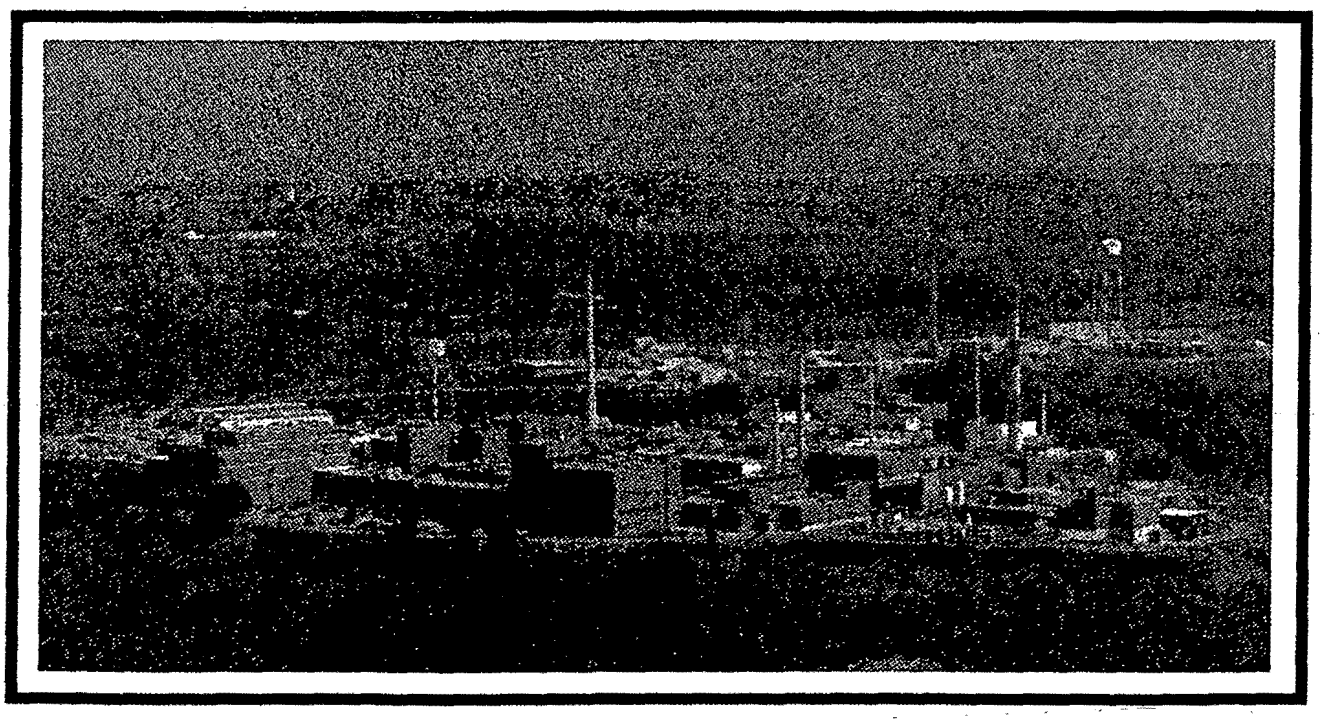
MOUND

Environmental
Restoration
Program

MOUND PLANT
Potential Release Site Package
PRS # 391



EG&G MOUND-30-03-04-02--9705190023

MOUND

Environmental Restoration Program

MOUND PLANT POTENTIAL RELEASE SITE PACKAGE

Notice of Public Review Period

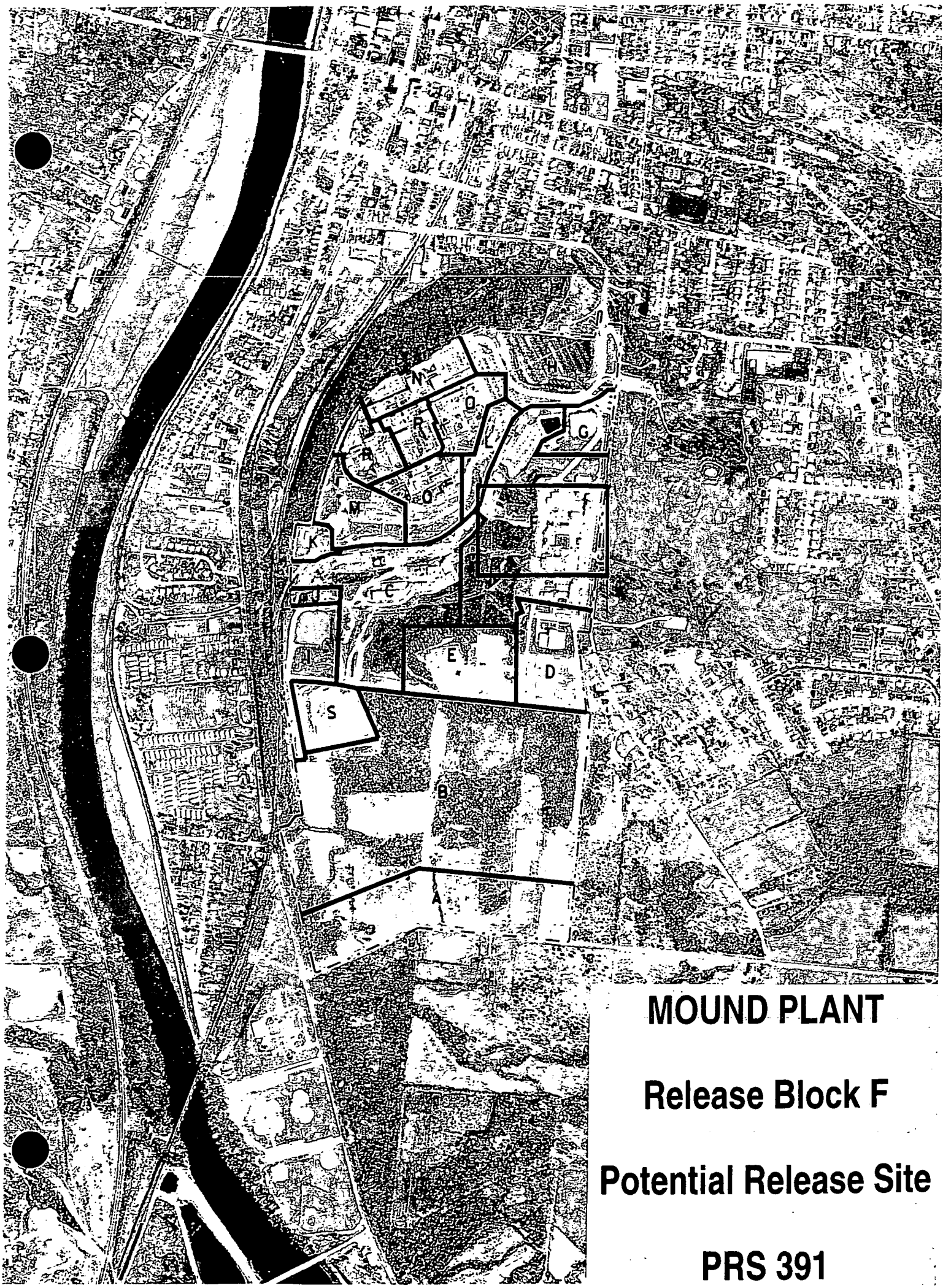
The following potential release site (PRS) packages will be available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio beginning April 3, 1997. Public comment will be accepted on these packages from April 3, 1997, through May 8, 1997.

PRS 15:	Former Waste Treatment Site - Area C (lithium burn area)
PRS 74:	Former Waste Storage Site - Quonsot Hut
PRS 330:	Former Tank Site - Building 2 Fuel Oil Tank
PRS 349:	Soil Contamination
PRS 371:	Soil Contamination
PRS 391:	Soil Contamination
PRS 395:	Soil Contamination
PRS 396:	Soil Contamination

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

PRS 391

REV	DESCRIPTION	DATE
PUBLIC RELEASE **0**	Available for comments.	**Mar. 11, 1997**
FINAL **1**	Comment period expired. No comments. Recommendation page annotated.	May 13, 1997



MOUND PLANT

Release Block F

Potential Release Site

PRS 391

H
N
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391
K
C
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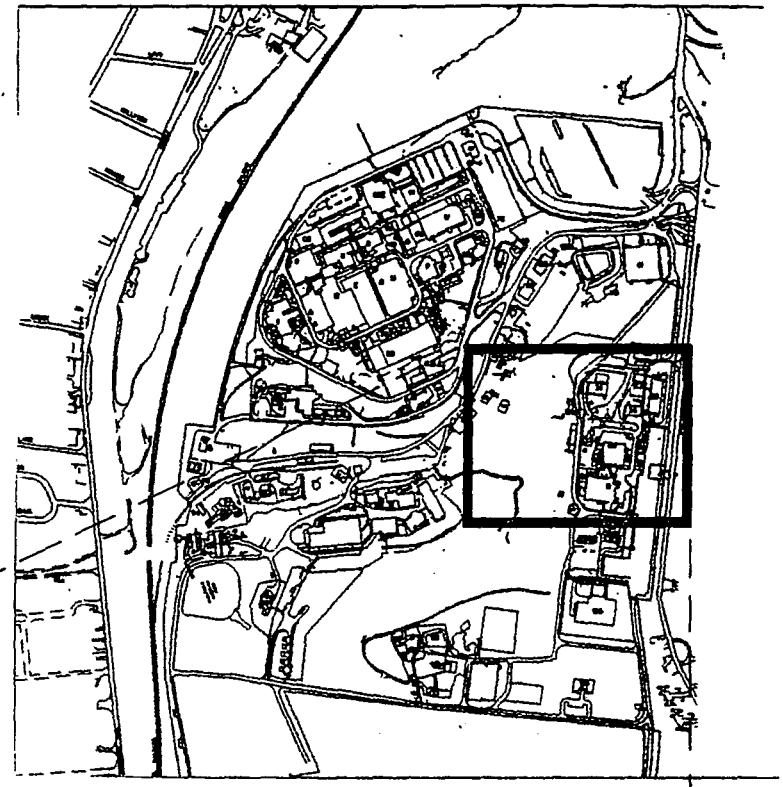
S
B

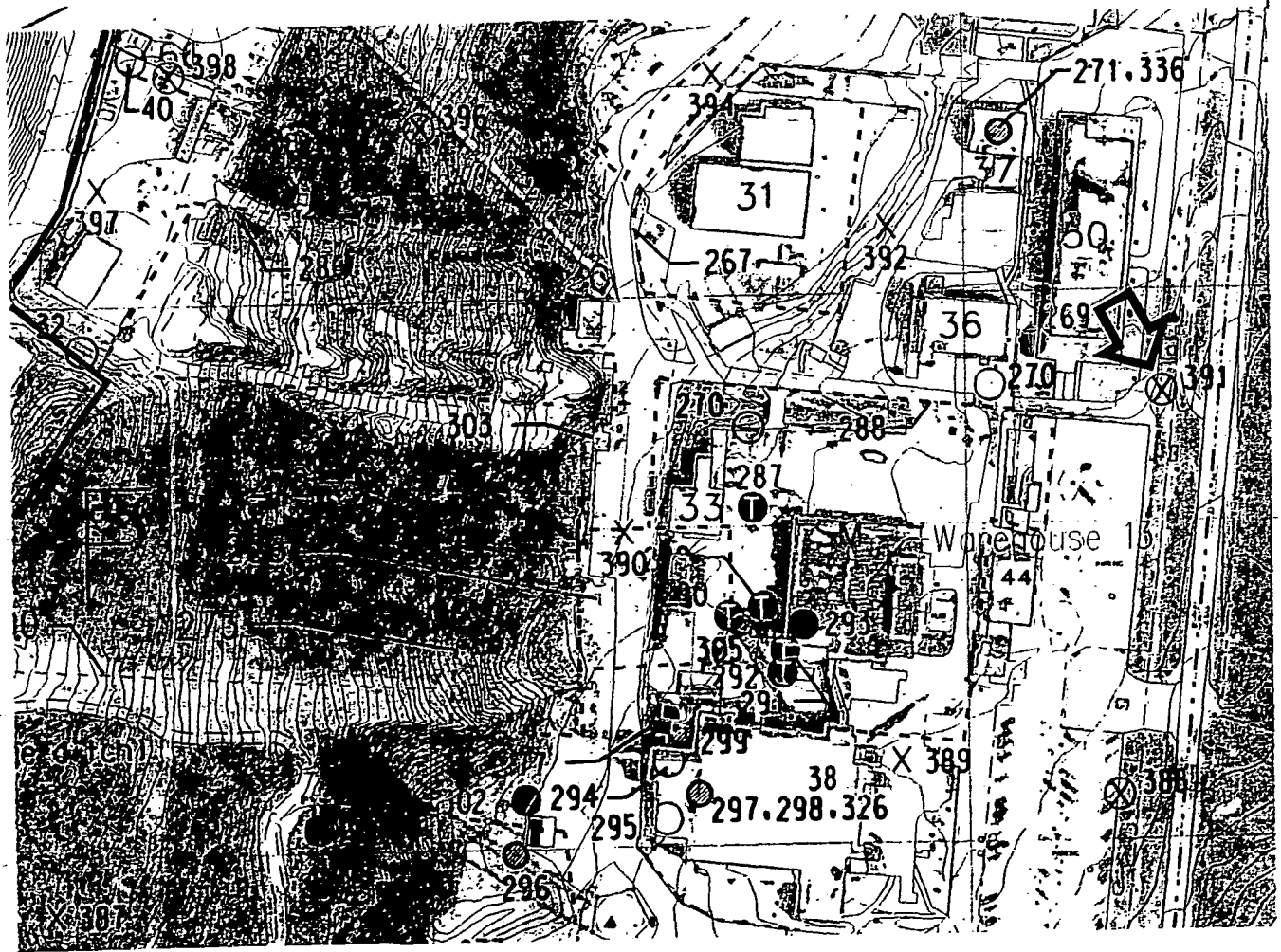
MOUND PLANT

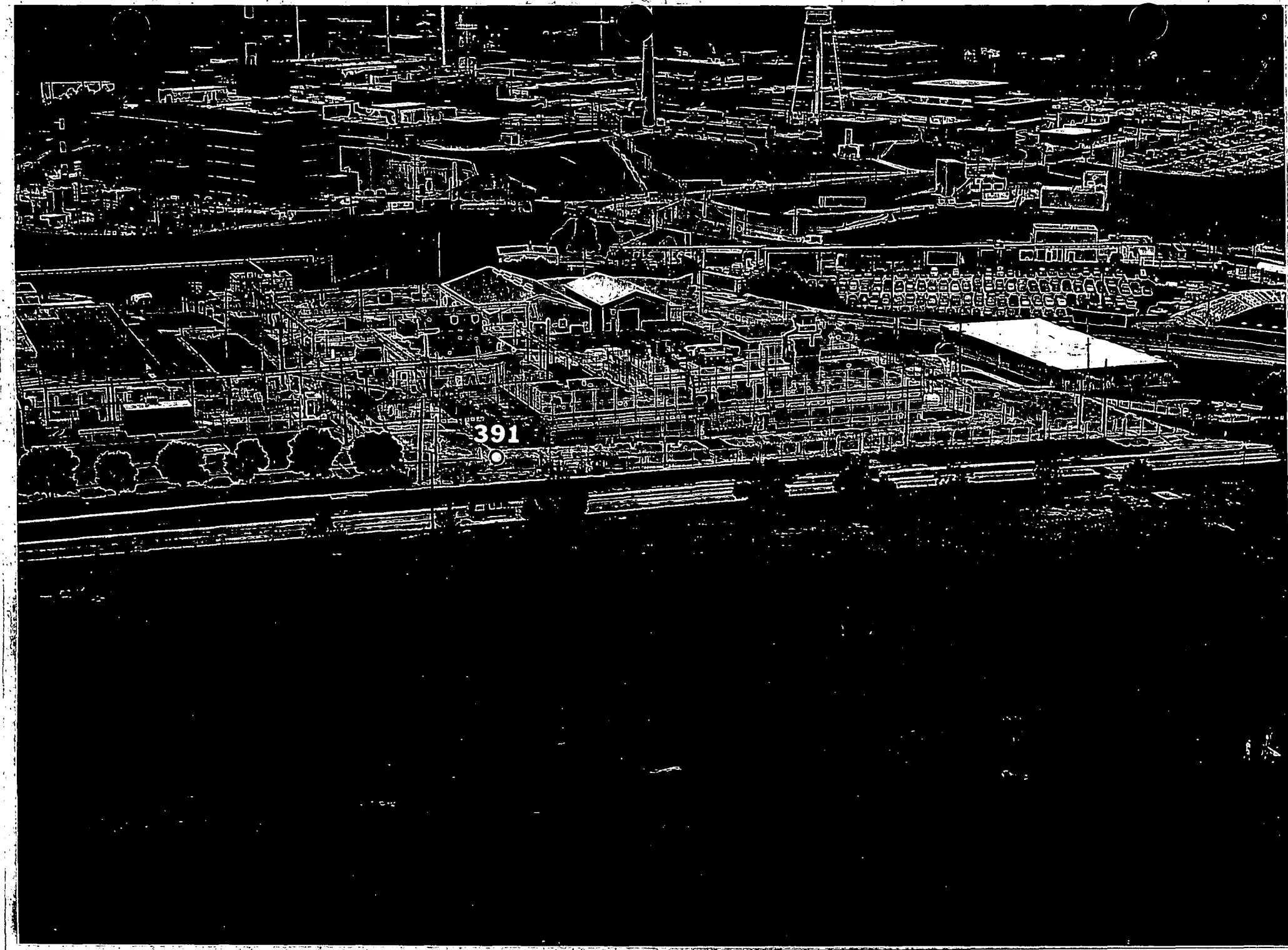
Release Block F

Potential Release Site

PRS 391






391

PRS 391

PRS HISTORY:

Potential Release Site (PRS) 391 is an area of soil located south-east of Building 50. This area was identified as a PRS when volatile and semi-volatile organic chemicals were detected by the PETREX passive soil gas survey performed in 1994. No radioactive or hazardous waste generating processes or activities are known to have occurred at PRS 391.

CONTAMINATION:

In 1983, the ***Radiological Site Survey***[1] analyzed two surface soil samples in the vicinity of PRS 391. The samples, S0577 and S0578, were analyzed for radioactivity. The maximum plutonium-238 concentration was 1.05 pCi/g which is less than the Mound ALARA standard of 25 pCi/g. The thorium concentration in both samples was below 2 pCi/g which is less than the regulatory standard of 5 pCi/g for surface contamination.[3]

In 1994, the ***OU5 Operational Area Phase I Investigation***[2] performed a PETREX qualitative soil gas survey that detected relatively elevated levels of aromatic, semivolatile, petroleum and halogenated hydrocarbons. The OU5 Operational Area Phase I investigation also performed a radionuclide study. The surface soil sample from grid location 17N01 (PRS 391) was analyzed by Mound's Soil Screening Facility for plutonium-238 and thorium-232. Neither isotope was detected. The instrumental detection limits were below the radiological guideline criteria previously referenced.

In 1996, the ***Further Assessment - Soil Gas Confirmation Sampling***[4] investigation analyzed the soil from a three foot deep core sample collected within 25 feet of PRS 391. This sample, #000005, was analyzed for both radiological and chemical constituents. Both Pu-238 and Th-232 were below their respective Guideline Criteria of 25 pCi/g and 5 pCi/g. The chemical measurements for VOCs, SVOCs, PCBs, pesticides, explosives, metals, and nitrate were also below their respective Guideline Criteria.

READING ROOM REFERENCES:

1) Operable Unit 9, Site Scoping Report: Volume 3 - Radiological Site Survey, 1993. (pages 5-8)
2) Operable Unit 5, Operational Area Phase I Investigation Non-AOC Field Report, June 1995. (pages 9-16)

OTHER REFERENCES:

3) Code of Federal Regulations 40CFR 192.41 and 40 CFR 192.12.
4) Further Assessment - Soil Gas Confirmation Sampling, Rev 0, May 1996. (pages 17-26)

PREPARED BY:

James A. Booth, Member of EG&G Technical Staff
W. David Gloekler, Member of EG&G Technical Staff

MOUND PLANT
PRS 391
SOIL CONTAMINATION

RECOMMENDATION:

This area was identified as a potential release site in June 1994 due to qualitative PETREX soil gas results obtained during the Operable Unit 5, Operational Area Phase I Investigation. A subsequent quantitative *Soil Gas Confirmation Investigation* within 25 feet of PRS 391 showed that all concentrations of volatile, semivolatile, PCBs, pesticides, metals, radionuclides, and explosives in the soils were below their respective ALARA, regulatory or 10^{-6} Risk Based Guideline Criteria. Therefore, NO FURTHER ASSESSMENT is recommended for PRS 391.

CONCURRENCE:

DOE/MEMP: Arthur Kleinrath 2/19/97
Arthur W. Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 2/19/97
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 2/19/97
Brian K. Nickel, Project Manager (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 4/3/97 to 5/8/97

☒ No comments were received during the comment period.

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

REFERENCE MATERIAL
PRS 391

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

WESTON
MANAGERS DESIGNERS/CONSULTANTS

6501 Americas Parkway N.E.
SUITE 800
ALBUQUERQUE, NM 87110
PHONE: (505) 884-5050

ER PROGRAM

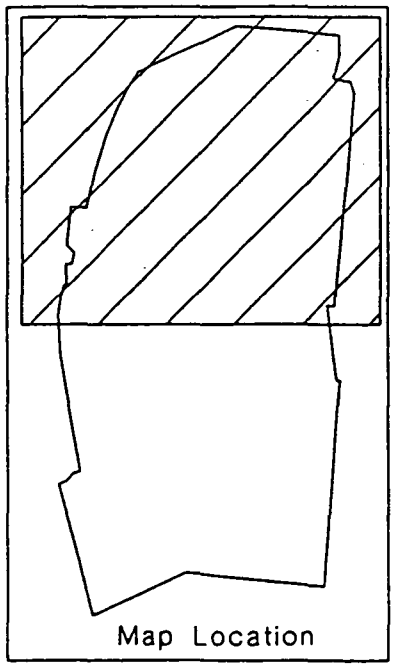
MOUND PLANT

Miamisburg, Ohio

PLATE 1
(1 of 2)

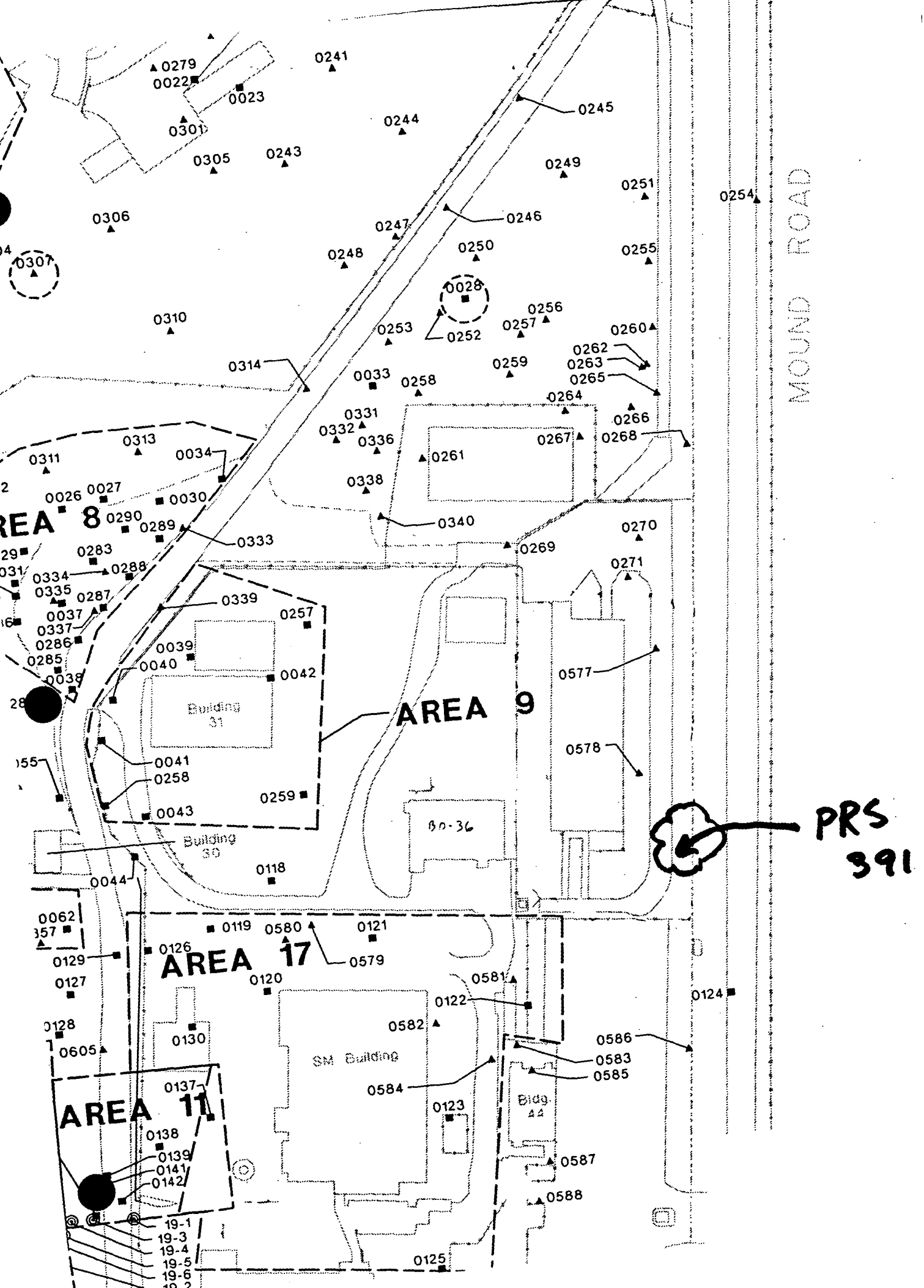
Site Survey Project Sampling Locations

Prepared for
Site Scoping Report: Volume 3,
Radiological Site Survey



Legend

- Structure
- Paved road
- Dirt road
- Water
- Mound Plant Boundary
- 0015 Surface Location
- 0002 Core Location
- Potential Release Site
- Elevated Activity
- 19-17 Sampling Location for Verification Survey of Former WTS Pipeline


MOUND ROAD
AREA 8
AREA 9
AREA 17
AREA 11
Building 31
Building 30
80-36
SM Building
Bldg. 44
PRS 391
0279
0022
0023
0241
0245
0301
0244
0305
0243
0249
0251
0254
0306
0246
0247
0250
0255
0307
0248
0028
0256
0310
0253
0252
0257
0260
0262
0263
0265
0314
0259
0033
0258
0264
0266
0331
0332
0336
0267
0268
0313
0261
0034
0311
0338
0026
0027
0030
0290
0289
0340
0270
0333
0269
0283
0271
0334
0288
0335
0287
0339
0037
0257
0337
0286
0039
0285
0040
0042
0577
0038
0041
0578
0258
0259
0043
0118
0044
0062
0119
0580
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0141
0142
0588
19-1
19-3
19-4
19-5
19-6
0125

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)
C0117	2400	4520	7750	09-84	90	4.98	b					
			7750	09-84	180	0.08	b					
(The same MRC ID was given for both depths)												
S0569	2475	4545	6470	08-84	0	0.36	b					
S0570	2475	4595	6469	08-84	0	2.77	b					
S0571	2525	4645	6468	08-84	0	0.11[c]	b					
S0572	2525	4570	6471	08-84	0	0.99	b					
S0573	2550	4620	6467	08-84	0	2.47	b					
S0574	2675	4745	6466	08-84	0	1.20	b					
S0575	2355	4525	4130	10-83	0	12.22	b	7.09				
S0576	2375	4545	6882	08-84	0	2.24	b					
S0577	2715	1765	2878	10-83	0	0.06	b					
S0578	2800	1830	2879	10-83	0	1.05[c]	b					
C0118	2725	2145	1314	12-82	18	11.30	b					
			1315	12-82	36	3.13	b					

PRS 391

[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

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

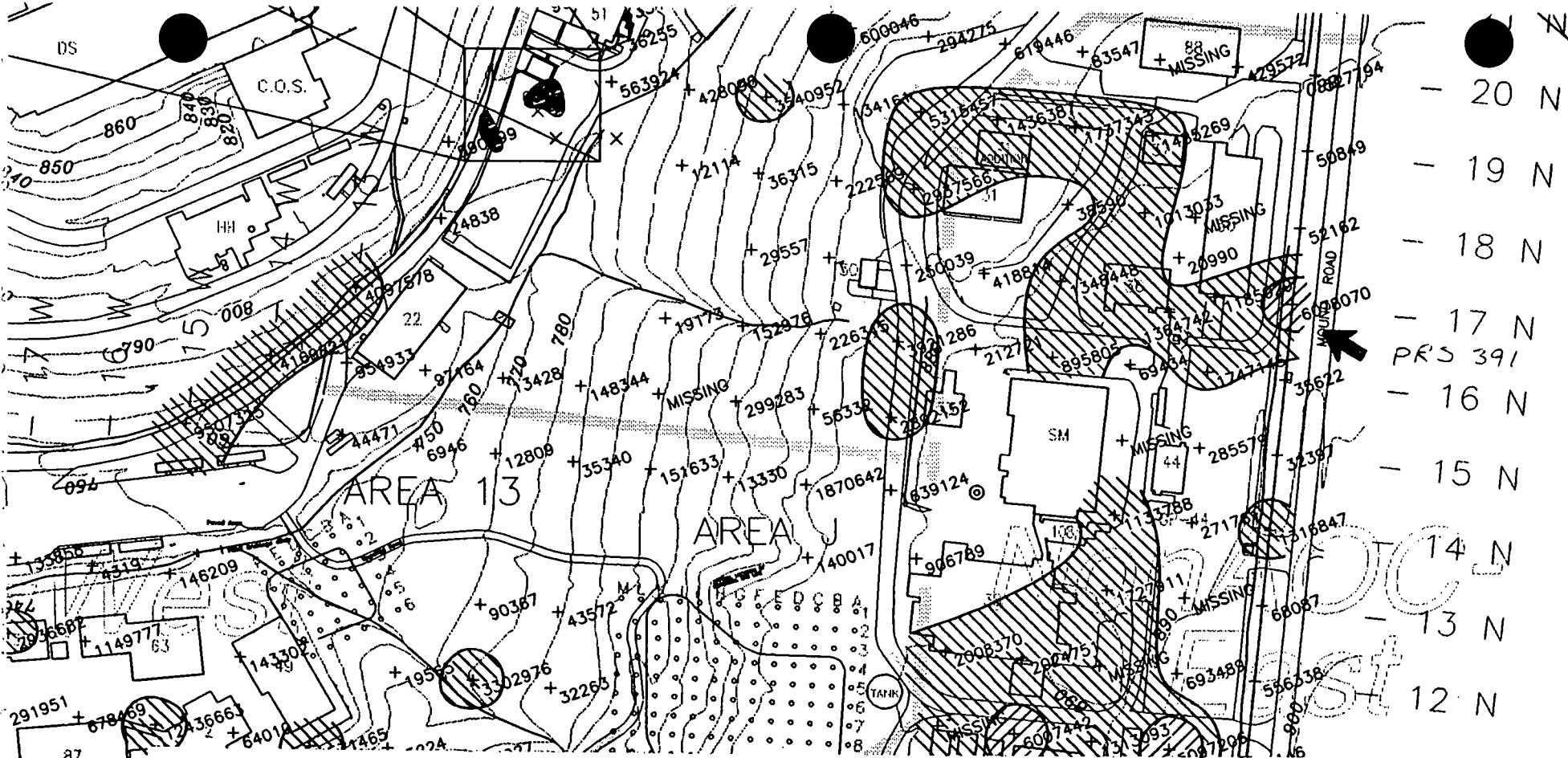
EG&G Mound Applied Technologies

Table 3: NonAOC-East Petrex Soil Gas Survey Results

NERI Project: 2114-11E
Site: Operable Unit -5, USDOE Mound Facility
Analysis: Thermal Desorption - Mass Spectrometry
Date of Analysis: 11/7/94
Units: Ion Counts

Sample #	Total Aromatic Hydrocarbons (a)	Total Semivolatile Hydrocarbons (b)	Total C5 to C11 Petroleum Hydrocarbons (c)	Total Halogenated Hydrocarbons (d)
905	527,794	948	1,033,136	ND
906	429,572	1,738	896,401	ND
907	50,849	ND	178,291	ND
908	52,162	ND	115,415	ND
909	1,485,269	11,379	3,157,673	5,493
911	1,737,343	18,849	3,164,476	ND
912	1,436,387	741	1,895,678	ND
913	1,348,448	10,185	2,424,800	ND
914	1,013,033	3,942	2,427,024	ND
915	38,590	ND	103,682	40,930
916	418,814	732	671,798	ND
917	83,547	ND	160,147	ND
918	366,896	661	502,058	ND
919	6,078,070	172,960	11,565,340	49,731
920	1,185,029	5,925	2,268,265	9,752
3920 (e)	407,311	3,117	740,848	774
922	2,024,751	21,260	4,988,003	10,535
923	1,313,093	380,022	9,495,872	H
924	1,585,590	10,253	2,684,402	ND
925	1,727,911	158,310	4,545,396	H
926	1,133,788	ND	1,348,935	ND
927	208,608	ND	487,052	ND

PRS 391

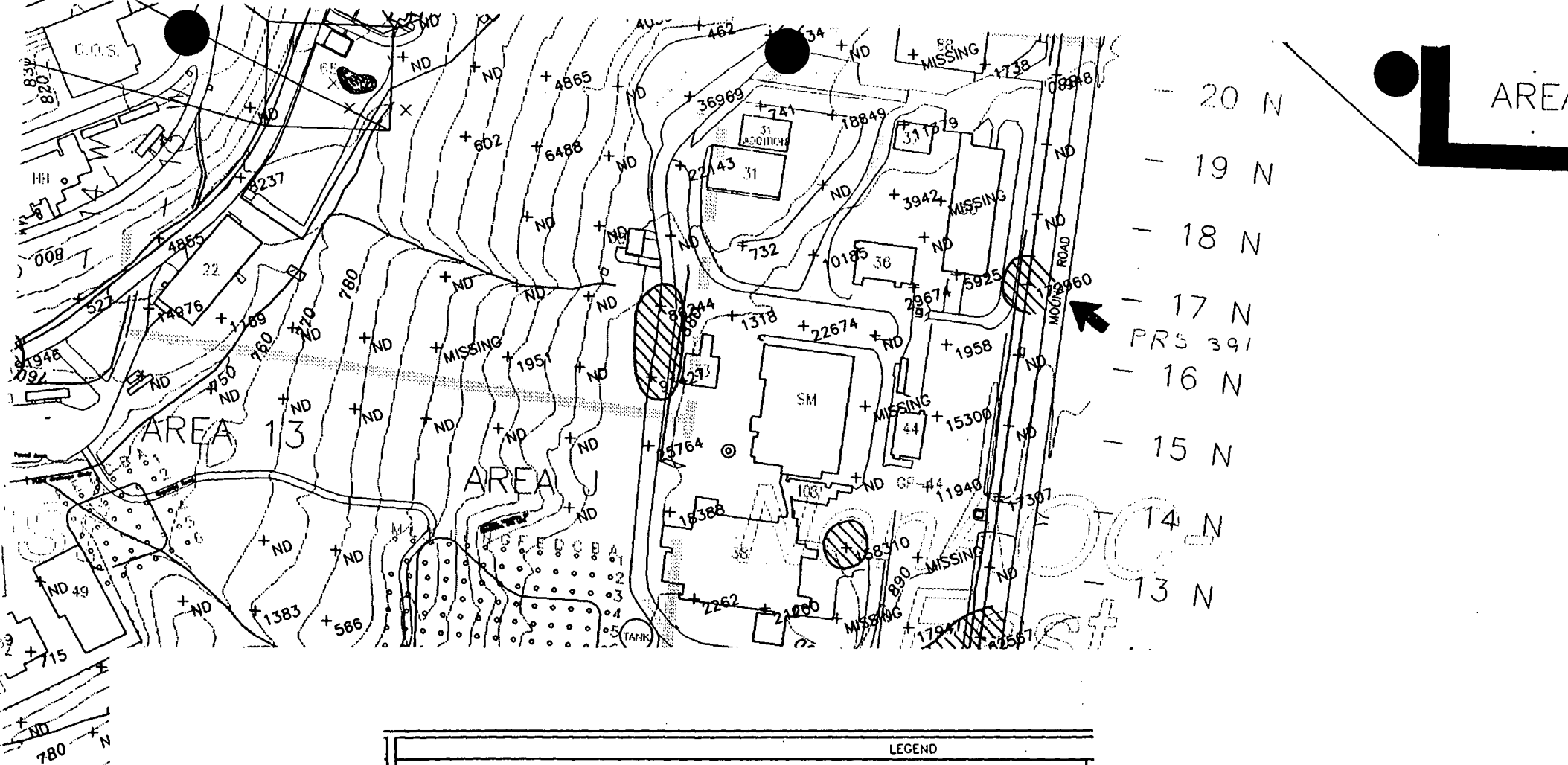


LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 4,200,000	≥ 20,000,000	≥ 5,000,000	≥ 10,000,000	≥ 5,800,000
850,000–4,199,999	2,000,000–19,999,999	850,000–4,999,999	1,500,000–9,999,999	1,400,000–5,799,999

Relative Response

Total Aromatic Hydrocarbons

Plate 2

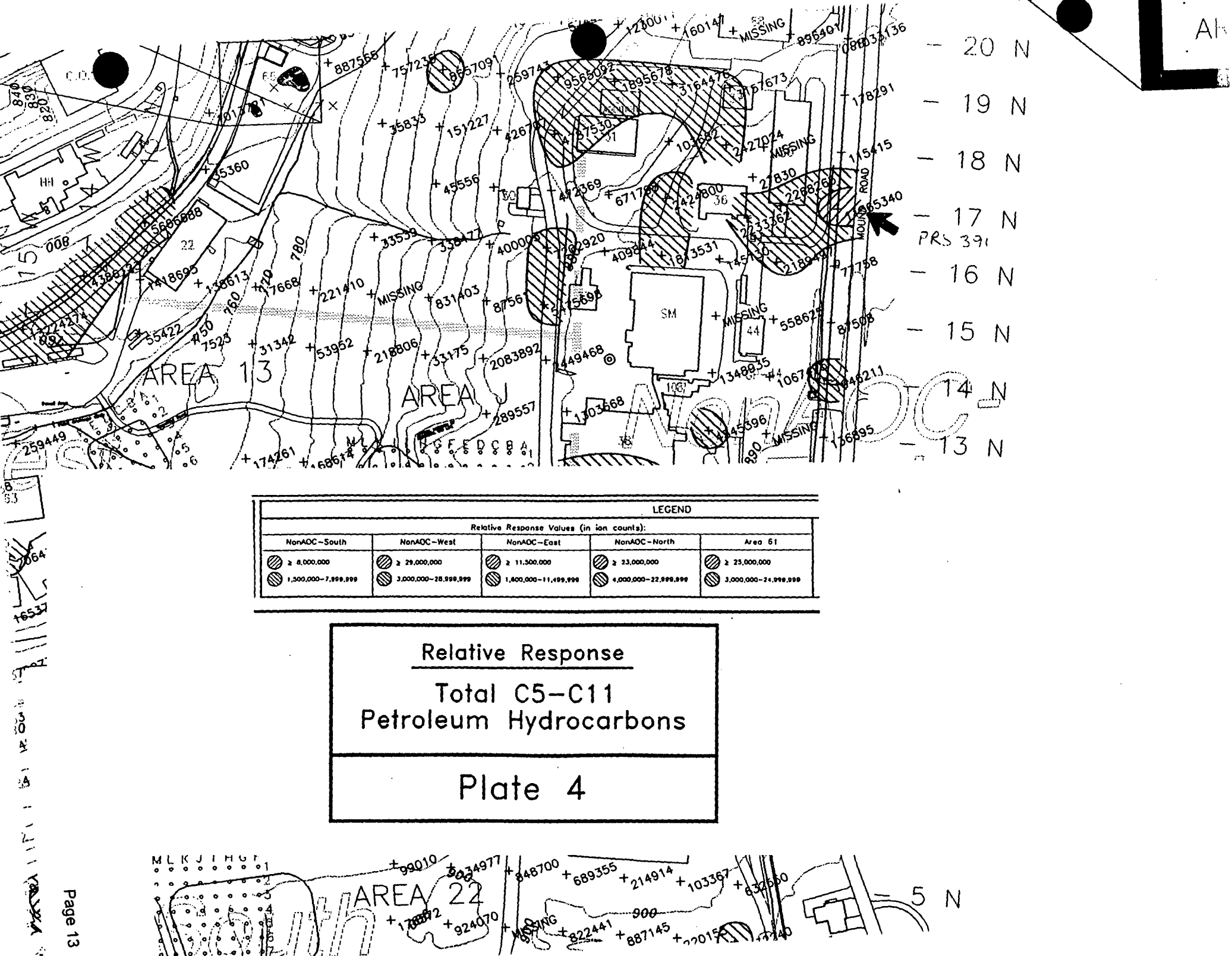


LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 70,000	≥ 1,000,000	≥ 300,000	≥ 800,000	≥ 1,400,000
7,000–69,999	100,000–999,999	30,000–299,999	80,000–799,999	180,000–1,399,999

Relative Response

Total Semivolatile Hydrocarbons

Plate 3

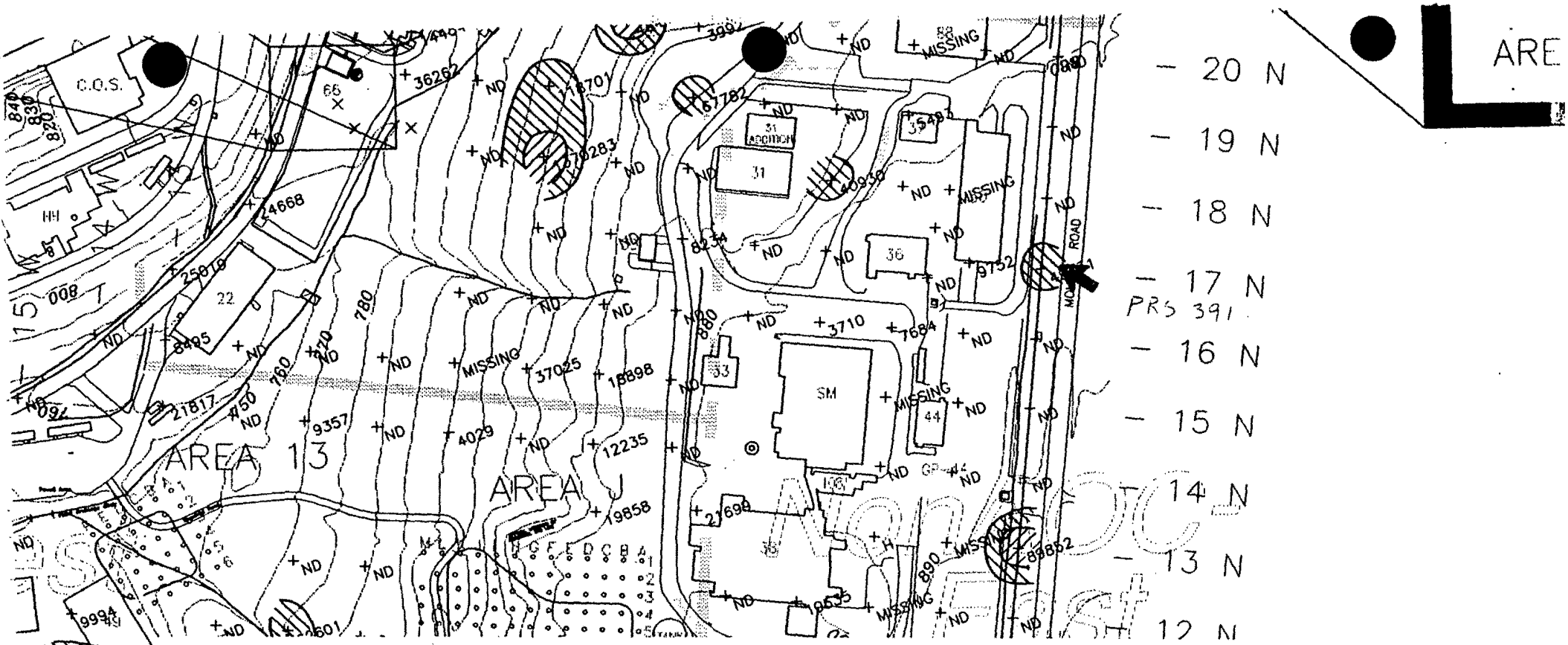


LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 8,000,000	≥ 29,000,000	≥ 11,500,000	≥ 23,000,000	≥ 25,000,000
1,500,000–7,999,999	3,000,000–28,999,999	1,600,000–11,499,999	4,000,000–22,999,999	3,000,000–24,999,999

Relative Response

Total C5–C11 Petroleum Hydrocarbons

Plate 4



LEGEND				
Relative Response Values (in ion counts):				
NonAOC–South	NonAOC–West	NonAOC–East	NonAOC–North	Area 61
≥ 500,000	≥ 500,000	≥ 80,000	≥ 400,000	≥ 250,000
50,000–499,999	50,000–499,999	20,000–79,999	40,000–399,999	35,000–249,999

Relative Response

Total Halogenated Hydrocarbons

Plate 5

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

	FIDLER SURVEY DATA					MOUND SOIL SCREENING FACILITY DATA			
SMPID	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:
15N01	253.5	190	12.48	10.0	NC	21	a	1.1	a
15N02	122.2	110	5.59	4.5	NC	WIPE	c	WIPE	c
15N03	130	80	6.5	6.0	NC	0	a	0	a
15N06	130	75	6.5	5.0	NC	NR		NR	
15N07	170.3	115	9.72	8.5	NC	30	b	1	a
15N08	170.3	155	9.72	9.0	NC	NR		NR	
15N09	170.3	125	9.72	10.5	NC	17 17	a a	1.2 1.1	a a
15N10	170.3	100	9.72	7.5	NC	19	a	0.9	a
15N11	170.3	120	9.72	8.5	NC	3	a	1	a
15N12	157.3	100	8.45	6.0	NC	17	a	0.6	a
15N13	157.3	85	8.45	4.5	NC	WIPE	c	WIPE	c
15N14	157.3	108	8.45	6.0	NC	NR		NR	
16N01	253.5	170	10.0	10.5	NC	17	a	1.1	a
16N02	122.2	70	5.59	4.5	NC	WIPE	c	WIPE	c
16N03	130	100	6.5	5.0	NC	0	a	0.5	a
16N04	130	150	6.5	9.0	NC	78	b	1.2	a
16N05	NC	NC	NC	NC	NC	243	b	1.2	a
16N06	130	45	6.5	4.5	NC	WIPE	c	WIPE	c
16N07	170.3	80	9.72	5.0	NC	4	a	1	a
16N08	170.3	45	9.72	4.5	NC	9	a	0.6	a
16N09	170.3	130	9.72	7.5	NC	NR		NR	
16N10	170.3	125	9.72	6.5	NC	NC		NC	
16N11	157.3	110	8.45	5.5	NC	NC		NC	
16N13	157.3	55	8.45	5.5	NC	NR		NR	
17N01	253.5	100	12.48	5.5	NC	0	a	0.5	a
17N02	130	80	6.5	4.5	NC	WIPE	c	WIPE	c
17N04	130	80	6.5	4.0	NC	WIPE	c	WIPE	c
17N05	130	90	6.5	4.0	NC	WIPE	c	WIPE	c

PRS 391

APPENDIX D

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

	FIDLER SURVEY DATA					MOUND SOIL SCREENING FACILITY DATA			
SMPID	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:

NR - Not recorded
NC - No sample/reading taken
NA - Reading not taken; contamination criteria not exceeded.
a - Mound Soil Screening Facility detection level not exceeded.
b - Concentration at or above the Mound Soil Screening Facility detection level.
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 - Picocuires per gram

MOUND

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Program

Further Assessment

Soil Gas Confirmation Sampling

Mound Plant
Miamisburg, Ohio

May 1996

Revision 0

Department of Energy

EG&G Mound Applied Technologies

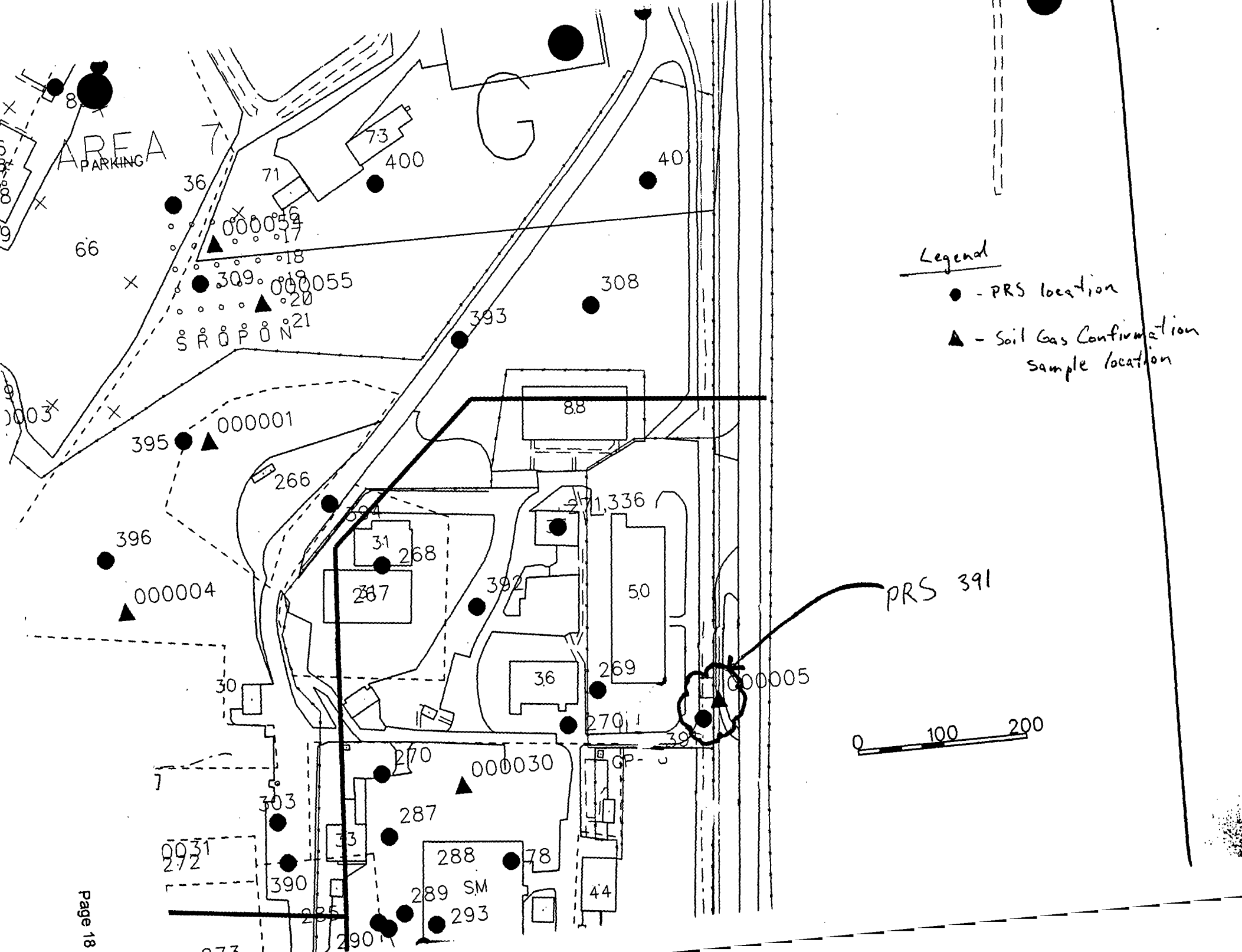
AREA 7
PARKING
SROPON
Legend
● - PRS location
▲ - Soil Gas Confirmation sample location
PRS 391
0 100 200
000054
000055
000001
000004
000030
000005
36
66
71
73
400
401
309
308
393
395
266
396
268
392
269
270
287
288
289
SM
293
290
303
390
272
30
31
36
50
88
44
33
78
271,336

Table I.1 Soil Analyte List

Volatile Organic Compounds

Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
2-Butanone
Carbon Disulfide
Carbon Tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
Dibromochloromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
1,2-Dichloroethene (total)
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene
2-Hexanone
Methylene Chloride
4-Methyl-2-Pentanone
Styrene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
1,1,1-Trichloroethane
1,1,2-Trichloroethane-
Trichloroethene
Toluene
Vinyl Acetate
Vinyl Chloride
Xylenes (total)

Semivolatile Organic Compounds

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-Ethylhexyl)phthalate
4-Bromophenyl-phenylether
Butylbenzylphthalate
Carbazole
4-Chloroaniline
4-Chloro-3-methylphenol
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl-phenylether
Pentachlorophenol
Phenanthrene
Phenol
Chrysene
Dibenz(a,h)anthracene
Dibenzofuran
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
3,3-Dichlorobenzidine
2,4-Dichlorophenol
Diethylphthalate
2,4-Dimethylphenol
Dimethyphthalate
Di-n-butylphthalate
Di-n-octylphthalate
4,6-Dinitro-2-methylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluoranthene
Fluorene
Pyrene
1,2,4-Trichlorobenzene
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Indeno(1,2,3-cd)pyrene
Isophorone
2-Methylnaphthalene
2-Methylphenol
4-Methylphenol
Naphthalene
2-Nitroaniline
3-Nitroaniline
4-Nitroaniline
Nitrobenzene
2-Nitrophenol
4-Nitrophenol
N-Nitroso-di-n-propylamine
N-Nitroso-diphenylamine
2,2-oxybis(1-Chloropropane)
2,4,5-Trichlorobenzene
2,4,6-Trichlorobenzene

Table I.1 Soil Analyte List (Continued)

Pesticides/PCB's		
Aroclor-1016	Delta-BHC	Endosulfan II
Aroclor-1221	Gamma-BHC	Endosulfan sulfate
Aroclor-1232	alpha-Chlordane	Endrin
Aroclor-1242	gamma-Chlordane	Endrin aldehyde
Aroclor-1248	4,4'-DDD	Endrin ketone
Aroclor-1254	4,4'-DDE	Heptachlor
Aroclor-1260	4,4'-DDT	Heptachlor epoxide
Aldrin	Dieldrin	Methoxychlor
Alpha-BHC	Endosulfan I	Toxaphene
Beta-BHC		
Inorganics		
Aluminum	Copper	Potassium
Antimony	Cyanide	Selenium
Arsenic	Iron	Silver
Barium	Lead	Sodium
Beryllium	Lithium	Thallium
Bismuth	Magnesium	Tin
Cadmium	Manganese	Vanadium
Calcium	Mercury	Zinc
Chromium	Molybdenum	Nitrate/Nitrite
Cobalt	Nickel	Explosives (USATHAMA,PETN)
Radionuclides		
Americium-241	Plutonium-238	Thorium-230
Bismuth-207	Plutonium-239/240	Thorium-232
Bismuth-210	Potassium-40	Uranium-234
Cesium-137	Radium-226	Uranium-235
Cobalt-60	Thorium-228	Uranium-238

Table A.1. Soil Gas Confirmation Detected Volatile Organic Compounds

ANALYTE	SGC NAC 000002	SGC NAC 000003	SGC NAC 000004	SGC NAC 000005	SGC NAC 000006	SGC NAC 000007	Background	10^{-6} Construction Worker Guidelines
VOLATILES (µg/Kg)								
Acetone	36						NA	105000000
1,2-Dichloroethene (total)							NA	21500000
2-Butanone	12						NA	46500000
Benzene	1 J						NA	8900
Carbon Disulfide							NA	1400000
Chloroform			67				NA	NA
Chloromethane							NA	NA
Ethylbenzene							NA	480
Methylene Chloride	6			7	8		NA	NA
Tetrachloroethene							NA	10500000
Toluene	1 J	1 J					NA	1250000
Trichloroethene						7	NA	41000
Xylene (total)							NA	2150000000

Table A.2. Soil Gas Confirmation Detected Semivolatile Organic Compounds

ANALYTE	SGC NAC 000001	SGC NAC 000002	SGC NAC 000003	SGC NAC 000004	SGC NAC 000005	SGC NAC 000006	Background	10^{-6} Construction Worker Guidelines
SEMIVOLATILES (µg/Kg)								
Acenaphthene		190 J	63 J				NA	NA
Acenaphthylene		730				42 J	NA	NA
Anthracene		1300	66 J		25 J	55 J	NA	320000000
Benzo(a)anthracene		1500	180 J		160 J	350 J	NA	4100
Benzo(a)pyrene		1300	180 J		200 J	450	NA	410
Benzo(b)fluoranthene		1000	180 J		190 J	460	NA	4100
Benzo(g,h,i)perylene		550	110 J		100 J	260 J	NA	NA
Benzo(k)fluoranthene		1000	160 J		190 J	440	NA	41000
Bis(2-ethylhexyl)phthalate							NA	215000
Butylbenzylphthalate							NA	215000000
Carbazole		600	62 J			34 J	NA	NA
Chrysene		1500	220 J		240 J	490	NA	410000
Di-n-butyl phthalate	120 J			280 J			NA	105000000
Di-n-octyl phthalate							NA	21500000
Dibenz(a,h)anthracene		180 J	40 J		37 J	87 J	NA	410
Dibenzofuran		1100	23 J				NA	NA
Diethyl phthalate							NA	NA
Fluoranthene		3400 D	480		400 J	800	NA	42500000
Fluorene		1500	42 J				NA	NA
Indeno(1,2,3-cd)pyrene		690	120 J		130 J	320 J	NA	4100
2-Methylnaphthalene		970					NA	NA
Naphthalene		4000 D	24 J				NA	NA
Phenanthrene		4700 D	380		150 J	280 J	NA	NA
Phenol							NA	650000000
Pyrene	24 J	2700 D	440		340 J	730	NA	32000000

Table A.4. Soil Gas Confirmation Detected TAL Inorganics

ANALYTE	SGC NAC 000001		SGC NAC 000002		SGC NAC 000003		SGC NAC 000004		SGC NAC 000005		SGC NAC 000006		Background	10^{-6} Construction Worker Guidelines
INORGANICS (mg/kg)														
Aluminum	11000		4190		1910		11400		7970		7780		19000	NA
Antimony			0.23	B			0.24	B	0.41	B			NA	425
Arsenic	1.5	B	2.1	B	2.9	B	1.4	B	7		7.2		8.6	320
Barium	48.6		20.7	B	23.7	B	47.1	B	73.6		86.4		180	75000
Beryllium	0.56				0.12	B	0.65		0.38		0.28		1.3	0.7
Bismuth													NA	NA
Cadmium			0.25	B	0.19	B			0.36	B	0.5	B	2.1	1050
Calcium	162000		159000		95500		152000		13600		86200		310000	NA
Chromium	13.2		6.7		3.8		15.2		13		11.6		20	1050000
Cobalt	9.8	B	4.5	B	2.3	B	10.1	B	7.6	B	7.6	B	19	NA
Copper	16.2		11.9		9.9		17.1		14.5		15.2		26	NA
Cyanide													ND	21400
Iron	21300		10600		5680		21800		17200		17700		35000	NA
Lead	6.7		5.2		11.2		8.6		30.9		25.1		48	NA
Lithium	21	B	12.5	B	6.2	B	23	B	7.7	B	10.3	B	26	NA
Magnesium	6160		57800		27900		5670		5210		35600		40000	NA
Manganese	695		384		270		612		383		589		1400	135000
Mercury					0.13								NC	320
Molybdenum	0.43	B	1.2	B	0.77	B			1.7	B	1.5	B	27	NA
Nickel	18.4		9.9		6.4	B	20.6		11.1		16.1		32	21500
Potassium	1780		742	B	346	B	2080		574	B	744	B	1900	NA
Selenium													NA	NA
Silver					0.24	B							1700	5500000
Sodium	228	B	888	B	150	B	137	B	411	B	348	B	240	NA
Thallium													460	NA
Tin	1.1	B					1.4	B	1	B			20	NA
Vanadium	14.9		8.3		4.7		16.3		23.1		18.9		25	7500
Zinc	53.3		29.5				67		59		69.2		140	320000

Table A.5. Soil Gas Confirmation Detected Nitrate-Nitrite

ANALYTE	SGC NAC 000001	SGC NAC 000002	SGC NAC 000003	SGC NAC 000004	SGC NAC 000005	SGC NAC 000006	Background	10^{-6} Construction Worker Guidelines
GENERAL ANALYTES								
% Solids (%)	83.9	93.8	88.5	83.3	78.4	75.0	NA	NA
Nitrate/Nitrite (MG-N/KG)	2.0	1.8	1.2	2.1	7.2	4.8	26	NA

ANALYTE	SGC NAC 000007	SGC NAC 000008	SGC NAC 000009	SGC NAC 000010	SGC NAC 000011	SGC NAC 000012	Background	10^{-6} Construction Worker Guidelines
GENERAL ANALYTES								
% Solids (%)	83.9	95.0	78.9	83.9	90.1	84.7	NA	NA
Nitrate/Nitrite (MG-N/KG)	1.6	26.5	2.2	5.9	5.3	1.8	26	NA

ANALYTE	SGC NAC 000013	SGC NAC 000014	SGC NAC 000015	SGC NAC 000016	SGC NAC 000017	SGC SAN 000018	Background	10^{-6} Construction Worker Guidelines
GENERAL ANALYTES								
% Solids (%)	81.7	80.9	74.0	85.3	72.8	84.2	NA	NA
Nitrate/Nitrite (MG-N/KG)	2.1	4.9	3.0	2.4	6.4	13.7	26	NA

ANALYTE	SGC NAC 000019	SGC NAC 000020	SGC NAC 000021	SGC NAC 000022	SGC NAC 000023	SGC NAC 000024	Background	10^{-6} Construction Worker Guidelines
GENERAL ANALYTES								
% Solids (%)	85.3	87.6	77.4	78.3	77.5	89.5	NA	NA
Nitrate/Nitrite (MG-N/KG)	6.5	2.1	6.1	2.2	11.6	2.2	26	NA

Table A.6. Soil Gas Confirmation Detected Radionuclides

ANALYTE	SGC NAC 000001	SGC NAC 000002	SGC NAC 000003	SGC NAC 000004	SGC NAC 000005	SGC NAC 000006	SGC NAC 000007	Background	10^{-6} Construction Worker Guidelines
RADIONUCLIDES (pCi/g)									
Americium-241								ND	4.95
Bismuth-207								ND	0.175
Bismuth-210								ND	NA
Cesium-137						0.861		0.42	0.46
Cobalt-60								NC	0.1
Plutonium-238	1.42	0.0690	0.833	0.0870	0.543	4.32	0.537	0.13	5.5
Plutonium-239/240			0.0252					0.18	5.5
Potassium-40	21.7	2.95	6.53	27.4	15.1	14.3	10.8	37	NA
Radium-226	1.03	0.478	0.508	1.16	1.22	0.870	0.537	2	0.14
Thorium-228	1.52	0.277	0.370	1.24	1.05	1.06	0.431	1.5	0.85
Thorium-230	0.814	0.374	0.621	0.980	1.19	1.18	0.582	1.9	44
Thorium-232	1.30	0.184	0.315	1.17	0.950	1.18	0.328	1.4	50
Uranium-234	2.19	0.401	0.419	0.934	0.874	0.761	0.551	1.1	37.5
Uranium-235	0.0974		0.0400	0.0349	0.0328			0.11	3.35
Uranium-238	2.35	0.392	0.512	0.918	0.913	0.815	0.574	1.2	11

Table B.2. Comparison Table for Mound Screening Laboratory Results and Quanterra Analytical Laboratory Results

Sample No.	Isotope	Quanterra Results pCi/g	Mound Screening Laboratory Results pCi/g
SGC-NAC-000001	Pu-238	1.42	25
	Th-232	1.30	1.5
SGC-NAC-000002	Pu-238	0.0690	0
	Th-232	0.184	0.3
SGC-NAC-000003	Pu-238	0.833	5
	Th-232	0.315	0.4
SGC-NAC-000004	Pu-238	0.0870	28
	Th-232	1.17	1.0
SGC-NAC-000005	Pu-238	0.543	19
	Th-232	0.950	1.0
SGC-NAC-000006	Pu-238	4.32	23
	Th-232	1.18	0.9
SGC-NAC-000007	Pu-238	0.537	10
	Th-232	0.328	0.4
SGC-NAC-000009	Pu-238	0.0233	26
	Th-232	0.838	1.2
SGC-NAC-000010	Pu-238	0.107	20
	Th-232	0.708	1.1
SGC-NAC-000011	Pu-238	0.0718	16
	Th-232	0.830	0.5
SGC-NAC-000012	Pu-238	0.101	15
	Th-232	0.769	1.0
SGC-NAC-000013	Pu-238	0.0107	0
	Th-232	0.210	0.4
SGC-NAC-000014	Pu-238	0.671	23
	Th-232	1.08	0.7
SGC-NAC-000015	Pu-238	0.0118	11
	Th-232	1.43	1.4
SGC-NAC-000016	Pu-238	0.253	3
	Th-232	0.894	0.9
SGC-NAC-000017	Pu-238	0.200	26
	Th-232	1.26	1.0
SGC-A66-000040	Pu-238	0.264	1
	Th-232	0.380	0.3
SGC-A66-000041	Pu-238	0.0496	25
	Th-232	0.873	1.0

Soil Gas Confirmation Sampling
Sampling Location Coordinates and Sample Numbers

Area	OU5 Point Number	Coordinates (1983 NAD) Easting	Northing	Sample Number Prefix	Serial
Non-AOC	20N 7W	1466073.04	598744.64	SGC-NAC-	000001
	27N 5W	1466351.77	599373.89	SGC-NAC-	000002
	20N 10W	1465784.08	598777.13	SGC-NAC-	000003
	18N 8W	1465954.76	598556.95	SGC-NAC-	000004
	17N 1W	1466638.71	598389.9	SGC-NAC-	000005
	13N 1W	1466600.36	597993.61	SGC-NAC-	000006
	13N 26W	1464124.35	598233.21	SGC-NAC-	000007
OEPA (T,TX)	12N 21W	1464610.13	598086.2	SGC-NAC-	000008
	11N 2W	1466482.12	597805.05	SGC-NAC-	000009
	11N 4W	1466277.95	597808.32	SGC-NAC-	000010
	10N 13W	1465382.79	597803.77	SGC-NAC-	000011
	9N 6W	1466066.65	597645.26	SGC-NAC-	000012
	8N 3W	1466354.28	597517.42	SGC-NAC-	000013
	7N 13W	1465354.77	597514.14	SGC-NAC-	000014
	4N 14W	1465226.93	597226.51	SGC-NAC-	000015
	2N 7W	1465901.27	596961.26	SGC-NAC-	000016
	2N 18W	1464811.47	597066.72	SGC-NAC-	000017
(san area)	(1093)	1464106.93	597834.77	SGC-NAC-	000018
OEPA (T)	12N 15W	1465204.56	598028.68	SGC-NAC-	000019
OEPA (T)	11N 20W	1464699.61	597977.54	SGC-NAC-	000020
OEPA	10N 22W	1464491.05	597898.59	SGC-NAC-	000021
OEPA	9N 22W	1464481.46	597799.52	SGC-NAC-	000022
OEPA	4N 18W	1464830.65	597264.86	SGC-NAC-	000023
OEPA	3N 1W	1466505.29	597002.81	SGC-NAC-	000024
OEPA	3N 2W	1466406.22	597012.4	SGC-NAC-	000025
OEPA	3N 15W	1465118.28	597137.03	SGC-NAC-	000026
OEPA (X)	6N 7W	1465941.49	597357.37	SGC-NAC-	000027
OEPA (X)	6N 14W	1465246.11	597424.66	SGC-NAC-	000028
OEPA (X)	6N 18W	1464849.82	597463.01	SGC-NAC-	000029
OEPA (X)	16N 4W	1466331.91	598319.59	SGC-NAC-	000030
OEPA	15N 8W	1465926.83	598258.79	SGC-NAC-	000031
OEPA	14N 10W	1465719.09	598178.89	SGC-NAC-	000032
OEPA	2N 19W	1464712.4	597076.3	SGC-NAC-	000033
OEPA (X)	1N 3W	1466287.97	596823.84	SGC-NAC-	000034
OEPA	1N 14W	1465198.17	596929.3	SGC-NAC-	000035
OEPA (new property, X)	0S 11W	1465487.42	596801.39	SGC-NAC-	000036
OEPA (new property, T)	1S 14W	1465179.18	596730.75	SGC-NAC-	000037
OEPA (new property, T, TX)	12S 14W	1465073.23	595635.87	SGC-NAC-	000038
OEPA (new property, T)	14S 22W	1464257.69	595513.85	SGC-NAC-	000039
AREA 66	N(1072)	1465672.83	598634.56	SGC-A66-	000040
	S(1073)	1465696.22	598599.5	SGC-A66-	000041
AREA 61	1 B	1466648.54	599320.27	SGC-A61-	000042
	1 C	1466623.61	599318.45	SGC-A61-	000043
	1 D	1466598.67	599316.63	SGC-A61-	000044
	4 E	1466579.2	599240.01	SGC-A61-	000045
AREA 7	6 J	1465761.1	599089.	SGC-A61-	000046
	8 K	1465715.94	599056.06	SGC-A61-	000047

PRS 39!