bgs	OCDD	310	0.001	.31
		1,2,3,7,8-TCDD equiv.			.31
MND33-0135-001	Soil 3-6' bgs	1,2,3,4,6,7,8-HpCDD	110	0.01	1.1
		OCDD	11000	0.001	11
		OCDF	540	0.001	.54
		1,2,3,7,8-TCDD equiv.			12.64
MND33-0136-001	Soil 3-6' bgs	1,2,3,4,6,7,8-HpCDD	210	0.01	2.1
		1,2,3,7,8-TCDD equiv.			2.1

Proposed action levels typically are 1,000pg/g (1ppb) for surface soil and 20,000 to 25,000pg/g (20- 25ppb) for soil below 1ft bgs.

The positive detection at the oil burn structure is only in the sediment within the structure itself (Figure 2). The soils adjacent to the structure show no detectable contamination. Analytical results for dioxin/furan analyses of soil samples from the fire-fighting pits indicate a detected dioxin concentration at surface sample MND33-0111-0001 (Figure 3). No other dioxin/furans were detected in soil samples from the fire-fighting training pits. Two soil samples, MND33-0135-0001 and MND33-0136-0001, from the Building 34 Historical fire-fighting pit (Figure 4) also had positive dioxin/furan detections. All other samples from this location did not have any detectable dioxin or furan concentrations.

OU1

The soils around the overflow pond, the sanitary landfill, and the soils spoils area have all been moved and relocated due to construction activities at the Mound Plant. Some of these soils were possibly affected by the burning activities in the historical landfill. Due to the allochthonous nature of these soils, however, a precise location for possible dioxin contaminated soils cannot be determined. For this reason a total of 30 soil samples from 10 soil borings were collected and sampled for dioxins/furans (Table 2 & Figure 5).

DISCUSSION & CONCLUSION

The collection of additional samples for dioxin and furan analyses is not necessary due to the extremely low levels that have been observed in the solvent and fuel burn areas. None of the analyzed samples at the Mound Plant have TEF adjusted concentrations close to the 1 ppb (1000pg/g) level.

Some of the guidelines previously used at other sites are summarized in a 1987 memo from the Center of Environmental Health to ATSDR:

Residential sites: Where surface soil in residential areas exceeds one part per billion of 2,3,7,8-TCDD (hereinafter referred to generically as dioxin), removal of the surface soil to a level 1 foot is recommended. If at 1 foot deep, the residual dioxin is 5 to 10 parts per billion, then addition of clean soil to the original grade will be sufficient. In no case is it necessary to remove the soil to a depth of more than 4 feet, provided 4 feet of clean soil is added to reestablish the original grade.

Industrial sites: In Industrial sites in areas where worker contact to contaminated soil does not occur, it would be acceptable for the average dioxin levels up to 20 parts per billion remain in place. Areas exceeding 20 parts per billion would be evacuated until the residual concentration of less than 20 parts per billion is reached. Then the evacuated areas would be backfilled with appropriate noncontaminated material to the original grade. In no case would evacuation need to proceed beyond a depth of 4 feet.

Although this 1 ppb level is not currently a proposed regulatory guideline, it does provide a reference for comparison to other superfund site cleanup criteria. Note that it has been considered sufficient to clean up dioxins to a depth no greater than 4 feet as the exposure pathway from soils is from the surficial deposits.

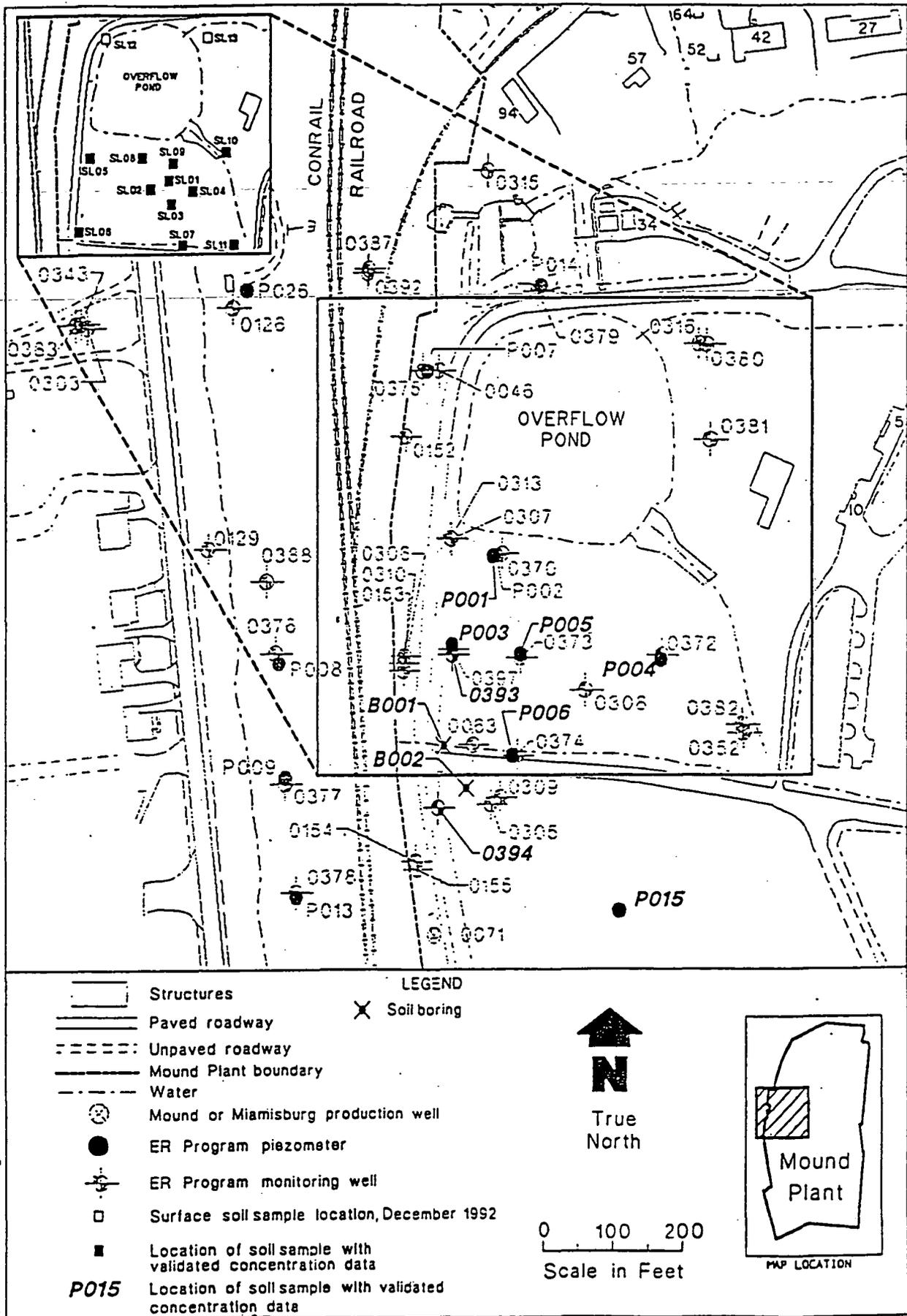
Dioxin/furan analytical results, when converted to the equivalent concentration of 2,3,7,8 TCDD (Table 3) and summed, yield the Toxicity Equivalency Factor Adjusted Concentration (TEF Concentration). All the dioxin/furan samples analyzed at the Mound Plant have TEF Concentrations well below the 1 ppb concentration level. The highest level observed in the soils is 165.9 pg/g (.1659 ppb) in sample P004-0031 at a depth of 31 feet below ground surface in fill material. The majority of samples near Building 34, including 4 surface samples, had no dioxin or furan detections.

A dioxin and furan contamination problem does not exist at the Mound Facility due to the extremely low levels of dioxin/furan compounds that have been detected. Further dioxin/furan sampling is not warranted.

Table 2. Toxicity Equivalency Factors of Soil Samples Analyzed for Dioxin/Furans

Sample Number	TEF Concentration	Units
P006-0010	1.73980	pg/g
P006-0015	0.00196	pg/g
P006-0025	0.00510	pg/g
P015-0014	7.5722	pg/g
P015-0045	0.00681	pg/g
B002-0015	0.04212	pg/g
B003-0026	0.02730	pg/g
B003-1026	0.00210	pg/g
B001-0007	0.07800	pg/g
B001-0015	0.01640	pg/g
P003-0006	46.7669	pg/g
P003-0016	2.57820	pg/g
P003-0026	0.00170	pg/g
P001-0036	0.14853	pg/g
P004-0005	0.00790	pg/g
P004-0025	4.4225	pg/g
P004-0031	165.937	pg/g
P004-0038	4.44470	pg/g
P004-0045	0.00540	pg/g
0393-0005	11.2973	pg/g
0393-0021	0.00650	pg/g
0393-1021	0.00530	pg/g
0394-0003	5.59550	pg/g
0394-0011	1.81158	pg/g
P005-0003	0.01670	pg/g
P005-0009	0.83043	pg/g
P005-0018	0.74390	pg/g
P005-0045	0.01890	pg/g
P005-0056	0.11010	pg/g
P005-1056	0.00692	pg/g

NOTE: Action levels may be 1 ppb (1000 pg/g) in soils and a MCL of 50 ppq (pg/L) in water.



116093
JA:OGNVP:POLAR:DOB:116927.dgn

Figure 5 Soil sample locations with validated dioxin and furan compound concentrations, November/December 1992.

2,3,7,8-TCDD Toxicity Equivalency Factors (TEFs) for the
Polychlorinated Dibenzodioxins and Dibenzofurans.

Number	Compound(s)	TEF
1	2,3,7,8-TCDD	1.00
2	1,2,3,7,8-PeCDD	0.50
3	1,2,3,6,7,8-HxCDD	0.10
4	1,2,3,7,8,9-HxCDD	0.10
5	1,2,3,4,7,8-HxCDD	0.10
6	1,2,3,4,6,7,8-HpCDD	0.01
7	1,2,3,4,6,7,8,9-OCDD	0.001
8	2,3,7,8-TCDF	0.1
9	1,2,3,7,8-PeCDF	0.05
10	2,3,4,7,8-PeCDF	0.5
11	1,2,3,6,7,8-HxCDF	0.1
12	1,2,3,7,8,9-HxCDF	0.1
13	1,2,3,4,7,8-HxCDF	0.1
14	2,3,4,6,7,8-HxCDF	0.1
15	1,2,3,4,6,7,8-HpCDF	0.01
16	1,2,3,4,7,8,9-HpCDF	0.01
17	1,2,3,4,6,7,8,9-OCDF	0.001

REFERENCES

Center of Environmental Health. 1987. Memo from Center of Environmental Health to ATSDR RE: Missouri Dioxin Sites Cleanup. May 8, 1987.

EPA. 1989. "Update of Toxicity Equivalency Factors (TEFs) for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and Dibenzofurans (CDD-CDF)"; U.S. Environmental Protection Agency, Washington, DC. EPA 625/3-89/016. March 1989.

OU1; Operable Unit 1; "Remedial Investigation Report; Draft Final Rev. 1", March 1994. U.S. Department of Energy, Albuquerque Field Office, Albuquerque, NM.

OU3; Operable Unit 3; "Miscellaneous Sites Limited Field Investigation Report", July, 1993. U.S. Department of Energy, Albuquerque Field Office, Albuquerque, NM.

Paustenback, D. J., Shu, H. P., Murray, F. J. 1986. "A Critical Examination of Assumptions Used in Risk Assessments of Dioxin Contaminated Soil". Regulatory Toxicology and Pharmacology, 1986.

APPENDIX I

Building 34 Historical Fire-Fighting Training Pit Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0135	MND33-0135-0001	Soil	2/12/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0135-0002	Soil	2/12/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0135-5001	Water	2/12/92	---	TCL VOCs.
MND33-0136	MND33-0136-0001	Soil	2/13/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0136-1001	Soil	2/13/92	3.0-6.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0136-0002	Soil	2/13/92	8.0-12.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0136-4001	Water	2/13/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.

BGS - Below Ground Surface

ft - Feet

EPH - Extractable Petroleum Hydrocarbons

P/PCBs - Pesticides/Polychlorinated Biphenyls

SVOCs - Semivolatile Organic Compounds

TAL - Target Analyte List

TCL - Target Compound List

VOCs - Volatile Organic Compounds

Building 34 Fire-Fighting Training Pits Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0110	MND33-0110-0001	Soil	1/21/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate; gamma spec.
	MND33-0110-0002	Soil	1/21/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate; gamma spec.
	MND33-0110-1002	Soil	1/21/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate.
	MND33-0110-0003	Soil	1/21/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; nitrite/nitrate.
	MND33-0110-5003	Water	1/21/92	Ambient blank	TCL VOCs.
	MND33-0110-0004	Soil	1/22/92	13.0-15.0	TCL VOCs; dioxins/furans; lithium.
	MND33-0110-0005	Soil	1/22/92	17.0-19.0	TCL VOCs; dioxins/furans; lithium.
MND33-0111	MND33-0111-0001	Soil	1/22/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0111-0002	Soil	1/22/92	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0111-0003	Soil	1/22/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
MND33-0112	MND33-0112-0001	Soil	1/22/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0112-1001	Soil	1/22/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0112-0002	Soil	1/22/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0112-0003	Soil	1/22/92	8.0-10.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0112-4003	Water	1/27/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
MND33-0113	MND33-0113-0001	Soil	1/27/92	0.0-2.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0113-0002	Soil	1/27/92	3.0-5.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
	MND33-0113-0003	Soil	1/27/92	8.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-0113-0004	Soil	1/27/92	13.0-15.0	TCL VOCs; lithium; dioxin/furans.
	MND33-0113-0005	Soil	1/27/92	15.0-17.0	TCL VOCs; lithium; dioxin/furans.
	MND33-0113-0008	Soil	1/27/92	17.0-20.0	TCL VOCs; lithium; dioxin/furans.
MND33-0119	No sample collected				
MND33-0120	No sample collected				
MND33-0121	No sample collected				
MND33-0140	MND33-0140-0001	Sediment	2/15/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH; gamma spec.
MND33-1140	MND33-1140-0001	Surface Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-1140-1001	Surface Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; lithium; dioxin/furans; EPH.
	MND33-1140-2001	Water	2/20/92	---	TCL VOCs.
	MND33-1140-5001	Water	2/20/92	---	TCL VOCs.

BGS - Below Ground Surface
 EPH - Extractable Petroleum Hydrocarbons
 ft - Feet
 P/PCBs - Pesticides/Polychlorinated Biphenyls
 SVOCs - Semivolatile Organic Compounds
 TAL - Target Analyte List
 TCL - Target Compound List
 VOCs - Volatile Organic Compounds

ER Program, Mound Plant

Dioxin Position Paper

Page 14

Page 51

Building 34 Oil Burn Structure Sample Summary

Sample Location	Sample Number	Matrix	Date Sampled	Sample Interval (ft BGS)	Parameters Analyzed
MND33-0114	MND33-0114-0001	Soil	1/20/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH; gamma spec.
	MND33-0114-1001	Soil	1/20/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH.
	MND33-0114-0002	Soil	1/20/92	7.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH; gamma spec.
MND33-0115	MND33-0115-0001	Soil	1/20/92	3.0-7.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH; gamma spec.
	MND33-0115-0002	Soil	1/20/92	7.0-11.0	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans, nitrite/nitrate; EPH; gamma spec.
	MND33-0115-4002	Water	1/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH.
MND33-0141	MND33-0141-0001	Sediment	2/15/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH; gamma spec.
MND33-1141	MND33-1141-0001	Surface Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH.
	MND33-1141-4001	Water	2/20/92	---	TCL VOCs, SVOCs, P/PCBs; TAL Inorganics; Iithium; dioxin/furans; EPH.
	MND33-1141-2001	Water	2/20/92	---	TCL VOCs.
	MND33-1141-2002	Water	2/20/92	---	TCL VOCs.

BGS - Below Ground Surface
 EPH - Extractable Petroleum Hydrocarbons
 ft - Feet
 P/PCBs - Pesticides/Polychlorinated Biphenyls
 SVOCs - Semivolatile Organic Compounds
 TAL - Target Analyte List
 TCL - Target Compound List
 VOCs - Volatile Organic Compounds

Validated Positive Detections - Dioxin/Furan

Sample Location	Depth (ft)	1,2,3,4,6,7,8-HpCDF (pg/g)	1,2,3,4,6,7,8-HpCDD (pg/g)	1,2,3,4,7,8,9-HpCDF (pg/g)	1,2,3,4,7,8-HxCDF (pg/g)	Reason for Qualification
B001	5.0-7.0 15.0-16.5	0.45 -	3.2 0.85	- -	- -	
B003	22.0-26.0	.22	-	-	-	
0393	3.0-5.0	3.3J	12.2J	-	2.J	Extraction holding time out 16 days. No impact on data.
0394	2.0-3.0 10.5-11.0	6.3 -	30.3 0.52	0.62 -	2.2 -	
P001	34.5-36.0	-	0.59	-	0.18	
P003	5.0-6.5 15.0-17.0	58.4J 2.8	259.J 4.4	6. -	41.J 1.8	Internal standard recovery high for estimated results, due to ion suppression of recovery standard. Since IS areas appear unaffected, data are probably not affected.
P004	23.0-25.0 30.0-31.5 37.0-38.0	10.4 214. 3.1	84.6J 230. 9.2	1.8 41.4 -	1.7 209. 1.4	MS recovery for HpCDD was high (151%). Possible low bias in reported sample result.
P005	7.5-9.0 16.5-18.0 55.0-59.0	0.36 1. 1.5	- - -	- - -	- 0.49 -	
P008	9.0-10.0	8.	53.4	0.48	1.4	
P015	12.0-14.0	17.3	246.	1.5	1.3	

Validated Positive Detections - Dioxin/Furan

Sample Location	Depth (ft)	2,3,4,6,7,8-HxCDF (pg/g)	2,3,4,7,8-PeCDF (pg/g)	2,3,7,8-TCDD (pg/g)	2,3,7,8-TCDF (pg/g)	OCDD (pg/g)	OCDF (pg/g)	Reason for Qualification
B001	5.0-7.0	0.22	-	-	-	-	0.6	
B002	13.0-15.0	-	-	-	-	-	0.22	
B003	22.0-26.0	-	-	-	-	-	1.1	
0393	3.0-5.0 20-22	0.77J	1.6J	9.6J	2.4J	96.J 6.5J	3.3J	Extraction holding time out by 16 days. No impact on data.
0394	2.0-3.0 10.5-11.0	1. -	1.5 -	3. 1.8	2.8 -	273 -	10.3 0.28	
P001	34.5-36.0	-	0.24	-	-	-	0.33J	Associated MS/MSD recovery for OCDF low (10/18%). Reported results possibly biased low by factor of 5-10.
P003	5.0-6.5 15.0-17.0	11.1 0.92	46.2 1.	- 1.5	59. 0.39	1780.J -	7.9 1.5	Internal standard recovery high for OCDD, due to ion suppression of recovery standard. Since IS area appears unaffected, result is probably not affected.
P004	23.0-25.0 30.0-31.5 37.0-38.0	0.76 64.1 0.66	0.71 150. 0.77	1.3 22.5 3.4	1.6 132. 1.4	1010J 1660J 86.9	6.5J 183.J 1.3	MS/MSD recoveries for OCDF low (10/18%). Reported results possibly biased low by factor of 5-10. MS/MSD recovery for OCDD, 590-88%, indicates inhomogeneity of soil. Wide variability may affect sample result.
P005	7.5-9.0 16.5-18.0 55.0-59.0	0.21 0.41 0.15	- - -	0.78 0.62 -	- - -	- - -	- - 3.	
P006	9.0-10.0	1.2	-	-	0.99	371	15.	
P015	12.0-14.0	0.99	-	-	-	2110	50.2	

Environmental Restoration Program

**OPERABLE UNIT 5
OPERATIONAL AREA PHASE I INVESTIGATION
NON-AOC FIELD REPORT**

**MOUND PLANT
MIAMISBURG, OHIO**

VOLUME II - APPENDICES A-G

June 1995

Final (Revision 0)

**U.S. Department of Energy
Ohio Field Office**



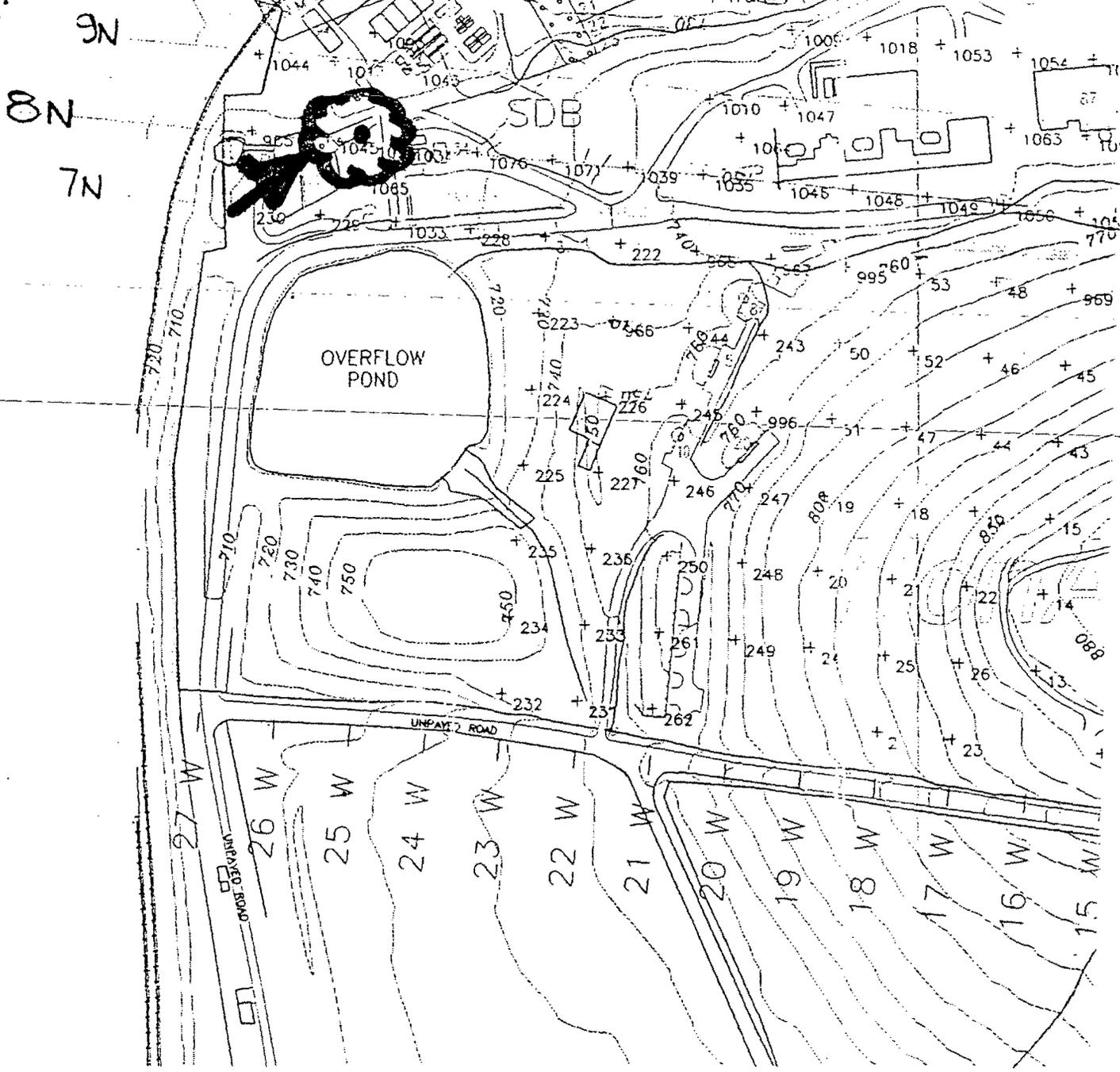
EG&G Mound Applied Technologies

APPENDIX D

RADIOLOGICAL DATA (FIDLER SURVEY MOUND SOIL SCREENING FACILITY DATA) FOR NON-AOC POINTS

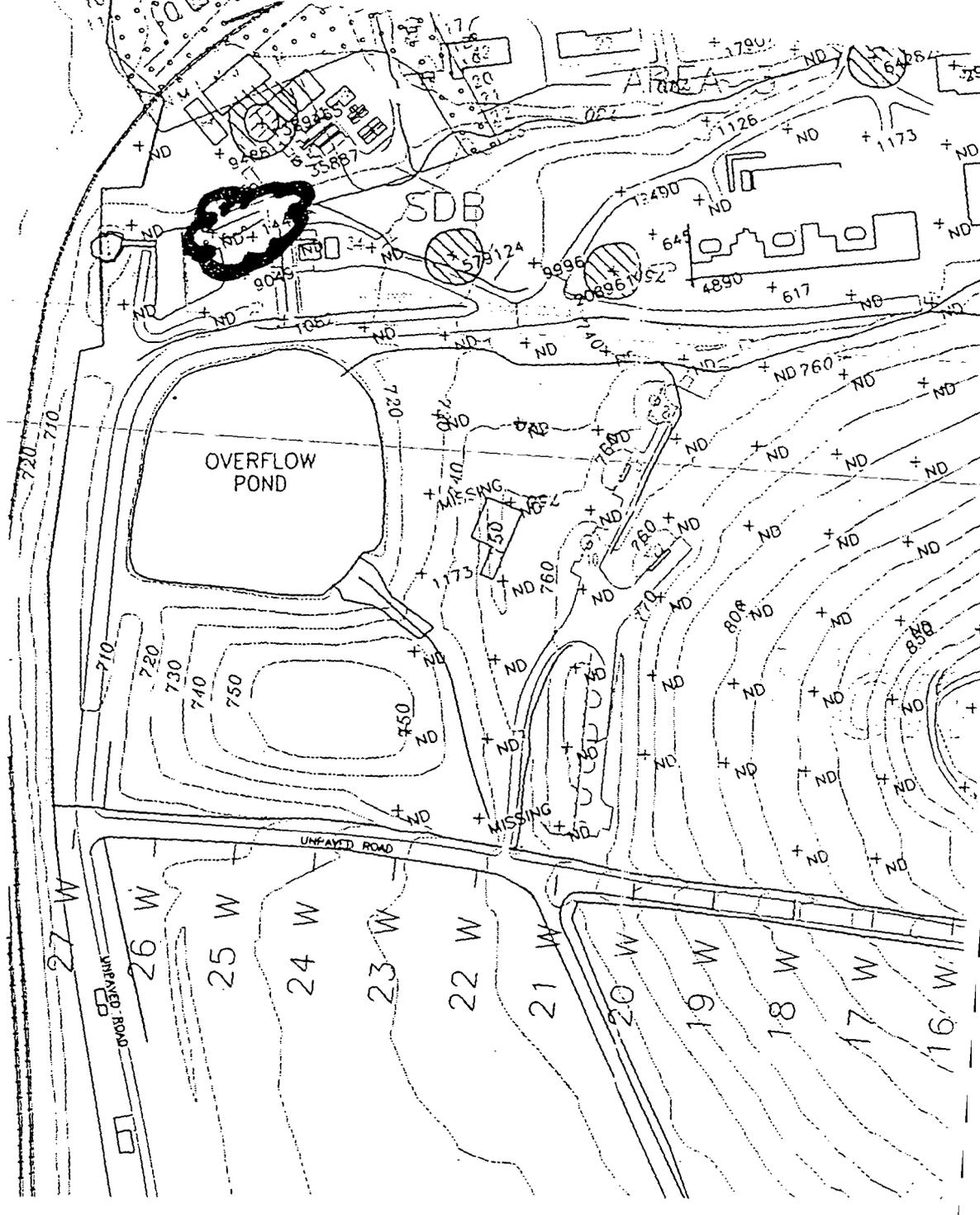
SMPID	FIDLER SURVEY DATA					MOUND SOIL SCREENING FACILITY DATA			
	Contamination Criteria CH1	FIDLER Readings CH1	Contamination Criteria CH2	FIDLER Readings CH2	FIDLER Readings Out Channel	Plutonium - 238		Thorium - 232	
	Units: CPM	Units: CPM	Units: KCPM	Units: KCPM	Units: KCPM	Units: pCi/g		Units: pCi/g	
	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	RESULTS	Note:	RESULTS	Note:
08N05	130	90	6.5	4.0	NC	WIPE	c	WIPE	c
08N06	122.2	70	5.59	4.0	NC	2	a	0.2	a
08N07	122.2	110	5.59	8.5	NC	7	a	0.6	a
08N08	122.2	115						0.9	a
08N11	213.2	160						1.1	a
08N12	213.2	160						0.9	a
08N13	213.2	120						0.7	a
08N14	213.2	120						0.9	a
08N15	213.2	115						0.4	a
08N16	130	120						0	a
08N17	130	50						0.7	a
08N18	130	50						0	a
08N19	130	50						0	a
08N20	130	65						WIPE	c
08N21	157.3	60	8.45	3.0	NC	WIPE	c	WIPE	c
08N22	117.0	60	8.71	4.5	NC	22	a	0.8	a
08N23	117.0	80	8.71	7.0	NC	WIPE	c	WIPE	c
08N24	157.3	110	8.45	7.0	NC	0	a	0.6	a
08N25	157.3	55	8.45	3.5	NC	24	a	0.8	a
08N26	157.3	80	8.45	4.0	NC	10	a	0.5	a
08N27	143	115	6.63	6.5	NC	8	a	1	a
09N01	253.5	170	12.48	10.5	NC	2	a	1.2	a
09N02	122.2	65	5.59	4.0	NC	WIPE	c	WIPE	c
09N03	122.2	125	5.59	5.0	NC	WIPE	c	WIPE	c
09N04	130	85	6.5	5.0	NC	WIPE	c	WIPE	c
09N05	122.2	110	5.59	5.5	NC	3	a	0.8	a
				4.5	NC	0	a	0.2	a

NC - No sample collected because location not an original grid point
 NA - Reading not taken; contamination criteria not exceeded.
 NS - Sample collected but not analyzed.
 a - Mound Soil Screening Facility detection level not exceeded.
 c - Results of the wipe sample were less than 20 disintegrations per minute.
 CPM - Counts per minute
 KCPM - Counts per minute x 1000
 pCi/g - Picocuries per gram



Sample Locations

Plate 1



Prepared by:
Northeast Research Institute LLC
 605 Parfet Street
 Suite 100
 Lakewood, Colorado 80215
 (303) 238-0090

Drawn By:
 JCS

Checked By:

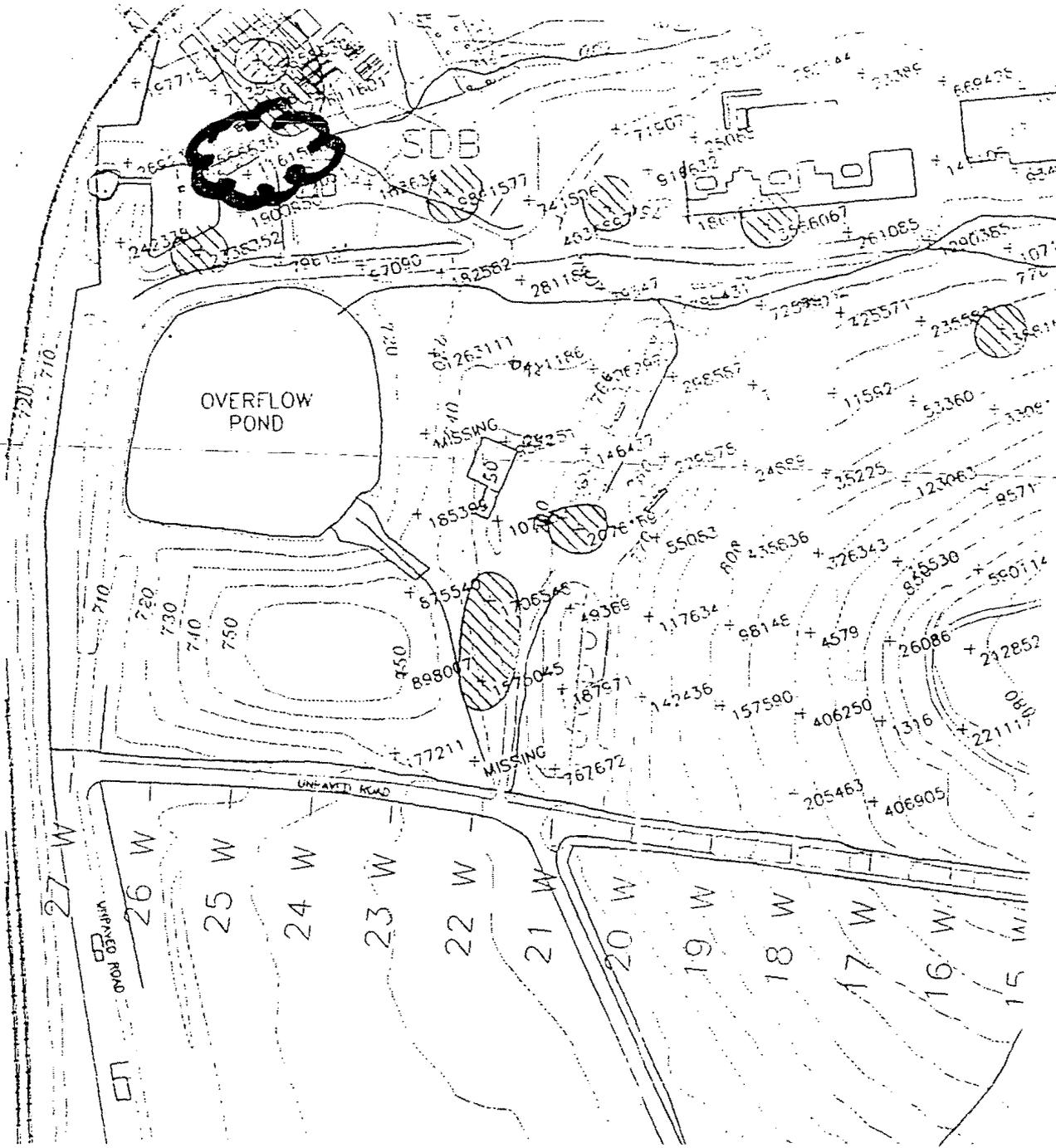
Project Manager
 PCB

Project #:
 2114E

NonAOC/O

Relative Response
 Total Semivolatile
 Hydrocarbons

Plate 3



Prepared by:
Northwest Research Institute, LLC
 505 Parfet Street
 Suite 100
 Lake Wood, Colorado 80215
 (303) 236-0090

Drawn By:
 JCS

Checked By:

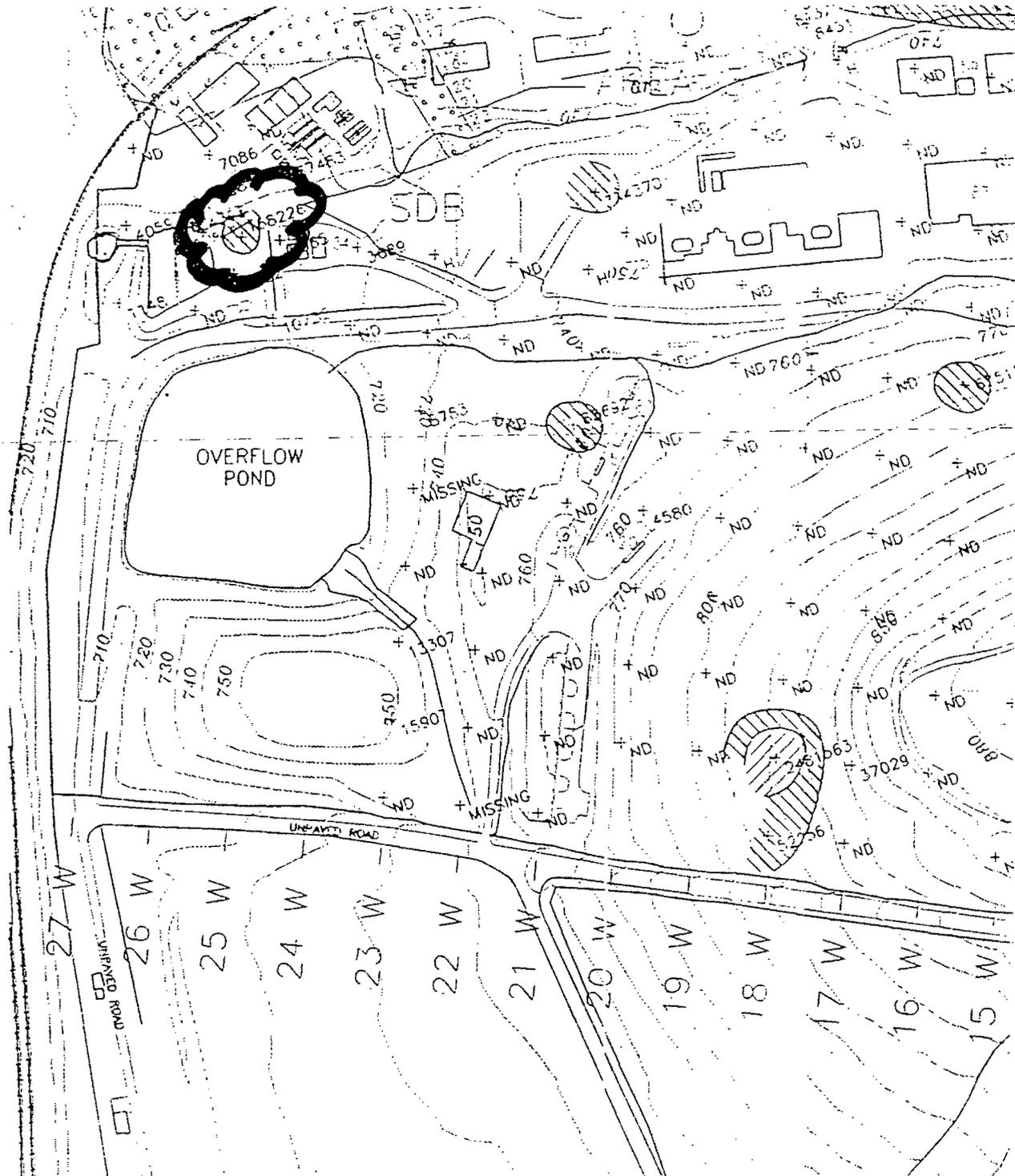
Project Manager:
 PCB

Project #:
 2114E

Date:
 No.
 File

NonAOC/Operab
 USDOE Moun
 Miamisburg.

Relative Response
 Total C5-C11
 Petroleum Hydrocarbons



Prepared by:
 Northeast Research Institute LLC
 605 Ponet Street
 Suite 100
 Loveland, Colorado 80538
 (303) 238-0090

Drawn By:
 JCS

Checked By:

Project Manager:
 PCB

Project #:
 2114E

Date:
 Novemb

File No:
 211

NonAOC/Operable

Relative Response
 Total Halogenated
 Hydrocarbons