Department of Energy

Ohio Field Office
Miamisburg Environmental Management Project
P.O. Box 66
Miamisburg, Ohio 45343-0066

MAR 22 1999

MB0378-99

Mr. Tim Fischer
US Environmental Protection Agency
SRF-5J
77 W. Jackson
Chicago, Illinois 60604

Dear Mr. Fischer:

Enclosed for your information please find copies of the following documents:

Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, Final, February, 1999.

CERCLA 120(h) Summary Notice of Hazardous Substances, Release Block D, Mound Plant, Miamisburg, Ohio, Final, February 1999.

Copies will be placed in the CERCLA Public Reading Room Administrative Record.

The Department appreciates your support during the preparation of these documents under an accelerated schedule. Should you have any questions regarding the enclosed, please contact me at (937) 865-3597 or Ms. Debbie White of my staff at (937) 865-5197.

Sincerely,

Arthur W. Kleinrath

Arthur W. Kleinrath
Remedial Project Manager/Team Leader

2 Enclosures

cc w/enclosures:
Ray Beaumier, OEPA
Ruth Vandegrift, ODH
Terrence Tracy, EM-73
Dann Bird, MMCIC

Department of Energy

Ohio Field Office
Miamisburg Environmental Management Project
P.O. Box 66
Miamisburg, Ohio 45343-0066

MAR 22 1999

MB0377-99

Mr. Brian Nickel
Ohio Environmental Protection Agency
401 E. Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Nickel:

Enclosed for your information please find copies of the following documents:

Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio, Final, February, 1999.

CERCLA 120(h) Summary Notice of Hazardous Substances, Release Block D, Mound Plant, Miamisburg, Ohio, Final, February 1999.

Copies will be placed in the CERCLA Public Reading Room Administrative Record.

The Department appreciates your support during the preparation of these documents under an accelerated schedule. Should you have any questions regarding the enclosed, please contact me at (937) 865-3597 or Ms. Debbie White of my staff at (937) 865-5197.

Sincerely,

Arthur W. Kleinrath

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Remedial Project Manager/Team Leader

2 Enclosures

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Ray Beaumier, OEPA
Ruth Vandegrift, ODH
Terrence Tracy, EM-73
Dann Bird, MMCIC

Mound Plant Groundwater Exposure Scenarios

Construction Worker Hazard and Risk Calculations

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust	
(3) Ingestion of Drinking Water	X
(4) Inhalation During Showering	X
(5) Dermal Contact with Groundwater	X
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

	Construction Worker Scenario Assumed Incremental Concentration	
	Current GW	Future GW
Radionuclide	pCi/L	pCi/L
Ac-227	0.335	0.355
Bi-210	0.39	0.39
Cs-137		
H-3	1224	4451
K-40		
Pb-210		
Pu-238		
Pu-239	1.875	1.89
Pu-242		
Ra-224		
Ra-226		
Ra-228		
Sr-85		
Sr-90		
Th-228	1.39	1.52
Th-230		
Th-232		
Th-234		
U-233		
U-234	7.35	7.35
U-235		
U-238	7.56	7.56

Risk Data	HEAST Slope Factors Ingestion risk/pCi	Inhalation risk/pCi
Ac-227+D	6.26E-10	7.87E-08
Bi-210	7.29E-12	5.12E-11
Cs-137+D	3.16E-11	1.91E-11
H-3	7.15E-14	9.59E-14
K-40	1.25E-11	7.46E-12
Pb-210+D	1.01E-09	3.86E-09
Pu-238	2.95E-10	2.74E-08
Pu-239	3.16E-10	2.78E-08
Pu-242	3.00E-10	2.64E-08
Ra-224	1.49E-10	2.25E-09
Ra-226+D	2.96E-10	2.75E-09
Ra-228+D	2.48E-10	9.94E-10
Sr-85	1.40E-12	1.14E-12
Sr-90	5.59E-11	6.93E-11
Th-228+D	2.31E-10	9.68E-08
Th-230	3.75E-11	1.72E-08
Th-232+D	3.28E-11	1.93E-08
Th-234	1.93E-11	1.90E-11
U-233	4.48E-11	1.41E-08
U-234	4.40E-11	1.40E-08
U-235+D	4.70E-11	1.30E-08
U-238+D	6.20E-11	1.24E-08

Radionuclide Risk Results

	Pathway 3 - DW		Pathway 4 - INH		Pathway 5 - Dermal	
	Current	Future	Current	Future	Current	Future
Ac-227	2.62E-07	2.78E-07				
Bi-210	3.55E-09	3.55E-09				
Cs-137	--	--				
H-3	1.09E-07	3.98E-07	1.37E-09	4.97E-09	5.21E-10	1.89E-09
K-40	--	--				
Pb-210	--	--				
Pu-238	--	--				
Pu-239	7.41E-07	7.47E-07				
Pu-242	--	--				
Ra-224	--	--				
Ra-226	--	--				
Ra-228	--	--				
Sr-85	--	--				
Sr-90	--	--				
Th-228	4.01E-07	4.39E-07				
Th-230	--	--				

Radionuclide Risk Results

	Pathway 3 - DW		Pathway 4 - INH		Pathway 5 - Dermal	
	Current	Future	Current	Future	Current	Future
Th-232	--	--				
Th-234	--	--				
U-233	--	--				
U-234	4.04E-07	4.04E-07				
U-235	--	--				
U-238	5.86E-07	5.86E-07				
Totals	2.51E-06	2.85E-06	1.37E-09	4.97E-09	5.21E-10	1.89E-09

Overall Incremental Risk to Construction Worker from Radionuclides in Groundwater

Current	2.51E-06
Future	2.86E-06
Current+Future	**5.37E-06**

Mound Plant Groundwater Exposure Scenarios

1/5/99

Construction Worker Hazard and Risk Calculations

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust	
(3) Ingestion of Drinking Water	X
(4) Inhalation During Showering	X
(5) Dermal Contact with Groundwater	X
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

	Construction Worker Scenario Assumed Background Concentration	
	Current GW	Future GW
Radionuclide	pCi/L	pCi/L
Ac-227		
Bi-210		
Cs-137		
H-3	1485	1485
K-40		
Pb-210		
Pu-238		
Pu-239	0.125	0.125
Pu-242		
Ra-224		
Ra-226		
Ra-228		
Sr-85		
Sr-90		
Th-228	0.779	0.779
Th-230		
Th-232		
Th-234		
U-233		
U-234	0.792	0.792
U-235		
U-238	0.688	0.688

Risk Data	HEAST Slope Factors Ingestion risk/pCi	Inhalation risk/pCi
Ac-227+D	6.26E-10	7.87E-08
Bi-210	7.29E-12	5.12E-11
Cs-137+D	3.16E-11	1.91E-11
H-3	7.15E-14	9.59E-14
K-40	1.25E-11	7.46E-12
Pb-210+D	1.01E-09	3.86E-09
Pu-238	2.95E-10	2.74E-08
Pu-239	3.16E-10	2.78E-08
Pu-242	3.00E-10	2.64E-08
Ra-224	1.49E-10	2.25E-09
Ra-226+D	2.96E-10	2.75E-09
Ra-228+D	2.48E-10	9.94E-10
Sr-85	1.40E-12	1.14E-12
Sr-90	5.59E-11	6.93E-11
Th-228+D	2.31E-10	9.68E-08
Th-230	3.75E-11	1.72E-08
Th-232+D	3.28E-11	1.93E-08
Th-234	1.93E-11	1.90E-11
U-233	4.48E-11	1.41E-08
U-234	4.40E-11	1.40E-08
U-235+D	4.70E-11	1.30E-08
U-238+D	6.20E-11	1.24E-08

Radionuclide Risk Results

	Pathway 3 - DW		Pathway 4 - INH		Pathway 5 - Dermal	
	Current	Future	Current	Future	Current	Future
Ac-227	--	--				
Bi-210	--	--				
Cs-137	--	--				
H-3	1.33E-07	1.33E-07	1.66E-09	1.66E-09	6.32E-10	6.32E-10
K-40	--	--				
Pb-210	--	--				
Pu-238	--	--				
Pu-239	4.94E-08	4.94E-08				
Pu-242	--	--				
Ra-224	--	--				
Ra-226	--	--				
Ra-228	--	--				
Sr-85	--	--				
Sr-90	--	--				
Th-228	2.25E-07	2.25E-07				
Th-230	--	--				

Radionuclide Risk Results

	Pathway 3 - DW		Pathway 4 - INH		Pathway 5 - Dermal	
	Current	Future	Current	Future	Current	Future
Th-232	--	--				
Th-234	--	--				
U-233	--	--				
U-234	4.36E-08	4.36E-08				
U-235	--	--				
U-238	5.33E-08	5.33E-08				
Totals	5.04E-07	5.04E-07	1.66E-09	1.66E-09	6.32E-10	6.32E-10

Overall Background Risk to Construction Worker from Radionuclides in Groundwater

Current	5.06E-07
Future	5.06E-07
Current+Future	**1.01E-06**

Mound Plant Groundwater Exposure Scenarios

1/6/99

Construction Worker Hazard and Risk Calculations

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust	
(3) Ingestion of Drinking Water	X
(4) Inhalation During Showering	X
(5) Dermal Contact with Groundwater	X
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

	Construction Worker Scenario Assumed Total (BG + Inc) Concentration	
	Current GW	Future GW
Radionuclide	pCi/L	pCi/L
Ac-227	0.335	0.355
Bi-210	0.39	0.39
Cs-137		
H-3	2709	5936
K-40		
Pb-210		
Pu-238		
Pu-239	2	2.02
Pu-242		
Ra-224		
Ra-226		
Ra-228		
Sr-85		
Sr-90		
Th-228	2.17	2.3
Th-230		
Th-232		
Th-234		
U-233		
U-234	8.14	8.14
U-235		
U-238	8.25	8.25

Risk Data	HEAST Slope Factors Ingestion risk/pCi	Inhalation risk/pCi
Ac-227+D	6.26E-10	7.87E-08
Bi-210	7.29E-12	5.12E-11
Cs-137+D	3.16E-11	1.91E-11
H-3	7.15E-14	9.59E-14
K-40	1.25E-11	7.46E-12
Pb-210+D	1.01E-09	3.86E-09
Pu-238	2.95E-10	2.74E-08
Pu-239	3.16E-10	2.78E-08
Pu-242	3.00E-10	2.64E-08
Ra-224	1.49E-10	2.25E-09
Ra-226+D	2.96E-10	2.75E-09
Ra-228+D	2.48E-10	9.94E-10
Sr-85	1.40E-12	1.14E-12
Sr-90	5.59E-11	6.93E-11
Th-228+D	2.31E-10	9.68E-08
Th-230	3.75E-11	1.72E-08
Th-232+D	3.28E-11	1.93E-08
Th-234	1.93E-11	1.90E-11
U-233	4.48E-11	1.41E-08
U-234	4.40E-11	1.40E-08
U-235+D	4.70E-11	1.30E-08
U-238+D	6.20E-11	1.24E-08

Radionuclide Risk Results

	Pathway 3 - DW		Pathway 4 - INH		Pathway 5 - Dermal	
	Current	Future	Current	Future	Current	Future
Ac-227	2.62E-07	2.78E-07				
Bi-210	3.55E-09	3.55E-09				
Cs-137	--	--				
H-3	2.42E-07	5.31E-07	3.03E-09	6.63E-09	1.15E-09	2.53E-09
K-40	--	--				
Pb-210	--	--				
Pu-238	--	--				
Pu-239	7.90E-07	7.98E-07				
Pu-242	--	--				
Ra-224	--	--				
Ra-226	--	--				
Ra-228	--	--				
Sr-85	--	--				
Sr-90	--	--				
Th-228	6.27E-07	6.64E-07				
Th-230	--	--				

	Pathway 3 - DW		Pathway 4 - INH		Pathway 5 - Dermal	
	Current	**Future**	**Current**	**Future**	**Current**	**Future**
Th-232	--	--				
Th-234	--	--				
U-233	--	--				
U-234	4.48E-07	4.48E-07				
U-235	--	--				
U-238	6.39E-07	6.39E-07				
Totals	3.01E-06	3.36E-06	3.03E-09	6.63E-09	1.15E-09	2.53E-09

Total Risk to Construction Worker from Radionuclides in Groundwater

Current	3.02E-06
Future	3.37E-06
Current+Future	**6.38E-06**

Mound Plant Groundwater Exposure Scenarios

1/6/99

Site Employee Hazard and Risk Calculations

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust	
(3) Ingestion of Drinking Water	X
(4) Inhalation During Showering	
(5) Dermal Contact with Groundwater	
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

	Site Employee Scenario Assumed Incremental Concentration	
	Current GW	Future GW
Radionuclide	pCi/L	pCi/L
Ac-227	0.335	0.355
Bi-210	0.39	0.39
Cs-137	0	0
H-3	1224	4451
K-40	0	0
Pb-210	0	0
Pu-238	0	0
Pu-239	1.875	1.89
Pu-242	0	0
Ra-224	0	0
Ra-226	0	0
Ra-228	0	0
Sr-85	0	0
Sr-90	0	0
Th-228	1.39	1.52
Th-230	0	0
Th-232	0	0
Th-234	0	0
U-233	0	0
U-234	7.35	7.35
U-235	0	0
U-238	7.56	7.56

Risk Data	HEAST Slope Factors Ingestion risk/pCi	Inhalation risk/pCi
Ac-227+D	6.26E-10	7.87E-08
Bi-210	7.29E-12	5.12E-11
Cs-137+D	3.16E-11	1.91E-11
H-3	7.15E-14	9.59E-14
K-40	1.25E-11	7.46E-12
Pb-210+D	1.01E-09	3.86E-09
Pu-238	2.95E-10	2.74E-08
Pu-239	3.16E-10	2.78E-08
Pu-242	3.00E-10	2.64E-08
Ra-224	1.49E-10	2.25E-09
Ra-226+D	2.96E-10	2.75E-09
Ra-228+D	2.48E-10	9.94E-10
Sr-85	1.40E-12	1.14E-12
Sr-90	5.59E-11	6.93E-11
Th-228+D	2.31E-10	9.68E-08
Th-230	3.75E-11	1.72E-08
Th-232+D	3.28E-11	1.93E-08
Th-234	1.93E-11	1.90E-11
U-233	4.48E-11	1.41E-08
U-234	4.40E-11	1.40E-08
U-235+D	4.70E-11	1.30E-08
U-238+D	6.20E-11	1.24E-08

Radionuclide Risk Results

	Pathway 3 - DW	
	Current	**Future**
Ac-227	1.31E-06	1.39E-06
Bi-210	1.78E-08	1.78E-08
Cs-137	--	--
H-3	5.47E-07	1.99E-06
K-40	--	--
Pb-210	--	--
Pu-238	--	--
Pu-239	3.70E-06	3.73E-06
Pu-242	--	--
Ra-224	--	--
Ra-226	--	--
Ra-228	--	--
Sr-85	--	--
Sr-90	--	--
Th-228	2.01E-06	2.19E-06
Th-230	--	--

Radionuclide Risk Results

	Pathway 3 - DW	
	Current	**Future**
Th-232	--	--
Th-234	--	--
U-233	--	--
U-234	2.02E-06	2.02E-06
U-235	--	--
U-238	2.93E-06	2.93E-06
Totals	1.25E-05	1.43E-05

Overall Incremental Risk to Site Employee from Radionuclides in Groundwater

Current	1.25E-05
Future	1.43E-05
Current+Future	**2.68E-05**

Mound Plant Groundwater Exposure Scenarios

1/5/99

Site Employee Hazard and Risk Calculations

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust	
(3) Ingestion of Drinking Water	X
(4) Inhalation During Showering	
(5) Dermal Contact with Groundwater	
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

	Site Employee Scenario Assumed Background Concentration		
	Current GW		Future GW
Radionuclide	pCi/L		pCi/L
Ac-227	0	0	0
Bi-210	0	0	0
Cs-137	0	0	0
H-3	1485	0	1485
K-40	0	0	0
Pb-210	0	0	0
Pu-238	0	0	0
Pu-239	0.125	0	0.125
Pu-242	0	0	0
Ra-224	0	0	0
Ra-226	0	0	0
Ra-228	0	0	0
Sr-85	0	0	0
Sr-90	0	0	0
Th-228	0.779	0	0.779
Th-230	0	0	0
Th-232	0	0	0
Th-234	0	0	0
U-233	0	0	0
U-234	0.792	0	0.792
U-235	0	0	0
U-238	0.688	0	0.688

Risk Data	HEAST Slope Factors Ingestion risk/pCi	Inhalation risk/pCi
Ac-227+D	6.26E-10	7.87E-08
Bi-210	7.29E-12	5.12E-11
Cs-137+D	3.16E-11	1.91E-11
H-3	7.15E-14	9.59E-14
K-40	1.25E-11	7.46E-12
Pb-210+D	1.01E-09	3.86E-09
Pu-238	2.95E-10	2.74E-08
Pu-239	3.16E-10	2.78E-08
Pu-242	3.00E-10	2.64E-08
Ra-224	1.49E-10	2.25E-09
Ra-226+D	2.96E-10	2.75E-09
Ra-228+D	2.48E-10	9.94E-10
Sr-85	1.40E-12	1.14E-12
Sr-90	5.59E-11	6.93E-11
Th-228+D	2.31E-10	9.68E-08
Th-230	3.75E-11	1.72E-08
Th-232+D	3.28E-11	1.93E-08
Th-234	1.93E-11	1.90E-11
U-233	4.48E-11	1.41E-08
U-234	4.40E-11	1.40E-08
U-235+D	4.70E-11	1.30E-08
U-238+D	6.20E-11	1.24E-08

Radionuclide Risk Results

	Pathway 3 - DW	
	Current	**Future**
Ac-227	--	--
Bi-210	--	--
Cs-137	--	--
H-3	6.64E-07	6.64E-07
K-40	--	--
Pb-210	--	--
Pu-238	--	--
Pu-239	2.47E-07	2.47E-07
Pu-242	--	--
Ra-224	--	--
Ra-226	--	--
Ra-228	--	--
Sr-85	--	--
Sr-90	--	--
Th-228	1.12E-06	1.12E-06
Th-230	--	--

Radionuclide Risk Results

	Pathway 3 - DW	
	Current	**Future**
Th-232	--	--
Th-234	--	--
U-233	--	--
U-234	2.18E-07	2.18E-07
U-235	--	--
U-238	2.67E-07	2.67E-07
Totals	2.52E-06	2.52E-06

Overall Background Risk to Site Employee from Radionuclides in Groundwater

Current	2.52E-06
Future	2.52E-06
Current+Future	**5.04E-06**

Mound Plant Groundwater Exposure Scenarios

1/6/99

Site Employee Hazard and Risk Calculations

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust	
(3) Ingestion of Drinking Water	X
(4) Inhalation During Showering	
(5) Dermal Contact with Groundwater	
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

	Site Employee Scenario Assumed Total Concentration	
Radionuclide	Current GW pCi/L	Future GW pCi/L
Ac-227	0.335	0.355
Bi-210	0.39	0.39
Cs-137		
H-3	2709	5936
K-40		
Pb-210		
Pu-238		
Pu-239	2	2.02
Pu-242		
Ra-224		
Ra-226		
Ra-228		
Sr-85		
Sr-90		
Th-228	2.17	2.3
Th-230		
Th-232		
Th-234		
U-233		
U-234	8.14	8.14
U-235		
U-238	8.25	8.25

Risk Data	HEAST Slope Factors Ingestion risk/pCi	Inhalation risk/pCi
Ac-227+D	6.26E-10	7.87E-08
Bi-210	7.29E-12	5.12E-11
Cs-137+D	3.16E-11	1.91E-11
H-3	7.15E-14	9.59E-14
K-40	1.25E-11	7.46E-12
Pb-210+D	1.01E-09	3.86E-09
Pu-238	2.95E-10	2.74E-08
Pu-239	3.16E-10	2.78E-08
Pu-242	3.00E-10	2.64E-08
Ra-224	1.49E-10	2.25E-09
Ra-226+D	2.96E-10	2.75E-09
Ra-228+D	2.48E-10	9.94E-10
Sr-85	1.40E-12	1.14E-12
Sr-90	5.59E-11	6.93E-11
Th-228+D	2.31E-10	9.68E-08
Th-230	3.75E-11	1.72E-08
Th-232+D	3.28E-11	1.93E-08
Th-234	1.93E-11	1.90E-11
U-233	4.48E-11	1.41E-08
U-234	4.40E-11	1.40E-08
U-235+D	4.70E-11	1.30E-08
U-238+D	6.20E-11	1.24E-08

Radionuclide Risk Results

	Pathway 3 - DW	
	Current	**Future**
Ac-227	1.31E-06	1.39E-06
Bi-210	1.78E-08	1.78E-08
Cs-137	--	--
H-3	1.21E-06	2.65E-06
K-40	--	--
Pb-210	--	--
Pu-238	--	--
Pu-239	3.95E-06	3.99E-06
Pu-242	--	--
Ra-224	--	--
Ra-226	--	--
Ra-228	--	--
Sr-85	--	--
Sr-90	--	--
Th-228	3.13E-06	3.32E-06
Th-230	--	--

	Pathway 3 - DW	
	Current	**Future**
Th-232	--	--
Th-234	--	--
U-233	--	--
U-234	2.24E-06	2.24E-06
U-235	--	--
U-238	3.20E-06	3.20E-06
Totals	1.51E-05	1.68E-05

Total Background Risk to Site Employee from Radionuclides in Groundwater

Current	1.51E-05
Future	1.68E-05
Current+Future	**3.19E-05**

INC

Mound Plant Groundwater Exposure Scenarios

1/5/99

Non-Radionuclide Hazard and Risk Calculations

Non-Radionuclide Contaminant	Construction Worker/Site Employee Assumed Incremental Concentration: Current GW mg/L	Future GW mg/L
1,1-Dichloroethene	0.0017	0.0017
1,1,1-Trichloroethane	1.20E-06	0.0047
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	0.0087
Beryllium	0	0.0001
Cadmium	0.0019	0.0019
Chromium (VI)	0	0.49
Molybdenum	0	0.004

Tox Data	Oral RfD mg/kg-d
1,1-Dichloroethene	9.0
1,1,1-Trichloroethane	0.09
1,1,2-Trichloro-1,2,2-trifluoroethane	30
Beryllium	2.00E-03
Cadmium	5.00E-04
Chromium (VI)	3.00E-03
Molybdenum	5.00E-03

Site Employee/Construction Worker	Groundwater Ingestion Hazard Quotients: Current GW	Future GW
1,1-Dichloroethene	1.85E-06	1.85E-06
1,1,1-Trichloroethane	1.30E-07	5.11E-04
1,1,2-Trichloro-1,2,2-trifluoroethane	2.84E-06	2.84E-06
Beryllium	0.00E+00	4.89E-04
Cadmium	3.72E-02	3.72E-02
Chromium (VI)	0.00E+00	***1.60E+00***
Molybdenum	0.00E+00	7.83E-03
Incremental HI =	**3.72E-02**	**1.64E+00**

Note: HQs and HI assume all chromium = Cr(VI).

DO WE WANT TO USE THE 1/7 (Cr-3/Cr-6) RATIO?

For Construction Worker, add dermal contact during shower	Dermal Contact Hazard Quotients Current GW	Future GW
1,1-Dichloroethene	3.8E-07	3.8E-07
1,1,1-Trichloroethane	3.7E-08	1.4E-04
1,1,2-Trichloro-1,2,2-trifluoroethane		
Beryllium		6.3E-07
Cadmium	1.2E-04	1.2E-04
Chromium (VI)		6.2E-03
Molybdenum		2.5E-05
Incremental HI =	1.2E-04	6.5E-03

BKGRND

Mound Plant Groundwater Exposure Scenarios

1/5/99

Non-Radionuclide Hazard and Risk Calculations

Non-Radionuclide Contaminant	Construction Worker/Site Employee Assumed Background Concentration Current GW mg/L	Future GW mg/L
1,1-Dichloroethene		
1,1,1-Trichloroethane	7.00E-04	7.00E-04
1,1,2-Trichloro-1,2,2-trifluoroethane		
Beryllium		
Cadmium		
Chromium (VI)		0.0061
Molybdenum		0.0056

Tox Data	Oral RfD mg/kg-d
1,1-Dichloroethene	9.0
1,1,1-Trichloroethane	0.09
1,1,2-Trichloro-1,2,2-trifluoroethane	30
Beryllium	2.00E-03
Cadmium	5.00E-04
Chromium (VI)	3.00E-03
Molybdenum	5.00E-03

Site Employee/Construction Worker	Groundwater Ingestion Hazard Quotients Current GW	Future GW
1,1-Dichloroethene	0.00E+00	0.00E+00
1,1,1-Trichloroethane	7.61E-05	7.61E-05
1,1,2-Trichloro-1,2,2-trifluoroethane	0.00E+00	0.00E+00
Beryllium	0.00E+00	0.00E+00
Cadmium	0.00E+00	0.00E+00
Chromium (VI)	0.00E+00	1.99E-02
Molybdenum	0.00E+00	1.10E-02
Background HI =	**7.61E-05**	**3.09E-02**

Note: HQs and HI assume all chromium = Cr(VI).

For Construction Worker, add dermal contact during shower	Dermal Contact Hazard Quotients Current GW	Future GW
1,1-Dichloroethene		
1,1,1-Trichloroethane	2.0E-05	2.0E-05
1,1,2-Trichloro-1,2,2-trifluoroethane		
Beryllium		6.3E-07
Cadmium		
Chromium (VI)		7.7E-05
Molybdenum		3.5E-05
Background HI =	**2.0E-05**	**1.3E-04**

TOTAL

Mound Plant Groundwater Exposure Scenarios

1/5/99

Non-Radionuclide Hazard and Risk Calculations

Non-Radionuclide Contaminant	Construction Worker/Site Employee Assumed Total Concentration: Current GW mg/L	Future GW mg/L
1,1-Dichloroethene	0.0017	0.0017
1,1,1-Trichloroethane	7.00E-04	5.40E-03
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	0.0087
Beryllium		0.0001
Cadmium	0.0019	0.0019
Chromium (VI)		0.4961
Molybdenum		0.0096

Tox Data	Oral RfD mg/kg-d
1,1-Dichloroethene	9.0
1,1,1-Trichloroethane	0.09
1,1,2-Trichloro-1,2,2-trifluoroethane	30
Beryllium	2.00E-03
Cadmium	5.00E-04
Chromium (VI)	3.00E-03
Molybdenum	5.00E-03

Site Employee/Construction Worker	Groundwater Ingestion Hazard Quotients: Current GW	Future GW
1,1-Dichloroethene	1.85E-06	1.85E-06
1,1,1-Trichloroethane	7.61E-05	5.87E-04
1,1,2-Trichloro-1,2,2-trifluoroethane	2.84E-06	2.84E-06
Beryllium	0.00E+00	4.89E-04
Cadmium	3.72E-02	3.72E-02
Chromium (VI)	0.00E+00	1.62E+00
Molybdenum	0.00E+00	1.88E-02
Total HI =	**3.73E-02**	**1.68E+00**

Note: HQs and HI assume all chromium = Cr(VI).

For Construction Worker, add dermal contact during shower	Dermal Contact Hazard Quotients Current GW	Future GW
1,1-Dichloroethene		
1,1,1-Trichloroethane	2.0E-05	2.0E-05
1,1,2-Trichloro-1,2,2-trifluoroethane		
Beryllium		6.3E-07
Cadmium		
Chromium (VI)		7.7E-05
Molybdenum		3.5E-05
Total HI =	**2.0E-05**	**1.3E-04**

INC

Mound Plant Groundwater Exposure Scenarios

07-Jan-99

Construction Worker and Site Employee Radionuclide Risk Calculations
Air Pathways

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust/Gases	X
(3) Ingestion of Drinking Water	
(4) Inhalation During Showering	
(5) Dermal Contact with Groundwater	
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

Radionuclide	Incremental Concentration, Highest Average for CY94 pCi/m^3
Ac-227	
Bi-210	
Cs-137	
H-3	7.54
K-40	
Pb-210	
Pu-238	2.60E-04
Pu-239	3.50E-06
Pu-242	
Ra-224	
Ra-226	
Ra-228	
Sr-85	
Sr-90	
Th-228	
Th-230	
Th-232	
Th-234	
U-233	
U-234	
U-235	
U-238	

Risk Data	HEAST Slope Factors Inhalation risk/pCi
Ac-227+D	7.87E-08
Bi-210	5.12E-11
Cs-137+D	1.91E-11
H-3	9.59E-14
K-40	7.46E-12
Pb-210+D	3.86E-09
Pu-238	2.74E-08
Pu-239	2.78E-08
Pu-242	2.64E-08
Ra-224	2.25E-09
Ra-226+D	2.75E-09
Ra-228+D	9.94E-10
Sr-85	1.14E-12
Sr-90	6.93E-11
Th-228+D	9.68E-08
Th-230	1.72E-08
Th-232+D	1.93E-08
Th-234	1.90E-11
U-233	1.41E-08
U-234	1.40E-08
U-235+D	1.30E-08
U-238+D	1.24E-08

Radionuclide Risk Results
Inhalation of Radionuclides in Air

	ConsW	SiteE
Ac-227	--	--
Bi-210	--	--
Cs-137	--	--
H-3	1.81E-08	9.04E-08
K-40	--	--
Pb-210	--	--
Pu-238	1.78E-07	8.91E-07
Pu-239	2.43E-09	1.22E-08
Pu-242	--	--
Ra-224	--	--
Ra-226	--	--
Ra-228	--	--
Sr-85	--	--
Sr-90	--	--
Th-228	--	--
Th-230	--	--

Radionuclide Risk Results
Inhalation of Radionuclides in Air

	ConsW	SiteE
Th-232	--	--
Th-234	--	--
U-233	--	--
U-234	--	--
U-235	--	--
U-238	--	--
Totals	**1.99E-07**	**9.93E-07**

BG

Mound Plant Groundwater Exposure Scenarios

07-Jan-99

Construction Worker and Site Employee Radionuclide Risk Calculations
Air Pathways

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust/Gases	X
(3) Ingestion of Drinking Water	
(4) Inhalation During Showering	
(5) Dermal Contact with Groundwater	
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

Radionuclide	Background Concentration, Average for CY94 pCi/m^3
Ac-227	
Bi-210	
Cs-137	
H-3	3.2
K-40	
Pb-210	
Pu-238	5.00E-08
Pu-239	7.00E-08
Pu-242	
Ra-224	
Ra-226	
Ra-228	
Sr-85	
Sr-90	
Th-228	
Th-230	
Th-232	
Th-234	
U-233	
U-234	
U-235	
U-238	

Risk Data	HEAST Slope Factors Inhalation risk/pCi
Ac-227+D	7.87E-08
Bi-210	5.12E-11
Cs-137+D	1.91E-11
H-3	9.59E-14
K-40	7.46E-12
Pb-210+D	3.86E-09
Pu-238	2.74E-08
Pu-239	2.78E-08
Pu-242	2.64E-08
Ra-224	2.25E-09
Ra-226+D	2.75E-09
Ra-228+D	9.94E-10
Sr-85	1.14E-12
Sr-90	6.93E-11
Th-228+D	9.68E-08
Th-230	1.72E-08
Th-232+D	1.93E-08
Th-234	1.90E-11
U-233	1.41E-08
U-234	1.40E-08
U-235+D	1.30E-08
U-238+D	1.24E-08

Radionuclide Risk Results
Inhalation of Radionuclides in Air

	ConsW	SiteE
Ac-227	--	--
Bi-210	--	--
Cs-137	--	--
H-3	7.67E-09	3.84E-08
K-40	--	--
Pb-210	--	--
Pu-238	3.43E-11	1.71E-10
Pu-239	4.87E-11	2.43E-10
Pu-242	--	--
Ra-224	--	--
Ra-226	--	--
Ra-228	--	--
Sr-85	--	--
Sr-90	--	--
Th-228	--	--
Th-230	--	--

Radionuclide Risk Results
Inhalation of Radionuclides in Air

	ConsW	SiteE
Th-232	--	--
Th-234	--	--
U-233	--	--
U-234	--	--
U-235	--	--
U-238	--	--
Totals	**7.75E-09**	**3.88E-08**

TOTAL

Mound Plant Groundwater Exposure Scenarios

07-Jan-99

Construction Worker and Site Employee Radionuclide Risk Calculations

Air Pathways

	Active for this run
(1) Inhalation of Volatiles	
(2) Inhalation of Dust/Gases	X
(3) Ingestion of Drinking Water	
(4) Inhalation During Showering	
(5) Dermal Contact with Groundwater	
(6) Ingestion of Soil-bound Radionuclides	
(7) External Exposure	
(8) Dermal Contact with Soil	

Radionuclide	Total Concentration, Highest Average for CY94 pCi/m^3
Ac-227	
Bi-210	
Cs-137	
H-3	10.76
K-40	
Pb-210	
Pu-238	2.60E-04
Pu-239	3.50E-06
Pu-242	
Ra-224	
Ra-226	
Ra-228	
Sr-85	
Sr-90	
Th-228	
Th-230	
Th-232	
Th-234	
U-233	
U-234	
U-235	
U-238	

Risk Data	HEAST Slope Factors Inhalation risk/pCi
Ac-227+D	7.87E-08
Bi-210	5.12E-11
Cs-137+D	1.91E-11
H-3	9.59E-14
K-40	7.46E-12
Pb-210+D	3.86E-09
Pu-238	2.74E-08
Pu-239	2.78E-08
Pu-242	2.64E-08
Ra-224	2.25E-09
Ra-226+D	2.75E-09
Ra-228+D	9.94E-10
Sr-85	1.14E-12
Sr-90	6.93E-11
Th-228+D	9.68E-08
Th-230	1.72E-08
Th-232+D	1.93E-08
Th-234	1.90E-11
U-233	1.41E-08
U-234	1.40E-08
U-235+D	1.30E-08
U-238+D	1.24E-08

Radionuclide Risk Results
Inhalation of Radionuclides in Air

	ConsW	SiteE
Ac-227	--	--
Bi-210	--	--
Cs-137	--	--
H-3	2.58E-08	1.29E-07
K-40	--	--
Pb-210	--	--
Pu-238	1.78E-07	8.91E-07
Pu-239	2.43E-09	1.22E-08
Pu-242	--	--
Ra-224	--	--
Ra-226	--	--
Ra-228	--	--
Sr-85	--	--
Sr-90	--	--
Th-228	--	--
Th-230	--	--

Radionuclide Risk Results
Inhalation of Radionuclides in Air

	ConsW	SiteE
Th-232	--	--
Th-234	--	--
U-233	--	--
U-234	--	--
U-235	--	--
U-238	--	--
Totals	**2.06E-07**	**1.03E-06**

Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio

FINAL

February 1999

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APPENDIX B Legal Description of RB D B-1

APPENDIX C Mound Plant Operations and Maintenance Plan for the Implementation of Institutional Controls C-1

APPENDIX D Applicable Relevant and Appropriate Requirements for RB D D-1

ACRONYMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BDP	Building Data Package
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
COC	Chemical of Concern
DOE	Department of Energy
FFA	Federal Facilities Agreement
FOD	Frequency of Detection
GV	Guideline Value
HEAST	Health Effects Assessment Summary Table
HI	Hazard Index
HQ	Hazard Quotient
IDM	Investigative Derived Material
IRIS	Integrated Risk Information System
MEMP	Miamisburg Environmental Management Project
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NPL	National Priority List
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
O&M	Operations and Maintenance
ORC	Ohio Revised Code
OSC	On-Scene Coordinator
OU	Operable Unit

ACRONYMS (CONTINUED)

pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PETREX	(trade name for a type of soil sampling)
PRS	Potential Release Site
RB	Release Block
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SARA	Superfund Amendments and Reauthorization Act
SCM	Site Conceptual Model
SM/PP	Special Metallurgical/Plutonium Processing
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

Record of Decision (ROD) for Release Block D, Mound Plant, Miamisburg, Ohio

This Record of Decision (ROD) documents the remedy selected for Release Block D of the Mound Plant, Miamisburg, Ohio. The ROD is organized in three sections: a declaration, a decision summary, and a responsiveness summary.

1.0 DECLARATION

This section summarizes the information presented in the ROD and includes the data certification sheet and authorizing signature page.

1.1 Site Name and Location

The U.S. Department of Energy (U.S. DOE) Mound Plant (CERCLIS ID No. 04935) is located within the City of Miamisburg, in southern Montgomery County, Ohio. The Plant is approximately ten (10) miles southwest of Dayton and 45 miles north of Cincinnati. This ROD addresses Release Block (RB) D which is located in the southeast corner of the developed area of the plant.

1.2 Basis and Purpose

This decision document presents the selected remedy for Release Block D (RB D) of the Mound Plant. The remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Contingency Plan (NCP). Information used to select the remedy is contained in the Administrative Record file. The file is available for review at the Mound CERCLA Reading Room, Miamisburg Senior Adult Center, 305 Central Avenue, Miamisburg, Ohio.

The State of Ohio concurs with the selected remedy.

1.3 Site Assessment

As documented in the Residual Risk Evaluation (RRE) for RB D, the RB D RRE Revision Summary, and the Technical Position Report in Support of the RB D RRE, the risks from carcinogens and non-carcinogens to current and future occupants of RB D were evaluated. In those analyses, the type of occupant was limited to an industrial use scenario and was represented by a construction worker and a site employee (office employee). Based on the RRE, the risks for current industrial use are within the acceptable range. However, in order to ensure that future use of the site conforms to the RRE assumptions, it was necessary to consider a remedy that would prevent the site being used for non-industrial purposes.

As described below, the remedy will protect future occupants of RB D from the threat of contaminants in the groundwater, and will ensure that RB D soils are appropriately evaluated prior to any removal of RB D soils from the Mound Plant NPL facility boundary.

1.4 Description of Selected Remedy

The selected remedy for RB D is institutional controls in the form of deed restrictions on future land use. DOE or its successors, as the lead agency for this ROD, has the responsibility to monitor, maintain and enforce these institutional controls. In order to maintain protection of human health and the environment at RB D in the future, the institutional controls to be adopted would:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- Prohibit removal of RB D soils from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

A copy of the deed is attached in Appendix A.

1.5 Statutory Determinations

The selected remedy for RB D is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate (ARAR), is cost-effective, and utilizes a permanent solution to the maximum extent practicable. Because this remedy will result in hazardous substances remaining in Release Block D above levels that allow for unlimited use and unrestricted exposure, DOE, in consultation with USEPA, Ohio EPA and ODH, will review the remedial action each year to assure that human health and the environment are being protected by the remedial action being implemented. DOE reserves the right to petition the USEPA, OEPA, and ODH for a modification to the frequency established for conducting the effectiveness reviews.

1.6 ROD Data Certification Checklist

Based on a commitment made by the U.S. Environmental Protection Agency (US EPA) to the General Accounting Office, RODs must contain a checklist which certifies that key information regarding the selection of the remedy has been included in the ROD. Therefore, note that the following information is located in the Decision Summary (Section 2) of this ROD. Additional information on any of these topics can be found in the Administrative Record for Mound.

- chemicals of concern (COCs) and their respective concentrations,
- guideline levels for the COCs;
- risks represented by the COCs;
- current and future land and groundwater use assumptions used in the risk assessment and ROD;
- land and groundwater uses that will be available at the site as a result of the remedy;
- estimated cost of the remedy; and the
- decisive factor(s) that led to the selection of the remedy.

1.7 Authorizing Signatures and Support Agency Acceptance

This Record of Decision for Release Block D of the Mound Plant has been prepared by the DOE. Approval of the US EPA and OEPA is required and has been secured as documented below.

This ROD is authorized for implementation.

G. Leah Dever — 2/25/99
Date

G. Leah Dever
Ohio Field Office Manager,
U. S. Department of Energy

William E. Muno — 3/3/99
Date

William E. Muno
Director, Superfund Division,
U. S. Environmental Protection Agency, Region V

Christopher Jones — 3/15/99
Date

Christopher Jones
Director,
Ohio Environmental Protection Agency

2.0 DECISION SUMMARY

This section provides an overview of the site and the alternatives evaluated. The selected remedy, and the basis for its selection, are also described.

2.1 Site Description

The U.S. Department of Energy (US DOE) Mound Plant (CERCLIS ID No. 04935) is located within the city limits of Miamisburg, in southern Montgomery County, Ohio (Figure 2-1). The Site is approximately ten (10) miles south-southwest of Dayton and 45 miles north of Cincinnati. Miamisburg is predominantly a residential community with supportive commercial facilities and industrial development. The adjacent upland areas are used primarily for residences and agriculture or are unused open spaces.

The Mound property is divided into eighteen "release blocks," which are contiguous tracts of property designated for transfer of ownership. These eighteen release blocks may be reconfigured to accommodate transfer of Mound property for economic development.

This ROD addresses Release Block (RB) D (Figure 2-2) which is located in the southeast corner of the developed area of the plant. The legal description of RB D is reproduced in Appendix B. RB D is generally bound to the south by the "South Property" (the undeveloped portion of the Mound Plant), to the east by offsite residences, to the north by a parking lot and group of small buildings, and to the west by a fenced area for storage of Investigative Derived Material (IDM).

There are two (2) main structures in RB D. Building 105, which was built in 1990 as a machine shop and is still used for that purpose, and Building 100, which was the Guard Force Precinct bunker.

2.2 Site History and Enforcement Activities

As a result of historic disposal practices and contaminant releases to the environment, the Mound Plant was placed on the National Priorities List (NPL) on November 21, 1989. The DOE signed a Comprehensive Environmental Resource Compensation and Liability Act (CERCLA) Section 120 Federal Facility Agreement (FFA) with the US EPA, effective October 1990. In 1993, this agreement was modified and expanded to include the OEPA. DOE serves as the lead agency for CERCLA-related activities at Mound.

Figure 2-1. Regional Context of the Mound Plant

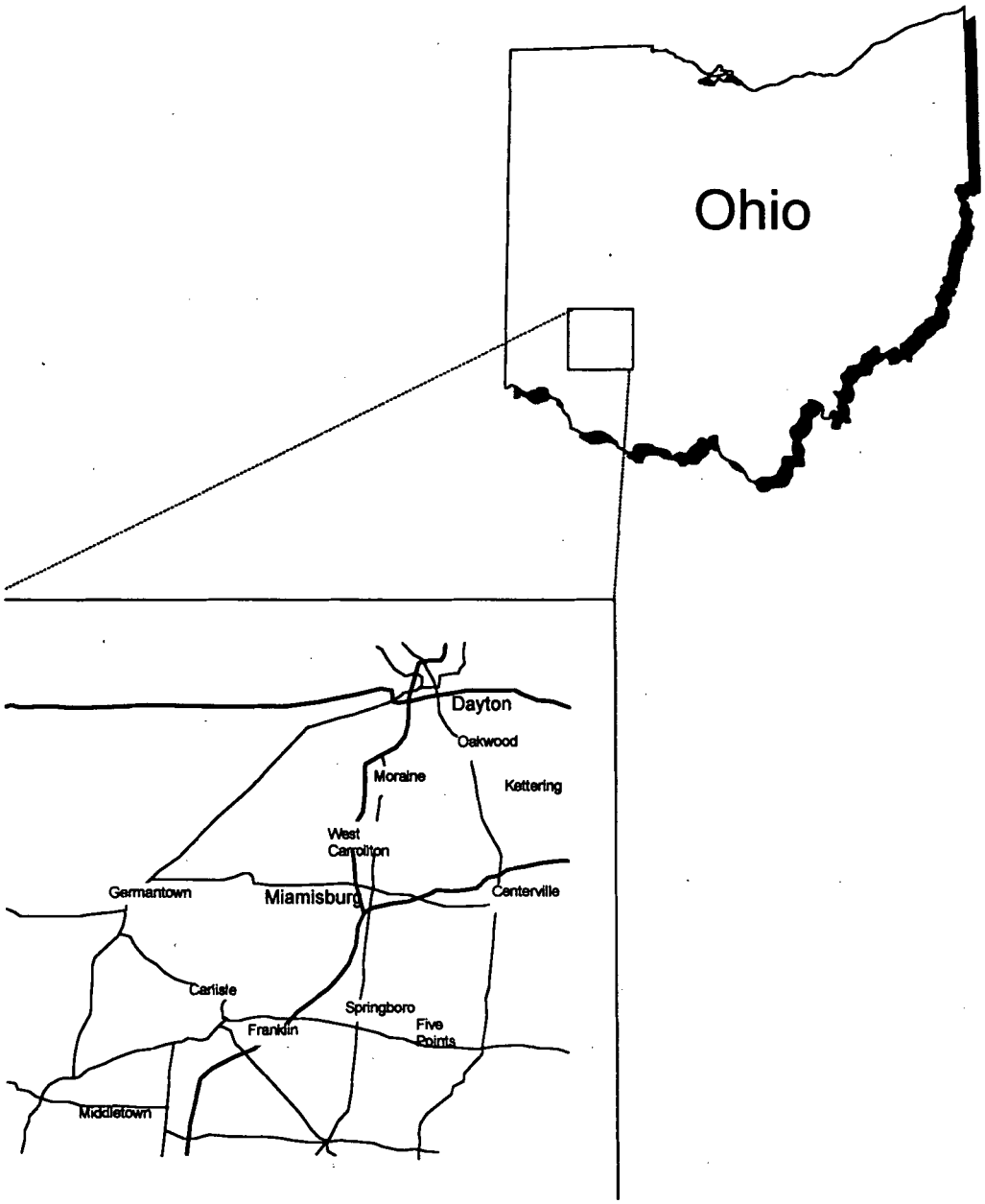
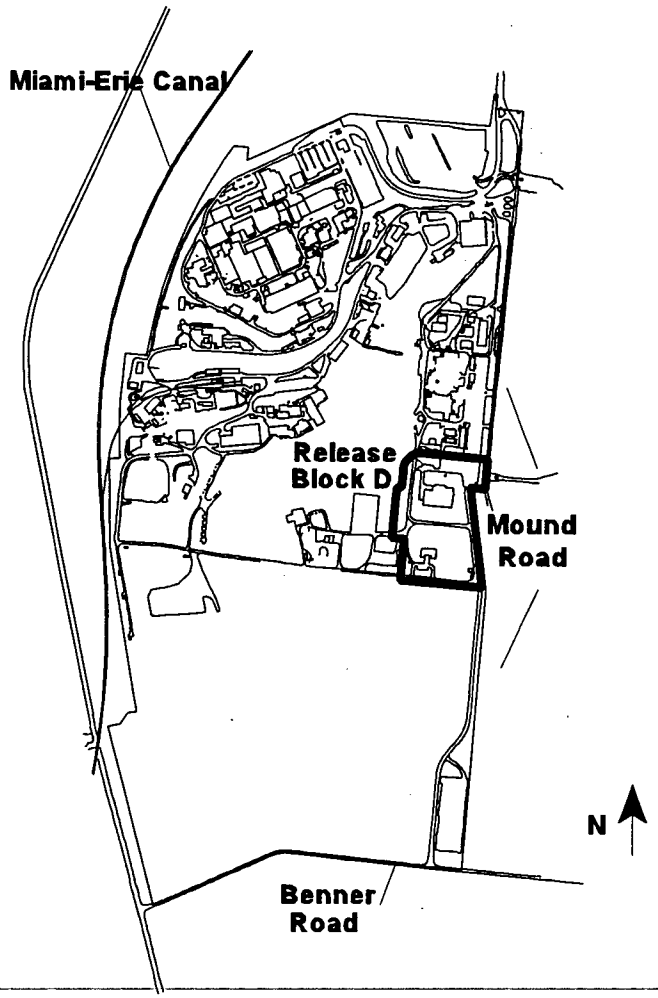


Figure 2-2. Location of Release Block D



The DOE, the US EPA, and the OEPA had originally planned to address the Plant's environmental restoration issues under a set of Operable Units (OUs), each of which would include a number of Potential Release Sites (PRSs). For each OU, the site would follow the traditional CERCLA process: a Remedial Investigation/Feasibility Study (RI/FS) followed by a Record of Decision (ROD), followed by Remedial Design/Remedial Action (RD/RA). After initiating remedial investigations for several OUs, the DOE and its regulators realized during a strategic review in 1995 that, for Mound, the OU approach was inefficient. The DOE and its regulators agreed that it would be more appropriate to evaluate each PRS or building separately, use removal action authority to remediate them as needed, and establish a goal for no additional remediation other than institutional controls for the final remedy. To evaluate any residual risk after all removals have been completed, a residual risk evaluation is conducted to ensure the block or parcel is protective of human health for industrial reuse. This process was named the Mound 2000 process. DOE and its regulators pursued this approach with the understanding that the USEPA and OEPA reserve all rights to enforce all provisions of the FFA and participation in the Mound 2000 process does not constitute a waiver of USEPA and OEPA rights to enforce the FFA.

The Mound 2000 process established a "core team" consisting of representatives of the Miamisburg Environmental Management Project (MEMP) of DOE, US EPA, and OEPA. The Core Team evaluates each of the potential contamination problems and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area. If a decision cannot be made, the Core Team identifies specific information needed to make a decision (e.g., data collection, investigations). The Core Team also receives input from technical experts as well as the general public and/or public interest groups. Thus, all stakeholders have the opportunity to express their opinions or suggestions involving each potential problem area. The details of this process are explained in the "Workplan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach," December 1998.

"The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 6, 1997" was developed as a framework for evaluating human health risks associated with residual levels of contamination. The RREM is applied to a release block once necessary remediation has been completed, and the remaining PRSs or buildings in the release block have been designated as No Further Assessment (NFA). Once these environmental concerns have been adequately addressed by the Core Team, a residual risk evaluation (RRE) is performed. The RRE forms part of the basis for determining what restrictions should be placed on the site.

2.3 Community Participation

Opportunities to comment on RB D PRSs and Building Data Packages (BDPs) were provided. A listing of those opportunities is shown in Table 2-1.

Table 2-1. Public Comment Periods for Release Block D Documents

DOCUMENT (PRS/BUILDING)	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
279	02/15/96	02/29/96
304/313	05/08/97	06/16/97
PRS 304 Action Memo	10/01/98	10/31/98
310	01/15/97	02/15/97
312	10/24/95	02/15/96
372/374	05/15/96	06/17/96
373	02/15/96	02/29/96
375/377/378	05/15/96	06/17/96
376	10/15/96	11/15/96
379	02/15/96	02/29/96
380/381	05/15/96	06/17/96
382	01/15/97	02/15/97
Building 100	09/04/97	10/20/97
Building 105	09/04/97	10/20/97
RB D Residual Risk Evaluation	08/21/96	09/20/96
Supplemental RB D Residual Risk Evaluation	12/22/98	01/21/99

The Proposed Plan for RB D was made available to the public on December 22, 1998. Copies were distributed to stakeholders and were placed in the Administrative Record file in the CERCLA Public Reading Room, Miamisburg Senior Adult Center, 305 Central Avenue, Miamisburg, Ohio. The notice of the availability of the Plan was published in the ***Miamisburg News*** on December 16, 1998. A public comment period was held from December 22, 1998, through January 21, 1999. In addition, a public meeting was held on January 20, 1999 to present the Proposed Plan. Representatives of DOE, US EPA, and the OEPA were present at the public meeting to answer questions regarding the proposed remedy. Responses to comments received during the comment period and public meeting are included in the Responsiveness Summary, which is Section 3 of this ROD.

2.4 Scope and Role of RB D

RB D lies within what was once called Operable Unit 5 (OU5). RB D includes a collection of individual areas called Potential Release Sites or PRSs that have undergone previous investigations. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB D have been evaluated and presented in the RB D Residual Risk Evaluation (RRE) (December, 1996), its supplement "Residual Risk Evaluation, Release Block D Revision Summary, December 1998," and the "Technical Position Report in Support of the Release Block D Residual Risk Evaluation," January, 1999.

The PRSs in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. The locations of the PRSs and buildings within RB D are shown in Figure 2-3; descriptions appear in Table 2-2. As shown in Table 2-2, all but one of the PRSs was determined by the Core Team to require no further assessment.

2.5 Site Characteristics

2.5.1 Geologic Setting

The bedrock section beneath Mound Plant consists of thin, nearly flat-lying beds of alternating shale and limestone of the Richmond Stage of the Cincinnati Group (Upper Ordovician -- about 450 million years ago). The Cincinnati Group is present at the surface at Mound Plant and underlies RB D. The limestone beds range from 2 to 6 inches in thickness and the shale layers are commonly 5 to 8 feet thick.

Pleistocene age (less than about 2 million years old) glacial deposits at Mound Plant include both till and outwash deposits. The till in the area of Mound Plant is composed of an unsorted, unstratified mixture of clay, silt, sand, and coarser material. Water-lain deposits consist of outwash composed of well-sorted sand and gravel. The sand and gravel is horizontally layered, and commonly cross-bedded. The outwash in the vicinity of Mound Plant occurs as restricted valley-train deposits that were formed by the aggregation of glacial meltwater streams. The outwash deposited in the Miami River Valley and the associated tributary valley forms the Buried Valley Aquifer (BVA) and contiguous deposits. A general discussion of the geology is presented in the "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992."

2.5.2 Hydrogeologic Setting

There are two hydrogeologic regimes at Mound Plant: flow through the bedrock beneath the Main Hill and the SM/PP Hill, and flow within the unconsolidated glacial deposits and alluvium associated with the BVA in the Great Miami River Valley and the tributary valley between the Main Hill and SM/PP Hill. The BVA is a US EPA-designated sole source aquifer. The bedrock system, an interbedded sequence of shale and limestone, is dominated by fracture flow especially in the upper portions of the bedrock. Groundwater movement within the till and sand and gravel, within the buried valley, is through porous media. Groundwater flow from Mound Plant is generally to the west and southwest toward the BVA of the Great Miami River Valley. A discussion of the hydrogeology of Mound is presented in the OU9 Work Plan and the "Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1 (September 1994)" and "Operable Unit 9 Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0 (January 1994)."

2.5.3 Available Data for Release Block D

All of the PRSs within RB D have been evaluated by the Core Team and, if necessary, addressed by either assessment or remediation. The following sections discuss the data relevant to RB D that are available from the general source documents and the individual Potential Release Site packages.

Figure 2-3. Location of PRSs and Buildings within RB D

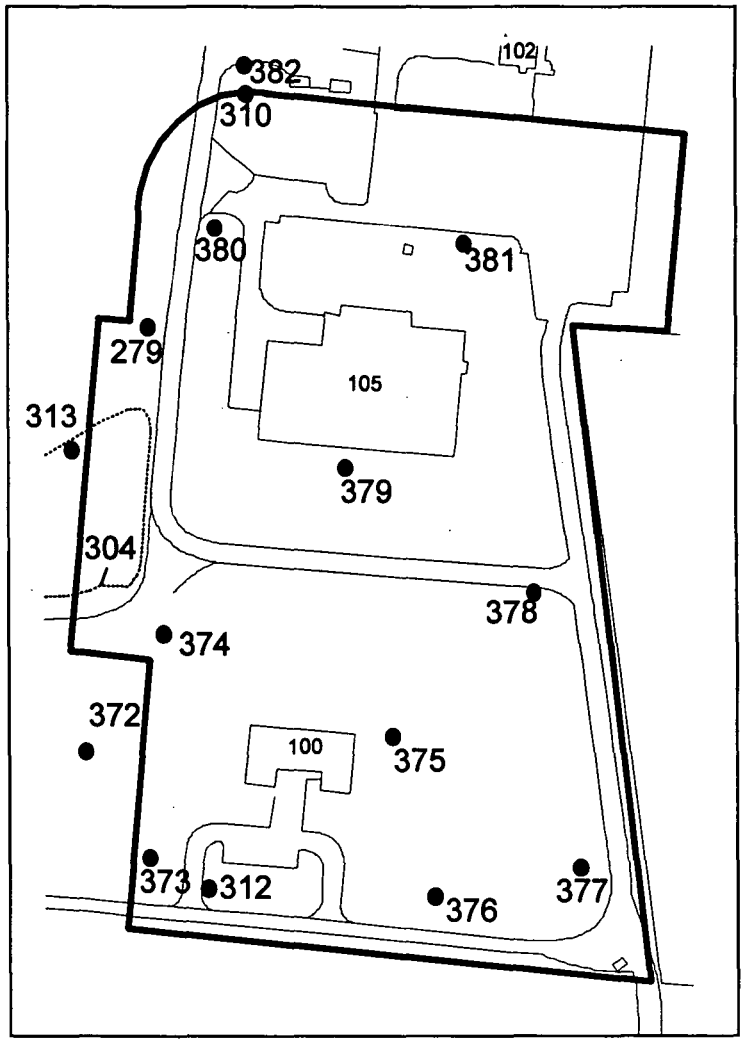


Table 2-2. Release Block D PRSs and Buildings and Core Team Conclusions

PRS/ BLDG	Reason for Identification	Core Team Decision	Close Out of PRS/BDP
279	Location of the Old Firing Range Drum Storage Area	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
304	Past use as a soil disposal area - thorium contamination.	Removal Action conducted in October 1998.	OSC Report signed by Core Team on 12/17/98.
310	Elevated cesium-137 sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 1/14/97
312	Elevated thorium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
313	Elevated thorium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 2/19/97
372/374	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
373	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
375/377/ 378	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
376	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/3/96
379	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
380/381	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
382	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 1/14/97
Bldg. 100	Building used for site operations	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 8/5/97
Bldg. 105	Building used for site operations	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 8/5/97

2.5.3.1 Background Data

Soils. Background concentrations measure the amount of a chemical that is naturally occurring (like metals) or anthropogenic (man-made but, for purposes of evaluating background, originating from sources other than the Mound Plant). Background concentrations are used as a screening tool to determine which contaminants should be carried through a risk evaluation as described in Section 2.7 of the ROD. Regional background concentrations in soil were determined during investigations conducted in September 1994 and August 1995 and are documented in reports titled "Operable Unit 9 Background Soils Investigation Soil Chemistry Report" and "Operable Unit 9, Regional Soils Investigation Report."

Groundwater. Background concentrations for groundwater were developed from two sources of data. For the Buried Valley Aquifer, background values were reported in the April 1995 "OU9 Hydrologic Investigation: Groundwater Sweeps Report." Background concentrations for bedrock groundwater were reported in the April 1995 "OU5 New Property Remedial Investigation Report."

2.5.3.2 Groundwater Contaminant Data

Groundwater data consist of water analyses of the Mound production wells screened within the Buried Valley Aquifer, and analyses of groundwater from monitoring wells screened in the bedrock aquifer on the Mound property. These wells are sampled as part of the site-wide groundwater monitoring network. Section 2.2.2 of the RRE for RB D documents the specific groundwater data used to evaluate the current and future groundwater profile for RB D. Summaries of the contaminants detected in Mound Plant groundwater, and those projected to be present in Mound Plant groundwater in the future, are shown in Tables 2-3 and 2-4, respectively.

2.5.3.3 Soil Contaminant Data

Soil data can be divided into three types: (a) data obtained through commercial analytical laboratory analysis, (b) data obtained through "screening" techniques conducted in a DOE laboratory, and (c) data obtained through screening techniques conducted in the field. Analytical laboratory data are obtained using strict methods and are subjected to exacting quality control procedures. These data are of the highest quality, and are quantitative. The laboratory screening data are considered to be of lower quality because sample preparation does not occur, and the measuring instruments are less precise. The field screening techniques are the least accurate due to instrument limitations and the effects of ambient conditions on field measurements. Due to these limitations, field screening data were not used for any calculations in the RRE for RB D.

Table 2-3. Current Mound Plant Groundwater Contaminants of Concern Based on the Plant Water Supply

Groundwater Constituent	Maximum concentration	Screening Concentration (either background or G.V.)[1]
ORGANICS (mg/L)		
1,1-Dichloroethene	0.0017	—
1,1,1-Trichloroethane	0.0018	0.0007[4]
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	—
INORGANICS (mg/L)		
Cadmium	0.0077	0.051[2]
Copper	0.593	0.0012[4]
Lead	0.040	0.0101[4]
RADIONUCLIDES (pCi/L)		
Actinium-227	0.335	0.26[3]
Bismuth-210	0.39	—
Plutonium-239/240	2.0	0.125[4]
Tritium	7200	1485[3]
Uranium-234	8.14	0.792[4]
Uranium-238	8.25	0.688[4]

1 - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if contaminants are present at levels that warrant evaluation.
2 - For increased conservatism, decision made on 0.1 x G.V. GV includes ingestion, dermal, and inhalation pathways.
3 - GV corresponds to a total risk of 10^{-6} for ingestion only.
4 - Background value. When adequate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.

Reference: "Residual Risk Evaluation, Release Block D," December 1996.

Table 2-4. Future Mound Plant Groundwater Contaminants of Concern

Groundwater Constituent	Estimated Maximum concentration	Screening Concentration (either background or G.V.)[1]
ORGANICS (mg/L)		
1,1-Dichloroethene	0.0017	—
1,1,1-Trichloroethane	0.0065	0.0007[4]
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	—
INORGANICS (mg/L)		
Beryllium	0.0001	6.6E-05[2]
Bismuth	0.0016	—
Cadmium	0.0077	0.051[2]
Chromium	0.4961	0.0061[4]
Cobalt	0.0039	0[4]
Copper	0.5964	0.0012[4]
Lead	0.040	0.010[4]
Molybdenum	0.0096	0.0056[4]
RADIONUCLIDES (pCi/L)		
Actinium-227	0.355	0.26[3]
Bismuth-210	0.39	—
Plutonium-239/240	2.020	0.125[4]
Tritium	10427	1485[3]
Uranium-234	8.14	0.792[4]
Uranium-238	8.25	0.688[4]

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if contaminants are present at levels that warrant evaluation.
[2] - For increased conservatism, decision made on 0.1 x G.V. GV includes ingestion, dermal, and inhalation pathways.
[3] - GV corresponds to a total risk of 10^{-6} for ingestion only.
[4] - Background value. When adequate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.

Reference: "Residual Risk Evaluation, Release Block D," December 1996.

Soil contaminant data for RB D collected prior to the Mound 2000 process are documented in a number of DOE reports. These references include:

- Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995 *(results of systematic sampling)*,
- OU-5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995 *(results of systematic sampling in southern area of site, gives general overview of soils not thought to be contaminated)*,
- OU-9 Regional Soils Investigation Report, Revision 2. August 1, 1995 *(purpose was to give a regional soil description away from impacts of Mound operations)*,
- OU-3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3. Final, Revision 0. July 1, 1993 *(purpose was to address areas noted in previous surveys; but, not thought to endanger human health or environment)*,
- OU-9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1, 1993 *(a compendium of existing data)*, and
- Soil Gas Confirmation Sampling. Revision 0. April 1, 1996 *(results of a study following up on a prior qualitative study)*.

In the Mound 2000 process, radionuclide and chemical contaminants were studied on a PRS basis. Many of the PRSs (372, 374, 375, 377, 378, 380, 381, and 382) were established based solely on soil gas readings. The soil gas study that identified these PRSs was conducted in 1994 utilizing PETREX tubes. The PETREX collector tubes measure relative ions counts of volatile and semi-volatile organic compounds; therefore, the method only provides qualitative indications of possible contamination. Eight of the PRSs, conversely, were identified based on radionuclide measurements. Those measurements are described below.

- At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. In December 1991, soil samples were again collected from this area. Of the 28 samples collected, two had cesium-137 concentrations above the detection limit. At the same location, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, additional soil samples collected in this area did not indicate the presence of cesium-137 or any other contaminant.

- At PRS 373, PRS 376 and PRS 379, plutonium-238 was detected in surface samples in 1994, 1995 and 1996, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detectable plutonium-238 concentrations were shown (by surrounding samples) to be isolated to the PRS locations only.

- At PRS 312, a surface sample collected in 1993 indicated an elevated thorium-232 concentration of 5.02 pCi/g. Nearby samples did not indicate elevated levels, suggesting the elevated result was an isolated event.

- PRS 279 was identified based on photographs that showed drum storage at this location. Plutonium-238, cobalt-60, radium-226, and thorium-228 were measured in this area. This drum storage area had been incorrectly referred to as the Old Firing Range Storage Site which was believed to be used between 1970 and 1974. Subsequent reviews indicated the Drum Storage Area was actually located at PRS 277.

  There were no elevated soil gas measurements detected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable polynuclear aromatic hydrocarbons (PAHs) at an elevated concentration of approximately 59 mg/kg. This sample was a composite of four samples collected at the corners of a 30 foot x 30 foot square. A second composite prepared similarly from about 100 feet away found similar contaminants at 1 to 3 mg/kg. Other nearby sample locations did not detect any of the contaminants. These chemicals are commonly associated with asphalt, which is present in the area. A February 1996 soil sample in the vicinity of PRS 279 contained low levels of organic and inorganic compounds, plutonium-238, radium-226, and thorium-228.

- PRS 313, which neighbors PRS 304, was a soil segregation area that contained the overburden soils excavated from the decommission and decontamination of a waste transfer line (PRS 300) and from Area 12 (PRS 273). PRS 313 was identified due to an elevated thorium result. Sampling in 1995 in the area of PRS 313 indicated no contaminants in excess of guideline criteria.

- PRS 304 was identified as a former soil disposal area. PRSs 304/313 were originally binned NFA on February 19, 1997, based on data existing at that time. However, a recent radiological survey and sampling event conducted in the fall of 1998 identified two small "hot spots" which were subsequently removed. The results from the 1998 removal actions are available in the "On Scene Coordinator (OSC) Report for PRS 304 Removal Action, December 1998."

A summary of the contaminants detected in RB D soils is shown in Table 2-5.

2.6 Potential Future Uses for Mound

The Mound Plant will remain in industrial use into the future. This future use has been determined based upon agreement among DOE, US EPA, OEPA, and interested stakeholders. This land use is alsoreflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

2.7 Summary of Site Risks

The human health risks for RB D were evaluated using the Residual Risk Evaluation Methodology (RREM) document developed for Mound. A residual risk evaluation (RRE) is a five-step process:

(1) identification of contaminants,
(2) exposure assessment,
(3) toxicity assessment,
(4) risk characterization, and
(5) evaluation of potential cumulative risks.

Table 2-5. Soil Contaminants of Concern for RB D

Soil Constituent	Maximum concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd or G.V.)[1]
ORGANICS (mg/kg)			
Acenaphtene	6.4	3.8	
Acenaphthylene	0.22	0.029	
Benzo(a)anthracene	41.5	6.8	4.10[2]
Benzo(a)pyrene	33.5	7.5	0.41[2]
Benzo(b)fluoranthene	53	12	4.10[2]
Benzo(g,h,i) perylene	3.9	3.9	
Carbazole	0.165	0.165	
Dibenz(a,h)anthracene	1.3	1.3	0.41
Dibenzofuran	3.8	3.0	
2,4-Dinitrophenol	0.97	0.97	
Fluorene	6.3	3.3	
Indeno(1,2,3-cd)pyrene	20.5	4.7	4.10[2]
2-Methylnaphthalene	1.4	1.4	
Naphthalene	1.9	1.9	
Phenanthrene	49.5	13	
1,1,1-Trichloroethane	0.0025	0.002	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003	
INORGANICS (mg/kg)			
Antimony	39.2	39.2	85[4]
Beryllium	1.8	1.8	0.7
Bismuth	5.7	5.7	
RADIONUCLIDES (pCi/g)			
Lead-210	2.91	2.91	
Plutonium-238	60	60	5.50[3]
Thorium-228	3.57	3.57	0.83[5]

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if contaminants are present at levels that warrant evaluation.
[2] - GV corresponds to a total risk of 10^{-6} for the ingestion pathway.
[3] - GV corresponds to a total risk 10^{-6} for the ingestion, inhalation and external pathways.
[4] - For additional conservatism, decision made on 0.1 x G.V. (for the ingestion pathway).
[5] - The Th-228 GV has not been formally modified to reflect new risk data. However, all Th-228 risk calculations were performed using updated slope factors.

Reference: "Residual Risk Evaluation - Release Block D Revision Summary," Final Report, January, 1999

2.7.1 Identification of Contaminants

The contaminants of concern (COCs) for RB D were identified by reviewing all of the sampling data for the release block. Based on that review, contaminants were eliminated for further evaluation based on criteria established in the RREM. Specifically, only contaminants exceeding (1) background, (2) a base level of potential health concern, and (3) certain frequency of detection (FOD) criteria were carried through the RRE. The COCs established for RB D were listed in Tables 2-3, 2-4, and 2-5.

2.7.2 Exposure Assessment

The Site Conceptual Model (SCM) for Mound provides the basis for evaluating human exposure scenarios. Because DOE and its regulators and stakeholders agree that the future use of Release Block D will be industrial in nature, two receptor scenarios from the Mound SCM apply: a construction worker and a site employee. The routes of exposure applicable to these two receptors are shown in Figure 2-4. The significant pathways for RB D include ingestion of soil and groundwater.

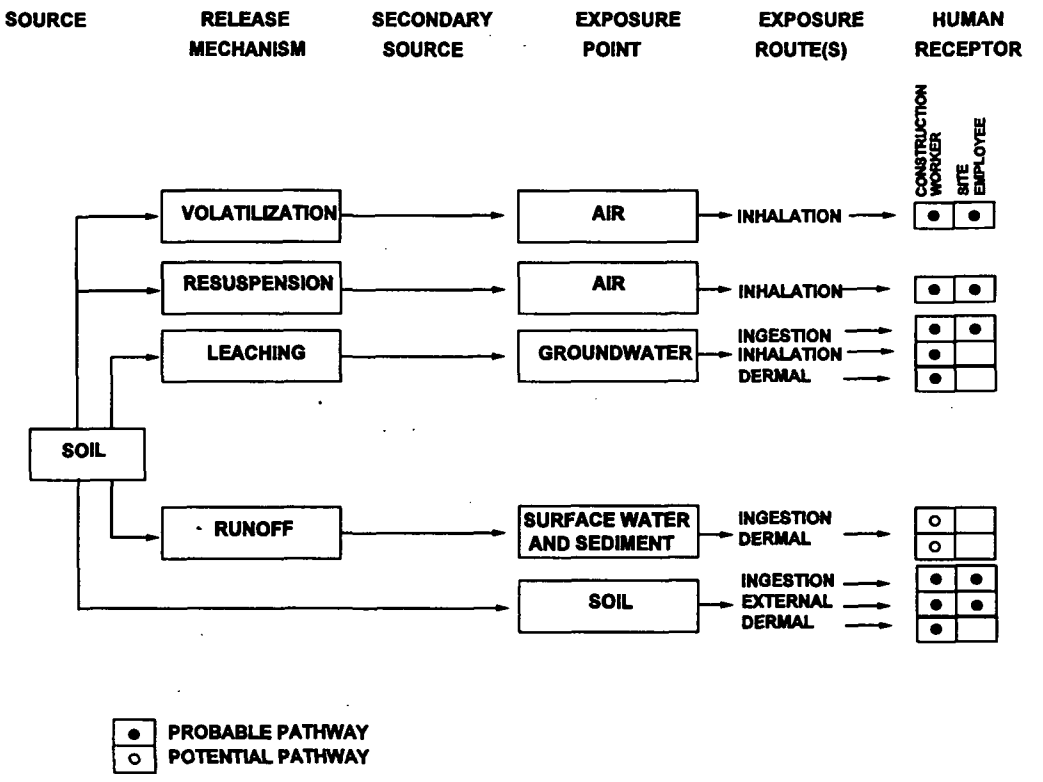
Using equations developed to support the SCM, exposures to specific concentrations of COCs are evaluated based on assuming intake rates for soil and groundwater. Once the intakes are estimated, the human health implications of those intakes are evaluated by reviewing toxicological data for the COCs.

For the special case of groundwater, the possible exposures to current and future COCs are evaluated. This approach ensures that the cumulative and long-term impacts of the COCs are adequately characterized.

2.7.3 Toxicity Assessment

The toxicological properties of each COC for RB D were evaluated by reviewing the Integrated Risk Information System (IRIS) and/or Health Effects Assessment Summary Table (HEAST) data for the COC. IRIS files provide no-observable effect levels and slope factors (for translating intake into cancer risk) for many of the chemicals encountered at Mound. HEAST provides slope factors for many of the radionuclides encountered at Mound. Based on the information collected from IRIS and HEAST, an adequate understanding of the toxicology of the RB D COCs has been developed.

Figure 2-4. Exposure Pathways for the Mound Site Conceptual Model



2.7.4 Risk Characterization

Pursuant to the RREM, risks are quantified for both carcinogenic and non-carcinogenic contaminants. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COC, as estimated using the appropriate slope factor and the amount of material ingested. Potential human health hazards from exposure to non-carcinogenic contaminants are evaluated by using a Hazard Quotient (HQ). The HQ is determined by the ratio of the intake of a COC to a reference dose or concentration for the COC that is believed to represent a no-observable effect level. The COC-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI.

The risks and hazards associated with residual concentrations of COCs in RB D are shown in Table 2-6. As shown in the table, the overall risk values are in the acceptable range of 10^{-4} to 10^{-6}. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. This is based on the bedrock groundwater contaminants flowing directly to the BVA that supplies drinking water for the plant. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB D remain acceptable.

Because the scope of the RRE was limited to industrial use, the soils within RB D have not been evaluated for unrestricted release (e.g., residential use). Disposition of RB D soils without proper handling, sampling and management could create an unacceptable risk to human health and the environment.

2.7.5 Evaluation of Potential Cumulative Risks

For purposes of the RREM, risks resulting from contaminants that originate outside the release block under consideration are called cumulative risks. In general, cumulative risks are possible via air, surface water, and ground water. For Mound, cumulative risks from surface waters are not expected because, other than storm water drainage, there are no surface water bodies flowing through RB D from other release blocks. Groundwater and air are therefore the media of concern for cumulative risks.

Current groundwater. The Mound RREM accounts for cumulative groundwater risks by evaluating current and future groundwater contamination. Since all groundwater currently used at Mound is drawn from the production wells located onsite, the risk posed by current groundwater contamination is equal to the risk resulting from exposure to contaminants found in the production wells. This risk is identical for all release blocks and represents the cumulative risk from contaminants that migrate to the production wells from all release blocks.

Future groundwater. The future risk from groundwater was estimated for RB D based on the assumption that contaminants found in bedrock will eventually migrate to the Mound Plant production well located in the BVA. A simple and extremely conservative flow model was used to estimate the concentrations as a function of time. These concentration estimates were reported in Table 2-4.

Air. The Mound RREM accounts for cumulative residual risk via the air pathway by using data collected in 1994 from the Mound Plant perimeter air sampling stations to bound the concentrations and therefore the risks from inhalation of radionuclides present in ambient air. These values are reported in the "Technical Position Report in Support of the Release Block D Residual Risk Evaluation" and are included in Table 2-6.

The HI and risk values presented in Table 2-6 for the current groundwater, future groundwater, and air scenarios are therefore believed to adequately bound the potential cumulative risk for RB D.

2.7.6 Ecological Risk Assessment

Based on the results of an ecological characterization of the Mound Plant (OU-9 Ecological Characterization, March, 1984) there are no endangered species or critical habitats of endangered species on RB D. In addition, RB D is composed entirely of buildings, roads, and mowed lawns. There are no wetlands or surface waters located in RB D and no sensitive habitats. Therefore, DOE has determined, with concurrence from US EPA and OEPA, that an ecological assessment for RB D is not necessary.

2.8 Remediation Objectives

The primary remediation objective for RB D is to ensure the residual risk associated with the release block is acceptable for the defined use scenario of industrial occupants.

Table 2-6. Current and Future Residual Risks for Release Block D

	Construction Worker					
	Soil	**Air**	**Groundwater Current**	**Groundwater Future**	**Sum of Soil, Air and Groundwater Current**	**Sum of Soil, Air and Groundwater Future**
Non-carcinogenic Hazard Index for Organics & Inorganics	**1.3E-01**	N/A	3.7E-02	1.6E+00	**HI =** 1.7E-01	**HI =** 1.8E+00
Carcinogenic Risks for Organics & Inorganics	9.6E-06	N/A	N/A	N/A	Risk = 9.6E-06	Risk = 9.6E-06
Carcinogenic Risks for Radionuclides	2.3E-05	2.0E-07	2.5E-06	2.9E-06	Risk = 2.6E-05	Risk = 2.8E-05
			Construction Worker			
				Overall HI =	1.7E-01	1.8E+00
				Overall Risk =	3.6E-05	3.8E-05

	Site Employee					
	Soil	Air	Groundwater Current	Groundwater Future	Sum of Soil, Air and Groundwater Current	Sum of Soil, Air and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.7E-02	N/A	3.7E-02	1.6E+00	HI = 5.4E-02	HI = 1.6E+00
Carcinogenic Risks for Organics & Inorganics	2.0E-06	N/A	N/A	N/A	Risk = 2.0E-06	Risk = 2.0E-06
Carcinogenic Risks for Radionuclides	2.3E-05	9.9E-07	1.3E-05	1.4E-05	Risk = 3.9E-05	Risk = 3.8E-05
			Site Employee			
				Overall HI =	5.4E-02	1.6E+00
				Overall Risk =	4.1E-05	4.0E-05

Reference: "Residual Risk Evaluation - Release Block D Revision Summary," Final Report, January, 1999

2.9 Description of Alternatives

As documented in Section 2.7, the risk from both carcinogens and non-carcinogens from RB D is within the acceptable range for the current industrial use. In light of the planned exit of DOE from the site, and the residual levels of contaminants in the soil and groundwater in RB D, a remedy must be implemented to protect human heath and the environment into the future. Two alternatives were considered for RB D; they are described below.

2.9.1 No Action

Regulations governing the Superfund program require that the "no action" alternative be evaluated at each site to establish a baseline for comparison. Under this alternative, DOE would take no action to prevent exposure to soil and groundwater contamination associated with RB D.

2.9.2 Institutional Controls

In this alternative, institutional controls in the form of deed restrictions would be placed on RB D. The objective of these institutional controls would be to prevent an unacceptable risk to human health and the environment by restricting the use of RB D, including RB D soils, to that which is consistent with assumptions in the RB D RRE. DOE or its successors would retain the right and responsibility to monitor, maintain, and enforce these institutional controls.

In order to maintain protection of human health and the environment at RB D in the future, the institutional controls to be adopted would:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- Prohibit removal of RB D soils from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

2.10 Selected Remedy

2.10.1 Description

The selected remedy for RB D is institutional controls in the form of deed restrictions on future land use. The specific restrictions to be adopted are provided in the deed attached to this ROD as Appendix A. The objective of these restrictions is to:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of taking response actions, including sampling and monitoring; and
- Prohibit removal of RB D soils from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

DOE or its successors, as the lead agency for this ROD, has the responsibility to monitor, maintain and enforce these institutional controls. This responsibility includes the duty to conduct annual assessments of compliance with the deed restrictions and the duty to enforce the deed restrictions if any noncompliance is detected. The assessment and enforcement processes are outlined in Appendix C, which is intended to serve as a framework for discussion of operation and maintenance activities for the selected remedy. Within ninety (90) days of the date this ROD is signed, DOE shall submit to USEPA and Ohio EPA for their approval a formal proposal regarding operation and maintenance of the institutional controls. This proposal and the annual compliance assessments shall be considered primary documents under the Federal Facility Agreement. If the DOE, USEPA and OEPA agree, the frequency of the compliance assessments can be changed at any time.

The soils within RB D have not been evaluated for any use other than on-site industrial use. Any off-site disposition of the RB D soil without proper handling, sampling, and management could create an unacceptable risk to off-site receptors. An objective of the preferred alternative is to prevent residential exposure to soils from RB D.

2.10.2 Estimated Costs

The initial costs associated with these deed restrictions are those associated with the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be $5,000 per year.

2.10.3 Decisive Factors

The US EPA has developed threshold, balancing and modifying criteria to aid in the selection of the remedy. There are two (2) threshold criteria, five (5) balancing criteria and two (2) modifying criteria. Each is described below.

2.10.3.1 THRESHOLD CRITERIA - *Must be met for an alternative to be eligible for selection:*

(1) Overall protection of human health and the environment

This criterion addressed whether an alternative provides adequate protection of human health and the environment. The "no action" alternative does not meet this criterion in that the level of risk to human health posed by the site was found to be acceptable only for an industrial scenario. No evaluation was made of the risks posed by unrestricted use of the property. Deed restrictions are therefore required as a mechanism to ensure the continued future use of RB D is limited to industrial purposes.

(2) Compliance with applicable or relevant and appropriate requirements

Section 121(d) of CERCLA requires that remedial actions at CERCLA sites attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA Section 121(d)(4).

Applicable Requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically addresses hazardous substances, the remedial action to be implemented at the site, the location of the site, or other circumstances present at the site. Relevant and Appropriate Requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law which, while not applicable to the hazardous materials found at the site, the remedial action itself, the site location, or other circumstances at the site, nevertheless address problems or situations sufficiently similar to those encountered at the site that there use is well-suited to the site.

Compliance with ARARs addresses whether a remedy will meet all the applicable or relevant and appropriate requirements of other Federal and State environmental statutes or provides the basis for invoking a waiver. ARARs are of several types: chemical-specific, location-specific, and action-specific. Chemical-specific ARARs are usually health- or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment. For RB D, "Maximum Contaminant Levels" or "MCLs" established under the Safe Drinking Water Act constitute chemical-specific ARARs and are listed in Appendix D. They apply to the bedrock groundwater beneath RB D. No evidence of any contamination above MCLs has been found in this ground water. Consequently, ARARs with respect to ground water are deemed to have been met.

Location-specific ARARs are restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they are located in specific locations, e.g. floodplains, wetlands, historic places, etc. For RB D, Ohio has identified two statutory provisions that describe site conditions that would prompt certain response actions. (See Appendix D). These provisions are similar to location-specific ARARs. The selected remedy meets both of these requirements.

Action-specific ARARs are usually technology- or activity-based requirements or limitations on actions taken with respect to hazardous wastes. These requirements are triggered by the particular remedial activities that are selected to accomplish a remedy. In this case, the remedy is an institutional control - deed restrictions. The ARARs are applicable State requirements concerning the recording of deeds. (See Appendix D). The selected remedy will comply with these requirement.

It should be noted that any onsite management of RB D soils, not associated with a CERCLA response action, in a manner inconsistent with State law or any disposition of RB D soils away from the Mound Superfund Site would be subject to applicable Ohio regulations, which are independently enforceable from CERCLA.

2.10.3.2 **BALANCING CRITERIA** - *used to weigh major trade-offs among alternatives:*

(1) Long-term effectiveness and permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk and the adequacy and reliability of controls. Only Alternative 2, Institutional Controls, provides some degree of long-term protectiveness. The implementation of institutional controls in the form of land use restrictions is necessary to ensure that future use remains compatible with the evaluated residual risk associated with RB D.

Because this remedy will result in hazardous substances remaining in the RB D above levels that allow for unlimited use and unrestricted exposure, an annual review and report will be submitted to OEPA, ODH, and USEPA (pursuant to CERCLA) determining whether or not the remedy is in effect and being complied with to ensure that it is adequately protective of human health and the environment. DOE reserves the right to petition the USEPA, OEPA, and ODH for a modification to the frequency established for conducting the effectiveness reviews.

(2) Reduction of toxicity, mobility or volume through treatment

Reduction of toxicity, mobility or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of the remedy.

Since neither of the alternatives includes treatment, this criterion does not require further evaluation. All necessary remediation in RB D was accomplished previously on an individual PRS basis.

(3) Short-term effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers and the community during construction and operation of the remedy until clean-up goals are achieved.

Alternative 1, No Action, would not provide short-term effectiveness because there is no assurance of protection of human health and the environment after the property is transferred. Alternative 2, Institutional Controls, provides this assurance.

(4) Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered. Since Alternative 1 involves no action, there is no time or cost required for implementation. Alternative 2, Institutional Controls, is expected to require approximately one month and minimal cost to implement in accordance with the memorandum to file from Randolph Tormey, Deputy Chief Counsel, Ohio Field Office, USDOE dated February 17, 1999.

(5) Cost

The range of costs is zero dollars ($0) for Alternative 1, No Action, to approximately $5,000 annually for the maintenance of the deed restrictions for Alternative 2, Institutional Controls.

2.10.3.3 **MODIFYING CRITERIA** - *to be considered after public comment is received on the Proposed Plan and of equal importance to the balancing criteria*:

(1) State/Support Agency Acceptance

Both US EPA and the State do not believe that Alternative 1, No Action, provides adequate protection of human health and the environment in the future. However, both agencies support the selected remedy, Alternative 2, Institutional Controls.

(2) Community Acceptance

Based on input received during the public comment period and the public hearing, the community accepts and support the selected remedy.

2.11 Statutory Determinations

The selected remedy for RB D is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate (ARAR), is cost-effective, and utilizes a permanent solution to the maximum extent practicable. Because this remedy will result in hazardous substances remaining in Release Block D above levels that allow for unlimited use and unrestricted exposure, DOE, in consultation with USEPA, Ohio EPA and ODH, will review the remedial action each year to assure that human health and the environment are being protected by the remedial action being implemented. DOE reserves the right to petition the USEPA, OEPA, and ODH for a modification to the frequency established for conducting the effectiveness reviews.

2.12 Documentation of Significant Changes

Although this ROD has been signed, new information may be received or generated that could affect the implementation of the remedy. DOE, as the lead agency for this ROD, has the responsibility to evaluate the significance of any such new information. The type of documentation required for a post-ROD change depends on the nature of the change. Three categories of changes are recognized by the US EPA: non-significant, significant, and fundamental. Non-significant post-ROD changes may be documented using a memo to the Administrative Record file. Changes that significantly affect the ROD must be evaluated pursuant to CERCLA Section 117 and the NCP at 40 CFR 300.435(c)(2)(I). Fundamental changes typically require a revised Proposed Plan and an amendment to the ROD. Significant or fundamental changes to the ROD for Release Block D are not anticipated.

3.0 RESPONSIVENESS SUMMARY

This section of the ROD presents stakeholder concerns about RB D and explains how those concerns were addressed prior to issuance of the ROD.

Stakeholders provided no formal comments during the January 20, 1999 public meeting on the Proposed Plan. During the public review period for the Proposed Plan, stakeholders provided comments about the Proposed Plan, the Supplemental Residual Risk Evaluation, and the On-Scene Coordinator Report for PRS 304. The Core Team responded to stakeholders by letter and included responsiveness summaries in the RRE and OSC reports. The comments and responses are also presented in the following pages.

- **Comments on the Proposed Plan**

Comment:
Chromium should be added to the list of non-radioactive substances.

Response:
Chromium is on the list of non-radioactive, inorganic substances. This may not be readily apparent because the Proposed Plan builds on information presented in the RRE. In the RRE (December, 1996), Chromium is listed on Table II.2 "Summary Table of All Soil Contaminants Detected," Table II.3 "Summary Table of All Groundwater Contaminants Detected in BVA Production Wells," and Table II.4 "Summary Table of All Future Groundwater Contaminants Assumed to be in Production Wells with Input from the Bedrock Aquifer." The Proposed Plan includes tables of contaminants carried through the entire RRE process. Chromium is listed in Table 5.3 "Future Groundwater Contaminants Carried Through RRE for RB D."

Comment:
The $5,000 per year for monitoring should be put into a contingency fund to be used in case an individual has an elevated reading. The fund could be used to follow-up with monitoring and whatever would need to be done for that individual.

Response:
The selected remedy for RB D is protective of human health and the environment, and utilizes a permanent solution to the maximum extent practicable. Therefore, it is not expected that an individual would receive an exposure resulting in an elevated reading or that future personnel monitoring would be required. The $5,000 per year as referenced is the estimated annual cost for maintaining deed restrictions and performing the effectiveness reviews for US EPA and OEPA as described in the Proposed Plan.

Comment:
A professional property survey has been completed for Release Block D. Will the complete legal description of Release Block D, with a thorough description of the property boundaries, be included in the Release Block D Record of Decision?

Response:
The complete legal description of Release Block D will be included in the ROD as an Appendix.

Comment:
Clarify the term "industrial use" or "industrial land use" as it appears in the Proposed Plan. The first sentence of Section 3.0, Exposure Assessment, of the *Release Block D Residual Risk Evaluation* (RRE) states that "[DOE], Ohio EPA, U.S. EPA, and the Mound Facility stakeholders have agreed that the future use of the Mound Plant property will be commercial/industrial use." The section then goes on to describe the two commercial/industrial exposure scenarios utilized in the RRE and defined in the *Mound 2000 Residual Risk Evaluation Methodology* as 1) a construction worker assumed to work on the property eight hours per day for 250 days per year over a 5-year period, and 2) a site employee assumed to work eight hours per day for 250 days per year over a 25-year period and who does not shower in water from a well on the property.

It is assumed, therefore, based on the foregoing scenarios, that the use of the term "industrial" in the Release Block D Proposed Plan refers to the risk exposure scenario evaluated for this property and is not restricted solely to the industrial land use category, but incorporates both commercial and industrial land uses. Are the assumptions correct?

Response:
Yes, the assumption is correct that "industrial" refers to the risk exposure scenario evaluated for the property. This incorporates both commercial and industrial land uses that are consistent with the restrictions placed on the deed and as described in the ROD.

- **Comments on the On Scene Coordinator (OSC) Report, PRS 304 Removal Action**

Comment:
The derivation of the "not to exceed 3 pCi/g" Objective for ^{232}Th in Table 2, page 4 needs to be included in the text. How was this value calculated?

Response:
The clean-up objective for ^{232}Th was identified in the Action Memo. It was derived by adding the 10^{-5} risk level (1.6 pCi/gm) and the observed Mound background level (1.4 pCi/g, "Operable Unit 9 Background Soils Investigation Soil Chemistry Report," Sept. 1994). The 10^{-5} risk level was calculated using the latest ^{228}Th + daughters slope factor.

Comment:
The sequence of sampling at this site (pages 4 and 5) suggests that final verification of adequate soil removal was based on two samples. What was the surface area of soil that was contaminated? How was it determined that two samples represent the extent of contamination at this hot spot?

Response:
Seven samples were identified as verification samples (004373, 004374, 004375, 004376, 004377, 004313, and 004416). See Figure B-2 of the OSC report. The off-site laboratory results for sample 004416 exceeded the cleanup objective (4 pCi/g vs. 3 pCi/g). An additional 2 cubic feet of soil was removed at this location. Two samples (004428 and 004429) were used to confirm that the hot spot identified by sample 004416 was removed by the additional excavation. This additional excavation encompassed a volume described by 2 ft. x 2 ft. x 0.5 ft. deep. Using the two samples for this location was a field judgement based on the limited surface area (2 ft. x 2 ft.) involved in the additional excavation. In addition, investigatory samples and field screening were used to guide the entire excavation. The locations of the investigory samples are shown in Figure B-3 of the OSC report and measurement results of those samples are summarized in Table B-1 of the OSC report.

- **Comments on the RRE Revision Summary**

Comment:
The results of this risk assessment were not verified because of inadequate documentation, however if the concentration terms FOR SOIL are accurate, the conclusions drawn in this risk assessment for the on-site surface soil exposure pathway are reasonable. The exposure parameter values and equations used for each exposure pathway for soil need to be included in the text for the construction worker and site employee. The document should stand on its own without extensive citation.

Response:
All exposure parameter values and equations are shown in Appendix D of the 1996 Residual Risk Evaluation (RRE). The text of the 1998 RRE Revision Summary has been expanded to refer the reader to this Appendix. The 1998 Revision Summary includes all soil data used to update the soil component of the RRE. Therefore, the information presented in these two documents allows a reviewer to reproduce any of the soil risk calculations reported in the Revision Summary.

Comment:
Please provide the equations, raw analytical data, and spreadsheet calculations used to calculate intake for Benzo(a)pyrene (B(a)P) in soil. This is a good spot check for this risk assessment (for chemicals). It seems odd that with GV values of 0.41 and 0.78 mg/kg for B(a)P in soil for the construction worker and site employee, respectively, risks of 6.0E-6 or less are calculated using 95% UCL of 2.4 and 1.17 mg B(a)P per Kg of surface soil.

Response:
The calculations for benzo(a)pyrene have been reproduced as an attachment. (Please see the last page of this Responsiveness Summary.) As seen on the attachment, the calculations in the Responsiveness Summary are correct. Based on those calculations, the guideline values are appropriate for benzo(a)pyrene. Specifically, since 0.41 mg/kg corresponds to a 1×10^{-6} risk level for the construction worker, then a concentration six times higher (2.4 mg/kg) would correspond to a risk level that is six times higher (6×10^{-6}). Similarly, since 0.78 mg/kg corresponds to a
1×10^{-6} risk level for the site employee, then a concentration 1.5 times higher (1.2 mg/kg) would correspond to a risk level that is 1.5 times higher

(1.5×10^{-6}).

Comment:
The site is contaminated with some type of diesel fuel and several radionuclides. Is TPH or free product of concern?

Response:
Neither diesel fuel nor TPH represent unacceptable risks for the construction or site worker scenarios analyzed for Release Block D. No free product was identified in Release Block D.

Comment:
I still need clarification on the construction worker scenario. Do you assume that a person wears protective gear for inhalation? If not, inhalation of dust is greater than incidental ingestion of soil and dust.

Response:
The residual risk evaluation methodology does not take credit for an individual wearing protective gear for inhalation. On a per unit soil concentration basis, for a five-year exposure period, the construction worker inhales 5.85×10^{-6} mg of dust. Conversely, the incidental soil ingestion rate specified in the RRE methodology document is 480 mg/d, or 600,000 mg per five-year period. Therefore, unless extremely high soil concentrations were encountered, intake via inhalation of dust would not be expected to be greater than intake by incidental ingestion.

Comment:
Soil was the only medium evaluated for Release Block D for this risk assessment even though [the] groundwater pathway was included in several Tables. I think policy about how groundwater is handled for this risk assessment needs to be clearly articulated in this text. Consumption of water is expected for both worker scenarios. As it stands, this pathway has been excluded from the risk analysis. Is leaching of soil to groundwater or streams considered as a pathway of exposure?

Response:
The availability of new soil data served as the basis for revisiting the RRE. As a result, the focus of the Revision Summary is on soil data, and minimal text on groundwater has been included. Although no new groundwater concentration data were generated for the RRE, the risks from groundwater-related pathways were captured in the risk tables that appear in the Revision Summary (see pp. 30 - 32). Subsequent to the development of the Revision Summary, the groundwater risk data were re-validated. The results of that re-validation effort are summarized in a stand- alone report entitled "Technical Position Report in Support of the Release Block D Residual Risk Evaluation." The technical position report has been added to the CERCLA Public Reading Room. The text of the Revision Summary has been modified to more clearly state the role of the groundwater pathway and to highlight the presence of groundwater risk data in Tables V.7 through V.9 of the Revision Summary.

Comment:
For the construction worker, are both surface soil contaminant levels and subsurface levels used for calculating risks? It appears that some chemicals increase in concentration below the shallow surface dirt. This is important when considering the construction worker scenario for excavation of soil. The health risks may be understated for this situation. It is unclear how many samples are near the surface or subsurface and how the samples were lumped for risk assessment purposes.

Response:
Both surface and subsurface data were used to determine a 95th percentile upper confidence limit (UCL) or maximum soil concentration value for the construction worker scenario. (Maximum concentrations are used when the data set contains fewer than 20 points.) Typically, surface and subsurface sample results are given equal weight for the construction worker exposure scenario. By including the subsurface results, and using the 95th% UCL or maximum concentration detected, a conservative estimate of the exposure to the construction worker is developed.

Comment:
The methods used to detect radionuclides and chemicals in soil and water and a list of the compounds tested for need to be included in the text. In other words, what materials were tested for but not detected?

Response:
The methods used are specified in the Methods Compendium which is available in the CERCLA Public Reading Room. Though not used for the RRE process, data regarding contaminants tested for, but not detected in, Release Block D were reported in PRS packages, Building Data Packages (BDPs) and the "OU5 Operational Area Phase I Investigation Non-AOC Field Report, Volume 1 - Text, Final, Revision 0, June 1, 1995." All of these documents are available in the Public Reading Room.

Comment:
It is not clear from the risk assessment if off-site migration of contaminates in soil or groundwater was considered. Release Block D is on the Mound property border.

Response:
Offsite migration was considered but is not of concern for RB D. More detailed explanations follow below.

Soil to air. The potential for airborne movement of soil was examined in the 1996 RRE. The RRE is believed to bound the risks likely to be encountered from continuous exposure to radionuclides driven aloft by resuspension.

Soil to surface water. RB D surface water runoff is not expected to move offsite. Stormwater runoff drains toward the south and then west -- ultimately discharging into the Mound Plant overflow pond or the main drainage channel. Based on results from Mound's effluent and environmental monitoring programs, contaminants are not present in stormwater at levels of concern.

Groundwater. As reported in the 1996 RRE, the movement of groundwater from bedrock toward the Buried Valley Aquifer and the Mound Plant production well field has been estimated using a conservative transport model. The risk values reported for future groundwater include these concentration estimates.

ATTACHMENT

Response to Comments

Release Block D Revision Summary

Risk Calculations for Benzo(a)pyrene Soil Ingestion

Soil Concentration

2.44	mg/kg	Construction Worker	(Ref: Revision Summary, p. 15)
1.17	mg/kg	Site Employee	(Ref: Revision Summary, p. 15)

Slope Factor

7.3	mg/kg-d	(Ref: Revision Summary, p. 17)

Construction Worker Intake

(Ref: Equation and parameter values from Appendix D, 1996 RRE)

Intake, mg/kg-d = (CS*EF*ED*10-6 kg/mg*IR)/(AT*BW*365 d/yr)

CS =	2.44	mg/kg (CS = concentration in soil)
EF =	250	days/year (EF = exposure frequency)
ED =	5	years (ED = exposure duration)
IR =	480	mg/day (IR = ingestion rate)
AT =	70	years (AT = averaging time)
BW =	70	kilograms (BW = body weight)
Intake =	8.19E-07	mg/kg-d

Construction Worker Risk, Soil Ingestion, B(a)P

(Reference for equation: Page 5-1 of 1996 RRE)

Risk = Intake * Slope Factor

Risk =	**5.98E-06**	
vs.		
Risk =	**6.0E-06**	(reported on p. 20 of Revision Summary)

Site Employee Intake

(Ref: Equation and parameter values from Appendix D, 1996 RRE)

Intake, mg/kg-d = (CS*EF*ED*10-6 kg/mg*IR)/(AT*BW*365 d/yr)

CS =	1.17	mg/kg (CS = concentration in soil)
EF =	250	days/year (EF = exposure frequency)
ED =	25	years (ED = exposure duration)
IR =	50	mg/day (IR = ingestion rate)
AT =	70	years (AT = averaging time)
BW =	70	kilograms (BW = body weight)
Intake =	2.04E-07	mg/kg-d

Site Employee Risk, Soil Ingestion, B(a)P

(Reference for equation: Page 5-1 of 1996 RRE)

Risk = Intake * Slope Factor

Risk =	**1.49E-06**	
vs.		
Risk =	**1.5E-06**	(reported on p. 21 of Revision Summary)

4.0 ADMINISTRATIVE RECORD FILE REFERENCES

Information used to select the remedy is contained in the Administrative Record file. The file is available for review at the Mound CERCLA Reading Room, Miamisburg Senior Adult Center, 305 Central Avenue, Miamisburg, Ohio. The Administrative Record File references for RB D includes the following:

Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992.

Operable Unit 3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3. Final, Revision 0. July 1, 1993.

Operable Unit 9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1, 1993.

Operable Unit 9; Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0, January 1994.

Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1, September 1994.

Operable Unit 9 Background Soils Investigation Soil Chemistry Report, Technical Memorandum, Revision 2, September 1994.

Operable Unit 5 New Property Remedial Investigation Report, Final, Revision 0, April, 1995.

Operable Unit 9 Hydrogeologic Investigation: Groundwater Sweeps Report, Technical Memorandum, April, 1995.

Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995.

Operable Unit 5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995.

Operable Unit 9 Regional Soils Investigation Report, Revision 2, August 1, 1995.

Soil Gas Confirmation Sampling. Revision 0. April 1, 1996.

Residual Risk Evaluation, Release Block D, December 1996.

The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 6, 1997.

Mound Plant Building Data Packages, Building 100 and 105 Located within Release Block D, Final, November 4, 1997.

Workplan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach, December 1998.

Action Memorandum, PRS 304 Removal Action, Final, December, 1998.

On Scene Coordinator (OSC) Report for PRS 304, Mound Plant, December 1998.

Residual Risk Evaluation, Release Block D Revision Summary, December 1998.

Letter from Mr. Timothy J. Fischer, Remedial Project Manager, US EPA to Mr. Arthur Kleinrath, US DOE dated December 4, 1998, RE: Ecological Risk Assessment, Release Block D.

Letter from Mr. Brian Nickel, Mound Project Manager, Office of Federal Facilities and Oversight, OEPA to Mr. Oba Vincent, US DOE dated December 8, 1998, RE: DOE Mound Release Block D Ecological Assessment.

Technical Position Report In Support of the Release Block D Residual Risk Evaluation, Final, Rev. 0, January 1999.

Operable Unit 9, Background Soils Investigation Soil Chemistry Report, Technical Memorandum, Rev. 2, September 1994.

Memorandum, Randolph Tormey, Deputy Chief Counsel, Ohio Field Office, US DOE dated February 17, 1999 regarding Institutional Controls, Mound Facility, Miamisburg, Ohio.

Appendix A

Quitclaim Deed for RB D

QUITCLAIM DEED

The UNITED STATES OF AMERICA, acting by and through the Secretary of the Department of Energy (hereinafter sometimes called "Grantor"), under and pursuant to the authority of the Atomic Energy Act of 1954, Section 161 (g) (42 U.S.C. §2201(g) for the sum of Ten Dollars ($10.00), the covenants contained herein, and other good and valuable consideration, duly paid by the Miamisburg Mound Community Improvement Corporation, a non-profit corporation subsisting under the laws of Ohio and recognized by the Secretary of Energy as the agent for the community wherein the former Mound Facility is located (hereinafter sometimes called "Grantee"), the receipt of which is hereby acknowledged, hereby QUITCLAIMS unto Grantee its successors and assigns, subject to the reservations, covenants, and conditions hereinafter set forth, all of its right, title and interest, together with all improvements thereon and appurtenances thereto, in the following described premises, commonly known as Parcel D:

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

Beginning at a iron spike, being the North East corner of Section 35 and the South East corner of Section 36, said point being the center of Benner Road (40 feet R/W) and being referenced North 84° 27' 09" West 3102.92 feet from spike (0.5' deep) at the intersection of the center line of Mound Road (60 feet R/W) with the centerline of said Benner Road in said City of Miamisburg, and being the point of beginning for the land herein described, thence S 84° 28' 03" E 1333.66 feet along the center line of Benner Road to a railroad spike (0.2' deep) located in the center of Benner Road, thence N 4° 44' 28" E 2010.06 feet to a concrete monument, thence N 83° 57' 37" W 34.19 feet to a concrete monument being the TRUE POINT OF BEGINNING; thence N 84° 31' 10" W 613.33 feet to a point, thence N 5° 35' 49" E 291.47 feet to a point, thence N 84° 24' 07" W 93.5 feet to a point, thence N 5° 35' 49" E 360.00 feet to a point, thence S 84° 24' 18" E 35.50 feet to a point, thence N 5° 35' 48" E 131.13 feet to a point, thence along the arc of a curve to the right having a radius of 130 feet for a distance of 203.83 feet to a point, thence S 85° 04' 40" E 495.72 feet to a point located in the center of Mound Road, thence along the centerline of Mound Road S 5° 33' 37" W 218.17 feet to an railroad spike, thence N 85° 26' 39" W 111.00 feet to and iron pipe, thence S 7° 05' 12" E 714.44 feet to the true point of beginning containing 12.43 acres more or less, and subject to all legal highways and easements of record. Prior Deed Reference: Deed Book 1214, Page 8.

RESERVING UNTO Grantor, the United States Environmental Protection Agency (USEPA) and the State of Ohio, acting by and through the Director of the Ohio Environmental Protection Agency (Ohio EPA) or the Ohio Department of Health (ODH), their successors and assigns, an easement to, upon or across the Premises in conjunction with the covenants of Grantor and/or Grantee in paragraphs numbered 1.1-1.3, 3.2 and 3.3 of this Deed and as otherwise needed for purposes of any response action as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, including but not limited to, environmental investigation or remedial action on the Premises or on property in the vicinity thereof, including the right of access to, and use of, to the extent permitted by applicable law, utilities at reasonable cost to Grantor. Grantee understands that any such response action will be conducted in a manner so as to attempt to minimize interfering with the ordinary and reasonable use of the Premises.

This Deed and conveyance is made and accepted without warranty of any kind, either express or implied, except for the warranty in paragraph 3.3 of this Deed, and is expressly made under and subject to all reservations, restrictions, rights, covenants, easements, licenses, and permits, whether or not of public record, to the extent that the same affect the Premises.

1. The parties hereto intend the following restrictions and covenants to run with the land and to be binding upon the Grantee and its successors, transferees, and assigns or any other person acquiring an interest in the Premises, for the benefit of Grantor, USEPA and the State of Ohio, acting by and through the Director of the Ohio EPA or ODH, their successors and assigns.

   1.1 Excepting those soils in an area approximately 40 feet wide and 218.17 feet long, bounded on the east by the centerline of Mound Road as described above, Grantee covenants that any soil from the Premises shall not be placed on any property outside the boundaries of that described in instruments recorded at Deed Book 1214, pages 10, 12, 15, 17 and 248; Deed Book 1215, page 347; Deed Book 1246, page 45; Deed Book 1258, pages 56 and 74; Deed Book 1256, page 179; Micro-Fiche 81-376A01; and Micro-Fiche 81-323A11 of the Deed Records of Montgomery County, Ohio (and as illustrated in the CERCLA 120(h) Summary, Notices of Hazardous Substances Release Block D, Mound Plant, Miamisburg, Ohio dated January, 1999) without prior written approval from the Ohio Department of Health (ODH), or a successor agency.

1.2 Grantee covenants not to use, or allow the use of, the Premises for any residential or farming activities, or any other activities which could result in the chronic exposure of children under eighteen years of age to soil or groundwater from the Premises. Restricted uses shall include, but not be limited to:

(1) single or multifamily dwellings or rental units;
(2) day care facilities;
(3) schools or other educational facilities for children under eighteen years of age; and
(4) community centers, playgrounds, or other recreational or religious facilities for children under eighteen years of age.

Grantor shall be contacted to resolve any questions which may arise as to whether a particular activity would be considered a restricted use.

1.3 Grantee covenants not to extract, consume, expose, or use in any way the groundwater underlying the premises without the prior written approval of the United States Environmental Protection Agency (Region V) and the Ohio Environmental Protection Agency.

2. The Grantor hereby grants to the State of Ohio and reserves and retains for itself, its successors and assigns an irrevocable, permanent, and continuing right to enforce the covenants of this Quitclaim Deed through proceedings at law or in equity, including resort to an action for specific performance, as against and at the expense of Grantee, its successors and assigns, including reasonable legal fees, and to prevent a violation of, or recover damages from a breach of, these covenants, or both. Any delay or forbearance in enforcement of said restrictions and covenants shall not be deemed to be a waiver thereof.

3. Pursuant to Section 120(h)(3) of the Comprehensive Environmental Response, Compensation and Liability Act of 1930, as amended (42 U.S.C. §9620(h)(3)), the following is notice of hazardous substances, the description of any remedial action taken, and a covenant concerning the Premises.

3.1 **Notice of Hazardous Substance**: Grantor has made a complete search of its files and records concerning the Premises. Those records indicate that the hazardous substances listed in Exhibit "B," attached hereto and made a part hereof, have been stored for one year or more or disposed of on the Premises and the dates that such storage/disposal took place.

3.2 **Description of Remedial Action Taken**:
A soil removal action was performed and Institutional Controls are established. The Institutional Controls are set forth as covenants in Sections 1.1, 1.2, and 1.3 of this Deed.

3.3 **Covenant:** Grantor covenants and warrants that all remedial action necessary for the protection of human health and the environment with respect to any hazardous substances remaining on the property has been taken, and any additional remedial action found to be necessary after the date of this Deed regarding hazardous substances existing prior to the date of this Deed shall be conducted by Grantor, provided, however, that the foregoing covenant shall not apply in any case in which the presence of hazardous substances on the property is due to the activities of Grantee, its successors, assigns, employees, invitees, or any other person subject to Grantee's control or direction.

4. Unless otherwise specified, all the covenants, conditions, and restrictions to this Deed shall be binding upon, and shall inure to the benefit of the assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the United States of America, acting by and through its Secretary of the Department of Energy, has caused these presents to be executed this _____day of _____ , 1999.

UNITED STATES OF AMERICA

_____

WITNESSETH:

_____

_____

State of Ohio)
County of Montgomery) SS.

Before me, a Notary Public in and for said State and County, appeared this ____day of _____, 1999, G. Leah Dever, who acknowledged that she is the Manager of the Ohio Field Office for the United States Department of Energy, with full authority to execute the foregoing on behalf of the United States of America, and who acknowledged the above to be her signature and her free act and deed.

SEAL_____

_____Notary Public

This instrument was prepared by: Randolph T. Tormey, Attorney at Law
PO Box 3020
Miamisburg, OH 45343
937.865.3025

Appendix B

Legal Description of RB D

Situate in the State of Ohio, County of Montgomery, being in the City of Miamisburg, being part of Section 30, Range 5, Township 2, lying in the Miami Rivers Survey (M.R.S.), and being part of city lots numbered 2259 within the Corporation Limits of the City of Miamisburg, and being more particularly bounded and described with bearings referenced to the Ohio State Coordinate System, South Zone, as follows:

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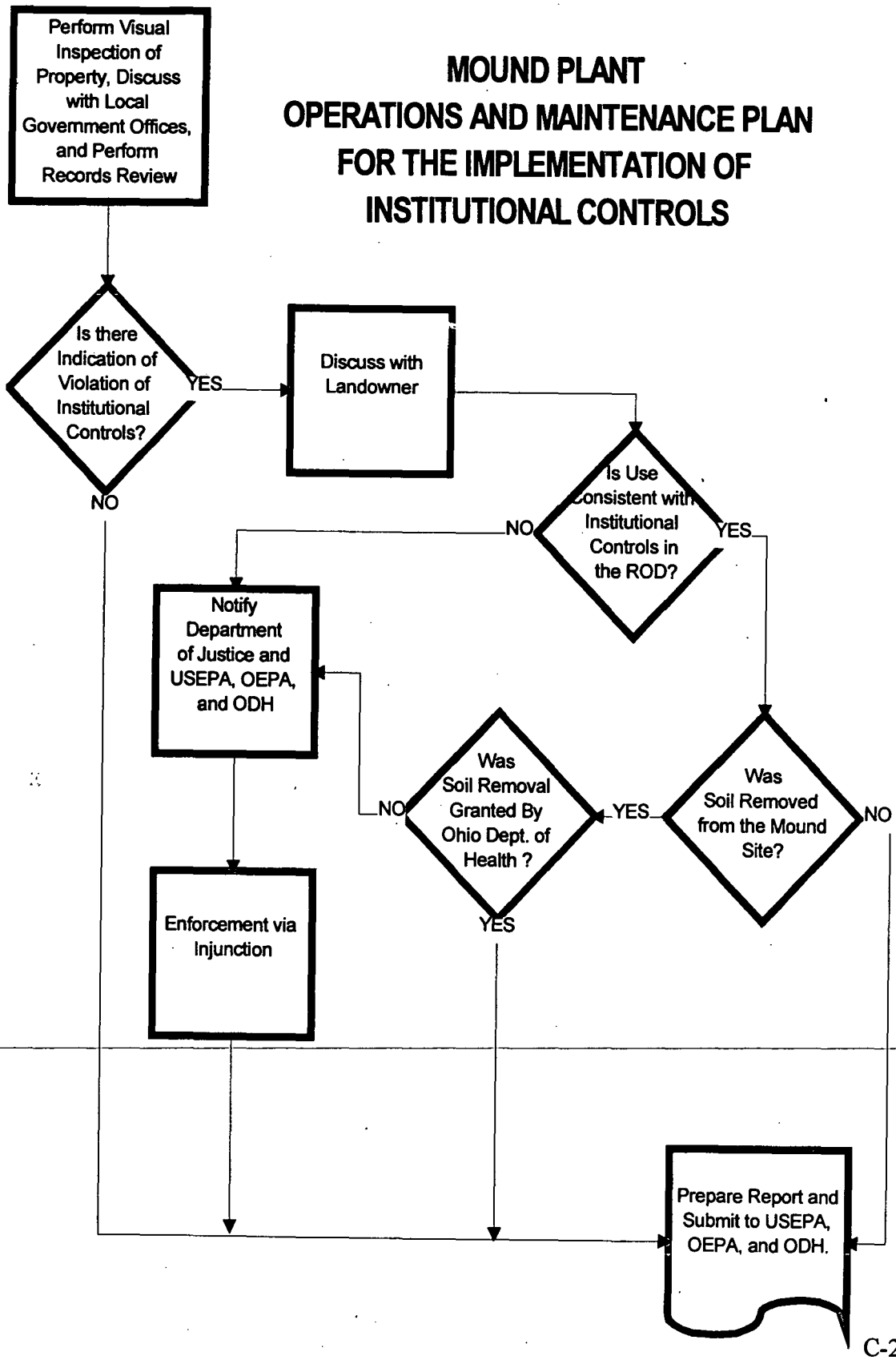
Appendix C

Mound Plant Operations and Maintenance Plan for the Implementation of Institutional Controls

MOUND PLANT
OPERATIONS AND MAINTENANCE PLAN FOR THE IMPLEMENTATION OF INSTITUTIONAL CONTROLS



Appendix D

Listing of Applicable Relevant and Appropriate Requirements (ARARs)

Chemical Specific ARARs

OAC 3745-81-11,	Maximum Contaminant Levels for Inorganic Chemicals
OAC 3745-81-12,	Maximum Contaminant Levels for Organic Chemicals
OAC 3745-81-13,	Maximum Contaminant Levels for Turbidity
OAC 3745-81-15,	Maximum Contaminant Levels for Radium 226, 228, Gross Alpha
OAC 3745-81-16,	Maximum Contaminant Levels for Beta Particle & Photon Radioactivity

Location Specific ARARs

ORC 6111.03,	Protection of Waters of the State
ORC 3734.20,	Description of Ohio EPA Director's power for Protection of Public Health and the Environment

Action Specific ARARs

ORC 317.08,	Criteria for County Recording of Deeds
ORC 5301.25(A),	Proper Recording of Land Encumbrances

TECHNICAL POSITION REPORT IN SUPPORT OF THE RELEASE BLOCK D RESIDUAL RISK EVALUATION

FINAL REPORT
Rev. 0

MOUND PLANT
MIAMISBURG, OHIO

January 1999

Miamisburg Environmental Management Project
U.S. Department of Energy

Report prepared by
Babcock & Wilcox of Ohio, Inc.
under Contract No. DE-AC24-97OH20044

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TECHNICAL POSITION REPORT IN SUPPORT OF THE RELEASE BLOCK D RESIDUAL RISK EVALUATION

1.0 BACKGROUND AND PURPOSE

The original Residual Risk Evaluation (RRE) for Release Block (RB) D was published in 1996. Changes to the boundaries of RB D, and the discovery of a small hot spot of soil in the RB, led to the preparation of a Revision Summary (RS) to the RRE in December of 1998. Though the additional hazard and risk analyses documented in the RS were limited to soil-related pathways, the Mound 2000 Core Team requested a review of key risk data for soil- and groundwater-related pathways. The specific questions raised by the Core Team were:

(1) what hazard and risk conversion factors have changed since the Mound Guideline Values (GVs) were established,
(2) how do those changes affect the collection of compounds that screened through, or were eliminated from, the RB D hazard and risk calculations, and
(3) what is a reasonable estimate of the overall impact of these changes on the hazard and risk analyses performed for RB D.

2.0 METHODOLOGY

Chronologies of change for the Health Effects Assessment Summary Tables (HEAST) and Integrated Risk Information System (IRIS) data bases were developed. The chronologies documented changes to HEAST and IRIS since the Mound Plant GVs were published. As a result of this exercise, a listing of the changes to risk data for compounds of interest to Mound was generated (Table 2-1).

Updated reference dose and slope factor data were then compared to values used in the RRE and RS to ensure: (1) the appropriate collection of compounds was carried through the RRE process, and (2) the appropriate risk conversion factors (e.g., reference doses, slope factors) were used. This review was conducted first for compounds detected in RB D soil, then for compounds detected, or projected to be present, in the groundwater regimes of the Buried Valley Aquifer and/or the Mound Plant bedrock. The risk data associated with ambient air pathways (inhalation of tritium and isotopes of plutonium) were also reviewed. All results are presented in Section 3.

Table 2-1. IRIS and HEAST Chronologies of Change for Compounds of Interest to the Mound Plant Exit Project.

Chemical	IRIS Updated	Description of Changes
INORGANICS		
Antimony	Feb-91	
Arsenic	Apr-98	No change to RfD, UR for INH established (4.3E-3/ug/m3), INH SF withdrawn, INH UR established (4.3E-3/ug/m3), Oral SF established (1.5E0/mg/kg-d), DW UR established (5E-5/ug/L water)
Barium	Mar-98	No change to RfD, INH RfC withdrawn
Beryllium	Apr-98	Lowered the RfD (5E-3 -> 2E-3), added an RfC (2E-2ug/m3), replaced INH SF with UR (2.4E-3/ug/m3), withdrew oral SF
Bismuth	X	
Cadmium	Feb-94	
Calcium	X	
Chloride	X	
Chromium (III)	Sep-98	Raised RfD slightly (1.0E0 -> 1.5E0 mg/kg-d), no RfC value
Chromium (VI)	Sep-98	Reduced RfD from 5E-3 -> 3E-3 mg/kg-d, added RfC (8E-6 mg/m3), no SFs
Cobalt	X	
Copper	Aug-91	
Cyanide	Feb-93	
Fluoride		
Iron	X	
Lead	Nov-93	
Lithium	X	
Magnesium	X	
Manganese	Dec-96	No change to RfD, RfC
Mercury	Jun-95	No change to RfC
Molybdenum	Aug-93	
Nickel	Dec-96	No change to RfD
Nitrate	Oct-91	
Nitrate/Nitrite	X	
Phosphate	X	
Potassium	X	
Silicon	X	
Silver	Dec-96	No change to RfD
Sulfate	X	
Thallium	X	
Tin	X	
Vandium (pentoxide)	Dec-96	RfD raised from 7E-3 -> 9E-3 mg/kg-d
Zinc	Oct-92	

Table 2-1 (continued).

Chemical	IRIS Updated	Description of Changes
ORGANICS		
Acenaphthene	Apr-94	
Acenaphthylene	Jan-91	
Acetone	Aug-93	
Anthracene	Sep-94	
Aroclor-1016	Nov-96	RfD = 7E-5 mg/kg-d
Aroclor-1248	Nov-96	RfD data deemed inadequate
Aroclor-1254	Nov-96	RfD deemed OK
Aroclor-1260	X	
Benzene	Oct-98	Oral SF established (2.9E-2/mg/kg-d), DW UR established (8.3E-7/ug/L water), INH UR established (≤7.8E-6/ug/m3)
Benz(a)anthracene	Sep-94	
Benzo(a)pyrene	Nov-94	
Benzo(b)fluoranthene	Mar-94	
Benzo(g,h,i)perylene	Dec-90	
Benzo(k)fluoranthene	Mar-94	
Benzoic acid	Jul-93	
Bromodichloromethane	Mar-93	
2-Butanone (methyl ethyle ketone)	May-93	
Carbazole	X	
Carbon disulfide	Aug-95	Established RfC (0.7 mg/m3)
Carbon tetrachloride	Jun-91	
Chloroform	Sep-92	
2-Chlorophenol	Jul-93	
Chrysene	Mar-94	
Dibutyl phthalate	Feb-93	
Di-n-octyl phthalate	X	
Dibenz(a,h)anthracene	Mar-94	
Dibenzofuran	May-92	
1,1-Dichloroethane	Dec-96	(no RfC, no RfD)
1,1-Dichloroethene	X	
1,2-Dichloroethene	X	
1,2-cis-Dichloroethene	X	
1,2-trans-Dichloroethene	X	
Dichloromethane	Feb-95	Oral SF = 7.5E-3/mg/kg-d, DW UR = 2.1E-7/ug/L water
Ethylbenzene	Aug-91	
bis(2-ethylhexyl) phthalate	X	
Fluoranthene	Sep-94	
Fluorene	Dec-90	Note: Oral RfD in past RRE documents = 0.4 mg/kg-d Correct oral RfD = 0.04 mg/kg-d

Table 2-1 (continued).

Chemical	IRIS Updated	Description of Changes
Indeno(1,2,3-cd) pyrene	Mar-94	
Isophorone	Nov-92	
Methoxychlor	Dec-93	
2-Methylnaphthalene	X	
4-Methyl-2-pentanone = MIBK	Aug-93	
4-Methylphenol	Aug-93	
Naphthalene	Sep-98	Oral RfD reduced from 50 -> 0.02 mg/kg-d Carcinogen class changed to C
N-Nitrosodiphenylamine	Jul-93	
Pentachlorophenol	Jul-93	
Phenol	Mar-91	
Pyrene	Sep-94	
Tetrachloroethene	X	
1,1,1-Trichloroethane	Feb-96	Oral RfD withdrawn
Trichloroethene	X	
Trichloroethylene	Jul-94	
Trichlorofluoromethane	Aug-92	
1,1,2-Trichloro-1,2,2-trifluoroethane	Feb-96	RfD = 3E+1mg/kg-d
Toluene	Apr-94	
Xylenes	Mar-91	

Table 2-1 (continued).

HEAST STATUS

RADIONUCLIDES	Slope Factors Ingestion (risk/pCi)	Inhalation (risk/pCi)	External (risk/yr/pCi/g soil)
Ac-227+D	6.26E-10	7.87E-08	***9.30E-07***
Bi-210	7.29E-12	5.12E-11	N/A
Cs-137+D	3.16E-11	1.91E-11	2.09E-06
H-3	7.15E-14	9.59E-14	N/A
K-40	1.25E-11	7.46E-12	6.11E-07
Pb-210+D	***1.01E-09***	***3.86E-09***	***1.45E-10***
Pu-238	2.95E-10	2.74E-08	1.94E-11
Pu-239/240	3.16E-10	2.78E-08	1.26E-11
Pu-242	3.00E-10	2.64E-08	1.55E-11
Ra-224	1.49E-10	2.25E-09	2.48E-08
Ra-226+D	2.96E-10	2.75E-09	6.74E-06
Ra-228+D	2.48E-10	9.94E-10	3.28E-06
Sr-85	1.40E-12	1.14E-12	1.54E-06
Sr-90	5.59E-11	6.93E-11	N/A
Th-228+D	2.31E-10	9.68E-08	***6.20E-06***
Th-230	3.75E-11	1.72E-08	4.40E-11
Th-232	3.28E-11	1.93E-08	1.97E-11
Th-234	1.93E-11	1.90E-11	3.50E-09
U-233/234	4.48E-11	1.41E-08	3.52E-11
U-235+D	4.70E-11	1.30E-08	2.65E-07
U-238+D	6.20E-11	1.24E-08	***6.57E-08***

Values in bold, italics were not considered during the development of the Guideline Values for Mound.

3.0 RESULTS

3.1 Soil Data

Based on the review, new risk information for eight (8) compounds detected in RB D soil required evaluation. Additionally, the risk conversion factors previously assigned to two (2) compounds were found to be inaccurate (incorrect or missing).

The appropriate changes have been made in the Revision Summary. Hazard Indices (HIs) and risk values remain in the acceptable range. Documentation regarding the changes that were made to Rev. 0 of the RS, in terms of the 10 compounds affected, is shown below. The broader issue of the impact of IRIS/HEAST risk changes on future RREs is discussed in the Conclusions and Recommendations section of this report.

3.1.1 Actinium-227 + D

The HEAST external risk factor has increased from 6.0×10^{-7} to 9.3×10^{-7} risk/y/pCi/g. The change does not lower the GV; a GV = 1 pCi/g remains valid. Therefore, screening out actinium based on a maximum concentration below the GV stands as written; modification of the RS was not needed.

3.1.2 Barium

Changes to the barium risk file did not affect the oral reference dose (RfD); the inhalation reference concentration (RfC) was withdrawn. These changes would not lower the more restrictive GV (15,000 ppm) to a value approaching the maximum concentration of barium observed (5 ppm above bg). Therefore, screening out barium based on a maximum concentration below the GV stands as written; modification of the RS was not needed.

3.1.3 Benzene

Changes to the benzene risk file would not lower the more restrictive GV (8.9 ppm) to the magnitude of the maximum concentration observed (0.001 ppm). The frequency of detects (FOD) for benzene was 1.6% (1/63). Therefore, screening out benzene based on a maximum concentration below the GV stands as written; modification of the RS was not needed.

3.1.4 Beryllium

For beryllium, the oral RfD was reduced from $5x10^{-3}$ to $2x10^{-3}$ mg/kg-d; an RfC of $2x10^{-2}$ $\mu g/m^3$ was added. Since beryllium was screened out because the 95% UCL concentration was less than background (0.7 vs. 1.3 ppm), modification of the RS was not needed.

3.1.5 Chromium

Updates to the chromium (VI) file reduced the oral RfD from $5x10^{-3}$ to $3x10^{-3}$ mg/kg-d, and added an inhalation RfC of $8x10^{-6}$ mg/m^3. The change would not lower the more restrictive GV (0.1GV = 110 ppm) to a value approaching the maximum concentration observed (9.6 ppm above bg). Therefore, screening out based on a maximum concentration below the GV stands as written; modification of the RS was not needed.

3.1.6 Fluorene

The RREM uses an oral RfD = 0.4 mg/kg-d; the IRIS value is 0.04 mg/kg-d. Therefore, the soil ingestion risk values for the construction worker and site employee were revised from $8.6x10^{-6}$ -> $8.6x10^{-5}$ and from $6.9x10^{-7}$ -> $6.9x10^{-6}$, respectively. The appropriate modifications to the RS have been made.

3.1.7 Lead-210 + D

The initial RS indicated slope factors were not available; HEAST slope factors have now been incorporated. The overall soil risk values for the construction worker and site employee were revised from 0 -> 1.7×10^{-6} and from 0 -> 9.2×10^{-7}, respectively. The appropriate modifications to the RS have been made.

3.1.8 Naphthalene

The appropriate oral RfD for naphthalene is 0.02 mg/kg-d (down from 50 mg/kg-d). The Hazard Quotients (HQs) for soil were therefore increased from 4.4×10^{-8} to 1.1×10^{-4} and from 4.1×10^{-9} to 1.0×10^{-5}, respectively, for the construction worker and site employee. The carcinogenicity class was revised to "C". The appropriate modifications to the RS have been made.

3.1.9 Thorium-228 + D, Thorium-232

The HEAST external risk factor has increased from 9.9×10^{-7} to 6.2×10^{-6} risk/y/pCi/g. The change lowers the GV from 0.83 to 0.16 pCi/g. Therefore, it is not appropriate to screen out based on the RREM-derived GV. (Note that Th-232 + D did not screen out based on the GV, but rather, because the 95% UCL concentration was less than background.) For Th-228, the change substantially impacts the risk values. The soil risk values for the construction worker and site employee were revised from 3.4×10^{-6} -> 1.95×10^{-5} and from 3.6×10^{-6} -> 2.15×10^{-5}, respectively. The appropriate modifications to the RS have been made.

3.1.10 Uranium-238 + D

The HEAST external risk factor has increased from 5.3×10^{-8} to 6.57×10^{-8} risk/y/pCi/g. This change will not lower the GV. Since U-238 screened out based on a maximum concentration below background, modification of the RS was not needed.

3.2 Groundwater Data

Though the RRE for groundwater-related pathways was not affected by the additional soil samples or the boundary changes, it was deemed appropriate to review the risk-related calculations reported in the 1996 RRE for significant changes or issues. This review was conducted subsequent to the release of the Revision Summary. Based on the review, new risk information for four (4) compounds detected, or presumed to be present in BVA or bedrock groundwater, required evaluation. Additionally, the exclusion of two (2) radionuclides from the RRE was studied. A description of the evaluation of each of the six compounds of concern appears below.

3.2.1 Beryllium

Beryllium was not included in the current groundwater scenario, but was projected to present in future groundwater. The oral RfD for beryllium has been lowered by a factor of 2.5 and the oral slope factor has been withdrawn. These updates would trigger a change in the beryllium HI for future incremental groundwater ingestion from $2x10^{-4}$ to $4.9x10^{-4}$ for both the construction worker and site employee. The updated risk data would also eliminate the carcinogenic risk estimate for beryllium since the slope factor has been withdrawn. Given the magnitude of the contribution to the HI from beryllium, these changes are not significant.

3.2.2 Chromium

Chromium is present in the bedrock under various areas of the site, but was not included in the current groundwater scenario because the maximum concentration detected was below the guideline value. The chromium is, however, assumed to enter the BVA and be consumed in the future. As such, chromium is a dominant contributor to the future groundwater hazard index.

Since the 1996 RRE, the oral RfD for chromium (VI) was lowered by a factor of 1.7. This update would trigger a change in the chromium (VI) HI for future incremental groundwater ingestion from 0.96 to 1.6 for both the construction worker and site employee. Though the increase in the HI is significant, the need to apply institutional controls to restrict future groundwater consumption was recognized via the earlier data. Therefore, the conclusions regarding chromium remain valid. However, given that all chromium detected in groundwater is not

in the hexavalent state, some consideration should be given to normalizing the chromium HI to account for the ratio of chromium (VI) to chromium (III). The data needed to determine this ratio will be collected as part of an on-going investigation of chromium sources and their migration patterns. When the investigation is complete, the groundwater RRE will require re-evaluation.

3.2.3 1,1,1-Trichloroethane

The oral RfD for 1,1,1-trichloroethane has been withdrawn. Revisiting the RRE is not recommended.

3.2.4 1,1,1-Trichloro-1,2,2-trifluoroethane

An oral RfD was added for 1,1,1-trichloro-1,2,2-trifluoroethane. Given that the oral RfD is 30 mg/kg-d, the RRE would not be significantly affected. Specifically, the contribution to the HI for incremental groundwater ingestion for both the construction worker and site employee is 2.8×10^{-6}.

3.2.5 Bismuth-210

Risk calculations for Bi-210 were not performed for the original RRE; the RRE indicated slope factors were not available. Bi-210 slope factors are available; however, the "missed risks" were 3.6×10^{-9} and 1.8×10^{-8} for the construction worker and site employee, respectively. These risk increments are not significant.

3.2.6 Thorium-228 + Daughters

In the original RRE, Th-228+D was reported as eliminated from the RRE (i.e., not carried through the RRE) because Th-228 is a decay product of Th-232. However, the Th-232 slope factors do not include daughters, and Th-232 was subsequently screened from the RRE because the 95% UCL concentration was less than background. Using the maximum concentration of Th-228 detected/projected for current and future BVA, the radionuclide risk values for groundwater ingestion were calculated for this report. For the current use scenario, the overall radionuclide total risk from groundwater ingestion increased from 2.4×10^{-6} to 3.0×10^{-6} (construction worker), and from 1.2×10^{-5} to 1.5×10^{-5} (site employee). For the future use scenario, the total risk from groundwater

ingestion of radionuclides would have increased from 2.7×10^{-6} to 3.4×10^{-6} (construction worker), and from 1.3×10^{-5} to 3.2×10^{-5} (site employee).

Though the magnitude of these changes is significant on a relative basis, the overall risks remain in the acceptable range and the conclusions of the RRE remain valid.

3.3 Air Data

For purposes of evaluating cumulative residual risk, air pathway data are also reported in each RRE. Per the Residual Risk Evaluation Methodology document, 1994 data collected at the Mound Plant perimeter air sampling stations are used to bound the concentrations and therefore the risks from inhalation of radionuclides present in ambient air. The risk data for tritium (HTO), Pu-238, and Pu-239/240 reported in the RB D RRE were reviewed and found to require no update or changes. It was observed, however, that the site employee risk calculations did not include an adjustment factor to account for the time spent indoors. While this approach is inconsistent with that applied to analogous outdoor pathways, it is conservative in nature.

3.4 Risk Data Summary

The residual risks for RB D, adjusted for updated and corrected data, are shown in Tables 3-1a and 3-1b for the construction worker and site employee, respectively. These data are appropriate for use in documenting the current and cumulative residual risks for Release Block D.

Example calculations are shown in the Appendix. Thorium-228 and chromium were selected as the examples because they dominate the risk from soil and the hazard from groundwater, respectively.

Table 3-1a. Current and Cumulative RB D RRE Data for the Construction Worker.

Construction Worker	Hazard Index (HI) or Risk		
	Incremental	Background	Total
Soil – current			
HI	1.3E-01	N/A	1.3E-01
Non-rad risk	9.6E-06	N/A	9.6E-06
Rad risk	2.3E-05	1.4E-05	3.7E-05
Groundwater – current			
HI	3.7E-02	9.6E-05	3.7E-02
Non-rad risk	N/A	N/A	N/A
Rad risk	2.5E-06	5.1E-07	3.0E-06
Air – current (1994)			
HI	N/A	N/A	N/A
Non-rad risk	N/A	N/A	N/A
Rad risk	2.0E-07	7.7E-09	2.1E-07
Totals – current			
HI	1.7E-01	9.6E-05	1.7E-01
Non-rad risk	9.6E-06	N/A	9.6E-06
Rad risk	2.6E-05	1.5E-05	4.0E-05
Groundwater – future			
HI	1.6E+00	3.1E-02	1.7E+00
Non-rad risk	N/A	N/A	N/A
Rad risk	2.9E-06	5.1E-07	3.4E-06
Totals – cumulative			
HI	1.8E+00	3.1E-02	1.9E+00
Non-rad risk	9.6E-06	N/A	9.6E-06
Rad risk	2.8E-05	1.5E-05	4.3E-05

Notes: N/A = Not applicable.
Data represent RRE calculations prior to the implementation of the remedy.
HI calculated based on assumption that all chromium is Cr(VI). This approach significantly over-estimates the Cr risk as not all chromium present in groundwater is in the hexavalent state.

Table 3-1b. Current and Cumulative RB D RRE Data for the Site Employee.

Site Employee	Hazard Index (HI) or Risk		
	Incremental	Background	Total
Soil – current			
HI	1.7E-02	N/A	1.7E-02
Non-rad risk	2.0E-06	N/A	2.0E-06
Rad risk	2.3E-05	1.6E-05	3.9E-05
Groundwater – current			
HI	3.7E-02	7.6E-05	3.7E-02
Non-rad risk	N/A	N/A	N/A
Rad risk	1.3E-05	2.5E-06	1.5E-05
Air – current (1994)			
HI	N/A	N/A	N/A
Non-rad risk	N/A	N/A	N/A
Rad risk	9.9E-07	3.9E-08	1.0E-06
Totals – current			
HI	5.4E-02	7.6E-05	5.4E-02
Non-rad risk	2.0E-06	N/A	2.0E-06
Rad risk	3.6E-05	1.9E-05	5.4E-05
Groundwater – future			
HI	1.6E+00	3.1E-02	1.6E+00
Non-rad risk	N/A	N/A	N/A
Rad risk	1.4E-05	2.5E-06	1.7E-05
Totals – cumulative			
HI	1.7E+00	3.1E-02	1.7E+00
Non-rad risk	2.0E-06	N/A	2.0E-06
Rad risk	5.0E-05	2.1E-05	7.1E-05

Notes: N/A = Not applicable.
Data represent RRE calculations prior to the implementation of the remedy.
HI calculated based on assumption that all chromium is Cr(VI). This approach significantly over-estimates the Cr risk as not all chromium present in groundwater is in the hexavalent state.

4.0 CONCLUSIONS AND RECOMMENDATIONS

For purposes of evaluating the need for institutional controls, the RB D RRE and its supplement adequately characterize the residual risks associated with the release block. However, changes to the risk data in IRIS and HEAST do occur and should be anticipated. IRIS updates are published monthly; HEAST updates occur much less frequently. A mechanism should be developed to ensure such changes are reviewed and adopted as appropriate.

It is also recommended that the changes noted in this report for groundwater-related risks be formally adopted. Since the groundwater risks will be identical for many of the parcels, a stand-alone report documenting the changes may be appropriate. The report should note prominently, though, that each subsequent RRE must be evaluated for parcel-specific leaching concerns that were not included in the site-wide analysis. Given that groundwater from numerous parcels may migrate toward the BVA, this evaluation should apply to any parcel in which new groundwater concerns arise – not just the parcel under consideration for sale.

A final recommendation is that consideration be given to the mechanism to update/re-validate the guideline values. The GV manual is a large document to which a small number of changes need to be made. An addendum to the manual documenting those changes should be considered.

5.0 REFERENCES

1. **Risk-Based Guideline Values**, Mound Plant, Miamisburg, Ohio, Final, Revision 4, Revised by EG&G Mound Applied Technologies, Miamisburg, Ohio, March 1997.

2. **Residual Risk Evaluation – Release Block D**, Mound Plant, Miamisburg, Ohio, Final, Revision 0, U.S. Department of Energy, Miamisburg, Ohio, December 1996.

3. **Residual Risk Evaluation – Release Block D – Revision Summary**, Mound Plant, Miamisburg, Ohio, Public Review Draft, U.S. Department of Energy, Miamisburg, Ohio, December 1998.

4. **Integrated Risk Information System (IRIS)** and updates to same, U.S. EPA web sites, December 1998.

5. **Health Effects Assessment Summary Tables (HEAST)** and updates to same, U.S. EPA web sites, December 1998.

6. **Mound 2000 Residual Risk Evaluation Methodology, Mound Plant**, U.S. Department of Energy, Miamisburg, Ohio, January 1997.

APPENDIX
Example Calculations

Example Risk Calculations
Soil Pathways -- Site Employee
Exposure to Thorium-228 + Daughters

Soil Th-228 Concentration (Incremental)

2.07 mg/kg	(Ref: Revision Summary, p. 16)

Slope Factors

2.31E-10 risk/pCi ingested	(Ref: Technical Position Report, p. 5)
9.68E-08 risk/pCi inhaled	(Ref: Technical Position Report, p. 5)
6.20E-06 risk/yr/pCi/g in soil	(Ref: Technical Position Report, p. 5)

Site Employee Intakes

(Ref: Equation and parameter values from Appendix D, 1996 RRE)

Intake by Inhalation, pCi = CS*1000g/kg*(1/PEF)*ED*EF*IR

CS =	2.07	mg/kg	(CS = concentration in soil)
PEF =	4.28E+09	m3/kg	(PEF = particulate emission factor)
ED =	25	years	(ED = exposure duration)
EF =	250	days/year	(EF = exposure frequency)
IR =	20	m3/day	(IR = inhalation rate)
Intake =	6.05E-02	pCi	(reported on p. 19 of the Revision Summary)

Intake by Ingestion, pCi = CS*ED*EF*0.001g/mg*IR

CS =	2.07	mg/kg	(CS = concentration in soil)
ED =	25	years	(ED = exposure duration)
EF =	250	days/year	(EF = exposure frequency)
IR =	50	mg/day	(IR = ingestion rate)
Intake =	6.47E+02	pCi	(reported on p. 19 of the Revision Summary)

External Exposure, pCi*yr/g = CS*TE*(1-SE)*ED

CS =	2.07	mg/kg	(CS = concentration in soil)
TE =	0.083		(TE = gamma shielding factor)
SE =	0.2		(SE = gamma exposure time factor)
ED =	25	years	(ED = exposure duration)
Exposure =	3.44E+00	pCi*yr/g	(reported on p. 19 of the Revision Summary)

Site Employee Risks, Th-228+D in Soil

(Reference for equations: Page 5-1 of 1996 RRE)

Internal Risk = Intake • Slope Factor, External Risk = Exposure • Slope Factor

Inhalation Risk =	5.85E-09	(reported on p. 21 of the Revision Summary)
Ingestion Risk =	1.49E-07	(reported on p. 21 of the Revision Summary)
External Risk =	2.13E-05	(reported on p. 21 of the Revision Summary)
Summed Risk =	2.15E-05	(as described in Section 3.1.9 of this report)

Example Risk Calculations
Groundwater Ingestion Pathway -- Site Employee and Construction Worker
Exposure to Hexavalent Chromium -- Cr(VI)

Predicted Future Concentration of Cr(VI) in Production Wells
0.4961 mg/L (Ref: 1996 RRE, p. 2-16)

Oral Reference Dose (RfD)
3.E-03 mg/kg-d (Ref: Technical Position Report, p. 2)

Intake
(Ref: Equation and parameter values from Appendix D, 1996 RRE)

Intake, mg/kg-d = (CW*IR*EF)/(BW*365d/yr)

CW =	0.4961	mg/L	(CW = concentration in groundwater)
IR =	1	L/day	(IR = ingestion rate)
EF =	250	days/year	(EF = exposure frequency)
BW =	70	kg	(BW = body weight)

Intake = 4.9E-03 mg/kg-d (reported on p.3-12 and p.3-15 of the 1996 RRE)

Risk, Cr(VI) in Groundwater
(Reference for equation: Page 5-1 of 1996 RRE)

Risk = Intake/RfD

Risk = 1.62E+00 (as described in Section 3.2.2 of this report)

BAUER

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES
Release Block D,
Mound Plant, Miamisburg, Ohio

DEBBIE,

WORKS FOR ME

→ SUGGESTED CHANGES

+ CORRECTIONS

+ REQUESTED TEXT

AS NOTED.

LB

1/14/99

January 12, 1999

DRAFT

ACRONYMS

BDP	Building Data Package
BVA	Buried Valley Aquifer
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
DOE	Department of Energy
EA	Environmental Assessment
FONSI	Finding of No Significant Impact um
IDM	Investigative Derived Material
MMCIC	Miamisburg Mound Community Improvement Corporation
MOA	Memoranda of Agreement
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NFA	No Further Assessment
NPL	National Priority List
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PCB	Polycholrinated biphenyl
PRS	Potential Release Site
RB	Release Block
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRE	Residual Risk Evaluation
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UST	Underground Storage Tank

CERCLA 120(h) SUMMARY
NOTICE OF HAZARDOUS SUBSTANCES
RELEASE BLOCK D
MOUND PLANT, MIAMISBURG, OHIO

I. PURPOSE

The information contained in this notice is required under the authority of regulations promulgated under section 120 (h) of the Comprehensive Environmental Resource Compensation and Liability Act (CERCLA). This summary is intended to support the transfer by deed to new ownership for economic development by documenting that the U.S. Department of Energy's (US DOE) Mound Plant has met the requirements of CERCLA 120 (h) for Release Block D (RB D).

II. PROPERTY DESCRIPTION

A. Description of Property Suitable for Transfer:

(need reference for full legal description of the RB D property here).

Release Block D (Figure II.1) is located in the southeast corner of the developed area of the plant. RB D is generally bound to the south by the "South Property" (the undeveloped portion of the Mound Plant), to the east by offsite residences, to the north by a parking lot and group of small buildings (numbered 39, 77, 78, 97, 95, 101 and 102), and to the west by a fenced area for storage of Investigative Derived Material (IDM) (just west of Building 100). There are two (2) main structures in RB D, Building 100 and Building 105.

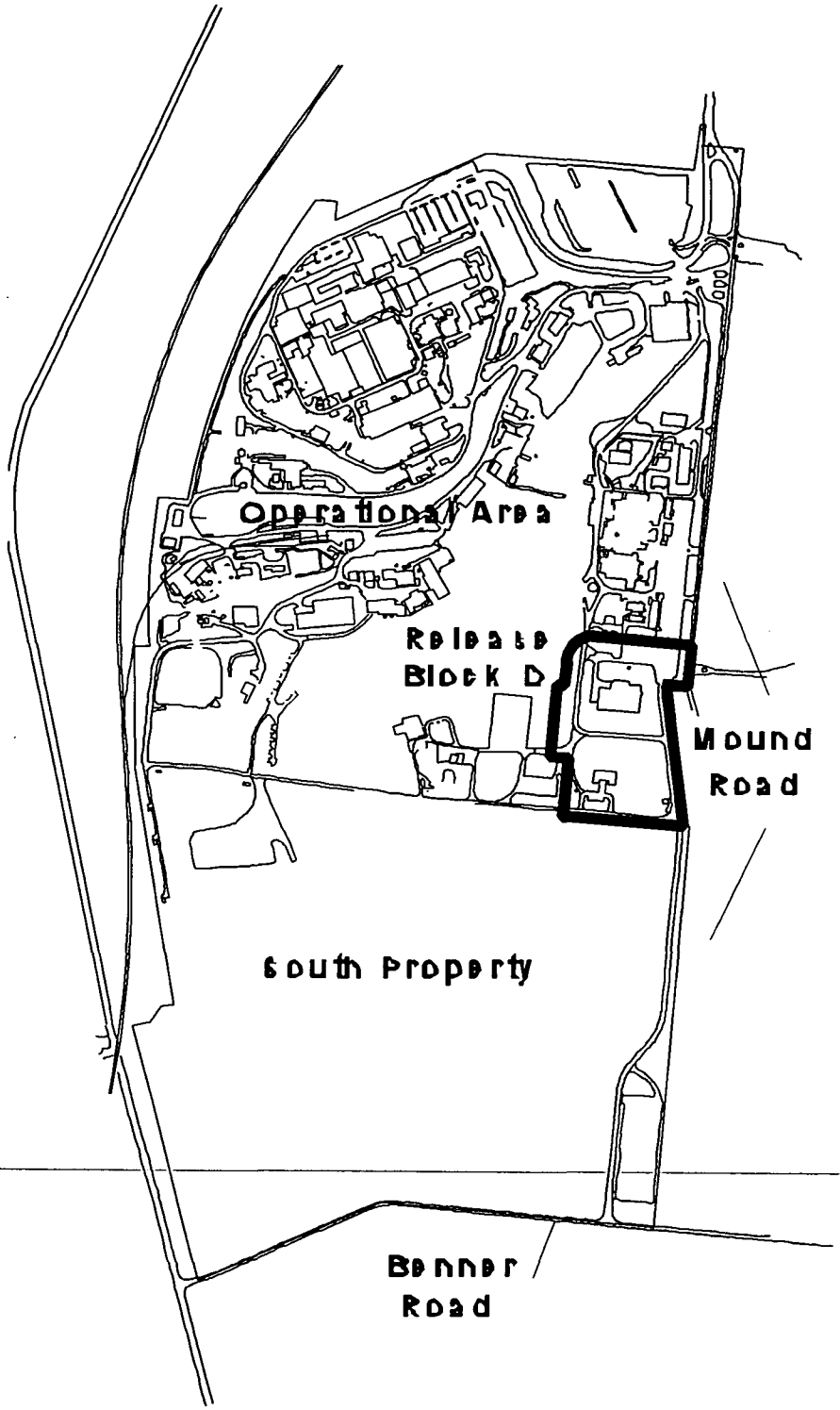
B. **Regional Context of Mound Plant and Transferred Property:**
The Mound Plant occupies approximately a 306 acre site in Montgomery County within the City of Miamisburg, Ohio. The northern boundary of the plant is approximately 0.13 miles south of Mound Avenue in Miamisburg. Benner Road forms the southern boundary of the plant, and the Conrail Railroad roughly parallels the western boundary at a distance of 50-200 feet. The Mound Plant consists of the Operational Area and the New Property (also referred to as the South Property). Approximately 130 buildings with a total of 1.4 million square feet of floor space existed at one time at the Mound Plant (although the number of buildings is constantly diminishing as buildings are decommissioned and demolished), all of which were located in the Operational area.

C. **Historical Uses of Property**
Two main structures in Release Block D ~~include~~ are Building 105, which was built in 1990 as a machine shop. The other is Building 100, which was a Guard Force Precinct bunker. Both buildings are currently leased for similar uses. Portions of Release Block D were previously used for storage of trailers, roll-off boxes, small above-ground tanks and other assorted containers. Also located on the block was a large sewer manway/dump station. An ~~area~~ of Release Block D had a small region known as the Old Firing Range Drum Storage Site that stored liquid chemical wastes over a four-year period. No other historical uses of the area of the Mound facility referred to as Release Block D are known.

CAREFUL ≠ "SIMILAR" USAGE

or "are believed to have occurred".

FIGURE II.1 Location of Release Block D



III. ENVIRONMENTAL FINDINGS

A. Methodology:

In accordance with Section 120 (h)(3) of CERCLA, to the extent that information is available based on a complete search of DOE files, the following shall be placed in deeds: (1) a notice of the type and quantity of hazardous substances stored, disposed of, or released; (2) a notice of the time at which such storage, disposal, or release took place; and (3) a description of any remedial action taken. Information sources reviewed to obtain the information include:

- Federal Government records
- Recorded chain of title documents
- Reasonably obtainable aerial photographs
- Visual inspection of the property and adjacent properties
- Reasonably obtainable records of releases on adjacent properties
- Interviews with current or former employees
- Sampling, if appropriate under the circumstances

RB D includes a collection of individual areas called Potential Release Sites or PRSs that have undergone previous investigations. The PRSs in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB D have been evaluated.

remove extra space

A Core Team with representatives from the Department of Energy (DOE), US Environmental Protection Agency (US EPA), and Ohio EPA (OEPA) approach is used to perform a joint agency evaluation of each of the potential contamination problems and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area.

remove extra space

This summary is a result of a thorough Core Team analysis of information contained in the following reference documents:

1. Building Data Packages (BDP) for Buildings Located within Release Block D. The locations of these buildings are shown on Figure III.1. The rationale for designation is outlined in Table III.1.
   Provides notice for buildings of the type and quantity of hazardous substances stored, disposed of, or released and a notice of the time at which such storage, disposal, or release took place, if known, as a result of the review of the seven sources of information listed ~~above~~ in Section A.

   a. Mound Plant, Building Data Package, Building 100 Located within Release Block D, Final, November 4, 1997.

   b. Mound Plant, Building Data Package, Building 105 Located within Release Block D, Final, November 4, 1997.

2. Potential Release Site (PRS) Data Packages for PRSs located within Release Block D. The locations of these PRSs are shown on Figure III.1. The rationale for designation of RB D PRSs is outlined in Table III.1.
   Provides notice for soil and groundwater of the type and quantity of hazardous substances stored, disposed of, or released and a notice of the time at which such storage, disposal, or release took place, if known, as a result of the review of the seven sources of information listed above.

   Potential Release Sites (PRSs) in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. The primary sources of potential radioactive contamination in RB D resulted from wastewater treatment, storage of radioactive materials, and ground disposal of soils and construction spoils.

a. Mound Plant, Potential Release Site Package, PRS # 279, Final, Revision 2, November 19, 1996.

b. Mound Plant, Potential Release Site Package, PRS # 304/313, Final, Revision 1, July 28, 1997.

c. Mound Plant, Potential Release Site Package, PRS # 310, Final, Revision 4, February 26, 1997.

d. Mound Plant, Potential Release Site Package, PRS # 312, Final, Revision 3, December 5, 1996.

e. Mound Plant, Potential Release Site Package, PRS # 372/374, Final, Revision 2, November 19, 1996.

f. Mound Plant, Potential Release Site Package, PRS # 375/377/378, Final, Revision 2, November 19, 1996.

g. Mound Plant, Potential Release Site Package, PRS # 376, Final, Revision 1, November 27, 1996.

h. Mound Plant, Potential Release Site Package, PRS # 379, Final, Revision 2, November 19, 1996.

i. Mound Plant, Potential Release Site Package, PRS # 380/381, Final, Revision 4, February 26, 1997.

j. Mound Plant, Potential Release Site Package, PRS # 382, Final, Revision 4, February 26, 1997.

FIGURE III.1 PRSs and Buildings Within Release Block D

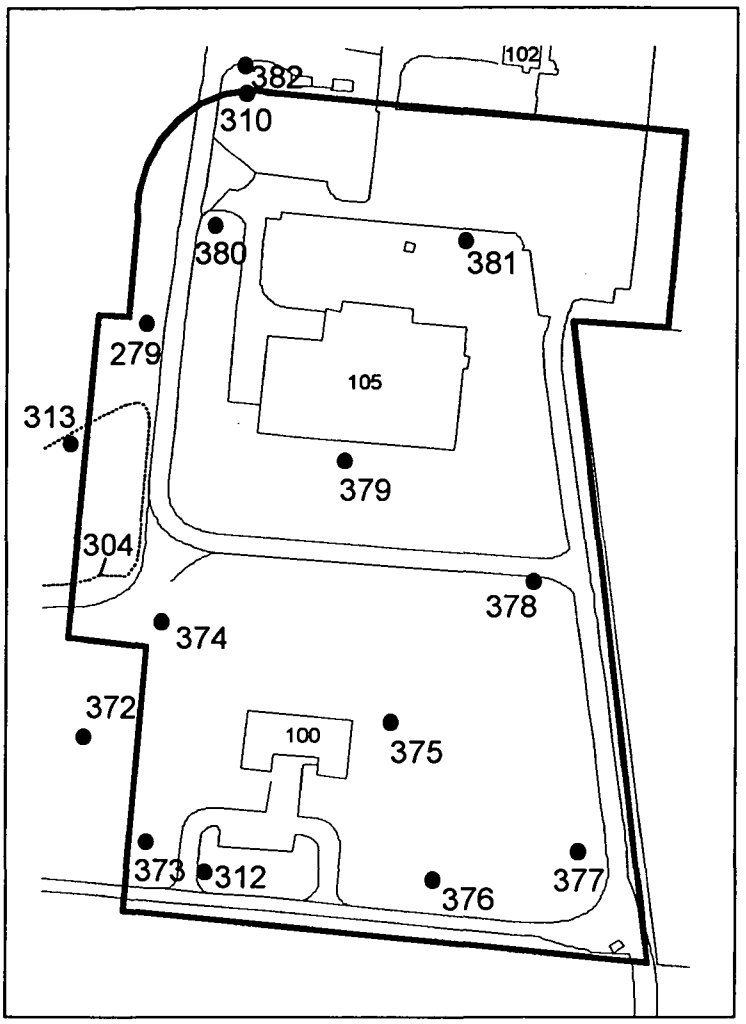


TABLE III.1 Release Block D PRSs/Buildings and Conclusions

PRS / Bldg	Reason for Identification	Joint Agency Decision (DOE & EPAs)	Close Out of PRS / BDP
279	Location of the Old Firing Range Drum Storage Area	No Further Assessment	Recommendation for NFA signed on 10/18/95
304	Past use as a soil disposal area - thorium contamination.	Removal Action conducted in October 1998.	OSC Report signed on 12/17/98.
310	Elevated cesium-137 sample location	No Further Assessment	Recommendation for NFA signed on 1/14/97
312	Elevated thorium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
313	Elevated thorium sample location	No Further Assessment	Recommendation for NFA signed on 2/19/97
372/374	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
373	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
375/377/378	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
376	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/3/96
379	Elevated plutonium sample location	No Further Assessment	Recommendation for NFA signed on 10/18/95
380/381	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 5/8/96
382	Elevated qualitative soil gas detections	No Further Assessment	Recommendation for NFA signed on 1/14/97
Bldg. 100	Building used as machine shop	No Further Assessment	Recommendation for NFA signed on 8/5/97
Bldg. 105	Building used as guard force precinct	No Further Assessment	Recommendation for NFA signed on 8/5/97

3. Residual Risk Evaluation, Release Block D, Final, December 1996.

Provides the evaluation of human health risks associated with any residual contamination that may remain in the block after all remedies within a parcel have been completed. The evaluation ensures that future users of the land will not be exposed to contamination levels that would pose unacceptable health risks.

4. On Scene Coordinator (OSC) Report for PRS 304, Mound Plant, December, 1998.

Summary report prepared to record the threat, describe the chronology of action(s) taken, and discuss effectiveness of remedial action.

5. Proposed Plan for Release Block D, Mound Plant, Miamisburg, Ohio, Final, December, 1998.

Identifies the preferred option for addressing the contamination at the Mound Site, Release Block D to the public by briefly summarizing the alternatives studied and highlighting the key factors that led to identifying the preferred alternative.

6. Residual Risk Evaluation (RRE) - Release Block D Revision Summary, Mound Plant, Miamisburg, Ohio, Final, January 1999.

Supplemental prepared for item c above as a result of additional information obtained from a recent radiological survey and sampling event conducted in the fall of 1998.

7. Record of Decision (ROD) for Release Block D, Mound Plant, Miamisburg, Ohio, Final, January, 1999.

Documents the remedial action plan for a site and serves the following three functions: (1) certifies the remedy selection process was carried out in accordance with CERCLA, (2) describes the technical parameters of the remedy, specifying the treatment, engineering, and institutional components as well as clean up levels, and (3) provides the public with a consolidated summary of information about the site and the chosen remedy, including the rationale behind the selection.

space

B. **Results Summary:**

1. **Building Data Analysis:**

A joint agency decision between DOE, the US EPA, and OEPA has determined no contamination within Buildings 100 and 105 warranted a remedial action and no environmental concerns are associated with Buildings 100 or 105. Lease or sale of Building 100 and 105 for commercial/industrial use is protective of human health and the environment. A brief summary follows. For a more detailed description of each, refer to the building data packages as identified in Section III.A.1 of this report.

a. **Asbestos**

Asbestos material in buildings can be found in five forms: sprayed or troweled on ceilings and walls (surfacing materials); insulation around pipes, ducts, boilers and tanks (pipe and boiler insulation); transite (in ground piping); and in roofing materials (roofing felts); other products such as ceiling and floor tiles and wall boards (miscellaneous materials). A Building 105 facility review conducted in June, 1994 indicated no asbestos in the building. Additionally, both buildings were constructed after 1983 when EPA's friable asbestos containing building materials ban went into effect. X AWK ?

b. **Lead Paint**

Lead based paint was used almost exclusively in the U.S. prior to the 1970's. Congress established maximum lead concentrations in residential paint in 1978. Due to the age of the buildings (100 was constructed 1988 and 105 constructed in 1986), no lead based paint was believed to have been used within the buildings.

c. **Radon**

The results of a 1989-1990 Mound indoor radon study indicated an average radon concentration of 0.5 picocuries/liter in Building 105 and 1.0 picocuries/liter in Building 100 as compared to the EPA recommended standard for radon of 4.0 picocuries/liter.

d. **Radiological Surveys**

No history of radiological processes were performed in or around Buildings 100 or 105. Radiation surveys were conducted in both buildings during safe shutdown activities prior to lease. No direct or removable contamination on the building's floors, corridors or stairways.

"history performed"?

was found

X

e. **Polychlorinated Biphenyls (PCB's)**

are

Fluorescent lighting fixtures used in buildings 100 and 105. Fluorescent lamp ballasts contain a small capacitor that may contain PCBs. All lamp ballasts manufactured before 1979 should be regarded as containing PCBs. These buildings were constructed after 1983. No wet type transformers were utilized. There were no other indications of PCBs in the buildings.

?

Significance of this yr = ?

2. **Results of Potential Release Site Soil Data Analysis:**

A joint agency decision between the US DOE, US EPA and OEPA has been made that no additional remedial action of PRSs in RB D is necessary. The risk associated with carcinogens was examined over an incremental range. These probabilities are expressed as excess cancer incidence over a human lifetime or the probability of an individual having one case of cancer above the normal background cancer rate observed in the general population. Residual levels of contamination that remain on RB D for carcinogens indicate a probability or likelihood of one chance in 10,000 to one chance in 1,000,000 of an individual developing cancer. This probability or likelihood is consistent with the US EPA target risk range.

Evaluation of residual contaminants within RB D have resulted in a determination that future users of the land will not be exposed to contaminant levels that would pose unacceptable risks.

~~WITH EXCEPTION OF Cr(VI) IN FUTURE GW?~~

disregard (does not apply to PRSs)

perhaps a good place to include stormwater considerations (a line or two)

Remediation activities are nearing completion for adjacent property to the west. Remediation activities and additional assessment activities are scheduled in the future for adjacent properties to the north. The Mound site has experience with environmental remediation of both soils and buildings. Each removal action will be designed with containment methods to prevent migration via air pathways, surface water pathways and groundwater pathways. DOE believes that no additional contamination of RB D is likely from adjacent activities.

A brief summary of the history of the RB D PRSs and measurements follows. For a more detailed description of each, refer to the PRS data packages as identified in Section III.A.2 of this report:

a. At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. In December 1991, soil samples were again collected from this area. Of the 28 samples collected, two had cesium-137 concentrations above the detection limit. At the same location, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, additional soil samples collected in this area did not indicate the presence of cesium-137 or any other contaminant.

b. At PRS 373, PRS 376 and PRS 379, plutonium-238 was detected in surface samples in 1994, 1995 and 1996, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detectable plutonium-238 concentrations were shown (by surrounding samples) to be isolated to the PRS locations only. Due to its low solubility and concentration, plutonium at these locations is not expected to adversely affect groundwater at potential drinking water sources.

c. At PRS 312, a surface sample collected in 1993 indicated an elevated thorium-232 concentration of 5.02 pCi/g. Nearby samples did not indicate elevated levels, suggesting the elevated result was an isolated event.

d. PRS 279 was identified based on photographs that showed drum storage at this location. This drum storage area had been referred to as the Old Firing Range Storage Site and was used between 1970 and 1974. Plutonium-238, cobalt-60, radium-226, and thorium-228 were measured in this area.

There were no elevated soil gas measurements detected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable polynuclear aromatic hydrocarbons (PAHs) at an elevated concentration of approximately 59 mg/kg. This sample was a composite of four samples collected at the corners of a 30 foot x 30 foot square. A second composite prepared similarly from about 100 feet away found similar contaminants at 1 to 3 mg/kg. Other nearby sample locations nearby did not detect any of the contaminants. These chemicals are commonly associated with asphalt, which is present in the area.

A February 1996 soil sample in the vicinity of PRS 279 contained low levels of organic and inorganic compounds, plutonium-238, radium-226, and thorium-228.

e. PRS 313, which neighbors PRS 304, was a soil segregation area that contained the overburden soils excavated from the decommission and decontamination of a waste transfer line (PRS 300) and from Area 12 (PRS 273). PRS 313 was identified due to an elevated thorium result. Sampling in 1995 in the area of PRS 313 indicated no contaminants in excess of guideline criteria.

f. PRS 304 was identified as a former soil disposal area. PRSs 304/313 were originally binned NFA on February 19, 1997, based on data existing at that time. However, a recent radiological survey and sampling event conducted in the fall of 1998 identified two small "hot spots" which were subsequently removed. The results from the 1998 removal actions are available in the "On Scene Coordinator (OSC) Report for PRS 304 Removal Action, December 1998."

C. Summary of All Soil and Groundwater Contaminants Detected

Table III.2 and Table III.3 presents a summary of all soil and groundwater contaminants above the detection limit. The American Chemical Society's Chemical Abstracts Service Registry Number (which is a numeric designation and uniquely identifies a specific chemical compound) is provided where available. Background levels are also provided where available.

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	Detects / Analyses
ORGANICS (mg/kg)					
Acenaphthene		6.4	3.80		10/55
Acenaphthylene		0.22	0.029		4/53
Acetone	000067-64-1	0.23	0.210		21/47
Alpha Chlordane		0.086	—		2/74
Anthracene	000120-12-7	11.65	4.8		16/60
Aroclor-1248	012672-29-6	0.059	0.059		1/60
Aroclor-1254	011097-69-1	0.3025	0.3025		1/60
Benzene	000071-43-2	0.001	—		1/63
Benzo(a)anthracene	000056-55-3	41.5	6.8		24/61
Benzo(a)pyrene	000050-32-8	33.5	7.5		25/60
Benzo(b)fluoranthene	000205-99-2	53	12		24/60
Benzo(g,h,i) perylene	000191-24-2	3.9	3.9		15/60
Benzo(k)fluoranthene	000207-08-9	1.3	1.3		13/61
Benzoic Acid	000065-85-0	0.750	0.750		6/52
Beta-BHC	000319-85-7	0.360	0.360		5/78
Bis(2-ethylhexyl)phthalate	000117-81-7	4.2	3.650		43/60
Bromoform		0.002	0.001		3/63
2-Butanone	000078-93-3	0.028	0.010		4/24
Carbazole		0.165	0.165		2/13
Carbon Disulfide	000075-15-0	0.004	0.004		1/48
2-Chlorophenol		0.1	0.1		1/60
Chrysene	000218-01-9	51.5	5.4		24/60
2,4-Dinitrophenol		0.970	0.970		4/72
Di-n-butyl phthalate	000084-74-2	0.140	—		1/48
Di-n-octyl phthalate	000117-84-0	0.089	0.089		1/48
Dibenz(a,h)anthracene	000053-70-3	1.3	1.3		10/60
Dibenzofuran		3.8	3.0		12/60
Dibromochloromethane	000124-48-1	0.001	0.001		2/63
Ethylbenzene	000110-54-3	0.003	0.001		8/48
Fluoranthene	000206-44-0	65	5.3		34/60
Fluorene		6.3	3.3		16/60
Indeno(1,2,3-cd)pyrene	000193-39-5	20.5	4.7		17/60
2-Hexanone		0.011	0.008		2/63
Methoxychlor		0.0055	0.0055	30	1/61
2-Methylnaphthalene		1.4	1.4		12/59
4-Methyl-2-pentanone	000108-10-1	0.002	—		1/24
Methylene Chloride		0.066	0.056		53/62

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum Concentration Any Depth	Maximum Concentration Shallow - only	Soil background	Detects / Analyses
Naphthalene		1.9	1.9		14 / 60
N-Nitrosodiphenylamine	000086-30-6	0.083	---		1 / 60
Pentachlorophenol	000087-86-5	0.97	0.97		2 / 60
Phenanthrene	000129-00-0	49.5	13		24 / 60
Phenol	000108-95-2	0.120	0.120		1 / 60
Pyrene	000129-00-0	62	3.4		35 / 61
Styrene		0.001	---		1 / 63
Toluene	000108-88-3	0.016	0.004		31 / 51
1,1,1-Trichloroethane	000071-55-6	0.0025	0.002		6 / 48
1,1,2-Trichloro-1,2,2-trifluoroethane		0.003	0.003		2 / 4
Tetrachloroethene	000127-18-4	0.0295	0.027		30 / 63
Trichloroethene		0.00175	0.001		3 / 63
Xylenes, total	001330-20-7	0.019	0.005		17 / 48
INORGANICS (mg/kg)					
Aluminum		24300	24300	19000	61 / 61
Antimony	007440-36-0	39.2	39.2		41 / 60
Arsenic (total)	007440-38-2	15.8	12.35	8.6	56 / 60
Barium (total)	007440-39-3	185	185	180	61 / 61
Beryllium	007440-41-7	1.8	1.8	1.3	47 / 49
Bismuth		5.7	5.7		2 / 13
Cadmium (total)	007440-43-9	10.2	10.2	2.1	21 / 61
Calcium (total)		276000	232000	310000	61 / 61
Chloride		59	---	107	3 / 6
Chromium (total)		29.6	28	20	61 / 61
Cobalt (total)	010198-40-0	15	15	19	59 / 61
Copper (total)	007440-50-8	33.1	30.5	26	61 / 61
Cyanide	000057-12-5	1.0	1.0		33 / 54
Fluoride		6.38	2.2	6.7	6 / 6
Iron (total)		43600	38900	35000	61 / 61
Lead (total)	007439-92-1	35.8	35.8	48	61 / 61
Lithium		25.3	25.3	26	9 / 10
Magnesium (total)		64500	64500	40000	61 / 61
Manganese (total)	007439-96-5	757	746	1400	61 / 61
Mercury (total)	007439-97-6	1.6	0.71		25 / 60
Molybdenum		14.5	2.3	27	9 / 11
Nickel (total)	007440-02-0	52.05	36.0	32	49 / 61
Nitrate		2.07	---	26	1 / 1
Nitrate/Nitrite		3.7	3.7		10 / 13

Table III.2 Summary Table of All Soil Contaminants Detected in Release Block D					
Soil contaminants above detection limit	CAS Registry Number	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	Detects / Analyses
Organic Carbon		10189.1	---		1 / 1
Potassium (total)		2580	2580	1900	59 / 61
Silicon (total)		1100	---		1 / 1
Silver (total)	007440-02-0	18.6	17.6	1.7	40 / 61
Sodium (total)		2490	2490	240	57 / 60
Sulfate		129	---	150	2 / 6
Thallium		0.23	---	0.46	2 / 60
Tin		1.7	1.7	20	7 / 9
Vanadium	007440-62-2	41	41	25	60 / 61
Zinc (total)	007440-66-6	754	238	140	61 / 61
RADIONUCLIDES (pCi/g)					
Actinium-227	014952-40-0	0.38	0.38		17 / 17
Americium-241	014596-10-2	0.05	0.05		17 / 24
Cesium-137	010045-97-3	1.7	1.7	0.42	43 / 79
Cobalt-60	010198-40-0	0.055	0.055	1.01	17 / 24
Lead-210		2.91	2.91		17 / 17
Plutonium-238	013981-16-3	60	60	0.13	332/394
Plutonium-239/240	015117-48-3/ 014119-33-6	0.0196	0.0196	0.18	10 / 21
Potassium-40		34.9	26.9	37	46 / 46
Radium-224		12.2	12.2		25 / 25
Radium-226	013982-63-3	3.055	2.3	2	78 / 79
Radium-228		1.52	1.25		25 / 25
Strontium-90	010098-97-2	0.854	---	0.72	1 / 5
Thorium-228	014274-82-9	3.57	3.57	1.5	18 / 18
Thorium-230	014269-63-7	5.75	5.75	1.9	34 / 39
Thorium-232	007440-29-1	7	7	1.4	221/393
Thorium-234		1.48	1.17	1.2	25 / 25
Tritium	010028-17-8	0.58	0.58	1.6	5 / 14
Uranium-234	013966-29-3	1.14	1.14	1.1	19 / 19
Uranium-235	015117-96-1	0.1195	0.1195	0.11	16 / 19
Uranium-238	007440-61-1	1.14	1.14	1.2	19 / 24

NOTE:

Contaminants with no background available were left blank.

--- No shallow data available.

Table III.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells			
Groundwater contaminants above detection limit	CAS Registry Number	Maximum concentration	BVA background
ORGANICS (mg/L)			
Acetone	000067-64-1	0.012	
Bromodichloromethane	000075-27-4	0.0037	
2-Butanone	000078-93-3	0.041	
Chloroform		0.0022	0.0005
1,1-Dichloroethane	000075-34-3	0.0035	
1,1-Dichloroethene		0.0017	
1,2-Dichloroethene		0.0047	
1,2-cis-Dichloroethene		0.0021	0.0010
1,2-trans-Dichloroethene		0.003	
Dichloromethane - Methylene Chloride		0.0098	
Isophorone	000078-59-1	0.010	
Tetrachloroethene	000127-18-4	0.002	
1,1,1-Trichloroethane	000071-55-6	0.0018	0.0007
Trichloroethene		0.0046	
Trichlorofluoromethane	000075-69-4	0.0025	
1,1,2-Trichloro-1,2,2-trifluoroethane		0.0087	
INORGANICS (mg/L)			
Alkalinity		335	
Aluminum		0.0737	0.0375
Ammonia		0.58	0.162
Barium	007440-39-3	0.0884	0.3102
Cadmium	007440-43-9	0.0077	
Calcium		126	111
Chloride		133	106
Chromium		0.0249	0.0061
Copper	007440-50-8	0.593	0.0012
Dissolved Solids		719	603
Fluoride		0.18	0.419
Iron		0.780	4.065

Table III.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells (cont.)			
Groundwater contaminants above detection limit		Maximum concentration	BVA background
Manganese	007439-96-5	0.0248	0.2296
Nitrate/Nitrite		4.9	5.349
Nitrate		2.55	
Nitrite		0.066	
Nitrogen		0.62	0.324
Organic Carbon		1.1	1.987
Phosphate		0.22	0.231
Potassium		3.8	4.461
Silver	007440-22-4	0.0242	
Sodium		82.4	62.43
Sulfate		83.0	142.7
Suspended Solids		8.0	26.44
Vanadium	007440-62-2	0.0244	0.0171
Zinc	007440-66-6	0.0577	0.1196
RADIONUCLIDES (pCi/L)			
Actinium-227	014952-40-0	0.335	
Bismuth-210	013982-38-2	0.39	
Plutonium-239/240	013981-16-3 / 015117-48-3	2.0	0.125
Radium-226	013982-63-3	0.4	0.996
Strontium-85		25	
Strontium-90	010098-97-2	0.3	0.975
Thorium-228	014274-82-9	2.17	0.779
Thorium-230	014269-63-7	1.99	0.289
Thorium-232	007440-29-1	0.1	
Tritium	010028-17-8	7200	1485
Uranium-234	013966-29-5	8.14	0.792
Uranium-238	007440-61-1	8.25	0.688

3. **Other Factors Considered:**

DOE developed a generic checklist of the issues to be considered in evaluating property to be transferred. The list was modified from those used by the Department of Defense in releasing property for sale. The list includes environmental problems from Mound Plant that are likely to concern a potential purchaser as well as items relating to the operational concerns from ongoing and future remedial actions. Table III.4 contains a brief summary and references for all factors considered. Results of only those factors which affect RB D are presented as follows:

a. **Drinking Water**

Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead will be made available to all Mound drinking water users.

b. **Monitoring Equipment**

An easement has been executed between the US DOE and MMCIC to maintain access for continued monitoring and maintenance on the following:

1. One monitoring well in bedrock (Well # 0351), exists to the west of the gravel road next to Building 100.

2. One air sampling stations (#216) is located within the boundary of Release Block D.

c. **National Environmental Policy Act (NEPA)**

1. Analyzed the impacts of transforming the Mound Plant to a different use in the form of a coordinated phase-out of the non-nuclear manufacturing, storage and surveillance functions and tritium handling activities historically conducted at the Mound Plant.
   a. Non-nuclear Consolidation Environmental Assessment (EA), DOE/EA-0792, dated June, 1993.
   b. Finding of No Significant Impact (FONSI) for the Non-nuclear Consolidation EA dated September 14, 1993.

2. Utilized the CERCLA process for review of actions to be taken under CERCLA to facilitate meeting environmental objectives of the NEPA.
   a. The Secretarial Policy for NEPA, Section E, dated June, 1994

3. Further analyzed a different use of the Mound Plant, (i.e. the impacts of leasing all or parts of the Mound Plant, excluding land associated with the South Property, to commercial enterprises).
   a. The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994
   b. FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994.

4. Documented the rationale supporting the Categorical Exclusion for the proposed sale of Mound Plant under 10 CFR 1021, Appendix A to Subpart D, Section A.7 ("use unchanged").
   a. December 8, 1995 memorandum from Nat Brown, Assistant Manager Compliance and Support, Ohio Field Office to George R. Gartrell, Director, Miamisburg Area Office.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	AFFECTS RB D? YES	AFFECTS RB D? NO	RECOMMENDATION/CONCLUSION	REFERENCE
Cultural Resources		✔	There are no historic or cultural resources within RB D that would fall under a Memoranda of Agreement (MOA) or require deed restrictions to be put in place prior to transfer to limit alterations to the structures.	Correspondence From Mark J.Epstein, Department Head, Resource Protection and Review, Ohio Historic Preservation Office dated July 31, 1998.
Drinking Water Quality	✔		Mound Plant has exceeded the action levels for lead and copper due to the corrosiveness of the water distribution system. When the action level for lead is exceeded, EPA regulations require corrosion control and public education programs. These programs are in place at Mound. Information on the steps being taken to reduce lead concentrations in the Mound Plant water system, and on the hazards associated with ingesting lead will be made available to all Mound drinking water users.	Miamisburg Environmental Management Project, Annual Site Environmental Report for Calendar Year 1997, September 1998.
Endangered Species		✔	Two state protected species were found, the dark-eyed junco (Junxo hyemalis) and the inland rush (Juncus interior). Because only one individual inland rush was located, it is not considered a viable breeding population at the Mound facility. The dark-eyed junco is not known to breed in southwestern Ohio. It has also been determined that the plant site is in the habitat range of the federally endangered species of Indiana Bat (Myotis sodalis), however, the Mound site does not provide a suitable habitat for the Indiana Bat. Neither the solitary sitings of the rush and the junco, nor the potential habitat for the Indiana bat, are expected to affect ongoing or future activities at the site.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994.
Fragment Arcs		✔	No fragment arcs and clearance zones due to explosive hazards at onsite operations exist in Release Block D.	Drawing FSD 970058, "Clearance Zones and Fragment Arcs" Building 100 Technical Review, Appendix 7.3 - Lease Agreement for Building (Extract)

Space

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	AFFECTS RB D? YES	AFFECTS RB D? NO	RECOMMENDATION/CONCLUSION	REFERENCE
Monitoring Equipment	✔		An easement has been executed between the US DOE and MMCIC to maintain access for continued monitoring of the plant for one monitoring well in bedrock (Well # 0351),located to the west of the gravel road next to Building 100 and air sampling stations 216 ~~and 217.~~	Groundwater Monitoring Program and Groundwater Protection Management Program Plan, April 1997, Revision 1. ≠ not for easement ? Mound Plant Environmental Monitoring Plan dated July 1997.
National Environmental Policy Act (NEPA)	✔		A Finding of No Significant Impact (FONSI) was issued on October 27, 1994 for Commercialization activities at the Mound Plant.	The Mound Plant EA for Commercialization of the Mound Plant, DOE/EA-1001 dated October, 1994 and FONSI for the Commercialization of the Mound Plant EA dated October 27, 1994.
Resource Conservation and Recovery Act (RCRA)		✔	DOE has found no RCRA regulated units within Release Block D warranting a RCRA closure action. It has been determined that the closest facility boundary from Buildings 23 and 72 will not change with the sale of release block D. Therefore, the risk assessment information in the RCRA Part B Permit will not change.	RCRA Part B Permit Application, Volume I, Section A, September 1995 (as amended) Responses to Information Requested by the Ohio HWFB Technical Staff transmitted to Bob Brown of the State of Ohio Hazardous Waste Facility Board dated March 12, 1996.

TABLE III.4 Summary of Other Factors Considered for Release Block D, Mound Plant

FACTOR CONSIDERED	AFFECTS RB D? YES	AFFECTS RB D? NO	RECOMMENDATION/CONCLUSION	REFERENCE
Safety Basis Risk		✔	The Building 22 Basis for Interim Operation (Bio) was modified to account for the decreased buffer zone. The DOE approved SPD was implemented 12/1/98. *(Need conclusion and reference)*	Correspondence from J. Krueger, Waste Management Manager, Bechtel & Wilcox of Ohio, Inc. to R. Proescher, Director, MEMP, 12/4/98.
Underground Storage Tanks (USTs)		✔	There are no USTs located within RB D.	EG&G Mound Applied Technologies, Active Underground Storage Tank Plan, November 1994.
Wetlands		✔	Three characteristics must be present to be classified as jurisdictional wetlands: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetlands hydrology. Absence of any one of these characteristics removes an area from consideration. None of the sites examined within Release Block D constitute jurisdictional wetlands.	Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, Technical Memorandum, Revision 1, January 1994, and Correspondence, T. Baillieul, Director, CEMP to S. Smiley, ...

8/27/98

? (1) stormwater runoff patterns - recommend adding @ p. 12

(2) NO Wild & Scenic Rivers - recommend adding to this table
Ref: Correspondence, S. Lewis, Ohio Department of Natural Resources to M. Gilliat, EG&G M.A.T., Miamisburg, Ohio, July 14, 1992

IV. FINDING OF SUITABILITY TO TRANSFER

In accordance with provisions of CERCLA Section 120 (h), contaminated property can only be transferred if one of the following applies:

(1) a remedial action has been taken that protects human health and the environment and EPA deems this conditions to be satisfied if a remedy has been constructed and is operating successfully,

(2) a decision has been made that no remedial action is necessary.

This future use of the Mound Plant has been determined based upon agreement among US DOE, US EPA and OEPA, and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

A joint agency decision between the US DOE, US EPA and OEPA has been made that no additional remedial action is necessary. Institutional controls in the form of deed restrictions on future land use would be placed on RB D. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of RB D, including RB D soils, to that which is consistent with assumptions in the RB D RRE. DOE or its successors would retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements would be imposed on the property to maintain protection of human health and the environment in the future:

A. Ensure that industrial land use is maintained;
B. Prohibit the use of bedrock ground water;
C. Provide site access for federal and state agencies for the purpose of sampling and monitoring; and
D. Soils from RB D shall not be removed from the Mound National Priority List (NPL) Facility boundary without approval from the Ohio Department of Health (ODH).

V. ENVIRONMENTAL COVENANTS:

DOE is committed to include a covenant in accordance with Section 120 (h)(3) of CERCLA in the deed for the sale or transfer of the property that warrants that:

A. All remedial action necessary to protect human health and the environment has been taken.

B. Any additional response action or corrective action found to be necessary after the date of sale or transfer shall be conducted by the United States [Section 120(h)(4)(D)(i)]. The requirements of the covenant shall not apply in any case in which the person or entity to whom the property is transferred is a potentially responsible party with respect to the property.

C. A clause granting the United States access to the property in any case in which a response action or corrective action is found to be necessary or such access is necessary to carry out a response action or corrective action on the adjoining property [Section 120 (h)(4)(D)(ii)]

VI. NOTIFICATION/PUBLIC PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS and building disposition recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room.

Table VI.1 lists all RB D PRS packages, Building Data Packages, and the RB D RRE, along with the dates they were made available for public comment.

ok

Table VI.1 Release Block D Documents and Public Comment Periods

DOCUMENT (PRS/BUILDING)	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
279	02/15/96	02/29/96
304/313	05/08/97	06/16/97
PRS 304 Action Memo	10/01/98	10/31/98
310	01/15/97	02/15/97
312	10/24/95	02/15/96
372/374	05/15/96	06/17/96
373	02/15/96	02/29/96
375/377/378	05/15/96	06/17/96
376	10/15/96	11/15/96
379	02/15/96	02/29/96
380/381	05/15/96	06/17/96
382	01/15/97	02/15/97
Building 100	09/04/97	10/20/97
Building 105	09/04/97	10/20/97
RB D Residual Risk Evaluation	08/21/96	09/20/96
Supplemental RB D Residual Risk Evaluation	12/22/98	01/21/99
Proposed Plan for RB D	12/22/98	01/21/98

Proposed Plan for Release Block D, Mound Plant, Miamisburg, Ohio

December, 1998

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ACRONYMS

AOC	Area of Concern
ARAR	Applicable Requirements and Appropriate Requirements
BDP	Building Data Package
BVA	Buried Valley Aquifer
BWX	Babcock and Wilcox
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
DOE	Department of Energy
FFA	Federal Facilities Agreement
FOD	Frequency of Detection
GV	Guideline Value
HI	Hazard Index
IDM	Investigative Derived Material
MEMP	Miamisburg Environmental Management Project
MMCIC	Miamisburg-Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NPL	National Priority List
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
OU	Operable Unit
p/Ci	picocurie
PAH	Polynuclear aromatic hydrocarbon
PETREX	(trade name for a type of soil sampling)
PRS	Potential Release Site
RB	Release Block
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SM/PP	Special Metallurgical/Plutonium Processing
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

PROPOSED PLAN
RELEASE BLOCK D
MOUND PLANT, OHIO

1. SITE NAME, LOCATION, AND DESCRIPTION

The U.S. Department of Energy (US DOE) Mound Plant (CERCLIS ID-04935) is located within the city limits of Miamisburg, in southern Montgomery County, Ohio (Figure 1.1). The Site is approximately ten (10) miles south-southwest of Dayton and 45 miles north of Cincinnati. Miamisburg is predominantly a residential community with supportive commercial facilities and industrial development. The adjacent upland areas are used primarily for residences and agriculture or are unused open spaces. The Mound Plant will remain in industrial use into the future. This future use has been determined based upon agreement among DOE, United States Environmental Protection Agency (US EPA), Ohio Environmental Protection Agency (OEPA), and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

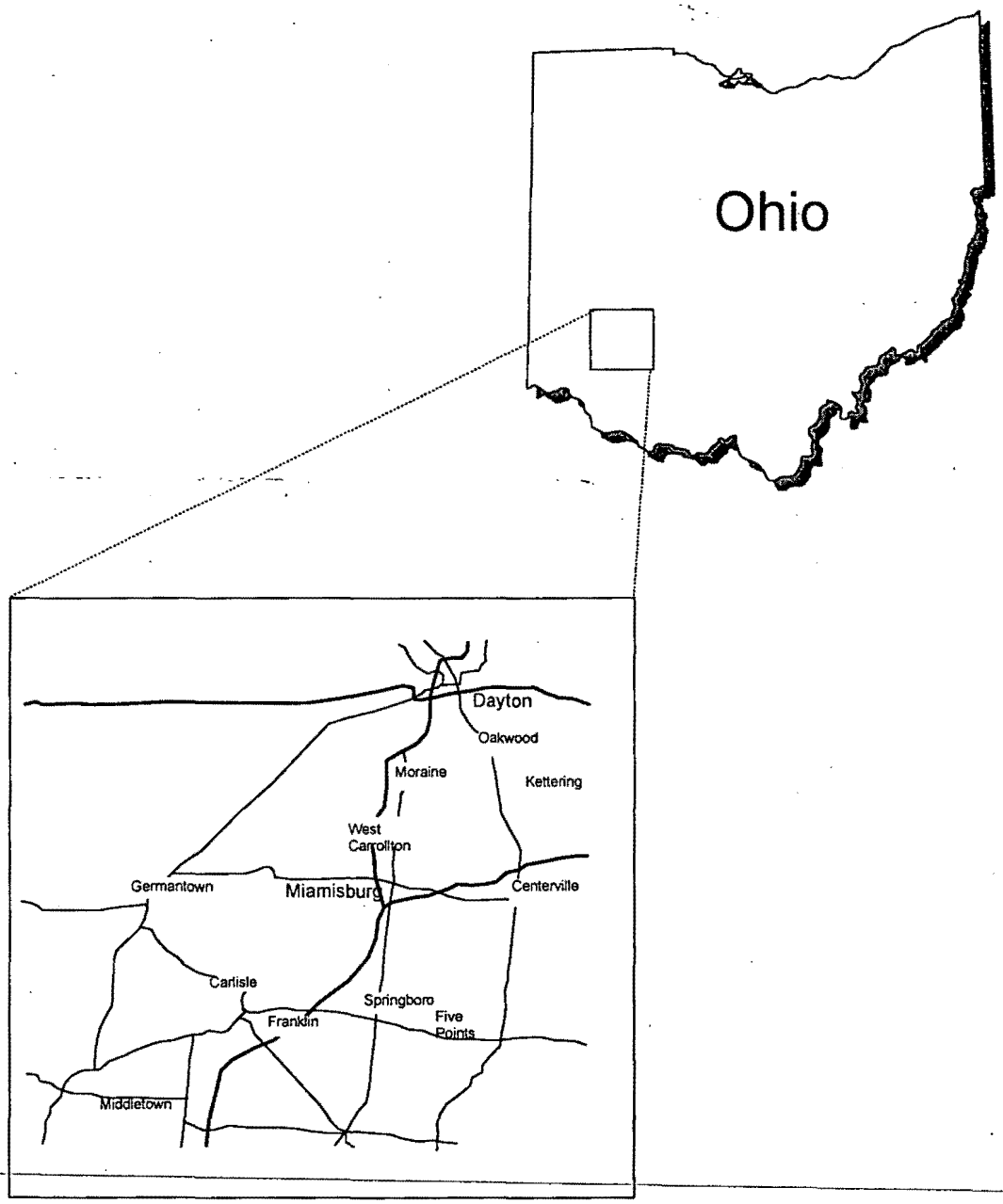
Mound Golf Course and Miamisburg Mound State Memorial Park, both directly east of the Mound facility across Mound Road, are frequented during favorable weather. The park is the site of a 68-foot high ancient Indian mound, located 380 feet east of the Mound Plant boundary. Other recreational areas within one (1) mile of the facility include the Miamisburg Municipal Park, Harmon Athletic Field, and Library Park. These areas are used extensively during the summer.

There are no large lakes within a 5-mile radius of the Site. Some vestiges of the old Miami-Erie Canal lie between the Conrail Railroad and Dayton-Cincinnati Pike west of the site. This remnant of the old Miami-Erie Canal is designated as Operable Unit (OU) 4. The major water body in the vicinity of the Mound Plant is the Great Miami River located approximately 2 miles to the west. The river is approximately 150 to 200 feet wide in this area.

Agricultural land within a 5-mile radial area around the Site is primarily used for corn and soybean production and for livestock grazing.

According to 1990 census figures, the population of Miamisburg is 17,834, Dayton is 182,044, and Montgomery County is 573,809.

FIGURE 1.1 Location of the Mound Plant



This Proposed Plan addresses Release Block (RB) D (Figure 1.2) which is located in the southeast corner of the developed area of the plant. RB D is generally bound to the south by the "South Property" (the undeveloped portion of the Mound Plant), to the east by offsite residences, to the north by a parking lot and group of small buildings (numbered 39, 77, 78, 97, 95, 101 and 102), and to the west by a fenced area for storage of Investigative Derived Material (IDM) (just west of Building 100).

There are two (2) main structures in RB D. Building 105, which was built in 1990 as a machine shop and is still used for that purpose, and Building 100, which was the Guard Force Precinct bunker. Also located in the block is a large storm sewer manway/dump station.

RB D lies within what was once called Operable Unit 5 (OU5). RB D includes a collection of individual areas called Potential Release Sites or PRSs that have undergone previous investigations. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB D have been evaluated and presented in the RB D Residual Risk Evaluation (RRE) December 1996 and its supplement "Residual Risk Evaluation, Release Block D Revision Summary, December 1998." The PRSs and buildings associated with RB D are listed in Table 2.1

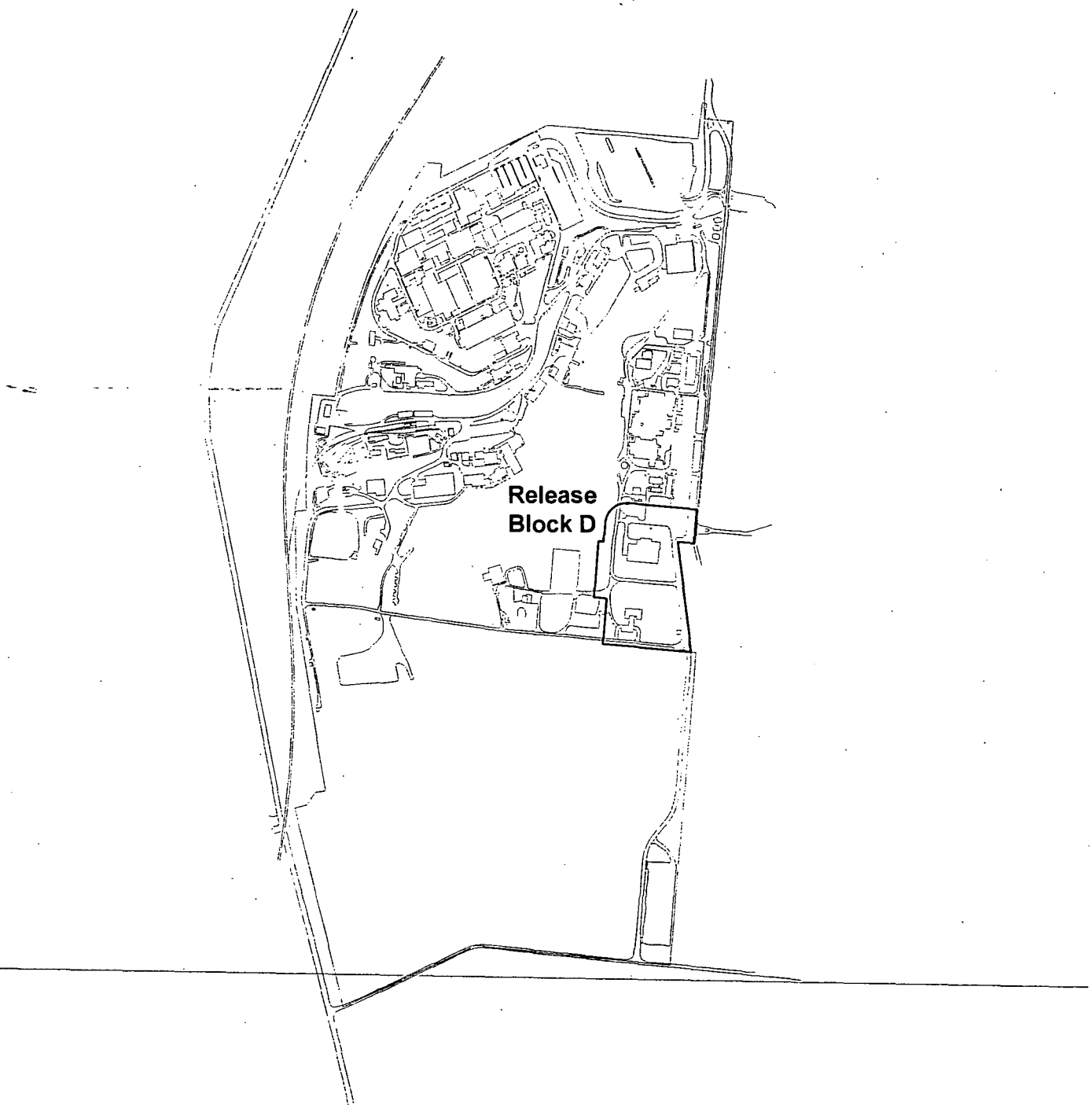
2. SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.1 History

The Mound facility was originally established by the DOE as an integrated research, development, and production facility that supported the nation's weapons and energy programs. To reconfigure and consolidate the nuclear complex, the DOE has decided to phase out the defense mission at Mound. As a result, the Mound Site has been designated an environmental management site and the plant is in the process of being remediated, transferred, and converted into a research and industrial site. Currently BWX Technologies, Inc. manages Mound for the DOE.

Early Mound Plant programs investigated the chemical and metallurgical properties of polonium-210 and its applications; particularly, the fabrication of neutron and alpha sources for weapon and non-weapon use. Investigations involving uranium, protactinium-231, and plutonium-239 were performed from 1950 to 1963 as part of the national civilian power reactor program. In 1954, Mound began the separation of stable isotopes.

FIGURE 1.2 Location of Release Block D



In the mid 1950s, Mound initiated efforts to develop a large-scale process for the recovery of thorium from a variety of thorium-bearing ores. Even though this project was canceled prior to full-scale operation, approximately 1,650 tons of sludge containing thorium were received at Mound. Due to its corrosivity, the thorium sludge was continually repackaged and relocated. This resulted in a number of thorium-contaminated areas around the site.

As a result of historic disposal practices and contaminant releases to the environment, the Mound Plant was placed on the National Priorities List (NPL) on November 21, 1989. The DOE signed a Comprehensive Environmental Resource Compensation and Liability Act (CERCLA) Section 120 Federal Facility Agreement (FFA) with the US EPA, effective October 1990. In 1993, this agreement was modified and expanded to include the OEPA.

The PRSs in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. The primary sources of potential radioactive contamination in RB D resulted from wastewater treatment, storage of radioactive materials, and ground disposal of soils and construction spoils. The PRSs and buildings within RB D are listed in Table 2.1, with the activity that caused concern and the evaluation results.

2.2 Enforcement and Agreements - Mound 2000

The DOE, the US EPA, and the OEPA had originally planned to address the Plant's environmental restoration issues under a set of OUs, each of which would include a number of PRSs. For each OU, the site would follow the traditional CERCLA process: a Remedial Investigation/Feasibility Study (RI/FS) followed by a Record of Decision (ROD), followed by Remedial Design/Remedial Action (RD/RA). After initiating remedial investigations for several OUs, the DOE and its regulators realized during a strategic review in 1995 that, for Mound, the OU approach was inefficient. The DOE and its regulators agreed that it would be more appropriate to evaluate each PRS or building separately, use removal action authority to remediate them as needed, and establish a goal for no additional remediation other than institutional controls for the final remedy documented in the Record of Decision. To evaluate any residual risk after all removals have been completed, a residual risk evaluation is conducted to ensure the block or parcel is protective of human health for industrial reuse. This process was named the Mound 2000 process. DOE and its regulators pursued this approach with the understanding that US EPA and OEPA reserve all rights to enforce all provisions of the FFA and participation in the Mound 2000 process does not constitute a waiver of US EPA and OEPA rights to enforce the FFA.

TABLE 2.1 Release Block D PRSs and Buildings and Core Team Conclusions

PRS/ BLDG	Reason for Identification	Core Team Decision	Close Out of PRS/BDP
279	Location of the Old Firing Range Drum Storage Area	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
304	Past use as a soil disposal area - thorium contamination.	Removal Action conducted in October 1998.	OSC Report signed by Core Team on 12/17/98.
310	Elevated cesium-137 sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 1/14/97
312	Elevated thorium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
313	Elevated thorium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 2/19/97
372/374	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
373	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
375/377 /378	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
376	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/3/96
379	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
380/381	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
382	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 1/14/97
Bldg. 100	Building used for site operations	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 8/5/97
Bldg. 105	Building used for site operations	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 8/5/97

The Mound 2000 process established a "core team" consisting of representatives of the Miamisburg Environmental Management Project (MEMP) of DOE, US EPA, and OEPA. The Core Team evaluates each of the potential contamination problems and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area. If a decision cannot be made, the Core Team identifies specific information needed to make a decision (e.g., data collection, investigations). The Core Team also receives input from technical experts as well as the general public and/or public interest groups. Thus, all stakeholders have the opportunity to express their opinions or suggestions involving each potential problem area. The details of this process are explained in the "Workplan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach," December 1998.

The Mound property is divided into eighteen "release blocks," which are contiguous tracts of property designated for transfer of ownership. These eighteen release blocks may be reconfigured to accommodate transfer of Mound property for economic development.

"The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 6, 1997" was developed as a framework for evaluating human health risks associated with residual levels of contamination. The RREM is applied to a release block once necessary remediation has been completed, and the remaining PRSs or buildings in the release block have been designated as No Further Assessment (NFA). Once these environmental concerns have been adequately addressed by the Core Team, a residual risk evaluation is performed. The evaluation documents whether the release block is acceptable for industrial redevelopment. The results of the Residual Risk Evaluation for RB D are discussed in Section 4 through Section 6 of this Proposed Plan. These results indicate that Release Block D is protective of human health.

A Record of Decision (ROD) will be generated for each piece of property to be transferred. The ROD will document the most appropriate remedy that meets statutory requirements and ensures protection of human health and the environment. The Core Team expects that institutional controls will be specified in the ROD for RB D.

After the ROD for RB D is final, DOE will submit to US EPA and OEPA documentation that shows the property meets CERCLA 120 (h) (3) requirements. This documentation must be sent to the Administrator of US EPA for concurrence on the property transfer. After concurrence is obtained, the title of the property may be formally transferred. Prior to acceptance of the deed for any discrete parcel, the Buyer shall acknowledge that it has reviewed the existing environmental reports provided by DOE for the Mound Facility. Acceptance of the deed thereby acknowledges and commits the Buyer to abiding by institutional controls specified in the ROD.

3. HIGHLIGHTS OF PREVIOUS COMMUNITY PARTICIPATION

The community has been an active participant in this process to date. Comments from the public on the PRS and building disposition recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the documents, comments, and responses have been placed in the CERCLA Public Reading Room. The Mound 2000 RREM and the RRE for RB D have also gone through a public comment cycle and copies are in the CERCLA Public Reading Room. With this Proposed Plan, a supplement to the RB D Residual Risk Evaluation is being issued to incorporate data previously not included due to a slight change in RB D boundaries and to incorporate recently acquired soils data generated during the PRS 304 removal action and investigation.

Table 3.1 lists all RB D PRS packages, Building Data Packages, and the RB D RRE, along with the dates they were made available for public comment. This Proposed Plan will have a thirty (30) day public comment period ending on January 21, 1999.

TABLE 3.1 Release Block D Documents and Public Comment Periods

DOCUMENT (PRS/BUILDING)	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
279	02/15/96	02/29/96
304/313	05/08/97	06/16/97
PRS 304 Action Memo	10/01/98	10/31/98
310	01/15/97	02/15/97
312	10/24/95	02/15/96
372/374	05/15/96	06/17/96
373	02/15/96	02/29/96
375/377/378	05/15/96	06/17/96
376	10/15/96	11/15/96
379	02/15/96	02/29/96
380/381	05/15/96	06/17/96
382	01/15/97	02/15/97
Building 100	09/04/97	10/20/97
Building 105	09/04/97	10/20/97
RB D Residual Risk Evaluation	08/21/96	09/20/96
Supplemental RB D Residual Risk Evaluation	12/22/98	01/21/99

4. SCOPE AND ROLE OF RELEASE BLOCK D

This Proposed Plan addresses one of 18 separate release blocks at Mound. These eighteen release blocks may be reconfigured to accommodate transfer of Mound property for economic development.

A ROD will be generated for each piece of property to be transferred. The Proposed Plan and resulting ROD will document the most appropriate remedy that meets statutory requirements and ensures protection of human health and the environment. This Proposed Plan for RB D represents one of a number of Proposed Plans that will be generated for parts of the Mound site. As such, this Plan identifies the proposed final action for RB D. Once the ROD for RB D is final and effective, DOE could petition the US EPA to delist RB D from the NPL.

After a ROD has been generated for each of the release blocks, the Core Team plans for a site-wide final ROD to address any areas or media associated with the Mound Plant that were not previously addressed.

5. SITE CHARACTERISTICS

5.1 Geologic Setting

The bedrock section beneath Mound Plant consists of thin, nearly flat-lying beds of alternating shale and limestone of the Richmond Stage of the Cincinnati Group (Upper Ordovician -- about 450 million years ago). The Cincinnati Group is present at the surface at Mound Plant and underlies RB D. The limestone beds range from 2 to 6 inches in thickness and the shale layers are commonly 5 to 8 feet thick.

Pleistocene age (less than about 2 million years old) glacial deposits at Mound Plant include both till and outwash deposits. The till in the area of Mound Plant is composed of an unsorted, unstratified mixture of clay, silt, sand, and coarser material. Water-lain deposits consist of outwash composed of well-sorted sand and gravel. The sand and gravel is horizontally layered, and commonly cross-bedded. The outwash in the vicinity of Mound Plant occurs as restricted valley-train deposits that were formed by the aggregation of glacial meltwater streams. The outwash deposited in the Miami River Valley and the associated tributary valley forms the Buried Valley Aquifer (BVA) and contiguous deposits. A general discussion of the geology is presented in the "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992. "

5.2 Hydrogeologic Setting

There are two hydrogeologic regimes at Mound Plant: flow through the bedrock beneath the Main Hill and the SM/PP Hill, and flow within the unconsolidated glacial deposits and alluvium associated with the Buried Valley Aquifer (BVA) in the Great Miami River Valley and the tributary valley between the Main Hill and SM/PP Hill. The BVA is a US EPA-designated sole source aquifer. The bedrock system, an interbedded sequence of shale and limestone, is dominated by fracture flow especially in the upper portions of the bedrock. Groundwater movement within the till and sand and gravel, within the buried valley, is through porous media. Groundwater flow from Mound Plant is generally to the west and southwest toward the BVA of the Great Miami River Valley. A discussion of the hydrogeology of Mound is presented in the OU9 work plan and the "Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1 (September 1994)" and "Operable Unit 9 Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0 (January 1994)."

5.3 Available Data for Release Block D

All of the PRSs within RB D have been evaluated by the Core Team and, if necessary, addressed by either assessment or remediation. The following sections discuss the data relevant to RB D that are available from the general source documents and the individual Potential Release Sites packages.

5.3.1 Background Data

Soils. Background concentrations measure the amount of a chemical that is naturally occurring (like metals) or anthropogenic (man-made but, for background purposes, originating from sources other than the Mound Plant). Background concentrations are used as a screening tool to determine which contaminants should be carried through a risk evaluation as described in Section 5.4 of this Proposed Plan. Regional background concentrations in soil were determined during investigations conducted in September 1994 and August 1995 and are documented in reports titled "Operable Unit 9 Background Soils Investigation Soil Chemistry Report" and "Operable Unit 9, Regional Soils Investigation Report."

Groundwater. Background concentrations for groundwater were developed from two sources of data. For the Buried Valley Aquifer, background values were reported in the April 1995 "OU9 Hydrologic Investigation: Groundwater Sweeps Report." Background concentrations for bedrock groundwater were reported in the April 1995 "OU5 New Property Remedial Investigation Report."

5.3.2 Groundwater Contaminant Data

Groundwater data consist of water analyses of the Mound production wells screened within the Buried Valley Aquifer, and analyses of groundwater from monitoring wells screened in the bedrock aquifer on the Mound property. These wells are sampled as part of the site-wide groundwater monitoring network. Section 2.2.2 of the RRE for RB D documents the specific groundwater data used to evaluate the current and future groundwater profile for RB D.

5.3.3 Soil Contaminant Data

Soil contaminant data for RB D collected prior to the Mound 2000 process are documented in a number of DOE reports. These references include:

- Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995 *(results of systematic sampling)*,
- OU-5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995 *(results of systematic sampling in southern area of site, gives general overview of soils not thought to be contaminated)*,
- OU-9 Regional Soils Investigation Report, Revision 2. August 1, 1995 *(purpose was to give a regional soil description away from impacts of Mound operations)*,
- OU-3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3. Final, Revision 0. July 1, 1993 *(purpose was to address areas noted in previous surveys; but, not thought to endanger human health or environment)*,
- OU-9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1, 1993 *(a compendium of existing data)*, and

- Soil Gas Confirmation Sampling. Revision 0. April 1, 1996 *(results of a study following up on a prior qualitative study).*

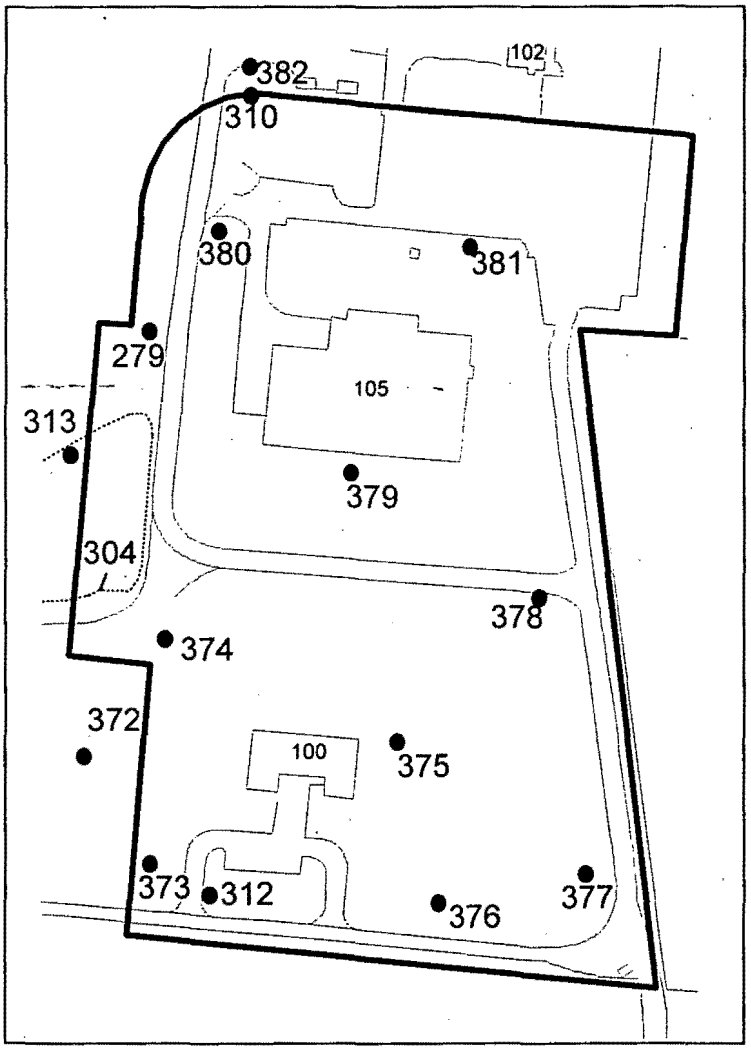
In the Mound 2000 process, radionuclide and chemical contaminants were studied on a PRS basis. The results are described below.

There are 14 Potential Release Sites (PRSs) located within RB D and two PRSs near the northern and western edges of RB D. The PRSs are numbered 279, 304, 310, 312, 313, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, and 382. The PRSs were identified based on either knowledge of historical land use that was considered potentially detrimental, or on actual sampling results showing elevated concentrations of contaminants. The rationale for designation of RB D PRSs is outlined in Table 2.1. The locations of these PRSs are shown on Figure 5.1.

Many of the PRSs (372, 374, 375, 377, 378, 380, 381, and 382) were established based solely on soil gas readings. The soil gas study that identified these PRSs was conducted in 1994, utilizing PETREX tubes. The PETREX collector tubes measure relative ion counts of volatile and semi-volatile organic compounds; therefore, the method only provides qualitative indications of possible contamination.

Eight of the PRSs were identified based on previous radionuclide measurements. Brief descriptions of those measurements appear after Figure 5-1.

FIGURE 5.1 PRSs Within Release Block D



- At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. In December 1991, soil samples were again collected from this area. Of the 28 samples collected, two had cesium-137 concentrations above the detection limit. At the same location, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, additional soil samples collected in this area did not indicate the presence of cesium-137 or any other contaminant.

- At PRS 373, PRS 376 and PRS 379, plutonium-238 was detected in surface samples in 1994, 1995 and 1996, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detectable plutonium-238 concentrations were shown (by surrounding samples) to be isolated to the PRS locations only. Due to its low solubility and concentration, plutonium at these locations is not expected to adversely affect groundwater at potential drinking water sources.

- At PRS 312, a surface sample collected in 1993 indicated an elevated thorium-232 concentration of 5.02 pCi/g. Nearby samples did not indicate elevated levels, suggesting the elevated result was an isolated event.

- PRS 279 was identified based on photographs that showed drum storage at this location. This drum storage area had been referred to as the Old Firing Range Storage Site and was used between 1970 and 1974. Plutonium-238, cobalt-60, radium-226, and thorium-228 were measured in this area.

  There were no elevated soil gas measurements detected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable polynuclear aromatic hydrocarbons (PAHs) at an elevated concentration of approximately 59 mg/kg. This sample was a composite of four samples collected at the corners of a 30 foot x 30 foot square. A second composite prepared similarly from about 100 feet away found similar contaminants at 1 to 3 mg/kg. Other nearby sample locations nearby did not detect any of the contaminants. These chemicals are commonly associated with asphalt, which is present in the area.

A February 1996 soil sample in the vicinity of PRS 279 contained low levels of organic and inorganic compounds, plutonium-238, radium-226, and thorium-228.

- PRS 313, which neighbors PRS 304, was a soil segregation area that contained the overburden soils excavated from the decommission and decontamination of a waste transfer line (PRS 300) and from Area 12 (PRS 273). PRS 313 was identified due to an elevated thorium result. Sampling in 1995 in the area of PRS 313 indicated no contaminants in excess of guideline criteria.

- PRS 304 was identified as a former soil disposal area. PRSs 304/313 were originally binned NFA on February 19, 1997, based on data existing at that time. However, a recent radiological survey and sampling event conducted in the fall of 1998 identified two small "hot spots" which were subsequently removed. The results from the 1998 removal actions are available in the "On Scene Coordinator (OSC) Report for PRS 304 Removal Action, December 1998" which is being issued concurrently with this Proposed Plan.

Soil data can be divided into three types: (a) data obtained through commercial analytical laboratory analysis, (b) data obtained through "screening" techniques conducted in a DOE laboratory, and (c) data obtained through screening techniques conducted in the field. Analytical laboratory data are obtained using strict methods and are subjected to exacting quality control procedures. These data are of the highest quality, and are quantitative. The laboratory screening data are considered to be of lower quality because sample preparation does not occur, and the measuring instruments are less precise. The field screening techniques are the least accurate due to instrument limitations and the effects of ambient conditions on field measurements. Due to these limitations, field screening data were not used for any calculations in the RRE for RB D.

5.4 Summary of Contaminants Detected in Release Block D

The complete list of all contaminants detected at least once within RB D is provided in the RB D RRE Supplement in Tables II.2, II.3, and II.4 for soil, current groundwater and future groundwater, respectively. These tables present the maximum concentration of each contaminant, and also present appropriate background concentrations, Guideline Values, and additional screening criteria for comparative purposes. The three categories (soil, current groundwater, and future groundwater) represent the exposure routes of concern in the RRE.

Only contaminants exceeding (1) background, (2) a base level of potential health concern, and (3) certain frequency of detection (FOD) criteria are carried through the RRE process. In general, whether or not a contaminant is present at or above background is determined by comparing the sample result to the 95% upper tolerance limit (UTL) for background data on that contaminant. Secondly, the levels of health concern used as screening criteria are the Guideline Values (GVs) established for Mound. GVs are media-specific concentrations of contaminants that correspond to certain risk levels for certain exposure scenarios. Thirdly, FOD criteria are used to screen out contaminants when the compound is infrequently detected and there is no reason to believe the compound is present. Infrequently, for RRE screening purposes, is a detection rate below 5% (one sample in 20).

Contaminants carried forward in the RRE for Release Block D are identified in Tables 5-1 through 5-3. The tables document the results of the screening process by listing the reason specific contaminants were carried through the RRE. A more detailed discussion of the screening process is located in the Mound 2000 Residual Risk Methodology.

5.4.1 Screening Results for Soil Contaminants

For RB D, 50 organic, 34 inorganic, and 20 radiological compounds were considered as potential contaminants of concern for the soil component of the RRE. Soil concentrations of those compounds were compared to the screening criteria listed above to determine if a given compound should be included in the RRE. The comparison to guideline values was completed using the GVs found in "Risk-Based Guideline Values, Mound Plant, Miamisburg, OH December 1995. "

Organic compounds. Because the organic contaminants found at Mound are generally not naturally-occurring substances, background concentrations were not available. The organic compounds were therefore screened against Guideline Values, and against the FOD factor (the contaminant must have been detected at least once in every 20 samples collected to be carried forward in the RRE). Using these screening criteria, the number of organic compounds was reduced from 50 to 17.

Inorganic compounds. Inorganic compounds were screened against background concentrations, Guideline Values, frequency of detection criteria, and whether they are common constituents of most soils, such as sodium and potassium. Compounds classified as human nutrients were eliminated from further consideration. Using these screening criteria, the number of inorganic compounds was reduced from 34 to 5.

Radiological compounds. Radiological contaminants were screened against background (95% UTL) and Guideline Values. Using these screening criteria, the number of radionuclides was reduced from 20 to 5.

5.4.2 Screening Results for the Current Groundwater Scenario

"Current" groundwater contaminants are defined as those currently found in the Mound production wells. For screening purposes, 16 organic, 28 inorganic, and 12 radiological compounds were identified as potential contaminants of concern. Similar to the approach for soils data, current groundwater concentrations were screened against background, Guideline Values, and on the basis of whether they are common water quality parameters, such as alkalinity or dissolved solids that are not health-related parameters.

The screening process reduced the number of organic contaminants from 16 to 3, the number of inorganic contaminants from 28 to 3, and the number of radiological contaminants from 12 to 6. The contaminants that were carried through the RRE process for the current groundwater scenario are summarized in Table 5.2.

5.4.3 Screening Results for the Future Groundwater Scenario

Future groundwater contaminants are defined as those currently in the Mound production wells, combined with contaminants measured in Mound site bedrock monitoring wells. This definition assumes that all contaminants in the bedrock aquifer water (that exceed background) will migrate to the production wells within the BVA in the future. To create this combined list of contaminants, the bedrock contaminants were screened against bedrock background concentrations. The screening process reduced the number of bedrock contaminants from 74 to 39. This list was combined with the current groundwater list. As a result, the complete list of future groundwater contaminants contained 22 organic compounds, 21 inorganic contaminants, and 16 radiological contaminants.

These contaminants were screened with respect to BVA background concentrations, Guideline Values, and whether they are common water quality parameters not associated with health impacts.

The screening reduced the number of future organic contaminants from 22 to 3, the inorganic contaminants from 21 to 8, and the radiological contaminants from 16 to 6. The contaminants that were carried through the RRE process for the future groundwater scenario are summarized in Table 5.3.

TABLE 5.1 Soil Contaminants Carried Through the RRE for RB D

Soil Constituents	Maximum concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd or G.V.)	Reason for carrying through RRE
ORGANICS (mg/kg)				
Acenaphtene	6.4	3.8		F.O.D. =18%
Acenaphthylene	0.22	0.029		F.O.D. = 8%
Benzo(a)anthracene	41.5	6.8	4.10[1]	Max Conc > G.V.
Benzo(a)pyrene	33.5	7.5	0.41[1]	Conc. > G.V.
Benzo(b)fluoranthene	53	12	4.10[1]	Max Conc > G.V.
Benzo(g,h,i) perylene	3.9	3.9		F.O.D. = 25%
Carbazole	0.165	0.165		F.O.D. = 15%
Dibenz(a,h)anthracene	1.3	1.3	0.41	Conc. > G.V.
Dibenzofuran	3.8	3.0		F.O.D. = 20%
2,4-Dinitrophenol	0.97	0.97		F.O.D. = 5.6%
Fluorene	6.3	3.3		F.O.D. = 27%
Indeno(1,2,3-cd)pyrene	20.5	4.7	4.10[1]	Max. Conc. > G.V.
2-Methylnaphthalene	1.4	1.4		F.O.D. =20%
Naphthalene	1.9	1.9		F.O.D. = 23%
Phenanthrene	49.5	13		F.O.D. = 40%
1,1,1-Trichloroethane	0.0025	0.002		F.O.D. = 12.5%
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003		F.O.D. = 50%
INORGANICS (mg/kg)				
Antimony	39.2	39.2	85[5]	Conc. > G.V.
Arsenic	15.8	12.35	64[5]	Conc. > G.V. & Bkgd.[6]
Beryllium	1.8	1.8	0.7	Conc. > Bkgd.
Bismuth	5.7	5.7		F.O.D. = 17%
Copper (total)	33.1	30.5	26[4]	Conc. > Bkgd.[6]
RADIONUCLIDES (pCi/g)				
Cesium-137	1.7	1.7	0.46[2]	Conc. > G.V[6]
Lead-210	2.91	2.91		F.O.D. = 100%
Plutonium-238	60	60	5.50[2]	Conc. > G.V[7] >Bkgd.
Thorium-228	3.57	3.57	0.83[8]	Conc. > G.V.
Thorium-232	7	7	0.83[2,3]	Conc. > G.V. [6]

1 - Total Risk 10^{-6} for Ingestion only.
2 - Total Risk 10^{-6} for Ingestion, Inhalation and External.
3 - Guideline Values from Thorium-228+D.
4 - Background value
5 - Hazard Quotient for Ingestion only. (decision made on 0.1 x G.V.)
6 - Arsenic, cesium-137, copper and thorium-232 were carried through the RRE in the first screening (as indicated in the table). However, arsenic, cesium-137, copper and thorium-232 total values were less than the background value therefore not carried through the RRE at a subsequent screening. Soil exposure concentrations for RB D were based on the 95th% UCL for all parameters with greater than 20 analyses. These exclude the Site employee value for flourene and naphthalene, all carbazole, bismuth and 1,1,2-trichloro-1,2,2-trifluoroethane data. These parameters use the maximum concentration value since N<20 samples.
7 - Pu-238 values were log-normally distributed and hence, concentrations (95th%UCL) shown were based on the log-transformed data.
8 - The Th-228 G.V. has not been formally modified to reflect new risk data. However, all Th-228 risk calculations were performed using updated slope factors.
F.O.D. Frequency of detection. Contaminants with a F.O.D. greater than 5% were carried thru the RRE.

Table 5.2 Current Groundwater Contaminants Carried Through RRE for RB D

Groundwater Constituents	Maximum concentration	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
ORGANICS (mg/L)			
1,1-Dichloroethene	0.0017	---	No Bkgd. or G.V. available
1,1,1-Trichloroethane	0.0018	0.0007[3]	Conc. > Bkgd.; no G.V. available
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	---	No Bkgd. or G.V. available
INORGANICS (mg/L)			
Cadmium	0.0077	0.051[1]	Conc. >G.V., no Bkgd. available
Copper	0.593	0.0012[3]	Conc. > Bkgd.; no G.V. available
Lead	0.040	0.0101[3]	Conc. > Bkgd.; no G.V. available
RADIONUCLIDES (pCi/L)			
Actinium-227	0.335	0.26[2]	Conc. > G.V.; no Bkgd. available
Bismuth-210	0.39	---	No Bkgd. or G.V. available
Plutonium-239/240	2.0	0.125[3]	Conc. > Bkgd. & G.V.
Tritium	7200	1485[2]	Conc. > Bkgd. & G.V.
Uranium-234	8.14	0.792[3]	Conc. > Bkgd. & G.V.
Uranium-238	8.25	0.688[3]	Conc. > Bkgd. & G.V.

[1] - Hazard Index for Ingestion + Dermal + Inhalation. (decision made on 0.1 x G.V.)
[2] - Total Risk 10^{-6} for Ingestion only.
[3] - Background value.

Table 5.3 Future Groundwater Contaminants Carried Through RRE for RB D

Groundwater Constituents	Estimated Maximum Concentration	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
ORGANICS (mg/L)			
1,1-Dichloroethene	0.0017	---	No Bkgd. or G.V. available
1,1,1-Trichloroethane	0.0065	0.0007[3]	Conc > Bkgd.; no G.V. available
1,1,2,-Trichloro-1,2,2-trifluoroethane	0.0087	---	No Bkgd. or G.V. available
INORGANICS (mg/L)			
Beryllium	0.0001	6.6E-05[2]	Conc. > G.V.
Bismuth	0.0016	---	No Bkgd. or G.V. available
Cadmium	0.0077	0.051[3]	Conc > G.V.; no Bkgd. available
Chromium	0.4961	0.0061[3]	Conc > Bkgd. and G.V.
Cobalt	0.0039	0[3]	Conc > Bkgd.; no G.V. available
Copper	0.5964	0.0012[3]	Conc > Bkgd.; no G.V. available
Lead	0.04	0.010[3]	Conc > Bkgd.; no G.V. available
Molybdenum	0.0096	0.0056[3]	Conc > Bkgd.; no G.V. available
RADIONUCLIDES (pCi/L)			
Actinium-227	0.355	0.26[1]	Conc > G.V.; no Bkgd. available
Bismuth-210	0.39	---	No Bkgd. or G.V. available
Plutonium-239/240	2.020	0.125[3]	Conc > Bkgd. and G.V.
Tritium	10427	1485[3]	Conc > Bkgd. and G.V.
Uranium-234	8.14	0.792[3]	Conc > Bkgd. and G.V.
Uranium-238	8.25	0.688[3]	Conc > Bkgd. and G.V.

[1] - Total Risk 10^{-6} for Ingestion only.
[2] - Total Risk 10^{-6} for Ingestion + Dermal + Inhalation
[3] - Background value.

6. SUMMARY OF SITE RISKS

For the Mound Plant, the human health risk associated with exposure to residual levels of contamination is evaluated pursuant to the Mound 2000 Residual Risk Evaluation Methodology (RREM) document described previously in this Proposed Plan. The RREM is applied to a limited area, such as a release block, after all necessary remediation has been completed and the remaining PRSs or buildings within that release block have been designated as NFA. Once the Core Team has determined that all environmental concerns have been adequately addressed, the residual risk evaluation is performed. The RRE consists of five steps:

Step 1: Identification of Contaminants to be Evaluated

Step 2: Exposure Assessment

Step 3: Toxicity Assessment

Step 4: Risk Characterization

Step 5: Evaluation of Potential Residual Risks

The information needed for Step 1 was presented in Section 5 of this Proposed Plan. Steps 2 through 5 are described below. After the Core Team reviews and approves an RRE, it is placed in the public reading room for a formal 30-day public review period. In the specific case of RB D, a supplemental RRE was needed to address recently-generated contaminant data. The public review period for the RRE supplement is running concurrently with the public review period for this Proposed Plan.

6.1 Exposure Assessment

The two exposure scenarios examined in the RB D RRE involve an onsite construction worker, and a site employee engaged in non-construction activities. The construction worker and site employee are assumed to be exposed to soil contaminated at the levels described by currently available data. The workers are assumed to be exposed to the existing soil contamination both now and into the future. For the groundwater pathways, both current and future exposures are assumed. Current groundwater exposures are estimated based on the current concentration levels in Mound production wells 0076 and 0271 (which are screened in the Buried Valley Aquifer) because they supply potable water to Mound. The bedrock water under RB D is not a current source of drinking water.

Future groundwater contamination is assumed to be appropriately represented by combining current BVA contamination with additional contamination currently in the nearby bedrock aquifer. Bedrock aquifer groundwater from across the entire Mound Plant is assumed to eventually mix with BVA water, and thereby contribute bedrock aquifer contamination to the BVA. It is this mix of BVA and bedrock contaminated water to which the future construction worker and site employee are assumed to be exposed.

6.1.1 Construction Worker Scenario

It is assumed that activities requiring earth-moving, such as construction of new buildings, will occur in RB D. These construction activities could result in worker exposure to contaminants in soil, on dust particles, in air, and in groundwater. This scenario characterizes the potential exposure to a construction worker by assuming an the worker is onsite eight hours per day, 250 days per year, for five years. The construction worker is assumed to be an adult weighing 70 kg. The amount of soil ingested is assumed to be 480 mg/day based on "heavy" construction work. All parameters needed to calculate intakes are specified in the Mound 2000 RREM.

6.1.2 Site Employee Scenario

It is assumed that normal activities associated with light industry, small business, and general office work will occur on the RB D property. These activities could result in worker exposure to contaminants in soil, on dust particles, in air, and in groundwater. This scenario characterizes the potential exposure of a site employee assumed to work on the property eight hours per day, 250 days per year, for 25 years. No exposure to potential interior building contamination is assumed or addressed here. The site employee is assumed to be an adult weighing 70 kg. The site employee is assumed to ingest 50 mg/day of contaminated soil, the amount incidentally ingested while working at the site. All parameters needed to calculate intakes are specified in the Mound 2000 RREM.

6.2 Identification of Exposure Pathways

An exposure pathway describes the course a chemical or radionuclide takes from a source to an exposed individual. An exposure pathway generally consists of a source and mechanism of release, an environmental medium in which the contaminant is contained or transported, a human or environmental receptor, and an exposure route. As an example, a source of contamination could be shallow soil that received a spill, a release mechanism could be resuspension of the soil by wind action, the affected environmental medium would be the atmosphere into which the soil was suspended, and a construction worker would be the receptor. In this example, the exposure route would be inhalation. Other typical exposure routes include uptake by ingestion and/or dermal contact.

6.3 Residual Risk Evaluation

To estimate the residual risks associated with the use of RB D, toxicity and exposure assessments were summarized and integrated into quantitative expressions of risk. Two types of risk characterization are performed. The first is the calculation of a Hazard Index (HI) for noncarcinogens. The second is the calculation of carcinogenic risk associated with cancer-causing compounds, including radionuclides. These calculations are performed for both the hypothetical construction worker and the hypothetical site employee. The results for Release Block D are summarized below.

6.3.1 Hazards and Risks for the Construction Worker

The RRE methodology established for Mound is intentionally conservative and tends to over-estimate hazards and risk. For the construction worker-related scenarios, a conservative assumption of daily exposure to RB D contamination throughout a five-year period was used.

6.3.1.1 Non-Cancer Risks

Overall hazards across all pathways, soil+current groundwater and soil+ future groundwater, were summed to provide a comprehensive Hazard Index (HI). The HI is based on the overall risk to a hypothetical construction worker from contaminants present in soil and groundwater (current and future). The HI is based on incremental contaminant concentrations, i.e., concentrations above

background. However, comprehensive Hazard Indices were also developed based on background and total exposures. Since background exposures and hazards were negligible, the Hazard Indices based on incremental and total exposures were the same, 0.16 for soil+current groundwater and 1.1 for soil and future groundwater (Table 6.1). For comparison purposes, US EPA guidance sets a limit of 1.0 for the Comprehensive Hazard Index.

The soil + current groundwater HI is dominated by the soil pathway. Virtually all of the non-carcinogenic risk for this scenario is attributable to daily ingestion of soil containing antimony and 2,4-dinitrophenol.

The larger value for the soil + future groundwater HI is due to a predicted increase in chromium concentrations in the BVA. The bedrock water is assumed to eventually mix with BVA groundwater, which is the potable water supply for the Mound Plant. Actual exposure to BVA groundwater is likely to be less than assumed here as the hazards were calculated assuming no dilution and using only the highest concentrations of chromium detected in groundwater. It should be noted that the elevated levels of chromium and other metals in the bedrock and BVA groundwater are currently under investigation.

6.3.1.2 Cancer Risks

Cancer risks for the RB D construction worker are within the 10^{-4} to 10^{-6} (1 in 10,000 to 1 in 1,000,000 incremental cancer incidence) acceptable risk range established by CERCLA and the NCP. Overall risks from carcinogenic, including radiological, contaminants across all pathways were summed to provide an overall risk based on incremental (i.e., above background) exposures. Overall risks were also developed based on background and total exposures. The risks based on incremental exposures were 3.5×10^{-5} for soil + current groundwater and 3.5×10^{-5} for soil + future groundwater. The risks based on background exposures were 1.4×10^{-7} for soil + current groundwater and the same for soil+future groundwater. The risks based on total exposures (background plus incremental) were 4.9×10^{-5} for soil + current groundwater and 5.0×10^{-5} for soil + future groundwater.

The results from the RRE are shown in Table 6-1. For organic and inorganic carcinogens, the soil pathway dominates the risk. Virtually all of the risk to the construction worker from soil is attributable to a series of polynuclear aromatic hydrocarbons that are naturally occurring products in petroleum and are also components of asphalt.

For radionuclides, the "soil" exposure route is the largest contributor. This result is attributable to thorium-228 and its daughters.

TABLE 6.1 Summary of Current and Future Incremental Risks at Release Block D, Mound Facility

	Construction Worker				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.3E-01	3.7E-02	1.0E+00	HI = 1.6E-01	HI = 1.1E+00
Carcinogenic Risks for Organics & Inorganics	9.6E-06	9.9E-08	4.0E-07	Risk = 9.7E-06	Risk = 1.0E-05
Carcinogenic Risks for Radionuclides	2.3E-05	2.1E-06	2.4E-06	Risk = 2.5E-05	Risk = 2.5E-05
		Construction Worker			
			Overall HI =	1.6E-01	1.1E+00
			Overall Risk =	3.5E-05	3.5E-05

	Site Employee				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.7E-02	3.7E-02	1.0E+00	HI = 5.4E-02	HI = 1.0E+00
Carcinogenic Risks for Organics & Inorganics	2.0E-06	NA	1.5E-06	Risk = 2.0E-06	Risk = 3.5E-06
Carcinogenic Risks for Radionuclides	2.3E-05	1.1E-05	1.2E-05	Risk = 3.4E-05	Risk = 3.5E-05
		Site Employee			
			Overall HI =	5.4E-02	1.0E+00
			Overall Risk =	3.6E-05	3.9E-05

6.3.2 Hazards and Risks for the Site Employee

The RRE methodology established for Mound is intentionally conservative and tends to over-estimate hazards and risk. For the site employee-related scenarios, a conservative assumption of daily exposure to RB D contamination throughout a 25-year period was used.

6.3.2.1 Non-Cancer Risks

Overall hazards across all pathways for soil+current groundwater, and for soil+ future groundwater, were summed to provide a comprehensive Hazard Index. The HI is based on incremental exposures above background to a hypothetical site employee working at RB D (Table 6.1). Comprehensive Hazard Indices were also developed based on background and total exposures. Since background exposures and hazards were very small, the Hazard Indices based on incremental and total exposures (background plus incremental) were the same, 0.054 for soil + current groundwater, and 1.0 for soil + future groundwater.

For current exposure conditions, the ingestion of antimony and cadmium, for soil and groundwater respectively, dominate the HI.

As seen previously, the primary difference between the calculated current and future groundwater hazards was due to the modeled presence of chromium in future groundwater.

6.3.2.2 Cancer Risks

Overall risks from carcinogenic, including radiological, contaminants across all pathways were summed to provide an overall risk based on incremental exposures (above background). Carcinogenic risks to a hypothetical site employee working at RB D were then estimated (Table 6.1). Overall risks were developed based on background and total exposures. The risks based on incremental exposures were 3.6×10^{-5} for soil + current groundwater and 3.9×10^{-5} for soil + future groundwater. The risks based on background exposures were 1.7×10^{-5} for soil + current groundwater and the same for soil + future groundwater. The risks based on total exposures (background plus incremental) were 5.2×10^{-5} for soil + current groundwater and 5.5×10^{-5} for soil + future groundwater.

The carcinogenic risk to the site employee is dominated by the presence of radionuclides in soil. The primary contributor is to the risk is the thorium-228.

6.4 Conclusions

Cancer risks for RB D are within the 10^{-4} to 10^{-6} (1 in 10,000 to 1 in 1,000,000 incremental cancer incidence) acceptable risk range established by CERCLA and the National Contingency Plan (NCP). Non-cancer risks for RB D were also determined to be acceptable for future industrial use. Based on the RRE conducted for the construction worker and site employee, US EPA and OEPA agree with DOE that all risks and hazards are acceptable for industrial use and no further remediation is required for this land use.

Because the scope of the RRE was limited to industrial use, the soils within RB D have not been evaluated for unrestricted release (e.g. residential use). Disposition of RB D soils without proper handling, sampling and management could create an unacceptable risk to human health and the environment.

6.5 Ecological Risk

Based on the results of an ecological characterization of the Mound Plant (OU-9 Ecological Characterization, March, 1984) there are no endangered species or critical habitats of endangered species on RB D. In addition, RB D is composed entirely of buildings, roads, and mowed lawns. There are no wetlands or surface waters located in RB D and no sensitive habitats. Therefore, DOE has determined, with concurrence from US EPA and OEPA, that an ecological assessment for RB D is not necessary.

7. DESCRIPTIONS OF ALTERNATIVES

As documented in Section 6, the risk from both carcinogens and non-carcinogens from RB D is within the acceptable range for the current industrial use. In light of the planned exit of DOE from the site, and the residual levels of contaminants in the soil and groundwater in RB D, a remedy must be implemented to protect human heath and the environment into the future. Two alternatives were considered for RB D:

Alternative 1, No Action
Regulations governing the Superfund program require that the "no action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, DOE would take no action at the Site to prevent exposure to soil and groundwater contamination.

Alternative 2, Institutional Controls
Institutional controls in the form of deed restrictions on future land use would be placed on RB D. The objective of these institutional controls is to prevent an unacceptable risk to human health and the environment by restricting the use of RB D, including RB D soils, to that which is consistent with assumptions in the RB D RRE. DOE or its successors would retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements would be imposed on the property to maintain protection of human health and the environment in the future:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of sampling and monitoring; and
- Soils from RB D shall not be removed from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

8. EVALUATION OF ALTERNATIVES

Pursuant to the NCP, each proposed alternative must be evaluated using nine (9) criteria. The nine criteria fall into three (3) groups: threshold criteria, primary balancing criteria, and modifying criteria. An evaluation of the alternatives in terms of these criteria follows.

8.1 THRESHOLD CRITERIA - *must be met for an alternative to be eligible for selection:*

8.1.1 CRITERIA 1: Overall protection of human health and the environment

This criterion addresses whether an alternative provides adequate protection of human health and the environment. The "no action" alternative does not meet this criterion for future use as the land and buildings in RB D have only been determined to be protective in an industrial land use setting. Deed restrictions are required as a mechanism to ensure the continued future use of RB D is limited to industrial purposes.

8.1.2 CRITERIA 2: Compliance with applicable or relevant and appropriate requirements

Section 121(d) of CERCLA requires that remedial actions at CERCLA sites attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations which are collectivlely referred to as "ARARs", unless such ARARs are waived under CERCLA Section 121(d)(4).

Applicable requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law that specifically address hazardous substances, the remedial action to be implemented at the site, the location of the site, or other circumstances present at the site. Relevant and Appropriate Requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law which, while not applicable to the hazardous materials found at the site, the remedial action itself, the site location, or other circumstances at the site, nevertheless address problems or situations sufficiently similar to those encountered at the site that there use is well-suited to the site.

Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes or provides the basis for invoking a waiver. Both alternatives will attain their respective federal and state ARARs, as appropriate.

8.2 PRIMARY BALANCING CRITERIA - *used to weigh major trade-offs among alternatives:*

8.2.1 CRITERIA 3: Long-term effectiveness and permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk and the adequacy and reliability of controls. Only Alternative 2, Institutional Controls, provides some degree of long-term protectiveness. The implementation of institutional controls in the form of land use restrictions is necessary to ensure that future use remains compatible with the evaluated residual risk associated with RB D.

At a minimum of every five (5) years, a review would be necessary to evaluate the effectiveness of the selected alternative because hazardous substances would remain onsite in concentrations above unrestricted land use levels.

8.2.2 CRITERIA 4: Reduction of toxicity, mobility or volume through treatment

Reduction of toxicity, mobility or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of the remedy.

Since neither of the alternatives includes treatment, this criterion does not require further evaluation. All necessary remediation in RB D was accomplished previously on an individual PRS basis.

8.2.3 CRTIERIA 5: Short-term effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers and the community during construction and operation of the remedy until clean-up goals are achieved.

Alternative 1, No Action, would not provide short-term effectiveness because there is no assurance of protection of human health and the environment after the property is transferred. Alternative 2, Institutional Controls, would provide this assurance.

8.2.4 CRITERIA 6: Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered. Since Alternative 1 involves no action, there is no time or cost required for implementation. Alternative 2, Institutional Controls, is expected to require approximately one month and minimal cost to implement.

8.2.5 CRITERIA 7: Cost

The range of costs is zero dollars ($0) for Alternative 1, No Action, to approximately $5,000 annually for the maintenance of the deed restrictions for Alternative 2, Institutional Controls.

8.3 MODIFYING CRITERIA - *to be considered after public comment is received on the Proposed Plan and of equal importance to the balancing criteria*:

8.3.1 CRITERIA 8: State/Support Agency Acceptance

Both US EPA and the State does not believe that Alternative 1, No Action, provides adequate protection of human health and the environment in the future. However, both agencies have expressed their support for Alternative 2, Institutional Controls.

8.3.2 CRITERIA 9: Community Acceptance

To evaluate community acceptance, this Proposed Plan, and the RRE supplement, will be the subject of a formal public comment and review period of 30 days.

9. THE PREFERRED ALTERNATIVE

The preferred alternative is Alternative 2, Institutional Controls, in the form of deed restrictions on future land use. DOE or its successors would retain the right and responsibility to monitor, maintain and enforce these institutional controls. The following property deed restrictions and requirements would be imposed on the property to maintain protection of human health and the environment in the future:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of sampling and monitoring; and
- Soils from RB D shall not be removed from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

The soils within RB D have not been evaluated for any use other than on-site industrial use. Any off-site disposition of RB D soil without proper handling, sampling and management could create an unacceptable risk to off-site receptors.

The initial costs associated with these deed restrictions are those associated with the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be $5,000 per year.

10. OPPORTUNITIES FOR COMMUNITY PARTICIPATION

This Proposed Plan will be available for public review and comment from December 22, 1998, to January 21, 1999. A public meeting will be held to discuss the Plan at 7:00 P.M. on January 14, 1999, in the OSE Cafeteria of the Mound Plant.

All of the supporting documentation for this Proposed Plan is located in the Administrative Record File, which is available for public review at the Mound CERCLA Public Reading Room located at the Miamisburg Senior Adult Center. Any questions or comments related to this Proposed Plan should be forwarded to Ms. Jane Greenwalt, Public Affairs Officer, DOE/MEMP at (937) 865-3116 or via e-mail at jane.greenwalt@em.doe.gov. Should you have questions or comments you wish to present directly to the regulators, the points-of-contact are Mr. Tim Fischer and Mr. Brian Nickel of the US EPA and OEPA, respectively. Mr. Fischer can be reached at (312) 886-5787; Mr. Nickel can be reached at (937) 285-6468.

11. REFERENCES

Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992.

Operable Unit 3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3. Finai, Revision 0. July 1, 1993.

Operable Unit 9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1, 1993.

Operable Unit 9; Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0, January 1994.

Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1, September 1994.

Operable Unit 9 Background Soils Investigation Soil Chemistry Report, Technical Memorandum, Revision 2, September 1994.

Operable Unit 5 New Property Remedial Investigation Report, Final, Revision 0, April, 1995.

Operable Unit 9 Hydrogeologic Investigation: Groundwater Sweeps Report, Technical Memorandum, April, 1995.

Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995.

Operable Unit 5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995.

Operable Unit 9 Regional Soils Investigation Report, Revision 2, August 1, 1995.

Soil Gas Confirmation Sampling. Revision 0. April 1, 1996.

Residual Risk Evaluation, Release Block D, December 1996.

The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 6, 1997.

Mound Plant Building Data Packages, Building 100 and 105 Located within Release Block D, Final, November 4, 1997.

Workplan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach, December 1998.

Action Memorandum, PRS 304 Removal Action, Final, December, 1998.

On Scene Coordinator (OSC) Report for PRS 304, Mound Plant, December 1998.

Residual Risk Evaluation, Release Block D Revision Summary, December 1998.

Letter from Mr. Timothy J. Fischer, Remedial Project Manager, US EPA to Mr. Arthur Kleinrath, US DOE dated December 4, 1998, RE: Ecological Risk Assessment, Release Block D.

Letter from Mr. Brian Nickel, Mound Project Manager, Office of Federal Facilities and Oversight, OEPA to Mr. Oba Vincent, US DOE dated December 8, 1998, RE: DOE Mound Release Block D Ecological Assessment.

THE MIAMISBURG/WEST CARROLLTON NEWS
January 6, 1999

THE UNITED STATES DEPARTMENT OF ENERGY
announces a
PUBLIC MEETING COMMENT PERIOD FOR RELEASE BLOCK D
MOUND SITE
MIAMISBURG, OHIO

The United States Department of Energy (DOE) has issued a proposed plan (hereinafter plan) describing its recommendations for addressing a 12 acre portion of the Mound Site, located in Miamisburg, Ohio, known as Release Block D.

The plan outlines the institutional controls to be put in place when the release block is transferred to the Miamisburg Mound Community Improvement Corporation (MMCIC). After public comments are received, a Record of Decision (ROD) will be issued which finalizes the institutional controls. After the Record of Decision is finalized it is the intent of DOE to transfer title of the parcel to the MMCIC.

Copies of the plan and supportive documents are available in the CERCLA Public Reading Room, 305 E. Central Avenue, Miamisburg, Ohio, 45342. The Public Reading Room is open:

Monday -12 noon to 8 p.m.
Tuesday - 8:30 a.m. to 1 p.m. & 4 p.m. to 8 p.m.
Wednesday -12 noon to 8 p.m.
Thursday - 8:30 a.m. to 1 p.m.
Friday - 10:30 a.m. to 4:30 p.m.

PUBLIC MEETING AND COMMENT PERIOD

A Public Meeting has been scheduled to discuss the plan. The meeting will provide the community an opportunity to ask questions and submit oral and written comments.

Wed JAN 20
~~Thursday, January 14~~, 1999
7 p.m.
Old Mound Cafeteria
OSE Building, Mound Site
1 Mound Road
Miamisburg, Ohio

For further information, please contact:

Jane Greenwalt
Public Information Officer
U.S. Department of Energy
P.O. Box 66
Miamisburg, OH 45343-0066
(937) 865-3116

Oral and written comments will be accepted at this meeting. Written comments may be submitted during the 30-Day Public Comment Period that began December 22, 1998, and ends January 21, 1999. Comments must be postmarked by the end of the comment period on January 21, 1999. Comments should be mailed to the above named DOE contact.

SUPERFUND PROGRAM FACT SHEET

MOUND PLANT, RELEASE BLOCK D
MIAMISBURG, OHIO

DECEMBER 21, 1998

DOE ANNOUNCES PROPOSED PLAN

The Proposed Plan identifies the preferred option for addressing the contamination at the Mound Site, Release Block D. The document is issued by the US Department of Energy (DOE), the lead agency for site cleanup activities, in consultation with the US Environmental Protection Agency (US EPA) and the Ohio Environmental Protection Agency (OEPA). DOE will select a final remedy for the site after the public comment period has ended and the information submitted during this time has been reviewed and considered. The DOE intends to transfer the Release Block D property to the Miamisburg Mound Community Improvement Corporation (MMCIC) which is converting the site into a privately owned technology business park.

DOE is issuing the Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This document summarizes information that can be found in greater detail in the PRS and Building Data Packages as well as other documents contained in the administrative record for the site. DOE, US EPA and the OEPA encourage the public to review these documents in order to gain a more comprehensive understanding of the site and the CERCLA activities that have been conducted there.

The Administrative Record file contains the information on which the selection of the response action will be based and is available at the following locations:

CERCLA PUBLIC READING ROOM
Miamisburg Senior Adult Center
305 Central Avenue
Miamisburg, OH 45342

MOUND CERCLA READING ROOM
Mound Plant, Building OSE
One Mound Road
Miamisburg, OH 45342

DATES TO REMEMBER:

Public Comment Period:
December 22, 1998 through
January 21, 1999.

DOE, US EPA and OEPA will accept written comments on the Proposed Plan during the public comment period.

Public Meeting:
January 14, 1999
7:00 p.m.
OSE Cafeteria
Mound Plant

SITE HISTORY:
Part of the Mound Plant mission is to restore the land to its beneficial use as an industrial site. This proposed plan outlines the institutional controls that will be put into effect in order to allow the intended transfer of Release Block D, a segment of approximately 15 acres of the 306 acres that comprise the entire Mound Plant.

SUMMARY OF SITE CHARACTERISTICS:
The area being addressed in the Proposed Plan, Release Block D, is located in the southeast corner of the developed portion of the property (refer to Figure 1). Release Block D is located on the south end of the SM-PP hill, and is generally bound to the south by the "South Property", to the east by offsite residences and Mound Park, to the north by a parking lot and a group of small buildings (numbered 39, 77, 78, 95, 97, 101 and 102) and to the west by a fenced area.

This area has two structures. Building 105, a machine shop constructed in 1990, which is currently used by Thaler Machine Company. Building 100, which was used as a post for the plant's security force, is currently under lease by CareNOW as a medical response command post. Historically, there also existed a small area known as the Old Firing Range Drum Storage Site that stored liquid chemical wastes over a four year period.

Sixteen Potential Release Sites (PRSs) within Release Block D were identified and, with the exception of PRS 304, have all been determined to have a "No Further Assessment" status. PRS 304 underwent a removal action for thorium contamination. An On Scene Coordinator report for the PRS 304 removal action is being released for public review concurrent with the Proposed Plan.

Additional information on these PRSs (numbered 279, 304/313, 310, 312, 372/374, 373, 375/377/378, 376, 379, 380/381, and 382) is found in the administrative record in the reading rooms.

SCOPE AND ROLE OF THE ACTION:
The DOE, US EPA, and OEPA had originally planned to address the Mound environmental restoration issues under a set of Operable Units (OUs), each of which would include a number of PRSs. For each OU, DOE would have followed the traditional CERCLA process. After initiating remedial investigations for several OUs, the DOE and its regulators realized that the OU process was inefficient. A new process, known as the Mound 2000 Process, divided the entire facility into 18 "Release Blocks" which are contiguous tracts of property which will be designated for release at a specific time.

Based on the residual contamination levels in Release Block D, this area was deemed to meet industrial use standards (selected land use) under the scenario spelled out in the Mound 2000 Residual Risk Evaluation Methodology.

SUMMARY OF RISKS:
Health risks were evaluated for a site construction worker and site employee scenario. Summarized below are the results of these evaluations which are published in the Release Block D Residual Risk Evaluation and its supplement entitled the "Residual Risk Evaluation - Release Block D Revision Summary" dated December 1998. This supplement is being released for public review concurrent with the Proposed Plan.

SUMMARY OF RISKS (continued):
Under the industrial use scenario, the current incremental risks to construction workers are 2.5×10^{-5} for radionuclides and 9.7×10^{-6} for organics and inorganics. The current incremental risks for a site employee are 3.4×10^{-5} for radionuclides and 2.0×10^{-6} for organics and inorganics.

DESCRIPTION OF THE PREFERRED ALTERNATIVE:
The preferred alternative is institutional controls in the form of deed restrictions on future land use. The following property restrictions have been agreed upon by the DOE, US EPA, and Ohio EPA and will be imposed to maintain protection of human health and the environment in the future:

- Ensure that industrial land use is maintained,
- Prohibit the use of bedrock ground water,
- Provide site access for federal and state agencies for the purpose of sampling and monitoring, and
- Soils from Release Block D shall not be removed from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

All of the soil within the current Mound Site boundary have not been evaluated for any use other than on-site industrial use. Any off-site disposition of the soil without proper handling, sampling and management could create an unacceptable risk to off-site receptors.

The initial costs associated with these deed restrictions are those that represent the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be $5,000 per year.

This evaluation and the decision to implement the institutional controls is consistent with the intent to transfer title from DOE and to protect the public and the environment during use of the building and the area.

COMMUNITY PARTICIPATION:
The community has been an active participant in this process. Comments from the public on the PRSs and Building disposition recommendations have been incorporated as part of the remedy evaluation. DOE believes all comments have been resolved with the commentor and the comments and responses have been placed in the CERCLA Public Reading Room.

We are now requesting comments on the Proposed Plan by January 21, 1999. DOE response to comments received will be included in the responsiveness summary which will be part of the Record of Decision for Release Block D.

Questions or comments related to the Proposed Plan should be addressed to:

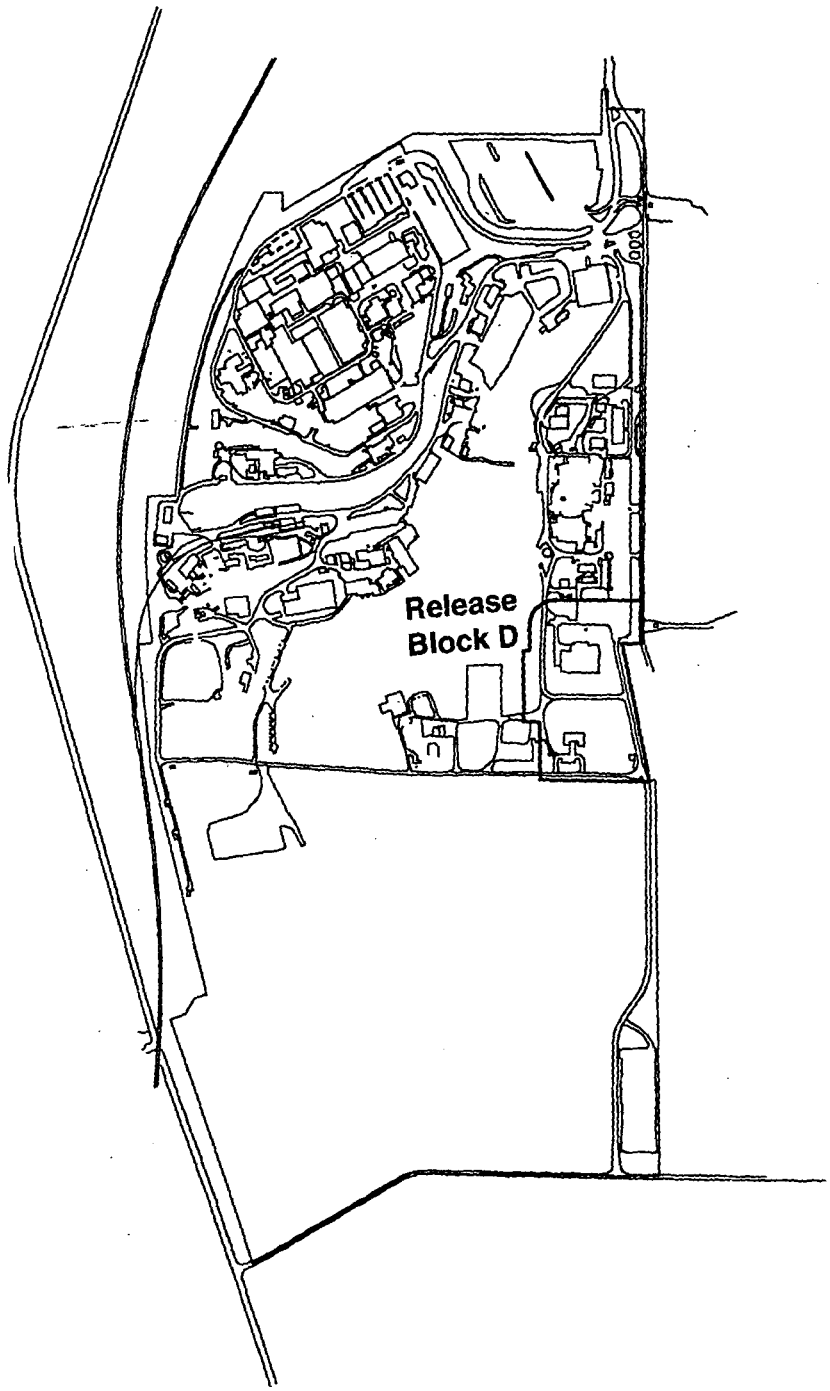
Ms. Jane Greenwalt
Public Affairs Officer
DOE/MEMP
P.O. Box 66
Miamisburg, OH 45342
(937) 865-3116 or
jane.greenwalt@em.doe.gov

Should you have questions or comments you wish to present directly to the regulators, the contacts are:

Mr. Tim Fischer, US EPA
(312) 886-5787 or
fischer.timothy@epamail.epa.gov

Mr. Brian Nickel, OEPA
(937) 285-6468 or
brian.nickel@epa.state.oh.us

FIGURE 1: LOCATION OF RELEASE BLOCK D



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Record of Decision for Release Block D, Mound Plant, Miamisburg, Ohio

January 1999

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ACRONYMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BDP	Building Data Package
BVA	Buried Valley Aquifer
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
COC	Chemical of Concern
DOE	Department of Energy
FFA	Federal Facilities Agreement
FOD	Frequency of Detection
GV	Guideline Value
HEAST	Health Effects Assessment Summary Table
HI	Hazard Index
HQ	Hazard Quotient
IDM	Investigative Derived Material
IRIS	Integrated Risk Information System
MEMP	Miamisburg Environmental Management Project
MMCIC	Miamisburg Mound Community Improvement Corporation
NCP	National Contingency Plan
NFA	No Further Assessment
NPL	National Priority List
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
OU	Operable Unit
pCi	picocurie
PAH	Polynuclear aromatic hydrocarbon
PETREX	(trade name for a type of soil sampling)
PRS	Potential Release Site
RB	Release Block
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RRE	Residual Risk Evaluation
RREM	Residual Risk Evaluation Methodology
SARA	Superfund Amendments and Reauthorization Act
SCM	Site Conceptual Model
SM/PP	Special Metallurgical/Plutonium Processing
US DOE	United States Department of Energy
US EPA	United States Environmental Protection Agency
UTL	Upper Tolerance Limit

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Record of Decision (ROD) for Release Block D, Mound Plant, Miamisburg, Ohio

This Record of Decision (ROD) documents the remedy selected for Release Block D of the Mound Plant, Miamisburg, Ohio. The ROD is organized in three sections: a declaration, a decision summary, and a responsiveness summary.

1.0 DECLARATION

This section summarizes the information presented in the ROD and includes the data certification sheet and authorizing signature page.

1.1 Site Name and Location

The U.S. Department of Energy (U.S. DOE) Mound Plant (CERCLIS ID No. 04935) is located within the City of Miamisburg, in southern Montgomery County, Ohio. The Plant is approximately ten (10) miles southwest of Dayton and 45 miles north of Cincinnati. This ROD addresses Release Block (RB) D which is located in the southeast corner of the developed area of the plant.

1.2 Basis and Purpose

This decision document presents the selected remedy for Release Block D of the Mound Plant. The remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Contingency Plan (NCP). Information used to select the remedy is contained in the Administrative Record file. The file is available for review at the Mound CERCLA Reading Room, Miamisburg Senior Adult Center, 305 Central Avenue, Miamisburg, Ohio.

The State of Ohio concurs with the selected remedy.

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1.3 Site Assessment

As documented in the Residual Risk Evaluation (RRE) for RB D, and a supplement to that RRE, the risks from carcinogens and non-carcinogens to current and future occupants of RB D were evaluated. In those analyses, the type of occupant was limited to an industrial use scenario and was represented by a construction worker and a site employee (office employee). Based on the RRE, the risks for current industrial use are within the acceptable range. However, in light of the planned exit of DOE from the site, and the residual levels of contaminants in the soil and groundwater of RB D, a remedy was deemed necessary to protect human health and the environment in the future.

As described below, the remedy will protect future occupants of RB D from the threat of contaminants in the groundwater, and will ensure that RB D soils are appropriately evaluated prior to any removal of RB D soils from the Mound Plant NPL facility boundary.

1.4 Description of Selected Remedy

The selected remedy for RB D is institutional controls in the form of deed restrictions on future land use. DOE or its successors, as the lead agency for this ROD, is assigned the responsibility to monitor, maintain and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock groundwater;
- Provide site access for federal and state agencies for the purpose of sampling and monitoring; and
- Soils from RB D shall not be removed from the Mound NPL facility boundary without approval from the Ohio Department of Health.

1.5 Statutory Determinations

The selected remedy for RB D is protective of human health and the environment, compiles with Federal and State requirements that are applicable or relevant and appropriate (ARAR), is cost-effective, and utilizes a permanent solution to the maximum extent practicable. Because this remedy will result in hazardous substances remaining in Release Block D above levels that allow for unlimited use and unrestricted exposure, a review will be conducted within five (5) years after

implementation of the remedy to ensure that it is adequately protective of human health and the environment.

1.6 ROD Data Certification Checklist

Based on a commitment made by the U.S. Environmental Protection Agency (US EPA) to the General Accounting Office, RODs must contain a checklist which certifies that key information regarding the selection of the remedy has been included in the ROD. Therefore, note that the following information is located in the Decision Summary (Section 2) of this ROD. Additional information on any of these topics can be found in the Administrative Record for Mound.

- chemicals of concern (COCs) and their respective concentrations,
- guideline levels for the COCs;
- risks represented by the COCs;
- current and future land and groundwater use assumptions used in the risk assessment and ROD;
- land and groundwater uses that will be available at the site as a result of the remedy;
- estimated cost of the remedy; and the
- decisive factor(s) that led to the selection of the remedy.

1.7 Authorizing Signatures and Support Agency Acceptance

This Record of Decision for Release Block D of the Mound Plant has been prepared by the DOE. Approval of the US EPA is required and has been secured as documented below. Concurrence of the OEPA is also required and has been secured by _____ *(looks like options are available here - letter or signature or statement of concurrence)*.

This ROD is authorized for implementation.

_____	_____
Someone from DOE Their title	Date
_____	_____
Someone from US EPA Their title	Date

2.0 DECISION SUMMARY

This section provides an overview of the site and the alternatives evaluated. The selected remedy, and the basis for its selection, are also described.

2.1 Site Description

The U.S. Department of Energy (US DOE) Mound Plant (CERCLIS ID No. 04935) is located within the city limits of Miamisburg, in southern Montgomery County, Ohio (Figure 2-1). The Site is approximately ten (10) miles south-southwest of Dayton and 45 miles north of Cincinnati. Miamisburg is predominantly a residential community with supportive commercial facilities and industrial development. The adjacent upland areas are used primarily for residences and agriculture or are unused open spaces.

The Mound property is divided into eighteen "release blocks," which are contiguous tracts of property designated for transfer of ownership. These eighteen release blocks may be reconfigured to accommodate transfer of Mound property for economic development.

This ROD addresses Release Block (RB) D (Figure 2-2) which is located in the southeast corner of the developed area of the plant. RB D is generally bound to the south by the "South Property" (the undeveloped portion of the Mound Plant), to the east by offsite residences, to the north by a parking lot and group of small buildings, and to the west by a fenced area for storage of Investigative Derived Material (IDM).

There are two (2) main structures in RB D. Building 105, which was built in 1990 as a machine shop and is still used for that purpose, and Building 100, which was the Guard Force Precinct bunker.

2.2 Site History and Enforcement Activities

As a result of historic disposal practices and contaminant releases to the environment, the Mound Plant was placed on the National Priorities List (NPL) on November 21, 1989. The DOE signed a Comprehensive Environmental Resource Compensation and Liability Act (CERCLA) Section 120 Federal Facility Agreement (FFA) with the US EPA, effective October 1990. In 1993, this agreement was modified and expanded to include the OEPA. DOE serves as the lead agency for CERCLA-related activities at Mound.

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Figure 2-1. Location of the Mound Plant

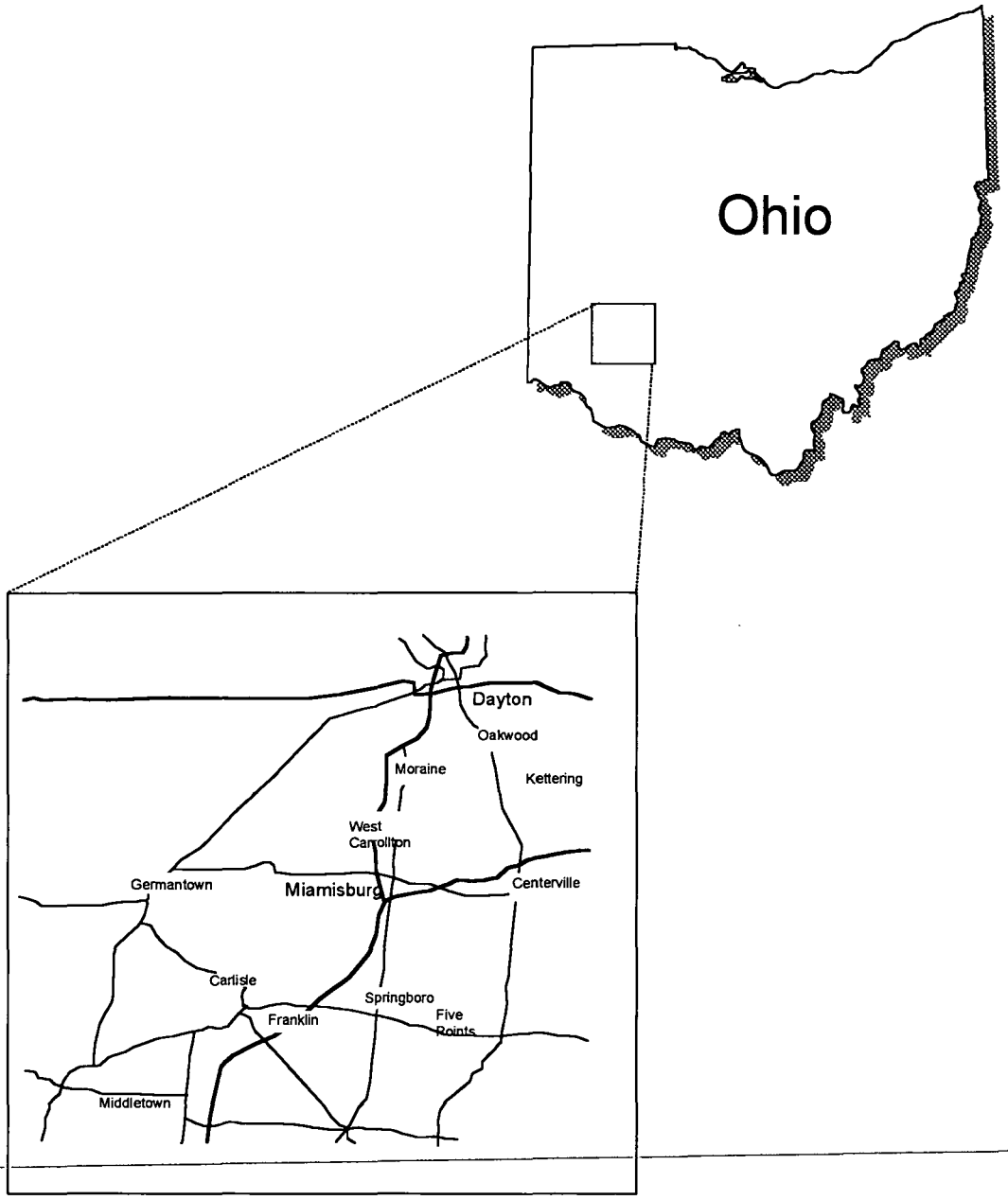

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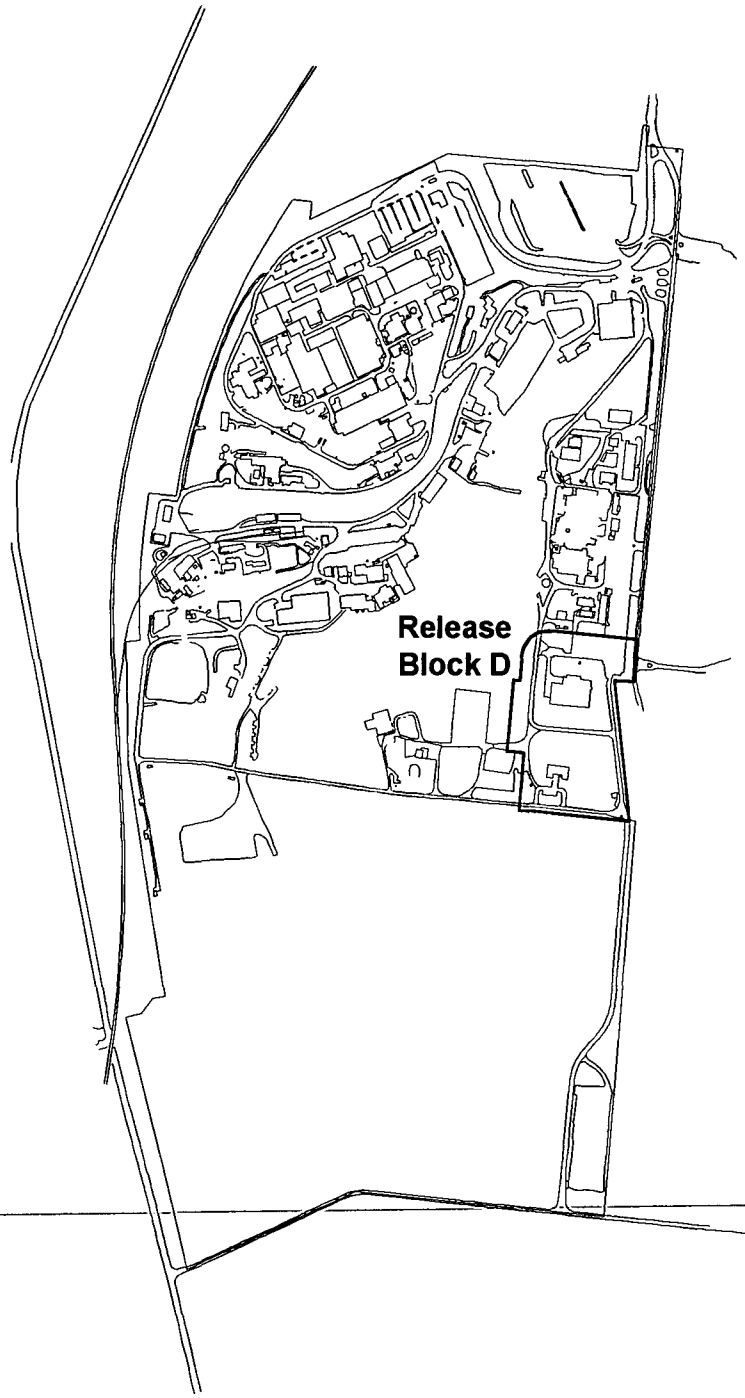
Figure 2-2. Location of Release Block D



The DOE, the US EPA, and the OEPA had originally planned to address the Plant's environmental restoration issues under a set of OUs, each of which would include a number of PRSs. For each OU, the site would follow the traditional CERCLA process: a Remedial Investigation/Feasibility Study (RI/FS) followed by a Record of Decision (ROD), followed by Remedial Design/Remedial Action (RD/RA). After initiating remedial investigations for several OUs, the DOE and its regulators realized during a strategic review in 1995 that, for Mound, the OU approach was inefficient. The DOE and its regulators agreed that it would be more appropriate to evaluate each PRS or building separately, use removal action authority to remediate them as needed, and establish a goal for no additional remediation other than institutional controls for the final remedy. To evaluate any residual risk after all removals have been completed, a residual risk evaluation is conducted to ensure the block or parcel is protective of human health for industrial reuse. This process was named the Mound 2000 process.

The Mound 2000 process established a "core team" consisting of representatives of the Miamisburg Environmental Management Project (MEMP) of DOE, US EPA, and OEPA. The Core Team evaluates each of the potential contamination problems and recommends the appropriate response. The Core Team uses process knowledge, site visits, and existing data to determine whether or not any action is warranted concerning the possible problem area. If a decision cannot be made, the Core Team identifies specific information needed to make a decision (e.g., data collection, investigations). The Core Team also receives input from technical experts as well as the general public and/or public interest groups. Thus, all stakeholders have the opportunity to express their opinions or suggestions involving each potential problem area. The details of this process are explained in the "Workplan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach," December 1998.

"The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 6, 1997" was developed as a framework for evaluating human health risks associated with residual levels of contamination. The RREM is applied to a release block once necessary remediation has been completed, and the remaining PRSs or buildings in the release block have been designated as No Further Assessment (NFA). Once these environmental concerns have been adequately addressed by the Core Team, a residual risk evaluation (RRE) is performed. The RRE forms the basis for determining what restrictions, if any, should be placed on the site.

2.3 Community Participation

Opportunties to comment on RB D PRSs and Building Data Packages (BDPs) were provided. A listing of those opportunites is shown in Table 2-1.

Table 2-1. Public Comment Periods for Release Block D Documents.

DOCUMENT (PRS/BUILDING)	COMMENT PERIOD (BEGIN)	COMMENT PERIOD (END)
279	02/15/96	02/29/96
304/313	05/08/97	06/16/97
PRS 304 Action Memo	10/01/98	10/31/98
310	01/15/97	02/15/97
312	10/24/95	02/15/96
372/374	05/15/96	06/17/96
373	02/15/96	02/29/96
375/377/378	05/15/96	06/17/96
376	10/15/96	11/15/96
379	02/15/96	02/29/96
380/381	05/15/96	06/17/96
382	01/15/97	02/15/97
Building 100	09/04/97	10/20/97
Building 105	09/04/97	10/20/97
RB D Residual Risk Evaluation	08/21/96	09/20/96
Supplemental RB D Residual Risk Evaluation	12/22/98	01/21/99

The Proposed Plan for RB D was made available to the public on December 22, 1998. Copies were distributed to stakeholders and were placed in the Administrative Record file in the CERCLA Public Reading Room, Miamisburg Senior Adult Center, 305 Central Avenue, Miamisburg, Ohio. The notice of the availability of the Plan was published in the ***Miamisburg Newsthing*** on December __, 1998. A public comment period was held from December 22, 1998, through January 21, 1999. In addition, a public meeting was held on January 14, 1999, to present the Proposed Plan. Representatives of DOE, US EPA, and the OEPA were present at the public meeting to answer questions regarding the proposed remedy. Responses to comments received during the comment period and public meeting are included in the Responsiveness Summary, which is Section 3 of this ROD.

2.4 Scope and Role of RB D

RB D lies within what was once called Operable Unit 5 (OU5). RB D includes a collection of individual areas called Potential Release Sites or PRSs that have undergone previous investigations. Before transfer of a release block can be completed, all buildings and PRSs must be evaluated for protectiveness or remediated to be protective. Any residual risks associated with remaining contamination in RB D have been evaluated and presented in the RB D Residual Risk Evaluation (RRE) December 1996 and its supplement "Residual Risk Evaluation, Release Block D Revision Summary, December 1998."

The PRSs in RB D were identified on the basis of potential radiological and chemical (non-radioactive) contamination using knowledge of historical land use or on actual measurements of contaminants. The locations of the PRSs and buildings within RB D are shown in Figure 2-3; descriptions appear in Table 2-2. As seen in Table 2-2, all but one of the PRSs was determined by the Core Team to require no further assessment.

2.5 Site Characteristics

2.5.1 Geologic Setting

The bedrock section beneath Mound Plant consists of thin, nearly flat-lying beds of alternating shale and limestone of the Richmond Stage of the Cincinnati Group (Upper Ordovician -- about 450 million years ago). The Cincinnati Group is present at the surface at Mound Plant and underlies RB D. The limestone beds range from 2 to 6 inches in thickness and the shale layers are commonly 5 to 8 feet thick.

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Figure 2-3. Location of PRSs and Buildings within RB D

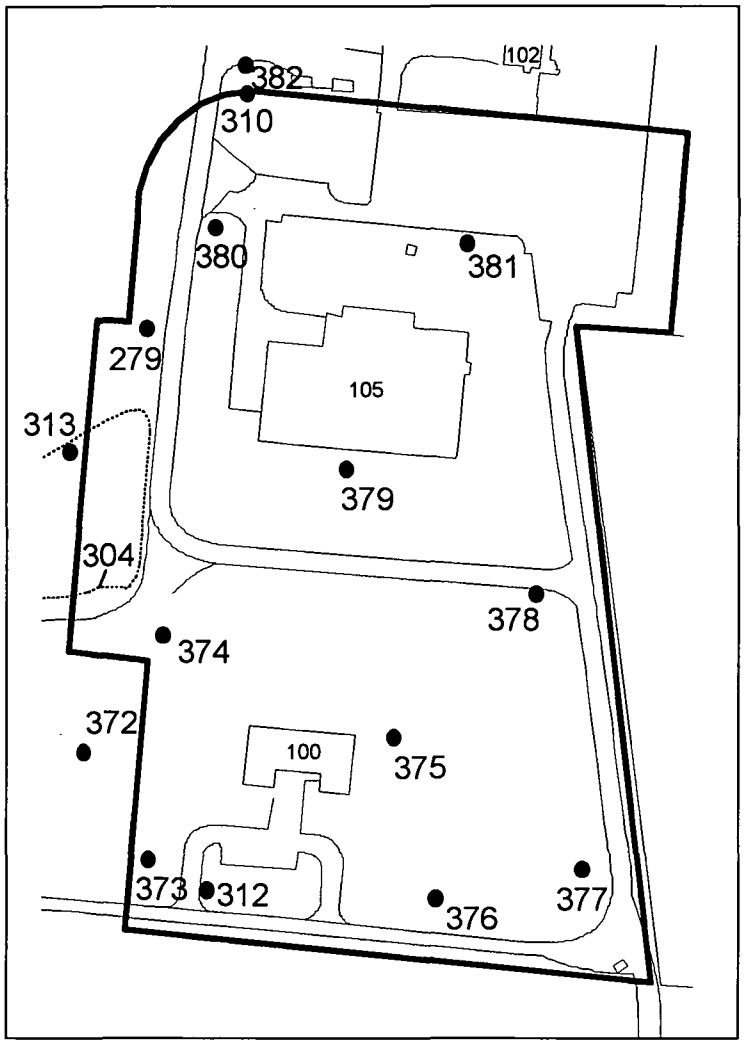

Table 2-2. Release Block D PRSs and Buildings and Core Team Conclusions

PRS/ BLDG	Reason for Identification	Core Team Decision	Close Out of PRS/BDP
279	Location of the Old Firing Range Drum Storage Area	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
304	Past use as a soil disposal area - thorium contamination.	Removal Action conducted in October 1998.	OSC Report signed by Core Team on 12/17/98.
310	Elevated cesium-137 sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 1/14/97
312	Elevated thorium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
313	Elevated thorium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 2/19/97
372/374	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
373	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
375/377 /378	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
376	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/3/96
379	Elevated plutonium sample location	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 10/18/95
380/381	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 5/8/96
382	Elevated qualitative soil gas detections	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 1/14/97
Bldg. 100	Building used for site operations	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 8/5/97
Bldg. 105	Building used for site operations	Binned for No Further Assessment	Recommendation for NFA signed by Core Team on 8/5/97

Pleistocene age (less than about 2 million years old) glacial deposits at Mound Plant include both till and outwash deposits. The till in the area of Mound Plant is composed of an unsorted, unstratified mixture of clay, silt, sand, and coarser material. Water-lain deposits consist of outwash composed of well-sorted sand and gravel. The sand and gravel is horizontally layered, and commonly cross-bedded. The outwash in the vicinity of Mound Plant occurs as restricted valley-train deposits that were formed by the aggregation of glacial meltwater streams. The outwash deposited in the Miami River Valley and the associated tributary valley forms the Buried Valley Aquifer (BVA) and contiguous deposits. A general discussion of the geology is presented in the "Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992. "

2.5.2 Hydrogeologic Setting

There are two hydrogeologic regimes at Mound Plant: flow through the bedrock beneath the Main Hill and the SM/PP Hill, and flow within the unconsolidated glacial deposits and alluvium associated with the Buried Valley Aquifer (BVA) in the Great Miami River Valley and the tributary valley between the Main Hill and SM/PP Hill. The BVA is a US EPA-designated sole source aquifer. The bedrock system, an interbedded sequence of shale and limestone, is dominated by fracture flow especially in the upper portions of the bedrock. Groundwater movement within the till and sand and gravel, within the buried valley, is through porous media. Groundwater flow from Mound Plant is generally to the west and southwest toward the BVA of the Great Miami River Valley. A discussion of the hydrogeology of Mound is presented in the OU9 work plan and the "Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1 (September 1994)" and "Operable Unit 9 Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0 (January 1994)."

2.5.3 Available Data for Release Block D

All of the PRSs within RB D have been evaluated by the Core Team and, if necessary, addressed by either assessment or remediation. The following sections discuss the data relevant to RB D that are available from the general source documents and the individual Potential Release Sites packages.

2.5.3.1 Background Data

Soils. Background concentrations measure the amount of a chemical that is naturally occurring (like metals) or anthropogenic (man-made but, for purposes of evaluating background, originating from sources other than the Mound Plant). Background concentrations are used as a screening tool to determine which contaminants should be carried through a risk evaluation as described in Section 5.4 of this Proposed Plan. Regional background concentrations in soil were determined during investigations conducted in September 1994 and August 1995 and are documented in reports titled "Operable Unit 9 Background Soils Investigation Soil Chemistry Report" and "Operable Unit 9, Regional Soils Investigation Report."

Groundwater. Background concentrations for groundwater were developed from two sources of data. For the Buried Valley Aquifer, background values were reported in the April 1995 "OU9 Hydrologic Investigation: Groundwater Sweeps Report." Background concentrations for bedrock groundwater were reported in the April 1995 "OU5 New Property Remedial Investigation Report."

2.5.3.2 Groundwater Contaminant Data

Groundwater data consist of water analyses of the Mound production wells screened within the Buried Valley Aquifer, and analyses of groundwater from monitoring wells screened in the bedrock aquifer on the Mound property. These wells are sampled as part of the site-wide groundwater monitoring network. Section 2.2.2 of the RRE for RB D documents the specific groundwater data used to evaluate the current and future groundwater profile for RB D. Summaries of the contaminants detected in Mound Plant groundwater, and those projected to be present in Mound Plant groundwater in the future, are shown in Tables 2-3 and 2-4, respectively.

2.5.3.3 Soil Contaminant Data

Soil data can be divided into three types: (a) data obtained through commercial analytical laboratory analysis, (b) data obtained through "screening" techniques conducted in a DOE laboratory, and (c) data obtained through screening techniques conducted in the field. Analytical laboratory data are obtained using strict methods and are subjected to exacting quality control procedures. These data are of the highest quality, and are quantitative. The laboratory screening data are considered to be of lower quality because sample

preparation does not occur, and the measuring instruments are less precise. The field screening techniques are the least accurate due to instrument limitations and the effects of ambient conditions on field measurements. Due to these limitations, field screening data were not used for any calculations in the RRE for RB D.

Table 2-3. Current Mound Plant Groundwater Contaminants of Concern

Groundwater Constituent	Maximum concentration	Screening Concentration (either background or G.V.)[1]
ORGANICS (mg/L)		
1,1-Dichloroethene	0.0017	---
1,1,1-Trichloroethane	0.0018	0.0007[4]
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	---
INORGANICS (mg/L)		
Cadmium	0.0077	0.051[2]
Copper	0.593	0.0012[4]
Lead	0.040	0.0101[4]
RADIONUCLIDES (pCi/L)		
Actinium-227	0.335	0.26[3]
Bismuth-210	0.39	---
Plutonium-239/240	2.0	0.125[4]
Tritium	7200	1485[3]
Uranium-234	8.14	0.792[4]
Uranium-238	8.25	0.688[4]

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if a contaminants are present at levels that warrant evaluation.
[2] - For increased conservatism, decision made on 0.1 x G.V. GV includes ingestion, dermal, and inhalation pathways.
[3] - GV corresponds to a total risk of 10^{-6} for ingestion only.
[4] - Background value. When adeuate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.

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BWX Technologies, Inc.
Babcock & Wilcox, a McDermott company

Babcock & Wilcox of Ohio, Inc.
1 Mound Road
P.O. Box 3030
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ESC-024/99
January 27, 1999

99-TC/01-27

Mr. Richard B. Provencher, Director
Miamisburg Environmental Management Project
U.S. Department of Energy
P.O. Box 3020
Miamisburg, Ohio 45343-3020

SUBJECT: Contract No. DE-AC24-97OH20044
CERCLA Documents for Release Block D

ATTENTION: A. Kleinrath

Dear Mr. Provencher:

Babcock & Wilcox of Ohio, Inc. (BWO) has completed the following CERCLA products in support of the transfer of Release Block D: (1) Residual Risk Evaluation - Release Block D Revision Summary, (2) Technical Position Report in Support of the Release Block D Residual Risk Evaluation, and (3) the Record of Decision (ROD). Items 1 and 2 accompany this transmittal; Item 3 has been transmitted electronically to Ms. Debbie White of your staff. BWO understands that minor revisions to the ROD may be required and will be performed by Ms. White.

Pending approval from your office to release the documents to the public, copies will be placed in the CERCLA Public Reading Room. If you or members of your staff have any questions regarding the documents, or if additional support is needed, please contact me at extension 3057.

Sincerely,

Linda R. Bauer, Ph.D.
Manager, Environmental Safeguards and Compliance

Enclosures (2)

cc: D. White, MEMP
DCC

bcc: PRICE
RAKEL

Table 2-4. Future Mound Plant Groundwater Contaminants of Concern

Groundwater Constituent	Estimated Maximum concentration	Screening Concentration (either background or G.V.)[1]
ORGANICS (mg/L)		
1,1-Dichloroethene	0.0017	---
1,1,1-Trichloroethane	0.0065	0.0007[4]
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	---
INORGANICS (mg/L)		
Beryllium	0.0001	6.6E-05[2]
Bismuth	0.0016	---
Cadmium	0.0077	0.051[2]
Chromium	0.4961	0.0061[4]
Cobalt	0.0039	0[4]
Copper	0.5964	0.0012[4]
Lead	0.040	0.010[4]
Molybdenum	0.0096	0.0056[4]
RADIONUCLIDES (pCi/L)		
Actinium-227	0.355	0.26[3]
Bismuth-210	0.39	---
Plutonium-239/240	2.020	0.125[4]
Tritium	10427	1485[3]
Uranium-234	8.14	0.792[4]
Uranium-238	8.25	0.688[4]

[1] - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if a contaminants are present at levels that warrant evaluation. [2] - For increased conservatism, decision made on 0.1 x G.V. GV includes ingestion, dermal, and inhalation pathways.
[3] - GV corresponds to a total risk of 10^{-6} for ingestion only.
[4] - Background value. When adeuate numbers of measurements are available, background values are based on the 95th% upper tolerance limit.

Soil contaminant data for RB D collected prior to the Mound 2000 process are documented in a number of DOE reports. These references include:

- Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995 *(results of systematic sampling)*,
- OU-5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995 *(results of systematic sampling in southern area of site, gives general overview of soils not thought to be contaminated)*,
- OU-9 Regional Soils Investigation Report, Revision 2. August 1, 1995 *(purpose was to give a regional soil description away from impacts of Mound operations)*,
- OU-3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3. Final, Revision 0. July 1, 1993 *(purpose was to address areas noted in previous surveys; but, not thought to endanger human health or environment)*,
- OU-9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1, 1993 *(a compendium of existing data)*, and
- Soil Gas Confirmation Sampling. Revision 0. April 1, 1996 *(results of a study following up on a prior qualitative study)*.

In the Mound 2000 process, radionuclide and chemical contaminants were studied on a PRS basis. Many of the PRSs (372, 374, 375, 377, 378, 380, 381, and 382) were established based solely on soil gas readings. The soil gas study that identified these PRSs was conducted in 1994 utilizing PETREX tubes. The PETREX collector tubes measure relative ions counts of volatile and semi-volatile organic compounds; therefore, the method only provides qualitative indications of possible contamination. Eight of the PRSs, conversely, were identified based on radionuclide measurements. Those measurements are described below.

- At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. In December 1991, soil samples were again collected from this area. Of the 28 samples collected, two had cesium-137 concentrations above the detection limit. At the same location, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, additional soil samples collected in this area did not indicate the presence of cesium-137 or any other contaminant.
- At PRS 373, PRS 376 and PRS 379, plutonium-238 was detected in surface samples in 1994, 1995 and 1996, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detectable plutonium-238 concentrations were shown (by surrounding samples) to be isolated to the PRS locations only. Due to its low solubility and concentration, plutonium

at these locations is not expected to adversely affect groundwater at potential drinking water sources.

- At PRS 312, a surface sample collected in 1993 indicated an elevated thorium-232 concentration of 5.02 pCi/g. Nearby samples did not indicate elevated levels, suggesting the elevated result was an isolated event.

- PRS 279 was identified based on photographs that showed drum storage at this location. This drum storage area had been referred to as the Old Firing Range Storage Site and was used between 1970 and 1974. Plutonium-238, cobalt-60, radium-226, and thorium-228 were measured in this area.

  There were no elevated soil gas measurements detected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable polynuclear aromatic hydrocarbons (PAHs) at an elevated concentration of approximately 59 mg/kg. This sample was a composite of four samples collected at the corners of a 30 foot x 30 foot square. A second composite prepared similarly from about 100 feet away found similar contaminants at 1 to 3 mg/kg. Other nearby sample locations nearby did not detect any of the contaminants. These chemicals are commonly associated with asphalt, which is present in the area. A February 1996 soil sample in the vicinity of PRS 279 contained low levels of organic and inorganic compounds, plutonium-238, radium-226, and thorium-228.

- PRS 313, which neighbors PRS 304, was a soil segregation area that contained the overburden soils excavated from the decommission and decontamination of a waste transfer line (PRS 300) and from Area 12 (PRS 273). PRS 313 was identified due to an elevated thorium result. Sampling in 1995 in the area of PRS 313 indicated no contaminants in excess of guideline criteria.

- PRS 304 was identified as a former soil disposal area. PRSs 304/313 were originally binned NFA on February 19, 1997, based on data existing at that time. However, a recent radiological survey and sampling event conducted in the fall of 1998 identified two small "hot spots" which were subsequently removed. The results from the 1998 removal actions are available in the "On Scene Coordinator (OSC) Report for PRS 304 Removal Action, December 1998."

A summary of the contaminants detected in RB D soils is shown in Table 2-5.

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Table 2-5. Soil Contaminants of Concern for RB D

Soil Constituent	Maximum concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either Bkgd or G.V.)[1]
ORGANICS (mg/kg)			
Acenaphtene	6.4	3.8	
Acenaphthylene	0.22	0.029	
Benzo(a)anthracene	41.5	6.8	4.10[2]
Benzo(a)pyrene	33.5	7.5	0.41[2]
Benzo(b)fluoranthene	53	12	4.10[2]
Benzo(g,h,i) perylene	3.9	3.9	
Carbazole	0.165	0.165	
Dibenz(a,h)anthracene	1.3	1.3	0.41
Dibenzofuran	3.8	3.0	
2,4-Dinitrophenol	0.97	0.97	
Fluorene	6.3	3.3	
Indeno(1,2,3-cd)pyrene	20.5	4.7	4.10[2]
2-Methylnaphthalene	1.4	1.4	
Naphthalene	1.9	1.9	-
Phenanthrene	49.5	13	
1,1,1-Trichloroethane	0.0025	0.002	
1,1,2-Trichloro-1,2,2-	0.003	0.003	
INORGANICS (mg/kg)			
Antimony	39.2	39.2	85[4]
Beryllium	1.8	1.8	0.7
Bismuth	5.7	5.7	
RADIONUCLIDES (pCi/g)			
Lead-210	2.91	2.91	
Plutonium-238	60	60	5.50[3]
Thorium-228	3.57	3.57	0.83[5]

1 - Guideline values (GVs) are decision-making tools for the Core Team. GVs help the Core Team determine if a contaminants are present at levels that warrant evaluation.

2 - GV corresponds to a total risk of 10^{-6} for the ingestion pathway.

3 - GV corresponds to a total risk 10^{-6} for the ingestion, inhalation and external pathways.

4 - For additional conservatism, decision made on 0.1 x G.V. (for the ingestion pathway).

5 - The Th-228 GV has not been formally modified to reflect new risk data. However, all Th-228 risk calculations were performed using updated slope factors.

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2.6 Potential Future Uses for Mound

The Mound Plant will remain in industrial use into the future. This future use has been determined based upon agreement among DOE, United States Environmental Protection Agency (US EPA), Ohio Environmental Protection Agency (OEPA), and interested stakeholders. This land use is reflected in the Mound Comprehensive Reuse Plan of the Miamisburg Mound Community Improvement Corporation (MMCIC) and is currently codified in the City of Miamisburg Zoning Ordinance for industrial use.

2.7 Summary of Site Risks

The human health risks for RB D were evaluated using the Residual Risk Evaluation Methodology (RREM) document developed for Mound. A residual risk evaluation (RRE) is a five-step process:

(1) identification of contaminants,
(2) exposure assessment,
(3) toxicity assessment,
(4) risk characterization, and
(5) evaluation of potential cumulative risks.

2.7.1 Identification of Contaminants

The contaminants of concern (COCs) for RB D were identified by reviewing all of the sampling data for the release block. Based on that review, contaminants were eliminated for further evaluation based on criteria established in the RREM. Specifically, only contaminants exceeding (1) background, (2) a base level of potential health concern, and (3) certain frequency of detection (FOD) criteria were carried through the RRE. The COCs established for RB D were listed in Tables 2-3, 2-4, and 2-5.

2.7.2 Exposure Assessment

The Site Conceptual Model (SCM) for Mound provides the basis for evaluating human exposure scenarios. Because DOE and its regulators and stakeholders agree that the future use of Release Block D will be industrial in nature, two receptor scenarios from the Mound SCM apply: a construction worker and a site employee. The routes of exposure applicable to these two receptors are shown in Figure 2-4. The significant pathways for RBD include ingestion of soil and groundwater.

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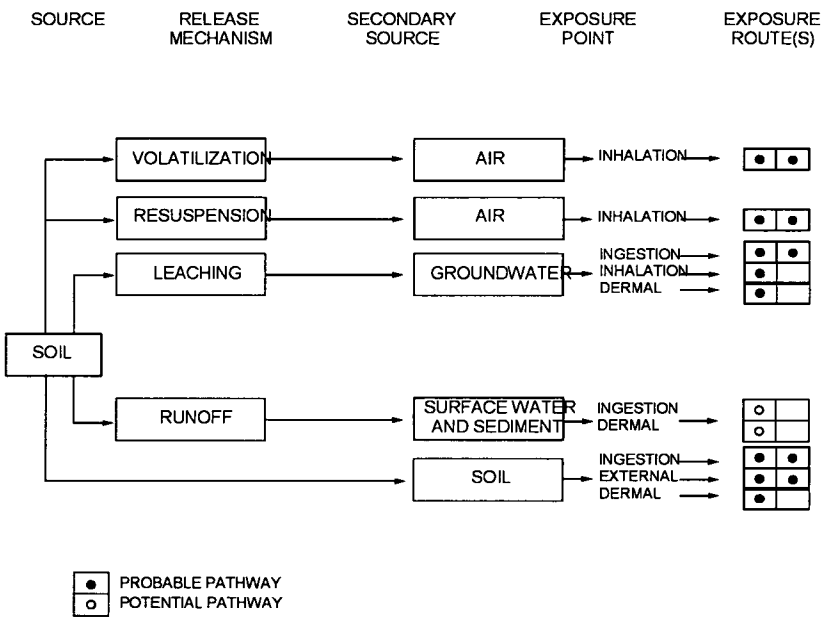
Figure 2-4. Exposure Pathways for the Mound Site Conceptual Model



Using equations developed to support the SCM, exposures to specific concentrations of COCs are evaluated based on assuming intake rates for soil and groundwater. Once the intakes are estimated, the human health implications of those intakes are evaluated by reviewing toxicological data for the COCs.

For the special case of groundwater, the possible exposures to current and future COCs are evaluated. This approach ensures that the cumulative and long-term impacts of the COCs are adequately characterized.

2.7.3 Toxicity Assessment

The toxicological properties of each COC for RB D were evaluated by reviewing the Integrated Risk Information System (IRIS) and/or Health Effects Assessment Summary Table (HEAST) data for the COC. IRIS files provide no-observable effect levels and slope factors (for translating intake into cancer risk) for many of the chemical encountered at Mound. HEAST provides slope factors for many of the radionuclides encountered at Mound. Based on the information collected from IRIS and HEAST, an adequate understanding of the toxicology of the RB D COCs has been developed.

2.7.4 Risk Characterization

Pursuant to the RREM, risks are quantified based on the carcinogenic properties of the COC. The risk associated with the intake of a known or suspected carcinogen is reported in terms of the incremental lifetime cancer risk presented by that COC, as estimated using the appropriate slope factor and the amount of material ingested. For non-carcinogens, or COCs for which sloper factors are not available, a Hazard Quotient (HQ) is used. The HQ is determined by the ratio of the intake of a COC to a reference dose or concentration for the COC that is believed to represent a no-observable effect level. The COC-specific HQs are then summed to provide an overall Hazard Index (HI). US EPA guidance sets a limit of 1.0 for the Comprehensive HI.

The risks and hazards associated with residual concentrations of COCs in RB D are shown in Table 2-6. As seen in the table, the overall risk values are in the acceptable range of 10^{-4} to 10^{-6}. The HIs for the future groundwater scenarios, however, are near or above the 1.0-limit. As a result, the selected remedy prohibits the use of bedrock groundwater. This institutional control, in the form of a deed restriction, will ensure that the residual risks associated with RB D remain acceptable.

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	Construction Worker				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.3E-01	3.7E-02	1.0E+00	HI = 1.6E-01	HI = 1.1E+00
Carcinogenic Risks for Organics & Inorganics	9.6E-06	9.9E-08	4.0E-07	Risk = 9.7E-06	Risk = 1.0E-05
Carcinogenic Risks for Radionuclides	2.3E-05	2.1E-06	2.4E-06	Risk = 2.5E-05	Risk = 2.5E-05
		Construction Worker			
			Overall HI =	1.6E-01	1.1E+00
			Overall Risk =	3.5E-05	3.5E-05

	Site Employee				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.7E-02	3.7E-02	1.0E+00	HI = 5.4E-02	HI = 1.0E+00
Carcinogenic Risks for Organics & Inorganics	2.0E-06	NA	1.5E-06	Risk = 2.0E-06	Risk = 3.5E-06
Carcinogenic Risks for Radionuclides	2.3E-05	1.1E-05	1.2E-05	Risk = 3.4E-05	Risk = 3.5E-05
		Site Employee			
			Overall HI =	5.4E-02	1.0E+00
			Overall Risk =	3.6E-05	3.9E-05

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There are no surface water bodies flowing in

2.7.5 Evaluation of Potential Cumulative Risks

For purposes of the RREM, risks resulting from contaminants that originate outside the release block under consideration are called cumulative risks. In general, cumulative risks are possible via air, surface water, and ground water. For Mound, cumulative risks from air are not expected due to the limitations placed on the amount of contaminants that may remain in a release block. Cumulative risks from surface waters are also not expected due to the small number of surface water bodies on the Mound site. Groundwater is therefore the medium of concern for cumulative risks.

Current groundwater. The Mound RREM accounts for cumulate groundwater risks by evaluating current and future groundwater contamination. Since all groundwater currently used at Mound is drawn from the production wells located onsite, the risk posed by current groundwater contamination is equal to the risk resulting from exposure to contaminants found in the production wells. This risk is identical for all release blocks and represents the cumulative risk from contaminants that mirgrate to the production wells from all release blocks.

Future groundwater. The future risk from groundwater was estimated for RB D based on the assumption that contaminants found in BVA bedrock will eventually migrate to the production wells. A simple and extremely conservative flow model was used to estimate the concentrations as a function of time. These concentration estimates were reported in Table 2-4.

The HI and risk values presented in Table 2-6 for the current and future groundwater scenarios are therefore believed to adequately bound the potential cumulative risk for RB D.

2.7.6 Ecological Risk Assessment

Based on the results of an ecological characterization of the Mound Plant (OU-9 Ecological Characterization, March, 1984) there are no endangered species or critical habitats of endangered species on RB D. In addition, RB D is composed entirely of buildings, roads, and mowed lawns. There are no wetlands or surface waters located in RB D and no sensitive habitats. Therefore, DOE has determined, with concurrence from US EPA and OEPA, that an ecological assessment for RB D is not necessary.

2.8 Remediation Objectives

The primary remediation objective for RB D is to ensure the residual risk associated with the release block is acceptable for the defined use scenario of industrial occupants.

2.9 Description of Alternatives

As documented in Section 2.7, the risk from both carcinogens and non-carcinogens from RB D is within the acceptable range for the current industrial use. In light of the planned exit of DOE from the site, and the residual levels of contaminants in the soil and groundwater in RB D, a remedy must be implemented to protect human heath and the environment into the future. Two alternatives were considered for RB D; they are described below.

2.9.1 No Action

Regulations governing the Superfund program require that the "no action" alternative be evaluated at each site to establish a baseline for comparison. Under this alternative, DOE would take no action to prevent exposure to soil and groundwater contamination associated with RB D.

2.9.2 Institutional Controls

In this alternative, institutional controls in the form of deed restrictions on future land use would be placed on RB D. The objective of these institutional controls would be to prevent an unacceptable risk to human health and the environment by restricting the use of RB D, including RB D soils, to that which is consistent with assumptions in the RB D RRE. DOE or its successors would retain the right and responsibility to monitor, maintain, and enforce these institutional controls. The following property deed restrictions and requirements would be imposed on the property to maintain protection of human health and the environment in the future:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock ground water;
- Provide site access for federal and state agencies for the purpose of sampling and monitoring; and
- Soils from RB D shall not be removed from the Mound NPL Facility boundary without approval from the Ohio Department of Health.

2.10 Selected Remedy

2.10.1 Description

The selected remedy for RB D is institutional controls in the form of deed restrictions on future land use. DOE or its successors, as the lead agency for this ROD, is assigned the responsibility to monitor, maintain and enforce these institutional controls. The following property deed restrictions and requirements will be imposed on the property to maintain protection of human health and the environment in the future:

- Ensure that industrial land use is maintained;
- Prohibit the use of bedrock groundwater;
- Provide site access for federal and state agencies for the purpose of sampling and monitoring; and
- Soils from RB D shall not be removed from the Mound NPL facility boundary without approval from the Ohio Department of Health.

2.10.2 Estimated Costs

The initial costs associated with these deed restrictions are those associated with the writing and recording of the restrictions with the deed. The costs associated with monitoring and enforcing the land use and property deed restrictions are estimated to be $5,000 per year.

2.10.3 Decisive Factors

The US EPA has developed balancing and modifying criteria to aid in the selection of the remedy. There are five (5) balancing criteria and two (2) modifying criteria. Each is described below.

2.10.3.1 **BALANCING CRITERIA** - *used to weigh major trade-offs among alternatives:*

(1) Long-term effectiveness and permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been

met. This criterion includes the consideration of residual risk and the adequacy and reliability of controls. Only Alternative 2, Institutional Controls, provides some degree of long-term protectiveness. The implementation of institutional controls in the form of land use restrictions is necessary to ensure that future use remains compatible with the evaluated residual risk associated with RB D.

At a minimum of every five (5) years, a review will be necessary to evaluate the effectiveness of the selected remedy because hazardous substances will remain onsite in concentrations above unrestricted land use levels.

(2) Reduction of toxicity, mobility or volume through treatment

Reduction of toxicity, mobility or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of the remedy.

Since neither of the alternatives includes treatment, this criterion does not require further evaluation. All necessary remediation in RB D was accomplished previously on an individual PRS basis.

(3) Short-term effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers and the community during construction and operation of the remedy until clean-up goals are achieved.

Alternative 1, No Action, would not provide short-term effectiveness because there is no assurance of protection of human health and the environment after the property is transferred. Alternative 2, Institutional Controls, provides this assurance.

(4) Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered. Since Alternative 1 involves no action, there is no time or cost required for implementation. Alternative 2, Institutional Controls, is expected to require approximately one month and minimal cost to implement.

(5) Cost

The range of costs is zero dollars ($0) for Alternative 1, No Action, to approximately $5,000 annually for the maintenance of the deed restrictions for Alternative 2, Institutional Controls.

MODIFYING CRITERIA - *to be considered after public comment is received on the Proposed Plan and of equal importance to the balancing criteria*:

(1) State/Support Agency Acceptance

Both US EPA and the State does not believe that Alternative 1, No Action, provides adequate protection of human health and the environment in the future. However, both agencies support the selected remedy, Alternative 2, Institutional Controls.

(2) Community Acceptance

Based on input received during the public comment period and the public hearing, the community accepts and support the selected remedy.

2.11 Statutory Determinations

The selected remedy for RB D is protective of human health and the environment, compiles with Federal and State requirements that are applicable or relevant and appropriate (ARAR), is cost-effective, and utilizes a permanent solution to the maximum extent practicable. Because this remedy will result in hazardous substances remaining in Release Block D above levels that allow for unlimited use and unrestricted exposure, a review will be conducted within five (5) years after implementation of the remedy to ensure that it is adequately protective of human health and the environment.

2.12 Documentation of Significant Changes

Although this ROD has been signed, new information may be received or generated that could affect the implementation of the remedy. DOE, as the lead agency for this ROD, has the responsibility to evaluate the signficance of any such new information.

The type of documentation required for a post-ROD change depends on the nature of the change. Three categories of changes are recognized by the US EPA: non-significant, significant, and fundamental. Non-significant post-ROD changes may be documented using a memo to the Administrative Record file. Changes that significantly affect the ROD must be evaluated pursuant to CERCLA section 117(c) and the NCP at 40 CFR 300.435(c)(2)(I). Fundamental changes typically require a revised Proposed Plan and an amendment to the ROD. Significant or fundamental changes to the ROD for Release Block D are not anticipated.

3.0 RESPONSIVENESS SUMMARY

This section of the ROD presents stakeholder concerns about RB D and explains how those concerns were addressed prior to issuance of the ROD.

Holding for public comments/responses.

DRAFT

4.0 REFERENCES

Remedial Investigation/Feasibility Study, Operable Unit 9, Site-Wide Work Plan, Final, May 1992.

Operable Unit 3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2, and 3. Final, Revision 0. July 1, 1993.

Operable Unit 9 Site Scoping Report, Volume 3 - Radiological Site Survey, Final, June 1, 1993.

Operable Unit 9; Hydrogeologic Investigation: Bedrock Report, Technical Memorandum, Revision 0, January 1994.

Operable Unit 9; Hydrogeologic Investigation: Buried Valley Aquifer Report, Technical Memorandum, Revision 1, September 1994.

Operable Unit 9 Background Soils Investigation Soil Chemistry Report, Technical Memorandum, Revision 2, September 1994.

Operable Unit 5 New Property Remedial Investigation Report, Final, Revision 0, April, 1995.

Operable Unit 9 Hydrogeologic Investigation: Groundwater Sweeps Report, Technical Memorandum, April, 1995.

Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995.

Operable Unit 5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995.

Operable Unit 9 Regional Soils Investigation Report, Revision 2, August 1, 1995.

Soil Gas Confirmation Sampling. Revision 0. April 1, 1996.

Residual Risk Evaluation, Release Block D, December 1996.

The Mound 2000 Residual Risk Evaluation Methodology (RREM), Mound Plant, Final, Revision 0, January 6, 1997.

Mound Plant Building Data Packages, Building 100 and 105 Located within Release Block D, Final, November 4, 1997.

Workplan for Environmental Restoration at the Mound Plant, The Mound 2000 Approach, December 1998.

Action Memorandum, PRS 304 Removal Action, Final, December, 1998.

On Scene Coordinator (OSC) Report for PRS 304, Mound Plant, December 1998.

Residual Risk Evaluation, Release Block D Revision Summary, December 1998.

Letter from Mr. Timothy J. Fischer, Remedial Project Manager, US EPA to Mr. Arthur Kleinrath, US DOE dated December 4, 1998, RE: Ecological Risk Assessment, Release Block D.

Letter from Mr. Brian Nickel, Mound Project Manager, Office of Federal Facilities and Oversight, OEPA to Mr. Oba Vincent, US DOE dated December 8, 1998, RE: DOE Mound Release Block D Ecological Assessment.

RESIDUAL RISK EVALUATION - RELEASE BLOCK D REVISION SUMMARY

FINAL REPORT

MOUND PLANT
MIAMISBURG, OHIO

January 1999

Miamisburg Environmental Management Project
U.S. Department Of Energy

Babcock & Wilcox of Ohio, Inc.
Contract No. DE-AC24-97OH20044

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RESPONSE TO COMMENTS RECEIVED FROM THE PUBLIC

1. The results of this risk assessment were not verified because of inadequate documentation, however if the concentration terms FOR SOIL are accurate, the conclusions drawn in this risk assessment for the on-site surface soil exposure pathway are reasonable. The exposure parameter values and equations used for each exposure pathway for soil need to be included in the text for the construction worker and site employee. The document should stand on its own without extensive citation.

Response:

All exposure parameter values and equations are shown in Appendix D of the 1996 Residual Risk Evaluation (RRE). The text of the 1998 RRE Revision Summary has been expanded to refer the reader to this Appendix. The 1998 Revision Summary includes all soil data used to update the soil component of the RRE. Therefore, the information presented in these two documents allows a reviewer to reproduce any of the soil risk calculations reported in the Revision Summary.

2. Please provide the equations, raw analytical data, and spreadsheet calculations used to calculate intake for Benzo(a)pyrene (B(a)P) in soil. This is a good spot check for this risk assessment (for chemicals). It seems odd that with GV values of 0.41 and 0.78 mg/kg for B(a)P in soil for the construction worker and site employee, respectively, risks of 6.0E-6 or less are calculated using 95% UCL of 2.4 and 1.17 mg B(a)P per Kg of surface soil.

Response:

The calculations for benzo(a)pyrene have been reproduced as an attachment. (Please see the last page of this Response to Comments.) As seen on the attachment, the calculations in the Revision Summary are correct. Based on those calculations, the guideline values are appropriate for benzo(a)pyrene. Specifically, since 0.41 mg/kg corresponds to a $1x10^{-6}$ risk level for the construction worker, then a concentration six times higher (2.4 mg/kg) would correspond to a risk level that is six times higher ($6x10^{-6}$). Similarly, since 0.78 mg/kg corresponds to a $1x10^{-6}$ risk level for the site employee, then a concentration 1.5 times higher (1.2 mg/kg) would correspond to a risk level that is 1.5 times higher ($1.5x10^{-6}$).

3. The site is contaminated with some type of diesel fuel and several radionuclides. Is TPH or free product of concern?

Response:

Neither diesel fuel nor TPH represent unacceptable risks for the construction or site worker scenarios analyzed for Release Block D. No free product was identified in Release Block D.

4. I still need clarification on the construction worker scenario. Do you assume that a person wears protective gear for inhalation? If not, inhalation of dust is greater than incidental ingestion of soil and dust.

Response:

The residual risk evaluation methodology does not take credit for an individual wearing protective gear for inhalation. On a per unit soil concentration basis, for a five-year exposure period, the construction worker inhales 5.85×10^{-6} mg of dust. Conversely, the incidental soil ingestion rate specified in the RRE methodology document is 480 mg/d, or 600,000 mg per five-year period. Therefore, unless extremely high soil concentrations were encountered, intake via inhalation of dust would not be expected to be greater than intake by incidental ingestion.

5. Soil was the only medium evaluated for Release Block D for this risk assessmenteven though [the] groundwater pathway was included in several Tables. I think policy about how groundwater is handled for this risk assessment needs to be clearly articulated in this text. Consumption of water is expected for both worker scenarios. As it stands, this pathway has been excluded from the risk analysis. Is leaching of soil to groundwater or streams considered as a pathway of exposure?

Response:

The availability of new soil data served as the basis for revisiting the RRE. As a result, the focus of the Revision Summary is on soil data, and minimal text on groundwater has been included. Although no new groundwater concentration data were generated for the RRE, the risks from groundwater-related pathways were captured in the risk tables that appear in the Revision Summary (see pp. 30 - 32). Subsequent to the development of the Revision Summary, the groundwater risk data were re-validated. The results of that re-validation effort are summarized in a stand- alone report entitled <u>Technical Position Report in Support of the Release Block D Residual Risk Evaluation</u>. The technical position report has been added to the CERCLA Public Reading Room. The text of the Revision Summary has been modified to more clearly state the role of the

groundwater pathway and to highlight the presence of groundwater risk data in Tables V.7 through V.9 of the Revision Summary.

6. For the construction worker, are both surface soil contaminant levels and subsurface levels used for calculating risks? It appears that some chemicals increase in concentration below the shallow surface dirt. This is important when considering the construction worker scenario for excavation of soil. The health risks may be understated for this situation. It is unclear how many samples are near the surface or subsurface and how the samples were lumped for risk assessment purposes.

Response:

Both surface and subsurface data were used to determine a 95th percentile upper confidence limit (UCL) or maximum soil concentration value for the construction worker scenario. (Maximum concentrations are used when the data set contains fewer than 20 points.) Typically, surface and subsurface sample results are given equal weight for the construction worker exposure scenario. By including the subsurface results, and using the 95th% UCL or maximum concentration detected, a conservative estimate of the exposure to the construction worker is developed.

7. The methods used to detect radionuclides and chemicals in soil and water and a list of the compounds tested for need to be included in the text. In other words, what materials were tested for but not detected?

Response:

The methods used are specified in the Methods Compendium which is available in the CERCLA Public Reading Room. Though not used for the RRE process, data regarding contaminants tested for, but not detected in, Release Block D were reported in PRS packages, Building Data Packages (BDPs) and the OU5 Operational Area Phase I Investigation Non-AOC Field Report, Volume 1 - Text, Final, Revision 0, June 1, 1995. All of these documents are available in the Public Reading Room.

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8. It is not clear from the risk assessment if off-site migration of contaminates in soil or groundwater was considered. Release Block D is on the Mound property border.

Response:

Offsite migration was considered but is not of concern for RB D. More detailed explanations follow on the next page.

Soil to air. *The potential for airborne movement of soil was examined in the 1996 RRE. The RRE is believed to bound the risks likely to be encountered from continuous exposure to radionuclides driven aloft by resuspension.*

Soil to surface water. *RB D surface water runoff is not expected to move offsite. Stormwater runoff drains toward the south and then west -- ultimately discharging into the Mound Plant overflow pond or the main drainage channel. Based on results from Mound's effluent and environmental monitoring programs, contaminants are not present in stormwater at levels of concern.*

Groundwater. *As reported in the 1996 RRE, the movement of groundwater from bedrock toward the Buried Valley Aquifer and the Mound Plant production well field has been estimated using a conservative transport model. The risk values reported for future groundwater include these concentration estimates.*

ATTACHMENT

Response to Comments
Release Block D Revision Summary
Risk Calculations for Benzo(a)pyrene Soil Ingestion

Soil Concentration

2.44 mg/kg	Construction Worker	(Ref: Revision Summary, p. 15)
1.17 mg/kg	Site Employee	(Ref: Revision Summary, p. 15)

Slope Factor
7.3 mg/kg-d (Ref: Revision Summary, p. 17)

Construction Worker Intake [redacted]
(Ref: Equation and parameter values from Appendix D, 1996 RRE)

Intake, mg/kg-d = (CS*EF*ED*10-6 kg/mg*IR)/(AT*BW*365 d/yr)

CS =	2.44	mg/kg (CS = concentration in soil)
EF =	250	days/year (EF = exposure frequency)
ED =	5	years (ED = exposure duration)
IR =	480	mg/day (IR = ingestion rate)
AT =	70	years (AT = averaging time)
BW =	70	kilograms (BW = body weight)

Intake = 8.19E-07 mg/kg-d

Construction Worker Risk, Soil Ingestion, B(a)P

(Reference for equation: Page 5-1 of 1996 RRE)

Risk = Intake • Slope Factor

Risk =	**5.98E-06**	
vs.		
Risk =	**6.0E-06**	(reported on p. 20 of Revision Summary)

Site Employee Intake [redacted]
(Ref: Equation and parameter values from Appendix D, 1996 RRE)

Intake, mg/kg-d = (CS*EF*ED*10-6 kg/mg*IR)/(AT*BW*365 d/yr)

CS =	1.17	mg/kg (CS = concentration in soil)
EF =	250	days/year (EF = exposure frequency)
ED =	25	years (ED = exposure duration)
IR =	50	mg/day (IR = ingestion rate)
AT =	70	years (AT = averaging time)
BW =	70	kilograms (BW = body weight)

Intake = 2.04E-07 mg/kg-d

Site Employee Risk, Soil Ingestion, B(a)P

(Reference for equation: Page 5-1 of 1996 RRE)

Risk = Intake • Slope Factor

Risk =	**1.49E-06**	
vs.		
Risk =	**1.5E-06**	(reported on p. 21 of Revision Summary)

The Mound Core Team
P.O. Box 66
Miamisburg, Ohio 45343-0066

December 3, 1996

Ms. Sharon Cowdrey
5491 Weidner
Franklin, Ohio 45005

Mr. Jeff Fisher
7470 Shellin
Dayton, Ohio 45415

Dear Ms. Cowdrey and Mr. Fisher:

The Core Team consisting of the U.S. Department of Energy Miamisburg Environmental Management Project (DOE-MEMP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA) appreciates the input provided by the public stakeholders of the Mound facility. The public stakeholders have significantly contributed to the forward progress that has been made on the entire release block strategy for establishing the safety of the Mound property prior to its return to public use after remediation and residual risk evaluation.

Attached please find responses to your October 7, 1996 comments on both the "Mound 2000 Residual Risk Evaluation Methodology (RREM), August 19, 1996, Revision 0" and the "Residual Risk Evaluation - Release Block D, September 1996, Revision 1."

Should the responses require additional detail, we will gladly arrange a meeting or telephone conference. Additionally, in order to make the risk evaluation process clear to the public, we request your help in creating a summary for the next CERCLA Quarterly Meeting. Jane Greenwalt, DOE-MEMP Public Affairs Officer, will be contacting you to arrange a conference to work on a public presentation.

Sincerely,

DOE/MEMP: Arthur W Kleinrath
Arthur W. Kleinrath, Remedial Project Manager

USEPA: Timothy J. Fischer
Timothy J. Fischer, Remedial Project Manager

OHIO EPA: Brian K. Nickel
Brian K. Nickel, Project Manager

cc w/ attachment:
Lisa Anderson, OEPA
Ray Beaumier, OEPA
Jim Webb, ODH
Debbie White, DOE-MEMP
Jane Greenwalt, DOE-MEMP
Terry Tracy, DOE, EM-73
Dave Rakel, EG&G
Alec Bray, EG&G
Steve Nowka, EG&G

COMMENTS RECEIVED FROM THE PUBLIC
RESIDUAL RISK EVALUATION METHODOLOGY (RREM)

1. Why use the upper threshold limit of the 95% CI (confidence interval) for establishing background levels. The lower bound is appropriate, not the upper bound. You have selected the statistically determined *maximum* value, not the statistically determined *minimum* value for background concentrations. What is the consequence of this decision?

   *The background concentrations used for screening purposes in residual risk assessments were developed and presented in a Mound DOE document entitled, **"Operable Unit 9 Background Soils Investigation Soils Chemistry Report (Technical Memorandum Revision 2)"**. As is required, the public had an opportunity to review and comment on this document. All comments and concerns from USEPA and OEPA were addressed in this document. No comments were received from the public.*

   The purpose of a Residual Risk Evaluation is to determine potential risks to construction workers and site employees working within each release block due to residual contamination <u>above background</u> . The 95th% upper tolerance limit (95th UTL) was used to establish whether samples can statistically be determined to be above background. This calculation is used in the Ohio Environmental Protection Agency (OEPA) Division of Energy and Remedial Response "How Clean is Clean" Policy (Final, 1991). Only if values fall above the 95th% UTL can one be statistically sure that contamination exists.

   Additionally, for compounds carried through the full Residual Risk Evaluation, total risks, incremental risks, and background risks are calculated. By lowering the background concentration, more risk would be attributed to Mound activities. While the total risks would not change, the incremental portion of risk attributed to the Mound Plant would be larger. This would force the risk management process to deal with risks that are in part, background risks.

2. Why was 0.1 HI selected to determine if a compound is taken through the risk assessment process? This decision should be tied to the number of contaminants within the block. Again, what is the consequence of this decision, in light of cumulative risks?

   During the course of developing the Residual Risk Evaluation Methodology (RREM), it was determined that use of Guideline Values equal to a Hazard Index of 1 were insufficiently conservative to use as screening criteria for the Residual Risk Evaluation. Therefore to be more conservative, concentrations equal to one tenth of the Guideline Values were used as screening criteria in order to evaluate the cumulative effect of multiple contaminants that are individually not above the Hazard Index of 1. Tying the decision to the number of contaminants within the release block is not feasible, as the exact number of contaminants contributing to residual risks attributable to Mound activities is not discernible until <u>after</u> the screening process is complete.

3. I believe that using the guidelines values, in its current form is premature. Several concerns were raised in my Wright State Risk Assessment class last year. I will provide a few examples. The Guideline Values need to be calculated using the same methodology that is used to calculate Residual Risks. This is not the case, dermal exposure is an example. All exposure pathways used in the Residual Risk manual need to be identical to the pathways used to calculate the Guideline Values. Also, use of toxicity factors needs to be consistent. The proposed approach for retrieving slope factor, RfD and RfC information is different in the Residual Risk manual compared to the Guideline Value manual. Validation of calculations (QA/QC) is needed on the Guideline Values manual.

The purpose of the Guideline Values is to serve as one screening tool as part of the Residual Risk Evaluation process. The concept of using Guideline Values as screening tools was developed with substantial input of the Mound DOE stakeholders. Guideline values are only screening criteria for partially determining which compounds to carry through a Residual Risk Evaluation. Guideline values are not cleanup levels at all, but rather concentrations above which a chemical may need to undergo further residual risk evaluation. The "Risk-Based Guideline Values" report (available in the Public Reading Room) is considered effectively a finalized report (HAZWRAP, Dec 1995). It is a key part of the Residual Risk Evaluation process. If the Risk-Based Guideline Values report were to be changed continuously, effectively being a moving target, no residual risk evaluations could be completed and no release blocks could be released to the City of Miamisburg.

We agree that the residual risks need to be evaluated using the same equations as the Guideline Values. Indeed, both residual risks and Guideline Values were calculated using the principles, procedures, equations, and exposure factors set forth in the U.S. Environmental Protection Agency's Risk Assessment Guidance for Superfund (RAGS), Parts A and B. Additional U.S. EPA Guidance for dermal exposures and exposure factors were also used. It is acknowledged that the dermal exposure equations used for groundwater are slightly different between the Guideline Value procedure (old method) and the RREM (new method). At the request of OEPA, DOE is in the process of modifying the Risk-Based Guideline Value Report so the dermal risk in the Risk-Based Guideline Value report is calculated using the same equations presented in the Residual Risk Evaluation Methodology. The numeric results however, do not change significantly as a result of this change.

We disagree that all residual risk exposure pathways must be identical to the pathways used to calculate the Guideline Values. Instead, the Residual Risk Evaluation Methodology directs the consideration of all pathways pertinent to a specific release block, as laid out in the methodology. As an example, these may include surface water for some release blocks and not others. Guideline values are only screening criteria for partially determining which compounds to carry through a Residual Risk Evaluation. Guideline values are applied to all release block residual risk evaluations, while all pertinent pathways for a specific release block must be considered for onsite construction workers and site employees.

We agree that the use of toxicity factors for residual risk evaluations needs to be consistent with those used to develop Guideline Values. While the text explaining the determination of toxicity factors is different between the RREM and the Guideline Value report, the approach used is the same. Data retrieved from the Integrated Risk Information System (IRIS) were used first, followed by data from the Health Effects Assessment Tables (HEAST), followed by other information sources (older versions of HEAST, or state or regional guidance).

Validation of calculations (QA/QC) for the Risk-Based Guideline Values report is not an appropriate issue here as this is a discussion on the RREM. However, it should be noted that the draft Risk-Based Guideline Value reports were prepared and completed with substantial review from a number of pertinent stakeholders, including USEPA and OEPA. This would have included substantial checking and rechecking of the Guideline Value approach, equations, parameter values and calculated Guideline Values.

4. The exposure assumptions for the construction worker are not justified. Based on historical experience, what is the average (or upper bound) length of time that construction crews have worked on D&D activities? Need site specific data. Light exercise would increase the daily intake of air above the standard 20 m^3. Also, intake of dust by inhalation is much more substantial than by ingestion. The use of the PEF is incorrect for the construction worker. Please review the derivation of the PEF. This has an important impact on risk assessment calculations because the slope factors for inhalation of important radionuclides is larger than for oral ingestion by up to 100 fold! Thus, the cancer risks would be greatly underestimated for the construction worker.

We agree that intake of dust by inhalation can represent a greater intake than ingestion. We disagree, however, that the exposure assumptions for the construction worker are not justified. D&D activities cannot serve as a site-specific surrogate for construction worker exposures. D&D activities are intentionally conducted in locations of relatively high exposures, as is needed during remediation. However, the D&D workers all are <u>required</u> to wear Personal Protective Equipment (PPE) that eliminates unacceptable exposures to site contaminants.

Experience at the Mound activity has shown that the most significant exposures to dust are to the heavy equipment operators (backhoes, bulldozers, etc.) who are operating their equipment from a drivers seat. This would not be considered light exercise. Therefore, we believe that the standard daily inhalation rate of 20 m^3 of air is appropriate.

The use of the Particulate Emission Factor (PEF) is appropriate for construction workers as a conservative factor defining dust exposures. The PEF is conservatively calculated by considering that there is a large (~22,000 ft^2) completely barren area comprised of an infinite supply of easily suspendable dust particles, and with a wind assumed to be blowing continuously at 10 mph. Thus it is unlikely that risks to construction workers are underestimated, but are rather more likely overestimated.

5. Need to address sediment. For Release Blocks that contain surface water (creek or pond), incidental intake (by ingestion and dermal absorption of chemicals and radionuclides contained in sediment) needs to be included in the risk assessment. Ecological concerns may exist also. One may gain a historical perspective on environmental contamination by sampling sediment.

We agree that sediment needs to be addressed. Sediments and surface waters will be addressed together for release blocks with surface water and sediments. The RREM will be modified to include sediments.

*We agree that ecological health risks need to be addressed at the site. An "**Operable Unit 9, Site-Wide Preliminary Baseline Risk Assessment**" (Draft, Revision 0), containing an Ecological Risk Assessment was initiated, but has not been made public. Overall, ecological risk concerns are addressed on a site-wide basis. DOE proposes to publish the Operable Unit 9, Site-Wide Preliminary Baseline Risk Assessment Report as a technical memorandum for public review.*

6. Page 37, second paragraph. Weighting data based on geographical size seems inappropriate. I do not believe that most samples are collected in an unbiased fashion. The goal is to define areas of contamination, make assumptions about other larger areas of land based on limited data. If the contaminated area is remediated to levels that are similar to the larger land area, then lumping the two may be appropriate.

This comment appears to be largely in concurrence with the RREM as it exists, although the text will be clarified to remove any confusion. We do agree that most samples are not collected in an unbiased fashion. The sampling at many locations was clearly biased, as pointed out by the commenter. To appropriately use biased data, one must use the data within the areas of biased sampling. As these areas generally were seeking to define completely a suspected area of contamination, the samples only are useful for that location, not area-wide. Therefore, as stated in the RREM, the data from such an area defines the contamination from that area, while other sampling from other areas defines those other areas. Weighing of the samples by geographical area is the most appropriate method to define contamination over an entire release block. We agree that after a removal has been performed, it may be appropriate to lump the larger land area with the remediated area for data analysis.

7. The methodology for assessing the impact of soil contamination on groundwater seems undeveloped and not clearly articulated (page 53-54). Include MCL values along with Guideline Values, I bet the MCL values are what you really pay attention to.

We agree that the methodology for assessing soil contamination impacts on groundwater need better articulation. The text will be revised appropriately.

In initial development of the methodology, MCLs were proposed as an initial screening tool. In response to regulatory comment, where it was stated that Mound Plant needed to examine risk regardless of MCLs, it was agreed to evaluate risk for groundwater regardless whether MCLs were met. MCLs will not be added because they are not used anywhere in the Residual Risk Evaluation for any release block. MCLs are regulatory limits used with drinking water supplies and are inappropriate to use in a Residual Risk Evaluation.

8. The text contains unsolicited results, obtained from a crystal ball perhaps. For example, on page 52, second paragraph states that "...this analysis will be used for each Release block RRE to demonstrate that cumulative risks from the air pathway are below levels of concern. This type of language in a methods document is unacceptable and brings into question the credentials of the authors involved in the development of this manual.

The language in the referenced section will be revised to reflect that risks can be above or below levels of concern.

9. Surface water definitely needs to be included in the risk assessment. The language is too wishy washy on surface water. Again, a crystal ball prediction is given about surface water on page 52.

We agree that surface water needs to be included in a release block residual risk evaluation. As noted in a previous comment, consideration of sediments within those surface waters will be included. The text will be clarified appropriately. It should be noted that only a few release blocks have surface water within their defined borders.

10. Please include specific guidance for oral absorption factors. What is regional and state guidance (page 49)?

The RREM will be revised to reflect that no pertinent regional or Ohio EPA guidance exists on this subject. Since very few of the required data are available to accomplish the revision of oral toxicity factors for use with dermal equations, the uncertainty analysis section of individual release block-specific Residual Risk Evaluations will be appropriately revised to acknowledge that dermal risks may be underestimated or overestimated for some compounds.

11. Please state how you intend to "lump" cancer risks from chemicals with radionuclides for assessing Release Block cancer risks. I believe that you cannot compare the two or sum the two risks together.

Prediction of cancer risk from radionuclides and from carcinogenic organic and inorganic chemicals are fundamentally different. Although there is conflicting USEPA guidance on the subject, these risks are often simply added together. While we agree that it may be technically inappropriate to add such risks together, from a risk management standpoint, it is practical to summarize overall risks. The summation of risk does let risk management decisions be made on the cumulative effects that would be lost if the risks were evaluated individually.

12. Off site migration is not adequately addressed. The exposure scenarios are developed to be protective of the site worker, but do not address residential exposure. For completeness, this aspect of the risk assessment is required.

The purpose of the Residual Risk Evaluation is to assess potential risks associated with any possible contamination remaining within a release block for a future land use. We chose to use an onsite construction worker and site employee to reflect industrial land use. The decision to use a future industrial land use risk scenario, made with the City of Miamisburg, reflect the anticipated commercial redevelopment of the site.

The release block specific Residual Risk Evaluations are not intended to address any potential offsite exposures. Any offsite migration issues will be dealt with after all sources have been addressed on site.

COMMENTS RECEIVED FROM THE PUBLIC
RESIDUAL RISK EVALUATION - RELEASE BLOCK D

1. This document uses the process described in the Residual Risk Evaluation Methodology manual to evaluate Release Block D (see attached map). The report was prepared by Terran Corp., Beavercreek, Ohio. A summary of their findings is given in an executive summary. Their conclusions were that for a construction worker, the cancer risks are currently about 2 in 100,000 and would not appear to change in the future. The hazard index for noncarcinogens is low currently, but predicted to increase in the future. For the site worker, the cancer risks (current and future) are predicted to be slightly lower, 1 in 100,000. The hazard index for noncarcinogens is low at this time but predicted to increase in the future. Increase in calculated future hazard index values for both the site worker and the construction worker is because of assumptions used to predict future concentrations of contaminants in groundwater.

   Comment only - no response needed.

2. The calculated Guideline Values for Plutonium-238 is 5.5 and 11.0 pCi/g for the construction worker and the site employee. This sends a very disturbing message about the clean-up of the canal in a residential/park area of Miamisburg. A double standard now exists. Mound is unwilling to clean up the canal to standards that are acceptable for the site. The public will have a difficult time listening to your rationalization of this issue.

   Guideline values are NOT cleanup standards. The Guideline Values are simply a listing of concentrations that give a specific risk level for a specific land use scenario. The Guideline Values calculated for plutonium ranged from 5.5 to 550 pCi/g for the on site construction worker. These values represent the $1x10^{-6}$ to $1x10^{-4}$ risk range. The canal cleanup standards of 75 pCi/g (95th UCL of the mean) and 150 pCi/g (maximum) were determined with significant and substantial public participation and examined recreational exposures. No double standard exists as we will be cleaning up (on site) for the expected on site industrial land use.

3. Show MCL values for production water.

   MCLs will not be added because they are not used anywhere in the residual risk evaluation for Release Block D. MCLs are regulatory limits used with drinking water supplies and are inappropriate to use in a Residual Risk Evaluation.

4. Page 14, Section 2. Several radionuclides have been found in groundwater. All of these radionuclides, except for tritium, are not expected to migrate in the environment. Why is Actinium-227, Bismuth-210, Plutonium-239/240, Uranium-234 and Uranium-238 found in groundwater? If a credible answer cannot be given, then this document only offers risk assessment calculations for direct contact and does not address leaching to groundwater. No discussion of this situation is given. This is very disturbing when combined with the observation that contamination in general is more severe in the deeper subsurface soils than the surface soils. My impression is that skilled geologists have been involved in the environmental remediation process at the Mound. If leaching is a viable means for chemicals and radionuclides to reach the buried valley aquifer, why is only the current groundwater contaminants used in the future groundwater exposure scenario? What other compounds are in the soils at Mound that may leach into the groundwater in the future? the soil may be a temporary storage bin; emptying of this bin may be controlled by weather conditions.

Essentially insoluble compounds and elements (including radionuclides) that are found in groundwater are generally bound up in particulate or colloidal components within the groundwater. Filtration was not performed on any of the samples. All groundwater concentrations available represent both dissolved and particulate contaminants. Discussion will be added to the text of the Residual Risk Evaluation for Release Block D to clarify this issue. Additionally, during the review of the Potential Release Sites (PRSs), a Soil Screening Level (SSL) analysis was performed that evaluated the potential for groundwater contamination from the residual soil contaminants. For Release Block D, no unacceptable potential for groundwater contamination from any contaminant was found. Details about the SSL analysis are in the "Potential Release Site Packages--Reading and Understanding, Volume II" document, which is available in the Public Reading Room.

5. Several of the risk assessment mis-assumptions that are used for the construction worker are detailed in the previous portion of this memo.

The following is comment #4 and response from the Residual Risk Evaluation Methodology comments:

> The exposure assumptions for the construction worker are not justified. Based on historical experience, what is the average (or upper bound) length of time that construction crews have worked on D&D activities? Need site specific data. Light exercise would increase the daily intake of air above the standard 20 m^3. Also, intake of dust by inhalation is much more substantial than by ingestion. The use of the PEF is incorrect for the construction worker. Please review the derivation of the PEF. This has an important impact on risk assessment calculations because the slope factors for inhalation of important radionuclides is larger than for oral ingestion by up to 100 fold! Thus, the cancer risks would be greatly underestimated for the construction worker.
>
> *We agree that intake of dust by inhalation can represent a greater intake than ingestion. We disagree, however, that the exposure assumptions for the construction worker are not justified. D&D activities cannot serve as a site-specific surrogate for construction worker exposures. D&D activities are intentionally conducted in locations of relatively high exposures, as is needed during remediation. However, the D&D workers all are required to wear Personal Protective Equipment (PPE) that eliminates unacceptable exposures to site contaminants.*
>
> *Experience at the Mound activity has shown that the most significant exposures to dust are to the heavy equipment operators (backhoes, bulldozers, etc.) who are operating their equipment from a drivers seat. This would not be considered light exercise. Therefore, we believe that the standard daily inhalation rate of 20 m^3 of air is appropriate.*

The use of the Particulate Emission Factor (PEF) is appropriate for construction workers as a conservative factor defining dust exposures. The PEF is conservatively calculated by considering that there is a large (~22,000 ft^2) completely barren area comprised of an infinite supply of easily suspendable dust particles, and with a wind assumed to be blowing continuously at 10 mph. Thus it is unlikely that risks to construction workers are underestimated, but are rather more likely overestimated.

6. The process and layout of this document is good and warrants an "atta girl or atta boy". The Mound 2000 risk assessment approach is consistent with other strategies used across the U.S. at this time. A hazard index value of 1.2 means little for the future use of groundwater given, the methods used to calculate future groundwater contaminants.

   Comment only - no response needed.

7. Several conclusions are drawn about risks being overestimated (page 5, section 5 - page 8, section 5 - page 11, section 5). I get the feeling that the authors believe that their calculations reflect reality. An unbiased presentation of uncertainty, at a minimum, is warranted. This language only reaffirms the public's perception of DOE and we know what that is. Remove all speculation unless a balance view can be presented.

   We believe that the calculations lead to conservative risk estimates. They are statistically controlled to ensure that the estimated risk is above the expected average risk. We agree that the text for the uncertainty is unclear at some locations. This text will be revised. Additional uncertainties not originally included in the text but were noted throughout these comments and responses, will be added.

8. Define the population that will be exposed to these radionuclides (onsite and offsite). Have any of these people been exposed to historic Mound related radiation? If so, then this must be factored in before one can conclude that the health risks are overestimated for Release Block D for current levels of contamination.

   The purpose of the Residual Risk Evaluation is to assess potential risks associated with any possible contamination remaining within a release block to an onsite construction worker or site employee in the future. The uncertainty analysis section presents and discusses factors of the Residual Risk Evaluation that overestimate or underestimate risks associated <u>only</u> with Mound related residual contamination to which a construction worker or site employee may be exposed following release of the land to Miamisburg for commercial redevelopment use.

   The release block specific Residual Risk Evaluations are not intended to address any past potential offsite (or onsite) exposures. Any offsite migration issues will be dealt with on a site-wide basis. The commenter is essentially asking for an epidemiology study of past exposures. That exercise is properly within the purview of the Agency for Toxic Substance and Disease Registry (ATSDR).

Terran Corporation

Environmental Services

March 4, 1997

Mr. Alec Bray
EG&G Mound Applied Technologies
P.O. Box 3000
Miamisburg, OH 45343

Re: Corrections to Release Block D RRE

Dear Alec,

While doing a final proof of Release Block H RRE, I noticed an error in Appendix C, Release Block D Current and Future Scenarios. The table in this appendix, Estimated Future Maximum Concentrations in the BVA, has columns showing the bedrock contribution to the BVA and the current production well concentrations. These two columns are added together to obtain the third column, estimated future maximum concentrations. Due to a units error in our original spreadsheet, several of these concentrations do not add properly to provide the estimated future maximum concentration.

The concentrations which do not add properly include: alkalinity, ammonia, chloride, dissolved solids, fluoride, nitrate, nitrate/nitrite, nitrite, and organic carbon. Each of these parameters was originally in mg/l (unlike all other constituents), and this is what precipitated the error.

Fortunately, these parameters were only considered to be "water quality parameters", and therefore did not play a big role in the RRE. They do appear, however, in Table IV.3, Current and Future Water Quality Data for BVA.

Following are the corrected versions of the Appendix C table, and Table IV.3. These should be distributed to holders of Release Block D reports so that they may correct their copies. These tables are correct in Release Block H.

I apologize for the error and any inconvenience it may cause you.

Regards,

Amy Lamborg
Senior Geologist

✧ 4080 Executive Drive ✧ Beavercreek, Ohio ✧ 45430-1061 ✧ (937) 320-3601 Phone ✧ (937) 320-3620 Fax ✧

JAN 17 1997

MIAMISBURG
AREA OFFICE

Department of Energy

Ohio Field Office
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Mr. Tim Fischer
U.S. Environmental Protection Agency (USEPA)
HSRM-6J
77 W. Jackson Blvd.
Chicago, Illinois 60604

Mr. Brian Nickel
Ohio Environmental Protection Agency (OEPA)
401 E. Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Fischer and Mr. Nickel:

Enclosed please find the "Residual Risk Evaluation -- Release Block D, Final, Revision 0". This document has been revised to incorporate stakeholder comments received during the public review period, and is therefore considered final.

If there are any questions, please contact Debbie White, Environmental Specialist at (937) 865-3597.

Sincerely,

Arthur W. Kleinrath
Environmental Restoration
Team Leader

Enclosure

cc w/enclosure:
Ray Beaumier, OEPA Columbus
Lisa Anderson, OEPA
Regina Bayer, CH2M Hill
Ruth Vandegrift, ODH
Terry Tracy, EM-73, HQ
Debbie White, MEMP

cc w/o enclosure:
Monte Williams, EG&G
Alec Bray, EG&G

MIAMISBURG
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JUL 23 1997

Mr. Tim Fischer
U.S. Environmental Protection Agency (USEPA)
HSRM-6J
77 W. Jackson Blvd.
Chicago, Illinois 60604

Mr. Brian Nickel
Ohio Environmental Protection Agency (OEPA)
401 E. Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Fischer and Mr. Nickel:

A minor error was discovered in the Residual Risk Evaluation, Release Block D, Appendix C, Table IV.3 and Appendix C "Estimated Future Maximum Concentrations in the BVA." which was distributed January 17, 1997. The error resulted from summing numbers with unlike units for the following constituents: alkalinity, ammonia, chloride, dissolved solids, fluoride, nitrate, nitrate/nitrite, nitrite, and organic carbon. Please find the attached page changes to insert in your copy:

Page iii and iv
Page ACK-1
Page 3 of 4, Section 4 Toxicity Assessment and 4 of 4
Appendix C "Estimated Future Maximum Concentrations in the BVA"

If there are any questions, please contact me at (937) 865-3597 or Debbie White, Environmental Protection Specialist at (937) 865-5197.

Sincerely,

Arthur W. Kleinrath
Project Engineer Team Leader

Enclosure

cc on page 2

Environmental Safeguards and Compliance
Project Compliance Profile

Project: Parcel D Transfer

Project Contact: S. Smiley

Date: April 19, 1999

Distribution:
File

A. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) [40 CFR 300]

The CERCLA process described in "Environmental Restoration of the DOE Mound Site: The Mound 2000 Approach" was followed. All (16) potential release sites and all (2) buildings were evaluated and determined to be protective of human health and the environment. This is documented in the administrative record, Proposed Plan, and Record of Decision (ROD) for Parcel D. The residual risk was determined to be within the 10^{-4} to 10^{-6} acceptable risk range ("Residual Risk Evaluation – Release Block D," Final, Revision 0, December 1996 and "Technical Position Report in Support of the Release Block D Residual Risk Evaluation," Final, Revision 0, January 1999). A remedial action (institutional controls) was selected ("Proposed Plan for Release Block D," December 1998, and "Record of Decision for Release Block D," Final, February 1999). DOE met the CERCLA 120(h) requirements for property transfer ("CERCLA 120(h) Summary Notice of Hazardous Substances," Release Block D, Final, February 1999).

B. National Emission Standards for Emissions of Radionuclides from DOE Facilities [40 CFR 61 Subpart H]

The continuous monitoring requirements of 40 CFR 61 Subpart H were evaluated for the stacks using the modified site boundary resulting from the transfer of Parcel D. The boundary adjustment causes no change in the status of any stack system relative to the NESHAPs standard (Internal Memo from S. Mackey to File, October 27, 1998).

Active diffuse sources were evaluated relative to the modified site boundary. The boundary adjustment did not cause an increase in the offsite dose from such projects above the U. S. EPA approval threshold (documentation maintained with NESHAPs project dose assessment files).

There are no NESHAPs compliance issues associated with the transfer of Parcel D. A U. S. EPA courtesy notification of the change in plant boundary was prepared and submitted to DOE on March 23, 1999.

C. Permits to Install (PTIs) and Permits to Operate (PTOs) [OAC 3745-31 and -35]

Parcel D contains no permitted air emission sources.

D. National Pollutant Discharge Elimination System (NPDES) Permit [OAC 3745-33]

Wastewater and stormwater discharges from Parcel D are covered by the Mound NPDES permit and Stormwater Pollution Prevention Plan (SWPPP). As the character of the discharges are expected to remain the same, no action is required. Property easements provide for continued access to Parcel D to confirm that discharges are consistent with the permit and SWPPP.

E. National Environmental Policy Act (NEPA) [10 CFR 1021]

Categorical exclusion A.7 (i.e., transfer, lease, disposition of interests in property if the use is to remain unchanged) applies per letter from N. Brown, DOE/OH, to G. Gartrell, DOE/MEMP, dated December 18, 1995. Different uses were evaluated in the Non-Nuclear Consolidation EA (DOE/EA-0792) and the Commercialization EA (DOE/EA-1001).

F. Floodplain/Wetland Review [10 CFR 1022] and Wetland Antidegradation [3745-1-54]

No floodplains are located within the boundaries of Parcel D (Flood Insurance Rate Map (FIRM) Community Panel Number 390413 0005 C).

No wetlands are located within the boundaries of Parcel D (Operable Unit 9 Hydrogeologic Investigation: Wetlands Determination Report, approved by the U. S. Army Corps of Engineers on June 21, 1994). One suspect area was subsequently evaluated and determined not to be a wetland (letter from T. A. Baillieul, DOE/CEMP, to S. Smiley, DOE/OH, dated August 27, 1998).

G. Protection of Historic and Cultural Properties [36 CFR 800]

No historic properties are located within the boundaries of Parcel D.

Reviewed and Approved by:

Environmental Safeguards and Compliance	4/19/99 Date

RESIDUAL RISK EVALUATION - RELEASE BLOCK D - REVISION SUMMARY
INTRODUCTION

The Mound Plant has been used as a research, development and production facility in support of the Department of Energy's (DOE) weapons and energy programs since 1948. Past operations created approximately 400 areas at the Mound where potential releases of hazardous substances may have occurred. These areas where releases may have occurred are undergoing investigation and, as deemed necessary, restoration. With the concurrence of the United States Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (OEPA), the DOE will release the restored Mound property to the Miamisburg Mound Community Improvement Corporation for economic development and industrial enterprises.

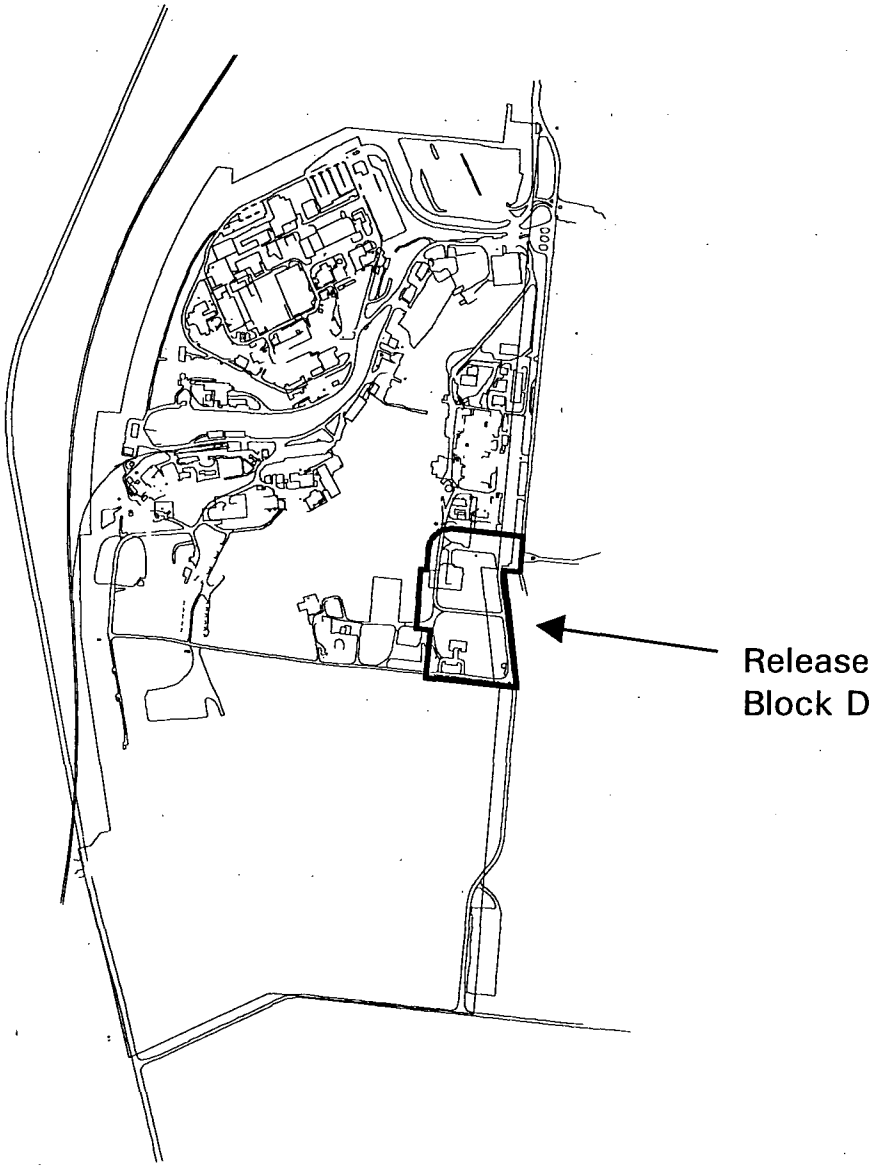
To streamline the transfer process, the Mound property has been divided into a number of "release blocks", which are contiguous tracts of property designated for release. Before transfer of a release block can be completed, an evaluation will be completed of human health risks that are associated with residual levels of contamination remaining in the release block either after removal actions (clean-ups) have occurred or have been deemed unnecessary. A Residual Risk Evaluation (RRE) will be prepared for each release block at the Mound to evaluate these residual risks. A RRE was completed for Release Block D in December 1996 (Residual Risk Evaluation - Release Block D Final Revision 0, December 1996) which addressed the residual contaminants in soil and groundwater for this release block.

In 1998 the boundary of Release Block D was reconfigured. (Figure 1 shows the location and new boundaries of Release Block D.) Due to this reconfiguration the data set used to complete the December 1996 Final RRE was revised. The original soil data set was modified to include or remove data points based on the boundary reconfiguration. In addition, there were some new soil samples collected and analyzed in October 1998 that are included in this revision.

This revision of the Release Block D RRE did not revise any data associated with the groundwater (current or future) scenarios. The Release Block D boundary change and the additional soil samples collected would have no affect on the groundwater risk calculations. This is due to the methodology used in calculating groundwater risk which is dependent on groundwater contaminants found in the Buried Valley Aquifer and the bedrock aquifer. The overall hazard index and risk included in the revised Release Block D RRE were recalculated using the revised soil data set and the December 1996 current and future groundwater hazards and risks values.

The Release Block D revision followed the Mound 2000 Residual Risk Evaluation Methodology or RREM (DOE, 1997). The RREM was developed through the collaborative efforts of Mound personnel, DOE, U.S. EPA, and OEPA.

Figure 1. Location and Boundaries of Release Block D, December 1998.



IDENTIFICATION OF CONTAMINANTS TO BE EVALUATED

Identification of contaminants to be evaluated required the compilation of new data. New data were compiled for soil sampling locations not previously included in Release Block D. This was accomplished by querying the Mound Environmental Information Management System (MEIMS) for all data associated with Release Block D based on the original boundary and the new boundary. These two databases were then compared to identify the soil sampling locations that needed to be added. A manual comparison of the soil sampling locations was done by using maps with both boundaries and locating the sampling locations that needed to be added, i.e., locations in the new boundary but outside the original boundary. Based on this exercise, it was determined that data for 15 soil sampling locations needed to be added, and data for six locations needed to be removed. Additionally, during October 1998, 13 new soil samples were collected within the Release Block D boundary and sent off-site to a commercial laboratory for radionuclide analysis. In November 1998 an additional 11 soil samples were collected and analyzed by the Mound soil screening laboratory. All the data for the 15 locations, as well as the October and November 1998 sampling locations, were then added to the existing Release Block D risk assessment database.

The second step of identifying contaminants to be evaluated consisted of determining what contaminants were detected one or more times. All contaminants that were detected one or more times were listed in a contaminant summary table for soil. Such information as the maximum concentration detected for any depth (construction worker scenario) and for depths less than 2 feet (site employee scenario) were noted. Contaminants that had previously met this criterion (Table II.2, December 1996 RRE) were updated to determine revised maximum concentration and frequency of detections. Review of the 15 new sampling locations identified 13 contaminants that had either one or more detections. These contaminants had been previously analyzed at other locations in Release Block D but were not detected in any samples. Data were then compiled for these 13 contaminants for all the sampling locations within the revised Release Block D boundary and the maximum concentrations and frequency of detection calculated. Table II.2 has been revised to present the maximum concentration of each contaminant, and also present appropriate background concentrations, Guideline Values and additional screening criteria for comparative purposes.

As per the RREM, the list of contaminants in Table II.2 was compared to background concentrations, Guideline Values and other screening criteria that define contaminants to be carried through the RRE process. Only contaminants exceeding both background and Guideline Values and meeting certain frequency of detection criteria are carried through the RRE process. Common constituents of most soil such as sodium and potassium were not carried through the RRE.

The screening process is documented on the revised Table II.2 by listing the reason each contaminant was carried through the RRE. The revised list of contaminants in soil contained 50 organic, 34 inorganic and 20 radionuclide compounds. Nearly all the organic contaminants found are generally not naturally occurring substances; therefore, background concentrations were not generally available.

This screening process identified 17 of 50 total organic contaminants, 5 of 34 inorganic contaminants, and 5 of 20 radiological contaminants. The revised list of contaminants carried through the RRE process for soil is summarized in Table II.5. The new contaminants required to be carried through the RRE based on the RREM are 7 organics (acenaphthene, acenaphthylene, dibenz(a,h)anthracene, dibenzofuran, 2,4-dinitrophenol, 2-methylnaphthalene, 1,1,1-trichloroethane) and two radionuclides (lead-210 and thorium-228).

EXPOSURE ASSESSMENT

This revision to the Release Block D RRE did not require any changes to the RREM concerning exposure assessments except for the soil concentrations used. The additional data changed maximum concentrations in some cases, and in many cases, the 95th % upper confidence limit (UCL) of the arithmetic mean or geometric mean. The same two exposure scenarios, construction worker and site employee, were used in the revision. All exposure pathways required by the RREM were evaluated in this revision. The equations and parameter values appear in Appendix D of the 1996 RB D RRE. Table III.1 of this revision summary lists the soil contaminants carried through the RRE process at the new Release Block D for all onsite construction workers and site employees and includes soil exposure concentrations (C_{soil}). For each constituent the total soil exposure concentration was based on either the measured maximum concentration among all samples from the revised Release Block D or the 95th % UCL of the arithmetic mean or geometric mean of soil data. The total soil exposure concentration is comprised of possible background concentrations plus any incremental additional contamination above background.

The revised intakes of Release Block D soil are listed in Tables III.4 and III.7 for the construction worker and site employee, respectively. Intakes of Release Block D soil contaminants are based on the incremental concentrations attributable to the site. Revised intakes of Release Block D soil contaminants based on the background concentrations at the site are shown in Tables F.1 and F.4 for the construction worker and site employee, respectively. Intakes as revised for soil contaminants based on the total concentration are shown in Tables F.13 and F.16 for the construction worker and site employee, respectively.

TOXICITY ASSESSMENT

Toxicological values appropriate for use in the Release Block D RRE were assembled from various sources. The U.S. EPA's integrated Risk Information System (IRIS 1998) and the Health Assessment Summary Tables (HEAST 1997) were the data sources for organics and inorganics. Radionuclide data were obtained from the DOE (HAZWRAP, 1995) and HEAST. These sources were reviewed to obtain values for the new contaminants carried through the Release Block D RRE.

The new contaminants carried through the RRE consisted of 6 organics that are non-carcinogens, one organic that is a carcinogen, and two radionuclides. The toxicity values for the contaminants carried through the RRE are listed in Table IV.1.

RISK CHARACTERIZATION

The residual soil risks associated with use of Release Block D were calculated for non-carcinogens, carcinogens and radionuclides separately. The calculation of the noncarcinogenic hazard quotient and carcinogenic risk associated with carcinogens and radionuclides were revised using updated toxicity values if applicable and revised exposure assessment data. All calculations were performed as required by the RREM.

Though new concentration data were not generated for groundwater-related pathways, the risks from exposure to current and future groundwater have been included in the risk tables (see pp. 30-32).

Soil Noncarcinogenic Hazards - Construction Worker

The noncarcinogenic hazard calculations were revised for all relevant construction worker pathways. Hazards were calculated for the incremental concentration above background (Table

V.1) and for background and total concentrations (Appendix F Tables F.7 and F.19). For Pathway 6 (incidental ingestion of soil), the revised overall pathway hazard was 0.12 and for Pathway 8 (dermal contact with soil), the overall pathway hazard was 0.003. When combined, the overall construction worker incremental hazard was 0.13, which is lower then the allowable limit of 1.0.

Soil Carcinogenic Risk - Construction Worker

Carcinogenic risk calculations were revised for all relevant construction worker pathways. Pathway 6 (incidental ingestion of soil) and Pathway 8 (dermal contact with soil) applied to non-radionuclide carcinogens. Risks were calculated for the incremental concentration above background (Table V.1) and for background and total concentrations (Appendix F Tables F.7 and F.19). For the carcinogenic soil contaminants, the potential risk due to exposure of non-radionuclide carcinogens to a construction worker for Pathway 6 (incidental ingestion of soil) overall was 8.0E-06, and for Pathway 8 (dermal contact with soil) overall was 1.7E-06. The combined incremental risks (above background) across all pathways and all chemicals was 9.6E-06. These revised risks again indicate that the overall incremental risk was approximately evenly divided between several contaminants, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene.

Soil Radionuclide Risk - Construction Worker

For radionuclides the revised potential risk to the construction worker for Pathway 2 (inhalation of dust) was 2.4E-09, for Pathway 6 (incidental ingestion of soil) was 3.4E-06 and for Pathway 7 (external radiation) was 1.9E-05, while the combined incremental risk (above background) across all pathways was 2.3E-05. Risks calculations were revised similarly for the same pathways using intakes based on background and total radionuclide concentrations (Tables F. 7 and F.19).

Soil Noncarcinogenic Hazards - Site Employee

The noncarcinogenic hazards calculations were revised for all relevant site employee pathways. Hazards were calculated for the incremental concentration above background (Table V.4) and for background and total concentrations (Appendix F Tables F.10 and F.22). For Pathway 6 (incidental ingestion of soil), the revised overall pathway hazard was 0.017 and since only one pathway is required the overall incremental hazard is also 0.017. This hazard value is well below the allowable limit of 1.0.

Soil Carcinogenic Risk - Site Employee

The carcinogenic risk calculations were revised for all relevant site employee pathways. Hazards were calculated for the incremental concentration above background (Table V.4) and for background and total concentrations (Appendix F Tables F.10 and F.22). For Pathway 6 (incidental ingestion of soil), the revised overall pathway risk was 2.0E-06 and since only one pathway is required the overall incremental hazard is also 2.0E-06. This risk again is attributed to a series of polynuclear aromatic hydrocarbons.

Soil Radionuclide Risk - Site Employee

For radionuclides, the revised potential risk to the site employee for Pathway 2 (inhalation of dust) was 1.2E-08, for Pathway 6 (incidental ingestion of soil) was 1.8E-06, and for Pathway 7

(external radiation) was 2.1E-05. The combined incremental risk (above background) across all pathways and all radionuclides was 2.3E-05 based primarily on thorium-228 (Table V.4). Revised risks were calculated similarly for the same pathways using intakes based on background and total radionuclides concentrations and are presented in Tables F. 10 and F.22.

SUMMARY OF INCREMENTAL HAZARDS AND RISKS

Revised overall hazards from non-carcinogenic contaminants and risks from carcinogenic and radionuclide contaminants across all pathways for soil + current groundwater, and for soil + future groundwater, were summed to provide a comprehensive Hazard Index and risks based on the incremental exposures above background to construction workers or site employees working at Release Block D (Table V.7).

SUMMARY OF CUMULATIVE HAZARDS AND RISKS

The risks associated with the naturally occurring, "background" concentrations of contaminants were calculated separately from the risks associated directly with Mound activities that constitute the "incremental" risks above background. The soil and groundwater risks are added together, and the background and incremental risks were added together to produce total risks. These total risks were divided into risks associated with non-carcinogenic contaminants, termed the Overall Hazard Index, and the risks associated with carcinogenic contaminants (including radionuclides), termed Overall Risk. Summary tables of the final risks obtained during this revision of the Release Block D RRE are provided below and compared to the December 1996 final risks.

Construction Worker

	Current Scenario		Future Scenario		
	Overall Hazard Index	Overall Risk	Overall Hazard Index	Overall Risk	Comments
Incremental/1996	0.21	1.5E-5	1.2	1.6E-5	Table V.7
Incremental/1998	0.16	3.5E-5	1.1	3.5E-5	Table V.7
Background/1996	9.3E-5	3.1E-7	0.023	3.1E-7	Table V.8
Background/1998	9.3E-5	1.4E-5	0.023	1.4E-5	Table V.8
Total / 1996	0.21	1.5E-5	1.2	1.6E-5	Table V.9
Total / 1998	0.16	4.9E-5	1.2	5.0E-5	Table V.9

Site Employee

	Current Scenario		Future Scenario		
	Overall Hazard Index	Overall Risk	Overall Hazard Index	Overall Risk	Comments
Incremental/1996	0.059	1.1E-5	1.0	1.4E-5	Table V.7
Incremental/1998	0.054	3.6E-5	1.0	3.9E-5	Table V.7
Background/1996	7.3E-5	1.4E-6	0.023	1.4E-6	Table V.8
Background/1998	7.3E-5	1.7E-5	0.023	1.7E-5	Table V.8
Total / 1996	0.059	1.3E-5	1.0	1.6E-5	Table V.9
Total / 1998	0.056	5.2E-5	1.0	5.5E-5	Table V.9

Table II.2. Summary Table of All Soil Contaminants Detected in Release Block D

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
ORGANICS (mg/kg)								
Acenaphthene	6.4	3.80				10/ 55	Yes	F.O.D. ~ 18% [8]
Acenaphthylene	0.22	0.029				4 / 53	Yes	F.O.D. = 8%
Acetone	0.23	0.210		21000[2]	200000[2]	21 / 47	No	Conc. < G.V.
Alpha Chlordane	0.086	---				2 / 74	No	F.O.D. ~5%
Anthracene	11.65	4.8		64000[2]	610000[2]	16 / 60	No	Conc. < G.V.
Aroclor-1248	0.059	0.059		0.385[4]	0.74[4]	1 / 60	No	Conc. < G.V.
Aroclor-1254	0.3025	0.3025		4.30[2]	41[2]	1 / 60	No	Conc. < G.V.
Benzene	0.001	---		32	8.9	1 / 63	No	Conc. < G.V.
Benzo(a)anthracene	41.5	6.8		4.10[4]	7.8[4]	24 / 61	Yes	Conc > G.V.
Benzo(a)pyrene	33.5	7.5		0.41[4]	0.78[4]	25 / 60	Yes	Conc. > G.V.
Benzo(b)fluoranthene	53	12		4.10[4]	7.8[4]	24 / 60	Yes	Conc > G.V.
Benzo(g,h,i) perylene	3.9	3.9				15 / 60	Yes	F.O.D. = 25%
Benzo(k)fluoranthene	1.3	1.3		41.0[4]	78.0[4]	13 / 61	No	Conc < G.V.
Benzoic Acid	0.750	0.750		850000[2]	8200000[2]	6 / 52	No	Conc. < G.V.
Beta-BHC	0.360	0.360		1.65	3.2	5 / 78	NO	Conc. < G.V.
Bis(2-ethylhexyl)phthalate	4.2	3.650		215[4]	410[4]	43 / 60	No	Conc < G.V.
Bromoform	0.002	0.001				3 / 63	No	F.O.D ~ 5%
2-Butanone	0.028	0.010		9300[1]	9300[1]	4 / 24	No	Conc. < G.V.
Carbazole	0.165	0.165				2 / 13	Yes	F.O.D. = 15%
Carbon Disulfide	0.004	0.004		280[1]	280[1]	1 / 48	No	Conc. < G.V.
2-Chlorophenol	0.1	0.1				1 / 60	No	F.O.D. = 2.8%
Chrysene	51.5	5.4		410[4]	780[4]	24 / 60	No	Conc. < G.V.
2,4-Dinitrophenol	0.970	0.970				4 / 72	Yes	F.O.D. = 5.6%
Di-n-butyl phthalate	0.140	---		21000[2]	200000[2]	1 / 48	No	Conc. < G.V.
Di-n-octyl phthalate	0.089	0.089		4300[2]	41000[2]	1 / 48	No	Conc. < G.V.
Dibenz(a,h)anthracene	1.3	1.3		0.41[4]	0.78[4]	10 / 60	Yes	Conc. > G.V.

Table II.2. Summary Table of All Soil Contaminants Detected in Release Block D

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
Dibenzofuran	3.8	3.0				12 / 60	Yes	F.O.D. = 20%
Dibromochloromethane	0.001	0.001		35.5	68	2 / 63	No	Cons. < G.V.
Ethylbenzene	0.003	0.001		0.48[1]	0.48[1]	8 / 48	No	Conc. < G.V.
Fluoranthene	65	5.3		8500[2]	82000[2]	34 / 60	No	Conc. < G.V.
Fluorene	6.3	3.3				16 / 60	Yes	F.O.D. = 27%
Indeno(1,2,3-cd)pyrene	20.5	4.7		4.10[4]	7.8[4]	17 / 60	Yes	Conc. > G.V.
2-Hexanone	0.011	0.008				2 / 63	No	F.O.D. ~5%
Methoxychlor	0.0055	0.0055	30			1 / 61	No	Conc. < Bkgd.
2-Methylnaphthalene	1.4	1.4				12 / 59	Yes	F.O.D.= 20%
4-Methyl-2-pentanone	0.002	---		700[1]	700[1]	1 / 24	No	Conc. < G.V.
Methylene Chloride	0.066	0.056		1000[1]	1000[1]	53 / 62	No	Conc. < G.V.
Naphthalene	1.9	1.9				14 / 60	Yes	F.O.D. = 23%
N-Nitrosodiphenylamine	0.083	---		600[4]	1200[4]	1 / 60	No	Conc. < G.V.
Pentachlorophenol	0.97	0.97		25[4]	48[4]	2 / 60	No	Conc. < G.V.
Phenanthrene	49.5	13				24 / 60	Yes	F.O.D. = 40%
Phenol	0.120	0.120		130000[2]	1200000[2]	1 / 60	No	Conc. < G.V.
Pyrene	62	3.4		6400[2]	61000[2]	35 / 61	No	Conc. < G.V.
Styrene	0.001	---				1 / 63	No	F.O.D. ~ 5%
Toluene	0.016	0.004		250[1]	250[1]	31 / 51	No	Conc. < G.V.
1,1,1-Trichloroethane	0.0025	0.002				6 / 48	Yes	F.O.D. = 12.5%
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003				2 / 4	Yes	F.O.D. = 50%
Tetrachloroethene	0.0295	0.027		2100	20000	30 / 63	No	Conc. < G.V.
Trichloroethene	0.00175	0.001		125	41	3 / 63	No	Conc. < G.V.
Xylenes, total	0.019	0.005		430000[2]	4100000[2]	17 / 48	No	Conc. < G.V.
INORGANICS (mg/kg)								
Aluminum	24300	24300	19000			61 / 61	No	Common soil constituent
Antimony	39.2	39.2		85[2]	820[2]	41 / 60	Yes	Conc. > G.V.

Table II.2. Summary Table of All Soil Contaminants Detected in Release Block D

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
Arsenic (total)	15.8	12.35	8.6	64[2]	610[2]	56 / 60	Yes	Conc. > G.V. & Bkgd.
Barium (total)	185	185	180	15000[1]	140000[1]	61 / 61	No	Conc. < G.V. >Bkgd
Beryllium	1.8	1.8	1.3	0.7[3]	1.3[3]	47 / 49	Yes	Conc. > Bkgd. > G.V.
Bismuth	5.7	5.7				2 / 13	Yes	F.O.D. = 15%
Cadmium (total)	10.2	10.2	2.1	210[2]	2000[2]	21 / 61	No	Conc. < G.V. > Bkgd
Calcium (total)	276000	232000	310000			61 / 61	No	Conc. < Bkgd.
Chloride	59	---	107			3 / 6	No	Conc. < Bkgd.
Chromium (total)	29.6	28	20	1100[2]	10000[2]	61 / 61	No	Conc. < G.V. > Bkgd.
Cobalt (total)	15	15	19			59 / 61	No	Conc. < Bkgd.
Copper (total)	33.1	30.5	26			61 / 61	Yes	Conc. > Bkgd.
Cyanide	1.0	1.0		4300[2]	41000[2]	33 / 54	No	Conc. < G.V.
Fluoride	6.38	2.2	6.7			6 / 6	No	Conc. < Bkgd.
Iron (total)	43600	38900	35000			61 / 61	No	Common soil constituent
Lead (total)	35.8	35.8	48			61 / 61	No	Conc. < Bkgd.
Lithium	25.3	25.3	26			9 / 10	No	Conc. < Bkgd.
Magnesium (total)	64500	64500	40000			61 / 61	No	Common soil constituent
Manganese (total)	757	746	1400	27000[1]	150000[1]	61 / 61	No	Conc. < G.V. & Bkgd.
Mercury (total)	1.6	0.71		64[1]	610[1]	25 / 60	No	Conc. < G.V.
Molybdenum	14.5	2.3	27			9 / 11	No	Conc. < Bkgd.
Nickel (total)	52.05	36.0	32	4300[2]	41000[2]	49 / 61	No	Conc. < G.V. > Bkgd.
Nitrate	2.07	---	26			1 / 1	No	Conc. < Bkgd.
Nitrate/Nitrite	3.7	3.7				10 / 13	No	Common soil constituent
Organic Carbon	10189.1	---				1 / 1	No	Common soil constituent
Potassium (total)	2580	2580	1900			59 / 61	No	Common soil constituent
Silicon (total)	1100	---				1 / 1	No	Common soil constituent
Silver (total)	18.6	17.6	1.7	1100[2]	10000[2]	40 / 61	No	Conc. < G.V. > Bkgd.
Sodium (total)	2490	2490	240			57 / 60	No	Common soil constituent

Table II.2. Summary Table of All Soil Contaminants Detected in Release Block D

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
Sulfate	129	---	150			2 / 6	No	Conc. < Bkgd.
Thallium	0.23	---	0.46			2 / 60	No	Conc. < Bkgd.
Tin	1.7	1.7	20			7 / 9	No	Conc. < Bkgd.
Vanadium	41	41	25	1500[2]	14000[2]	60 / 61	No	Conc. < G. V. > Bkgd.
Zinc (total)	754	238	140	64000[2]	610000[2]	61 / 61	No	Conc. < G. V. > Bkgd.
RADIONUCLIDES (pCi/g)								
Actinium-227	0.38	0.38		1.0	1.1	17 / 17	No	Conc. < G.V.
Americium-241	0.05	0.05		4.95	9.2	17 / 24	No	Conc. < G.V.
Cesium-137	1.7	1.7	0.42	0.46[5]	0.42[5]	43 / 79	Yes	Conc. > G.V. & Bkgd.
Cobalt-60	0.055	0.055	1.01	0.1	0.09	17 / 24	No	Conc. < Bkgd. & G.V.
Lead-210	2.91	2.91				17 / 17	Yes	F.O.D. = 100%
Plutonium-238	60	60	0.13	5.50[5]	11[5]	332/394	Yes	Conc. > G.V. & Bkgd.
Plutonium-239/240	0.0196	0.0196	0.18	5.50[5]	10[5]	10 / 21	No	Conc. < G.V. & Bkgd.
Potassium-40	34.9	26.9	37			46 / 46	No	Conc. < Bkgd.
Radium-224	12.2	12.2		0.85[6]	0.83[6]	25 / 25	No	Th-232 decay products
Radium-226	3.055	2.3	2	0.14[5]	0.13[5]	78 / 79	No	Th-232 decay products
Radium-228	1.52	1.25		0.85[6]	0.83[6]	25 / 25	No	Th-232 decay products
Strontium-90	0.854	---	0.72	3.0[5]	57[5]	1 / 5	No	Conc. < G.V. > Bkgd.
Thorium-228	3.57	3.57	1.5	0.85[5]	0.83[5]	18 / 18	Yes	Conc. > G.V. > Bkgd.
Thorium-230	5.75	5.75	1.9	44.0[5]	81[5]	34 / 39	No	Conc. < G.V. & Bkgd.
Thorium-232	7	7	1.4	0.85[5,6]	0.83[5,6]	221/393	Yes	Conc. > G.V. & Bkgd.
Thorium-234	1.48	1.17	1.2	11.0[7]	13.0[7]	25 / 25	No	Conc. < G.V.
Tritium	0.58	0.58	1.6	23500[5]	45000[5]	5 / 14	No	Conc. < G.V. & Bkgd.
Uranium-234	1.14	1.14	1.1	37.5[5]	70[5]	19 / 19	No	Conc. < G.V. & Bkgd.
Uranium-235	0.1195	0.1195	0.11	3.35[5]	3.1[5]	16 / 19	No	Conc. < G.V. > Bkgd.
Uranium-238	1.14	1.14	1.2	11.0[5]	13.0[5]	19 / 24	No	Conc. < G.V. & Bkgd.

Table II.2. Summary Table of All Soil Contaminants Detected in Release Block D

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason

NOTE: Contaminants with no background or Guideline Value available were left blank.
--- No shallow data available.
[1] - Hazard Quotient for both Ingestion and Inhalation. (decision made on 0.1 x G.V.)
[2] - Hazard Quotient for Ingestion only. (decision made on 0.1 x G.V.)
[3] - Total Risk 10^{-6} for both Ingestion and Inhalation.
[4] - Total Risk 10^{-6} for Ingestion only.
[5] - Total Risk 10^{-6} for Ingestion, Inhalation and External.
[6] - Guideline Values from Thorium-228 + D.
[7] - Guideline values from U-238 + D.
[8] - F.O.D. = Frequency of detection. Contaminants with a F.O.D. greater than 5% were carried through the RRE.

Table II.5. Soil Contaminants Carried Through RRE

Soil Constituents	Maximum concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
ORGANICS (mg/kg)				
Acenaphthene	6.4	3.8		F.OD. =18%
Acenaphthylene	0.22	0.029		F.O.D. = 8%
Benzo(a)anthracene	41.5	6.8	4.10[1]	Max Conc > G.V.
Benzo(a)pyrene	33.5	7.5	0.41[1]	Conc. > G.V.
Benzo(b)fluoranthene	53	12	4.10[1]	Max Conc > G.V.
Benzo(g,h,i) perylene	3.9	3.9		F.O.D. = 25%
Carbazole	0.165	0.165		F.O.D. = 15%
Dibenz(a,h)anthracene	1.3	1.3	0.41	Conc. > G.V.
Dibenzofuran	3.8	3.0		F.O.D. = 20%
2,4-Dinitrophenol	0.970	0.970		F.O.D. = 5.6%
Fluorene	6.3	3.3		F.O.D. = 27%
Indeno(1,2,3-cd)pyrene	20.5	4.7	4.10[1]	Max. Conc. > G.V.
2-Methylnaphthalene	1.4	1.4		F.O.D. = 20%
Naphthalene	1.9	1.9		F.O.D. = 23%
Phenanthrene	49.5	13		F.O.D. = 40%
1,1,1-Trichloroethane	0.0025	0.002		F.O.D. = 12.5%
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003		F.O.D. = 50%
INORGANICS (mg/kg)				
Antimony	39.2	39.2	85[5]	Conc. > G.V.
Arsenic	15.8	12.35	64[5]	Conc. > G.V. & Bkgd.
Beryllium	1.8	1.8	0.7	Conc. > Bkgd. > G.V.
Bismuth	5.7	5.7		F.O.D. = 15%
Copper (total)	33.1	30.5	26[4]	Conc. > Bkgd.
RADIONUCLIDES (pCi/g)				
Cesium-137	1.7	1.7	0.42[2]	Conc. > G.V.
Lead-210	2.91	2.91		F.O.D. = 100%
Plutonium-238	60	60	5.50[2]	Conc. > G.V.
Thorium-228	3.57	3.57	0.83[6]	Conc. > G.V. > Bkgd.

Table II.5. Soil Contaminants Carried Through RRE

Soil Constituents	Maximum concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
Thorium-232	7	7	0.83[2,3]	Conc. > G.V.

1 - Total Risk 10^{-6} for Ingestion only.
2 - Total Risk 10^{-6} for Ingestion, Inhalation and External.
3 - Guideline Values from thorium-228 + D.
4 - Background value
5 - Hazard Quotient for Ingestion only. (decision made on 0.1 x G.V.)
6 - Revisions to guideline values for thorium-228 and thorium-232 are pending. However, the Th-228 G.V. was not a factor in (a) carrying Th-228 through the RRE, or (b) screening Th-232 from the RRE. As seen in Table IV.1, the updated external slope factor for Th-228 was used in the risk calculations.

F.O.D. - Frequency of detection. Contaminants with a F.O.D. greater than 5% were carried through the RRE.

Table III.1. Soil Constituents Carried through Release Block D RRE

Constituent	C_{soil}					ABS
	Total[1] Construction Worker	Total[1] Site Employee	BG[2]	Increment Construction Worker	Increment Site Employee	
ORGANICS (mg/kg)						
Acenaphthene	0.827	0.671	NAv	0.827	0.671	0.1
Acenaphthylene	0.22	0.029	NAv	0.409	0.309	0.1
Benzo(a)anthracene	2.774	1.1	NAv	2.774	1.1	0.1
Benzo(a)pyrene	2.444	1.17	NAv	2.444	1.17	0.1
Benzo(b)fluoranthene	3.767	1.77	NAv	3.767	1.77	0.1
Benzo(g,h,i)perylene	0.630	0.7	NAv	0.630	0.7	0.1
Carbazole	0.165	0.165	NAv	0.165	0.165	0.1
Dibenz(a,h)anthracene	0.437	0.377	NAv	0.437	0.377	0.1
Dibenzofuran	0.606	0.534	NAv	0.606	0.534	0.1
2,4-Dinitrophenol	0.970	0.970	NAv	0.970	0.970	0.1
Fluorene	0.733	0.563	NAv	0.733	0.563	0.1
Indeno(1,2,3-cd)pyrene	1.543	0.797	NAv	1.543	0.797	0.1
2-Methylnaphthalene	0.435	0.410	NAv	0.435	0.410	0.1
Naphthalene	0.473	0.419	NAv	0.473	0.419	0.1
Phenanthrene	3.673	1.87	NAv	3.673	1.87	0.1
1,1,1-Trichloroethane	0.0025	0.002	NAv	0.003	0.002	0.1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003	NAv	0.003	0.003	0.1
INORGANICS (mg/kg)						
Antimony	10.31	13.361	NAv	10.31	13.361	0.01
Arsenic[3]	4.27	4.289	8.6	0	0	0.01

Table III.1. Soil Constituents Carried through Release Block D RRE

Constituent	C_{soil}					ABS
	Total[1] Construction Worker	Total[1] Site Employee	BG[2]	Increment Construction Worker	Increment Site Employee	
Beryllium	0.72	0.766	1.3	0	0	0.01
Bismuth	5.7	5.7	NAv	5.7	5.7	0.01
Copper[3]	16.07	17.0	26	0	0	0.01
RADIONUCLIDES (pCi/g)						
Cesium-137[3]	0.25	0.298	0.42	0	0	NAp
Lead-210	2.91	2.91	NAv	2.91	2.91	NAp
Plutonium-238[4]	7.79	7.796	0.13	7.66	7.66	NAp
Thorium-228	3.57	3.57	1.5	2.07	2.07	NAp
Thorium-232[3]	0.97	0.995	1.4	0	0	NAp

ABS - Absorption factor (unitless)
NAv - Not Available
NAp - Not Applicable

1 Soil exposure concentration for Release Block D, based on the 95th% UCL for all parameters with greater than 20 analyses completed. These exclude the Site Employee value for fluorene and naphthalene, all carbazole, bismuth and 1,1,2-trichloro-1,2,2-trifluoroethane data. These parameters use the maximum concentration value since N<20 samples.

2 Soil background concentration for Mound facility (see RREM, DOE, 1996).

3 Arsenic, cesium-137, copper and thorium-232 total values were less than the background value therefore not carried thru the RRE.

4 Pu-238 values were log-normally distributed and hence, concentrations (95th% UCL) shown were based on the log-transformed data.

Table IV.1. Toxicity Values* for Soil Constituents Included in the Release Block D RRE

Soil Constituent	Oral RfD (mg/kg-da)	Inhalation RfD (mg/kg-da)	Oral Slope Factor $(mg/kg\text{-}da)^{-1}$	Inhalation Slope Factor $(mg/kg\text{-}da)^{-1}$	Carcinogenic Weight of Evidence**
ORGANICS					
Acenaphthene	0.60				D
Acenaphthylene					
Benzo(a)anthracene			0.73		B2
Benzo(a)pyrene			7.3		B2
Benzo(b)fluoranthene			0.73		B2
Benzo(g,h,i)perylene					
Carbazole			0.02		B2
Dibenz(a,h)anthracene					
Dibenzofuran	4.0E-03				D
2,4-Dinitrophenol	0.002				D
Fluorene	0.04				D
Indeno(1,2,3-cd)pyrene			0.73		B2
2-Methylnaphthalene					
Naphthalene	0.02				C
Phenanthrene					
1,1,1-Trichloroethane					
1,1,2-Trichloro-1,2,2-trifluoroethane	30				D
INORGANICS					
Antimony	4.0E-04				
Bismuth					
RADIONUCLIDES			**Oral Slope Factor (risk/pCi)**	**Inhalation Slope Factor (risk/pCi)**	**External Slope Factor (risk/yr per pCi/g)**
Lead-210 + D			1.10E-9	3.86E-9	1.45E-10
Plutonium-238			3.0E-10	2.7E-8	1.9E-11
Thorium-228 +D			2.3E-10	9.7E-8	6.2E-6

* -Values from IRIS (1996), HEAST(1997) and HAZWRAP (1995). No data available if left blank.

** A - Human Carcinogen.
B1 - Probable human carcinogen; limited human data available.
B2 - Probable human carcinogen; sufficient evidence in animals, insufficient or no human data available.
C - Possible human carcinogen.
D - Not classified.

Table III.4. Construction Worker Calculated Constituent Intakes for Soil (Incremental*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation	Pathway 8 Soil Dermal
Organics								
Acenaphthene	NA	3.781E-11	NA	NA	NA	3.884E-06	NA	8.092E-07
Acenaphthylene	NA	1.870E-11	NA	NA	NA	1.921E-06	NA	4.002E-07
Benzo(a)anthracene	NA	9.060E-12	NA	NA	NA	9.306E-07	NA	1.939E-07
Benzo(a)pyrene	NA	7.982E-12	NA	NA	NA	8.199E-07	NA	1.708E-07
Benzo(b)fluoranthene	NA	1.230E-11	NA	NA	NA	1.264E-06	NA	2.633E-07
Benzo(g,h,i)perylene	NA	2.058E-12	NA	NA	NA	2.114E-07	NA	4.403E-08
Carbazole	NA	5.389E-13	NA	NA	NA	5.535E-08	NA	1.153E-08
Dibenz(a,h)anthracene	NA	1.427E-12	NA	NA	NA	1.466E-07	NA	3.054E-08
Dibenzofuran	NA	2.771E-11	NA	NA	NA	2.846E-06	NA	5.930E-07
2,4-Dinitrophenol	NA	4.435E-11	NA	NA	NA	4.556E-06	NA	9.491E-07
Fluorene	NA	3.352E-11	NA	NA	NA	3.443E-06	NA	7.172E-07
Indeno(1,2,3-cd)pyrene	NA	5.039E-12	NA	NA	NA	5.176E-07	NA	1.078E-07
2-Methylnaphthalene	NA	1.989E-11	NA	NA	NA	2.043E-06	NA	4.256E-07
Naphthalene	NA	2.163E-11	NA	NA	NA	2.222E-06	NA	4.628E-07
Phenanthrene	NA	1.679E-10	NA	NA	NA	1.725E-05	NA	3.594E-06
1,1,1-Trichloroethane	NA	1.372E-13	NA	NA	NA	1.409E-08	NA	2.935E-09
1,1,2-Trichloro-1,2,2-trichloroethane	NA	1.372E-13	NA	NA	NA	1.409E-08	NA	2.935E-09
Inorganics								
Antimony	NA	4.714E-10	NA	NA	NA	4.842E-05	NA	1.009E-06
Bismuth	NA	2.606E-10	NA	NA	NA	2.677E-05	NA	5.577E-07
Radionuclides								
Lead-210 (pCi)	NA	1.70E-02	NA	NA	NA	1.75E+03	4.361E+00	NA
Plutonium-238 (pCi)	NA	4.474E-02	NA	NA	NA	4.596E+03	1.148E+01	NA
Thorium-228 (pCi)	NA	1.209E-02	NA	NA	NA	1.242E+03	3.102E+00	NA

* - Incremental soil concentrations and resulting intakes obtained by subtracting background from total concentrations.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Intakes due to exposure to total and background concentrations presented in Appendix F.

Note: Intakes for carcinogens are calculated as average daily dose-lifetime,

Intakes for non-carcinogens are calculated as average daily doses.

NA - Not applicable.

Table III.7. Site Employee Calculated Constituent Intakes from Soil (Incremental*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation
Organics					
Acenaphthene	NA	3.068E-11	NA	3.283E-07	NA
Acenaphthylene	NA	1.413E-11	NA	1.512E-07	NA
Benzo(a)anthracene	NA	1.796E-11	NA	1.922E-07	NA
Benzo(a)pyrene	NA	1.911E-11	NA	2.044E-07	NA
Benzo(b)fluoranthene	NA	2.890E-11	NA	3.093E-07	NA
Benzo(g,h,i)perylene	NA	1.143E-11	NA	1.223E-07	NA
Carbazole	NA	2.694E-12	NA	2.883E-08	NA
Dibenz(a,h)anthracene	NA	6.156E-12	NA	6.587E-08	NA
Dibenzofuran	NA	2.442E-11	NA	2.613E-07	NA
2,4-Dinitrophenol	NA	4.435E-11	NA	4.746E-07	NA
Fluorene	NA	2.574E-11	NA	2.754E-07	NA
Indeno(1,2,3-cd)pyrene	NA	1.301E-11	NA	1.393E-07	NA
2-Methylnaphthalene	NA	1.875E-11	NA	2.006E-07	NA
Naphthalene	NA	1.916E-11	NA	2.050E-07	NA
Phenanthrene	NA	8.550E-11	NA	9.149E-07	NA
1,1,1-Trichloroethene	NA	9.145E-14	NA	9.785E-10	NA
1,1,2-Trichloro-1,2,2-trichloroethane	NA	1.372E-13	NA	1.468E-09	NA
Inorganics					
Antimony	NA	6.109E-10	NA	6.537E-06	NA
Bismuth	NA	2.606E-10	NA	2.789E-06	NA
Radionuclides					
Lead-210 (pCi)	NA	8.499E-02	NA	9.09E+02	4.85E+00
Plutonium-238 (pCi)	NA	2.237E-01	NA	2.394E+03	1.276E+01
Thorium-228 (pCi)	NA	6.046E-02	NA	6.469E+02	3.449E+00

* - Incremental soil concentrations and resulting intakes obtained by subtracting background from total concentrations.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Intakes due to exposure to total and background concentrations presented in Appendix F.

NA - Not applicable.

Table V.1. Characterization of Residual Risks at Release Block D - Construction Worker (Soil Pathways - Incremental)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Acenaphthene	NA	***	NA	NA	NA	6.5E-06	NA	1.3E-06	
Acenaphthylene	NA	***	NA	NA	NA	***	NA	***	
Antimony	NA	***	NA	NA	NA	1.2E-01	NA	2.5E-03	
Bismuth	NA	***	NA	NA	NA	***	NA	***	
Dibenzofuran	NA	***	NA	NA	NA	7.1E-04	NA	1.5E-04	
2,4-Dinitrophenol	NA	***	NA	NA	NA	2.3E-03		4.7E-04	
Fluorene	NA	***	NA	NA	NA	8.6E-05	NA	1.8E-06	
2-Methylnaphthalene	NA	***	NA	NA	NA	***		***	
Naphthalene	NA	***	NA	NA	NA	1.1E-04	NA	2.3E-05	
Phenanthrene	NA	***	NA	NA	NA	***	NA	***	
1,1,1-Trichloroethane	NA	***	NA	NA	NA	***	NA	***	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	NA	NA	4.7E-10	NA	9.8E-11	Total Soil HI =
Total:						1.2E-01		3.2E-03	1.3E-01
Carcinogens (Risk)									
Benzo(a)anthracene	NA	***	NA	NA	NA	6.8E-07	NA	1.4E-07	
Benzo(a)pyrene	NA	***	NA	NA	NA	6.0E-06	NA	1.2E-06	
Benzo(b)fluoranthene	NA	***	NA	NA	NA	9.2E-07	NA	1.9E-07	
Benzo(g,h,i)perylene	NA	***	NA	NA	NA	***	NA	***	
Carbazole	NA	***	NA	NA	NA	1.1E-09	NA	2.3E-10	Total Carcinogenic
Dibenz(a,h)anthracene	NA	***	NA	NA	NA	***	NA	***	
Indeno(1,2,3-cd)pyrene	NA	***	NA	NA	NA	3.8E-07	NA	7.9E-08	
Total:						8.0E-06		1.7E-06	9.6E-06
Radionuclides (Risk)									Total Radionuclide
Lead-210 (pCi)	NA	6.6E-11	NA	NA	NA	1.8E-06	6.3E-10	NA	
Plutonium-238 (pCi)	NA	1.2E-09	NA	NA	NA	1.4E-06	2.2E-10	NA	
Thorium-228 (pCi)	NA	1.2E-09	NA	NA	NA	2.9E-07	1.9E-05	NA	Risks =
Total:		2.4E-09				3.4E-06	1.9E-05		2.3E-05

*** - Toxicity values not available.

NA - Not applicable.

Table V.4. Characterization of Residual Risks at Release Block D - Site Employee (Soil Pathways - Incremental)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Acenaphthene	NA	***	NA	5.5E-07	NA	
Acenaphthylene	NA	***	NA	***	NA	
Antimony	NA	***	NA	1.6E-02	NA	
Bismuth	NA	***	NA	***	NA	
Dibenzofuran	NA	***	NA	6.5E-05	NA	
2,4-Dinitrophenol	NA	***	NA	2.4E-04	NA	
Fluorene	NA	***	NA	6.9E-06	NA	
2-Methylnaphthalene	NA	***	NA	***	NA	
Naphthalene	NA	***	NA	1.0E-05	NA	
Phenanthrene	NA	***	NA	***	NA	
1,1,1-Trichloroethene	NA	***	NA	***	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	4.9E-11	NA	Total Soil HI =
Total:				1.7E-02		1.7E-02
Carcinogens (Risk)						
Benzo(a)anthracene	NA	***	NA	1.4E-07	NA	
Benzo(a)pyrene	NA	***	NA	1.5E-06	NA	
Benzo(b)fluoranthene	NA	***	NA	2.3E-07	NA	
Benzo(g,h,i)perylene	NA	***	NA	***	NA	
Carbazole	NA	***	NA	5.8E-10	NA	Total Carcinogenic
Dibenz(a,h)anthracene	NA	***	NA	***	NA	
Indeno(1,2,3-cd)pyrene	NA	***	NA	1.0E-07	NA	
Total:				2.0E-06		2.0E-06
Radionuclides (Risk)						Total Radionuclide
Lead-210 (pCi)	NA	3.3E-10	NA	9.2E-07	7.0E-10	
Plutonium-238 (pCi)	NA	6.0E-09	NA	7.2E-07	2.4E-10	
Thorium-228 (pCi)	NA	5.9E-09	NA	1.5E-07	2.1E-05	Risks =
Total:		1.2E-08		1.8E-06	2.1E-05	2.3E-05

*** - Toxicity values not available.

NA - Not applicable.

Table Appendix F.1. Construction Worker Calculated Constituent Intakes from Soil (Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation	Pathway 8 Soil Dermal
Organics								
Acenaphthene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Acenaphthylene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(a)anthracene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(a)pyrene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(b)fluoranthene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(g,h,i)perylene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Carbazole	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Dibenz(a,h)anthracene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Dibenzofuran	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
2,4-Dinitrophenol	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Fluorene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Indeno(1,2,3-cd)pyrene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
2-Methylnaphthalene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Naphthalene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Phenanthrene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
1,1,1-Trichloroethane	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
1,1,2-Trichloro-1,2,2-trichloroethane	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Inorganics								
Antimony	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Bismuth	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Radionuclides								
Lead-210 (pCi)	NA	0.00E+00	NA	NA	NA	0.00E+00	0.00E+00	NA
Plutonium-238 (pCi)	NA	7.593E-04	NA	NA	NA	7.800E+01	1.948E-01	NA
Thorium-228 (pCi)	NA	8.762E-03	NA	NA	NA	9.000E+02	2.248E+00	NA

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Note: Intakes for carcinogens are calculated as average daily dose-lifetime,
Intakes for non-carcinogens are calculated as average daily doses.

Table Appendix F.4. Site Employee Calculated Constituent Intakes from Soil (Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation
Organics					
Acenaphthene	NA	0.000E+00	NA	0.000E+00	NA
Acenaphthylene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(a)anthracene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(a)pyrene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(b)fluoranthene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(g,h,i)perylene	NA	0.000E+00	NA	0.000E+00	NA
Carbazole	NA	0.000E+00	NA	0.000E+00	NA
Dibenz(a,h)anthracene	NA	0.000E+00	NA	0.000E+00	NA
Dibenzofuran	NA	0.000E+00	NA	0.000E+00	NA
2,4-Dinitrophenol	NA	0.000E+00	NA	0.000E+00	NA
Fluorene	NA	0.000E+00	NA	0.000E+00	NA
Indeno(1,2,3-cd)pyrene	NA	0.000E+00	NA	0.000E+00	NA
2-Methylnaphthalene	NA	0.000E+00	NA	0.000E+00	NA
Naphthalene	NA	0.000E+00	NA	0.000E+00	NA
Phenanthrene	NA	0.000E+00	NA	0.000E+00	NA
1,1,1-Trichloroethane	NA	0.000E+00	NA	0.000E+00	NA
1,1,2-Trichloro-1,2,2-trichloroethane	NA	0.000E+00	NA	0.000E+00	NA
Inorganics					
Antimony	NA	0.000E+00	NA	0.000E+00	NA
Bismuth	NA	0.000E+00	NA	0.000E+00	NA
Radionuclides					
Lead-210 (pCi)	NA	0.000E+00	NA	0.000E+00	0.000E+00
Plutonium-238 (pCi)	NA	3.797E-03	NA	4.063E+01	2.166E-01
Thorium-228 (pCi)	NA	4.381E-02	NA	4.688E+02	2.499E+00

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Table Appendix F.7. Characterization of Residual Risks at Release Block D - Construction Worker (Soil Pathways - Background)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Acenaphthene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Acenaphthylene	NA	***	NA	NA	NA	***	NA	***	
Antimony	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Bismuth	NA	***	NA	NA	NA	***	NA	***	
Dibenzofuran	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
2.4-Dinitrophenol	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Fluorene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
2-Methylnaphthalene	NA	***	NA	NA	NA	***	NA	***	
Naphthalene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Phenanthrene	NA	***	NA	NA	NA	***	NA	***	
1,1,1-Trichloroethane	NA	***	NA	NA	NA	***	NA	***	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	Total Soil HI =
Total:						0.0E+00		0.0E+00	0.0E+00
Carcinogens (Risk)									
Benzo(a)anthracene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Benzo(a)pyrene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Benzo(b)fluoranthene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Benzo(g,h,i)perylene	NA	***	NA	NA	NA	***	NA	***	
Carbazole	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	Total Carcinogenic
Dibenz(a,h)anthracene	NA	***	NA	NA	NA	***	NA	***	
Indeno(1,2,3-cd)pyrene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Total:						0.0E+00		0.0E+00	0.0E+00
Radionuclides (Risk)									Total Radionuclide
Lead-210 (pCi)	NA	0.0E+00	NA	NA	NA	0.0E+00	0.0E+00	NA	
Plutonium-238 (pCi)	NA	2.1E-11	NA	NA	NA	2.3E-08	3.7E-12	NA	
Thorium-228 (pCi)	NA	8.5E-10	NA	NA	NA	2.1E-07	1.4E-05	NA	Risks =
Total:		8.7E-10				2.3E-07	1.4E-05		1.4E-05

*** - Toxicity values not available.
NAv - Background value not available.
NA - Not applicable.

Table Appendix F.10. Characterization of Residual Risks at Release Block D - Site Employee (Soil Pathways - Background)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Acenaphthene	NA	***	NA	0.0E+00	NA	
Acenaphthylene	NA	***	NA	***	NA	
Antimony	NA	***	NA	0.0E+00	NA	
Bismuth	NA	***	NA	***	NA	
Dibenzofuran	NA	***	NA	0.0E+00	NA	
2,4-Dinitrophenol	NA	***	NA	0.0E+00	NA	
Fluorene	NA	***	NA	0.0E+00	NA	
2-Methylnaphthalene	NA	***	NA	***	NA	
Naphthalene	NA	***	NA	0.0E+00	NA	
Phenanthrene	NA	***	NA	***	NA	
1,1,1-Trichloroethane	NA	***	NA	***	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	0.0E+00	NA	Total Soil HI =
Total:				0.0E+00		0.0E+00
Carcinogens (Risk)						
Benzo(a)anthracene	NA	***	NA	0.0E+00	NA	
Benzo(a)pyrene	NA	***	NA	0.0E+00	NA	
Benzo(b)fluoranthene	NA	***	NA	0.0E+00	NA	
Benzo(g,h,i)perylene	NA	***	NA	***	NA	
Carbazole	NA	***	NA	0.0E+00	NA	Total Carcinogenic
Dibenz(a,h)anthracene	NA	***	NA	***	NA	
Indeno(1,2,3-cd)pyrene	NA	***	NA	0.0E+00	NA	
Total:				0.0E+00		0.0E+00
Radionuclides (Risk)						Total Radionuclide
Lead-210 (pCi)	NA	0.0E+00	NA	0.0E+00	0.0E+00	
Plutonium-238 (pCi)	NA	1.0E-10	NA	1.2E-08	4.1E-12	
Thorium-228 (pCi)	NA	4.2E-09	NA	1.1E-07	1.5E-05	Risks =
Total:		4.4E-09		1.2E-07	1.5E-05	1.6E-05

*** - Toxicity values not available.
NAv - Background value not available.
NA - Not applicable.

Table Appendix F.13. Construction Worker Calculated Constituent Intakes from Soil (Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation	Pathway 8 Soil Dermal
Organics								
Acenaphthene	NA	3.781E-11	NA	NA	NA	3.884E-06	NA	8.092E-07
Acenaphthylene	NA	1.870E-11	NA	NA	NA	1.921E-06	NA	4.002E-07
Benzo(a)anthracene	NA	9.060E-12	NA	NA	NA	9.306E-07	NA	1.939E-07
Benzo(a)pyrene	NA	7.982E-12	NA	NA	NA	8.199E-07	NA	1.708E-07
Benzo(b)fluoranthene	NA	1.230E-11	NA	NA	NA	1.264E-06	NA	2.633E-07
Benzo(g,h,i)perylene	NA	2.058E-12	NA	NA	NA	2.114E-07	NA	4.403E-08
Carbazole	NA	5.389E-13	NA	NA	NA	5.535E-08	NA	1.153E-08
Dibenz(a,h)anthracene	NA	1.427E-12	NA	NA	NA	1.466E-07	NA	3.054E-08
Dibenzofuran	NA	2.771E-11	NA	NA	NA	2.846E-06	NA	5.930E-07
2,4-Dinitrophenol	NA	4.435E-11	NA	NA	NA	4.556E-06	NA	9.491E-07
Fluorene	NA	3.352E-11	NA	NA	NA	3.443E-06	NA	7.172E-07
Indeno(1,2,3-cd)pyrene	NA	5.039E-12	NA	NA	NA	5.176E-07	NA	1.078E-07
2-Methylnaphthalene	NA	1.989E-11	NA	NA	NA	2.043E-06	NA	4.256E-07
Naphthalene	NA	2.163E-11	NA	NA	NA	2.222E-06	NA	4.628E-07
Phenanthrene	NA	1.679E-10	NA	NA	NA	1.725E-05	NA	3.594E-06
1,1,1-Trichloroethane	NA	1.372E-13	NA	NA	NA	1.409E-08	NA	2.935E-09
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	1.372E-13	NA	NA	NA	1.409E-08	NA	2.935E-09
Inorganics								
Antimony	NA	4.714E-10	NA	NA	NA	4.842E-05	NA	1.009E-06
Bismuth	NA	2.606E-10	NA	NA	NA	2.677E-05	NA	5.577E-07
Radionuclides								
Lead-210 (pCi)	NA	1.700E-02	NA	NA	NA	1.746E+03	4.361E+00	NA
Plutonium-238 (pCi)	NA	4.550E-02	NA	NA	NA	4.674E+03	1.167E+01	NA
Thorium-228 (pCi)	NA	2.085E-02	NA	NA	NA	2.142E+03	5.350E+00	NA

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Note: Intakes for carcinogens are calculated as average daily dose-lifetime,
Intakes for non-carcinogens are calculated as average daily doses.

Table Appendix F.16. Site Employee Calculated Constituent Intakes from Soil (Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation
Organics					
Acenaphthene	NA	3.068E-11	NA	3.283E-07	NA
Acenaphthylene	NA	1.413E-11	NA	1.512E-07	NA
Benzo(a)anthracene	NA	1.796E-11	NA	1.922E-07	NA
Benzo(a)pyrene	NA	1.911E-11	NA	2.044E-07	NA
Benzo(b)fluoranthene	NA	2.890E-11	NA	3.093E-07	NA
Benzo(g,h,i)perylene	NA	1.143E-11	NA	1.223E-07	NA
Carbazole	NA	2.694E-12	NA	2.883E-08	NA
Dibenz(a,h)anthracene	NA	6.156E-12	NA	6.587E-08	NA
Dibenzofuran	NA	2.442E-11	NA	2.613E-07	NA
2,4-Dinitrophenol	NA	4.435E-11	NA	4.556E-06	NA
Fluorene	NA	2.574E-11	NA	2.754E-07	NA
Indeno(1,2,3-cd)pyrene	NA	1.301E-11	NA	1.393E-07	NA
2-Methylnaphthalene	NA	1.875E-11	NA	2.006E-07	NA
Naphthalene	NA	1.916E-11	NA	2.050E-07	NA
Phenanthrene	NA	8.550E-11	NA	9.149E-07	NA
1,1,1-Trichloroethane	NA	9.145E-14	NA	9.785E-10	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	1.372E-13	NA	1.468E-09	NA
Inorganics					
Antimony	NA	6.109E-10	NA	6.537E-06	NA
Bismuth	NA	2.606E-10	NA	2.789E-06	NA
Radionuclides					
Lead-210 (pCi)	NA	8.499E-02	NA	9.094E+02	4.848E+00
Plutonium-238 (pCi)	NA	2.277E-01	NA	2.436E+03	1.299E+01
Thorium-228 (pCi)	NA	1.043E-01	NA	1.116E+03	5.948E+00

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Table Appendix F.19. Characterization of Residual Risks at Release Block D - Construction Worker (Soil Pathways - Total)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Acenaphthene	NA	***	NA	NA	NA	6.5E-06	NA	1.3E-06	
Acenaphthylene	NA	***	NA	NA	NA	***	NA	***	
Antimony	NA	***	NA	NA	NA	1.2E-01	NA	2.5E-03	
Bismuth	NA	***	NA	NA	NA	***	NA	***	
Dibenzofuran	NA	***	NA	NA	NA	***	NA	***	
2,4-Dinitrophenol	NA	***	NA	NA	NA	2.3E-03	NA	4.7E-04	
Fluorene	NA	***	NA	NA	NA	8.6E-05	NA	1.8E-06	
2-Methylnaphthalene	NA	***	NA	NA	NA	***	NA	***	
Naphthalene	NA	***	NA	NA	NA	1.1E-04	NA	2.3E-05	
Phenanthrene	NA	***	NA	NA	NA	***	NA	***	
1,1,1-Trichloroethane	NA	***	NA	NA	NA	***	NA	***	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	NA	NA	4.7E-10	NA	9.8E-11	Total Soil HI =
Total:						1.2E-01		3.0E-03	1.3E-01
Carcinogens (Risk)									
Benzo(a)anthracene	NA	***	NA	NA	NA	6.8E-07	NA	1.4E-07	
Benzo(a)pyrene	NA	***	NA	NA	NA	6.0E-06	NA	1.2E-06	
Benzo(b)fluoranthene	NA	***	NA	NA	NA	9.2E-07	NA	1.9E-07	
Benzo(g,h,i)perylene	NA	***	NA	NA	NA	***	NA	***	
Carbazole	NA	***	NA	NA	NA	1.1E-09	NA	2.3E-10	Total Carcinogenic
Dibenzo(a,h)anthracene	NA	***	NA	NA	NA	***	NA	***	
Indeno(1,2,3-cd)pyrene	NA	***	NA	NA	NA	3.8E-07	NA	7.9E-08	Risks =
Total:						8.0E-06		1.7E-06	9.6E-06
Radionuclides (Risk)									Total Radionuclide
Lead-210 (pCi)	NA	6.6E-11	NA	NA	NA	1.8E-06	6.3E-10	NA	
Plutonium-238 (pCi)	NA	1.2E-09	NA	NA	NA	1.4E-06	2.2E-10	NA	Risks =
Thorium-228 (pCi)	NA	2.0E-09	NA	NA	NA	4.9E-07	3.3E-05	NA	
Total:		3.3E-09				3.7E-06	3.3E-05		3.7E-05

*** - Toxicity values not available.

NA - Not applicable.

Table Appendix F.22. Characterization of Residual Risks at Release Block D - Site Employee (Soil Pathways - Total)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Acenaphthene	NA	***	NA	5.5E-07	NA	
Acenaphthylene	NA	***	NA	***	NA	
Antimony	NA	***	NA	1.6E-02	NA	
Bismuth	NA	***	NA	***	NA	
Dibenzofuran	NA	***	NA	6.5E-05	NA	
2,4-Dinitrophenol	NA	***	NA	2.3E-03	NA	
Fluorene	NA	***	NA	6.9E-06	NA	
2-Methylnaphthalene	NA	***	NA	***	NA	
Naphthalene	NA	***	NA	1.0E-05	NA	
Phenanthrene	NA	***	NA	***	NA	
1,1,1-Trichloroethene	NA	***	NA	***	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	4.9E-11	NA	Total Soil HI =
Total:				1.9E-02		1.9E-02
Carcinogens (Risk)						
Benzo(a)anthracene	NA	***	NA	1.4E-07	NA	
Benzo(a)pyrene	NA	***	NA	1.5E-06	NA	
Benzo(b)fluoranthene	NA	***	NA	2.3E-07	NA	
Benzo(g,h,i)perylene	NA	***	NA	***	NA	
Carbazole	NA	***	NA	5.8E-10	NA	Total Carcinogenic
Dibenz(a,h)anthracene	NA	***	NA	***	NA	
Indeno(1,2,3-cd)pyrene	NA	***	NA	1.0E-07	NA	
Total:				2.0E-06		2.0E-06
Radionuclides (Risk)						Total Radionuclide
Lead-210 (pCi)	NA	3.3E-10	NA	9.2E-07	7.0E-10	
Plutonium-238 (pCi)	NA	6.1E-09	NA	7.3E-07	2.5E-10	
Thorium-228 (pCi)	NA	1.0E-08	NA	2.6E-07	3.7E-05	Risks =
Total:		1.6E-08		9.9E-07	3.7E-05	3.8E-05

*** - Toxicity values not available.

NA - Not applicable.

TABLE V.7. Summary of Current and Future Incremental Risks at Release Block D - Mound Facility

	Construction Worker					
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics				HI =	HI =	
	1.8E-01	3.7E-02	1.0E+00	2.1E-01	1.2E+00	December 1996 Final (Revision 0)
	1.3E-01	3.7E-02	1.0E+00	1.6E-01	1.1E+00	December 1998 Final (Revision 1)
Carcinogenic Risks for Organics & Inorganics				Risk =	Risk =	
	1.2E-05	9.9E-08	4.0E-07	1.2E-05	1.3E-05	December 1996 Final (Revision 0)
	9.6E-06	9.9E-08	4.0E-07	9.7E-06	1.0E-05	December 1998 Final (Revision 1)
Carcinogenic Risks for Radionuclides				Risk =	Risk =	
	4.6E-07	2.1E-06	2.4E-06	2.6E-06	2.9E-06	December 1996 Final (Revision 0)
	2.3E-05	2.1E-06	2.4E-06	2.5E-05	2.5E-05	December 1998 Final (Revision 1)
		Construction Worker				
			Overall HI =	2.1E-01	1.2E+00	December 1996 Final (Revision 0)
				1.6E-01	1.1E+00	December 1998 Final (Revision 1)
			Overall Risk =	1.5E-05	1.6E-05	December 1996 Final (Revision 0)
				3.5E-05	3.5E-05	December 1998 Final (Revision 1)

	Site Employee					
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics				HI =	HI =	
	2.2E-02	3.7E-02	1.0E+00	5.9E-02	1.0E+00	December 1996 Final (Revision 0)
	1.7E-02	3.7E-02	1.0E+00	5.4E-02	1.0E+00	December 1998 Final (Revision 1)
Carcinogenic Risks for Organics & Inorganics				Risk =	Risk =	
	6.1E-07	NA	1.5E-06	6.1E-07	2.1E-06	December 1996 Final (Revision 0)
	2.0E-06	NA	1.5E-06	2.0E-06	3.5E-06	December 1998 Final (Revision 1)
Carcinogenic Risks for Radionuclides				Risk =	Risk =	
	2.5E-07	1.1E-05	1.2E-05	1.1E-05	1.2E-05	December 1996 Final (Revision 0)
	2.3E-05	1.1E-05	1.2E-05	3.4E-05	3.5E-05	December 1998 Final (Revision 1)
		Site Employee				
			Overall HI =	5.9E-02	1.0E+00	December 1996 Final (Revision 0)
				5.4E-02	1.0E+00	December 1998 Final (Revision 1)
			Overall Risk =	1.1E-05	1.4E-05	December 1996 Final (Revision 0)
				3.6E-05	3.9E-05	December 1998 Final (Revision 1)

TABLE V.8. Summary of Current and Future Background Risks at Release Block D - Mound Facility

	Construction Worker					
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics				HI =	HI =	
	0.0E+00	9.3E-05	2.3E-02	9.3E-05	2.3E-02	December 1996 Final (Revision 0)
	0.0E+00	9.3E-05	2.3E-02	9.3E-05	2.3E-02	December 1998 Final (Revision 1)
Carcinogenic Risks for Organics & Inorganics				Risk =	Risk =	
	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	December 1996 Final (Revision 0)
	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	December 1998 Final (Revision 1)
Carcinogenic Risks for Radionuclides				Risk =	Risk =	
	2.3E-08	2.9E-07	2.8E-07	3.1E-07	3.1E-07	December 1996 Final (Revision 0)
	1.4E-05	2.9E-07	2.8E-07	1.4E-05	1.4E-05	December 1998 Final (Revision 1)
		Construction Worker				
			Overall HI =	9.3E-05	2.3E-02	December 1996 Final (Revision 0)
				9.3E-05	2.3E-02	December 1998 Final (Revision 1)
			Overall Risk =	3.1E-07	3.1E-07	December 1996 Final (Revision 0)
				1.4E-05	1.4E-05	December 1998 Final (Revision 1)

	Site Employee					
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics				HI =	HI =	
	0.0E+00	7.3E-05	2.3E-02	7.3E-05	2.3E-02	December 1996 Final (Revision 0)
	0.0E+00	7.3E-05	2.3E-02	7.3E-05	2.3E-02	December 1998 Final (Revision 1)
Carcinogenic Risks for Organics & Inorganics				Risk =	Risk =	
	0.0E+00	NA	0.0E+00	0.0E+00	0.0E+00	December 1996 Final (Revision 0)
	0.0E+00	NA	0.0E+00	0.0E+00	0.0E+00	December 1998 Final (Revision 1)
Carcinogenic Risks for Radionuclides				Risk =	Risk =	
	1.2E-08	1.4E-06	1.4E-06	1.4E-06	1.4E-06	December 1996 Final (Revision 0)
	1.6E-05	1.4E-06	1.4E-06	1.7E-05	1.7E-05	December 1998 Final (Revision 1)
		Site Employee				
			Overall HI =	7.3E-05	2.3E-02	December 1996 Final (Revision 0)
				7.3E-05	2.3E-02	December 1998 Final (Revision 1)
			Overall Risk =	1.4E-06	1.4E-06	December 1996 Final (Revision 0)
				1.7E-05	1.7E-05	December 1998 Final (Revision 1)

TABLE V.9. Summary of Current and Future Total Risks at Release Block D - Mound Facility

	Construction Worker					
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics				HI =	HI =	
	1.8E-01	3.7E-02	1.0E+00	2.1E-01	1.2E+00	December 1996 Final (Revision 0)
	1.3E-01	3.7E-02	1.0E+00	1.6E-01	1.2E+00	December 1998 Final (Revision 1)
Carcinogenic Risks for Organics & Inorganics				Risk =	Risk =	
	1.2E-05	9.9E-08	4.0E-07	1.2E-05	1.3E-05	December 1996 Final (Revision 0)
	9.6E-06	9.9E-08	4.0E-07	9.7E-06	1.0E-05	December 1998 Final (Revision 1)
Carcinogenic Risks for Radionuclides				Risk =	Risk =	
	4.8E-07	2.4E-06	2.7E-06	2.9E-06	3.2E-06	December 1996 Final (Revision 0)
	3.7E-05	2.4E-06	2.7E-06	3.9E-05	4.0E-05	December 1998 Final (Revision 1)
		Construction Worker				
			Overall HI =	2.1E-01	1.2E+00	December 1996 Final (Revision 0)
				1.6E-01	1.2E+00	December 1998 Final (Revision 1)
			Overall Risk =	1.5E-05	1.6E-05	December 1996 Final (Revision 0)
				4.9E-05	5.0E-05	December 1998 Final (Revision 1)

	Site Employee					
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future	
Non-carcinogenic Hazard Index for Organics & Inorganics				HI =	HI =	
	2.2E-02	3.7E-02	1.0E+00	5.9E-02	1.0E+00	December 1996 Final (Revision 0)
	1.9E-02	3.7E-02	1.0E+00	5.6E-02	1.0E+00	December 1998 Final (Revision 1)
Carcinogenic Risks for Organics & Inorganics				Risk =	Risk =	
	6.1E-07	NA	1.5E-06	6.1E-07	2.1E-06	December 1996 Final (Revision 0)
	2.0E-06	NA	1.5E-06	2.0E-06	3.5E-06	December 1998 Final (Revision 1)
Carcinogenic Risks for Radionuclides				Risk =	Risk =	
	2.6E-07	1.2E-05	1.3E-05	1.2E-05	1.4E-05	December 1996 Final (Revision 0)
	3.8E-05	1.2E-05	1.3E-05	5.0E-05	5.1E-05	December 1998 Final (Revision 1)
		Site Employee				
			Overall HI =	5.9E-02	1.0E+00	December 1996 Final (Revision 0)
				5.6E-02	1.0E+00	December 1998 Final (Revision 1)
			Overall Risk =	1.3E-05	1.6E-05	December 1996 Final (Revision 0)
				5.2E-05	5.5E-05	December 1998 Final (Revision 1)

BAUER

RESIDUAL RISK EVALUATION - RELEASE BLOCK D

MOUND PLANT
MIAMISBURG, OHIO

December 1996

FINAL

(Revision 0)

Department Of Energy

EG&G Mound Applied Technologies

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EXECUTIVE SUMMARY

The Mound Plant has been used as a research, development and production facility in support of the Department of Energy's (DOE) weapons and energy programs since 1948. Past operations created approximately 400 areas at the Mound where potential releases of hazardous substances may have occurred. These areas where releases may have occurred are undergoing investigation and, as deemed necessary, restoration. With the concurrence of the United States Environmental Protection Agency and the Ohio Environmental Protection Agency, the DOE will release the restored Mound property to the City of Miamisburg for economic development and commercial enterprises.

To streamline the transfer process, the Mound property has been divided into 18 "release blocks", which are contiguous tracts of property designated for release. Before transfer of each release block can be completed, an evaluation will be completed of any human health risks that are associated with residual levels of contamination remaining in the release block either after removal actions (clean-ups) have occurred or have been deemed unnecessary. A Residual Risk Evaluation (RRE) will be prepared for each release block at the Mound to evaluate these residual risks. This report is the RRE for Release Block D, and it addresses residual contaminants in soil and groundwater.

The residual contaminants in Release Block D were evaluated by assuming that two categories of people would come into contact with the contaminants: construction workers, who may be directly exposed to soil and groundwater (used for showering and drinking) for up to five years, and site employees, such as office workers who may have minimal exposure to soil and groundwater, but may be exposed for up to 25 years. Additionally, the construction worker and site employee scenarios include both a scenario for current contaminant concentrations, and a scenario for future contaminant concentrations. The current contaminant concentrations were estimated for groundwater by assuming that the groundwater currently being pumped from Mound production wells represents today's groundwater exposures. In the future, additional site-related contamination may enter the groundwater currently in use and potentially cause different exposures than today's.

The risks associated with the naturally occurring, "background" concentrations of contaminants were calculated separately from the risks associated directly with Mound activities that constitute the "incremental" risks above background. The soil and groundwater risks were added together, and the background and incremental risks were added together to produce total risks. These total risks were divided into risks associated with non-carcinogenic contaminants, termed the Overall Hazard Index, and the risks associated with carcinogenic contaminants (including radionuclides), termed Overall Risk. Summary tables of the final risks obtained during this RRE are provided below.

Construction Worker

	Current Scenario		Future Scenario		
	Overall Hazard Index	Overall Risk	Overall Hazard Index	Overall Risk	Comments
Incremental	0.21	1.5E-5	1.2	1.6E-5	Table V.7
Background	9.3E-5	3.1E-7	0.023	3.1E-7	Table V.8
Total	0.21	1.5E-5	1.2	1.6E-5	Table V.9

Site Employee

	Current Scenario		Future Scenario		
	Overall Hazard Index	Overall Risk	Overall Hazard Index	Overall Risk	Comments
Incremental	0.059	1.1E-5	1.0	1.4E-5	Table V.7
Background	7.3E-5	1.4E-6	0.023	1.4E-6	Table V.8
Total	0.059	1.3E-5	1.0	1.6E-5	Table V.9

An Overall Hazard Index of 1.0 indicates that for exposures at or below the given concentration of contaminants, no effects on humans are expected. Risks from carcinogens are expressed in scientific notation. For example, 1.0E-4 equals one cancer in 10,000 people and 1.0E-6 equals one cancer in 1,000,000 people.

The construction worker and site employee tables show that for both Overall Hazard Indices and Overall Risks, the incremental values are nearly identical to the total values. For example, the future site employee Hazard Index is 1.0 for both incremental and total, and the Overall Risks are 1.4E-5 (incremental) and 1.6E-5 (total). This demonstrates that the majority of the risk is incremental, and therefore possibly caused by former Mound activities. A comparison of the construction worker and the site employee Hazard Indices show that they are currently both well below 1.0 (0.21 for construction workers and 0.059 for site employees). In the future, the construction worker Overall Hazard Index may be 1.2, while the site employee may be 1.0. The slightly higher value for the construction worker, as compared to the site employee, is primarily due to the differences in exposure scenarios and due to the consideration of only shallow (<2 ft.) soil with the site employee, which tends to be slightly cleaner than deeper soil. A comparison of the construction worker and the site worker Overall Risks shows that they are similar. For example, for the current scenario, risks are calculated to be 1.5E-5 and 1.3E-5 for the construction worker and site employee, respectively, and for the future scenario, risks are calculated to be 1.6E-5 for both construction workers and site employees.

Site employees and construction workers at Release Block D are assumed to be directly exposed to Release Block D soil. The groundwater that may be supplied to workers at Release Block D businesses comes from elsewhere on the Mound site. Therefore, a comparison of the soil hazards and risks associated with soil and groundwater is useful to better illustrate residual risks directly attributable to Release Block D. Approximately 86% of the Overall Hazard Index for construction workers currently, but only 15% of the hazard in the future, is attributable to Release Block D soils. About 37% of the Overall Hazard Index for site employees currently, but only 2% of the hazard in the future, is attributable to Release Block D soils. The rest of the overall calculated hazards to construction workers and site employees would result from use of the BVA groundwater.

Similar results are seen with Overall Risks. Approximately 83% of the Overall Risks to construction workers currently, and 78% of the risks in the future, are attributable to Release Block D soils. Only 6 to 8% of the Overall Risks, both currently and in the future, to site employees are attributable to Release Block D soils. The rest of the calculated risks to construction workers and site employees would result from use of the BVA groundwater. The differences in calculated hazards and risks between construction workers and site employees are due to the much reduced exposure potential of the site employee to come in contact with residual soil contamination in Release Block D.

1.0 INTRODUCTION

1.1 OVERVIEW

The Department of Energy's Mound Plant is located on a 306-acre parcel of land within the city of Miamisburg, Ohio, about 10 miles southwest of Dayton, Ohio. The plant is located approximately 2000 feet east of the Great Miami River. Portions of the site overlie the Great Miami Buried Valley Aquifer, which has sole source designation. The Mound Plant has been used as a research, development and production facility in support of DOE's weapons and energy programs since 1948. Past operations created over 400 areas at the Mound where potential releases of hazardous substances may have occurred. These areas where releases may have occurred are undergoing investigation and, as deemed necessary, restoration. The restored Mound property will be released for economic development and used for commercial enterprises.

To streamline the transfer process, the Mound property has been divided into 18 "release blocks", which are contiguous tracts of property designated for release at a specific time. Before transfer of each release block can be completed, any residual risks in each of the areas where releases may have occurred (called potential release sites or PRSs) in that release block must be evaluated. The locations and designations of the release blocks are shown in Figure 1.1. All preparations for the transfer of the first Release Block (Block A) were completed in 1995, and are underway for the scheduled transfer of Release Block D in 1996 (the subject of this report). All of the release blocks are scheduled to be cleaned up and transferred by 2005.

A Residual Risk Evaluation (RRE) needs to be prepared for each release block to evaluate human health risks associated with residual levels of contamination that remain after removal actions have been completed or judged unnecessary. This information is necessary to show that the release block is acceptable for commercial redevelopment. This report is the RRE completed for Release Block D, which addresses residual contaminants in soil, surface water and groundwater. The RRE also addresses potential cumulative risks from exposure of non-release block-specific exposure of contaminants in groundwater and air, in addition to release block-specific contaminants.

The data used to evaluate the human health risks associated with residual contaminants has been derived from many sources over a number of years. These data include, but are not limited to, background study results, soil screening samples, groundwater assessments, soil gas sampling, soil confirmation sampling, groundwater data from Mound production wells and Mound bedrock aquifer monitoring wells, and air sampling data.

1.2 SCOPE OF THE RRE PERFORMED FOR A SPECIFIC RELEASE BLOCK

This report was developed using the Mound 2000 Residual Risk Evaluation Methodology or RREM (DOE, 1996). The RREM was developed through the collaborative efforts of Mound personnel, DOE, U.S. Environmental Protection Agency (U.S. EPA), and the Ohio Environmental Protection Agency (OEPA). A core team of personnel from each party participated in the development of the methodology and were supported by risk assessment experts.

Each release block RRE consists of five elements. These elements are:

1. Identification of contaminants to be evaluated,
2. Exposure assessment,
3. Toxicity assessment,
4. Risk characterization, and
5. Characterization of cumulative risks.

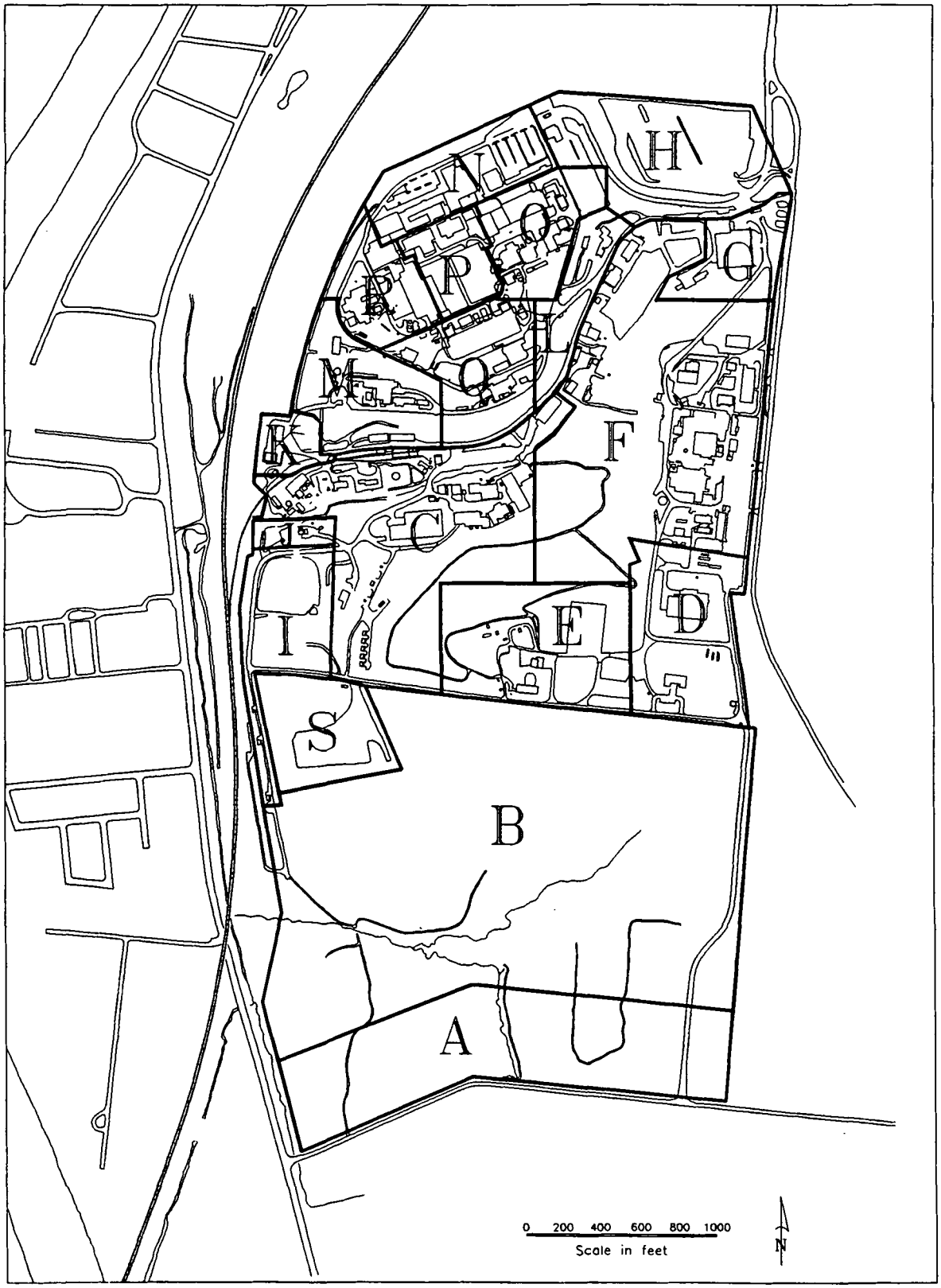

Figure 1.1. Mound facility location map with release blocks identified.

Identification of contaminants to be evaluated

For Release Block D, identification of contaminants to be carried through the RRE calculations was based on several sources of data. In general, all information that qualitatively and quantitatively describes the residual contamination within the release block was collected. Historical information describing the past usage of land and buildings within Release Block D was also required.

As described in the RREM, the process of identifying contaminants to be evaluated consists of several steps. All contaminants that were detected one or more times were listed in a contaminant summary table by media where they were detected. Such information as the maximum concentration detected was noted. These data were compared to background concentrations of the contaminants for organics, inorganics, and radionuclides. Background concentrations (95th% Upper Tolerance Limit of the background level) were developed and are presented in the RREM. Contaminants with the maximum concentration detected exceeding their background were carried to the next step of the RRE. Contaminants with the maximum concentration less than their background concentration were not quantitatively addressed further in the RRE. This approach focuses RRE evaluations to address contamination caused by Release Block D and Mound plant activities.

Soil and groundwater contaminants that exceeded the background concentration were compared to risk-based Guideline Values. Guideline Values are media-specific concentrations of contaminants that correspond to certain human health risk levels for specified exposure scenarios. As described in the RREM, Guideline Values were developed for construction worker and site employee scenarios (see HAZWRAP, 1995 for the detailed derivation of Guideline Values). The Guideline Values used in the RRE for Release Block D were developed specifically for the Mound, and were approved by the DOE, the U.S. EPA, and OEPA. Based on these exposure scenarios, the Guideline Values correspond to the 1.0E-6 risk level for carcinogens and radionuclides, and the concentration corresponding to a Hazard Quotient of one for each noncarcinogen. A 1.0E-6 risk level represents one chance in one million of contracting cancer as a result of exposure to the Guideline Value concentration. A Hazard Quotient of one indicates that from an exposure at or below the given concentration, no effects to humans are expected. Carcinogenic or radionuclide contaminants that exceeded their Guideline Values and noncarcinogenic contaminants that exceeded one-tenth of their Guideline Value were carried to the next step of the RRE. Comparison to Guideline Values insures that Release Block D related contaminants occurring at concentrations potentially detrimental to human health were included in the RRE.

Additional screening procedures were also used to evaluate release block contaminants. Contaminants with a frequency of detection less than or equal to 5% (1 detect per 20 analyses) may not indicate contamination that is site related. If a contaminant was infrequently detected in all media, was not detected at high concentrations in any media, and there was no reason to believe it was used on site, the contaminant was eliminated from further consideration. Additionally, a contaminant detected in samples and blanks but is known to be a common laboratory contaminant, and was unlikely to have been used on site, may be eliminated from further consideration if concentrations are within a factor of 10 of the detection limit (RAGS, 1989). Such laboratory contaminants may include methylene chloride, 2-butanone, and phthalate esters.

A final list was then prepared of all contaminants detected in one or more samples and in one or more media that were screened by comparison of the maximum detected value with background and Guideline Values, and considering frequency of detection and whether or not it was a laboratory contaminant. Appropriate screening values for each constituent are listed in the tables presented in Section 2, and the decision and rationale to include or exclude a contaminant from further consideration is indicated. Additionally, general water quality indicator parameters were noted as such and were not carried through the risk evaluation. Nitrogen, as an example, has been measured as nitrates, nitrites, or together as nitrates-nitrites. All are considered indicators of water quality.

Exposure Assessment

The goal of exposure assessment is to estimate the type and magnitude of contaminant exposures that may be incurred by an individual working within the release block under consideration. First, exposure scenarios were identified. DOE, U.S.EPA and OEPA core team members and the stakeholders have agreed that the site use will be commercial/industrial. Therefore, the two exposure scenarios developed for use in the RRE are the construction worker and site employee scenarios. These scenarios represent exposures that are reasonably expected to occur at the Mound property. The intake variables with which potential exposures were quantified for these two types of personnel were conservatively selected such that the exposures represent a reasonable maximum exposure.

Potential exposure pathways through which the construction worker or the site employee may be exposed were determined based on the RREM and knowledge of Release Block D. These potential exposure pathways include direct soil exposure pathways (inadvertent ingestion of soil, external radiation exposure, and dermal contact with soil), air exposure pathways (inhalation of airborne particulates and vapors), and groundwater pathways (ingestion of groundwater as drinking water, inhalation of volatiles during showering, and dermal contact with groundwater during showering). Some differences in pathways for the site employee and construction worker are noted. Construction workers are assumed to be on site for a shorter period of time and consume more soil via incidental ingestion than site employees. Site employees do not shower with groundwater at the site.

The quantification of intakes for each contaminant and each pathway for each exposure scenario were also conducted during exposure assessment. First, constituent concentrations were determined for each media. Then, separate concentrations for each contaminant were calculated for the background (if available) for the incremental portion of the contamination attributable to the Mound facility, and for the total concentration. The total concentration, which is based on the measured concentration, is comprised of both background and the increment above background. These concentrations were then used with the appropriate equations for contaminant intake for each pathway and each receptor (construction worker or site employee) as specified in the RREM. In addition, Secondary Drinking Water Standards were used to assess general quality of the potable water supply.

Toxicity Assessment

The toxicity assessment identifies potential adverse effects associated with exposure to release block-related substances. Toxicity values were taken from the U.S. EPA's Integrated Risk Information System (IRIS) and the Health Effects Assessment Summary Tables (HEAST). For contaminants without toxicity values in IRIS or HEAST, the most recent data available may be used. If no toxicity values exist for a particular contaminant, the contaminant was not quantitatively evaluated in the RRE.

Risk Characterization

Risk characterization combines information from both the exposure assessment and the toxicity assessment to characterize human health risks. This process characterizes carcinogenic and radionuclide risk separately, using standard equations as specified in the RREM. Hazard Quotients are calculated for each noncarcinogen contaminant. Potential risks were calculated for each pathway and each receptor based on the total concentration of a contaminant, its background concentration and the increment above background attributable to Mound activities. Chemical-specific risks and Hazard Quotients were then summed across pathways and across contaminants.

Evaluation of Potential Cumulative Health Effects

The exposures to contaminants located within a release block are called release block exposures. However, contaminants from outside the release block under investigation may migrate to the release

block via air pathways, surface water pathways and groundwater pathways. The potential for exposure to these migrating contaminants are called cumulative exposures, and they were evaluated to complete the RRE for Release Block D.

1.3 ORGANIZATION OF THIS RRE REPORT

This RRE report is for Release Block D. Section 2.0 identifies the Release Block D contaminants by describing the available data and performing the screening with background and Guideline Values. Section 3.0 identifies exposure scenarios and exposure pathways to complete the exposure assessment. Section 4.0 is the toxicity assessment. Section 5.0 contains the residual risk evaluation for both construction workers and site employees, and considers both current exposures and potential future exposures. This section also evaluates the cumulative health effects of residual risk from multiple pathways, and discusses uncertainties.

2.0 IDENTIFICATION OF RELEASE BLOCK D POTENTIAL CONTAMINANTS

2.1 RELEASE BLOCK D SITE HISTORY

In the early 1980's, a Site Survey Project of the Mound facility was initiated to estimate the quantities and types of radionuclides, the volume and locations of contaminated soil, and the potential remediation costs. The report, published in 1988, lists 22 contaminated areas on the Mound facility property, called Areas Of Concern (AOC). One of these areas lies west of the southwestern corner of Release Block D and is a former thorium storage and redrumming area. Because there are no AOCs in Release Block D, it is considered to be a Non-AOC area.

Release Block D is considered to be part of the Operable Unit 5 (OU-5) Non-Area of Concern (Non-AOC). OU-5 comprises approximately 100 acres, and includes the SM/PP Hill, the valley to the west, and the plant drainage ditch. Release Block D is located on the south end of the SM/PP Hill, and is generally bound to the south by the "South Property", to the east by offsite residences, to the north by a parking lot and group of small buildings (numbered 39, 77, 78, 97, 95, 101), and to the west by a fenced area for storage of Investigative Derived Material (IDM) (just west of Building 100). The OU-5 Phase I Non-AOC Field Report of June, 1995 states that "The Non-AOC is comprised of many locations where daily plant activities occur. The limited historical data suggests that, except for the special areas of interest, there presently exist no known additional AOC's within this Phase I study area." (pg 1-8).

Two main structures in Release Block D include Building 105, which was built in 1990 as a machine shop, and is still used for that purpose. The other is Building 100, which is the Guard Force Precinct bunker. There is also a small guard shack near the former Contractor's Gate entrance and a small building where Mound orientations take place. Portions of Release Block D are currently used for storage of trailers, roll-off boxes, small above-ground tanks and other assorted containers. Also located on the block is a large sewer manway/dump station. Historically, the portion of the Mound facility now referred to as Release Block D had a small area known as the Old Firing Range Drum Storage Site that stored liquid chemical wastes over a four year period. No other historical uses of the area of the Mound facility referred to as Release Block D are known.

2.2 AVAILABLE DATA FOR RELEASE BLOCK D

2.2.1 Soil Contaminant Data

Soil contaminant data for Release Block D was obtained from a number of DOE reports. These include:

- Other Soils Characterization Report, Volume I - Text. Final, Revision 0. May 1, 1995.
- OU-5 Operational Area Phase I Investigation Non-AOC Field Reports, Volume I - Text. Final, Revision 0. June 1, 1995.
- OU-9 Regional Soils Investigation Report, Revision 2. August 1, 1995.
- OU-3 Miscellaneous Sites Limited Field Investigation Report, Volumes 1, 2 and 3. Final, Revision 0. July 1, 1993.
- OU-9 Site Scoping Report, Volume 3 - Radiological Site Survey. Final. June 1, 1993.
- Soil Gas Confirmation Sampling. Revision 0. April 1, 1996.

The soil data can be divided into three types: data obtained through analytical laboratory analysis, data obtained through "screening" techniques conducted in a laboratory and data obtained through screening techniques conducted in the field. The analytical laboratory data is obtained by using strict methods and following exacting quality control procedures. This data is of the highest quality, and is quantitative. This laboratory screening data is considered to be of a lower quality because sample preparation does not occur, and the measuring instruments are less precise than when analytical techniques are used. The field screening techniques are the least accurate, due to instrument limitations, field calibrations and the effect of ambient conditions. Field screening data was not used for any calculations in this RRE. Laboratory screening data was the subject of an OEPA audit, and the data was deemed useable for risk evaluation purposes. The analytical laboratory data was also used for calculations in this RRE.

The Release Block D distribution of quantitative analytical data is shown in Figure 2.1. The Release Block D distribution of relatively qualitative screening data is shown in Appendix A, Diagrams A and C.

2.2.2 Groundwater Contaminant Data

Groundwater data consist of water analyses of the Mound production wells and analyses of groundwater from monitoring wells screened in the bedrock aquifer on the Mound property. This data has been compiled in the Mound MEIMS database.

Groundwater from the Great Miami Buried Valley Aquifer (BVA) Mound Plant Production Wells is a potable water supply capable of serving uses associated with Release Block D. Current BVA groundwater contamination is defined by current concentration levels in Production Wells 0076 and 0271 (Appendix B). There have been 57 organic, inorganic and radionuclide contaminants detected in these wells.

Future groundwater contamination is assumed to be appropriately represented by combining current BVA contamination with additional contamination currently in the nearby bedrock aquifer. Bedrock aquifer groundwater from across the entire Mound Plant is assumed to eventually mix with BVA water, and thereby contribute bedrock aquifer contaminant mass to the BVA. A detailed analysis of this approach is presented in Appendix C. There have been 74 organic, inorganic and radionuclide contaminants detected in bedrock aquifer wells.

2.2.3 Background Data

For an analyte to be carried through the risk evaluation, the analyte must exceed both background concentrations and Guideline Value concentrations (0.1 times the Guideline value for non-carcinogens) for the soil or groundwater media in which it was detected. Background concentrations measure the amount of a chemical that is naturally occurring (like metals) or anthropogenic chemicals originating from sources other than the Mound plant. Background concentrations in soil were determined during an investigation conducted in September 1994 titled "Operable Unit 9 Background Soils Investigation Soil Chemistry Report".

Background concentrations in groundwater were developed from two sources of data. For the Buried Valley Aquifer, background values were reported in the April 1995 "OU9 Hydrologic Investigation: Groundwater Sweeps Report". Background for bedrock groundwater was reported in the April 1995 "OU5 New Property Remedial Investigation Report". Guideline Values were developed by the DOE and are listed in a document titled "Risk-Based Guideline Values, Mound Plant, Miamisburg, OH" December 1995. For analytes in soil or groundwater with no Guideline Values, analytes that exceeded background were carried through the RRE. Detected analytes with neither background nor Guideline Values were carried through to the next step of the RRE. The following section examines the available soil and groundwater data for Release Block D.

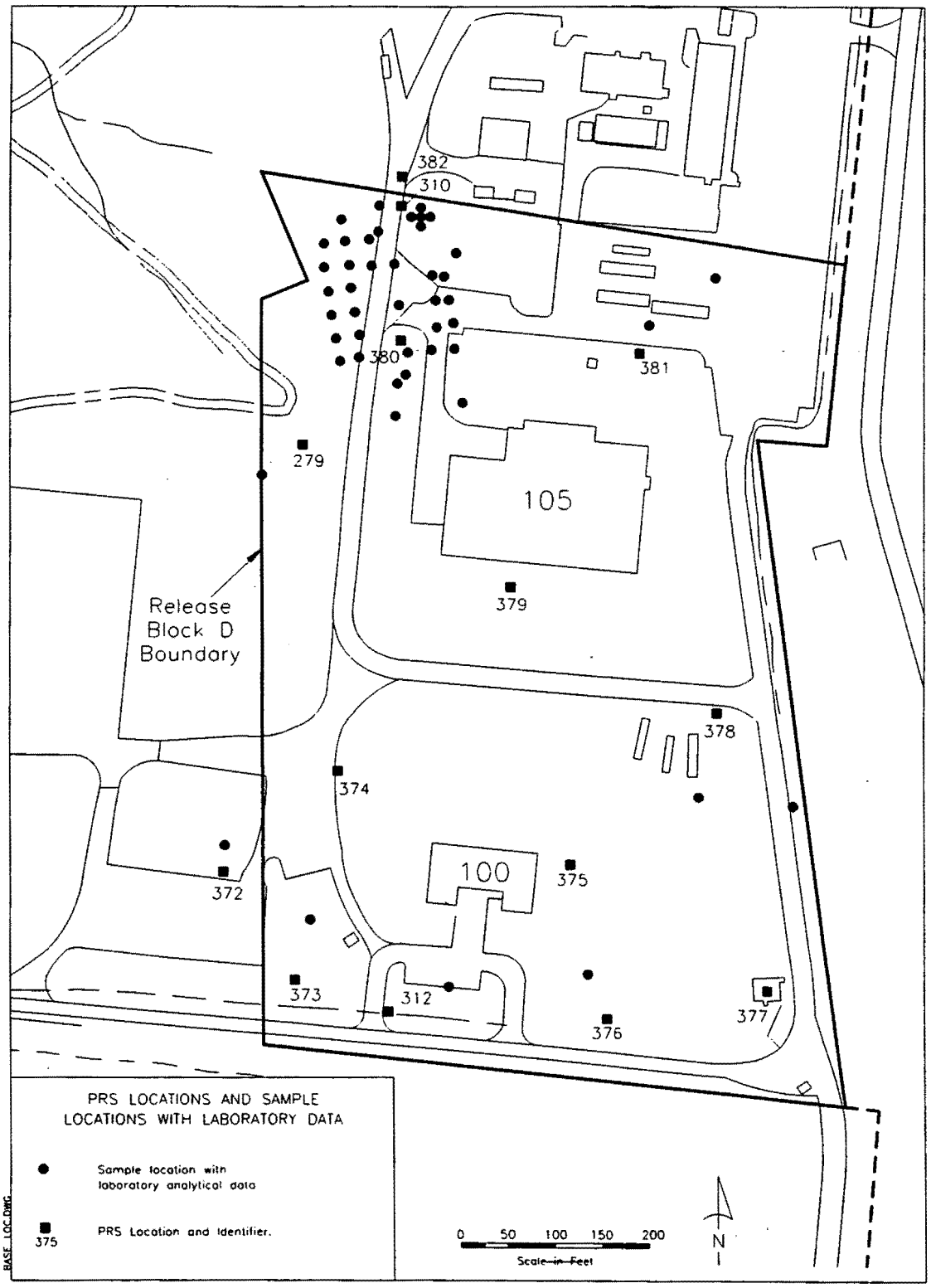

Figure 2.1. Release Block D map showing the locations of samples for which there is quantitative laboratory analytical data. Also shown are the locations of Potential Release Sites (PRSs).

2.2.4 PRS Data

There are 12 Potential Release Sites (PRSs) located within Release Block D and two PRSs near the northern and western edges of Release Block D. The PRSs are numbered 279, 310, 312, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381 and 382. The PRSs are so designated based on either knowledge of historical land use considered potentially detrimental, or on actual sampling results showing elevated concentrations of contaminants. The rationale for designation of Release Block D PRSs is outlined in Table II.1. The locations of these PRSs are shown on Figure 2.1. The PRS packages prepared by Mound personnel provide available data of analyte detections, summaries of site uses and maps locating sampling sites. Most of these PRSs (372, 374, 375, 376, 377, 378, 380, 381, 382) were so designated based solely on soil gas readings. The soil gas study was conducted in 1994, utilizing PETREX tubes. Collector tubes measure relative ion counts of volatile and semi-volatile organic compounds; therefore, the method only provides indications of possible contamination. Four of the PRSs were identified based on radionuclide measurements. At PRS 310, elevated cesium-137 was found in a surface soil sample in 1987, and was remediated immediately upon its detection. Soil samples were again collected from this area in December 1991 after the soil removal. Of 28 samples collected, two had concentrations of cesium-137 above detection limits. In these same locations, 25 samples were analyzed for radium-226. All samples contained detectable concentrations of radium-226. In 1995, soil samples collected in this location did not detect cesium-137, or any other contaminant. At PRS 373 and PRS 379, plutonium-238 was detected in surface samples in 1994 and 1995, respectively, and found (as measured by the Mound Soil Screening Laboratory) at or slightly above the method detection limit. The surface samples with detected plutonium-238 were shown (by surrounding samples) to be isolated to the PRS location only. Mound Soil Screening Level calculations indicated that the concentrations of plutonium at these locations will not adversely affect groundwater at potential drinking water sources (see the PRS data package for a detailed analysis). In PRS 312, a surface sample collected in 1993 contained thorium-232.

PRS 279 was identified based on photographs that showed possible drum storage at this location. This drum storage area had been referred to as the Old Firing Range Storage Site. Plutonium-238, cobalt-60, radium-226 and thorium-228 were measured in this sample. This former drum storage area was used between 1970 and 1974, and is located north and slightly east of PRS 279. There were no elevated soil gas measurements collected at this location. A deep (3 to 5 feet) soil sample near PRS 279 had detectable concentrations of several PAHs at a concentration of approximately 50 mg/kg. This sample was a composite of four samples collected at the corners of a 30 ft. x 30 ft. square. A second composite prepared similarly from about 100 ft. away found similar contaminants at 1 to 3 mg/kg. Other sample locations nearby did not detect any of the contaminants. A recent (February 1996) soil sample in the vicinity contained only low levels of organic or inorganic compounds. Plutonium-238, radium-226 and thorium-228 were detected in this sample.

2.2.5 Radiological Analytical Data

Radiological data provided by the Mound was compiled by Terran Corporation into four maps (Appendix A). One set of two maps shows analytical laboratory data: one for thorium-232 and one for plutonium-238 concentrations. The other set of two maps shows Mound Soil Screening Laboratory data for thorium-232 and plutonium-238. The analytical laboratory and screening laboratory data were separated because of their differing detection limits.

The screening laboratory map for thorium-232 shows that of 317 samples within Release Block D, nine (or 3%) were 2 pCi/g (the detection limit) or above. Eight of these nine samples are located north of Building 105. The highest thorium-232 concentration from these nine samples was 7 pCi/g. The analytical laboratory map shows no thorium-232 values above a positively measured value of 1.215 pCi/g. There were two other locations which could be higher--values of 1.3(U) and 1.4(U).

The map showing analytical laboratory data for plutonium-238 shows concentrations located in the northeastern corner of Release Block D ranging from 8.56 pCi/g to 26 pCi/g. South of Building 100,

there are two locations with plutonium-238 concentrations ranging from 20(U) to 26 pCi/g. Maps of soil screening facility data for plutonium-238 within Release Block D show a number of samples (11% of 214 samples) that were at or above the 25 pCi/g detection limit. The highest screening sample concentration measured within Release Block D was 60 pCi/g. Confirmatory analytical laboratory samples collected in the same vicinity contained only 0.574 to 0.732 pCi/g plutonium-238. Other screening samples which contained 49 and 38 pCi/g plutonium-238 showed a maximum of 0.698 pCi/g during analytical laboratory confirmatory sampling in the same vicinity. The differences between screening and analytical laboratory results were attributed to differences in analytical techniques and the sporadic nature of the contamination.

2.3 SUMMARY OF DETECTED CONTAMINANTS IN RELEASE BLOCK D

Based on the available data, the complete list of all contaminants detected at least once within Release Block D appears in Tables II.2, II.3, and II.4 for soil, current groundwater and future groundwater, respectively. These tables present the maximum concentration of each contaminant, and also present appropriate background concentrations, Guideline Values and additional screening criteria for comparative purposes. The comparison of contaminant concentrations to background concentrations, Guideline Values and other screening criteria serves to reduce the number of contaminants to be carried through the RRE process. Only contaminants exceeding both background and a base level of potential health concerns and meeting certain frequency of detection criteria are carried through the RRE process. The screening process is documented on these tables by listing the reason contaminants are chosen to be carried through the RRE. As described in table footnotes, any contaminants compared to a Hazard Quotient Guideline Value were screened based on a value that is one-tenth the Hazard Quotient, as directed in the Mound 2000 Residual Risk Evaluation Methodology (RREM).

2.4 SOIL CONTAMINANT SCREENING

The complete list of all contaminants in soil contained 40 organic, 34 inorganic and 16 radionuclide compounds. Because the organic contaminants found here are generally not naturally occurring substances, background concentrations are not available for organic compounds. The organic compounds were screened against Guideline Values, and against a frequency of detection screening factor (contaminants must have been detected at least once for every 20 samples to be carried forward in the RRE). The inorganic compounds were screened against background concentrations, Guideline Values, frequency of detection criteria and whether they are common constituents of most soils, such as sodium and potassium. The radiological contaminants were screened against background and Guideline Values.

This screening reduced the number of organic contaminants from 40 to 10, the inorganic contaminants from 34 to 4, and the radiological contaminants from 16 to 3. The contaminants which will be carried through the RRE process for the soil media are summarized in Table II.5.

2.5 LEACHING OF SOIL CONTAMINATION TO GROUNDWATER

The potential for contaminants in the soil to be dissolved and transported into the groundwater by infiltrating rainfall was modeled as part of the PRS evaluation process. The model is a conservative soil to groundwater partitioning model that assumes a continuous source extending from the surface to the water table. Dispersion effects are not modeled. This model was adapted from the USEPA Soil Screening Level (SSL) guidance document (USEPA, 1996). A full presentation of the model is available in the public reading room in the "Potential Release Site Packages--Reading and Understanding, Volume II" report.

This Soil Screening Level model produces soil concentrations that correspond to the Mound Plant Construction Worker Industrial Use 10^{-6} risk level in groundwater. Soil concentrations that are below this calculated acceptable soil concentration are not a concern and do not have to be remediated or

addressed in this document. Soil concentrations that are above this calculated acceptable soil concentration may pose a concern if there are multiple chemicals that leach to groundwater. These cases are examined on a PRS by PRS basis by the core team to determine whether remediation might be required.

Because all PRSs within Release Block D have been examined by the core team and No Further Action (NFA) recommended, all issues relating to potential soil leaching from soils have been resolved. As a result, the detailed modeling of soil leaching to groundwater did not need to be performed in this document.

2.6 CURRENT SCENARIO GROUNDWATER SCREENING

The complete list of current groundwater contaminants contains 16 organic compounds, 28 inorganic constituents, and 12 radiological contaminants. These contaminants were screened against background, Guideline Values, and on the basis of whether they are common water quality parameters, such as alkalinity or dissolved solids.

The screening reduced the number of organic contaminants from 16 to 3, the number of inorganic contaminants from 28 to 3, and the number of radiological contaminants from 12 to 6. The contaminants that will be carried through the RRE process for the current groundwater scenario are summarized in Table II.6.

2.7 FUTURE GROUNDWATER SCREENING

Future groundwater contaminants are defined as those currently in the Mound production wells (the Current Groundwater list), combined with contaminants measured in Mound site bedrock monitoring wells. This assumes that all contaminants in the bedrock aquifer that exceed background, will migrate to the production wells within the Buried Valley Aquifer (the BVA) in the future. To create this combined list of contaminants, the bedrock contaminants were screened against bedrock background concentrations. The complete list of bedrock contaminants, the applicable background concentrations, and the screening documentation are presented in Table II.7. The screening process reduced the number of bedrock contaminants from 74 to 39. This list was combined with the current groundwater list that yielded Table II.4. This complete list of future groundwater contaminants contains 22 organic compounds, 21 inorganic contaminants, and 16 radiological contaminants. These contaminants were screened with respect to BVA background concentrations, Guideline Values, and common water quality parameters.

The screening reduced the number of future organic contaminants from 22 to 3 the inorganic contaminants from 21 to 8, and the radiological contaminants from 16 to 6. The contaminants that will be carried through the RRE process for the future groundwater scenario are summarized in Table II.8.

Some of the radionuclide constituents detected in groundwater are not expected in groundwater. However, it is true that essentially insoluble compounds and elements (including radionuclides) that are found in groundwater are generally bound up in particulate or colloidal components within the groundwater. Filtered sample results were not used in this analysis. All groundwater concentrations available represent both dissolved and particulate-bound contaminant.

Table II.1. Potential Release Sites Designation Information.

PRS Number	Rationale
279	Old Firing Range Drum Storage Area
310	Site Survey Project Potential Hot Spot (location S0647)
312	Site Survey Project Potential Hot Spot (location S0971)
372/374	Elevated soil gas readings based on relative ion counts (PETREX) during the OU-5 Non-AOC Phase 1 soil gas activities
373	Isolated plutonium (Pu-238) hot spot identified during the OU-5 Non-Area Of Concern (AOC) Phase 1 activities (location 01N06)
375/377/378	Elevated soil gas readings based on relative ion counts (PETREX) during the OU-5 Non-AOC Phase 1 soil gas activities
376	Low level plutonium detected during the OU-5 Non-AOC Phase 1 activities
379	Isolated plutonium (Pu-238) hot spot identified during the OU-5 Non-Area Of Concern (AOC) Phase 1 activities (location 05N04)
380/381	Elevated soil gas readings based on relative ion counts (PETREX) during the OU-5 Non-AOC Phase 1 soil gas activities
382	Elevated soil gas readings based on relative ion counts (PETREX) during the OU-5 Non-AOC Phase 1 soil gas activities

Table II.2. Summary Table of All Soil Contaminants Detected

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
ORGANICS (mg/kg)								
Acenaphthene	6.4	0.135				2 / 36	No	F.O.D. ~ 5% [6]
Acenaphthylene	0.22	---				2 / 36	No	F.O.D. ~ 5%
Acetone	0.23	---		21000[2]	200000[2]	7 / 24	No	Conc. < G.V.
Anthracene	11.65	0.375		64000[2]	610000[2]	5 / 36	No	Conc. < G.V.
Aroclor-1248	0.059	0.059		0.385[4]	0.74[4]	1 / 36	No	Conc. < G.V.
Aroclor-1254	0.3025	0.3025		4.30[2]	41[2]	1 / 36	No	Conc. < G.V.
Benzo(a)anthracene	41.5	0.525		4.10[4]	7.8[4]	12 / 36	Yes	Conc > G.V.
Benzo(a)pyrene	33.5	0.570		0.41[4]	0.78[4]	14 / 36	Yes	Conc. > G.V.
Benzo(b)fluoranthene	53	0.740		4.10[4]	7.8[4]	13 / 36	Yes	Conc > G.V.
Benzo(g,h,i) perylene	0.780	0.370				7 / 36	Yes	F.O.D. = 19%
Benzo(k)fluoranthene	1.3	0.5175		41.0[4]	78.0[4]	10 / 36	No	Conc < G.V.
Benzoic Acid	0.750	0.750		850000[2]	8200000[2]	6 / 29	No	Conc. < G.V.
Bis(2-ethylhexyl)phthalate	4.2	3.650		215[4]	410[4]	27 / 36	No	Conc < G.V.
2-Butanone	0.028	0.010		9300[1]	9300[1]	4 / 24	No	Conc. < G.V.
Carbazole	0.165	0.165				2 / 11	Yes	F.O.D. = 18%
Carbon Disulfide	0.004	0.004		280[1]	280[1]	1 / 24	No	Conc. < G.V.
2-Chlorophenol	0.1	0.1				1 / 36	No	F.O.D. = 2.8%
Chrysene	51.5	0.700		410[4]	780[4]	12 / 36	No	Conc. < G.V.
Di-n-butyl phthalate	0.140	---		21000[2]	200000[2]	1 / 36	No	Conc. < G.V.
Di-n-octyl phthalate	0.089	0.089		4300[2]	41000[2]	1 / 36	No	Conc. < G.V.
Dibenz(a,h)anthracene	0.190	0.069		0.41[4]	0.78[4]	2 / 36	No	Conc. < G.V.
Dibenzofuran	3.8	0.0975				2 / 36	No	F.O.D. ~ 5%
Dichloromethane-methylene chloride	0.066	0.056		1000[1]	1000[1]	7 / 24	No	Conc. < G.V.
Ethylbenzene	0.003	---		0.48[1]	0.48[1]	1 / 24	No	Conc. < G.V.
Fluoranthene	65	1.4		8500[2]	82000[2]	21 / 36	No	Conc. < G.V.
Fluorene	6.3	0.170				4 / 36	Yes	F.O.D. = 11%
Indeno(1,2,3-cd)pyrene	20.5	0.390		4.10[4]	7.8[4]	7 / 36	Yes	Conc. > G.V.

Table II.2. Summary Table of All Soil Contaminants Detected (cont.)

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
Methoxychlor	0.0055	0.0055	30			1 / 37	No	Conc. < Bkgd.
2-Methylnaphthalene	1.4	1.4				2 / 36	No	F.O.D. ~ 5%
4-Methyl-2-pentanone	0.002	---		700[1]	700[1]	1 / 24	No	Conc. < G.V.
Naphthalene	1.65	0.230				3 / 36	Yes	F.O.D. = 8%
N-Nitrosodiphenylamine	0.083	---		600[4]	1200[4]	1 / 36	No	Conc. < G.V.
Pentachlorophenol	0.120	0.120		25[4]	48[4]	1 / 36	No	Conc. < G.V.
Phenanthrene	49.5	1.2				11 / 36	Yes	F.O.D. = 31%
Phenol	0.120	0.120		130000[2]	1200000[2]	1 / 36	No	Conc. < G.V.
Pyrene	62	1.050		6400[2]	61000[2]	21 / 36	No	Conc. < G.V.
Toluene	0.016	0.002		250[1]	250[1]	7 / 24	No	Conc. < G.V.
1,1,1-Trichloroethane	0.0025	---				1 / 24	No	F.O.D. = 2.8%
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003				2 / 4	Yes	F.O.D. = 50%
Xylenes, total	0.019	---		430000[2]	4100000[2]	2 / 24	No	Conc. < G.V.
INORGANICS (mg/kg)								
Aluminum	22900	15400	19000			37 / 37	No	Common soil constituent
Antimony	39.2	39.2		85[2]	820[2]	19 / 37	Yes	Conc. > G.V.
Arsenic (total)	15.8	12.35	8.6	64[2]	610[2]	37 / 37	Yes	Conc. > G.V. & Bkgd.
Barium (total)	168.5	112.5	180	15000[1]	140000[1]	37 / 37	No	Conc. < Bkgd & G.V.
Beryllium	0.98	0.81	1.3	0.7[3]	1.3[3]	36 / 37	No	Conc. < Bkgd. > G.V.
Bismuth	5.7	5.7				2 / 12	Yes	F.O.D. = 17%
Cadmium (total)	10.2	10.2	2.1	210[2]	2000[2]	21 / 37	No	Conc. < G.V. > Bkgd
Calcium (total)	276000	222000	310000			37 / 37	No	Conc. < Bkgd.
Chloride	59	---	107			2 / 5	No	Conc. < Bkgd.
Chromium (total)	29.6	26.7	20	1100[2]	10000[2]	37 / 37	No	Conc. < G.V. > Bkgd.
Cobalt (total)	14.2	13.4	19			35 / 37	No	Conc. < Bkgd.
Copper (total)	33.1	30.5	26			37 / 37	Yes	Conc. > Bkgd.
Cyanide	1.0	1.0		4300[2]	41000[2]	11 / 30	No	Conc. < G.V.
Fluoride	6.38	2.2	6.7			5 / 5	No	Conc. < Bkgd.

Table II.2. Summary Table of All Soil Contaminants Detected (cont.)

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
Iron (total)	43600	30800	35000			37 / 37	No	Common soil constituent
Lead (total)	35.8	35.8	48			37 / 37	No	Conc. < Bkgd.
Lithium	25.3	25.3	26			8 / 8	No	Conc. < Bkgd.
Magnesium (total)	64500	64500	40000			37 / 37	No	Common soil constituent
Manganese (total)	757	659	1400	27000[1]	150000[1]	37 / 37	No	Conc. < G.V. & Bkgd.
Mercury (total)	0.13	0.13		64[1]	610[1]	15 / 3 7	No	Conc. < G.V.
Molybdenum	14.5	2.3	27			8 / 9	No	Conc. < Bkgd.
Nickel (total)	52.05	26.4	32	4300[2]	41000[2]	36 / 37	No	Conc. < G.V. > Bkgd.
Nitrate	2.07	---	26			1 / 1	No	Conc. < Bkgd.
Nitrate/Nitrite	3.7	3.7				8 / 11	No	Common soil constituent
Organic Carbon	10189.1	---				1 / 1	No	Common soil constituent
Potassium (total)	2090	2090	1900			37 / 37	No	Common soil constituent
Silicon (total)	1100	---				1 / 1	No	Common soil constituent
Silver (total)	18.6	17.6	1.7	1100[2]	10000[2]	18 / 37	No	Conc. < G.V. > Bkgd.
Sodium (total)	2490	2490	240			33 / 37	No	Common soil constituent
Sulfate	129	---	150			1 / 5	No	Conc. < Bkgd.
Thallium	0.23	---	0.46			1 / 37	No	Conc. < Bkgd.
Tin	1.7	1.7	20			6 / 8	No	Conc. < Bkgd.
Vanadium	38.3	30.45	25	1500[2]	14000[2]	36 / 37	No	Conc. < G. V. > Bkgd.
Zinc (total)	754	238	140	64000[2]	610000[2]	37 / 37	No	Conc. < G. V. > Bkgd.
RADIONUCLIDES (pCi/g)								
Cesium-137	1.7	1.7	0.42	0.46[5]	0.42[5]	26 / 52	Yes	Conc. > G.V. & Bkgd.
Plutonium-238	60	60	0.13	5.50[5]	11[5]	295 /	Yes	Conc. > G.V. & Bkgd.
Plutonium-239/240	0.0141	0.0141	0.18	5.50[5]	10[5]	7 / 12	No	Conc. < G.V. & Bkgd.
Potassium-40	34.9	24.9	37			37 / 37	No	Conc. < Bkgd.
Radium-224	12.2	12.2		0.85[6]	0.83[6]	25 / 25	No	Th-232 decay products
Radium-226	3.055	2.3	2	0.14[5]	0.13[5]	51 / 52	No	Th-232 decay products
Radium-228	1.52	1.25		0.85[6]	0.83[6]	25 / 25	No	Th-232 decay products

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Table II.2. Summary Table of All Soil Contaminants Detected (cont.)

Soil contaminants above detection limit	Maximum concentration Any Depth	Maximum concentration Shallow - only	Soil background	G.V. for construction worker	G.V. for site employee	Detects / Analyses	Carried through RRE?	Reason
Strontium-90	0.854	---	0.72	3.0[5]	57[5]	1 / 5	No	Conc. < G.V. > Bkgd.
Thorium-228	1.16	1.16	1.5	0.85[5]	0.83[5]	9 / 9	No	Conc. > G.V. < Bkgd.
Thorium-230	1.585	1.585	1.9	44.0[5]	81[5]	9 / 14	No	Conc. < G.V. & Bkgd.
Thorium-232	7	7	1.4	0.85[5,6]	0.83[5,6]	190 / [illegible]	Yes	Conc. > G.V. & Bkgd.
Thorium-234	1.48	1.17	1.2	11.0[7]	13.0[7]	25 / 25	No	Conc. < G.V.
Tritium	0.098	---	1.6	23500[5]	45000[5]	1 / 5	No	Conc. < G.V. & Bkgd.
Uranium-234	1.07	1.07	1.1	37.5[5]	70[5]	10 / 10	No	Conc. < G.V. & Bkgd.
Uranium-235	0.1195	0.1195	0.11	3.35[5]	3.1[5]	8 / 10	No	Conc. < G.V. > Bkgd.
Uranium-238	1.14	1.14	1.2	11.0[5]	13.0[5]	10 / 15	No	Conc. < G.V. & Bkgd.

NOTE: *Contaminants with no background or Guideline Value available were left blank.*

--- No shallow data available.

[1] - Hazard Quotient for both Ingestion and Inhalation. (decision made on 0.1 x G.V.)

[2] - Hazard Quotient for Ingestion only. (decision made on 0.1 x G.V.)

[3] - Total Risk 10^{-6} for both Ingestion and Inhalation.

[4] - Total Risk 10^{-6} for Ingestion only.

[5] - Total Risk 10^{-6} for Ingestion, Inhalation and External.

[6] - Guideline Values from Thorium-228 + D.

[7] - Guideline values from U-238 + D.

[8] - *F.O.D. = Frequency of detection. Contaminants with a F.O.D. greater than 5% were carried through the RRE.*

Table II.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells

Groundwater contaminants above detection limit	Maximum concentration	BVA background	G.V. for construction worker	G.V. for site employee	Carried through RRE?	Reason
ORGANICS (mg/L)						
Acetone	0.012		10[1]	10[2]	No	Conc. < G.V.
Bromodichloromethane	0.0037		0.0045[3]	0.0046[4]	No	Conc. < G.V.
2-Butanone	0.041		53[1]	61[2]	No	Conc. < G.V.
Chloroform	0.0022	0.0005	0.024[3]	0.047[4]	No	Conc. < G.V. > Bkgd.
1,1-Dichloroethane	0.0035		9.5[1]	10[2]	No	Conc. < G.V.
1,1-Dichloroethene	0.0017				Yes	No screening values
1,2-Dichloroethene	0.0047		2.0[2]	2.0[2]	No	Conc. < G.V.
1,2-cis-Dichloroethene	0.0021	0.0010	2.0[2]	2.0[2]	No	Conc. < G.V. > Bkgd.
1,2-trans-Dichloroethene	0.003		2.0[2]	2.0[2]	No	Conc. < G.V.
Dichloromethane - Methylene Chloride	0.0098		0.038[3]	0.038[4]	No	Conc. < G.V.
Isophorone	0.010		0.3[3]	0.3[4]	No	Conc. < G.V.
Tetrachloroethene	0.002		0.46[1]	1.0[2]	No	Conc. < G.V.
1,1,1-Trichloroethane	0.0018	0.0007			Yes	Conc. > Bkgd.
Trichloroethene	0.0046		0.024[3]	0.026[4]	No	Conc. < G.V.
Trichlorofluoromethane	0.0025		26[1]	31[2]	No	Conc. < G.V.
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087				Yes	No screening values
INORGANICS (mg/L)						
Alkalinity	335				No	Water quality parameter
Aluminum	0.0737	0.0375			No	Water quality parameter
Ammonia	0.58	0.162			No	Water quality parameter
Barium	0.0884	0.3102	7.1[1]	7.2[2]	No	Conc. < G.V. & Bkgd.
Cadmium	0.0077		0.051[1]	0.051[2]	Yes	Conc. > G.V.

Table II.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells (cont.)

Groundwater contaminants above detection limit	Maximum concentration	BVA background	G.V. for construction worker	G.V. for site employee	Carried through RRE?	Reason
Calcium	126	111			No	Water quality parameter
Chloride	133	106			No	Water quality parameter
Chromium	0.0249	0.0061	0.51[1]	0.51[2]	No	Conc. < G.V. > Bkgd.
Copper	0.593	0.0012			Yes	Conc. > Bkgd.
Dissolved Solids	719	603			No	Water quality parameter
Fluoride	0.18	0.419			No	Water quality parameter
Iron	0.780	4.065			No	Conc. < Bkgd.
Lead (soluble)	0.040	0.0101			Yes	Conc. > Bkgd.
Magnesium	39.6	40.43			No	Conc. < Bkgd.
Manganese	0.0248	0.2296	0.51[1]	0.51[2]	No	Conc. < G.V. & Bkgd.
Nitrate/Nitrite	4.9	5.349			No	Conc. < Bkgd.
Nitrate	2.55				No	Water quality parameter
Nitrite	0.066				No	Water quality parameter
Nitrogen	0.62	0.324			No	Water quality parameter
Organic Carbon	1.1	1.987			No	Conc. < Bkgd.
Phosphate	0.22	0.231			No	Conc. < Bkgd.
Potassium	3.8	4.461			No	Conc. < Bkgd.
Silver	0.0242		0.51[1]	0.51[2]	No	Conc. < G.V.
Sodium	82.4	62.43			No	Water quality parameter
Sulfate	83.0	142.7			No	Conc. < Bkgd.
Suspended Solids	8.0	26.44			No	Conc. < Bkgd.
Vanadium	0.0244	0.0171	0.71[1]	0.72[2]	No	Conc. < G.V. > Bkgd.
Zinc	0.0577	0.1196	31[1]	31[2]	No	Conc. < G.V. & Bkgd.

Table II.3. Summary Table of All Current Groundwater Contaminants Detected in BVA Production Wells (cont.)

Groundwater contaminants above detection limit	Maximum concentration	BVA background	G.V. for construction worker	G.V. for site employee	Carried through RRE?	Reason
RADIONUCLIDES (pCi/L)						
Actinium-227	0.335		0.26[4]	0.26[4]	Yes	Conc. > G.V.
Bismuth-210	0.39				Yes	No screening values
Plutonium-239/240	2.0	0.125	0.51[4]	0.51[4]	Yes	Conc. > G.V. & Bkgd.
Radium-226	0.4	0.996	0.54[4]	0.54[4]	No	Conc. < G.V. & Bkgd.
Strontium-85	25				No	1 detect, short 1/2 life
Strontium-90	0.3	0.975	2.9[4]	2.9[4]	No	Conc. < G.V. & Bkgd.
Thorium-228	2.17	0.779	0.69[4]	0.69[4]	No	Th-232 decay product
Thorium-230	1.99	0.289	4.3[4]	4.3[4]	No	Conc. < G.V. > Bkgd.
Thorium-232	0.1		0.69[4,5]	0.69[4,5]	No	Conc. < G.V.
Tritium	7200	1485	2200[4]	2200[4]	Yes	Conc. > G.V. & Bkgd.
Uranium-234	8.14	0.792	3.6[4]	3.6[4]	Yes	Conc. > G.V. & Bkgd.
Uranium-238	8.25	0.688	2.6[4]	2.6[4]	Yes	Conc. > G.V. & Bkgd.

[1] - Hazard Index for Ingestion + Dermal + Inhalation. (decision made on 0.1 x G.V.)
[2] - Hazard Index for Ingestion only. (decision made on 0.1 x G.V.)
[3] - Total Risk 10^{-6} for Ingestion + Dermal + Inhalation.
[4] - Total Risk 10^{-6} for Ingestion only.
[5] - Guideline values from Thorium-228 + D.

Table II.4. Summary Table of All Future Groundwater Contaminants Assumed to be in Production Wells with Input from the Bedrock Aquifer

Groundwater contaminants above detection limit	Estimated maximum concentration	BVA background	G.V. for construction worker	G.V. for site employee	Carried through RRE?	Reason
ORGANICS (mg/L)						
Acetone	0.0129		10[1]	10[2]	No	Conc < G.V.
Benzene	0.0001		0.0087[3]	0.0099[4]	No	Conc < G.V.
Benzoic Acid	0.071		400[1]	410[2]	No	Conc < G.V.
Bromodichloromethane	0.0037		0.0045[3]	0.0046[4]	No	Conc < G.V.
2-Butanone	0.0543		53[1]	61[2]	No	Conc < G.V.
Carbon Tetrachloride	1.3E-5		0.002[3]	0.0022[4]	No	Conc < G.V.
Chloroform	0.0022	0.0005	0.024[3]	0.047[4]	No	Conc < G.V. > Bkgd.
1,1-Dichloroethane	0.0035		9.5[1]	10[2]	No	Conc < G.V.
1,1-Dichloroethene	0.0017				Yes	No screening values
1,2-Dichloroethene	0.0050		2.0[2]	2.0[2]	No	Conc < G.V.
1,2-cis-Dichloroethene	0.0023	0.0010	2.0[2]	2.0[2]	No	Conc < G.V. > Bkgd.
1,2-trans-Dichloroethene	0.0032		2.0[2]	2.0[2]	No	Conc < G.V.
Bis (2-ethylhexyl)phthalate	0.0153	0.0084	0.019[3]	0.02[2]	No	Conc < G.V. & Bkgd
Isophorone	0.0100		0.3[3]	0.3[4]	No	Conc < G.V.
4-Methylphenol	0.0004		0.48[1]	0.51[2]	No	Conc < G.V.
Tetrachloroethene	0.0021		0.46[1]	1.0[2]	No	Conc < G.V.
Trichloroethene	0.0050		0.024[3]	0.026[4]	No	Conc < G.V.
1,1,1-Trichloroethane	0.0065	0.0007			Yes	Conc. > Bkgd.
Trichlorofluoromethane	0.0025		26[1]	31[2]	No	Conc < G.V.
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087				Yes	No screening values
Toluene	0.0002		16[1]	20[2]	No	Conc < G.V.
Total Xylenes	4.3E-5		200[2]	200[2]	No	Conc < G.V.
INORGANICS (mg/L)						
Antimony	0.0008	0.0006	0.041[1]	0.041[2]	No	Conc < G.V. > Bkgd.
Barium	0.0884	0.3102	7.1[1]	7.2[2]	No	Conc < G.V. & Bkgd.
Beryllium	0.0001		0.000066[3]	0.000067[4]	Yes	Conc > G.V.
Bismuth	0.0016				Yes	No screening values

Table II.4. Summary Table of All Future Groundwater Contaminants Assumed to be in Production Wells with Input from the Bedrock Aquifer (cont.)

Groundwater contaminants above detection limit	Estimated maximum concentration	BVA background	G.V. for construction worker	G.V. for site employee	Carried through RRE?	Reason
Cadmium	0.0077		0.051[1]	0.051[2]	Yes	Conc > G.V.
Chromium	0.4961	0.0061	0.51[1]	0.51[2]	Yes	Conc < G.V. > Bkgd.
Cobalt	0.0039				Yes	Conc > Bkgd.
Copper	0.5964	0.0012			Yes	Conc > Bkgd.
Cyanide	0.0001		2.0[1]	2.0[2]	No	Conc < Bkgd.
Iron	0.78	4.065			No	Conc < Bkgd.
Lead	0.04	0.0101			Yes	Conc > Bkgd.
Lithium	0.0036	0.0557			No	Conc < Bkgd.
Magnesium	43.974	40.428			No	Water quality parameter
Manganese	0.0248	0.2296	0.51[1]	0.51[2]	No	Conc < G.V. & Bkgd.
Molybdenum	0.0096	0.0056			Yes	Conc > Bkgd.
Nickel	0.1003	0.0350	2.0[1]	2.0[2]	No	Conc < G.V. > Bkgd.
Phosphate	0.3664	0.231			No	Water quality parameter
Potassium	6.0034	4.461			No	Water quality parameter
Silver	0.0242		0.51[1]	0.51[2]	No	Conc < G.V.
Vanadium	0.028	0.0171	0.71[1]	0.72[2]	No	Conc < G.V. > Bkgd.
Zinc	0.0577	0.1196	31[1]	31[2]	No	Conc < G.V. & Bkgd.
RADIONUCLIDES (pCi/L)						
Actinium-227	0.355		0.26[4]	0.26[4]	Yes	Conc. > G.V.
Bismuth-210	0.39				Yes	No screening values
Plutonium-238	0.0034	0.087	0.54[4]	0.54[4]	No	Conc < G.V. & Bkgd.
Plutonium-239/240	2.0199	0.125	0.51[4]	0.51[4]	Yes	Conc > G.V. & Bkgd.
Radium-226	0.6402	0.996	0.54[4]	0.54[4]	No	Conc < Bkgd.
Strontium-85	25				No	1 detect, short 1/2 life
Strontium-90	0.3121	0.975	2.9[4]	2.9[4]	No	Conc < G.V. & Bkgd.
Thorium-228	2.17	0.779	0.69[4]	0.69[4]	No	Th-232 decay product
Thorium-230	2.0645	0.289	4.3[4]	4.3[4]	No	Conc < G.V. > Bkgd.
Thorium-232	0.1422		0.69[4,5]	0.69[4,5]	No	Conc < G.V.

Table II.4. Summary Table of All Future Groundwater Contaminants Assumed to be in Production Wells with Input from the Bedrock Aquifer (cont.)

Groundwater contaminants above detection limit	Estimated maximum concentration	BVA background	G.V. for construction worker	G.V. for site employee	Carried through RRE?	Reason
Tritium	10427	1485	2200[4]	2200[4]	Yes	Conc > G.V. & Bkgd.
Uranium-233	0.0002		3.6[4]	3.6[4]	No	Conc < G.V.
Uranium-234	8.14	0.792	3.6[4]	3.6[4]	Yes	Conc > G.V. & Bkgd.
Uranium-235	0.0036	0.045	3.4[4]	3.4[4]	No	Conc < G.V. & Bkgd.
Uranium-235/236	0.0003		3.4[4]	3.4[4]	Yes	Conc < G.V.
Uranium-238	8.25	0.688	2.6[4]	2.6[4]	Yes	Conc > G.V. & Bkgd.

[1] - Hazard Index for Ingestion + Dermal + Inhalation. (decision made on 0.1 x G.V.)
[2] - Hazard Index for Ingestion only. (decision made on 0.1 x G.V.)
[3] - Total Risk 10^{-6} for Ingestion + Dermal + Inhalation.
[4] - Total Risk 10^{-6} for Ingestion only.
[5] - Guideline values from Thorium-228+D.

Table II.5. Soil Contaminants Carried Through RRE

Soil Constituents	Maximum concentration Any Depth	Maximum concentration Shallow (<2' deep)	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
ORGANICS (mg/kg)				
Benzo(a)anthracene	41.5	0.525	4.10[1]	Max Conc > G.V.
Benzo(a)pyrene	33.5	0.570	0.41[1]	Conc. > G.V.
Benzo(b)fluoranthene	53	0.740	4.10[1]	Max Conc > G.V.
Benzo(g,h,i) perylene	0.780	0.370		F.O.D. = 19%
Carbazole	0.165	0.165		F.O.D. = 18%
Fluorene	6.3	0.170		F.O.D. = 11%
Indeno(1,2,3-cd)pyrene	20.5	0.390	4.10[1]	Max. Conc. > G.V.
Naphthalene	1.65	0.230		F.O.D. = 8%
Phenanthrene	49.5	1.2		F.O.D. = 31%
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003		F.O.D. = 50%
INORGANICS (mg/kg)				
Antimony	39.2	39.2	85[5]	Conc. > G.V.
Arsenic	15.8	12.35	64[5]	Conc. > G.V. & Bkgd.
Bismuth	5.7	5.7		F.O.D. = 17%
Copper (total)	33.1	30.5	26[4]	Conc. > Bkgd.
RADIONUCLIDES (pCi/g)				
Cesium-137	1.7	1.7	0.46[2]	Conc. > G.V.
Plutonium-238	60	60	5.50[2]	Conc. > G.V.
Thorium-232	7	7	0.83[2,3]	Conc. > G.V.

[1] - Total Risk 10^{-6} for Ingestion only.
[2] - Total Risk 10^{-6} for Ingestion, Inhalation and External.
[3] - Guideline Values from Thorium-228+D.
[4] - Background value
[5] - Hazard Quotient for Ingestion only. (decision made on 0.1 x G.V.)
F.O.D. - Frequency of detection. Contaminants with a F.O.D. greater than 5% were carried through the RRE.

Table II.6. Current Groundwater Contaminants Carried Through RRE

Groundwater Constituents	Maximum concentration	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
ORGANICS (mg/L)			
1,1-Dichloroethene	0.0017	---	No Bkgd. or G.V. available
1,1,1-Trichloroethane	0.0018	0.0007[3]	Conc. > Bkgd.; no G.V. available
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	---	No Bkgd. or G.V. available
INORGANICS (mg/L)			
Cadmium	0.0077	0.051[1]	Conc. >G.V., no Bkgd. available
Copper	0.593	0.0012[3]	Conc. > Bkgd.; no G.V. available
Lead	0.040	0.0101[3]	Conc. > Bkgd.; no G.V. available
RADIONUCLIDES (pCi/L)			
Actinium-227	0.335	0.26[2]	Conc. > G.V.; no Bkgd. available
Bismuth-210	0.39	---	No Bkgd. or G.V. available
Plutonium-239/240	2.0	0.125[3]	Conc. > Bkgd. & G.V.
Tritium	7200	1485[2]	Conc. > Bkgd. & G.V.
Uranium-234	8.14	0.792[3]	Conc. > Bkgd. & G.V.
Uranium-238	8.25	0.688[3]	Conc. > Bkgd. & G.V.

[1] - Hazard Index for Ingestion + Dermal + Inhalation. (decision made on 0.1 x G.V.)
[2] - Total Risk 10^{-6} for Ingestion only.
[3] - Background value.

Table II.7. Summary Table of All Bedrock Aquifer Contaminants

Bedrock Groundwater Compounds Above Detection	Maximum Concentration	Bedrock Background Concentration	Contribute to Future Groundwater Concentration?	Reason
ORGANICS (mg/L)				
Acetone	0.028	NA	Yes	
Alpha Chlordane	0.000069	0.00045	No	Conc. < background
Benzene	0.005	NA	Yes	
Benzoic Acid	0.99	NA	Yes	
Bis(2-ethylhexyl)phthalate	0.950	NA	Yes	
2-Butanone	0.095	NA	Yes	
Carbon Disulfide	0.005	NA	No	Common lab contaminant
Carbon Tetrachloride	0.002	NA	Yes	
Chloroform	0.0024	NA	Yes	
1,2-Dichloroethene	0.035	NA	Yes	
1,2-cis-Dichloroethene	0.017	NA	Yes	
1,2-trans-Dichloroethene	0.01	NA	Yes	
Methylene Chloride	0.0089	NA	No	Common lab contaminant
4-Methylphenol	0.061	NA	Yes	
Organic Carbon	47.9	NA	No	Indicator parameter
Tetrachloroethene	0.002	NA	Yes	
1,1,1-Trichloroethane	0.001	NA	Yes	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0022	NA	Yes	
Toluene	0.005	NA	Yes	
Trichloroethene	0.03	NA	Yes	
Trichlorofluoromethane	0.002	NA	Yes	
Xylenes, Total	0.006	NA	Yes	
INORGANICS (mg/L)				
Alkalinity	447	NA	No	Indicator parameter
Aluminum	28.5	7.82	No	
Ammonia	21.7	NA	No	Indicator parameter
Antimony	0.0128	0.0012	Yes	
Arsenic	0.0187	0.084	No	Conc. < background
Barium	0.284	0.53712	No	Conc. < background
Beryllium	0.0023	0.00065	Yes	
Bismuth	0.051	0.0296	Yes	
Cadmium	0.0131	0.0138	No	Conc. < background
Calcium	935	111	No	Indicator parameter
Chloride	4770	NA	No	Indicator parameter
Chromium	15.1	0.104	Yes	
Cobalt	0.283	0.0179	Yes	
Copper	0.277	0.19462	Yes	
Cyanide	0.0142	0.01	Yes	
Dissolved Solids	4800	NA	No	Indicator parameter

Table II.7. Summary Table of All Bedrock Aquifer Contaminants (cont.)

Bedrock Groundwater Compounds Above Detection	Maximum Concentration	Bedrock Background Concentration	Contribute to Future Groundwater Concentration?	Reason
Fluoride	2.4	1.3	No	Water quality parameter
Iron	181	526.097	No	Conc. < background
Lead	0.0404	0.230	No	Conc. < background
Lithium	0.331	0.208	Yes	
Magnesium	279	65.1	No	Water quality parameter
Manganese	3.03	4.78754	No	Conc. < background
Molybdenum	0.32	0.0743	Yes	
Nickel	7.22	0.0249	Yes	
Nitrate	2.1	NA	No	Water quality parameter
Nitrate/Nitrite	21.1	9.55	No	Water quality parameter
Nitrite	0.314	NA	No	Water quality parameter
Nitrogen	4.6	NA	No	Water quality parameter
Phosphate	10.1	NA	No	Water quality parameter
Potassium	314	7.3	No	Water quality parameter
Sodium	3790	351.63	No	Water quality parameter
Sulfate	399	NA	No	Water quality parameter
Suspended Solids	2880	NA	No	
Tin	0.0659	0.118	No	Conc. < background
Vanadium	0.0703	0.0132	Yes	
Zinc	0.399	92.83128	No	Conc. < background
RADIONUCLIDES (pCi/L)				
Americium-241	0.217	3.95	No	Conc. < background
Bismuth-210	0.26	24.94	No	Conc. < background
Plutonium-238	0.236	0.08	Yes	
Plutonium-239/240	0.378	0.18	Yes	
Potassium-40	129	455.56	No	Conc. < background
Radium-226	9.47	0.95	Yes	
Strontium-90	1.77	2.22	No	Conc. < background
Thorium-228	4.86	1.45	No	Th-232 decay product
Thorium-230	4.07	4.86	No	Conc. < background
Thorium-232	2.11	0.92	Yes	
Tritium	61020	4658	Yes	
Uranium-233	0.0272	NA	Yes	
Uranium-234	3.23	6.23	No	Conc. < background
Uranium-235	0.3	0.27	Yes	
Uranium-235/236	0.0471	NA	Yes	
Uranium-238	1.34	9.28	No	Conc. < background

Table II.8. Future Groundwater Contaminants Carried Through RRE

Groundwater Constituents	Estimated Maximum Concentration	Screening Concentration (either background or G.V.)	Reason for carrying through RRE
ORGANICS (mg/L)			
1,1-Dichloroethene	0.0017	---	No Bkgd. or G.V. available
1,1,1-Trichloroethane	0.0065	0.0007[3]	Conc > Bkgd.; no G.V. available
1,1,2,-Trichloro-1,2,2-trifluoroethane	0.0087	---	No Bkgd. or G.V. available
INORGANICS (mg/L)			
Beryllium	0.0001	6.6E-05[2]	Conc. > G.V.
Bismuth	0.0016	---	No Bkgd. or G.V. available
Cadmium	0.0077	0.051[3]	Conc > G.V.; no Bkgd. available
Chromium	0.4961	0.0061[3]	Conc > Bkgd. and G.V.
Cobalt	0.0039	0[3]	Conc > Bkgd.; no G.V. available
Copper	0.5964	0.0012[3]	Conc > Bkgd.; no G.V. available
Lead	0.04	0.010[3]	Conc > Bkgd.; no G.V. available
Molybdenum	0.0096	0.0056[3]	Conc > Bkgd.; no G.V. available
RADIONUCLIDES (pCi/L)			
Actinium-227	0.355	0.26[1]	Conc > G.V.; no Bkgd. available
Bismuth-210	0.39	---	No Bkgd. or G.V. available
Plutonium-239/240	2.020	0.125[3]	Conc > Bkgd. and G.V.
Tritium	10427	1485[3]	Conc > Bkgd. and G.V.
Uranium-234	8.14	0.792[3]	Conc > Bkgd. and G.V.
Uranium-238	8.25	0.688[3]	Conc > Bkgd. and G.V.

[1] - Total Risk 10^{-6} for Ingestion only.
[2] - Total Risk 10^{-6} for Ingestion + Dermal + Inhalation
[3] - Background value.

3.0 EXPOSURE ASSESSMENT

The Department of Energy, Ohio EPA, the U.S. EPA and the Mound Facility stakeholders have agreed that the future use of the Mound Plant property will be commercial/industrial use. Based on the RREM guidance for the Mound facility, two receptor scenarios have been developed and will be carried through this evaluation, 1) an onsite construction worker, and 2) a site employee engaged in non-construction work activities. Several potential exposure pathways exist for each scenario. The pathway analysis will be based on either known current exposures or assumed future exposures.

3.1 IDENTIFICATION OF EXPOSURE SCENARIOS

The two exposure scenarios that were examined are the onsite construction worker and the site employee engaged in non-construction activities. The construction worker and site employee are assumed to be exposed to soil contaminated at the level described by currently available data. The workers are assumed to be exposed to the existing soil contamination both now and into the future. For the groundwater pathways, both current and future exposures are assumed. Current groundwater exposures will be estimated based on the current production well (Buried Valley Aquifer) conditions. Future BVA groundwater contamination is assumed to be made up of a mix of known bedrock aquifer contamination that will enter the BVA groundwater and become the future BVA contamination to which construction workers and site employees would be exposed.

3.1.1 Construction Worker Scenario

It is assumed that activities requiring earth-moving, such as construction of new buildings, will occur in Release Block D. These construction activities could result in worker exposure to contaminants in soil, on dust particles, in air, and in groundwater. This scenario characterizes the potential exposure of a construction worker assumed to work on the property 8 hours per day for 250 days per year over a 5 year period. The construction worker is assumed to be an adult weighing 70 kg. The amount of soil ingested is 480 mg/da and is reflective of "heavy" construction-type work. All parameters needed to calculate intakes are specified in the RREM.

3.1.2 Site Employee Scenario

It is assumed that normal work-site activities associated with light industry, small business, and general office work will occur in the Release Block D Mound property. These activities could result in worker exposures to contaminants in soil, on dust particles, in air, and in groundwater. This scenario characterizes the potential exposure of a site employee assumed to work on the property 8 hours per day for 250 days per year over a 25 year period. No exposure to potential interior building contamination is assumed or addressed here. The site employee is assumed to be an adult weighing 70 kg. The site employee is assumed to ingest 50 mg/day of contaminated soil, the amount incidentally ingested while working at the site. All parameters needed to calculate intakes are specified in the RREM.

3.2 IDENTIFICATION OF EXPOSURE PATHWAYS

An exposure pathway describes the course a chemical or radionuclide takes from a source to an exposed individual. An exposure pathway generally consists of a source and mechanism of chemical or radionuclide release, an environmental compartment in which the contaminant is retained or transported, a human or environmental receptor, and an exposure route. As an example, a source of contamination may be shallow soil that received a spill, the environmental compartment may be contaminated soil that becomes windborne, and a construction worker may be the receptor who is exposed by inhaling contaminated airborne particulates. A source may also be an exposure point, such as contaminated groundwater or soil that is directly ingested.

3.2.1 Construction Worker Exposure Pathways

Several potential exposure pathways have been identified and will be addressed for the onsite construction worker (Figure 3.1). Two airborne exposure pathways will be addressed. The first potential air exposure pathway assumes inhalation of airborne contaminated soil particulates. The second potential air pathway assumes inhalation of volatile emissions from soil. The airborne exposures are assumed to be continuous when the construction worker is onsite.

Three groundwater exposure pathways will be addressed. All groundwater is assumed to be withdrawn from the Buried Valley Aquifer (BVA). The first potential groundwater exposure pathway assumes ingestion of BVA groundwater as drinking water. The second groundwater pathway assumes inhalation of volatile contaminants from a daily shower at the site. The third groundwater pathway assumes dermal contact with BVA groundwater during showering. Calculations will be made based on both currently known and future estimated groundwater concentrations

Three soil exposure pathways will be addressed. The first potential soil exposure pathway assumes inadvertent ingestion of small amounts of contaminated soil. The second soil pathway assumes dermal contact with soil during construction activities. The third soil pathway assumes external exposure to ionizing radiation from radionuclides in soil. Incidental ingestion, dermal contact, and external exposure are assumed to occur daily.

3.2.2 Site Employee Exposure Pathways

Several potential exposure pathways have been identified and will be addressed for the site employee (Figure 3.1). Two airborne exposure pathways will be addressed. The first potential air exposure pathway assumes inhalation of airborne contaminated soil particulates. The second potential air pathway assumes inhalation of volatile emissions from soil.

A single groundwater exposure pathway will be addressed. All groundwater is assumed to be withdrawn from the Buried Valley Aquifer (BVA). The potential groundwater exposure pathway assumes ingestion of BVA groundwater as drinking water. The site employee is not assumed to shower at the site. Calculations will be made based on both currently known and future estimated groundwater concentrations.

Two soil exposure pathways will be addressed. The first potential soil exposure pathway assumes inadvertent ingestion of small amounts of contaminated shallow (<2 ft) soil on a daily basis. The soil pathway that assumes dermal contact with soil during daily activities is not addressed for site employees as daily soil contact is assumed to be negligible. The second soil pathway that is addressed assumes external exposure to ionizing radiation from radionuclides in soil. Incidental ingestion and external exposure are assumed to occur daily.

3.3 EXPOSURE CALCULATIONS

The calculated contaminant exposures to the construction workers and site employees were made for each of the appropriate pathways. The construction worker and site employee exposure pathways were described above and are shown in Figure 3.1. Each pathway described below is numbered one through eight as shown in the figure.

3.3.1 Exposure Pathways Intake Calculations

There are eight construction worker pathways and five site employee pathways described above. Equations describing the intake of Release Block D constituents were taken from the RREM (Appendix D). Equations were adapted from U.S. EPA Risk Assessment Guidance for Superfund (RAGS) Parts A and B (1989, 1991) and the Dermal Exposure Assessment: Principles and Applications - Interim Guidance (1992).

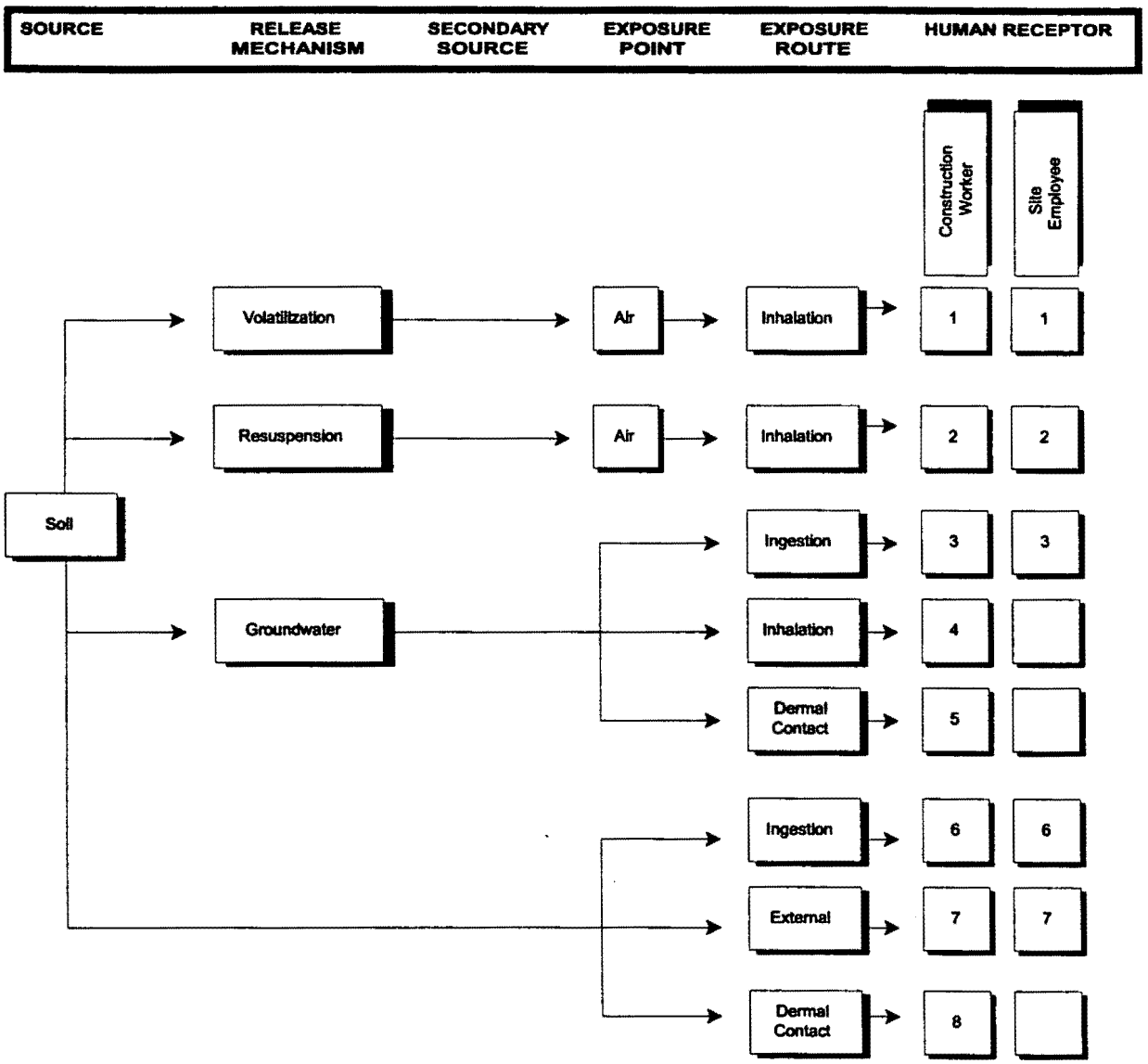

Figure 3.1. Residual Risk Evaluation Exposure Scenarios

3.3.1.1 Inhalation of Volatile Air Contaminants From Soil

Exposures of noncarcinogens and carcinogens via inhalation of volatile air contaminants were not calculated for Release Block D as no volatile compounds were detected in Release Block D soil. If volatile contaminants were present in the Release Block D soil, exposures would be calculated using the equations presented in Appendix D.

3.3.1.2 Inhalation of Dust-bound Contaminants

Exposures of noncarcinogens, carcinogens and radionuclides may occur via inhalation of soil-bound contaminants resuspended into the atmosphere attached to dust. The exposures of dust-bound contaminants inhaled by the onsite construction worker and the site employee were calculated using the intake equations shown in Appendix D.

3.3.1.3 Ingestion of Drinking Water

Exposures of noncarcinogens, carcinogens and radionuclides via ingestion of one liter of drinking water each day were calculated using the intake equations shown in Appendix D. This pathway applies to both construction workers and site employees.

3.3.1.4 Inhalation of Volatile Air Contaminants During Showering

Exposures of noncarcinogens, carcinogens and radionuclides via inhalation of volatile air contaminants derived from a 10 minute shower once daily were calculated using the intake equations shown in Appendix D. Tritium (H-3) is the only radionuclide to which this pathway applies. This pathway applies only to the construction worker.

3.3.1.5 Dermal Contact With Groundwater-derived Shower Water

Exposures of noncarcinogens, carcinogens and radionuclides via dermal contact of groundwater contaminants derived from a 10 minute shower once daily were calculated using the intake equations shown in Appendix D. Tritium (H-3) is the only radionuclide to which this pathway applies. This pathway applies only to the construction worker.

3.3.1.6 Ingestion of Soil-bound Contaminants

Exposures of noncarcinogens, carcinogens and radionuclides via ingestion of soil-bound contaminants were calculated using the intake equations shown in Appendix D. This pathway applies to both construction workers and site employees, although the amount of soil ingested through incidental contact with soil is 480 mg/day for the construction worker and only 50 mg/day for the site employee.

3.3.1.7 External Exposure to Radiation

Exposures of radionuclides during daily presence at the site were calculated using the exposure equation shown in Appendix D. This pathway applies to both construction workers and site employees.

3.3.1.8 Dermal Contact With Soil

Exposures of noncarcinogens and carcinogens via dermal contact with soil during daily activities contaminants were calculated using the intake equations shown in Appendix D. This pathway applies only to construction workers as site employees are not assumed to be engaged in work activities providing direct contact with contaminated soil.

3.3.2 Contaminant Exposures

Table III.1 lists the soil contaminants carried through the RRE process at Release Block D for all onsite construction workers and site employees. Table III.2 lists the current groundwater contaminants carried through the RRE process for Release Block D. Table III.3 lists the future groundwater contaminants carried through the Release Block D RRE. The soil and groundwater exposure concentrations (C_{soil} and C_{gw}) are listed. The total concentration was based either on the measured maximum concentration for Release Block D or the 95th% UCL of the arithmetic mean or geometric mean, as appropriate. The total concentration is comprised of possible background concentrations plus any incremental additional contamination above background. The background concentration, if available, and the incremental concentration above background that is attributed to Release Block D (for soil) or Mound Facility (for groundwater) activities are also listed. Also shown are the chemical-specific parameters needed to calculate dermal exposures from soil or water (ABS, Kp, and T). The number of detected values and analyses for current groundwater contaminants are listed (Table III.2).

Several contaminants had sufficient concentration data to calculate credible 95th% UCL of the mean (either geometric or arithmetic). To calculate the 95th% UCL, the range of concentrations from a contaminant with 20 or more samples was divided into 5% increments. The number of samples which fell into each increment was counted and divided into the total number of samples of that contaminant to provide a probability distribution. The probability distributions were then added cumulatively, and the concentrations at the 95% cumulative probability distribution were used in the calculations. The plotted distributions of contaminants with less than about 20 values often did not appear to be either log normal or normal distributions. Therefore, a decision was made to calculate 95th% UCL values for contaminants with a sample size of 20 or more.

In soil, all contaminants except carbazole, bismuth and 1,1,2-trichloro-1,2,2-trifluoroethane for both construction worker and site employees, and the exposures of fluorene and naphthalene to site employees, had sufficient concentration data (n = 20 or more) to allow a calculation of the 95th% UCL of the mean. An examination of the frequency distributions for plutonium-238 show them to be log normally distributed, so the 95th% UCL is based on log-transformed data. The 95th% UCLs are considered the total concentrations. Background concentrations were subtracted from the total to obtain the incremental concentration attributed to the site (Table III.1). In the case of Th-232, cesium-137, copper and arsenic, this resulted in incremental concentrations of effectively zero.

Similarly in groundwater (currently in the BVA), contaminants for which 95th% UCL values were calculated are indicated in Table III.2. These values were considered the total concentrations, as were the maximum BVA groundwater concentrations for all contaminants with fewer than 20 data points. Background concentrations were subtracted from the total concentrations to obtain the incremental concentration attributed to the site (Table III.2). In the case of lead, this resulted in an incremental concentration of effectively zero.

Future potential groundwater concentrations were estimated by combining known bedrock aquifer contamination with known BVA contamination. The procedures for calculation of bedrock aquifer contamination and resulting BVA contamination projected for the future, are detailed in Appendix C. The resulting contaminant concentrations are considered the estimated total concentrations. Background concentrations were subtracted from the total concentrations to obtain the incremental concentration attributed to the site (Table III.3). In the case of lead, this resulted in an incremental concentration of effectively zero.

Based on the nature of the exposure pathways and characteristics of the Release Block D contaminants, some pathways need not be evaluated. In soil, nine organics, two inorganics and one radionuclide contaminant carried through the RRE have a low degree of volatility and hence, are not considered here as vapor-phase contaminants. Therefore, the inhalation Pathway 1 (inhalation of volatile air contaminants from soil) was not addressed at Release Block D. The exception is 1,1,2-trichloro-1,2,2-trifluoroethane. Although this organic compound is very volatile, there are no health-

based inhalation criteria available for it. Therefore, a Pathway 1 calculation could not be completed. The soil dermal exposure pathway, which assumes direct contact with soil, is addressed only with the construction worker as the site employee is assumed to come into negligible contact with Release Block D soil. All other soil pathways will be addressed for the soil contaminants. Intakes of Release Block D soil contaminants based on the incremental concentrations attributable to the site, are shown in Table III.4 for the construction worker and in Table III.7 for the site employee. Intakes of Release Block D soil contaminants based on the total and background concentrations at the site, are shown in Appendix F for both the construction worker and site employee.

In groundwater, contaminant exposures were calculated for all organic, inorganic, and radionuclide contaminants for the groundwater ingestion pathway with both construction workers and site employees.

For construction workers only, dermal exposures during showering were calculated for all organic and inorganic contaminants, as well as tritium. Also for construction workers only, inhalation exposures were calculated for volatile organic contaminants and tritium. Site employees are not assumed to shower at the site.

Currently, BVA groundwater, the source of potable water available for use at Release Block D, has three volatile organic, three inorganic, and six radionuclide contaminants that were carried through the RRE (Table III.2). Intakes of Release Block D current groundwater contaminants based on the incremental concentrations attributable to the site, are shown in Table III.5 for the construction worker and in Table III.8 for the site employee. Intakes of Release Block D current groundwater contaminants based on the total and background concentrations at the site, are shown in Appendix F for both the construction worker and site employee.

Future BVA groundwater has three volatile organic, eight inorganic, and six radionuclide contaminants that were carried through the RRE (Table III.3). Intakes of Release Block D future groundwater contaminants based on the incremental concentrations attributable to the site, are shown in Table III.6 for the construction worker and in Table III.9 for the site employee. Intakes of Release Block D future groundwater contaminants based on the total and background concentrations at the site, are shown in Appendix F for both the construction worker and site employee.

Table III.1. Soil Constituents Carried through Release Block D RRE

Constituent	C_{soil}					ABS
	Total[1] Construction Worker	Total[1] Site Employee	BG[2]	Increment Construction Worker	Increment Site Employee	
ORGANICS (mg/kg)						
Benzo(a)anthracene	3.776	0.371	NAv	3.776	0.371	0.1
Benzo(a)pyrene	3.107	0.365	NAv	3.107	0.365	0.1
Benzo(b)fluoranthene	4.686	0.386	NAv	4.686	0.386	0.1
Benzo(g,h,i)perylene	0.511	0.346	NAv	0.511	0.346	0.1
Carbazole	0.165	0.165	NAv	0.165	0.165	0.1
Fluorene	0.894	0.17	NAv	0.894	0.170	0.1
Indeno(1,2,3-cd)pyrene	2.059	0.357	NAv	2.059	0.357	0.1
Naphthalene	0.569	0.23	NAv	0.569	0.230	0.1
Phenanthrene	4.447	0.436	NAv	4.447	0.436	0.1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.003	0.003	NAv	0.003	0.003	0.1
INORGANICS (mg/kg)						
Antimony	14.635	18.118	NAv	14.635	18.118	0.01
Arsenic[3]	4.927	4.504	8.6	0	0	0.01
Bismuth	5.7	5.7	NAv	5.7	5.7	0.01
Copper[3]	18.513	18.167	26	0	0	0.01
RADIONUCLIDES (pCi/g)						
Cesium-137[3]	0.309	0.12	0.42	0	0	NAp
Plutonium-238[4]	2.69	2.75	0.13	2.56	2.62	NAp
Thorium-232[3]	1.004	1.005	1.4	0	0	NAp

ABS - Absorption factor (unitless)
NAv - Not Available
NAp - Not Applicable

1 Soil exposure concentration for Release Block D, based on the 95th% UCL for all parameters with greater than 20 analyses completed. These exclude the Site Employee value for fluorene and naphthalene, all carbazole, bismuth and 1,1,2-trichloro-1,2,2-trifluoroethane data. These parameters use the maximum concentration value since N<20 samples.

2 Soil background concentration for Mound facility (see RREM, DOE, 1996).

3 Arsenic, cesium-137, copper and thorium-232 total values were less than the background value therefore not carried thru the RRE.

4 Pu-238 values were log-normally distributed and hence, concentrations (95th% UCL) shown were based on the log-transformed data.

Table III.2. Current Groundwater Constituents Carried through Release Block D RRE

Groundwater Constituent	C_{gw}			Kp	T	Detects / Analyses
	Total[1]	BG[2]	Increment[3]			
ORGANICS (mg/L)						
1,1-Dichloroethene	0.0017	NAv	0.0017	0.016	0.34	8/11
1,1,1-Trichloroethane[4]	0.0007	0.0007	0.000001	0.017	0.57	21/41
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	NAv	0.0087	NAv	NAv	3/3
INORGANICS (mg/L)						
Cadmium[4]	0.0019	NAv	0.0019	0.001	NAp	7/28
Copper	0.593	0.0012	0.5918	0.001	NAp	6/12
Lead[4]	0.0025	0.0101	0	0	NAp	17/28
RADIONUCLIDES (pCi/L)						
Actinium-227	0.335	NAv	0.335	NAp	NAp	1/1
Bismuth-210	0.39	NAv	0.39	NAp	NAp	2/2
Plutonium-239/240	2	0.125	1.875	NAp	NAp	3/3
Tritium[4]	2709	1485	1224	NAp	NAp	23/23
Uranium-234	8.14	0.792	7.348	NAp	NAp	11/11
Uranium-238	8.25	0.688	7.562	NAp	NAp	9/9

Kp - Permeability constant for dermal exposures.
T - Tau, a chemical specific timing constant for dermal exposures.
NAv - Not Available
NAp - Not Applicable

1 - Groundwater exposure concentrations for Release Block D, based on measured data from Production Wells 0076 and 0271. All total values were C_{max} from Table II.2. except 1,1,1-Trichloroethane, Cadmium, Lead and Tritium.
2 - Groundwater background concentrations for the BVA (see RREM).
3 - Increment above background for Release Block D groundwater contaminant concentrations.
4 - Total concentration was based 95th% UCL on of mean (by log transformed values except Lead). These contaminants were carried through the RRE because C_{max} > BG and/or GV.

Table III.3. Future Groundwater Constituents Carried through Release Block D RRE

Groundwater Constituent	C_{gw}			Kp	T
	Estimated Total[1]	BG[2]	Increment[3]		
ORGANICS (mg/L)					
1,1-Dichloroethene	0.0017	NAv	0.0017	0.016	0.34
1,1,1-Trichloroethane[4]	0.0054	0.0007	0.0047	0.017	0.57
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0087	NAv	0.0087	NAv	NAv
INORGANICS (mg/L)					
Beryllium	0.0001	NAv	0.0001	0.001	NAp
Bismuth	0.0016	NAv	0.0016	0.001	NAp
Cadmium[4]	0.0019	NAv	0.0019	0.001	NAp
Chromium	0.4961	0.0061	0.49	0.002	NAp
Cobalt	0.0039	NAv	0.0039	0.0004	NAp
Copper	0.5964	0.0012	0.5952	0.001	NAp
Lead[4]	0.002509	0.01005	0	0	NAp
Molybdenum	0.0096	0.0056	0.004	0.001	NAp
RADIONUCLIDES (pCi/L)					
Actinium-227	0.355	NAv	0.355	NAp	NAp
Bismuth-210	0.39	NAv	0.39	NAp	NAp
Plutonium-239/240	2.02	0.125	1.895	NAp	NAp
Tritium[4]	5936	1485	4451	NAp	NAp
Uranium-234	8.14	0.792	7.348	NAp	NAp
Uranium-238	8.25	0.688	7.562	NAp	NAp

Kp - Permeability constant for dermal exposures.
T - Tau, a chemical specific timing constant for dermal exposures.
NAv - Not Available
NAp - Not Applicable
[1] - Estimated future groundwater exposure concentrations for Release Block D, based on measured data from Production Wells 0076 and 0271 and bedrock wells. All total values were C_{max} from Table II.3. except 1,1,1-Trichloroethane, Cadmium, Lead and Tritium.
[2] - Groundwater background concentrations for the BVA (see RREM).
[3] - Increment above background for estimated future Release Block D groundwater contaminant concentrations.
[4] - Total concentration was based on 95th% UCL of mean (by log transformed values except Lead). These contaminants were carried through the RRE because C_{max} > BG and/or GV.

Table III.4. Construction Worker Calculated Constituent Intakes for Soil (Incremental*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation	Pathway 8 Soil Dermal
Organics								
Benzo(a)anthracene	NA	1.233E-11	NA	NA	NA	1.267E-06	NA	2.639E-07
Benzo(a)pyrene	NA	1.015E-11	NA	NA	NA	1.042E-06	NA	2.172E-07
Benzo(b)fluoranthene	NA	1.530E-11	NA	NA	NA	1.572E-06	NA	3.275E-07
Benzo(g,h,i)perylene	NA	1.669E-12	NA	NA	NA	1.714E-07	NA	3.571E-08
Carbazole	NA	5.389E-13	NA	NA	NA	5.535E-08	NA	1.153E-08
Fluorene	NA	4.088E-11	NA	NA	NA	4.199E-06	NA	8.748E-07
Indeno(1,2,3-cd)pyrene	NA	6.725E-12	NA	NA	NA	6.907E-07	NA	1.439E-07
Naphthalene	NA	2.602E-11	NA	NA	NA	2.672E-06	NA	5.568E-07
Phenanthrene	NA	2.033E-10	NA	NA	NA	2.089E-05	NA	4.351E-06
1,1,2-Trichloro-1,2,2-trichloroethane	NA	1.372E-13	NA	NA	NA	1.409E-08	NA	2.935E-09
Inorganics								
Antimony	NA	6.692E-10	NA	NA	NA	6.874E-05	NA	1.432E-06
Bismuth	NA	2.606E-10	NA	NA	NA	2.677E-05	NA	5.577E-07
Radionuclides								
Plutonium-238 (pCi)	NA	1.495E-02	NA	NA	NA	1.536E+03	3.836E+00	NA

* - Incremental soil concentrations and resulting intakes obtained by subtracting background from total concentrations.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Intakes due to exposure to total and background concentrations presented in Appendix F.

Note: Intakes for carcinogens are calculated as average daily dose-lifetime,
Intakes for non-carcinogens are calculated as average daily doses.
Carcinogen status presented in Section 4 of this report.

NA - Not applicable.

Table III.5. Construction Worker Calculated Constituent Intakes from Groundwater (Current -Increment*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal
Organics								
1,1-Dichloroethene	NA	NA	1.663E-05	8.268E-08	3.401E-06	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	1.174E-08	8.170E-10	3.302E-09	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	8.513E-05	5.923E-06	NAv	NA	NA	NA
Inorganics								
Cadmium	NA	NA	1.859E-05	NA	6.023E-08	NA	NA	NA
Copper	NA	NA	5.791E-03	NA	1.876E-05	NA	NA	NA
Lead	NA	NA	0.000E+00	NA	0.000E+00	NA	NA	NA
Radionuclides								
Actinium-227 (pCi)	NA	NA	4.188E+02	NA	NA	NA	NA	NA
Bismuth-210 (pCi)	NA	NA	4.875E+02	NA	NA	NA	NA	NA
Plutonium-239/240 (pCi)	NA	NA	2.344E+03	NA	NA	NA	NA	NA
Tritium (pCi)	NA	NA	1.530E+06	1.426E+04	7.282E+03	NA	NA	NA
Uranium-234 (pCi)	NA	NA	9.185E+03	NA	NA	NA	NA	NA
Uranium-238 (pCi)	NA	NA	9.453E+03	NA	NA	NA	NA	NA

NAv - Data not available to perform this calculation.

* - Incremental groundwater concentrations and resulting intakes obtained by subtracting background from total concentrations.

Intakes due to exposure to total and background concentrations presented in Appendix F.

NA - Not applicable.

Table III.6. Construction Worker Calculated Constituent Intakes from Groundwater (Future - Incremental*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal
Organics			
1,1-Dichloroethene	1.663E-05	8.268E-08	3.401E-06
1,1,1-Trichloroethane	4.630E-05	3.222E-06	1.302E-05
1,1,2-Trichloro-1,2,2-trifluoroethane	8.513E-05	5.923E-06	NAv
Inorganics			
Beryllium (carcinogen)	6.989E-08	NA	2.264E-10
Beryllium (non-carcinogen)	9.785E-07	NA	3.170E-09
Bismuth	1.566E-05	NA	5.072E-08
Cadmium	1.859E-05	NA	6.023E-08
Chromium	4.795E-03	NA	3.107E-05
Cobalt	3.816E-05	NA	4.945E-08
Copper	5.824E-03	NA	1.887E-05
Lead	0.000E+00	NA	0.000E+00
Molybdenum	3.917E-05	NA	1.269E-07
Radionuclides			
Actinium-227 (pCi)	4.188E+02	NA	NA
Bismuth-210 (pCi)	4.875E+02	NA	NA
Plutonium-239/240 (pCi)	2.369E+03	NA	NA
Tritium (pCi)	5.563E+06	5.184E+04	2.648E+04
Uranium-234 (pCi)	9.185E+03	NA	NA
Uranium-238 (pCi)	9.453E+03	NA	NA

* - Incremental groundwater concentrations and resulting intakes obtained by subtracting background from total concentrations. Intakes due to exposure to total and background concentrations presented in Appendix F.
NA - Not applicable.

Table III.7. Site Employee Calculated Constituent Intakes from Soil (Incremental*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation
Organics					
Benzo(a)anthracene	NA	6.058E-12	NA	6.482E-08	NA
Benzo(a)pyrene	NA	5.960E-12	NA	6.378E-08	NA
Benzo(b)fluoranthene	NA	6.303E-12	NA	6.744E-08	NA
Benzo(g,h,i)perylene	NA	5.650E-12	NA	6.046E-08	NA
Carbazole	NA	2.694E-12	NA	2.883E-08	NA
Fluorene	NA	7.773E-12	NA	8.317E-08	NA
Indeno(1,2,3-cd)pyrene	NA	5.830E-12	NA	6.238E-08	NA
Naphthalene	NA	1.052E-11	NA	1.125E-07	NA
Phenanthrene	NA	1.994E-11	NA	2.133E-07	NA
1,1,2-Trichloro-1,2,2-trichloroethane	NA	1.372E-13	NA	1.468E-09	NA
Inorganics					
Antimony	NA	8.284E-10	NA	8.864E-06	NA
Bismuth	NA	2.606E-10	NA	2.789E-06	NA
Radionuclides					
Plutonium-238 (pCi)	NA	7.652E-02	NA	8.188E+02	4.365E+00

* - Incremental soil concentrations and resulting intakes obtained by subtracting background from total concentrations.
** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).
Intakes due to exposure to total and background concentrations presented in Appendix F.
NA - Not applicable.

Table III.8. Site Employee Calculated Constituent Intakes from Groundwater (Current - Increment*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation
Organics					
1,1-Dichloroethene	NA	NA	1.663E-05	NA	NA
1,1,1-Trichloroethane	NA	NA	1.174E-08	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	8.513E-05	NA	NA
Inorganics					
Cadmium	NA	NA	1.859E-05	NA	NA
Copper	NA	NA	5.791E-03	NA	NA
Lead	NA	NA	0.000E+00	NA	NA
Radionuclides					
Actinium-227 (pCi)	NA	NA	2.094E+03	NA	NA
Bismuth-210 (pCi)	NA	NA	2.438E+03	NA	NA
Plutonium-239/240 (pCi)	NA	NA	1.172E+04	NA	NA
Tritium (pCi)	NA	NA	7.650E+06	NA	NA
Uranium-234 (pCi)	NA	NA	4.593E+04	NA	NA
Uranium-238 (pCi)	NA	NA	4.726E+04	NA	NA

* - Incremental groundwater concentrations and resulting intakes obtained by subtracting background from total concentrations.
Intakes due to exposure to total and background concentrations presented in Appendix F.
NA - Not applicable.

Table III.9. Site Employee Calculated Constituent Intakes from Groundwater (Future - Incremental*) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 3 Groundwtr. Ingestion
Organics	
1,1-Dichloroethene	1.663E-05
1,1,1-Trichloroethane	4.630E-05
1,1,2-Trichloro-1,2,2-trifluoroethane	8.513E-05
Inorganics	
Beryllium (carcinogen)	3.495E-07
Beryllium (non-carcinogen)	9.785E-07
Bismuth	1.566E-05
Cadmium	1.859E-05
Chromium	4.795E-03
Cobalt	3.816E-05
Copper	5.824E-03
Lead	0.000E+00
Molybdenum	3.917E-05
Radionuclides	
Actinium-227 (pCi)	2.094E+03
Bismuth-210 (pCi)	2.438E+03
Thorium-228 (pCi)	9.513E+03
Tritium (pCi)	2.782E+07
Uranium-234 (pCi)	4.593E+04
Uranium-238 (pCi)	4.726E+04

* - Incremental groundwater concentrations and resulting intakes obtained by subtracting background from total concentrations.
Intakes due to exposure to total and background concentrations presented in Appendix F.
NA - Not applicable.

4.0 TOXICITY ASSESSMENT

Toxicological values appropriate to use in the Release Block D RRE were assembled from various sources. The U.S. EPA's Integrated Risk Information System (IRIS) and the Health Assessment Summary Tables (HEAST) were the data sources for organics and inorganics. Radionuclide data was obtained from the DOE (HAZWRAP, 1995). Toxicity values included noncarcinogenic oral and inhalation reference doses (oral RfD or inhalation RfD). Inhalation RfDs were calculated from the inhalation RfC by assuming a $20m^3$/day inhalation volume and 70 kg body weight. A reference dose is an estimate of a route-specific exposure level that would not be expected to cause adverse effects when exposure occurs for a significant portion of a lifespan. Additional data were cancer slope factors for ingested or inhaled carcinogenic contaminants (referred to as oral and inhalation slope factors). These slope factors correlate intake of a carcinogen with an increased risk of cancer. Radionuclides are classified as known carcinogens but are discussed separately from organic and inorganic carcinogens, and have oral, inhalation, and external radiation slope factors. Toxicity data were not available for several organic and inorganic constituents. Some chemicals have no conclusive data; others are undergoing review by the U.S. EPA. Secondary drinking water standards were also obtained for those contaminants that can affect general water quality. Consistent with the approach used to develop Guideline Values, oral slope factors and oral references doses were used, unmodified by gastrointestinal absorption efficiency, for evaluation of dermal pathways. Toxicity profiles for each contaminant are presented in Appendix E.

4.1 NONCARCINOGENS

There were three organic and one inorganic soil contaminants causing potential noncarcinogenic effects addressed with the Release Block D RRE. Toxicity values for these soil noncarcinogens are shown in Table IV.1. There were two organic and four inorganic contaminants in groundwater (either current or future) causing potential noncarcinogenic effects addressed with the Release Block D RRE. Toxicity values for these groundwater noncarcinogens are shown in Table IV.2.

4.2 CARCINOGENS

There were four organic carcinogenic constituents in soil addressed in Release Block D RRE for which toxicity data were available. Toxicity values for these soil carcinogens are shown in Table IV.1. There were three inorganic and one organic carcinogenic constituents in current and future groundwater that were addressed in Release Block D RRE for which toxicity data were available. Toxicity values for these groundwater carcinogens are shown in Table IV.2.

4.3 RADIONUCLIDES

There was one radionuclide in soil that was addressed in the Release Block D RRE. Toxicity values (including oral, inhalation, and external slope factors) for this radionuclide is shown in Table IV.1. There were five radionuclides in current and future groundwater that were addressed in the Release Block D RRE. Toxicity values (including oral, inhalation, and external slope factors) for these radionuclides are shown in Table IV.2.

4.4 OTHER CHEMICALS

Several additional constituents have been identified at the site that are water quality indicators or secondary water quality parameters. These constituents give a general indication of water quality and are naturally found in most, if not all waters. These were taken from the data introduced in Section 2. These parameters are shown in Table IV.3.

Table IV.1. Toxicity Values* for Soil Constituents Included in the Release Block D RRE

Soil Constituent	Oral RfD (mg/kg/da)	Inhalation RfD (mg/kg/da)	Oral Slope Factor $(mg/kg/da)^{-1}$	Inhalation Slope Factor $(mg/kg/da)^{-1}$	Carcinogenic Weight of Evidence**
ORGANICS					
Benzo(a)anthracene			0.73		B2
Benzo(a)pyrene			7.3		B2
Benzo(b)fluoranthene			0.73		B2
Benzo(g,h,i)perylene					B2
Carbazole					
Fluorene	0.04				D
Indeno(1,2,3-cd)pyrene			0.73		B2
Naphthalene	50				D
Phenanthrene					
1,1,2-Trichloro-1,2,2-trifluoroethane	30				
INORGANICS					
Antimony	4.0E-04				
Bismuth					
RADIONUCLIDES			**Oral Slope Factor (risk/pCi)**	**Inhalation Slope Factor (risk/pCi)**	**External Slope Factor (risk/yr per pCi/g)**
Plutonium-238			3.0E-10	2.7E-8	1.9E-11

* - Values from IRIS, HEAST and HAZWRAP (1995). No data available if left blank.

** A - Human Carcinogen.
B1 - Probable human carcinogen; limited human data available.
B2 - Probable human carcinogen; sufficient evidence in animals, insufficient or no human data available.
C - Possible human carcinogen.
D - Not classified.

Table IV.2. Toxicity Values[1] for All Groundwater Constituents Included in the Release Block D RRE

Groundwater Constituent	Oral RfD (mg/kg/da)	Inhalation RfD (mg/kg/da)	Oral Slope Factor $(mg/kg/da)^{-1}$	Inhalation Slope Factor $(mg/kg/da)^{-1}$	Carcinogenic Weight of Evidence[3]
ORGANICS					
1,1-Dichloroethene	9.0			1.2	C
1,1,1-Trichloroethane	0.09				D
1,1,2-Trichloro-1,2,2-trifluoroethane	added 30 mg/kg/d				
INORGANICS					
Beryllium	0.005		4.3	8.4	
Bismuth					
Cadmium	0.0005			6.1	B1
Chromium[2]	0.005			41	A
Cobalt					
Copper					D
Lead					B2
Molybdenum	0.005				
RADIONUCLIDES			**Oral Slope Factor (risk/pCi)**	**Inhalation Slope Factor (risk/pCi)**	**Carcinogenic Weight of Evidence[3]**
Actinium-227			6.3E-10	7.9E-8	A
Bismuth-210					A
Plutonium-239/240			3.2E-10	2.8E-8	A
Tritium			7.2E-14	9.6E-14	A
Uranium-234			4.4E-11	1.4E-8	A
Uranium-238			6.2E-11	1.2E-8	A

[1] - Values from IRIS, HEAST and HAZWRAP (1995). No data available if left blank.
[2] - Chromium assumed to be Cr-VI.
[3] A - Human Carcinogen.
B1 - Probable human carcinogen; limited human data available.
B2 - Probable human carcinogen; sufficient evidence in animals, insufficient or no human data available.
C - Possible human carcinogen.
D - Not classified

Table IV.3. Current and Future Water Quality Data for BVA

Groundwater Constituent	Current Maximum Concentration (mg/L)	Future Maximum Concentration (mg/L)	Secondary Drinking Water Standard (mg/L)
Alkalinity	335	335	---
Aluminum	0.0737	0.3495	0.05 to 0.20
Ammonia	0.58	0.58	---
Calcium	126	156	---
Chloride	133	133	250
Copper	0.593	0.596	1
Dissolved Solids	719	719	500
Fluoride	0.18	0.18	2
Iron	0.78	0.78	0.3
Magnesium	39.6	44	---
Manganese	0.0248	0.0248	0.05
Nitrate	2.55	2.55	10
Nitrate/Nitrite	4.9	4.9	10
Nitrite	0.066	0.066	---
Nitrogen	0.62	0.77	---
Organic Carbon	1.1	1.1	---
Phosphate	0.22	0.37	---
Potassium	3.8	6	---
Sodium	82.4	143.2	---
Sulfate	83	111	250
Suspended Solids	8	81.1	---

--- - No Secondary Drinking Water Standard available.

5.0 RESIDUAL RISK EVALUATION FOR RELEASE BLOCK D

The residual risks associated with use of Release Block D are characterized in this section. To accomplish this, toxicity and exposure assessment are summarized and integrated into quantitative expressions of risk. Two types of risk characterization are performed. The first is the calculation of hazard quotients (HQ) for noncarcinogens. The second is the calculation of carcinogenic risk associated with carcinogens and radionuclides. Following the calculation of hazard quotients or risks for individual chemicals and all exposure pathways, the hazards or risks can be summed across constituents and across media.

5.1 CALCULATION OF NONCARCINOGENIC HAZARD QUOTIENTS

Potential human health hazards from exposure to noncarcinogens are calculated by combining an oral Reference Dose (oral RfD) or an inhalation Reference Dose, (inhalation RfD) as presented in Section IV, with calculated intakes as presented in Section 3 to generate a ratio called a Hazard Quotient. The specific relationship between toxicity and exposure of noncarcinogens is represented as Equation 1. Chemical-specific hazard quotients may be summed to yield the hazard index (HI). As an example, a hazard quotient of one or less implies that no toxicity will occur at the specified contaminant exposure.

$$HQ = \text{intake / oral RfD or inhalation RfD} \quad (1)$$

where, intake is the pathway and chemical-specific intake (mg/kg/da)
and, oral RfD and inhalation RfD have units of (mg/kg-da).

5.2 CALCULATION OF CARCINOGENIC RISKS

Carcinogenic risks are calculated for both carcinogenic chemicals and radionuclides. A carcinogenic risk is calculated by converting calculated intakes to incremental risks by using Equation 2 or 3 and the oral slope factor (oral SF), an inhalation slope factor (inhalation SF), or external radiation slope factor. As an example, a risk of 1.0E-6, or one in a million, indicates that the exposed individual has one chance in a million of cancer occurring at the specified contaminant exposure.

$$Risk = \text{intake x slope factor (oral or inhalation)} \quad (2)$$
$$Risk = \text{external exposure x slope factor (external)} \quad (3)$$

where, oral and inhalation slope factors have units of $(mg/kg\text{-}da)^{-1}$ and,
external slope factors have units of $(pCi\text{-}yr/g)^{-1}$.

5.3 CONSTRUCTION WORKER RESIDUAL RISK EVALUATION

5.3.1 Soil Residual Risk Evaluation - Construction Worker

5.3.1.1 Soil Noncarcinogenic Hazards - Construction Worker

For soil, noncarcinogenic hazards were calculated for all relevant construction worker pathways, in this case, Pathway 6 (incidental ingestion of soil) and Pathway 8 (dermal contact with soil). Hazards were calculated for the incremental concentration above background (Table V.1) and for background and total concentrations (Appendix F).

For Pathway 6 (incidental ingestion of soil), the overall pathway hazard was 0.17 and for Pathway 8 (dermal contact with soil), the overall pathway hazard was 0.0036. When combined, the overall construction worker incremental hazard (above background) from soil noncarcinogenic contaminants was 0.18, which is lower than desired upper limit of 1.0. Hazards were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall

construction worker hazard from soil noncarcinogenic contaminants was zero based solely on background. The overall construction worker hazard from soil noncarcinogenic contaminants was 0.18, as calculated from intakes based on total concentrations. The primary contaminant contributing to the calculated hazard was antimony.

5.3.1.2 Soil Carcinogenic Risks - Construction Worker

Carcinogenic risks were calculated for all relevant construction worker pathways. Pathway 6 (incidental ingestion of soil) and Pathway 8 (dermal contact with soil) applied to non-radionuclide carcinogens. Risks were calculated for the incremental concentration above background (Table V.1) and for background and total concentrations (Appendix F).

For the carcinogenic soil contaminants, the potential risk due to exposure of non-radionuclide carcinogens to a construction worker for Pathway 6 (incidental ingestion of soil) overall was 1.0E-5, and for Pathway 8 (dermal contact with soil) overall was 2.1E-6. The combined incremental risks (above background) across all pathways and all chemicals was 1.2E-5. Risks were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall construction worker risk from soil carcinogenic contaminants was zero based solely on background. The overall construction worker risk from carcinogenic soil contaminants was 1.2E-5 as calculated from intakes based on total concentrations. The overall incremental risk was approximately evenly divided between several contaminants, including benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene.

5.3.1.3 Soil Radionuclide Risks - Construction Worker

For radionuclides, the potential risk to the construction worker for Pathway 2 (inhalation of dust) was 4.0E-10, for Pathway 6 (incidental ingestion of soil) was 4.6E-7, and for Pathway 7 (external radiation) was 7.3E-11, while the combined incremental risks (above background) across all pathways were 4.6E-7. Risks were calculated similarly for the same pathways using intakes based on background and total radionuclide concentrations (Appendix F). The overall construction worker risk from soil radionuclides was 2.3E-8 based solely on background. The overall construction worker risk from soil radionuclides was 4.8E-7 as calculated from intakes based on total concentrations. Note that the total, background, and incremental risks presented here may not add up exactly due to rounding of the numbers.

5.3.2 Current Groundwater Residual Risk Evaluation - Construction Worker

5.3.2.1 Current Groundwater Noncarcinogenic Hazards - Construction Worker

For groundwater (current), noncarcinogenic hazards were calculated for all relevant pathways, in this case, Pathway 3 (groundwater ingestion), Pathway 4 (shower inhalation), and Pathway 5 (dermal contact with shower water). Hazards were calculated for the incremental concentration above background (Table V.2) and for background and total concentrations (Appendix F).

For Pathway 3 (groundwater ingestion), the overall pathway hazard was 3.7E-2, not applicable for Pathway 4, and for Pathway 5 (dermal contact with shower water), the overall pathway hazard was 1.2E-4. When combined, the overall construction worker incremental hazard (above background) from current groundwater noncarcinogenic contaminants was 3.7E-2. The primary contaminant contributing to the overall incremental hazard was cadmium. Hazards were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall construction worker hazard from current groundwater noncarcinogenic contaminants was 9.3E-5 based solely on background. The overall construction worker hazard from current groundwater noncarcinogenic contaminants was 3.7E-2 as calculated from intakes based on total concentrations.

5.3.2.2 Current Groundwater Carcinogenic Risks - Construction Worker

Carcinogenic risks were calculated for all relevant current groundwater pathways. Pathway 4 (inhalation of volatiles from shower water) was the only applicable pathway for the one carcinogenic organic chemical in current groundwater. Risks were calculated for the incremental concentration above background (Table V.2) and for background and total concentrations (Appendix F).

For the single carcinogenic current groundwater contaminant (1,1-dichloroethene), the potential risk due to exposure to a construction worker for Pathway 4 (inhalation of shower volatile contaminants) overall was 9.9E-8 and represents the overall incremental risks (above background) for current groundwater carcinogens. Risks were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall construction worker risk from current groundwater carcinogenic contaminants was zero based solely on background. The overall construction worker risk from carcinogenic current groundwater contaminants was 9.9E-8 as calculated from intakes based on total concentrations.

5.3.2.3 Current Groundwater Radionuclide Risks - Construction Worker

For radionuclides, the potential risk to the construction worker for Pathway 3 (groundwater ingestion) was 2.1E-6, for Pathway 4 (shower inhalation) was 1.4E-9 (based solely on tritium), and for Pathway 5 (dermal contact with shower water), was 5.2E-10 (based solely on tritium). When combined, the overall construction worker incremental risk (above background) from current groundwater radionuclides was 2.1E-6. Risks were calculated similarly for the same pathways using intakes based on current groundwater background and total radionuclide concentrations (Appendix F). The overall construction worker risk from current groundwater radionuclides was 2.9E-7 based solely on background. The overall construction worker risk from current groundwater radionuclides was 2.4E-6 as calculated from intakes based on total concentrations. Note that the total, background, and incremental risks presented here may not add up exactly due to rounding of the numbers.

5.3.3 Future Groundwater Residual Risk Evaluation - Construction Worker

5.3.3.1 Future Groundwater Noncarcinogenic Hazards - Construction Worker

For groundwater (future), noncarcinogenic hazards were calculated for all relevant pathways, in this case, Pathway 3 (groundwater ingestion), Pathway 4 (shower inhalation), and Pathway 5 (dermal contact with shower water). Hazards were calculated for the incremental concentration above background (Table V.3) and for background and total concentrations (Appendix F).

For Pathway 3 (groundwater ingestion), the overall pathway hazard was 1.0 (due primarily to chromium) not applicable for Pathway 4, and for Pathway 5 (dermal contact with shower water), the overall pathway hazard was 6.5E-3. When combined, the overall construction worker incremental hazard (above background) from future groundwater noncarcinogenic contaminants was 1.0. Hazards were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall construction worker hazard from future groundwater noncarcinogenic contaminants was 2.3E-2 based solely on background. The overall construction worker hazard from future groundwater noncarcinogenic contaminants was 1.0 as calculated from intakes based on total concentrations.

5.3.3.2 Future Groundwater Carcinogenic Risks - Construction Worker

Carcinogenic risks were calculated for all relevant future groundwater pathways. Pathway 3 (groundwater ingestion), Pathway 4 (inhalation of volatiles from shower water), and Pathway 5 (dermal contact with shower water) were the applicable pathways. Risks were calculated for the incremental concentration above background (Table V.3) and for background and total concentrations (Appendix F).

For future groundwater contaminants, the potential risk to a construction worker for Pathway 3 (ingestion of groundwater) was 3.0E-7 (due to beryllium), for Pathway 4 (inhalation of shower volatiles) was 9.9E-8 (due to 1,1-dichloroethene), and for Pathway 5 (dermal exposure to shower water) was 9.7E-10 (due to beryllium). The overall incremental risk (above background) for future groundwater carcinogens was 4.0E-7. Risks were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall construction worker risk from future groundwater carcinogenic contaminants was zero based solely on background. The overall construction worker risk from carcinogenic future groundwater contaminants was 4.0E-7 as calculated from intakes based on total concentrations.

5.3.3.3 Future Groundwater Radionuclide Risks - Construction Worker

For radionuclides, the potential risk to the construction worker exposed to future groundwater from Pathway 3 (groundwater ingestion) was 2.4E-6, from Pathway 4 (shower inhalation) was 5.0E-9 (based solely on tritium), and from Pathway 5 (dermal contact with shower water), was 1.9E-9 (based solely on tritium). Combined together, the overall construction worker incremental risk (above background) from future groundwater radionuclides was 2.4E-6. Risks were calculated similarly for the same pathways using intakes based on future groundwater background and total radionuclide concentrations (Appendix F). The overall construction worker risk from future groundwater radionuclides was 2.8E-7 based solely on background. The overall construction worker risk from future groundwater radionuclides was 2.7E-6 as calculated from intakes based on total concentrations. Note that the total, background, and incremental risks presented here may not add up exactly due to rounding of the numbers.

5.3.4 Summary of Hazards and Risks for the Construction Worker

Overall hazards across all pathways for soil + current groundwater, and for soil + future groundwater, were summed to provide a comprehensive Hazard Index based on the incremental exposures above background to construction workers potentially working at Release Block D (Table V.7). Comprehensive Hazard Indices were also developed based on background and total exposures (Tables V.8 and V.9). Since background exposures and hazards were negligible, the Hazard Indices based on incremental and total exposures were the same, 0.21 for soil + current groundwater and 1.2 for soil + future groundwater. The primary difference between current and future groundwater hazards was due to the potential presence of chromium in the future groundwater.

Overall risks from carcinogenic and radionuclide contaminants across all pathways for soil + current groundwater, and for soil + future groundwater, were summed to provide an overall risk based on the incremental exposures above background to construction workers potentially working at Release Block D (Table V.7). Overall risks were also developed based on background and total exposures (Tables V.8 and V.9). The risks based on incremental exposures were 1.5E-5 for soil + current groundwater and the 1.6E-5 for soil + future groundwater. The risks based on background exposures were 3.1E-7 for soil + current groundwater and the same for soil + future groundwater. The risks based on total exposures were 1.5E-5 for soil + current groundwater and 1.6E-5 for soil + future groundwater.

Virtually all of the total risks and hazards to which a construction worker may be exposed arise from the incremental contribution of Release Block D for soil and from the incremental contribution of the Mound Plant to the BVA for groundwater. For groundwater and soil, both current and future incremental exposures contribute all of the noncarcinogenic hazard and nonradionuclide carcinogenic risks and about 90% of the radionuclide risks. For the contaminants carried through the Release Block D RRE, background concentrations of nonradionuclides are negligible. Background levels of the radionuclide are important but very small portions of the total risks.

The hypothetical construction worker would potentially be exposed to several soil and BVA groundwater contaminants that collectively may pose an incremental hazard above background of 0.21, which is less than the maximum desired Hazard Index of 1.0. Virtually all of the potential hazard would be caused by daily ingestion of soil containing antimony. In the future, the construction worker would

be exposed to an incremental hazard above background, from soil and BVA groundwater, of 1.2. Most of the hazard is due to chromium that was inadvertently released by the Mound facility and entered the bedrock aquifer, which then entered the BVA groundwater that is supplied to Release Block D. Long term exposure to this groundwater is likely to be less than assumed here as the hazards were calculated using only the highest concentrations of chromium detected in groundwater. The chromium is believed to have been used at the site for corrosion control in water systems.

The construction worker would also potentially be exposed to several soil and BVA groundwater organic, inorganic, and radionuclide carcinogenic contaminants both now and in the future. For current or future conditions, the overall incremental risks above background would be about 1.5 to 1.6E-5 or potentially less than two chances in 100,000 of cancer occurring in an exposed worker. Virtually all of the risks from soil to the construction worker are due to a series of polynuclear aromatic hydrocarbons (PAHs) that are naturally occurring products in petroleum, sometimes found in soil at industrial sites, and are also components of asphalt.

While these PAHs must be carried through the RRE, it should be recognized that the conservativeness of the RREM requires the assumption that, despite the relative isolation of the positively detected PAHs, the PAHs are assumed to be available for daily exposure to any construction worker at Release Block D and lasting for 5 years. If the PAHs were assumed to be isolated and not available for daily, long-term exposures, the overall potential carcinogenic incremental risks in soil would drop from about 1.3E-5 to 4.6E-7 for non-PAH carcinogens and radionuclides (then based solely on Pu-238).

The main contributors of risk from groundwater were several radionuclides in BVA groundwater. Virtually all contaminants contributing the most to risks and hazards were based on maximum concentrations, rather than an average, due to the limited available data. Based on the RREM, this conservative assumption of maximum concentrations applies to daily exposures occurring over 5 years. This would tend to overestimate hazards and risks.

5.4 SITE EMPLOYEE RESIDUAL RISK EVALUATION

5.4.1 Soil Residual Risk Evaluation - Site Employee

5.4.1.1 Noncarcinogenic Hazards - Site Employee

For soil, noncarcinogenic hazards were calculated for the only relevant (for site employees) pathway, Pathway 6 (incidental ingestion of soil). Hazards were calculated for the incremental concentration above background (Table V.4) and for background and total concentrations (Appendix F).

For Pathway 6 (incidental ingestion of soil), the overall pathway hazard was 0.022 (primarily due to antimony). Since only one pathway was considered, site employee incremental hazard (above background) from soil noncarcinogenic contaminants was the same value, 0.022. Hazards were calculated similarly for the same pathway using intakes based on background and total concentrations (Appendix F). The site employee hazard from soil noncarcinogenic contaminants was zero based solely on background. The site employee hazard from soil noncarcinogenic contaminants was 0.022 as calculated from intakes based on total concentrations.

5.4.1.2 Soil Carcinogenic Risks Site Employee

Carcinogenic risk was calculated for the only relevant pathway for site employees, Pathway 6 (incidental ingestion of soil). The risk from Pathway 6 (incidental ingestion of soil) was calculated for the incremental concentration above background (Table V.4) and for background and total concentrations (Appendix F).

For the carcinogenic soil contaminants, the potential risk due to exposure of carcinogens to a site employee for Pathway 6 (incidental ingestion of soil) overall was 6.1E-7 (attributed to a series of

polynuclear aromatic hydrocarbons). As there was only one relevant pathway, this represents the overall incremental risk above background. Risks were calculated similarly for the same pathway using intakes based on background and total concentrations (Appendix F). The overall site employee risk from soil carcinogenic contaminants was zero based solely on background. The overall site employee risk from carcinogenic soil contaminants was 6.1E-7 as calculated from intakes based on total concentrations.

5.4.1.3 Soil Radionuclide Risks - Site Employee

For radionuclides, the potential risk to the site employee for Pathway 2 (inhalation of dust) was 2.1E-9, for Pathway 6 (incidental ingestion of soil) was 2.5E-7, and for Pathway 7 (external radiation) was 8.5E-11. The combined incremental risks (above background) across all pathways and all radionuclides was 2.5E-7 based only on plutonium-238 (Table V.4). Risks were calculated similarly for the same pathways using intakes based on background and total radionuclide concentrations (Appendix F). The overall site employee risk from soil radionuclides was 1.2E-8 based solely on background. The overall site employee risk from soil radionuclides was 2.6E-7 as calculated from intakes based on total concentrations.

5.4.2 Current Groundwater Residual Risk Evaluation - Site Employee

5.4.2.1 Current Groundwater Noncarcinogenic Hazards - Site Employee

For groundwater (current), noncarcinogenic hazards were calculated for the only relevant pathway to which the site employee would be exposed, Pathway 3 (groundwater ingestion). Hazards were calculated for the incremental concentration above background (Table V.5) and for background and total concentrations (Appendix F) for this pathway.

For Pathway 3 (groundwater ingestion), the overall pathway hazard was 3.7E-2 (primarily due to cadmium). This also represents the overall hazard from noncarcinogens to a site employee based on current groundwater exposures. Hazards were calculated similarly for the same pathway using intakes based on background and total concentrations (Appendix F). The overall site employee hazard from current groundwater noncarcinogenic contaminants was 7.3E-5 based solely on background. The overall site employee hazard from current groundwater noncarcinogenic contaminants was 3.7E-2 as calculated from intakes based on total concentrations.

5.4.2.2 Current Groundwater Carcinogenic Risks - Site Employee

No current groundwater non-radionuclide carcinogenic contaminants have toxicity data available. Therefore, no risks were calculated for the incremental concentration above background (Table V.5), nor for background or total concentrations (Appendix F).

5.4.2.3 Current Groundwater Radionuclide Risks - Site Employee

For radionuclides, the potential risk to the site employee for Pathway 3 (groundwater ingestion) was 1.1E-5. As this is the only relevant pathway for current groundwater radionuclides and the site employee, the site employee incremental risk (above background) from current groundwater radionuclides was also 1.1E-5. Risks were calculated similarly for the same pathways using intakes based on current groundwater background and total radionuclide concentrations (Appendix F). The overall site employee risk from current groundwater radionuclides was 1.4E-6 based solely on background. The overall site employee risk from current groundwater radionuclides was 1.2E-5 as calculated from intakes based on total concentrations. Note that the total, background, and incremental risks presented here may not add up exactly due to rounding of the numbers.

5.4.3 Future Groundwater Residual Risk Evaluation - Site Employee

5.4.3.1 Future Groundwater Noncarcinogenic Hazards - Site Employee

For groundwater (future), noncarcinogenic hazards were calculated for the only relevant pathway, Pathway 3 (groundwater ingestion). Hazards were calculated for the incremental concentration above background (Table V.6) and for background and total concentrations (Appendix F).

For Pathway 3 (groundwater ingestion), the overall pathway hazard was 1.0 (primarily due to chromium) and represents the overall site employee incremental hazard (above background) from future groundwater noncarcinogenic contaminants. Hazards were calculated similarly for the same pathway using intakes based on background and total concentrations (Appendix F). The overall site employee hazard from future groundwater noncarcinogenic contaminants was 2.3E-2 based solely on background. The overall site employee hazard from future groundwater noncarcinogenic contaminants was 1.0 as calculated from intakes based on total concentrations.

5.4.3.2 Future Groundwater Carcinogenic Risks - Site Employee

For groundwater (future), carcinogenic risks were calculated for the only relevant pathway, Pathway 3 (groundwater ingestion). Risks were calculated for the incremental concentration above background (Table V.6) and for background and total concentrations (Appendix F).

For future groundwater contaminants, the potential risk to a site employee for Pathway 3 (ingestion of groundwater) was 1.5E-6 (due to beryllium), which also represents the overall incremental risk (above background) to a site employee from future groundwater carcinogens. Risks were calculated similarly for the same pathways using intakes based on background and total concentrations (Appendix F). The overall site employee risk from future groundwater carcinogenic contaminants was zero based solely on background. The overall construction worker risk from carcinogenic future groundwater contaminants was 1.5E-6 as calculated from intakes based on total concentrations.

5.4.3.3 Future Groundwater Radionuclide Risks - Site Employee

For radionuclides, the potential risk to the site employee exposed to future groundwater from Pathway 3 (groundwater ingestion) was 1.2E-5, which also represents the overall incremental risk (above background) from future groundwater radionuclides. Risks were calculated similarly for the same pathway using intakes based on future groundwater background and total radionuclide concentrations (Appendix F). The overall site employee risk from future groundwater radionuclides was 1.4E-6 based solely on background. The overall construction worker risk from future groundwater radionuclides was 1.3E-5 as calculated from intakes based on total concentrations. Note that the total, background, and incremental risks presented here may not add up exactly due to rounding of the numbers.

5.4.4 Summary of Hazards and Risks for the Site Employee

Overall hazards across all pathways for soil + current groundwater, and for soil + future groundwater, were summed to provide a comprehensive Hazard Index based on the incremental exposures above background to site employees potentially working at Release Block D (Table V.7). Comprehensive Hazard Indices were also developed based on background and total exposures (Tables V.8 and V.9). Since background exposures and hazards were very small, the Hazard Indices based on incremental and total exposures were the same, 0.059 for soil + current groundwater, and 1.0 for soil + future groundwater. The primary difference between current and future groundwater hazards was due to the presence of chromium in the potential future groundwater. The hazards to a site employee were the same as for a construction worker.

Overall risks from carcinogenic and radionuclide contaminants across all pathways for soil + current

groundwater, and for soil + future groundwater, were summed to provide an overall risk based on the incremental exposures above background to site employees potentially working at Release Block D (Table V.7). Overall risks were also developed based on background and total exposures (Tables V.8 and V.9). The risks based on incremental exposures were 1.1E-5 for soil + current groundwater and 1.4E-5 for soil + future groundwater. The risks based on background exposures were 1.4E-6 for soil + current groundwater and the same for soil + future groundwater. The risks based on total exposures were 1.3E-5 for soil + current groundwater and 1.6E-5 for soil + future groundwater.

Virtually all of the total risks and hazards to which a site employee may be exposed arise from the incremental contribution of Release Block D and from the incremental contribution of the Mound Plant to the BVA for groundwater. For groundwater and soil, both current and future incremental exposures contribute all of the noncarcinogenic hazard and nonradionuclide carcinogenic risks and about 86% to 92% of the radionuclide risks. For the contaminants carried through the Release Block D RRE, background concentrations of nonradionuclides are negligible. Background levels of the radionuclides are important but very small portions of the total risks.

The hypothetical site employee would currently be potentially exposed to several soil and BVA groundwater contaminants that collectively may pose a very small incremental hazard above background of 0.059, which is much less than the maximum desired Hazard Index of 1.0. Most of the potential hazard would be caused by daily consumption of BVA groundwater containing cadmium with the remaining attributed to antimony in the soil. In the future, the site employee would be exposed to an incremental hazard above background, from soil and BVA groundwater, of 1.0. Most of the hazard is due to chromium that was inadvertently released by the Mound facility and entered the bedrock aquifer, which then entered the BVA groundwater that is supplied to Release Block D. Long term exposure to this groundwater is likely to be less than assumed here as the hazards were calculated using only the highest concentrations of chromium detected in groundwater. The chromium is believed to have been used at the site for corrosion control in water systems.

The site employee would also potentially be exposed to several soil and BVA groundwater organic, inorganic, and radionuclide carcinogenic contaminants both now and in the future. For current or future conditions, the overall incremental risks above background would be 1.1 to 1.4E-5 or about one chance in 100,000 of cancer occurring in an exposed site employee. The risks based on soil exposures to the site employee are lower than for the construction worker because the construction worker is exposed to contaminants in the full soil column, as opposed to the somewhat cleaner shallow (<2 ft.) soil to which the site employee may be exposed. In addition, the construction worker is assumed to ingest nearly 10 times the soil as a site employee, although the site employee remains working at the site for 25 years, as opposed to 5 years for the construction worker.

Virtually all of the risks to the site employee are due to a series of polynuclear aromatic hydrocarbons (PAHs) and a series of radionuclides. The radionuclides likely originated from Mound plant activities or are decay products of radionuclides associated with Mound plant activities. PAHs are naturally occurring products in petroleum, are sometimes found in soil, and are components of asphalt. The conservative nature of the RREM and the RRE require the assumption that the relatively isolated PAHs were available to cause exposure daily for 25 years. If the PAHs were assumed to be isolated and not available for daily, long-term exposures, the overall potential incremental hazards to site employees from exposure to the non-PAH noncarcinogenic contaminants in soil would drop slightly, and the potential carcinogenic incremental risks from non-PAH carcinogens and radionuclides in soil would drop from 8.6E-7 to 2.5E-7 (then based solely on Pu-238).

The main contributors of risk from groundwater were several radionuclides in BVA groundwater. Virtually all contaminants contributing the most to risks and hazards were based on maximum concentrations, rather than an average, due to the limited available data. Based on the RREM, this conservative assumption of maximum concentrations applies to daily exposures occurring over 25 years. This would tend to overestimate hazards and risks.

95% UCL ON MEAN ≠ AVERAGE

5.5 EVALUATION OF POTENTIAL CUMULATIVE EXPOSURE - AIR

Potential exposure to contaminants originating from outside Release Block D that may reach a receptor at the release block are termed potential cumulative exposures. Potential cumulative exposures may come from groundwater (dealt with previously), air, or surface water. No surface water is present at or near Release Block D so only airborne emissions pose an additional potential exposure to exposures quantified already.

Airborne contaminant concentrations were measured at the Mound Facility in 1994 during various site restoration activities (DOE, 1994). Both radiological and nonradiological data were collected. It is assumed that the measured concentrations would represent an upper-bound air concentration. These data are shown in Table V.10. Risks due to inhalation of the radionuclides by construction workers and site employees were calculated (Table V.10).

The calculated risks attributable to the potential upper-bound exposure of airborne contaminants would total 2E-7 (or 2 chances in 10,000,000 of contracting cancer) for the construction worker and 9.8E-7 (or about one chance in a million of contracting cancer) for the site employee. Note that the potential exposures are based on the assumption of long-term consumption of this upper-bound concentration that was measured during site restoration activities.

5.6 UNCERTAINTIES ASSOCIATED WITH THE RELEASE BLOCK D RRE

Uncertainties are inherent in the risk assessment process. In addition to the use of many conservative assumptions and approximations, the identification and analysis of environmental conditions is difficult and inexact. A number of assumptions and interpretations were made during the preparation of this RRE which lead to some degree of uncertainty in the results. By understanding the inherent uncertainties in the assumptions and interpretations, the potential for overestimation or underestimation of potential Release Block D risks can be ascertained.

5.6.1 Uncertainties Associated with Release Block D Analytical Data

Most of the soil analytical data for Release Block D was for either a few constituents (Thorium-232 and Plutonium-238) or was obtained from the 1996 Soil Gas Confirmation Sampling. Most of the remaining Release Block D data was sporadic in coverage of the site or focused on individual radionuclides at isolated spots. The result was that long-term exposure concentrations were assumed to be equivalent to the maximum concentration detected for most constituents. The likely bias is to overestimate potential exposures. It is also possible that contaminated areas of Release Block D were not sampled, but this is considered not very likely given the well-known past uses of this portion of the Mound facility.

5.6.2 Uncertainties Associated with Toxicological Data

Toxicity data were obtained from U.S. EPA sources. Carcinogens were assumed to be human carcinogens regardless of EPA's weight-of-evidence classification (i.e., risk associated with EPA Group C carcinogens [insufficient human evidence of carcinogenicity] were weighted equally with Group A carcinogens [sufficient human evidence of carcinogenicity]). EPA develops slope factors (SFS) as the upper 95% confidence limit SFS of the range of possible SFS and are based on the linearized multistage (LMS) dose-response model, which is used to define the expected potency of a carcinogen. Animal data selected for use in this model are often obtained from the most sensitive species tested, and uses the study that gave the most severe results (if more than one study were available). These data are then scaled to potential human doses assuming that humans are even more sensitive than the most sensitive animal species. The estimate of potency incorporates conservative assumptions designed not to underestimate risks. Therefore, use of the EPA slope factors likely overestimates the risks associated with exposure to a particular chemical.

Dermal reference doses and slope factors are not available. The oral reference dose or slope factors were used for dermal pathway analysis. This likely overestimates risk but is consistent with recent DOE procedures and decisions (HAZWRAP, DOE, 1995). Currently no pertinent regional or Ohio EPA guidance exists on the subject of dermal reference doses. Since very few of the required data are available to accomplish the revision of oral toxicity factors for use with dermal equations, the dermal risks may be underestimated or overestimated for some compounds.

To calculate potential noncarcinogenic health effects, this RRE used EPA-established route-specific RfDs. RfDs are generally derived by EPA using a No Observed Effect Level (NOEL) or a No Observed Adverse Effect Level (NOAEL), often obtained from animal studies. The extrapolation from animals to humans, and the use of specific uncertainty factors and modifying factors, produces an RfD that is conservative.

Overall, the uncertainty associated with the toxicological data leads to a conservative bias. Several contaminants have demonstrated toxicity to laboratory animals, but no toxicity values have been developed for use here. Similarly, other contaminants have had their toxicity values withdrawn by EPA for further review. For these contaminants, the previous data were used, which may be either over conservative or under conservative, pending the EPA review.

5.6.3 Uncertainties Associated with Infrequently Detected Compounds

Numerous groundwater constituents were included in the RRE that had only one detection and usually one or more non-detected value. The actual presence of these constituents is uncertain. The risks and HQs calculated for these constituents are based on the assumption that construction workers and site employees would be exposed to the detected concentration of each chemical for 5 to 25 years. This likely overestimates the groundwater risks to the construction worker and site employee both currently and in the future. Conversely, elimination of compounds with a frequency of detection less than 5% may tend to underestimate potential risks. Due to the possible biased sampling that may have occurred, contaminants may be removed from further consideration despite the potential presence of localized contamination.

5.6.4 Uncertainties Associated with Future Groundwater Concentrations

Bedrock aquifer groundwater contamination was assumed to enter the BVA and move without mixing, through the BVA to active production wells. This likely overestimates the future groundwater contamination to which the construction worker and site employee will be exposed for 5 to 25 years. Additionally, the maximum concentrations detected in the various portions of the bedrock aquifer were assumed to be representative of long-term contamination entering the BVA groundwater. This assumption would tend to over conservatively estimate the calculated hazards and risks associated with future groundwater concentrations.

5.6.5 Uncertainties Associated with Soil Contamination

The use of Guideline Values aids in the determination of which soil contaminants are considered to be Mound related. This may underestimate overall risks due to the fact that several chemicals may cause exposure above background but below the Guideline Values and collectively these compounds may pose an additional uncounted risk.

Most contaminants were examined by using maximum soil concentrations. This may tend to overestimate risks as maximum values are poor estimates of overall site contamination.

Many soil sampling events collected samples in a biased manner with the deliberate intent of examining specific areas of contamination. These biased samples do not represent actual contaminant distributions in areas outside of the sampled area. To do so may result in overestimation of risks as

uncontaminated areas would then be assumed to be contaminated to the same degree as known areas of contamination.

5.6.6 Uncertainties Associated with Exposure Estimates

The RREM presents exposure and intake calculations based on EPA procedures that were used in this Release Block D RRE. Parameter values for calculating exposure were developed by EPA with a conservative bias. For example, it is assumed that a worker at the site is exposed to upper-bound contaminant concentrations during every work day for 5 to 25 years, for the construction worker or site employee, respectively. An additional example of potential uncertainty is the assumption that all individuals within a particular receptor group will receive the same dose. Biological variability in absorption, ingestion rates, breathing rates, and exposure frequency and duration will exist, even in narrowly defined age group or sensitive population group. On the basis of this information, uncertainties for the intakes used in this RRE likely have a bias toward over conservatism. Conversely, consideration of only construction workers and site employees may underestimate or overestimate risks if future land use does not conform to these scenarios.

Some minor pathways may be excluded in this analysis. For instance, trespassing is not assumed to occur in Release Block D. This may lead to some underestimation of potential incremental risks attributable to the Mound facility. Additionally, any potential offsite pathways are not addressed, based on the RREM. This may underestimate potential risks should any offsite migration be occurring.

5.6.7 Uncertainties Associated with Risk Characterization

To estimate hypothetical future noncarcinogenic health effects, the EPA-established RfDs were compared with the calculated exposure or intake for each contaminant for each pathway. Because conservative assumptions were used by EPA in developing RfDs, it is not expected that noncarcinogenic effects will be underestimated in this RRE, and in fact, are likely overestimated.

The extent of chemical and biological interaction of chemicals is another site-specific factor that may introduce uncertainty. The Hazard Index approach used in this RRE to evaluate the potential for adverse noncarcinogenic effects posed by exposure to multiple chemicals adds individual hazard quotients for each chemical together. When the HI exceeds 1.0, there may be concern that adverse health effects could occur from the predicted exposures. It is possible that the HI can exceed 1.0 even if no single chemical exceeds its acceptable level. Therefore, the HI approach assumes that an adverse effect could occur as a result of multiple exposures below threshold levels. In this RRE, the HIs were summed without consideration of specific toxic effects, target organs, and mechanisms of action. Thus, the potential for adverse noncarcinogenic effects is likely overestimated.

Hypothetical cancer risks were calculated by multiplying the chemical-specific route-specific SF by the calculated dose for each exposure pathway. Similar to the HI calculations conducted for noncarcinogens, the predicted health risks were summed across chemicals and pathways, without regard to specific toxic effects, target organs, and mechanisms of action. Thus, the potential for adverse carcinogenic effects is likely overestimated. Overall, there is significant potential for overestimation of potential health risks at Release Block D and a low potential for underestimation of potential health risks.

5.6.8 Uncertainties Associated with Chromium in Groundwater

To calculate potential risks due to exposure to chromium (based on Hazard Indices), an assumption was made that 100% of the chromium was the more toxic Cr+6, rather than the less toxic Cr+3. As shown in Appendix H, this may overestimate the potential Hazard Indices by about a factor of six-fold, depending on the exact ratio of Cr+3 and Cr+6 assumed to make up the total chromium detected at the Mound site.

Table V.1. Characterization of Residual Risks at Release Block D - Construction Worker (Soil Pathways - Incremental)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Antimony	NA	***	NA	NA	NA	1.7E-01	NA	3.6E-03	
Bismuth	NA	***	NA	NA	NA	***	NA	***	
Fluorene	NA	***	NA	NA	NA	1.0E-09	NA	2.2E-05	
Naphthalene	NA	***	NA	NA	NA	5.3E-08	NA	1.1E-08	
Phenanthrene	NA	***	NA	NA	NA	***	NA	***	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	NA	NA	4.7E-10	NA	9.8E-11	Total Soil HI =
Total:						1.7E-01		3.6E-03	1.8E-01
Carcinogens (Risk)									
Benzo(a)anthracene	NA	***	NA	NA	NA	9.2E-07	NA	1.9E-07	
Benzo(a)pyrene	NA	***	NA	NA	NA	7.6E-06	NA	1.6E-06	
Benzo(b)fluoranthene	NA	***	NA	NA	NA	1.1E-06	NA	2.4E-07	
Benzo(g,h,i)perylene	NA	***	NA	NA	NA	***	NA	***	
Carbazole	NA	***	NA	NA	NA	***	NA	***	Total Carcinogenic
Indeno(1,2,3-cd)pyrene	NA	***	NA	NA	NA	5.0E-07	NA	1.1E-07	Risks =
Total:						1.0E-05		2.1E-06	1.2E-05
Radionuclides (Risk)									Total Radionuclide
Plutonium-238 (pCi)	NA	4.0E-10	NA	NA	NA	4.6E-07	7.3E-11	NA	Risks =
Total:		4.0E-10				4.6E-07	7.3E-11		4.6E-07

*** - Toxicity values not available.
NA - Not applicable.

Table V.2. Characterization of Residual Risks at Release Block D - Construction Worker (Groundwater - Current - Incremental)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Cadmium	NA	NA	3.7E-02	NA	1.2E-04	NA	NA	NA	
Copper	NA	NA	***	NA	***	NA	NA	NA	
1,1-Dichloroethene	NA	NA	1.8E-06	NA	3.8E-07	NA	NA	NA	
Lead	NA	NA	***	NA	***	NA	NA	NA	
1,1,1-Trichloroethane	NA	NA	1.3E-07	***	3.7E-08	NA	NA	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	***	***	***	NA	NA	NA	Total HI =
Total:			3.7E-02		1.2E-04				3.7E-02
Carcinogens (Risk)									Total Carcinogenic
1,1-Dichloroethene	NA	NA	NA	9.9E-08	NA	NA	NA	NA	Risks =
Total:				9.9E-08					9.9E-08
Radionuclides (Risk)									
Actinium-227 (pCi)	NA	NA	2.6E-07	NA	NA	NA	NA	NA	
Bismuth-210 (pCi)	NA	NA	***	NA	NA	NA	NA	NA	
Plutonium-239/240 (pCi)	NA	NA	7.5E-07	NA	NA	NA	NA	NA	
Tritium (pCi)	NA	NA	1.1E-07	1.4E-09	5.2E-10	NA	NA	NA	Total
Uranium-234 (pCi)	NA	NA	4.0E-07	NA	NA	NA	NA	NA	Radionuclide
Uranium-238 (pCi)	NA	NA	5.9E-07	NA	NA	NA	NA	NA	Risks =
Total:			2.1E-06	1.4E-09	5.2E-10				2.1E-06

*** - Toxicity values not available.
NA - Not applicable.

Table V.4. Characterization of Residual Risks at Release Block D - Site Employee (Soil Pathways - Incremental)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Antimony	NA	***	NA	2.2E-02	NA	
Bismuth	NA	***	NA	***	NA	
Fluorene	NA	***	NA	2.1E-06	NA	
Naphthalene	NA	***	NA	2.3E-09	NA	
Phenanthrene	NA	***	NA	***	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	4.9E-11	NA	Total Soil HI =
Total:				2.2E-02		2.2E-02
Carcinogens (Risk)						
Benzo(a)anthracene	NA	***	NA	4.7E-08	NA	
Benzo(a)pyrene	NA	***	NA	4.7E-07	NA	
Benzo(b)fluoranthene	NA	***	NA	4.9E-08	NA	
Benzo(g,h,i)perylene	NA	***	NA	***	NA	
Carbazole	NA	***	NA	***	NA	Total Carcinogenic
Indeno(1,2,3-cd)pyrene	NA	***	NA	4.6E-08	NA	Risks =
Total:				6.1E-07		6.1E-07
Radionuclides (Risk)						Total Radionuclide
Plutonium-238 (pCi)	NA	2.1E-09	NA	2.5E-07	8.3E-11	Risks =
Total:		2.1E-09		2.5E-07	8.3E-11	2.5E-07

*** - Toxicity values not available.
NA - Not applicable.

Table V.5. Characterization of Residual Risks at Release Block D - Site Employee (Groundwater - Current - Incremental)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Cadmium	NA	NA	3.7E-02	NA	NA	
Copper	NA	NA	***	NA	NA	
1,1-Dichloroethene	NA	NA	1.8E-06	NA	NA	
Lead	NA	NA	***	NA	NA	
1,1,1-Trichloroethane	NA	NA	1.3E-07	NA	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	***	NA	NA	Total HI =
Total:			3.7E-02			3.7E-02
Carcinogens (Risk)						
1,1-Dichloroethene	NA	NA	NA	NA	NA	Total Carcinogenic Risk = NA
Radionuclides (Risk)						
Actinium-227 (pCi)	NA	NA	1.3E-06	NA	NA	
Bismuth-210 (pCi)	NA	NA	***	NA	NA	
Plutonium-239/240 (pCi)	NA	NA	3.8E-06	NA	NA	
Tritium (pCi)	NA	NA	5.5E-07	NA	NA	Total
Uranium-234 (pCi)	NA	NA	2.0E-06	NA	NA	Radionuclide
Uranium-238 (pCi)	NA	NA	2.9E-06	NA	NA	Risks =
Total:			1.1E-05			1.1E-05

*** - Toxicity values not available.
NA - Not applicable.

Table V.6. Characterization of Residual Risks at Release Block D
Site Employee (Groundwater - Future - Incremental)

Constituent	Pathway 3 Groundwtr. Ingestion	Site Employee
Non-carcinogens (HQ)		
Beryllium	2.0E-04	
Bismuth	***	
Cadmium	3.7E-02	
Chromium	9.6E-01	
Cobalt	***	
Copper	***	
1,1-Dichloroethene	1.8E-06	
Lead	***	
Molybdenum	7.8E-03	
1,1,1-Trichloroethane	5.1E-04	
1,1,2-Trichloro-1,2,2-trifluoroethane	***	Total HI =
Total:	1.0E+00	1.0E+00
Carcinogens (Risk)		Total Carcinogenic
Beryllium	1.5E-06	Risks =
Total:	1.5E-06	1.5E-06
Radionuclides (Risk)		
Actinium-227 (pCi)	1.3E-06	
Bismuth-210 (pCi)	***	
Plutonium-239/240 (pCi)	3.8E-06	
Tritium (pCi)	2.0E-06	Total
Uranium-234 (pCi)	2.0E-06	Radionuclide
Uranium-238 (pCi)	2.9E-06	Risks =
Total:	1.2E-05	1.2E-05

*** - Toxicity values not available.

TABLE V.7. Summary of Current and Future Incremental Risks at Release Block D - Mound Facility

	Construction Worker				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.8E-01	3.7E-02	1.0E+00	HI = 2.1E-01	HI = 1.2E+00
Carcinogenic Risks for Organics & Inorganics	1.2E-05	9.9E-08	4.0E-07	Risk = 1.2E-05	Risk = 1.3E-05
Carcinogenic Risks for Radionuclides	4.6E-07	2.1E-06	2.4E-06	Risk = 2.6E-06	Risk = 2.9E-06
		Construction Worker			
			Overall HI =	2.1E-01	1.2E+00
			Overall Risk =	1.5E-05	1.6E-05

	Site Employee				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	2.2E-02	3.7E-02	1.0E+00	HI = 5.9E-02	HI = 1.0E+00
Carcinogenic Risks for Organics & Inorganics	6.1E-07	NA	1.5E-06	Risk = 6.1E-07	Risk = 2.1E-06
Carcinogenic Risks for Radionuclides	2.5E-07	1.1E-05	1.2E-05	Risk = 1.1E-05	Risk = 1.2E-05
		Site Employee			
			Overall HI =	5.9E-02	1.0E+00
			Overall Risk =	1.1E-05	1.4E-05

TABLE V.8. Summary of Current and Future Background Risks at Release Block D - Mound Facility

	Construction Worker				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	0.0E+00	9.3E-05	2.3E-02	HI = 9.3E-05	HI = 2.3E-02
Carcinogenic Risks for Organics & Inorganics	0.0E+00	0.0E+00	0.0E+00	Risk = 0.0E+00	Risk = 0.0E+00
Carcinogenic Risks for Radionuclides	2.3E-08	2.9E-07	2.8E-07	Risk = 3.1E-07	Risk = 3.1E-07
	Construction Worker				
			Overall HI =	9.3E-05	2.3E-02
			Overall Risk =	3.1E-07	3.1E-07

	Site Employee				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	0.0E+00	7.3E-05	2.3E-02	HI = 7.3E-05	HI = 2.3E-02
Carcinogenic Risks for Organics & Inorganics	0.0E+00	NA	0.0E+00	Risk = 0.0E+00	Risk = 0.0E+00
Carcinogenic Risks for Radionuclides	1.2E-08	1.4E-06	1.4E-06	Risk = 1.4E-06	Risk = 1.4E-06
	Site Employee				
			Overall HI =	7.3E-05	2.3E-02
			Overall Risk =	1.4E-06	1.4E-06

TABLE V.9. Summary of Current and Future Total Risks at Release Block D - Mound Facility

	Construction Worker				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	1.8E-01	3.7E-02	1.0E+00	HI = 2.1E-01	HI = 1.2E+00
Carcinogenic Risks for Organics & Inorganics	1.2E-05	9.9E-08	4.0E-07	Risk = 1.2E-05	Risk = 1.3E-05
Carcinogenic Risks for Radionuclides	4.8E-07	2.4E-06	2.7E-06	Risk = 2.9E-06	Risk = 3.2E-06
		Construction Worker			
			Overall HI =	2.1E-01	1.2E+00
			Overall Risk =	1.5E-05	1.6E-05

	Site Employee				
	Soil	Groundwater Current	Groundwater Future	Sum of Soil and Groundwater Current	Sum of Soil and Groundwater Future
Non-carcinogenic Hazard Index for Organics & Inorganics	2.2E-02	3.7E-02	1.0E+00	HI = 5.9E-02	HI = 1.0E+00
Carcinogenic Risks for Organics & Inorganics	6.1E-07	NA	1.5E-06	Risk = 6.1E-07	Risk = 2.1E-06
Carcinogenic Risks for Radionuclides	2.6E-07	1.2E-05	1.3E-05	Risk = 1.2E-05	Risk = 1.4E-05
		Site Employee			
			Overall HI =	5.9E-02	1.0E+00
			Overall Risk =	1.3E-05	1.6E-05

Table V.10. Concentration of Radionuclides in Air in 1994 (EG&G Mound Applied Technologies - Mound Site Environmental Report for Calendar Year 1994, pg. 4-15 to 4-17) MLM-3814

Radionuclide	Maximum Concentration* (μCi/mL)	Risks to** Construction Worker	Risks to** Site Employees
Tritium oxide (H-3)	7.54 ± 4.61E-12	1.8E-8	9.0E-8
Plutonium-238	259.65 ± 289.58E-18	1.75E-7	8.8E-7
Plutonium-239,240	3.50 ± 2.75E-18	2.5E-9	1.2E-8
SUM		2.0E-7	9.8E-7

* - Error limits are estimates of the standard error of the estimated means at the 95% confidence level. Values given are from the location on the site with the highest concentration (based on the average of two or more samples).

** - Calculated risks assumed that the maximum concentration shown here was the C_{air} value needed for Pathway 1 for inhalation of volatiles for construction workers and site employees. Intake equations shown in Appendix D (with appropriate units conversions).

6.0 REFERENCES

1. DOE. 1996. Mound 2000 Residual Risk Evaluation Methodology, Draft. U.S. Department of Energy, Dayton Area Office.

2. EPA. 1994. Health Effects Assessment Summary Tables FY 1994, Supplement Number 2. EPA/540/R-94/114. Office of Solid Waste and Emergency Response. Washington, D.C.

3. EPA. 1992. Dermal Exposure Assessment: Principles and Applications, Interim Report. EPA/600/8-91/011B. Office of Research and Development. Washington, D.C.

4. EPA. 1991. Risk Assessment Guidance for Superfund (Vol. 1) Human Health Evaluation Manual (Part B - Development of Risk-based Preliminary Remediation Goals), Interim. EPA/540/r-92/003. Office of Research and Development. Washington, D.C.

5. EPA. 1989. Risk Assessment Guidance for Superfund (Vol. 1) Human Health Evaluation Manual (Part A), Interim Final. EPA/540/1-89/002. Office of Emergency and Remedial Response. Washington, D.C.

6. Hazardous Waste Remedial Actions Program (HAZWRAP). December 1995. Risk-based Guideline Values, Mound Plant, Miamisburg, Ohio. Submitted to Office of Southwestern Area Programs, Environmental Restoration, U.S. Department of Energy and the U.S. Department of Energy, Dayton Area Office.

7. DOE. 1994. Mound Site Environmental Report for Calendar Year 1994. MLM-3814.

8. DOE. 1996. Soil Gas Confirmation Sampling. February 1996.

9. DOE. 1994. OU9 Site Scoping Report: Volume 12 Site Summary Report.

10. USEPA. 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response, Washington, DC 20460. EPA/540/R-95/128, May 1996.

APPENDIX A

MONITORING DATA PLOTS FOR PLUTONIUM-238 AND THORIUM-232

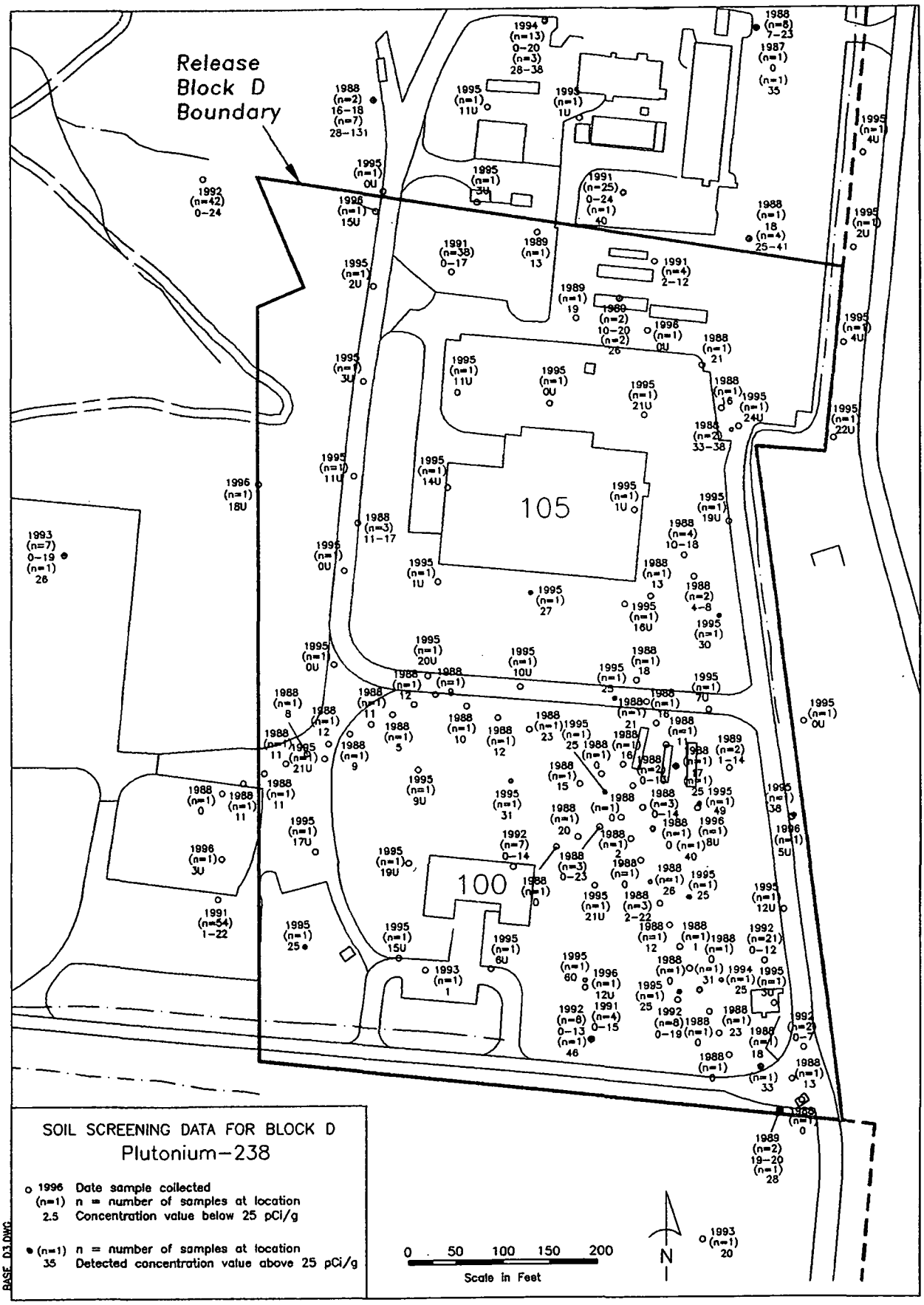
Release
Block D
Boundary
105
100
SOIL SCREENING DATA FOR BLOCK D
Plutonium-238
o 1996 Date sample collected
(n=1) n = number of samples at location
2.5 Concentration value below 25 pCi/g
• (n=1) n = number of samples at location
35 Detected concentration value above 25 pCi/g
0 50 100 150 200
Scale in Feet
N
BASE D3.DWG

DIAGRAM A

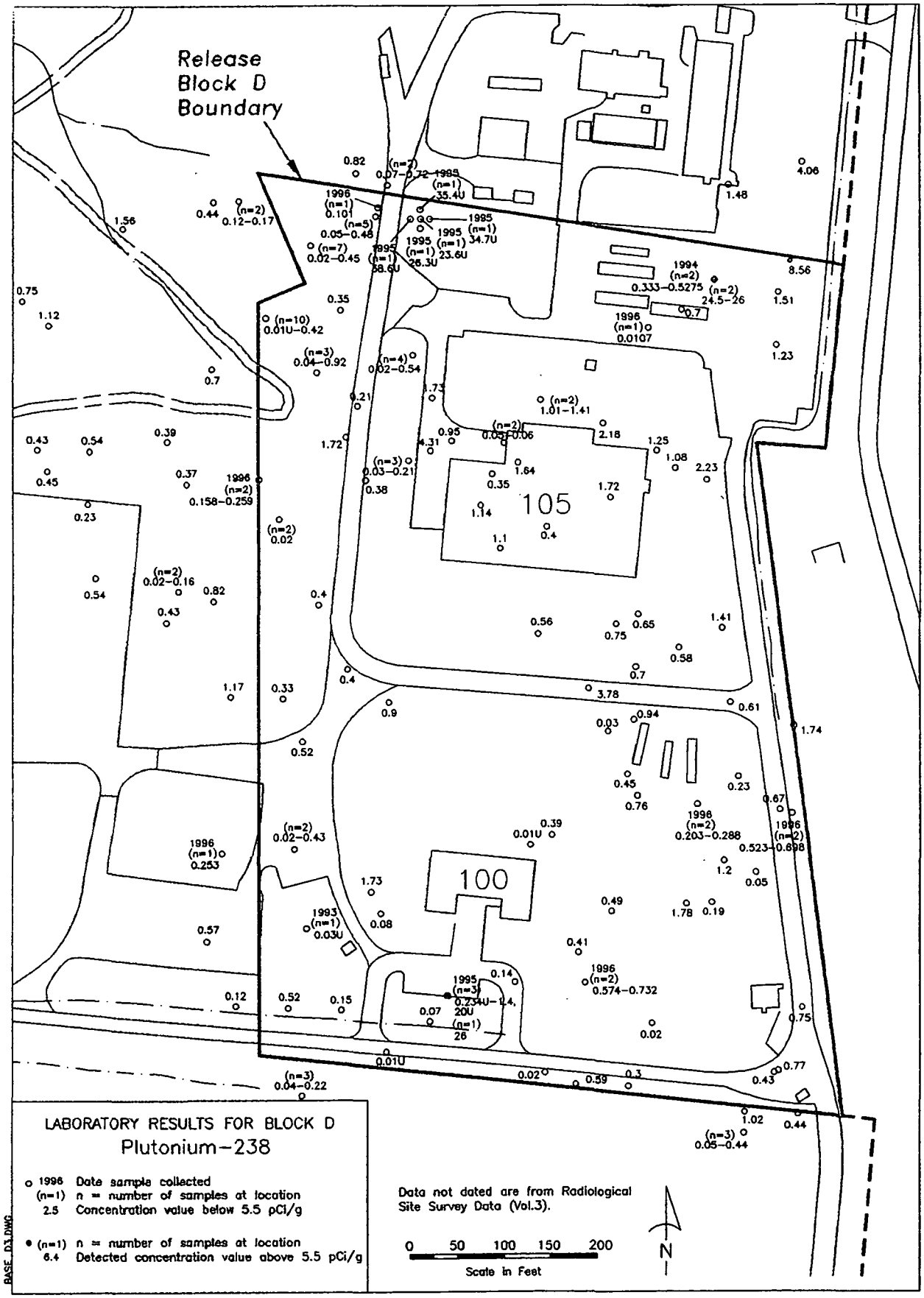
Release
Block D
Boundary
105
100
LABORATORY RESULTS FOR BLOCK D
Plutonium-238
1996 Date sample collected
(n=1) n = number of samples at location
2.5 Concentration value below 5.5 pCi/g
(n=1) n = number of samples at location
6.4 Detected concentration value above 5.5 pCi/g
Data not dated are from Radiological Site Survey Data (Vol.3).
0 50 100 150 200
Scale in Feet
N
BASE D3.DWG

DIAGRAM B

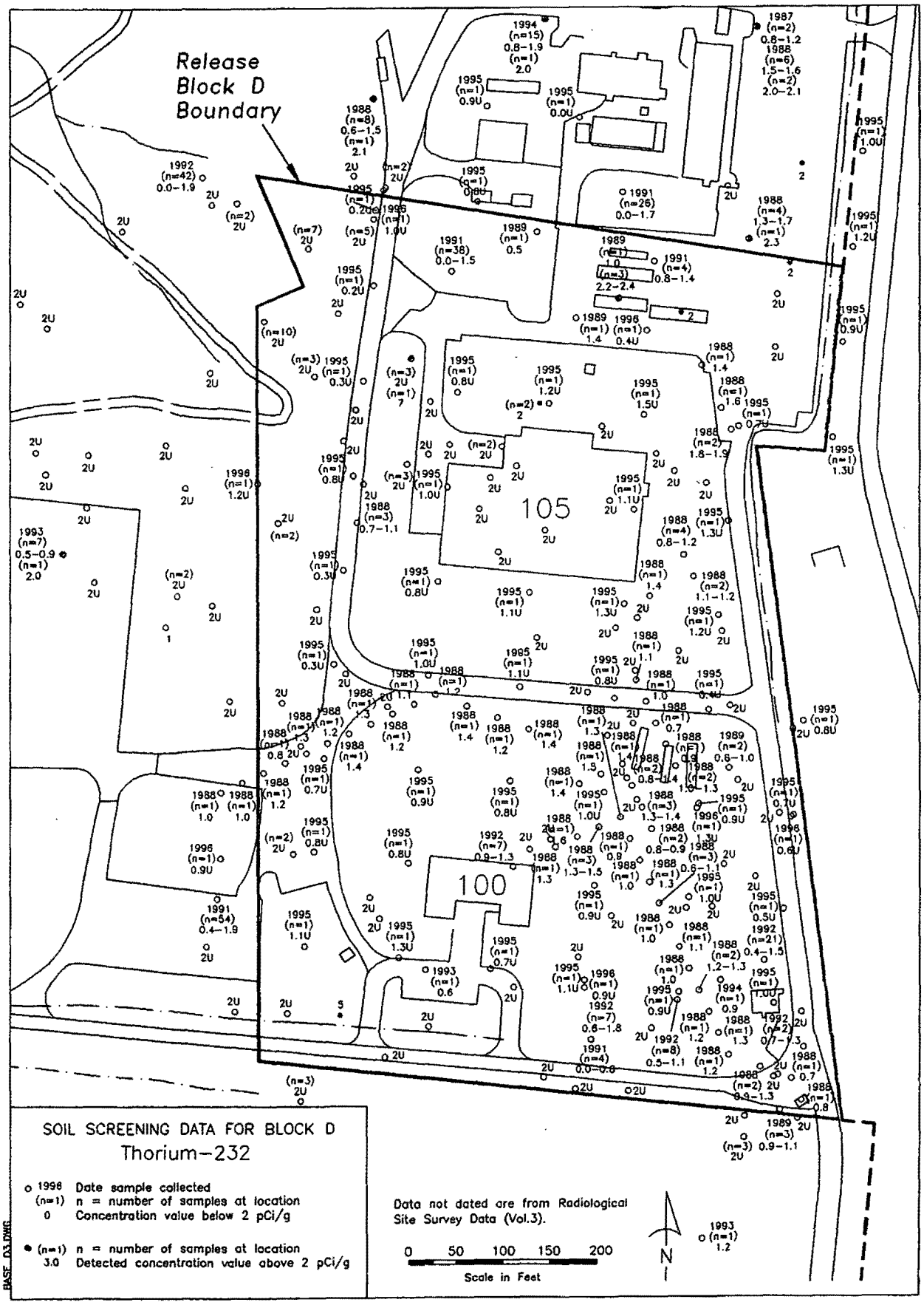
Release
Block D
Boundary
105
100
SOIL SCREENING DATA FOR BLOCK D
Thorium-232
o 1996 Date sample collected
(n=1) n = number of samples at location
0 Concentration value below 2 pCi/g
• (n=1) n = number of samples at location
3.0 Detected concentration value above 2 pCi/g
Data not dated are from Radiological Site Survey Data (Vol.3).
0 50 100 150 200
Scale in Feet
N
BASE_D3.DWG

DIAGRAM C

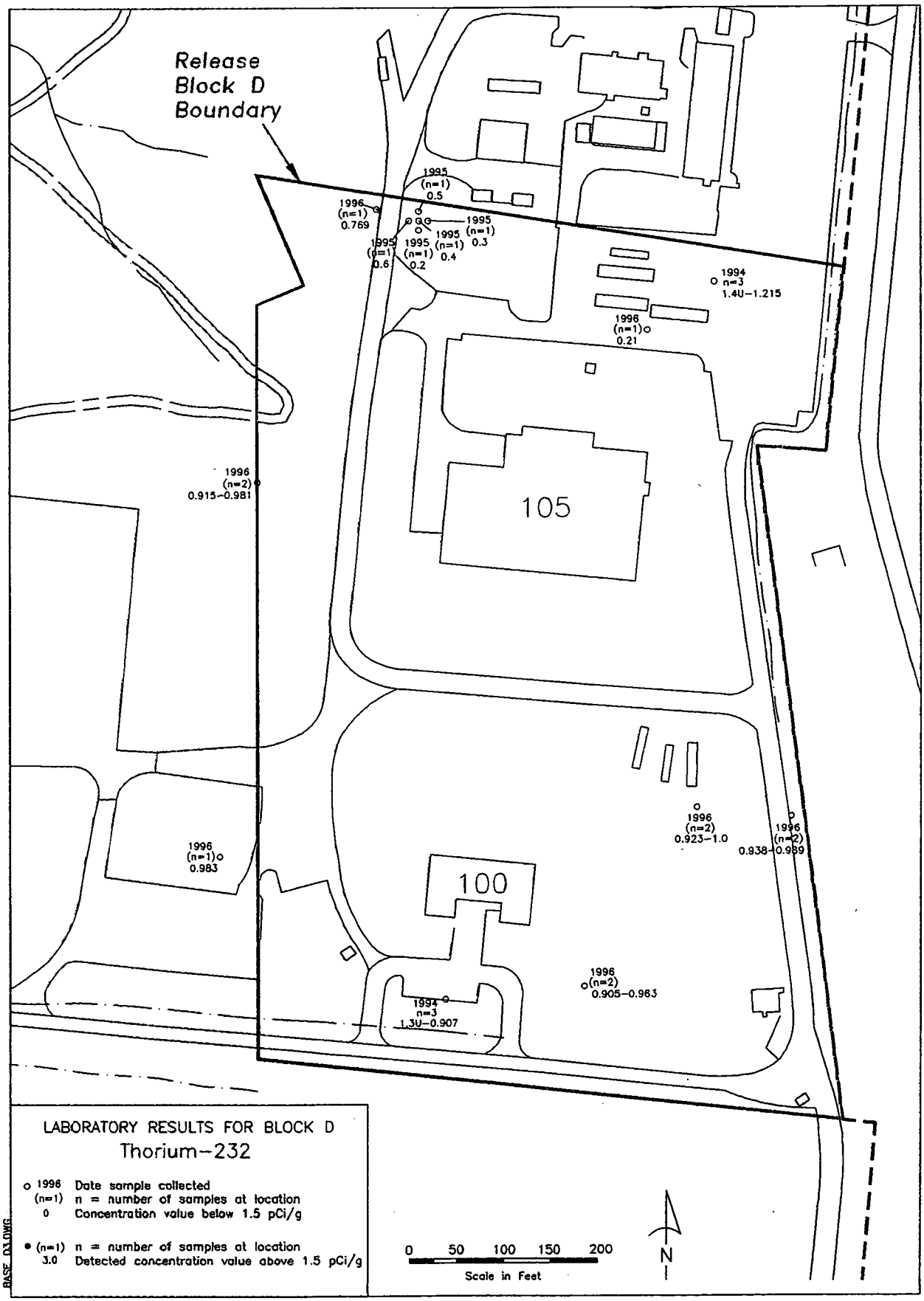
Release
Block D
Boundary
1995
(n=1)
0.5
1996
(n=1)
0.769
1995
(n=1)
0.3
1995
(n=1)
0.6
1995
(n=1)
0.2
1995
(n=1)
0.4
1994
n=3
1.4U–1.215
1996
(n=1)
0.21
105
1996
(n=2)
0.915–0.981
1996
(n=2)
0.923–1.0
1996
(n=2)
0.938–0.959
1996
(n=1)
0.983
100
1996
(n=2)
0.905–0.963
1994
n=3
1.3U–0.907
LABORATORY RESULTS FOR BLOCK D
Thorium–232
1996 Date sample collected
(n=1) n = number of samples at location
0 Concentration value below 1.5 pCi/g
(n=1) n = number of samples at location
3.0 Detected concentration value above 1.5 pCi/g
0 50 100 150 200
Scale in Feet
N
BASE 03.DWG

DIAGRAM D

APPENDIX B

ANALYTICAL DATA FOR MOUND PRODUCTION WELLS 0271 AND 0076

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	06-May-91	1,1,1,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0271	05-Aug-91	1,1,1,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0271	06-May-91	1,1,1,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0076	31-Jul-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	27-Feb-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	24-Jan-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	31-Jul-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	27-Feb-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	22-Jun-92	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	R
0271	11-Oct-93	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	UJ
0076	16-Dec-91	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	UJ
0271	23-Mar-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	27-Feb-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	23-Mar-92	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	15-Jun-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	16-Sep-92	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	11-Oct-93	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	UJ
0076	27-Feb-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	16-Dec-91	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	UJ
0076	07-Apr-94	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	01-Feb-91	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	15-Jun-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	24-Jan-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	06-Nov-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	UJ
0271	16-Sep-92	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	06-Nov-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	UJ
0076	23-Mar-90	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	22-Jun-92	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	R
0076	16-Jun-93	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	01-Feb-91	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	07-Apr-94	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0271	07-Apr-94	1,1,1,2-Tetrachloroethane	1	1	UG/L	U	U
0076	16-Jun-93	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0076	06-Nov-90	1,1,1-Trichloroethane	0.3	0.3	UG/L		UJ
0271	23-Mar-90	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,1,1-Trichloroethane	0.3	0.3	UG/L		
0076	23-Mar-92	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0271	05-Aug-91	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	UJ
0271	15-Jun-90	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0271	24-Jan-90	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0271	16-Sep-92	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0076	22-Jun-92	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0076	06-May-91	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	UJ
0271	01-Feb-91	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	UJ
0076	16-Sep-92	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0271	06-Nov-90	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0076	01-Feb-91	1,1,1-Trichloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,1,1-Trichloroethane	0.3	0.3	UG/L		
0076	11-Oct-93	1,1,1-Trichloroethane	0.36	0.3	UG/L		J
0076	27-Feb-90	1,1,1-Trichloroethane	0.4	0.3	UG/L		
0271	27-Feb-90	1,1,1-Trichloroethane	0.4	0.3	UG/L		
0076	24-Jan-90	1,1,1-Trichloroethane	0.4	0.3	UG/L		
0076	15-Jun-90	1,1,1-Trichloroethane	0.4	0.3	UG/L		
0076	23-Mar-90	1,1,1-Trichloroethane	0.6	0.3	UG/L		
0271	31-Jul-90	1,1,1-Trichloroethane	0.7	0.3	UG/L		
0076	07-Apr-94	1,1,1-Trichloroethane	0.71	0.3	UG/L		
0271	06-May-91	1,1,1-Trichloroethane	0.9	0.3	UG/L		J
0076	16-Dec-91	1,1,1-Trichloroethane	1	1	UG/L	U	UJ
0271	16-Dec-91	1,1,1-Trichloroethane	1	1	UG/L	U	U
0076	13-Sep-88	1,1,1-Trichloroethane	1	1	UG/L	U	U
0271	13-Sep-88	1,1,1-Trichloroethane	1	1	UG/L	U	U
0271	07-Apr-94	1,1,1-Trichloroethane	1.4	0.3	UG/L		
0076	31-Jul-90	1,1,1-Trichloroethane	1.4	0.3	UG/L		
0271	07-Apr-94	1,1,1-Trichloroethane	1.7	0.3	UG/L		
0271	22-Jun-92	1,1,1-Trichloroethane	1.8	0.3	UG/L		
0271	11-Oct-93	1,1,1-Trichloroethane	1.8	0.3	UG/L		J
0271	08-Mar-88	1,1,1-Trichloroethane	5	5	UG/L	U	U
0076	13-Sep-88	1,1,1-Trichloroethane	5	5	UG/L	U	U
0271	13-Sep-88	1,1,1-Trichloroethane	5	5	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	25-Apr-90	1,1,1-Trichloroethane	5	5	UG/L	U	U
0271	24-Jun-88	1,1,1-Trichloroethane	5	5	UG/L	U	U
0076	25-Apr-90	1,1,1-Trichloroethane	5	5	UG/L	U	U
0076	24-Jun-88	1,1,1-Trichloroethane	5	5	UG/L	U	U
0076	22-Jun-92	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	R
0076	16-Sep-92	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	24-Jan-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	16-Jun-93	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0076	01-Feb-91	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0271	16-Sep-92	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	07-Apr-94	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0076	06-Nov-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	22-Jun-92	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	R
0271	31-Jul-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	06-May-91	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	07-Apr-94	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	27-Feb-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	07-Apr-94	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	23-Mar-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	06-May-91	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	01-Feb-91	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0076	11-Oct-93	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	11-Oct-93	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	UJ
0076	31-Jul-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	23-Mar-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	15-Jun-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	15-Jun-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	23-Mar-92	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0076	24-Jan-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	05-Aug-91	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	06-Nov-90	1,1,2,2-Tetrachloroethane	0.3	0.3	UG/L	U	U
0271	16-Dec-91	1,1,2,2-Tetrachloroethane	1	1	UG/L	U	UJ
0076	13-Sep-88	1,1,2,2-Tetrachloroethane	1	1	UG/L	U	U
0271	13-Sep-88	1,1,2,2-Tetrachloroethane	1	1	UG/L	U	U
0076	16-Dec-91	1,1,2,2-Tetrachloroethane	1	1	UG/L	U	UJ
0076	13-Sep-88	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0271	08-Mar-88	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0076	25-Apr-90	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0271	13-Sep-88	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0271	25-Apr-90	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0271	24-Jun-88	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0076	24-Jun-88	1,1,2,2-Tetrachloroethane	5	5	UG/L	U	U
0271	11-Oct-93	1,1,2-Trichloro-1,2,2-trifluoroethane	2	2	UG/L	U	UJ
0076	11-Oct-93	1,1,2-Trichloro-1,2,2-trifluoroethane	2	2	UG/L	U	UJ
0076	07-Apr-94	1,1,2-Trichloro-1,2,2-trifluoroethane	2	2	UG/L	U	U
0271	07-Apr-94	1,1,2-Trichloro-1,2,2-trifluoroethane	2.3	2	UG/L		J
0271	07-Apr-94	1,1,2-Trichloro-1,2,2-trifluoroethane	2.6	2	UG/L		J
0076	16-Jun-93	1,1,2-Trichloro-1,2,2-trifluoroethane	8.7	1	UG/L		J
0076	23-Mar-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	27-Feb-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	15-Jun-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	06-Nov-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	15-Jun-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	01-Feb-91	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	27-Feb-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	06-May-91	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	07-Apr-94	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	UJ
0076	22-Jun-92	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	R
0271	23-Mar-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	07-Apr-94	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	27-Feb-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	06-May-91	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	07-Apr-94	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	31-Jul-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	11-Oct-93	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	23-Mar-92	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	24-Jan-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	05-Aug-91	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	11-Oct-93	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	UJ
0271	27-Feb-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	06-Nov-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	16-Jun-93	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	16-Sep-92	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	22-Jun-92	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	R
0271	24-Jan-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	01-Feb-91	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	31-Jul-90	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0076	16-Sep-92	1,1,2-Trichloroethane	0.2	0.2	UG/L	U	U
0271	13-Sep-88	1,1,2-Trichloroethane	1	1	UG/L	U	U
0076	13-Sep-88	1,1,2-Trichloroethane	1	1	UG/L	U	U
0076	16-Dec-91	1,1,2-Trichloroethane	1	1	UG/L	U	U
0271	16-Dec-91	1,1,2-Trichloroethane	1	1	UG/L	U	U
0076	25-Apr-90	1,1,2-Trichloroethane	5	5	UG/L	U	U
0271	24-Jun-88	1,1,2-Trichloroethane	5	5	UG/L	U	U
0076	13-Sep-88	1,1,2-Trichloroethane	5	5	UG/L	U	U
0271	13-Dec-85	1,1,2-Trichloroethane	5	5	UG/L	U	U
0271	08-Mar-88	1,1,2-Trichloroethane	5	5	UG/L	U	U
0076	12-Dec-85	1,1,2-Trichloroethane	5	5	UG/L	U	U
0271	13-Sep-88	1,1,2-Trichloroethane	5	5	UG/L	U	U
0271	13-Mar-86	1,1,2-Trichloroethane	5	5	UG/L	U	U
0271	25-Apr-90	1,1,2-Trichloroethane	5	5	UG/L	U	U
0076	24-Jun-88	1,1,2-Trichloroethane	5	5	UG/L	U	U
0076	01-Feb-84	1,1,2-Trichloroethane	10	10	UG/L	U	U
0271	07-Apr-94	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0076	06-May-91	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	24-Jan-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	31-Jul-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	16-Sep-92	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0076	07-Apr-94	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	06-May-91	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	01-Feb-91	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0271	11-Oct-93	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0076	06-Nov-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	11-Oct-93	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0271	16-Sep-92	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0076	24-Jan-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	07-Apr-94	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	16-Jun-93	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0076	15-Jun-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	27-Feb-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	27-Feb-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	22-Jun-92	1,1-Dichloroethane	0.7	0.7	UG/L	U	R
0271	06-Nov-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	23-Mar-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	15-Jun-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	31-Jul-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	05-Aug-91	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	27-Feb-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	01-Feb-91	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	27-Feb-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0076	23-Mar-92	1,1-Dichloroethane	0.7	0.7	UG/L	U	UJ
0271	22-Jun-92	1,1-Dichloroethane	0.7	0.7	UG/L	U	R
0271	23-Mar-90	1,1-Dichloroethane	0.7	0.7	UG/L	U	U
0271	16-Dec-91	1,1-Dichloroethane	1	1	UG/L	U	U
0076	16-Dec-91	1,1-Dichloroethane	1	1	UG/L	U	U
0076	13-Sep-88	1,1-Dichloroethane	2.5	1	UG/L		
0271	13-Sep-88	1,1-Dichloroethane	3.5	1	UG/L		
0271	24-Jun-88	1,1-Dichloroethane	5	5	UG/L	U	U
0076	24-Jun-88	1,1-Dichloroethane	5	5	UG/L	U	U
0076	25-Apr-90	1,1-Dichloroethane	5	5	UG/L	U	U
0271	13-Sep-88	1,1-Dichloroethane	5	5	UG/L	U	U
0271	08-Mar-88	1,1-Dichloroethane	5	5	UG/L	U	U
0271	25-Apr-90	1,1-Dichloroethane	5	5	UG/L	U	U
0076	13-Sep-88	1,1-Dichloroethane	5	5	UG/L	U	U
0271	16-Sep-92	1,1-Dichloroethene	1	1	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	22-Jun-92	1,1-Dichloroethene	1	1	UG/L	U	UJ
0076	16-Dec-91	1,1-Dichloroethene	1	1	UG/L	U	UJ
0271	22-Jun-92	1,1-Dichloroethene	1	1	UG/L	U	UJ
0076	16-Jun-93	1,1-Dichloroethene	1	1	UG/L	U	UJ
0076	16-Sep-92	1,1-Dichloroethene	1	1	UG/L	U	UJ
0076	13-Sep-88	1,1-Dichloroethene	1	1	UG/L	U	U
0271	16-Dec-91	1,1-Dichloroethene	1	1	UG/L	U	UJ
0271	13-Sep-88	1,1-Dichloroethene	1	1	UG/L	U	U
0076	23-Mar-92	1,1-Dichloroethene	1	1	UG/L	U	UJ
0076	31-Jul-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	06-Nov-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	UJ
0076	06-Nov-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	31-Jul-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	24-Jan-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	27-Feb-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	15-Jun-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	27-Feb-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	27-Feb-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	06-May-91	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0076	11-Oct-93	1,1-Dichloroethene	1.3	1.3	UG/L	U	UJ
0271	07-Apr-94	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	07-Apr-94	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	23-Mar-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0076	07-Apr-94	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	01-Feb-91	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0076	06-May-91	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	05-Aug-91	1,1-Dichloroethene	1.3	1.3	UG/L	U	UJ
0076	15-Jun-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0076	24-Jan-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0076	27-Feb-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0076	23-Mar-90	1,1-Dichloroethene	1.3	1.3	UG/L	U	U
0271	11-Oct-93	1,1-Dichloroethene	1.3	1.3	UG/L	U	UJ
0076	01-Feb-91	1,1-Dichloroethene	1.7	1.3	UG/L		J
0271	25-Apr-90	1,1-Dichloroethene	5	5	UG/L	U	U
0076	24-Jun-88	1,1-Dichloroethene	5	5	UG/L	U	U
0271	13-Sep-88	1,1-Dichloroethene	5	5	UG/L	U	U
0076	13-Sep-88	1,1-Dichloroethene	5	5	UG/L	U	U
0271	08-Mar-88	1,1-Dichloroethene	5	5	UG/L	U	U
0076	25-Apr-90	1,1-Dichloroethene	5	5	UG/L	U	U
0271	24-Jun-88	1,1-Dichloroethene	5	5	UG/L	U	U
0271	11-Oct-93	1,2,3-Trichloropropane	1	1	UG/L	U	U
0076	06-May-91	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0271	05-Aug-91	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0271	06-Nov-90	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0076	07-Apr-94	1,2,3-Trichloropropane	1	1	UG/L	U	U
0271	06-May-91	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0076	01-Feb-91	1,2,3-Trichloropropane	1	1	UG/L		UJ
0076	11-Oct-93	1,2,3-Trichloropropane	1	1	UG/L	U	U
0271	01-Feb-91	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0271	07-Apr-94	1,2,3-Trichloropropane	1	1	UG/L	U	U
0271	07-Apr-94	1,2,3-Trichloropropane	1	1	UG/L	U	U
0076	23-Mar-92	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0076	16-Sep-92	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0271	16-Sep-92	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0076	22-Jun-92	1,2,3-Trichloropropane	1	1	UG/L	U	U
0076	06-Nov-90	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0271	22-Jun-92	1,2,3-Trichloropropane	1	1	UG/L	U	U
0076	16-Jun-93	1,2,3-Trichloropropane	1	1	UG/L	U	U
0076	16-Dec-91	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0271	16-Dec-91	1,2,3-Trichloropropane	1	1	UG/L	U	UJ
0076	06-Nov-90	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	01-Feb-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	16-Sep-92	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	16-Dec-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	11-Oct-93	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	06-May-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	23-Mar-92	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0076	22-Jun-92	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	06-May-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	05-Aug-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	UJ
0271	06-Nov-90	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	01-Feb-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	16-Sep-92	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	11-Oct-93	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	16-Dec-91	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	22-Jun-92	1,2,4-Trichlorobenzene	10	10	UG/L	U	U
0271	07-Apr-94	1,2,4-Trichlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	1,2,4-Trichlorobenzene	11	11	UG/L	U	U
0076	07-Apr-94	1,2,4-Trichlorobenzene	11	11	UG/L	U	U
0076	13-Sep-88	1,2-Dichlorobenzene	1	1	UG/L	U	U
0076	16-Dec-91	1,2-Dichlorobenzene	1	1	UG/L	U	U
0271	13-Sep-88	1,2-Dichlorobenzene	1	1	UG/L	U	U
0271	16-Dec-91	1,2-Dichlorobenzene	1	1	UG/L	U	U
0271	01-Feb-91	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	07-Apr-94	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	24-Jan-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	27-Feb-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	27-Feb-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	27-Feb-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	16-Sep-92	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	06-Nov-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	06-May-91	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	24-Jan-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	22-Jun-92	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	UJ
0076	23-Mar-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	16-Jun-93	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	16-Sep-92	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	11-Oct-93	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	UJ
0271	05-Aug-91	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	07-Apr-94	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	UJ
0271	23-Mar-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	11-Oct-93	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	31-Jul-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	01-Feb-91	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	07-Apr-94	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	15-Jun-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	06-May-91	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	22-Jun-92	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	UJ
0076	31-Jul-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	27-Feb-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	15-Jun-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0271	06-Nov-90	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	U
0076	23-Mar-92	1,2-Dichlorobenzene	1.5	1.5	UG/L	U	UJ
0076	06-Nov-90	1,2-Dichlorobenzene	10	10	UG/L	U	U
0076	11-Oct-93	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	05-Aug-91	1,2-Dichlorobenzene	10	10	UG/L	U	UJ
0076	01-Feb-91	1,2-Dichlorobenzene	10	10	UG/L	U	U
0076	23-Mar-92	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	01-Feb-91	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	11-Oct-93	1,2-Dichlorobenzene	10	10	UG/L	U	U
0076	06-May-91	1,2-Dichlorobenzene	10	10	UG/L	U	U
0076	16-Dec-91	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	06-Nov-90	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	22-Jun-92	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	16-Dec-91	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	16-Sep-92	1,2-Dichlorobenzene	10	10	UG/L	U	U
0076	22-Jun-92	1,2-Dichlorobenzene	10	10	UG/L	U	U
0076	16-Sep-92	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	06-May-91	1,2-Dichlorobenzene	10	10	UG/L	U	U
0271	07-Apr-94	1,2-Dichlorobenzene	11	11	UG/L	U	U
0076	07-Apr-94	1,2-Dichlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	1,2-Dichlorobenzene	11	11	UG/L	U	U
0076	22-Jun-92	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	23-Mar-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	07-Apr-94	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	24-Jan-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	06-Nov-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	01-Feb-91	1,2-Dichloroethane	0.3	0.3	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	27-Feb-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	16-Jun-93	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	16-Sep-92	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	23-Mar-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	01-Feb-91	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	15-Jun-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	27-Feb-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	24-Jan-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	22-Jun-92	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	16-Sep-92	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	05-Aug-91	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	31-Jul-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	07-Apr-94	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	11-Oct-93	1,2-Dichloroethane	0.3	0.3	UG/L	U	UJ
0076	06-May-91	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	07-Apr-94	1,2-Dichloroethane	0.3	0.3	UG/L	U	UJ
0271	11-Oct-93	1,2-Dichloroethane	0.3	0.3	UG/L	U	UJ
0076	23-Mar-92	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	31-Jul-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	27-Feb-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	15-Jun-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	06-May-91	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0076	06-Nov-90	1,2-Dichloroethane	0.3	0.3	UG/L	U	U
0271	16-Dec-91	1,2-Dichloroethane	1	1	UG/L	U	UJ
0076	16-Dec-91	1,2-Dichloroethane	1	1	UG/L	U	UJ
0271	13-Sep-88	1,2-Dichloroethane	1	1	UG/L	U	U
0076	13-Sep-88	1,2-Dichloroethane	1	1	UG/L	U	U
0076	12-Dec-85	1,2-Dichloroethane	2.8	2.8	UG/L	U	U
0271	13-Dec-85	1,2-Dichloroethane	2.8	2.8	UG/L	U	U
0271	13-Mar-86	1,2-Dichloroethane	2.8	2.8	UG/L	U	U
0271	24-Jun-88	1,2-Dichloroethane	5	5	UG/L	U	U
0271	13-Sep-88	1,2-Dichloroethane	5	5	UG/L	U	U
0076	24-Jun-88	1,2-Dichloroethane	5	5	UG/L	U	U
0076	13-Sep-88	1,2-Dichloroethane	5	5	UG/L	U	U
0271	08-Mar-88	1,2-Dichloroethane	5	5	UG/L	U	U
0271	25-Apr-90	1,2-Dichloroethane	5	5	UG/L	U	U
0076	25-Apr-90	1,2-Dichloroethane	5	5	UG/L	U	U
0076	01-Feb-84	1,2-Dichloroethane	10	10	UG/L	U	U
0076	06-May-91	1,2-Dichloroethene	1.3	1	UG/L		
0076	13-Sep-88	1,2-Dichloroethene	1.5	5	UG/L	J	J
0076	01-Feb-91	1,2-Dichloroethene	1.6	1	UG/L		
0076	25-Apr-90	1,2-Dichloroethene	2	5	UG/L	J	J
0271	25-Apr-90	1,2-Dichloroethene	3	5	UG/L	J	J
0271	05-Aug-91	1,2-Dichloroethene	3.2	1	UG/L		J
0271	01-Feb-91	1,2-Dichloroethene	3.7	1	UG/L		
0271	06-May-91	1,2-Dichloroethene	4.7	1	UG/L		J
0271	13-Sep-88	1,2-Dichloroethene	5	5	UG/L	U	U
0076	24-Jan-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	23-Mar-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	05-Aug-91	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	06-Nov-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	27-Feb-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	15-Jun-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	23-Mar-92	1,2-Dichloropropane	0.4	0.4	UG/L	U	UJ
0271	27-Feb-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	23-Mar-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	06-May-91	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	07-Apr-94	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	15-Jun-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	01-Feb-91	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	31-Jul-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	07-Apr-94	1,2-Dichloropropane	0.4	0.4	UG/L	U	UJ
0271	11-Oct-93	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	31-Jul-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	27-Feb-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	06-May-91	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	11-Oct-93	1,2-Dichloropropane	0.4	0.4	UG/L	U	UJ
0271	01-Feb-91	1,2-Dichloropropane	0.4	0.4	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Jun-93	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	16-Sep-92	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	24-Jan-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	22-Jun-92	1,2-Dichloropropane	0.4	0.4	UG/L	U	R
0076	06-Nov-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	16-Sep-92	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	07-Apr-94	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0271	27-Feb-90	1,2-Dichloropropane	0.4	0.4	UG/L	U	U
0076	22-Jun-92	1,2-Dichloropropane	0.4	0.4	UG/L	U	R
0076	16-Dec-91	1,2-Dichloropropane	1	1	UG/L	U	U
0076	13-Sep-88	1,2-Dichloropropane	1	1	UG/L	U	U
0271	16-Dec-91	1,2-Dichloropropane	1	1	UG/L	U	UJ
0271	13-Sep-88	1,2-Dichloropropane	1	1	UG/L	U	U
0076	13-Sep-88	1,2-Dichloropropane	5	5	UG/L	U	U
0271	25-Apr-90	1,2-Dichloropropane	5	5	UG/L	U	U
0271	13-Sep-88	1,2-Dichloropropane	5	5	UG/L	U	U
0271	24-Jun-88	1,2-Dichloropropane	5	5	UG/L	U	U
0076	25-Apr-90	1,2-Dichloropropane	5	5	UG/L	U	U
0271	08-Mar-88	1,2-Dichloropropane	5	5	UG/L	U	U
0076	24-Jun-88	1,2-Dichloropropane	5	5	UG/L	U	U
0271	11-Oct-93	1,2-Diethylbenzene	1	1	UG/L	U	UJ
0271	07-Apr-94	1,2-Diethylbenzene	1	1	UG/L	U	U
0076	07-Apr-94	1,2-Diethylbenzene	1	1	UG/L	U	U
0076	11-Oct-93	1,2-Diethylbenzene	1	1	UG/L	U	U
0271	07-Apr-94	1,2-Diethylbenzene	1	1	UG/L	U	U
0076	23-Mar-92	1,2-cis-Dichloroethene	0.93	1	UG/L	J	J
0076	07-Apr-94	1,2-cis-Dichloroethene	1	1	UG/L	U	U
0076	16-Sep-92	1,2-cis-Dichloroethene	1	1	UG/L	U	U
0076	22-Jun-92	1,2-cis-Dichloroethene	1	1	UG/L	U	UJ
0076	11-Oct-93	1,2-cis-Dichloroethene	1.1	1	UG/L		J
0271	07-Apr-94	1,2-cis-Dichloroethene	1.2	1	UG/L		
0271	07-Apr-94	1,2-cis-Dichloroethene	1.3	1	UG/L		J
0076	16-Jun-93	1,2-cis-Dichloroethene	1.4	1	UG/L		J
0271	11-Oct-93	1,2-cis-Dichloroethene	1.5	1	UG/L		J
0271	16-Sep-92	1,2-cis-Dichloroethene	1.8	1	UG/L		UJ
0271	22-Jun-92	1,2-cis-Dichloroethene	2.1	1	UG/L		J
0076	07-Apr-94	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	23-Mar-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	22-Jun-92	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	22-Jun-92	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	27-Feb-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	11-Oct-93	1,2-trans-Dichloroethene	1	1	UG/L	U	UJ
0271	15-Jun-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	27-Feb-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	01-Feb-91	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	23-Mar-92	1,2-trans-Dichloroethene	1	1	UG/L	U	UJ
0271	07-Apr-94	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	16-Jun-93	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	16-Sep-92	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	11-Oct-93	1,2-trans-Dichloroethene	1	1	UG/L	U	UJ
0271	06-Nov-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	27-Feb-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	31-Jul-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	05-Aug-91	1,2-trans-Dichloroethene	1	1	UG/L	U	UJ
0271	06-May-91	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	24-Jan-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	06-May-91	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	16-Sep-92	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	27-Feb-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	24-Jan-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	07-Apr-94	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0271	01-Feb-91	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	23-Mar-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	15-Jun-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	06-Nov-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	13-Sep-88	1,2-trans-Dichloroethene	1	5	UG/L	J	J
0076	31-Jul-90	1,2-trans-Dichloroethene	1	1	UG/L	U	U
0076	12-Dec-85	1,2-trans-Dichloroethene	1.6	1.6	UG/L	U	U
0271	13-Dec-85	1,2-trans-Dichloroethene	1.6	1.6	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Dec-91	1,2-trans-Dichloroethene	1.8	1	UG/L		
0271	13-Sep-88	1,2-trans-Dichloroethene	1.9	1	UG/L		
0076	24-Jun-88	1,2-trans-Dichloroethene	2	5	UG/L	J	J
0271	16-Dec-91	1,2-trans-Dichloroethene	2.1	1	UG/L		
0076	13-Sep-88	1,2-trans-Dichloroethene	2.8	1	UG/L		
0271	24-Jun-88	1,2-trans-Dichloroethene	3	5	UG/L	J	J
0271	13-Mar-86	1,2-trans-Dichloroethene	3	1.6	UG/L		
0271	13-Sep-88	1,2-trans-Dichloroethene	5	5	UG/L	U	U
0271	08-Mar-88	1,2-trans-Dichloroethene	5	5	UG/L	U	U
0076	01-Feb-84	1,2-trans-Dichloroethene	10	10	UG/L	U	U
0271	07-Apr-94	1,3,5-Trinitrobenzene	1.3	1.3	UG/L	U	U
0076	07-Apr-94	1,3,5-Trinitrobenzene	1.3	1.3	UG/L	U	U
0271	11-Oct-93	1,3,5-Trinitrobenzene	1.3	1.3	UG/L	U	R
0076	11-Oct-93	1,3,5-Trinitrobenzene	1.3	1.3	UG/L	U	R
0076	16-Dec-91	1,3-Dichlorobenzene	1	1	UG/L	U	U
0076	13-Sep-88	1,3-Dichlorobenzene	1	1	UG/L	U	U
0271	13-Sep-88	1,3-Dichlorobenzene	1	1	UG/L	U	U
0271	16-Dec-91	1,3-Dichlorobenzene	1	1	UG/L	U	U
0271	07-Apr-94	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	06-Nov-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	15-Jun-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	24-Jan-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	05-Aug-91	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	24-Jan-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	27-Feb-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	06-May-91	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	31-Jul-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	06-Nov-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	15-Jun-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	23-Mar-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	11-Oct-93	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	UJ
0076	11-Oct-93	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	UJ
0076	06-May-91	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	01-Feb-91	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	07-Apr-94	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	31-Jul-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	22-Jun-92	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	R
0271	07-Apr-94	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	UJ
0076	16-Jun-93	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	UJ
0271	27-Feb-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	22-Jun-92	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	R
0076	16-Sep-92	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	01-Feb-91	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	27-Feb-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	16-Sep-92	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	23-Mar-92	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	UJ
0271	27-Feb-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0076	23-Mar-90	1,3-Dichlorobenzene	3.2	3.2	UG/L	U	U
0271	11-Oct-93	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	01-Feb-91	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	23-Mar-92	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	16-Dec-91	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	16-Sep-92	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	22-Jun-92	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	06-May-91	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	11-Oct-93	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	22-Jun-92	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	06-Nov-90	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	05-Aug-91	1,3-Dichlorobenzene	10	10	UG/L	U	UJ
0271	16-Sep-92	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	06-May-91	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	16-Dec-91	1,3-Dichlorobenzene	10	10	UG/L	U	U
0076	06-Nov-90	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	01-Feb-91	1,3-Dichlorobenzene	10	10	UG/L	U	U
0271	07-Apr-94	1,3-Dichlorobenzene	11	11	UG/L	U	U
0076	07-Apr-94	1,3-Dichlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	1,3-Dichlorobenzene	11	11	UG/L	U	U
0076	07-Apr-94	1,3-Diethylbenzene	1	1	UG/L	U	U
0271	11-Oct-93	1,3-Diethylbenzene	1	1	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	07-Apr-94	1,3-Diethylbenzene	1	1	UG/L	U	U
0076	11-Oct-93	1,3-Diethylbenzene	1	1	UG/L	U	U
0271	07-Apr-94	1,3-Diethylbenzene	1	1	UG/L	U	UJ
0076	07-Apr-94	1,3-Dinitrobenzene	0.31	0.31	UG/L	U	U
0271	11-Oct-93	1,3-Dinitrobenzene	0.31	0.31	UG/L	U	UJ
0271	07-Apr-94	1,3-Dinitrobenzene	0.31	0.31	UG/L	U	U
0076	11-Oct-93	1,3-Dinitrobenzene	0.31	0.31	UG/L	U	UJ
0271	13-Sep-88	1,3-cis-Dichloropropene	1	1	UG/L	U	U
0076	13-Sep-88	1,3-cis-Dichloropropene	1	1	UG/L	U	U
0271	16-Dec-91	1,3-cis-Dichloropropene	1	1	UG/L	U	UJ
0076	16-Dec-91	1,3-cis-Dichloropropene	1	1	UG/L	U	UJ
0076	06-May-91	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	16-Jun-93	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	23-Mar-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	06-Nov-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	07-Apr-94	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	07-Apr-94	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	11-Oct-93	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	UJ
0076	22-Jun-92	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	16-Sep-92	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	23-Mar-92	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	24-Jan-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	07-Apr-94	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	27-Feb-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	31-Jul-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	27-Feb-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	11-Oct-93	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	23-Mar-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	15-Jun-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	06-Nov-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	31-Jul-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	22-Jun-92	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	27-Feb-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	27-Feb-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	06-May-91	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	24-Jan-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	05-Aug-91	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0076	15-Jun-90	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	16-Sep-92	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	U
0271	01-Feb-91	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	UJ
0076	01-Feb-91	1,3-cis-Dichloropropene	3.4	3.4	UG/L	U	UJ
0076	24-Jun-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0076	13-Sep-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0076	25-Apr-90	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0076	13-Sep-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0271	25-Apr-90	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0271	24-Jun-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0271	08-Mar-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0271	13-Sep-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0271	13-Sep-88	1,3-cis-Dichloropropene	5	5	UG/L	U	U
0076	16-Dec-91	1,3-trans-Dichloropropene	1	1	UG/L	U	UJ
0271	13-Sep-88	1,3-trans-Dichloropropene	1	1	UG/L	U	U
0076	13-Sep-88	1,3-trans-Dichloropropene	1	1	UG/L	U	U
0271	16-Dec-91	1,3-trans-Dichloropropene	1	1	UG/L	U	UJ
0271	27-Feb-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	06-May-91	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	24-Jan-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	22-Jun-92	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	27-Feb-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	24-Jan-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	22-Jun-92	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	05-Aug-91	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	16-Sep-92	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	23-Mar-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	16-Sep-92	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	07-Apr-94	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	27-Feb-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	07-Apr-94	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	23-Mar-92	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Jun-93	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	06-Nov-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	01-Feb-91	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	UJ
0076	31-Jul-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	06-May-91	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	06-Nov-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	01-Feb-91	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	UJ
0271	11-Oct-93	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	UJ
0076	11-Oct-93	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	UJ
0076	07-Apr-94	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	31-Jul-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	15-Jun-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0271	23-Mar-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	15-Jun-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	27-Feb-90	1,3-trans-Dichloropropene	3.4	3.4	UG/L	U	U
0076	13-Sep-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0271	13-Sep-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0076	13-Sep-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0271	24-Jun-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0271	13-Sep-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0271	08-Mar-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0076	24-Jun-88	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0076	25-Apr-90	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0271	25-Apr-90	1,3-trans-Dichloropropene	5	5	UG/L	U	U
0271	13-Sep-88	1,4-Dichlorobenzene	1	1	UG/L	U	U
0076	13-Sep-88	1,4-Dichlorobenzene	1	1	UG/L	U	U
0076	16-Dec-91	1,4-Dichlorobenzene	1	1	UG/L	U	U
0271	16-Dec-91	1,4-Dichlorobenzene	1	1	UG/L	U	U
0271	24-Jan-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	06-May-91	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	22-Jun-92	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	UJ
0076	23-Mar-92	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	UJ
0271	23-Mar-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	23-Mar-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	16-Sep-92	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	11-Oct-93	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	15-Jun-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	27-Feb-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	11-Oct-93	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	UJ
0271	07-Apr-94	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	UJ
0076	16-Jun-93	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	UJ
0271	27-Feb-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	06-May-91	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	05-Aug-91	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	27-Feb-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	24-Jan-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	15-Jun-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	16-Sep-92	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	06-Nov-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	31-Jul-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	06-Nov-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	27-Feb-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	31-Jul-90	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	01-Feb-91	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	07-Apr-94	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0271	22-Jun-92	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	UJ
0271	07-Apr-94	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	01-Feb-91	1,4-Dichlorobenzene	2.4	2.4	UG/L	U	U
0076	16-Sep-92	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	22-Jun-92	1,4-Dichlorobenzene	10	10	UG/L	U	U
0271	01-Feb-91	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	11-Oct-93	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	06-Nov-90	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	01-Feb-91	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	06-May-91	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	16-Dec-91	1,4-Dichlorobenzene	10	10	UG/L	U	U
0271	16-Dec-91	1,4-Dichlorobenzene	10	10	UG/L	U	U
0271	11-Oct-93	1,4-Dichlorobenzene	10	10	UG/L	U	U
0271	16-Sep-92	1,4-Dichlorobenzene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	05-Aug-91	1,4-Dichlorobenzene	10	10	UG/L	U	UJ
0271	06-Nov-90	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	23-Mar-92	1,4-Dichlorobenzene	10	10	UG/L	U	U
0271	06-May-91	1,4-Dichlorobenzene	10	10	UG/L	U	U
0271	22-Jun-92	1,4-Dichlorobenzene	10	10	UG/L	U	U
0076	07-Apr-94	1,4-Dichlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	1,4-Dichlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	1,4-Dichlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	1,4-Diethylbenzene	1	1	UG/L	U	UJ
0076	11-Oct-93	1,4-Diethylbenzene	1	1	UG/L	U	UJ
0271	07-Apr-94	1,4-Diethylbenzene	1	1	UG/L	U	U
0271	11-Oct-93	1,4-Diethylbenzene	1	1	UG/L	U	UJ
0076	07-Apr-94	1,4-Diethylbenzene	1	1	UG/L	U	U
0076	01-Feb-91	1-Chlorohexane	1	1	UG/L	U	UJ
0076	06-May-91	1-Chlorohexane	1	1	UG/L	U	UJ
0076	22-Jun-92	1-Chlorohexane	1	1	UG/L	U	R
0076	16-Sep-92	1-Chlorohexane	1	1	UG/L	U	UJ
0271	01-Feb-91	1-Chlorohexane	1	1	UG/L	U	UJ
0076	11-Oct-93	1-Chlorohexane	1	1	UG/L	U	UJ
0271	07-Apr-94	1-Chlorohexane	1	1	UG/L	U	UJ
0076	15-Jun-90	1-Chlorohexane	1	1	UG/L	U	U
0271	06-Nov-90	1-Chlorohexane	1	1	UG/L	U	UJ
0271	27-Feb-90	1-Chlorohexane	1	1	UG/L	U	U
0076	06-Nov-90	1-Chlorohexane	1	1	UG/L	U	UJ
0076	23-Mar-90	1-Chlorohexane	1	1	UG/L	U	U
0076	23-Mar-92	1-Chlorohexane	1	1	UG/L	U	U
0271	15-Jun-90	1-Chlorohexane	1	1	UG/L	U	U
0271	07-Apr-94	1-Chlorohexane	1	1	UG/L	U	U
0271	06-May-91	1-Chlorohexane	1	1	UG/L	U	UJ
0271	05-Aug-91	1-Chlorohexane	1	1	UG/L	U	UJ
0076	07-Apr-94	1-Chlorohexane	1	1	UG/L	U	U
0271	16-Sep-92	1-Chlorohexane	1	1	UG/L	U	UJ
0076	27-Feb-90	1-Chlorohexane	1	1	UG/L	U	U
0271	24-Jan-90	1-Chlorohexane	1	1	UG/L	U	U
0076	24-Jan-90	1-Chlorohexane	1	1	UG/L	U	U
0271	11-Oct-93	1-Chlorohexane	1	1	UG/L	U	UJ
0271	27-Feb-90	1-Chlorohexane	1	1	UG/L	U	U
0076	16-Jun-93	1-Chlorohexane	1	1	UG/L	U	U
0271	22-Jun-92	1-Chlorohexane	1	1	UG/L	U	R
0271	23-Mar-90	1-Chlorohexane	1	1	UG/L	U	U
0076	31-Jul-90	1-Chlorohexane	1	1	UG/L	U	U
0271	27-Feb-90	1-Chlorohexane	1	1	UG/L	U	U
0271	31-Jul-90	1-Chlorohexane	1	1	UG/L	U	U
0076	23-Mar-92	2,2'-oxybis(1-chloropropane)	2	2	UG/L	U	UJ
0271	16-Sep-92	2,2'-oxybis(1-chloropropane)	2	2	UG/L	U	UJ
0076	16-Jun-93	2,2'-oxybis(1-chloropropane)	2	2	UG/L	U	U
0076	22-Jun-92	2,2'-oxybis(1-chloropropane)	2	2	UG/L	U	R
0271	22-Jun-92	2,2'-oxybis(1-chloropropane)	2	2	UG/L	U	R
0076	16-Sep-92	2,2'-oxybis(1-chloropropane)	2	2	UG/L	U	UJ
0271	16-Dec-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0076	11-Oct-93	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0271	05-Aug-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	UJ
0271	06-Nov-90	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	UJ
0076	22-Jun-92	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0076	06-May-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0076	16-Dec-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0076	23-Mar-92	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0076	01-Feb-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0271	16-Sep-92	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0076	06-Nov-90	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	UJ
0271	11-Oct-93	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0271	06-May-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0271	22-Jun-92	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	UJ
0076	16-Sep-92	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0271	01-Feb-91	2,2'-oxybis(1-chloropropane)	10	10	UG/L	U	U
0271	07-Apr-94	2,2'-oxybis(1-chloropropane)	11	11	UG/L	U	U
0271	07-Apr-94	2,2'-oxybis(1-chloropropane)	11	11	UG/L	U	U
0076	07-Apr-94	2,2'-oxybis(1-chloropropane)	11	11	UG/L	U	U
0271	23-Mar-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	15-Jun-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	06-May-91	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0271	05-Aug-91	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0271	11-Oct-93	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	27-Feb-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	01-Feb-91	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0076	11-Oct-93	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	31-Jul-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	06-Nov-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0076	06-Nov-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0076	07-Apr-94	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	31-Jul-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	15-Jun-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	06-May-91	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0271	27-Feb-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	24-Jan-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	07-Apr-94	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0271	27-Feb-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	01-Feb-91	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	UJ
0271	27-Feb-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	24-Jan-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	07-Apr-94	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0076	23-Mar-90	2,2'-oxybis(1-chloropropane)	20	20	UG/L	U	U
0271	11-Oct-93	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0076	07-Apr-94	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0076	16-Sep-92	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0271	07-Apr-94	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0076	22-Jun-92	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0076	11-Oct-93	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0271	22-Jun-92	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0076	23-Mar-92	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0271	07-Apr-94	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0271	16-Sep-92	2,4,5-Trichlorophenol	26	26	UG/L	U	U
0076	01-Feb-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0076	06-Nov-90	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0271	16-Dec-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0271	06-Nov-90	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0271	05-Aug-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0076	16-Dec-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0271	01-Feb-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0076	06-May-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0271	06-May-91	2,4,5-Trichlorophenol	50	50	UG/L	U	U
0076	11-Oct-93	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	11-Oct-93	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	06-Nov-90	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	01-Feb-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	06-Nov-90	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	16-Dec-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	16-Sep-92	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	05-Aug-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	23-Mar-92	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	16-Sep-92	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	16-Dec-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	01-Feb-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	22-Jun-92	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	22-Jun-92	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0271	06-May-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	06-May-91	2,4,6-Trichlorophenol	10	10	UG/L	U	U
0076	07-Apr-94	2,4,6-Trichlorophenol	11	11	UG/L	U	U
0271	07-Apr-94	2,4,6-Trichlorophenol	11	11	UG/L	U	U
0271	07-Apr-94	2,4,6-Trichlorophenol	11	11	UG/L	U	U
0271	11-Oct-93	2,4,6-Trinitrotoluene	1.3	1.3	UG/L	U	R
0076	11-Oct-93	2,4,6-Trinitrotoluene	1.3	1.3	UG/L	U	R
0076	07-Apr-94	2,4,6-Trinitrotoluene	1.3	1.3	UG/L	U	U
0271	07-Apr-94	2,4,6-Trinitrotoluene	1.3	1.3	UG/L	U	U
0076	01-Feb-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	16-Sep-92	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	22-Jun-92	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	23-Mar-92	2,4-Dichlorophenol	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-Nov-90	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	06-May-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	01-Feb-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	22-Jun-92	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	16-Dec-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	11-Oct-93	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	16-Sep-92	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	11-Oct-93	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	05-Aug-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	16-Dec-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0076	06-Nov-90	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	06-May-91	2,4-Dichlorophenol	10	10	UG/L	U	U
0271	07-Apr-94	2,4-Dichlorophenol	11	11	UG/L	U	U
0271	07-Apr-94	2,4-Dichlorophenol	11	11	UG/L	U	U
0076	07-Apr-94	2,4-Dichlorophenol	11	11	UG/L	U	U
0076	11-Oct-93	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	22-Jun-92	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	05-Aug-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	06-Nov-90	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	16-Dec-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	23-Mar-92	2,4-Dimethylphenol	10	10	UG/L	U	UJ
0271	01-Feb-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	16-Dec-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	11-Oct-93	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	06-May-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	16-Sep-92	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	06-May-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	16-Sep-92	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	01-Feb-91	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	22-Jun-92	2,4-Dimethylphenol	10	10	UG/L	U	U
0271	06-Nov-90	2,4-Dimethylphenol	10	10	UG/L	U	U
0076	07-Apr-94	2,4-Dimethylphenol	11	11	UG/L	U	U
0271	07-Apr-94	2,4-Dimethylphenol	11	11	UG/L	U	U
0271	07-Apr-94	2,4-Dimethylphenol	11	11	UG/L	U	U
0076	16-Sep-92	2,4-Dinitrophenol	26	26	UG/L	U	UJ
0076	23-Mar-92	2,4-Dinitrophenol	26	26	UG/L	U	U
0271	07-Apr-94	2,4-Dinitrophenol	26	26	UG/L	U	U
0076	22-Jun-92	2,4-Dinitrophenol	26	26	UG/L	U	U
0076	07-Apr-94	2,4-Dinitrophenol	26	26	UG/L	U	U
0076	11-Oct-93	2,4-Dinitrophenol	26	26	UG/L	U	UJ
0271	07-Apr-94	2,4-Dinitrophenol	26	26	UG/L	U	U
0271	11-Oct-93	2,4-Dinitrophenol	26	26	UG/L	U	UJ
0271	16-Sep-92	2,4-Dinitrophenol	26	26	UG/L	U	UJ
0271	22-Jun-92	2,4-Dinitrophenol	26	26	UG/L	U	U
0076	06-Nov-90	2,4-Dinitrophenol	50	50	UG/L	U	U
0271	05-Aug-91	2,4-Dinitrophenol	50	50	UG/L	U	UJ
0271	06-May-91	2,4-Dinitrophenol	50	50	UG/L	U	UJ
0076	16-Dec-91	2,4-Dinitrophenol	50	50	UG/L	U	U
0271	01-Feb-91	2,4-Dinitrophenol	50	50	UG/L	U	UJ
0271	06-Nov-90	2,4-Dinitrophenol	50	50	UG/L	U	U
0271	16-Dec-91	2,4-Dinitrophenol	50	50	UG/L	U	U
0076	06-May-91	2,4-Dinitrophenol	50	50	UG/L	U	UJ
0076	01-Feb-91	2,4-Dinitrophenol	50	50	UG/L	U	UJ
0271	07-Apr-94	2,4-Dinitrotoluene	0.31	0.31	UG/L	U	U
0076	11-Oct-93	2,4-Dinitrotoluene	0.31	0.31	UG/L	U	R
0076	07-Apr-94	2,4-Dinitrotoluene	0.31	0.31	UG/L	U	U
0271	11-Oct-93	2,4-Dinitrotoluene	0.31	0.31	UG/L	U	R
0271	06-Nov-90	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	06-Nov-90	2,4-Dinitrotoluene	10	10	UG/L	U	U
0271	11-Oct-93	2,4-Dinitrotoluene	10	10	UG/L	U	U
0271	01-Feb-91	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	16-Dec-91	2,4-Dinitrotoluene	10	10	UG/L	U	U
0271	16-Dec-91	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	22-Jun-92	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	16-Sep-92	2,4-Dinitrotoluene	10	10	UG/L	U	U
0271	22-Jun-92	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	06-May-91	2,4-Dinitrotoluene	10	10	UG/L	U	U
0271	06-May-91	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	11-Oct-93	2,4-Dinitrotoluene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Sep-92	2,4-Dinitrotoluene	10	10	UG/L	U	U
0271	05-Aug-91	2,4-Dinitrotoluene	10	10	UG/L	U	UJ
0076	01-Feb-91	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	23-Mar-92	2,4-Dinitrotoluene	10	10	UG/L	U	U
0076	07-Apr-94	2,4-Dinitrotoluene	11	11	UG/L	U	U
0271	07-Apr-94	2,4-Dinitrotoluene	11	11	UG/L	U	U
0271	07-Apr-94	2,4-Dinitrotoluene	11	11	UG/L	U	U
0076	07-Apr-94	2,6-Dinitrotoluene	0.31	0.31	UG/L	U	U
0271	11-Oct-93	2,6-Dinitrotoluene	0.31	0.31	UG/L	U	R
0271	07-Apr-94	2,6-Dinitrotoluene	0.31	0.31	UG/L	U	U
0076	11-Oct-93	2,6-Dinitrotoluene	0.31	0.31	UG/L	U	R
0076	06-Nov-90	2,6-Dinitrotoluene	10	10	UG/L	U	U
0076	23-Mar-92	2,6-Dinitrotoluene	10	10	UG/L	U	U
0076	16-Dec-91	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	06-May-91	2,6-Dinitrotoluene	10	10	UG/L	U	U
0076	11-Oct-93	2,6-Dinitrotoluene	10	10	UG/L	U	U
0076	01-Feb-91	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	01-Feb-91	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	16-Sep-92	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	06-Nov-90	2,6-Dinitrotoluene	10	10	UG/L	U	U
0076	22-Jun-92	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	22-Jun-92	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	16-Dec-91	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	11-Oct-93	2,6-Dinitrotoluene	10	10	UG/L	U	U
0076	06-May-91	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	05-Aug-91	2,6-Dinitrotoluene	10	10	UG/L	U	UJ
0076	16-Sep-92	2,6-Dinitrotoluene	10	10	UG/L	U	U
0271	07-Apr-94	2,6-Dinitrotoluene	11	11	UG/L	U	U
0076	07-Apr-94	2,6-Dinitrotoluene	11	11	UG/L	U	U
0271	07-Apr-94	2,6-Dinitrotoluene	11	11	UG/L	U	U
0076	07-Apr-94	2-Amino-4,6-dinitrotoluene	0.62	0.62	UG/L	U	U
0076	11-Oct-93	2-Amino-4,6-dinitrotoluene	0.62	0.62	UG/L	U	UJ
0271	07-Apr-94	2-Amino-4,6-dinitrotoluene	0.62	0.62	UG/L	U	U
0271	11-Oct-93	2-Amino-4,6-dinitrotoluene	0.62	0.62	UG/L	U	UJ
0076	11-Oct-93	2-Benzyl-4-Chlorophenol	10	10	UG/L	U	U
0271	11-Oct-93	2-Benzyl-4-Chlorophenol	10	10	UG/L	U	U
0271	07-Apr-94	2-Benzyl-4-Chlorophenol	11	11	UG/L	U	U
0271	07-Apr-94	2-Benzyl-4-Chlorophenol	11	11	UG/L	U	U
0076	07-Apr-94	2-Benzyl-4-Chlorophenol	11	11	UG/L	U	U
0271	25-Apr-90	2-Butanone	7	10	UG/L	JB	
0271	11-Oct-93	2-Butanone	10	10	UG/L	U	UJ
0076	24-Jun-88	2-Butanone	10	10	UG/L	U	U
0076	13-Sep-88	2-Butanone	10	10	UG/L	U	U
0076	11-Oct-93	2-Butanone	10	10	UG/L	U	UJ
0271	13-Sep-88	2-Butanone	10	10	UG/L	U	U
0271	07-Apr-94	2-Butanone	10	10	UG/L	U	UJ
0076	07-Apr-94	2-Butanone	10	10	UG/L	U	UJ
0271	24-Jun-88	2-Butanone	10	10	UG/L	U	U
0271	07-Apr-94	2-Butanone	10	10	UG/L	U	U
0076	25-Apr-90	2-Butanone	11	10	UG/L	B	
0271	08-Mar-88	2-Butanone	41	10	UG/L		
0076	13-Sep-88	2-Chloroethylvinylether	1	1	UG/L	U	U
0271	13-Sep-88	2-Chloroethylvinylether	1	1	UG/L	U	U
0271	23-Mar-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	31-Jul-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	05-Aug-91	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	31-Jul-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	27-Feb-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	07-Apr-94	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0076	06-Nov-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	UJ
0076	22-Jun-92	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0271	22-Jun-92	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0076	16-Jun-93	2-Chloroethylvinylether	1.3	1.3	UG/L	U	UJ
0076	23-Mar-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	16-Sep-92	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	24-Jan-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	27-Feb-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	07-Apr-94	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0271	06-May-91	2-Chloroethylvinylether	1.3	1.3	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	15-Jun-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	06-May-91	2-Chloroethylvinylether	1.3	1.3	UG/L	U	UJ
0076	11-Oct-93	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0271	16-Sep-92	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	01-Feb-91	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	01-Feb-91	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	15-Jun-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	23-Mar-92	2-Chloroethylvinylether	1.3	1.3	UG/L	U	UJ
0271	06-Nov-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	11-Oct-93	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0076	27-Feb-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0076	24-Jan-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	27-Feb-90	2-Chloroethylvinylether	1.3	1.3	UG/L	U	U
0271	07-Apr-94	2-Chloroethylvinylether	1.3	1.3	UG/L	U	R
0271	16-Dec-91	2-Chloroethylvinylether	5	5	UG/L	U	U
0076	16-Dec-91	2-Chloroethylvinylether	5	5	UG/L	U	U
0271	08-Mar-88	2-Chloroethylvinylether	10	10	UG/L	U	U
0271	24-Jun-88	2-Chloroethylvinylether	10	10	UG/L	U	U
0076	24-Jun-88	2-Chloroethylvinylether	10	10	UG/L	U	U
0076	13-Sep-88	2-Chloroethylvinylether	10	10	UG/L	U	U
0271	13-Sep-88	2-Chloroethylvinylether	10	10	UG/L	U	U
0076	16-Sep-92	2-Chloronaphthalene	10	10	UG/L	U	U
0271	22-Jun-92	2-Chloronaphthalene	10	10	UG/L	U	U
0271	01-Feb-91	2-Chloronaphthalene	10	10	UG/L	U	U
0076	11-Oct-93	2-Chloronaphthalene	10	10	UG/L	U	U
0076	01-Feb-91	2-Chloronaphthalene	10	10	UG/L	U	U
0271	06-May-91	2-Chloronaphthalene	10	10	UG/L	U	U
0271	06-Nov-90	2-Chloronaphthalene	10	10	UG/L	U	U
0076	23-Mar-92	2-Chloronaphthalene	10	10	UG/L	U	U
0271	16-Sep-92	2-Chloronaphthalene	10	10	UG/L	U	U
0271	11-Oct-93	2-Chloronaphthalene	10	10	UG/L	U	U
0076	06-May-91	2-Chloronaphthalene	10	10	UG/L	U	U
0076	22-Jun-92	2-Chloronaphthalene	10	10	UG/L	U	U
0271	16-Dec-91	2-Chloronaphthalene	10	10	UG/L	U	U
0076	06-Nov-90	2-Chloronaphthalene	10	10	UG/L	U	U
0076	16-Dec-91	2-Chloronaphthalene	10	10	UG/L	U	U
0271	05-Aug-91	2-Chloronaphthalene	10	10	UG/L	U	UJ
0076	07-Apr-94	2-Chloronaphthalene	11	11	UG/L	U	U
0271	07-Apr-94	2-Chloronaphthalene	11	11	UG/L	U	U
0271	07-Apr-94	2-Chloronaphthalene	11	11	UG/L	U	U
0271	16-Sep-92	2-Chlorophenol	10	10	UG/L	U	U
0076	22-Jun-92	2-Chlorophenol	10	10	UG/L	U	U
0271	22-Jun-92	2-Chlorophenol	10	10	UG/L	U	U
0076	23-Mar-92	2-Chlorophenol	10	10	UG/L	U	U
0076	06-May-91	2-Chlorophenol	10	10	UG/L	U	U
0076	01-Feb-91	2-Chlorophenol	10	10	UG/L	U	U
0076	16-Dec-91	2-Chlorophenol	10	10	UG/L	U	U
0271	05-Aug-91	2-Chlorophenol	10	10	UG/L	U	U
0271	06-May-91	2-Chlorophenol	10	10	UG/L	U	U
0271	06-Nov-90	2-Chlorophenol	10	10	UG/L	U	U
0271	11-Oct-93	2-Chlorophenol	10	10	UG/L	U	U
0271	01-Feb-91	2-Chlorophenol	10	10	UG/L	U	U
0076	11-Oct-93	2-Chlorophenol	10	10	UG/L	U	U
0076	06-Nov-90	2-Chlorophenol	10	10	UG/L	U	U
0271	16-Dec-91	2-Chlorophenol	10	10	UG/L	U	U
0076	16-Sep-92	2-Chlorophenol	10	10	UG/L	U	U
0271	07-Apr-94	2-Chlorophenol	11	11	UG/L	U	U
0271	07-Apr-94	2-Chlorophenol	11	11	UG/L	U	U
0076	07-Apr-94	2-Chlorophenol	11	11	UG/L	U	U
0271	16-Sep-92	2-Chlorotoluene	1	1	UG/L	U	U
0076	11-Oct-93	2-Chlorotoluene	1	1	UG/L	U	UJ
0271	07-Apr-94	2-Chlorotoluene	1	1	UG/L	U	U
0076	16-Dec-91	2-Chlorotoluene	1	1	UG/L	U	UJ
0076	07-Apr-94	2-Chlorotoluene	1	1	UG/L	U	U
0271	11-Oct-93	2-Chlorotoluene	1	1	UG/L	U	UJ
0271	07-Apr-94	2-Chlorotoluene	1	1	UG/L	U	U
0076	16-Sep-92	2-Chlorotoluene	1	1	UG/L	U	U
0076	16-Jun-93	2-Chlorotoluene	1	1	UG/L	U	U
0271	22-Jun-92	2-Chlorotoluene	1	1	UG/L	U	R

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	22-Jun-92	2-Chlorotoluene	1	1	UG/L	U	R
0076	23-Mar-92	2-Chlorotoluene	1	1	UG/L	U	U
0271	16-Dec-91	2-Chlorotoluene	1	1	UG/L	U	UJ
0271	13-Sep-88	2-Hexanone	10	10	UG/L	U	U
0271	24-Jun-88	2-Hexanone	10	10	UG/L	U	U
0076	13-Sep-88	2-Hexanone	10	10	UG/L	U	U
0271	25-Apr-90	2-Hexanone	10	10	UG/L	U	U
0076	24-Jun-88	2-Hexanone	10	10	UG/L	U	U
0271	08-Mar-88	2-Hexanone	10	10	UG/L	U	U
0076	25-Apr-90	2-Hexanone	10	10	UG/L	U	U
0271	06-May-91	2-Methylnaphthalene	10	10	UG/L	U	U
0271	01-Feb-91	2-Methylnaphthalene	10	10	UG/L	U	U
0076	16-Dec-91	2-Methylnaphthalene	10	10	UG/L	U	U
0076	06-May-91	2-Methylnaphthalene	10	10	UG/L	U	U
0271	22-Jun-92	2-Methylnaphthalene	10	10	UG/L	U	U
0271	05-Aug-91	2-Methylnaphthalene	10	10	UG/L	U	UJ
0076	11-Oct-93	2-Methylnaphthalene	10	10	UG/L	U	U
0076	06-Nov-90	2-Methylnaphthalene	10	10	UG/L	U	U
0271	11-Oct-93	2-Methylnaphthalene	10	10	UG/L	U	U
0076	01-Feb-91	2-Methylnaphthalene	10	10	UG/L	U	U
0076	22-Jun-92	2-Methylnaphthalene	10	10	UG/L	U	U
0271	16-Sep-92	2-Methylnaphthalene	10	10	UG/L	U	U
0271	16-Dec-91	2-Methylnaphthalene	10	10	UG/L	U	U
0076	16-Sep-92	2-Methylnaphthalene	10	10	UG/L	U	U
0271	06-Nov-90	2-Methylnaphthalene	10	10	UG/L	U	U
0076	23-Mar-92	2-Methylnaphthalene	10	10	UG/L	U	U
0271	07-Apr-94	2-Methylnaphthalene	11	11	UG/L	U	U
0076	07-Apr-94	2-Methylnaphthalene	11	11	UG/L	U	U
0271	07-Apr-94	2-Methylnaphthalene	11	11	UG/L	U	U
0076	06-May-91	2-Methylphenol	10	10	UG/L	U	U
0271	01-Feb-91	2-Methylphenol	10	10	UG/L	U	U
0076	16-Dec-91	2-Methylphenol	10	10	UG/L	U	U
0271	11-Oct-93	2-Methylphenol	10	10	UG/L	U	U
0271	05-Aug-91	2-Methylphenol	10	10	UG/L	U	U
0076	06-Nov-90	2-Methylphenol	10	10	UG/L	U	U
0076	22-Jun-92	2-Methylphenol	10	10	UG/L	U	U
0076	23-Mar-92	2-Methylphenol	10	10	UG/L	U	U
0271	16-Dec-91	2-Methylphenol	10	10	UG/L	U	U
0271	06-May-91	2-Methylphenol	10	10	UG/L	U	U
0271	06-Nov-90	2-Methylphenol	10	10	UG/L	U	U
0076	16-Sep-92	2-Methylphenol	10	10	UG/L	U	U
0076	01-Feb-91	2-Methylphenol	10	10	UG/L	U	U
0076	11-Oct-93	2-Methylphenol	10	10	UG/L	U	U
0271	22-Jun-92	2-Methylphenol	10	10	UG/L	U	U
0271	16-Sep-92	2-Methylphenol	10	10	UG/L	U	U
0076	07-Apr-94	2-Methylphenol	11	11	UG/L	U	U
0271	07-Apr-94	2-Methylphenol	11	11	UG/L	U	U
0271	07-Apr-94	2-Methylphenol	11	11	UG/L	U	U
0076	07-Apr-94	2-Nitroaniline	26	26	UG/L	U	U
0271	07-Apr-94	2-Nitroaniline	26	26	UG/L	U	U
0076	11-Oct-93	2-Nitroaniline	26	26	UG/L	U	UJ
0271	07-Apr-94	2-Nitroaniline	26	26	UG/L	U	U
0076	23-Mar-92	2-Nitroaniline	26	26	UG/L	U	U
0076	16-Sep-92	2-Nitroaniline	26	26	UG/L	U	U
0076	22-Jun-92	2-Nitroaniline	26	26	UG/L	U	U
0271	11-Oct-93	2-Nitroaniline	26	26	UG/L	U	UJ
0271	22-Jun-92	2-Nitroaniline	26	26	UG/L	U	UJ
0271	16-Sep-92	2-Nitroaniline	26	26	UG/L	U	U
0076	01-Feb-91	2-Nitroaniline	50	50	UG/L	U	U
0076	06-May-91	2-Nitroaniline	50	50	UG/L	U	U
0271	16-Dec-91	2-Nitroaniline	50	50	UG/L	U	U
0271	05-Aug-91	2-Nitroaniline	50	50	UG/L	U	UJ
0271	01-Feb-91	2-Nitroaniline	50	50	UG/L	U	U
0271	06-May-91	2-Nitroaniline	50	50	UG/L	U	U
0271	06-Nov-90	2-Nitroaniline	50	50	UG/L	U	U
0076	06-Nov-90	2-Nitroaniline	50	50	UG/L	U	U
0076	16-Dec-91	2-Nitroaniline	50	50	UG/L	U	U
0076	11-Oct-93	2-Nitrophenol	10	10	UG/L	U	U
0076	01-Feb-91	2-Nitrophenol	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	22-Jun-92	2-Nitrophenol	10	10	UG/L	U	U
0271	06-Nov-90	2-Nitrophenol	10	10	UG/L	U	U
0076	23-Mar-92	2-Nitrophenol	10	10	UG/L	U	U
0271	06-May-91	2-Nitrophenol	10	10	UG/L	U	U
0271	22-Jun-92	2-Nitrophenol	10	10	UG/L	U	U
0271	16-Sep-92	2-Nitrophenol	10	10	UG/L	U	U
0076	16-Sep-92	2-Nitrophenol	10	10	UG/L	U	U
0271	16-Dec-91	2-Nitrophenol	10	10	UG/L	U	U
0271	05-Aug-91	2-Nitrophenol	10	10	UG/L	U	U
0271	11-Oct-93	2-Nitrophenol	10	10	UG/L	U	U
0271	01-Feb-91	2-Nitrophenol	10	10	UG/L	U	U
0076	06-May-91	2-Nitrophenol	10	10	UG/L	U	U
0076	06-Nov-90	2-Nitrophenol	10	10	UG/L	U	U
0076	16-Dec-91	2-Nitrophenol	10	10	UG/L	U	U
0271	07-Apr-94	2-Nitrophenol	11	11	UG/L	U	U
0076	07-Apr-94	2-Nitrophenol	11	11	UG/L	U	U
0271	07-Apr-94	2-Nitrophenol	11	11	UG/L	U	U
0076	16-Sep-92	3,3'-Dichlorobenzidine	10	10	UG/L	U	UJ
0076	23-Mar-92	3,3'-Dichlorobenzidine	10	10	UG/L	U	U
0076	11-Oct-93	3,3'-Dichlorobenzidine	10	10	UG/L	U	U
0076	22-Jun-92	3,3'-Dichlorobenzidine	10	10	UG/L	U	UJ
0271	11-Oct-93	3,3'-Dichlorobenzidine	10	10	UG/L	U	U
0271	16-Sep-92	3,3'-Dichlorobenzidine	10	10	UG/L	U	UJ
0271	22-Jun-92	3,3'-Dichlorobenzidine	10	10	UG/L	U	U
0271	07-Apr-94	3,3'-Dichlorobenzidine	11	11	UG/L	U	U
0076	07-Apr-94	3,3'-Dichlorobenzidine	11	11	UG/L	U	U
0271	07-Apr-94	3,3'-Dichlorobenzidine	11	11	UG/L	U	U
0076	16-Dec-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0076	01-Feb-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0271	16-Dec-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0076	06-May-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0271	05-Aug-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	UJ
0076	06-Nov-90	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0271	06-May-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0271	01-Feb-91	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0271	06-Nov-90	3,3'-Dichlorobenzidine	20	20	UG/L	U	U
0076	11-Oct-93	3-Nitroaniline	26	26	UG/L	U	U
0271	16-Sep-92	3-Nitroaniline	26	26	UG/L	U	U
0271	11-Oct-93	3-Nitroaniline	26	26	UG/L	U	U
0271	07-Apr-94	3-Nitroaniline	26	26	UG/L	U	U
0271	22-Jun-92	3-Nitroaniline	26	26	UG/L	U	UJ
0076	16-Sep-92	3-Nitroaniline	26	26	UG/L	U	U
0271	07-Apr-94	3-Nitroaniline	26	26	UG/L	U	U
0076	23-Mar-92	3-Nitroaniline	26	26	UG/L	U	U
0076	07-Apr-94	3-Nitroaniline	26	26	UG/L	U	U
0076	22-Jun-92	3-Nitroaniline	26	26	UG/L	U	U
0271	06-Nov-90	3-Nitroaniline	50	50	UG/L	U	U
0076	01-Feb-91	3-Nitroaniline	50	50	UG/L	U	U
0271	06-May-91	3-Nitroaniline	50	50	UG/L	U	U
0076	06-Nov-90	3-Nitroaniline	50	50	UG/L	U	U
0076	16-Dec-91	3-Nitroaniline	50	50	UG/L	U	U
0271	01-Feb-91	3-Nitroaniline	50	50	UG/L	U	U
0271	16-Dec-91	3-Nitroaniline	50	50	UG/L	U	U
0271	05-Aug-91	3-Nitroaniline	50	50	UG/L	U	UJ
0076	06-May-91	3-Nitroaniline	50	50	UG/L	U	U
0076	22-Jun-92	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	16-Sep-92	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	11-Oct-93	4,4'-DDD	0.1	0.1	UG/L	U	UJ
0271	07-Apr-94	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	01-Feb-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	06-May-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	06-Nov-90	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	05-Aug-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	07-Apr-94	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	01-Feb-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	22-Jun-92	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	16-Dec-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	11-Oct-93	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	06-Nov-90	4,4'-DDD	0.1	0.1	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-May-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0271	16-Sep-92	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	16-Dec-91	4,4'-DDD	0.1	0.1	UG/L	U	U
0076	07-Apr-94	4,4'-DDD	0.11	0.11	UG/L	U	U
0076	23-Mar-92	4,4'-DDD	0.11	0.11	UG/L	U	U
0076	06-May-91	4,4'-DDD	0.5	0.5	UG/L	U	U
0271	06-May-91	4,4'-DDD	1.5	1.5	UG/L	U	U
0271	05-Aug-91	4,4'-DDE	0.04	0.04	UG/L	U	U
0076	01-Feb-91	4,4'-DDE	0.1	0.1	UG/L	U	U
0076	06-May-91	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	07-Apr-94	4,4'-DDE	0.1	0.1	UG/L	U	U
0076	11-Oct-93	4,4'-DDE	0.1	0.1	UG/L	U	UJ
0076	16-Sep-92	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	01-Feb-91	4,4'-DDE	0.1	0.1	UG/L	U	U
0076	22-Jun-92	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	06-May-91	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	16-Dec-91	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	07-Apr-94	4,4'-DDE	0.1	0.1	UG/L	U	U
0076	16-Dec-91	4,4'-DDE	0.1	0.1	UG/L	U	U
0076	06-Nov-90	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	22-Jun-92	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	16-Sep-92	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	11-Oct-93	4,4'-DDE	0.1	0.1	UG/L	U	U
0271	06-Nov-90	4,4'-DDE	0.1	0.1	UG/L	U	U
0076	07-Apr-94	4,4'-DDE	0.11	0.11	UG/L	U	U
0076	23-Mar-92	4,4'-DDE	0.11	0.11	UG/L	U	U
0076	06-May-91	4,4'-DDE	0.5	0.5	UG/L	U	U
0271	06-May-91	4,4'-DDE	1.5	1.5	UG/L	U	U
0271	22-Jun-92	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	06-May-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	16-Dec-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0076	06-Nov-90	4,4'-DDT	0.1	0.1	UG/L	U	U
0076	06-May-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0076	16-Sep-92	4,4'-DDT	0.1	0.1	UG/L	U	UJ
0271	06-Nov-90	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	05-Aug-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	07-Apr-94	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	07-Apr-94	4,4'-DDT	0.1	0.1	UG/L	U	U
0076	01-Feb-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0076	11-Oct-93	4,4'-DDT	0.1	0.1	UG/L	U	UJ
0271	11-Oct-93	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	01-Feb-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0271	16-Sep-92	4,4'-DDT	0.1	0.1	UG/L	U	UJ
0076	22-Jun-92	4,4'-DDT	0.1	0.1	UG/L		U
0076	16-Dec-91	4,4'-DDT	0.1	0.1	UG/L	U	U
0076	07-Apr-94	4,4'-DDT	0.11	0.11	UG/L	U	U
0076	23-Mar-92	4,4'-DDT	0.11	0.11	UG/L	U	U
0076	06-May-91	4,4'-DDT	0.5	0.5	UG/L	U	U
0271	06-May-91	4,4'-DDT	1.5	1.5	UG/L	U	U
0271	07-Apr-94	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0076	22-Jun-92	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0271	07-Apr-94	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0271	11-Oct-93	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0076	16-Sep-92	4,6-Dinitro-o-Cresol	26	26	UG/L	U	UJ
0271	16-Sep-92	4,6-Dinitro-o-Cresol	26	26	UG/L	U	UJ
0271	22-Jun-92	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0076	23-Mar-92	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0076	07-Apr-94	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0076	11-Oct-93	4,6-Dinitro-o-Cresol	26	26	UG/L	U	U
0076	01-Feb-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0271	01-Feb-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0076	06-May-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0076	16-Dec-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0271	16-Dec-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0271	06-Nov-90	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0271	06-May-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0271	05-Aug-91	4,6-Dinitro-o-Cresol	50	50	UG/L	U	UJ
0076	06-Nov-90	4,6-Dinitro-o-Cresol	50	50	UG/L	U	U
0271	01-Feb-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-Nov-90	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0271	05-Aug-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	UJ
0271	06-May-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0271	11-Oct-93	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	23-Mar-92	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	06-Nov-90	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	06-May-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0271	16-Sep-92	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	16-Dec-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	22-Jun-92	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0271	16-Dec-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	16-Sep-92	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0271	22-Jun-92	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	01-Feb-91	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0076	11-Oct-93	4-Bromophenyl-phenyl Ether	10	10	UG/L	U	U
0271	07-Apr-94	4-Bromophenyl-phenyl Ether	11	11	UG/L	U	U
0271	07-Apr-94	4-Bromophenyl-phenyl Ether	11	11	UG/L	U	U
0076	07-Apr-94	4-Bromophenyl-phenyl Ether	11	11	UG/L	U	U
0076	06-Nov-90	4-Chloroaniline	10	10	UG/L	U	U
0271	06-May-91	4-Chloroaniline	10	10	UG/L	U	U
0271	11-Oct-93	4-Chloroaniline	10	10	UG/L	U	U
0076	16-Dec-91	4-Chloroaniline	10	10	UG/L	U	U
0076	06-May-91	4-Chloroaniline	10	10	UG/L	U	U
0076	22-Jun-92	4-Chloroaniline	10	10	UG/L	U	U
0271	05-Aug-91	4-Chloroaniline	10	10	UG/L	U	UJ
0271	16-Dec-91	4-Chloroaniline	10	10	UG/L	U	U
0076	01-Feb-91	4-Chloroaniline	10	10	UG/L	U	U
0076	11-Oct-93	4-Chloroaniline	10	10	UG/L	U	U
0271	01-Feb-91	4-Chloroaniline	10	10	UG/L	U	U
0076	16-Sep-92	4-Chloroaniline	10	10	UG/L	U	U
0271	06-Nov-90	4-Chloroaniline	10	10	UG/L	U	U
0076	23-Mar-92	4-Chloroaniline	10	10	UG/L	U	U
0271	22-Jun-92	4-Chloroaniline	10	10	UG/L	U	U
0271	16-Sep-92	4-Chloroaniline	10	10	UG/L	U	U
0271	07-Apr-94	4-Chloroaniline	11	11	UG/L	U	U
0076	07-Apr-94	4-Chloroaniline	11	11	UG/L	U	U
0271	07-Apr-94	4-Chloroaniline	11	11	UG/L	U	U
0076	01-Feb-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	06-Nov-90	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	22-Jun-92	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	05-Aug-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	UJ
0271	01-Feb-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	06-May-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	16-Dec-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	22-Jun-92	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	23-Mar-92	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	11-Oct-93	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	16-Dec-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	16-Sep-92	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	11-Oct-93	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	06-Nov-90	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	06-May-91	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0271	16-Sep-92	4-Chlorophenyl-phenylether	10	10	UG/L	U	U
0076	07-Apr-94	4-Chlorophenyl-phenylether	11	11	UG/L	U	U
0271	07-Apr-94	4-Chlorophenyl-phenylether	11	11	UG/L	U	U
0271	07-Apr-94	4-Chlorophenyl-phenylether	11	11	UG/L	U	U
0076	07-Apr-94	4-Chlorotoluene	1	1	UG/L	U	U
0271	11-Oct-93	4-Chlorotoluene	1	1	UG/L	U	UJ
0076	11-Oct-93	4-Chlorotoluene	1	1	UG/L	U	UJ
0271	07-Apr-94	4-Chlorotoluene	1	1	UG/L	U	U
0271	07-Apr-94	4-Chlorotoluene	1	1	UG/L	U	U
0271	11-Oct-93	4-Methyl-2-pentanone	5	5	UG/L	U	UJ
0076	11-Oct-93	4-Methyl-2-pentanone	5	5	UG/L	U	UJ
0076	07-Apr-94	4-Methyl-2-pentanone	5	5	UG/L	U	UJ
0271	07-Apr-94	4-Methyl-2-pentanone	5	5	UG/L	U	UJ
0271	07-Apr-94	4-Methyl-2-pentanone	5	5	UG/L	U	U
0271	13-Sep-88	4-Methyl-2-pentanone	10	10	UG/L	U	U
0076	25-Apr-90	4-Methyl-2-pentanone	10	10	UG/L	U	U
0271	25-Apr-90	4-Methyl-2-pentanone	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	08-Mar-88	4-Methyl-2-pentanone	10	10	UG/L	U	U
0271	24-Jun-88	4-Methyl-2-pentanone	10	10	UG/L	U	U
0076	13-Sep-88	4-Methyl-2-pentanone	10	10	UG/L	U	U
0076	24-Jun-88	4-Methyl-2-pentanone	10	10	UG/L	U	U
0271	11-Oct-93	4-Methylphenol	10	10	UG/L	U	U
0271	01-Feb-91	4-Methylphenol	10	10	UG/L	U	U
0271	06-Nov-90	4-Methylphenol	10	10	UG/L	U	U
0271	22-Jun-92	4-Methylphenol	10	10	UG/L	U	U
0271	05-Aug-91	4-Methylphenol	10	10	UG/L	U	U
0076	16-Dec-91	4-Methylphenol	10	10	UG/L	U	U
0271	16-Dec-91	4-Methylphenol	10	10	UG/L	U	U
0076	11-Oct-93	4-Methylphenol	10	10	UG/L	U	U
0076	06-Nov-90	4-Methylphenol	10	10	UG/L	U	U
0076	01-Feb-91	4-Methylphenol	10	10	UG/L	U	U
0076	16-Sep-92	4-Methylphenol	10	10	UG/L	U	U
0271	06-May-91	4-Methylphenol	10	10	UG/L	U	U
0076	22-Jun-92	4-Methylphenol	10	10	UG/L	U	U
0271	16-Sep-92	4-Methylphenol	10	10	UG/L	U	U
0076	06-May-91	4-Methylphenol	10	10	UG/L	U	U
0076	23-Mar-92	4-Methylphenol	10	10	UG/L	U	U
0076	07-Apr-94	4-Methylphenol	11	11	UG/L	U	U
0271	07-Apr-94	4-Methylphenol	11	11	UG/L	U	U
0271	07-Apr-94	4-Methylphenol	11	11	UG/L	U	U
0076	11-Oct-93	4-Nitroaniline	26	26	UG/L	U	U
0076	16-Sep-92	4-Nitroaniline	26	26	UG/L	U	UJ
0076	07-Apr-94	4-Nitroaniline	26	26	UG/L	U	UJ
0271	07-Apr-94	4-Nitroaniline	26	26	UG/L	U	UJ
0271	22-Jun-92	4-Nitroaniline	26	26	UG/L	U	U
0076	22-Jun-92	4-Nitroaniline	26	26	UG/L	U	U
0271	07-Apr-94	4-Nitroaniline	26	26	UG/L	U	UJ
0076	23-Mar-92	4-Nitroaniline	26	26	UG/L	U	U
0271	16-Sep-92	4-Nitroaniline	26	26	UG/L	U	UJ
0271	11-Oct-93	4-Nitroaniline	26	26	UG/L	U	U
0076	06-May-91	4-Nitroaniline	50	50	UG/L	U	U
0076	06-Nov-90	4-Nitroaniline	50	50	UG/L	U	U
0271	06-May-91	4-Nitroaniline	50	50	UG/L	U	U
0271	06-Nov-90	4-Nitroaniline	50	50	UG/L	U	U
0076	16-Dec-91	4-Nitroaniline	50	50	UG/L	U	U
0271	01-Feb-91	4-Nitroaniline	50	50	UG/L	U	U
0271	05-Aug-91	4-Nitroaniline	50	50	UG/L	U	UJ
0076	01-Feb-91	4-Nitroaniline	50	50	UG/L	U	U
0271	16-Dec-91	4-Nitroaniline	50	50	UG/L	U	U
0271	22-Jun-92	4-Nitrophenol	26	26	UG/L	U	U
0076	23-Mar-92	4-Nitrophenol	26	26	UG/L	U	UJ
0076	16-Sep-92	4-Nitrophenol	26	26	UG/L	U	UJ
0076	22-Jun-92	4-Nitrophenol	26	26	UG/L	U	U
0076	07-Apr-94	4-Nitrophenol	26	26	UG/L	U	U
0271	11-Oct-93	4-Nitrophenol	26	26	UG/L	U	UJ
0076	11-Oct-93	4-Nitrophenol	26	26	UG/L	U	UJ
0271	07-Apr-94	4-Nitrophenol	26	26	UG/L	U	U
0271	16-Sep-92	4-Nitrophenol	26	26	UG/L	U	UJ
0271	07-Apr-94	4-Nitrophenol	26	26	UG/L	U	U
0271	05-Aug-91	4-Nitrophenol	50	50	UG/L	U	UJ
0271	01-Feb-91	4-Nitrophenol	50	50	UG/L	U	U
0271	16-Dec-91	4-Nitrophenol	50	50	UG/L	U	U
0076	16-Dec-91	4-Nitrophenol	50	50	UG/L	U	U
0271	06-Nov-90	4-Nitrophenol	50	50	UG/L	U	U
0076	06-Nov-90	4-Nitrophenol	50	50	UG/L	U	U
0076	06-May-91	4-Nitrophenol	50	50	UG/L	U	U
0271	06-May-91	4-Nitrophenol	50	50	UG/L	U	U
0076	01-Feb-91	4-Nitrophenol	50	50	UG/L	U	U
0271	06-May-91	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	11-Oct-93	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	16-Sep-92	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	16-Sep-92	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	01-Feb-91	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	01-Feb-91	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	06-May-91	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	16-Dec-91	4-chloro-3-methylphenol	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	23-Mar-92	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	22-Jun-92	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	22-Jun-92	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	05-Aug-91	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	06-Nov-90	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	06-Nov-90	4-chloro-3-methylphenol	10	10	UG/L	U	U
0076	16-Dec-91	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	11-Oct-93	4-chloro-3-methylphenol	10	10	UG/L	U	U
0271	07-Apr-94	4-chloro-3-methylphenol	11	11	UG/L	U	U
0076	07-Apr-94	4-chloro-3-methylphenol	11	11	UG/L	U	U
0271	07-Apr-94	4-chloro-3-methylphenol	11	11	UG/L	U	U
0076	22-Jun-92	Acenaphthene	10	10	UG/L	U	U
0271	05-Aug-91	Acenaphthene	10	10	UG/L	U	UJ
0076	16-Dec-91	Acenaphthene	10	10	UG/L	U	U
0076	06-Nov-90	Acenaphthene	10	10	UG/L	U	U
0271	06-Nov-90	Acenaphthene	10	10	UG/L	U	U
0271	16-Dec-91	Acenaphthene	10	10	UG/L	U	U
0271	01-Feb-91	Acenaphthene	10	10	UG/L	U	U
0271	11-Oct-93	Acenaphthene	10	10	UG/L	U	U
0076	11-Oct-93	Acenaphthene	10	10	UG/L	U	U
0076	16-Sep-92	Acenaphthene	10	10	UG/L	U	U
0076	06-May-91	Acenaphthene	10	10	UG/L	U	U
0271	16-Sep-92	Acenaphthene	10	10	UG/L	U	U
0271	22-Jun-92	Acenaphthene	10	10	UG/L	U	U
0076	23-Mar-92	Acenaphthene	10	10	UG/L	U	U
0271	06-May-91	Acenaphthene	10	10	UG/L	U	U
0076	01-Feb-91	Acenaphthene	10	10	UG/L	U	U
0271	07-Apr-94	Acenaphthene	11	11	UG/L	U	U
0076	07-Apr-94	Acenaphthene	11	11	UG/L	U	U
0271	07-Apr-94	Acenaphthene	11	11	UG/L	U	U
0076	16-Sep-92	Acenaphthylene	10	10	UG/L	U	U
0076	06-May-91	Acenaphthylene	10	10	UG/L	U	U
0271	11-Oct-93	Acenaphthylene	10	10	UG/L	U	U
0271	16-Sep-92	Acenaphthylene	10	10	UG/L	U	U
0271	06-May-91	Acenaphthylene	10	10	UG/L	U	U
0271	05-Aug-91	Acenaphthylene	10	10	UG/L	U	UJ
0076	23-Mar-92	Acenaphthylene	10	10	UG/L	U	U
0271	01-Feb-91	Acenaphthylene	10	10	UG/L	U	U
0076	16-Dec-91	Acenaphthylene	10	10	UG/L	U	U
0076	11-Oct-93	Acenaphthylene	10	10	UG/L	U	U
0271	16-Dec-91	Acenaphthylene	10	10	UG/L	U	U
0271	22-Jun-92	Acenaphthylene	10	10	UG/L	U	U
0076	06-Nov-90	Acenaphthylene	10	10	UG/L	U	U
0076	22-Jun-92	Acenaphthylene	10	10	UG/L	U	U
0271	06-Nov-90	Acenaphthylene	10	10	UG/L	U	U
0076	01-Feb-91	Acenaphthylene	10	10	UG/L	U	U
0076	07-Apr-94	Acenaphthylene	11	11	UG/L	U	U
0271	07-Apr-94	Acenaphthylene	11	11	UG/L	U	U
0271	07-Apr-94	Acenaphthylene	11	11	UG/L	U	U
0076	13-Sep-88	Acetone	2	10	UG/L	J	J
0271	24-Jun-88	Acetone	3	10	UG/L	JB	
0271	25-Apr-90	Acetone	5	10	UG/L	JB	
0076	24-Jun-88	Acetone	5	10	UG/L	JB	
0076	25-Apr-90	Acetone	9	10	UG/L	JB	
0271	08-Mar-88	Acetone	10	10	UG/L	U	U
0271	13-Sep-88	Acetone	12	10	UG/L		
0271	07-Apr-94	Acetone	20	20	UG/L	U	U
0076	07-Apr-94	Acetone	20	20	UG/L	U	U
0271	11-Oct-93	Acetone	20	20	UG/L	U	UJ
0076	11-Oct-93	Acetone	20	20	UG/L	U	UJ
0271	07-Apr-94	Acetone	20	20	UG/L	U	U
0271	11-Oct-93	Acetonitrile	10	10	UG/L	U	U
0076	11-Oct-93	Acetonitrile	10	10	UG/L	U	U
0271	07-Apr-94	Acetonitrile	10	10	UG/L	U	UJ
0076	07-Apr-94	Acetonitrile	10	10	UG/L	U	UJ
0271	07-Apr-94	Acetonitrile	10	10	UG/L	U	U
0076	07-Apr-94	Acrylonitrile	10	10	UG/L	U	UJ
0271	07-Apr-94	Acrylonitrile	10	10	UG/L	U	U
0271	07-Apr-94	Acrylonitrile	10	10	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	11-Oct-93	Acrylonitrile	10	10	UG/L	U	U
0271	11-Oct-93	Acrylonitrile	10	10	UG/L	U	U
0271	16-Sep-92	Actinium-227	0.355	1	PCI/L		
0076	16-Sep-92	Actinium-227	0.84	0.84	PCI/L	U	U
0076	16-Dec-91	Actinium-227	1	1	PCI/L	U	U
0271	05-Aug-91	Actinium-227	1	0	PCI/L	U	U
0076	01-Feb-91	Actinium-227	1	0	PCI/L	U	U
0271	16-Dec-91	Actinium-227	1	1	PCI/L	U	U
0271	01-Feb-91	Actinium-227	1	0	PCI/L	U	U
0076	23-Mar-92	Actinium-227	14	14	PCI/L	U	U
0271	22-Jun-92	Actinium-227	18	18	PCI/L	U	U
0076	22-Jun-92	Actinium-227	22	22	PCI/L	U	U
0271	05-Aug-91	Aldrin	0.04	0.04	UG/L	U	U
0076	11-Oct-93	Aldrin	0.05	0.05	UG/L	U	UJ
0271	16-Sep-92	Aldrin	0.05	0.05	UG/L	B	U
0271	06-May-91	Aldrin	0.05	0.05	UG/L	U	U
0076	01-Feb-91	Aldrin	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Aldrin	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Aldrin	0.05	0.05	UG/L	U	U
0271	01-Feb-91	Aldrin	0.05	0.05	UG/L	U	U
0076	06-Nov-90	Aldrin	0.05	0.05	UG/L	U	U
0076	06-May-91	Aldrin	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Aldrin	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Aldrin	0.05	0.05	UG/L	B	U
0271	22-Jun-92	Aldrin	0.051	0.051	UG/L	U	U
0076	16-Dec-91	Aldrin	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Aldrin	0.052	0.052	UG/L	U	U
0076	22-Jun-92	Aldrin	0.052	0.052	UG/L	U	U
0271	16-Dec-91	Aldrin	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Aldrin	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Aldrin	0.055	0.055	UG/L	U	U
0076	06-May-91	Aldrin	0.25	0.25	UG/L	U	U
0271	06-May-91	Aldrin	0.75	0.75	UG/L	U	U
0076	13-Sep-88	Alkalinity	272	1	MG/L		
0076	24-Jun-88	Alkalinity	308	1	MG/L		
0271	24-Jun-88	Alkalinity	334	1	MG/L		
0271	13-Sep-88	Alkalinity	335	1	MG/L		
0271	13-Sep-88	Alkalinity	335	1	MG/L		
0271	13-Sep-88	Alkalinity	335	1	MG/L		
0271	08-Mar-88	Alkalinity	335	1	MG/L		
0271	11-Oct-93	Alpha Chlordane	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Alpha Chlordane	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Alpha Chlordane	0.05	0.05	UG/L	U	U
0271	05-Aug-91	Alpha Chlordane	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Alpha Chlordane	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Alpha Chlordane	0.05	0.05	UG/L	U	UJ
0271	22-Jun-92	Alpha Chlordane	0.051	0.051	UG/L	U	U
0076	22-Jun-92	Alpha Chlordane	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Alpha Chlordane	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Alpha Chlordane	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Alpha Chlordane	0.055	0.055	UG/L	U	U
0076	06-Nov-90	Alpha Chlordane	0.5	0.5	UG/L	U	U
0076	06-May-91	Alpha Chlordane	0.5	0.5	UG/L	U	U
0271	01-Feb-91	Alpha Chlordane	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Alpha Chlordane	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Alpha Chlordane	0.5	0.5	UG/L	U	U
0271	06-May-91	Alpha Chlordane	0.5	0.5	UG/L	U	U
0076	16-Dec-91	Alpha Chlordane	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Alpha Chlordane	0.52	0.52	UG/L	U	U
0076	06-May-91	Alpha Chlordane	2.5	2.5	UG/L	U	U
0271	06-May-91	Alpha Chlordane	7.5	7.5	UG/L	U	U
0271	05-Aug-91	Alpha-BHC	0.03	0.03	UG/L	U	U
0271	06-Nov-90	Alpha-BHC	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Alpha-BHC	0.05	0.05	UG/L	U	U
0076	06-May-91	Alpha-BHC	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Alpha-BHC	0.05	0.05	UG/L	U	U
0271	01-Feb-91	Alpha-BHC	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Alpha-BHC	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Alpha-BHC	0.05	0.05	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	07-Apr-94	Alpha-BHC	0.05	0.05	UG/L	U	U
0076	06-Nov-90	Alpha-BHC	0.05	0.05	UG/L	U	U
0271	06-May-91	Alpha-BHC	0.05	0.05	UG/L	U	U
0076	01-Feb-91	Alpha-BHC	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Alpha-BHC	0.051	0.051	UG/L	U	U
0271	16-Dec-91	Alpha-BHC	0.052	0.052	UG/L	U	U
0076	22-Jun-92	Alpha-BHC	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Alpha-BHC	0.052	0.052	UG/L	U	U
0076	16-Dec-91	Alpha-BHC	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Alpha-BHC	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Alpha-BHC	0.055	0.055	UG/L	U	U
0076	06-May-91	Alpha-BHC	0.25	0.25	UG/L	U	U
0271	06-May-91	Alpha-BHC	0.75	0.75	UG/L	U	U
0076	11-Oct-93	Aluminum	7.1	9.3	UG/L	B	U
0076	11-Oct-93	Aluminum	9.1	9.3	UG/L	B	U
0271	11-Oct-93	Aluminum	11.8	9.3	UG/L	B	U
0271	07-Apr-94	Aluminum	13.1	4.1	UG/L	B	U
0271	07-Apr-94	Aluminum	13.2	4.1	UG/L	B	U
0271	07-Apr-94	Aluminum	13.7	4.1	UG/L	B	U
0076	07-Apr-94	Aluminum	15.3	4.1	UG/L	B	U
0076	07-Apr-94	Aluminum	15.3	4.1	UG/L	B	U
0271	11-Oct-93	Aluminum	15.8	9.3	UG/L	B	U
0271	22-Jun-92	Aluminum	17	17	UG/L	U	UJ
0076	22-Jun-92	Aluminum	17	17	UG/L	U	UJ
0271	07-Apr-94	Aluminum	17.8	4.1	UG/L	B	U
0271	16-Sep-92	Aluminum	37	37	UG/L	U	U
0076	16-Sep-92	Aluminum	37	37	UG/L	U	U
0076	23-Mar-92	Aluminum	46	200	UG/L	U	U
0271	06-Nov-90	Aluminum	60	60	UG/L	U	U
0271	05-Aug-91	Aluminum	67.911	60	UG/L		
0076	06-Nov-90	Aluminum	68.8	60	UG/L	B	
0271	05-Aug-91	Aluminum	73.7	60	UG/L		
0076	06-May-91	Aluminum	92.2	60	UG/L	B	
0271	06-May-91	Aluminum	93.5	60	UG/L	B	
0076	01-Feb-91	Aluminum	106	40	UG/L	B	
0271	01-Feb-91	Aluminum	148	40	UG/L	B	
0076	16-Dec-91	Aluminum	200	200	UG/L	U	U
0271	16-Dec-91	Aluminum	200	200	UG/L	U	U
0271	07-Apr-94	Americium-241	0.025	0.019	PCI/L		J
0271	07-Apr-94	Americium-241	0.03	0.03	PCI/L	U	UJ
0076	07-Apr-94	Americium-241	0.046	0.046	PCI/L	U	U
0076	11-Oct-93	Americium-241	0.049	0.049	PCI/L	U	U
0271	11-Oct-93	Americium-241	0.1	0.1	PCI/L	U	U
0076	06-May-91	Americium-241	24.4	1	PCI/L	U	U
0271	01-Feb-91	Americium-241	29	0	PCI/L	U	U
0271	06-May-91	Americium-241	30.5	1	PCI/L	U	U
0076	01-Feb-91	Americium-241	42	0	PCI/L	U	U
0271	07-Apr-94	Ammonia	0.1	0.1	MG/L	U	U
0271	07-Apr-94	Ammonia	0.1	0.1	MG/L	U	U
0271	11-Oct-93	Ammonia	0.1	0.1	MG/L	U	U
0076	11-Oct-93	Ammonia	0.39	0.1	MG/L		
0076	07-Apr-94	Ammonia	0.58	0.1	MG/L		
0076	22-Jun-92	Anthracene	10	10	UG/L	U	U
0271	11-Oct-93	Anthracene	10	10	UG/L	U	U
0271	16-Dec-91	Anthracene	10	10	UG/L	U	U
0271	22-Jun-92	Anthracene	10	10	UG/L	U	U
0076	06-May-91	Anthracene	10	10	UG/L	U	U
0271	01-Feb-91	Anthracene	10	10	UG/L	U	U
0076	16-Dec-91	Anthracene	10	10	UG/L	U	U
0271	16-Sep-92	Anthracene	10	10	UG/L	U	U
0076	06-Nov-90	Anthracene	10	10	UG/L	U	U
0271	06-Nov-90	Anthracene	10	10	UG/L	U	U
0271	06-May-91	Anthracene	10	10	UG/L	U	U
0076	11-Oct-93	Anthracene	10	10	UG/L	U	U
0271	05-Aug-91	Anthracene	10	10	UG/L	U	UJ
0076	16-Sep-92	Anthracene	10	10	UG/L	U	U
0076	01-Feb-91	Anthracene	10	10	UG/L	U	U
0076	23-Mar-92	Anthracene	10	10	UG/L	U	U
0076	07-Apr-94	Anthracene	11	11	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	07-Apr-94	Anthracene	11	11	UG/L	U	U
0271	07-Apr-94	Anthracene	11	11	UG/L	U	U
0076	11-Oct-93	Antimony	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Antimony	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Antimony	0.58	0.58	UG/L	U	U
0271	07-Apr-94	Antimony	0.58	0.58	UG/L	U	U
0271	07-Apr-94	Antimony	0.58	0.58	UG/L	U	UJ
0271	07-Apr-94	Antimony	0.58	0.58	UG/L	U	U
0076	07-Apr-94	Antimony	0.58	0.58	UG/L	U	U
0271	22-Jun-92	Antimony	2	2	UG/L	U	U
0076	22-Jun-92	Antimony	2	2	UG/L	U	U
0076	11-Oct-93	Antimony	2.8	0.5	UG/L		
0271	16-Sep-92	Antimony	5	5	UG/L	U	UJ
0076	16-Sep-92	Antimony	5	5	UG/L	U	UJ
0271	11-Oct-93	Antimony	7	0.5	UG/L		
0076	07-Apr-94	Antimony	14.4	0.58	UG/L		
0076	01-Feb-91	Antimony	30	30	UG/L	U	U
0271	05-Aug-91	Antimony	30	30	UG/L	U	U
0076	06-Nov-90	Antimony	30	30	UG/L	U	U
0271	01-Feb-91	Antimony	30	30	UG/L	U	U
0271	06-Nov-90	Antimony	30	30	UG/L	U	U
0271	05-Aug-91	Antimony	30	30	UG/L	U	U
0076	23-Mar-92	Antimony	36	60	UG/L	U	U
0271	06-May-91	Antimony	38.3	30	UG/L	B	
0076	06-May-91	Antimony	40.2	30	UG/L	B	
0271	16-Dec-91	Antimony	60	60	UG/L	U	U
0076	16-Dec-91	Antimony	60	60	UG/L	U	U
0271	01-Feb-91	Antimony-124	59	0	PCI/L	U	U
0076	01-Feb-91	Antimony-124	70	0	PCI/L	U	U
0076	01-Feb-91	Antimony-125	83	0	PCI/L	U	U
0271	01-Feb-91	Antimony-125	84	0	PCI/L	U	U
0271	06-May-91	Aroclor-1016	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Aroclor-1016	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Aroclor-1016	0.5	0.5	UG/L	U	U
0271	01-Feb-91	Aroclor-1016	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1016	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Aroclor-1016	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1016	0.5	0.5	UG/L	U	UJ
0076	06-Nov-90	Aroclor-1016	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Aroclor-1016	0.5	0.5	UG/L	U	U
0076	06-May-91	Aroclor-1016	0.5	0.5	UG/L	U	U
0076	16-Sep-92	Aroclor-1016	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1016	0.51	0.51	UG/L	U	U
0076	16-Dec-91	Aroclor-1016	0.52	0.52	UG/L	U	U
0076	22-Jun-92	Aroclor-1016	0.52	0.52	UG/L	U	U
0271	07-Apr-94	Aroclor-1016	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Aroclor-1016	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1016	0.55	0.55	UG/L	U	U
0271	05-Aug-91	Aroclor-1016	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1016	1.1	1.1	UG/L	U	U
0076	06-May-91	Aroclor-1016	2.5	2.5	UG/L	U	U
0271	06-May-91	Aroclor-1016	7.5	7.5	UG/L	U	U
0271	06-May-91	Aroclor-1221	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Aroclor-1221	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Aroclor-1221	0.5	0.5	UG/L	U	U
0076	16-Sep-92	Aroclor-1221	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Aroclor-1221	0.5	0.5	UG/L	U	U
0271	01-Feb-91	Aroclor-1221	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Aroclor-1221	0.5	0.5	UG/L	U	U
0076	06-Nov-90	Aroclor-1221	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1221	0.5	0.5	UG/L	U	UJ
0076	06-May-91	Aroclor-1221	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1221	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1221	0.51	0.51	UG/L	U	U
0076	22-Jun-92	Aroclor-1221	0.52	0.52	UG/L	U	U
0076	16-Dec-91	Aroclor-1221	0.52	0.52	UG/L	U	U
0271	07-Apr-94	Aroclor-1221	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Aroclor-1221	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1221	0.55	0.55	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	05-Aug-91	Aroclor-1221	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1221	2.1	2.1	UG/L	U	U
0076	06-May-91	Aroclor-1221	2.5	2.5	UG/L	U	U
0271	06-May-91	Aroclor-1221	7.5	7.5	UG/L	U	U
0271	01-Feb-91	Aroclor-1232	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1232	0.5	0.5	UG/L	U	UJ
0271	11-Oct-93	Aroclor-1232	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1232	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Aroclor-1232	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Aroclor-1232	0.5	0.5	UG/L	U	U
0076	16-Sep-92	Aroclor-1232	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Aroclor-1232	0.5	0.5	UG/L	U	U
0076	06-May-91	Aroclor-1232	0.5	0.5	UG/L	U	U
0271	06-May-91	Aroclor-1232	0.5	0.5	UG/L	U	U
0076	06-Nov-90	Aroclor-1232	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1232	0.51	0.51	UG/L	U	U
0271	07-Apr-94	Aroclor-1232	0.52	0.52	UG/L	U	U
0076	16-Dec-91	Aroclor-1232	0.52	0.52	UG/L	U	U
0076	22-Jun-92	Aroclor-1232	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Aroclor-1232	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1232	0.55	0.55	UG/L	U	U
0271	05-Aug-91	Aroclor-1232	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1232	1.1	1.1	UG/L	U	U
0076	06-May-91	Aroclor-1232	2.5	2.5	UG/L	U	U
0271	06-May-91	Aroclor-1232	7.5	7.5	UG/L	U	U
0076	16-Sep-92	Aroclor-1242	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1242	0.5	0.5	UG/L	U	UJ
0271	07-Apr-94	Aroclor-1242	0.5	0.5	UG/L	U	U
0271	01-Feb-91	Aroclor-1242	0.5	0.5	UG/L	U	U
0076	06-May-91	Aroclor-1242	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1242	0.5	0.5	UG/L	U	U
0076	06-Nov-90	Aroclor-1242	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Aroclor-1242	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Aroclor-1242	0.5	0.5	UG/L	U	U
0271	06-May-91	Aroclor-1242	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Aroclor-1242	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1242	0.51	0.51	UG/L	U	U
0076	22-Jun-92	Aroclor-1242	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Aroclor-1242	0.52	0.52	UG/L	U	U
0076	16-Dec-91	Aroclor-1242	0.52	0.52	UG/L	U	U
0271	07-Apr-94	Aroclor-1242	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1242	0.55	0.55	UG/L	U	U
0271	05-Aug-91	Aroclor-1242	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1242	1.1	1.1	UG/L	U	U
0076	06-May-91	Aroclor-1242	2.5	2.5	UG/L	U	U
0271	06-May-91	Aroclor-1242	7.5	7.5	UG/L	U	U
0271	01-Feb-91	Aroclor-1248	0.5	0.5	UG/L	U	U
0076	06-May-91	Aroclor-1248	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Aroclor-1248	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1248	0.5	0.5	UG/L	U	U
0076	16-Sep-92	Aroclor-1248	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Aroclor-1248	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Aroclor-1248	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Aroclor-1248	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1248	0.5	0.5	UG/L	U	UJ
0076	06-Nov-90	Aroclor-1248	0.5	0.5	UG/L	U	U
0271	06-May-91	Aroclor-1248	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1248	0.51	0.51	UG/L	U	U
0076	22-Jun-92	Aroclor-1248	0.52	0.52	UG/L	U	U
0271	07-Apr-94	Aroclor-1248	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Aroclor-1248	0.52	0.52	UG/L	U	U
0076	16-Dec-91	Aroclor-1248	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1248	0.55	0.55	UG/L	U	U
0271	05-Aug-91	Aroclor-1248	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1248	1.1	1.1	UG/L	U	U
0076	06-May-91	Aroclor-1248	2.5	2.5	UG/L	U	U
0271	06-May-91	Aroclor-1248	7.5	7.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1254	0.5	0.5	UG/L	U	UJ
0271	11-Oct-93	Aroclor-1254	0.5	0.5	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Sep-92	Aroclor-1254	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Aroclor-1254	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1254	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1254	0.51	0.51	UG/L	U	U
0271	07-Apr-94	Aroclor-1254	0.52	0.52	UG/L	U	U
0076	22-Jun-92	Aroclor-1254	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1254	0.55	0.55	UG/L	U	U
0076	16-Dec-91	Aroclor-1254	1	1	UG/L	U	U
0076	06-Nov-90	Aroclor-1254	1	1	UG/L	U	U
0271	06-May-91	Aroclor-1254	1	1	UG/L	U	U
0271	01-Feb-91	Aroclor-1254	1	1	UG/L	U	U
0271	06-Nov-90	Aroclor-1254	1	1	UG/L	U	U
0271	05-Aug-91	Aroclor-1254	1	1	UG/L	U	U
0271	16-Dec-91	Aroclor-1254	1	1	UG/L	U	U
0076	01-Feb-91	Aroclor-1254	1	1	UG/L	U	U
0076	06-May-91	Aroclor-1254	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1254	1.1	1.1	UG/L	U	U
0076	06-May-91	Aroclor-1254	5	5	UG/L	U	U
0271	06-May-91	Aroclor-1254	15	15	UG/L	U	U
0076	16-Sep-92	Aroclor-1260	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Aroclor-1260	0.5	0.5	UG/L	U	UJ
0271	07-Apr-94	Aroclor-1260	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Aroclor-1260	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Aroclor-1260	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Aroclor-1260	0.51	0.51	UG/L	U	U
0271	07-Apr-94	Aroclor-1260	0.52	0.52	UG/L	U	U
0076	22-Jun-92	Aroclor-1260	0.52	0.52	UG/L	U	U
0076	07-Apr-94	Aroclor-1260	0.55	0.55	UG/L	U	U
0076	06-Nov-90	Aroclor-1260	1	1	UG/L	U	U
0271	16-Dec-91	Aroclor-1260	1	1	UG/L	U	U
0076	06-May-91	Aroclor-1260	1	1	UG/L	U	U
0271	01-Feb-91	Aroclor-1260	1	1	UG/L	U	U
0271	05-Aug-91	Aroclor-1260	1	1	UG/L	U	U
0076	16-Dec-91	Aroclor-1260	1	1	UG/L	U	U
0076	01-Feb-91	Aroclor-1260	1	1	UG/L	U	U
0271	06-May-91	Aroclor-1260	1	1	UG/L	U	U
0271	06-Nov-90	Aroclor-1260	1	1	UG/L	U	U
0076	23-Mar-92	Aroclor-1260	1.1	1.1	UG/L	U	U
0076	06-May-91	Aroclor-1260	5	5	UG/L	U	U
0271	06-May-91	Aroclor-1260	15	15	UG/L	U	U
0076	22-Jun-92	Arsenic	2	2	UG/L	U	U
0271	07-Apr-94	Arsenic	2	2	UG/L	U	UJ
0271	07-Apr-94	Arsenic	2	2	UG/L	U	UJ
0271	22-Jun-92	Arsenic	2	2	UG/L	U	U
0271	06-Nov-90	Arsenic	2	2	UG/L	U	U
0271	07-Apr-94	Arsenic	2	2	UG/L	U	UJ
0076	23-Mar-92	Arsenic	2	10	UG/L	U	U
0076	01-Feb-91	Arsenic	2	2	UG/L	U	U
0076	07-Apr-94	Arsenic	2	2	UG/L	U	U
0271	07-Apr-94	Arsenic	2	2	UG/L	U	UJ
0076	07-Apr-94	Arsenic	2	2	UG/L	U	UJ
0076	11-Oct-93	Arsenic	2	2	UG/L	U	UJ
0076	11-Oct-93	Arsenic	2	2	UG/L	U	UJ
0271	11-Oct-93	Arsenic	2	2	UG/L	U	U
0271	11-Oct-93	Arsenic	2	2	UG/L	U	UJ
0076	16-Sep-92	Arsenic	2	2	UG/L	U	UJ
0271	05-Aug-91	Arsenic	2	2	UG/L	U	U
0076	06-Nov-90	Arsenic	2	2	UG/L	U	U
0271	01-Feb-91	Arsenic	2	2	UG/L	U	U
0271	06-May-91	Arsenic	2	2	UG/L	U	U
0271	16-Sep-92	Arsenic	2	2	UG/L	U	UJ
0271	05-Aug-91	Arsenic	2	2	UG/L	U	U
0076	06-May-91	Arsenic	2	2	UG/L	U	UJ
0076	01-Feb-84	Arsenic	5	5	UG/L	U	U
0076	16-Dec-91	Arsenic	10	10	UG/L	U	U
0271	16-Dec-91	Arsenic	10	10	UG/L	U	U
0271	13-Dec-85	Arsenic	10	10	UG/L	U	U
0076	12-Dec-85	Arsenic	10	10	UG/L	U	U
0076	16-Sep-92	Barium	75	2	UG/L		

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Sep-92	Barium	78.6	2	UG/L		
0076	22-Jun-92	Barium	79.7	3	UG/L	B	
0076	07-Apr-94	Barium	81.6	1.1	UG/L	B	J
0076	07-Apr-94	Barium	81.7	1.1	UG/L	B	J
0076	11-Oct-93	Barium	82.1	0.5	UG/L	B	J
0271	22-Jun-92	Barium	82.4	3	UG/L	B	
0271	11-Oct-93	Barium	83.4	0.5	UG/L	B	J
0076	23-Mar-92	Barium	83.6	200	UG/L	B	
0271	11-Oct-93	Barium	84.3	0.5	UG/L	B	J
0076	06-May-91	Barium	84.5	2	UG/L	B	
0076	11-Oct-93	Barium	84.9	0.5	UG/L	B	J
0271	05-Aug-91	Barium	85	2	UG/L		
0076	01-Feb-91	Barium	85	2	UG/L	B	
0271	07-Apr-94	Barium	85.8	1.1	UG/L	B	J
0271	07-Apr-94	Barium	85.8	1.1	UG/L	B	J
0271	07-Apr-94	Barium	86.9	1.1	UG/L	B	J
0271	05-Aug-91	Barium	88.424	2	UG/L		
0271	06-Nov-90	Barium	95	2	UG/L	B	
0271	01-Feb-91	Barium	98.2	2	UG/L	B	
0271	07-Apr-94	Barium	98.7	1.1	UG/L	B	J
0271	06-May-91	Barium	99.7	2	UG/L	B	
0076	06-Nov-90	Barium	115	2	UG/L	B	
0271	16-Dec-91	Barium	200	200	UG/L	U	U
0076	16-Dec-91	Barium	200	200	UG/L	U	U
0271	01-Feb-91	Barium-133	19	0	PCI/L	U	U
0076	01-Feb-91	Barium-133	26	0	PCI/L	U	U
0271	01-Feb-91	Barium-140	44	0	PCI/L	U	U
0076	01-Feb-91	Barium-140	68	0	PCI/L	U	U
0271	16-Dec-91	Benzene	1	1	UG/L	U	U
0076	16-Dec-91	Benzene	1	1	UG/L	U	U
0271	16-Sep-92	Benzene	1	1	UG/L	U	UJ
0076	23-Mar-92	Benzene	1	1	UG/L	U	U
0076	16-Jun-93	Benzene	1	1	UG/L	U	U
0271	13-Sep-88	Benzene	1	1	UG/L	U	U
0076	13-Sep-88	Benzene	1	1	UG/L	U	U
0076	22-Jun-92	Benzene	1	1	UG/L	U	UJ
0076	16-Sep-92	Benzene	1	1	UG/L	U	UJ
0271	22-Jun-92	Benzene	1	1	UG/L	U	UJ
0271	15-Jun-90	Benzene	2	2	UG/L	U	U
0271	24-Jan-90	Benzene	2	2	UG/L	U	U
0271	07-Apr-94	Benzene	2	2	UG/L	U	U
0076	23-Mar-90	Benzene	2	2	UG/L	U	U
0076	06-May-91	Benzene	2	2	UG/L	U	UJ
0076	06-Nov-90	Benzene	2	2	UG/L	U	U
0271	05-Aug-91	Benzene	2	2	UG/L	U	U
0271	27-Feb-90	Benzene	2	2	UG/L	U	U
0271	31-Jul-90	Benzene	2	2	UG/L	U	U
0076	11-Oct-93	Benzene	2	2	UG/L	U	UJ
0271	01-Feb-91	Benzene	2	2	UG/L	U	U
0076	27-Feb-90	Benzene	2	2	UG/L	U	U
0076	07-Apr-94	Benzene	2	2	UG/L	U	U
0271	27-Feb-90	Benzene	2	2	UG/L	U	U
0271	11-Oct-93	Benzene	2	2	UG/L	U	UJ
0076	01-Feb-91	Benzene	2	2	UG/L	U	U
0076	15-Jun-90	Benzene	2	2	UG/L	U	U
0076	31-Jul-90	Benzene	2	2	UG/L	U	U
0271	07-Apr-94	Benzene	2	2	UG/L	U	U
0271	23-Mar-90	Benzene	2	2	UG/L	U	U
0271	06-May-91	Benzene	2	2	UG/L	U	UJ
0271	06-Nov-90	Benzene	2	2	UG/L	U	U
0271	27-Feb-90	Benzene	2	2	UG/L	U	U
0076	24-Jan-90	Benzene	2	2	UG/L	U	U
0076	13-Sep-88	Benzene	5	5	UG/L	U	U
0271	25-Apr-90	Benzene	5	5	UG/L	U	U
0271	08-Mar-88	Benzene	5	5	UG/L	U	U
0271	13-Sep-88	Benzene	5	5	UG/L	U	U
0271	24-Jun-88	Benzene	5	5	UG/L	U	U
0076	25-Apr-90	Benzene	5	5	UG/L	U	U
0076	24-Jun-88	Benzene	5	5	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect Limit	Units	Lab Qual.	Data Qual.
0076	16-Dec-91	Benzo(a)anthracene	10	10	UG/L	U	U
0271	06-Nov-90	Benzo(a)anthracene	10	10	UG/L	U	U
0076	06-May-91	Benzo(a)anthracene	10	10	UG/L	U	U
0076	06-Nov-90	Benzo(a)anthracene	10	10	UG/L	U	U
0271	22-Jun-92	Benzo(a)anthracene	10	10	UG/L	U	U
0076	16-Sep-92	Benzo(a)anthracene	10	10	UG/L	U	U
0271	05-Aug-91	Benzo(a)anthracene	10	10	UG/L	U	UJ
0076	11-Oct-93	Benzo(a)anthracene	10	10	UG/L	U	U
0271	06-May-91	Benzo(a)anthracene	10	10	UG/L	U	U
0271	11-Oct-93	Benzo(a)anthracene	10	10	UG/L	U	U
0076	23-Mar-92	Benzo(a)anthracene	10	10	UG/L	U	U
0271	01-Feb-91	Benzo(a)anthracene	10	10	UG/L	U	U
0076	22-Jun-92	Benzo(a)anthracene	10	10	UG/L	U	U
0271	16-Sep-92	Benzo(a)anthracene	10	10	UG/L	U	U
0076	01-Feb-91	Benzo(a)anthracene	10	10	UG/L	U	U
0271	16-Dec-91	Benzo(a)anthracene	10	10	UG/L	U	U
0271	07-Apr-94	Benzo(a)anthracene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(a)anthracene	11	11	UG/L	U	U
0076	07-Apr-94	Benzo(a)anthracene	11	11	UG/L	U	U
0076	06-Nov-90	Benzo(a)pyrene	10	10	UG/L	U	U
0271	11-Oct-93	Benzo(a)pyrene	10	10	UG/L	U	U
0076	23-Mar-92	Benzo(a)pyrene	10	10	UG/L	U	U
0076	06-May-91	Benzo(a)pyrene	10	10	UG/L	U	U
0271	01-Feb-91	Benzo(a)pyrene	10	10	UG/L	U	U
0271	06-May-91	Benzo(a)pyrene	10	10	UG/L	U	U
0076	22-Jun-92	Benzo(a)pyrene	10	10	UG/L	U	U
0271	06-Nov-90	Benzo(a)pyrene	10	10	UG/L	U	U
0271	05-Aug-91	Benzo(a)pyrene	10	10	UG/L	U	UJ
0271	16-Sep-92	Benzo(a)pyrene	10	10	UG/L	U	U
0076	01-Feb-91	Benzo(a)pyrene	10	10	UG/L	U	U
0271	22-Jun-92	Benzo(a)pyrene	10	10	UG/L	U	U
0271	16-Dec-91	Benzo(a)pyrene	10	10	UG/L	U	U
0076	11-Oct-93	Benzo(a)pyrene	10	10	UG/L	U	U
0076	16-Dec-91	Benzo(a)pyrene	10	10	UG/L	U	U
0076	16-Sep-92	Benzo(a)pyrene	10	10	UG/L	U	U
0271	07-Apr-94	Benzo(a)pyrene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(a)pyrene	11	11	UG/L	U	U
0076	07-Apr-94	Benzo(a)pyrene	11	11	UG/L	U	U
0271	16-Sep-92	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	16-Dec-91	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	23-Mar-92	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	06-Nov-90	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	22-Jun-92	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	11-Oct-93	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	11-Oct-93	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	06-Nov-90	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	22-Jun-92	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	01-Feb-91	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	01-Feb-91	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	06-May-91	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	06-May-91	Benzo(b)fluoranthene	10	10	UG/L	U	U
0271	05-Aug-91	Benzo(b)fluoranthene	10	10	UG/L	U	UJ
0076	16-Dec-91	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	16-Sep-92	Benzo(b)fluoranthene	10	10	UG/L	U	U
0076	07-Apr-94	Benzo(b)fluoranthene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(b)fluoranthene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(b)fluoranthene	11	11	UG/L	U	U
0271	16-Sep-92	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	16-Sep-92	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0271	22-Jun-92	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0271	06-May-91	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0271	05-Aug-91	Benzo(g,h,i)perylene	10	10	UG/L	U	UJ
0076	06-May-91	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	01-Feb-91	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	11-Oct-93	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	22-Jun-92	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0271	16-Dec-91	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0271	11-Oct-93	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0271	06-Nov-90	Benzo(g,h,i)perylene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	01-Feb-91	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	23-Mar-92	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	06-Nov-90	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	16-Dec-91	Benzo(g,h,i)perylene	10	10	UG/L	U	U
0076	07-Apr-94	Benzo(g,h,i)perylene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(g,h,i)perylene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(g,h,i)perylene	11	11	UG/L	U	U
0271	11-Oct-93	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	16-Dec-91	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	06-May-91	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	22-Jun-92	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	16-Sep-92	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	01-Feb-91	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	11-Oct-93	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	06-Nov-90	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	16-Sep-92	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	01-Feb-91	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	16-Dec-91	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	06-Nov-90	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	22-Jun-92	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	05-Aug-91	Benzo(k)fluoranthene	10	10	UG/L	U	UJ
0076	23-Mar-92	Benzo(k)fluoranthene	10	10	UG/L	U	U
0076	06-May-91	Benzo(k)fluoranthene	10	10	UG/L	U	U
0271	07-Apr-94	Benzo(k)fluoranthene	11	11	UG/L	U	U
0076	07-Apr-94	Benzo(k)fluoranthene	11	11	UG/L	U	U
0271	07-Apr-94	Benzo(k)fluoranthene	11	11	UG/L	U	U
0271	06-May-91	Benzoic Acid	50	50	UG/L	U	UJ
0076	16-Dec-91	Benzoic Acid	50	50	UG/L	U	UJ
0271	06-Nov-90	Benzoic Acid	50	50	UG/L	U	U
0271	16-Dec-91	Benzoic Acid	50	50	UG/L	U	UJ
0271	05-Aug-91	Benzoic Acid	50	50	UG/L	U	UJ
0076	06-Nov-90	Benzoic Acid	50	50	UG/L	U	U
0076	06-May-91	Benzoic Acid	50	50	UG/L	U	UJ
0076	01-Feb-91	Benzoic Acid	50	50	UG/L	U	UJ
0271	01-Feb-91	Benzoic Acid	50	50	UG/L	U	UJ
0271	11-Oct-93	Benzoic Acid	51	51	UG/L	U	U
0076	11-Oct-93	Benzoic Acid	51	51	UG/L	U	U
0271	07-Apr-94	Benzoic Acid	53	53	UG/L	U	U
0271	07-Apr-94	Benzoic Acid	53	53	UG/L	U	U
0076	07-Apr-94	Benzoic Acid	53	53	UG/L	U	U
0271	06-May-91	Benzyl Alcohol	10	10	UG/L	U	U
0271	06-Nov-90	Benzyl Alcohol	10	10	UG/L	U	U
0271	11-Oct-93	Benzyl Alcohol	10	10	UG/L	U	U
0076	06-Nov-90	Benzyl Alcohol	10	10	UG/L	U	U
0076	01-Feb-91	Benzyl Alcohol	10	10	UG/L	U	U
0076	16-Dec-91	Benzyl Alcohol	10	10	UG/L	U	U
0271	05-Aug-91	Benzyl Alcohol	10	10	UG/L	U	UJ
0271	01-Feb-91	Benzyl Alcohol	10	10	UG/L	U	U
0076	06-May-91	Benzyl Alcohol	10	10	UG/L	U	U
0271	16-Dec-91	Benzyl Alcohol	10	10	UG/L	U	U
0076	11-Oct-93	Benzyl Alcohol	10	10	UG/L	U	U
0271	07-Apr-94	Benzyl Alcohol	11	11	UG/L	U	U
0271	07-Apr-94	Benzyl Alcohol	11	11	UG/L	U	U
0076	07-Apr-94	Benzyl Alcohol	11	11	UG/L	U	U
0271	07-Apr-94	Beryllium	0.08	0.08	UG/L	U	U
0271	07-Apr-94	Beryllium	0.08	0.08	UG/L	U	U
0271	07-Apr-94	Beryllium	0.08	0.08	UG/L	U	U
0076	07-Apr-94	Beryllium	0.08	0.08	UG/L	U	U
0076	07-Apr-94	Beryllium	0.08	0.08	UG/L	U	U
0271	07-Apr-94	Beryllium	0.08	0.08	UG/L	U	U
0271	11-Oct-93	Beryllium	0.25	0.25	UG/L	U	U
0271	11-Oct-93	Beryllium	0.25	0.25	UG/L	U	U
0076	11-Oct-93	Beryllium	0.25	0.25	UG/L	U	U
0076	11-Oct-93	Beryllium	0.25	0.25	UG/L	U	U
0076	16-Sep-92	Beryllium	1	1	UG/L	U	U
0271	01-Feb-91	Beryllium	1	1	UG/L	U	U
0271	16-Sep-92	Beryllium	1	1	UG/L	U	U
0076	23-Mar-92	Beryllium	1	5	UG/L	U	U
0271	22-Jun-92	Beryllium	1	1	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	01-Feb-91	Beryllium	1	1	UG/L	U	U
0076	22-Jun-92	Beryllium	1	1	UG/L	U	U
0271	05-Aug-91	Beryllium	2	2	UG/L	U	U
0271	06-Nov-90	Beryllium	2	2	UG/L	U	U
0271	13-Dec-85	Beryllium	2	2	UG/L	U	U
0271	06-May-91	Beryllium	2	2	UG/L	U	U
0271	05-Aug-91	Beryllium	2	2	UG/L	U	U
0076	06-Nov-90	Beryllium	2	2	UG/L	U	U
0076	06-May-91	Beryllium	2	2	UG/L	U	U
0076	12-Dec-85	Beryllium	2	2	UG/L	U	U
0076	01-Feb-84	Beryllium	5	5	UG/L	U	U
0271	16-Dec-91	Beryllium	5	5	UG/L	U	U
0076	16-Dec-91	Beryllium	5	5	UG/L	U	U
0271	01-Feb-91	Beryllium-7	96	0	PCI/L	U	U
0076	01-Feb-91	Beryllium-7	110	0	PCI/L	U	U
0076	06-Nov-90	Beta-BHC	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Beta-BHC	0.05	0.05	UG/L	U	U
0271	05-Aug-91	Beta-BHC	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Beta-BHC	0.05	0.05	UG/L	U	U
0271	01-Feb-91	Beta-BHC	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Beta-BHC	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Beta-BHC	0.05	0.05	UG/L	U	U
0271	06-May-91	Beta-BHC	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Beta-BHC	0.05	0.05	UG/L	U	UJ
0076	01-Feb-91	Beta-BHC	0.05	0.05	UG/L	U	U
0076	06-May-91	Beta-BHC	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Beta-BHC	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Beta-BHC	0.051	0.051	UG/L		U
0076	16-Dec-91	Beta-BHC	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Beta-BHC	0.052	0.052	UG/L	U	U
0271	16-Dec-91	Beta-BHC	0.052	0.052	UG/L	U	U
0076	22-Jun-92	Beta-BHC	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Beta-BHC	0.053	0.053	UG/L	JB	U
0076	07-Apr-94	Beta-BHC	0.055	0.055	UG/L	U	U
0076	06-May-91	Beta-BHC	0.25	0.25	UG/L	U	U
0271	06-May-91	Beta-BHC	0.75	0.75	UG/L	U	U
0271	06-May-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	06-Nov-90	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	06-Nov-90	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	16-Sep-92	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	22-Jun-92	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	23-Mar-92	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	01-Feb-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	01-Feb-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	05-Aug-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	UJ
0271	11-Oct-93	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	06-May-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	16-Dec-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	22-Jun-92	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	11-Oct-93	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	16-Dec-91	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0076	16-Sep-92	Bis(2-chloroethoxy)methane	10	10	UG/L	U	U
0271	07-Apr-94	Bis(2-chloroethoxy)methane	11	11	UG/L	U	U
0271	07-Apr-94	Bis(2-chloroethoxy)methane	11	11	UG/L	U	U
0076	07-Apr-94	Bis(2-chloroethoxy)methane	11	11	UG/L	U	U
0076	23-Mar-92	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	11-Oct-93	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	01-Feb-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	11-Oct-93	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	06-May-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	06-Nov-90	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	16-Sep-92	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	01-Feb-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	16-Sep-92	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	05-Aug-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	UJ
0271	16-Dec-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	06-May-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	06-Nov-90	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	16-Dec-91	Bis(2-chloroethyl)ether	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	22-Jun-92	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0271	22-Jun-92	Bis(2-chloroethyl)ether	10	10	UG/L	U	U
0076	07-Apr-94	Bis(2-chloroethyl)ether	11	11	UG/L	U	U
0271	07-Apr-94	Bis(2-chloroethyl)ether	11	11	UG/L	U	U
0271	07-Apr-94	Bis(2-chloroethyl)ether	11	11	UG/L	U	U
0271	16-Sep-92	Bis(2-ethylhexyl)phthalate	10	10	UG/L	JB	UJ
0076	12-Dec-85	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0271	13-Dec-85	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0271	05-Aug-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	UJ
0076	16-Dec-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0271	16-Dec-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	22-Jun-92	Bis(2-ethylhexyl)phthalate	10	10	UG/L	JB	UJ
0271	11-Oct-93	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	23-Mar-92	Bis(2-ethylhexyl)phthalate	10	10	UG/L	JB	UJ
0271	01-Feb-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	01-Feb-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	06-Nov-90	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	11-Oct-93	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	16-Sep-92	Bis(2-ethylhexyl)phthalate	10	10	UG/L	JB	UJ
0271	06-Nov-90	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0271	22-Jun-92	Bis(2-ethylhexyl)phthalate	10	10	UG/L	JB	UJ
0076	01-Feb-84	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0271	06-May-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	06-May-91	Bis(2-ethylhexyl)phthalate	10	10	UG/L	U	U
0076	07-Apr-94	Bis(2-ethylhexyl)phthalate	11	11	UG/L	JB	UJ
0271	07-Apr-94	Bis(2-ethylhexyl)phthalate	11	11	UG/L	JB	UJ
0271	07-Apr-94	Bis(2-ethylhexyl)phthalate	11	11	UG/L	JB	UJ
0076	11-Oct-93	Bismuth	32.2	32.2	UG/L	U	U
0076	11-Oct-93	Bismuth	32.2	32.2	UG/L	U	U
0271	11-Oct-93	Bismuth	32.2	32.2	UG/L	U	U
0271	11-Oct-93	Bismuth	32.2	32.2	UG/L	U	U
0271	07-Apr-94	Bismuth	32.5	32.5	UG/L	U	U
0076	07-Apr-94	Bismuth	32.5	32.5	UG/L	U	U
0271	07-Apr-94	Bismuth	32.5	32.5	UG/L	U	U
0271	07-Apr-94	Bismuth	32.5	32.5	UG/L	U	U
0271	07-Apr-94	Bismuth	32.5	32.5	UG/L	U	U
0076	07-Apr-94	Bismuth	32.5	32.5	UG/L	U	U
0271	07-Apr-94	Bismuth-207	1.97	1.97	PCI/L	U	U
0076	07-Apr-94	Bismuth-207	2.5	2.5	PCI/L	U	U
0271	07-Apr-94	Bismuth-207	3.86	3.86	PCI/L	U	U
0076	11-Oct-93	Bismuth-207	8.1	8.1	PCI/L	U	U
0271	11-Oct-93	Bismuth-207	9.9	9.9	PCI/L	U	U
0076	16-Sep-92	Bismuth-207	10.2	10.2	PCI/L	U	U
0271	16-Sep-92	Bismuth-207	12.1	12.1	PCI/L	U	U
0271	06-May-91	Bismuth-210	0.11	1	PCI/L		
0076	06-May-91	Bismuth-210	0.39	1	PCI/L		
0076	01-Feb-91	Bismuth-210	1	1	PCI/L	U	U
0271	01-Feb-91	Bismuth-210	1	1	PCI/L	U	U
0076	23-Mar-92	Bismuth-210	6	6	PCI/L	U	U
0271	07-Apr-94	Bismuth-210	6.67	6.67	PCI/L	U	U
0271	22-Jun-92	Bismuth-210	7	7	PCI/L	U	U
0271	07-Apr-94	Bismuth-210	7.1	7.1	PCI/L	U	U
0076	16-Dec-91	Bismuth-210	9.1	9.1	PCI/L	U	U
0076	07-Apr-94	Bismuth-210	9.82	9.82	PCI/L	U	U
0076	22-Jun-92	Bismuth-210	10	10	PCI/L	U	U
0271	05-Aug-91	Bismuth-210	10	0	PCI/L	U	U
0076	11-Oct-93	Bismuth-210	12	12	PCI/L	U	U
0271	11-Oct-93	Bismuth-210	13	13	PCI/L	U	U
0076	16-Sep-92	Bismuth-210	13.8	13.8	PCI/L	U	U
0271	16-Sep-92	Bismuth-210	14.4	14.4	PCI/L	U	U
0271	16-Dec-91	Bismuth-210	15	15	PCI/L	U	U
0076	06-Nov-90	Bismuth-210	20	0	PCI/L	U	U
0271	06-Nov-90	Bismuth-210	20	0	PCI/L	U	U
0076	06-May-91	Bismuth-211	219	1	PCI/L	U	U
0271	06-May-91	Bismuth-211	274	1	PCI/L	U	U
0076	06-May-91	Bismuth-212	187	1	PCI/L	U	U
0271	06-May-91	Bismuth-212	282	1	PCI/L	U	U
0271	06-May-91	Bismuth-214	82.5	1	PCI/L	U	U
0076	06-May-91	Bismuth-214	91.7	1	PCI/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Dec-91	Bromobenzene	1	1	UG/L	U	UJ
0076	16-Dec-91	Bromobenzene	1	1	UG/L	U	UJ
0271	15-Jun-90	Bromobenzene	2	2	UG/L	U	U
0076	31-Jul-90	Bromobenzene	2	2	UG/L	U	U
0271	24-Jan-90	Bromobenzene	2	2	UG/L	U	U
0271	06-Nov-90	Bromobenzene	2	2	UG/L	U	UJ
0076	01-Feb-91	Bromobenzene	2	2	UG/L	U	UJ
0271	23-Mar-90	Bromobenzene	2	2	UG/L	U	U
0271	11-Oct-93	Bromobenzene	2	2	UG/L	U	U
0271	31-Jul-90	Bromobenzene	2	2	UG/L	U	U
0076	23-Mar-90	Bromobenzene	2	2	UG/L	U	U
0271	27-Feb-90	Bromobenzene	2	2	UG/L	U	U
0271	01-Feb-91	Bromobenzene	2	2	UG/L	U	UJ
0076	22-Jun-92	Bromobenzene	2	2	UG/L	U	R
0076	06-Nov-90	Bromobenzene	2	2	UG/L	U	UJ
0076	11-Oct-93	Bromobenzene	2	2	UG/L	U	UJ
0271	07-Apr-94	Bromobenzene	2	2	UG/L	U	U
0271	16-Sep-92	Bromobenzene	2	2	UG/L	U	U
0076	15-Jun-90	Bromobenzene	2	2	UG/L	U	U
0271	22-Jun-92	Bromobenzene	2	2	UG/L	U	R
0271	27-Feb-90	Bromobenzene	2	2	UG/L	U	U
0271	07-Apr-94	Bromobenzene	2	2	UG/L	U	U
0271	05-Aug-91	Bromobenzene	2	2	UG/L	U	UJ
0271	27-Feb-90	Bromobenzene	2	2	UG/L	U	U
0076	24-Jan-90	Bromobenzene	2	2	UG/L	U	U
0076	27-Feb-90	Bromobenzene	2	2	UG/L	U	U
0076	16-Jun-93	Bromobenzene	2	2	UG/L	U	U
0076	16-Sep-92	Bromobenzene	2	2	UG/L	U	U
0271	06-May-91	Bromobenzene	2	2	UG/L	U	UJ
0076	23-Mar-92	Bromobenzene	2	2	UG/L	U	U
0076	06-May-91	Bromobenzene	2	2	UG/L	U	UJ
0076	07-Apr-94	Bromobenzene	2	2	UG/L	U	U
0076	07-Apr-94	Bromodichloromethane	1	1	UG/L	U	U
0271	07-Apr-94	Bromodichloromethane	1	1	UG/L	U	UJ
0076	16-Jun-93	Bromodichloromethane	1	1	UG/L	U	U
0271	15-Jun-90	Bromodichloromethane	1	1	UG/L	U	U
0271	24-Jan-90	Bromodichloromethane	1	1	UG/L	U	U
0076	06-Nov-90	Bromodichloromethane	1	1	UG/L	U	U
0076	22-Jun-92	Bromodichloromethane	1	1	UG/L	U	U
0076	31-Jul-90	Bromodichloromethane	1	1	UG/L	U	U
0076	27-Feb-90	Bromodichloromethane	1	1	UG/L	U	U
0271	31-Jul-90	Bromodichloromethane	1	1	UG/L	U	U
0271	27-Feb-90	Bromodichloromethane	1	1	UG/L	U	U
0271	27-Feb-90	Bromodichloromethane	1	1	UG/L	U	U
0271	16-Sep-92	Bromodichloromethane	1	1	UG/L	U	U
0271	23-Mar-90	Bromodichloromethane	1	1	UG/L	U	U
0076	24-Jan-90	Bromodichloromethane	1	1	UG/L	U	U
0271	05-Aug-91	Bromodichloromethane	1	1	UG/L	U	U
0271	27-Feb-90	Bromodichloromethane	1	1	UG/L	U	U
0271	16-Dec-91	Bromodichloromethane	1	1	UG/L	U	UJ
0271	06-May-91	Bromodichloromethane	1	1	UG/L	U	U
0076	15-Jun-90	Bromodichloromethane	1	1	UG/L	U	U
0076	23-Mar-90	Bromodichloromethane	1	1	UG/L	U	U
0271	06-Nov-90	Bromodichloromethane	1	1	UG/L	U	U
0271	07-Apr-94	Bromodichloromethane	1	1	UG/L	U	U
0076	06-May-91	Bromodichloromethane	1	1	UG/L	U	U
0271	22-Jun-92	Bromodichloromethane	1	1	UG/L	U	U
0076	16-Dec-91	Bromodichloromethane	1	1	UG/L	U	UJ
0271	01-Feb-91	Bromodichloromethane	1	1	UG/L	U	U
0271	11-Oct-93	Bromodichloromethane	1	1	UG/L	U	UJ
0076	11-Oct-93	Bromodichloromethane	1	1	UG/L	U	UJ
0076	16-Sep-92	Bromodichloromethane	1	1	UG/L	U	U
0076	01-Feb-91	Bromodichloromethane	1	1	UG/L	U	U
0076	23-Mar-92	Bromodichloromethane	1	1	UG/L	U	U
0076	13-Sep-88	Bromodichloromethane	2.2	1	UG/L		
0271	13-Sep-88	Bromodichloromethane	3.7	1	UG/L		
0076	13-Sep-88	Bromodichloromethane	5	5	UG/L	U	U
0271	25-Apr-90	Bromodichloromethane	5	5	UG/L	U	U
0271	08-Mar-88	Bromodichloromethane	5	5	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	13-Sep-88	Bromodichloromethane	5	5	UG/L	U	U
0271	24-Jun-88	Bromodichloromethane	5	5	UG/L	U	U
0076	25-Apr-90	Bromodichloromethane	5	5	UG/L	U	U
0076	24-Jun-88	Bromodichloromethane	5	5	UG/L	U	U
0271	16-Dec-91	Bromoform	1	1	UG/L	U	UJ
0271	13-Sep-88	Bromoform	1	1	UG/L	U	U
0076	16-Dec-91	Bromoform	1	1	UG/L	U	UJ
0076	13-Sep-88	Bromoform	1	1	UG/L	U	U
0076	11-Oct-93	Bromoform	2	2	UG/L	U	UJ
0271	31-Jul-90	Bromoform	2	2	UG/L	U	U
0076	15-Jun-90	Bromoform	2	2	UG/L	U	U
0271	06-May-91	Bromoform	2	2	UG/L	U	U
0076	16-Sep-92	Bromoform	2	2	UG/L	U	U
0271	05-Aug-91	Bromoform	2	2	UG/L	U	UJ
0271	27-Feb-90	Bromoform	2	2	UG/L	U	U
0076	07-Apr-94	Bromoform	2	2	UG/L	U	UJ
0271	16-Sep-92	Bromoform	2	2	UG/L	U	U
0076	24-Jan-90	Bromoform	2	2	UG/L	U	U
0271	01-Feb-91	Bromoform	2	2	UG/L	U	U
0271	22-Jun-92	Bromoform	2	2	UG/L	U	UJ
0076	23-Mar-92	Bromoform	2	2	UG/L	U	U
0076	06-May-91	Bromoform	2	2	UG/L	U	U
0076	22-Jun-92	Bromoform	2	2	UG/L	U	U
0271	23-Mar-90	Bromoform	2	2	UG/L	U	U
0271	27-Feb-90	Bromoform	2	2	UG/L	U	U
0271	07-Apr-94	Bromoform	2	2	UG/L	U	UJ
0271	07-Apr-94	Bromoform	2	2	UG/L	U	UJ
0076	16-Jun-93	Bromoform	2	2	UG/L	U	U
0076	06-Nov-90	Bromoform	2	2	UG/L	U	UJ
0271	24-Jan-90	Bromoform	2	2	UG/L	U	U
0076	01-Feb-91	Bromoform	2	2	UG/L	U	U
0076	27-Feb-90	Bromoform	2	2	UG/L	U	U
0271	15-Jun-90	Bromoform	2	2	UG/L	U	U
0076	23-Mar-90	Bromoform	2	2	UG/L	U	U
0076	31-Jul-90	Bromoform	2	2	UG/L	U	U
0271	06-Nov-90	Bromoform	2	2	UG/L	U	U
0271	27-Feb-90	Bromoform	2	2	UG/L	U	U
0076	13-Sep-88	Bromoform	5	5	UG/L	U	U
0271	24-Jun-88	Bromoform	5	5	UG/L	U	U
0076	25-Apr-90	Bromoform	5	5	UG/L	U	U
0076	24-Jun-88	Bromoform	5	5	UG/L	U	U
0271	25-Apr-90	Bromoform	5	5	UG/L	U	U
0271	13-Sep-88	Bromoform	5	5	UG/L	U	U
0271	08-Mar-88	Bromoform	5	5	UG/L	U	U
0076	06-May-91	Bromomethane	1.2	1.2	UG/L	U	U
0271	05-Aug-91	Bromomethane	1.2	1.2	UG/L	U	U
0271	06-May-91	Bromomethane	1.2	1.2	UG/L	U	U
0271	16-Dec-91	Bromomethane	2	2	UG/L	U	R
0076	16-Dec-91	Bromomethane	2	2	UG/L	U	R
0271	13-Sep-88	Bromomethane	2	2	UG/L	U	U
0076	13-Sep-88	Bromomethane	2	2	UG/L	U	U
0076	24-Jun-88	Bromomethane	10	10	UG/L	U	U
0076	13-Sep-88	Bromomethane	10	10	UG/L	U	U
0271	25-Apr-90	Bromomethane	10	10	UG/L	U	U
0271	13-Sep-88	Bromomethane	10	10	UG/L	U	U
0271	24-Jun-88	Bromomethane	10	10	UG/L	U	U
0076	25-Apr-90	Bromomethane	10	10	UG/L	U	U
0271	08-Mar-88	Bromomethane	10	10	UG/L	U	U
0271	06-May-91	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0076	16-Dec-91	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0076	01-Feb-91	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0271	06-Nov-90	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0271	16-Dec-91	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0271	05-Aug-91	Butyl Benzyl Phthalate	10	10	UG/L	U	UJ
0076	06-Nov-90	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0076	16-Sep-92	Butyl Benzyl Phthalate	10	10	UG/L	U	UJ
0076	22-Jun-92	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0271	22-Jun-92	Butyl Benzyl Phthalate	10	10	UG/L	U	UJ
0076	06-May-91	Butyl Benzyl Phthalate	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Sep-92	Butyl Benzyl Phthalate	10	10	UG/L	U	UJ
0271	11-Oct-93	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0076	11-Oct-93	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0271	01-Feb-91	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0076	23-Mar-92	Butyl Benzyl Phthalate	10	10	UG/L	U	U
0076	07-Apr-94	Butyl Benzyl Phthalate	11	11	UG/L	U	U
0271	07-Apr-94	Butyl Benzyl Phthalate	11	11	UG/L	U	U
0271	07-Apr-94	Butyl Benzyl Phthalate	11	11	UG/L	U	U
0271	11-Oct-93	Cadmium	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Cadmium	0.5	0.5	UG/L	U	UJ
0076	11-Oct-93	Cadmium	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Cadmium	0.5	0.5	UG/L	U	U
0076	07-Apr-94	Cadmium	0.65	0.65	UG/L	U	U
0271	07-Apr-94	Cadmium	0.65	0.65	UG/L	U	U
0271	07-Apr-94	Cadmium	0.65	0.65	UG/L	U	U
0076	07-Apr-94	Cadmium	0.65	0.65	UG/L	U	U
0271	07-Apr-94	Cadmium	0.65	0.65	UG/L	U	U
0271	07-Apr-94	Cadmium	0.65	0.65	UG/L	U	U
0076	12-Dec-85	Cadmium	1	1	UG/L	U	U
0271	13-Dec-85	Cadmium	1	1	UG/L	U	U
0271	16-Sep-92	Cadmium	3	3	UG/L	U	U
0076	16-Sep-92	Cadmium	3	3	UG/L	U	U
0271	22-Jun-92	Cadmium	4	4	UG/L	U	U
0076	23-Mar-92	Cadmium	4	5	UG/L	U	U
0076	22-Jun-92	Cadmium	4	4	UG/L	U	U
0271	05-Aug-91	Cadmium	4.6	2	UG/L		
0271	01-Feb-91	Cadmium	5	5	UG/L	U	U
0271	16-Dec-91	Cadmium	5	5	UG/L	U	U
0076	01-Feb-91	Cadmium	5	5	UG/L	U	U
0076	16-Dec-91	Cadmium	5	5	UG/L	U	U
0271	05-Aug-91	Cadmium	5.131	2	UG/L		
0271	06-Nov-90	Cadmium	5.3	2	UG/L		
0076	06-Nov-90	Cadmium	5.4	2	UG/L		
0076	06-May-91	Cadmium	6.9	2	UG/L		
0271	06-May-91	Cadmium	7.7	2	UG/L		
0076	01-Feb-84	Cadmium	30	30	UG/L	U	U
0271	05-Aug-91	Calcium	107	0.02	UG/L		
0271	05-Aug-91	Calcium	108	0.02	UG/L		
0271	05-Aug-91	Calcium	108	0.02	UG/L		
0076	23-Mar-92	Calcium	94300	5000	UG/L		J
0076	22-Jun-92	Calcium	94500	14	UG/L		
0076	16-Sep-92	Calcium	94600	30	UG/L		
0076	07-Apr-94	Calcium	95400	14	UG/L		
0076	07-Apr-94	Calcium	96100	14	UG/L		
0076	11-Oct-93	Calcium	96600	7.5	UG/L		J
0076	16-Dec-91	Calcium	98100	5000	UG/L		J
0076	06-May-91	Calcium	99300	0.05	UG/L		
0076	11-Oct-93	Calcium	99600	7.5	UG/L		J
0271	07-Apr-94	Calcium	100000	14	UG/L		
0271	05-Aug-91	Calcium	101000	20	UG/L		
0271	11-Oct-93	Calcium	102000	7.5	UG/L		J
0271	11-Oct-93	Calcium	102000	7.5	UG/L		J
0076	06-May-91	Calcium	102000	20	UG/L		
0271	22-Jun-92	Calcium	103000	14	UG/L		
0271	07-Apr-94	Calcium	103000	14	UG/L		
0271	16-Sep-92	Calcium	105000	30	UG/L		
0271	07-Apr-94	Calcium	105000	14	UG/L		
0271	06-Nov-90	Calcium	106000	20	UG/L		
0271	05-Aug-91	Calcium	106719.414	20	UG/L		
0076	06-Nov-90	Calcium	107000	20	UG/L		
0271	16-Dec-91	Calcium	108000	5000	UG/L		J
0076	01-Feb-91	Calcium	112000	30	UG/L		
0076	01-Feb-91	Calcium	113000	0	UG/L		
0271	06-May-91	Calcium	116000	0.05	UG/L		
0271	07-Apr-94	Calcium	117000	14	UG/L		
0271	06-May-91	Calcium	119000	20	UG/L		
0271	01-Feb-91	Calcium	125000	0	UG/L		
0271	01-Feb-91	Calcium	126000	30	UG/L		
0076	22-Jun-92	Carbazole	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Sep-92	Carbazole	10	10	UG/L	U	UJ
0271	22-Jun-92	Carbazole	10	10	UG/L	U	U
0076	11-Oct-93	Carbazole	10	10	UG/L	U	U
0076	23-Mar-92	Carbazole	10	10	UG/L	U	U
0271	11-Oct-93	Carbazole	10	10	UG/L	U	U
0076	16-Sep-92	Carbazole	10	10	UG/L	U	UJ
0271	07-Apr-94	Carbazole	11	11	UG/L	U	U
0271	07-Apr-94	Carbazole	11	11	UG/L	U	U
0076	07-Apr-94	Carbazole	11	11	UG/L	U	U
0271	24-Jun-88	Carbon Disulfide	5	5	UG/L	U	U
0271	25-Apr-90	Carbon Disulfide	5	5	UG/L	U	U
0271	07-Apr-94	Carbon Disulfide	5	5	UG/L	U	UJ
0271	11-Oct-93	Carbon Disulfide	5	5	UG/L	U	UJ
0076	11-Oct-93	Carbon Disulfide	5	5	UG/L	U	UJ
0271	08-Mar-88	Carbon Disulfide	5	5	UG/L	U	U
0271	13-Sep-88	Carbon Disulfide	5	5	UG/L	U	U
0076	07-Apr-94	Carbon Disulfide	5	5	UG/L	U	UJ
0076	13-Sep-88	Carbon Disulfide	5	5	UG/L	U	U
0076	25-Apr-90	Carbon Disulfide	5	5	UG/L	U	U
0271	07-Apr-94	Carbon Disulfide	5	5	UG/L	U	UJ
0076	24-Jun-88	Carbon Disulfide	5	5	UG/L	U	U
0076	16-Sep-92	Carbon Tetrachloride	1	1	UG/L	U	U
0271	13-Sep-88	Carbon Tetrachloride	1	1	UG/L	U	U
0271	16-Sep-92	Carbon Tetrachloride	1	1	UG/L	U	U
0271	16-Dec-91	Carbon Tetrachloride	1	1	UG/L	U	U
0076	23-Mar-92	Carbon Tetrachloride	1	1	UG/L	U	U
0076	16-Jun-93	Carbon Tetrachloride	1	1	UG/L	U	UJ
0076	13-Sep-88	Carbon Tetrachloride	1	1	UG/L	U	U
0076	16-Dec-91	Carbon Tetrachloride	1	1	UG/L	U	U
0076	22-Jun-92	Carbon Tetrachloride	1	1	UG/L	U	UJ
0271	22-Jun-92	Carbon Tetrachloride	1	1	UG/L	U	UJ
0076	24-Jan-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	27-Feb-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	01-Feb-91	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	27-Feb-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	15-Jun-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	24-Jan-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	11-Oct-93	Carbon Tetrachloride	1.2	1.2	UG/L	U	UJ
0076	07-Apr-94	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	05-Aug-91	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	07-Apr-94	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	31-Jul-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	23-Mar-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	27-Feb-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	06-May-91	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	07-Apr-94	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	31-Jul-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	06-Nov-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	01-Feb-91	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	11-Oct-93	Carbon Tetrachloride	1.2	1.2	UG/L	U	UJ
0076	15-Jun-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	23-Mar-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	06-Nov-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0076	06-May-91	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	27-Feb-90	Carbon Tetrachloride	1.2	1.2	UG/L	U	U
0271	08-Mar-88	Carbon Tetrachloride	5	5	UG/L	U	U
0076	25-Apr-90	Carbon Tetrachloride	5	5	UG/L	U	U
0271	25-Apr-90	Carbon Tetrachloride	5	5	UG/L	U	U
0076	24-Jun-88	Carbon Tetrachloride	5	5	UG/L	U	U
0076	13-Sep-88	Carbon Tetrachloride	5	5	UG/L	U	U
0271	24-Jun-88	Carbon Tetrachloride	5	5	UG/L	U	U
0271	13-Sep-88	Carbon Tetrachloride	5	5	UG/L	U	U
0271	01-Feb-91	Cerium-139	11	0	PCI/L	U	U
0076	01-Feb-91	Cerium-139	16	0	PCI/L	U	U
0271	01-Feb-91	Cerium-141	18	0	PCI/L	U	U
0076	01-Feb-91	Cerium-141	25	0	PCI/L	U	U
0271	01-Feb-91	Cerium-144	88	0	PCI/L	U	U
0076	01-Feb-91	Cerium-144	100	0	PCI/L	U	U
0271	01-Feb-91	Cesium-134	12	0	PCI/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	01-Feb-91	Cesium-134	16	0	PCI/L	U	U
0076	06-May-91	Cesium-134	25	1	PCI/L	U	U
0271	06-May-91	Cesium-134	34.5	1	PCI/L	U	U
0271	07-Apr-94	Cesium-137	1.83	1.83	PCI/L	U	U
0271	07-Apr-94	Cesium-137	2.52	2.52	PCI/L	U	U
0076	23-Mar-92	Cesium-137	3	3	PCI/L	U	U
0076	22-Jun-92	Cesium-137	3	3	PCI/L	U	U
0271	22-Jun-92	Cesium-137	4	4	PCI/L	U	U
0076	07-Apr-94	Cesium-137	4.37	4.37	PCI/L	U	U
0271	11-Oct-93	Cesium-137	11	11	PCI/L	U	U
0271	01-Feb-91	Cesium-137	12	0	PCI/L	U	U
0076	16-Sep-92	Cesium-137	13	13	PCI/L	U	U
0076	01-Feb-91	Cesium-137	15	0	PCI/L	U	U
0076	11-Oct-93	Cesium-137	15	15	PCI/L	U	U
0271	16-Sep-92	Cesium-137	16.5	16.5	PCI/L	U	U
0076	06-May-91	Cesium-137	37.3	20	PCI/L	U	U
0271	06-May-91	Cesium-137	42	20	PCI/L	U	U
0076	22-Jun-92	Chloride	75.5	5	MG/L		
0076	16-Dec-91	Chloride	80.72	0.5	MG/L		
0076	16-Sep-92	Chloride	80.9	5	MG/L		
0076	11-Oct-93	Chloride	88.6	6.2	MG/L		
0076	06-May-91	Chloride	89.1	0.05	MG/L		
0076	23-Mar-92	Chloride	91.2	5	MG/L		
0076	01-Feb-91	Chloride	96.1	0	MG/L		
0076	07-Apr-94	Chloride	98.1	25	MG/L		
0271	22-Jun-92	Chloride	98.2	25	MG/L		
0271	05-Aug-91	Chloride	103	0.5	MG/L		
0271	16-Sep-92	Chloride	111	10	MG/L		
0271	16-Dec-91	Chloride	113.72	0.5	MG/L		
0271	11-Oct-93	Chloride	119	6.2	MG/L		
0271	07-Apr-94	Chloride	128	50	MG/L		
0271	01-Feb-91	Chloride	130	0	MG/L		
0271	07-Apr-94	Chloride	132	50	MG/L		
0271	06-May-91	Chloride	133	0.05	MG/L		
0076	16-Jun-93	Chlorobenzene	1	1	UG/L	U	UJ
0271	13-Sep-88	Chlorobenzene	1	1	UG/L	U	U
0076	16-Dec-91	Chlorobenzene	1	1	UG/L	U	U
0076	22-Jun-92	Chlorobenzene	1	1	UG/L	U	R
0076	13-Sep-88	Chlorobenzene	1	1	UG/L	U	U
0271	22-Jun-92	Chlorobenzene	1	1	UG/L	U	R
0076	16-Sep-92	Chlorobenzene	1	1	UG/L	U	U
0076	23-Mar-92	Chlorobenzene	1	1	UG/L	U	UJ
0271	16-Dec-91	Chlorobenzene	1	1	UG/L	U	U
0271	16-Sep-92	Chlorobenzene	1	1	UG/L	U	U
0271	23-Mar-90	Chlorobenzene	2	2	UG/L	U	U
0271	11-Oct-93	Chlorobenzene	2	2	UG/L	U	U
0076	23-Mar-90	Chlorobenzene	2	2	UG/L	U	U
0076	06-May-91	Chlorobenzene	2	2	UG/L	U	U
0271	06-May-91	Chlorobenzene	2	2	UG/L	U	U
0076	15-Jun-90	Chlorobenzene	2	2	UG/L	U	U
0076	07-Apr-94	Chlorobenzene	2	2	UG/L	U	U
0076	24-Jan-90	Chlorobenzene	2	2	UG/L	U	U
0271	06-Nov-90	Chlorobenzene	2	2	UG/L	U	U
0076	01-Feb-91	Chlorobenzene	2	2	UG/L	U	U
0271	27-Feb-90	Chlorobenzene	2	2	UG/L	U	U
0271	01-Feb-91	Chlorobenzene	2	2	UG/L	U	U
0271	05-Aug-91	Chlorobenzene	2	2	UG/L	U	U
0076	11-Oct-93	Chlorobenzene	2	2	UG/L	U	UJ
0076	31-Jul-90	Chlorobenzene	2	2	UG/L	U	U
0271	07-Apr-94	Chlorobenzene	2	2	UG/L	U	U
0076	27-Feb-90	Chlorobenzene	2	2	UG/L	U	U
0271	15-Jun-90	Chlorobenzene	2	2	UG/L	U	U
0271	24-Jan-90	Chlorobenzene	2	2	UG/L	U	U
0076	06-Nov-90	Chlorobenzene	2	2	UG/L	U	U
0271	27-Feb-90	Chlorobenzene	2	2	UG/L	U	U
0271	27-Feb-90	Chlorobenzene	2	2	UG/L	U	U
0271	07-Apr-94	Chlorobenzene	2	2	UG/L	U	U
0271	31-Jul-90	Chlorobenzene	2	2	UG/L	U	U
0271	08-Mar-88	Chlorobenzene	5	5	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	25-Apr-90	Chlorobenzene	5	5	UG/L	U	U
0271	13-Sep-88	Chlorobenzene	5	5	UG/L	U	U
0076	13-Sep-88	Chlorobenzene	5	5	UG/L	U	U
0271	25-Apr-90	Chlorobenzene	5	5	UG/L	U	U
0076	24-Jun-88	Chlorobenzene	5	5	UG/L	U	U
0271	24-Jun-88	Chlorobenzene	5	5	UG/L	U	U
0076	16-Dec-91	Chloroethane	2	2	UG/L	U	R
0076	13-Sep-88	Chloroethane	2	2	UG/L	U	U
0271	13-Sep-88	Chloroethane	2	2	UG/L	U	U
0271	16-Dec-91	Chloroethane	2	2	UG/L	U	R
0076	06-May-91	Chloroethane	5.2	5.2	UG/L	U	U
0271	05-Aug-91	Chloroethane	5.2	5.2	UG/L	U	U
0271	06-May-91	Chloroethane	5.2	5.2	UG/L	U	U
0076	24-Jun-88	Chloroethane	10	10	UG/L	U	U
0271	08-Mar-88	Chloroethane	10	10	UG/L	U	U
0076	25-Apr-90	Chloroethane	10	10	UG/L	U	U
0271	13-Sep-88	Chloroethane	10	10	UG/L	U	U
0271	24-Jun-88	Chloroethane	10	10	UG/L	U	U
0271	25-Apr-90	Chloroethane	10	10	UG/L	U	U
0076	13-Sep-88	Chloroethane	10	10	UG/L	U	U
0271	27-Feb-90	Chloroform	0.5	0.5	UG/L	U	U
0271	24-Jan-90	Chloroform	0.5	0.5	UG/L	U	U
0076	07-Apr-94	Chloroform	0.5	0.5	UG/L	U	U
0271	27-Feb-90	Chloroform	0.5	0.5	UG/L	U	U
0076	24-Jan-90	Chloroform	0.5	0.5	UG/L	U	U
0076	27-Feb-90	Chloroform	0.5	0.5	UG/L	U	U
0271	27-Feb-90	Chloroform	0.5	0.5	UG/L	U	U
0076	22-Jun-92	Chloroform	0.5	0.5	UG/L	U	UJ
0076	11-Oct-93	Chloroform	0.5	0.5	UG/L	U	UJ
0271	11-Oct-93	Chloroform	0.5	0.5	UG/L	U	UJ
0076	16-Sep-92	Chloroform	0.5	0.5	UG/L	U	U
0076	06-May-91	Chloroform	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Chloroform	0.5	0.5	UG/L	U	U
0271	23-Mar-90	Chloroform	0.5	0.5	UG/L	U	U
0076	15-Jun-90	Chloroform	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Chloroform	0.5	0.5	UG/L	U	UJ
0271	22-Jun-92	Chloroform	0.5	0.5	UG/L	U	UJ
0076	31-Jul-90	Chloroform	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Chloroform	0.5	0.5	UG/L	U	U
0076	16-Jun-93	Chloroform	0.5	0.5	UG/L	U	U
0076	23-Mar-92	Chloroform	0.5	0.5	UG/L	U	U
0271	15-Jun-90	Chloroform	0.5	0.5	UG/L	U	U
0271	01-Feb-91	Chloroform	0.6	0.5	UG/L		UJ
0271	06-May-91	Chloroform	0.6	0.5	UG/L		J
0076	23-Mar-90	Chloroform	0.7	0.5	UG/L		
0076	01-Feb-91	Chloroform	0.8	0.5	UG/L		UJ
0271	05-Aug-91	Chloroform	0.9	0.5	UG/L		J
0076	06-Nov-90	Chloroform	0.9	0.5	UG/L		UJ
0271	13-Sep-88	Chloroform	1	1	UG/L	U	U
0076	13-Sep-88	Chloroform	1	1	UG/L	U	U
0076	16-Dec-91	Chloroform	1	1	UG/L	U	U
0271	16-Dec-91	Chloroform	1	1	UG/L	U	UJ
0271	06-Nov-90	Chloroform	1.2	0.5	UG/L		UJ
0076	12-Dec-85	Chloroform	1.6	1.6	UG/L	U	U
0271	13-Mar-86	Chloroform	1.6	1.6	UG/L	U	U
0271	13-Dec-85	Chloroform	1.6	1.6	UG/L	U	U
0271	31-Jul-90	Chloroform	2.2	0.5	UG/L		
0076	24-Jun-88	Chloroform	5	5	UG/L	U	U
0076	25-Apr-90	Chloroform	5	5	UG/L	U	U
0271	25-Apr-90	Chloroform	5	5	UG/L	U	U
0076	13-Sep-88	Chloroform	5	5	UG/L	U	U
0271	13-Sep-88	Chloroform	5	5	UG/L	U	U
0271	08-Mar-88	Chloroform	5	5	UG/L	U	U
0271	24-Jun-88	Chloroform	5	5	UG/L	U	U
0076	01-Feb-84	Chloroform	10	10	UG/L	U	U
0271	05-Aug-91	Chloromethane	0.8	0.8	UG/L	U	UJ
0271	06-May-91	Chloromethane	0.8	0.8	UG/L	U	U
0076	06-May-91	Chloromethane	0.8	0.8	UG/L	U	U
0271	13-Sep-88	Chloromethane	2	2	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Dec-91	Chloromethane	2	2	UG/L	U	UJ
0076	13-Sep-88	Chloromethane	2	2	UG/L	U	U
0076	16-Dec-91	Chloromethane	2	2	UG/L	U	UJ
0076	25-Apr-90	Chloromethane	10	10	UG/L	U	U
0271	08-Mar-88	Chloromethane	10	10	UG/L	U	U
0076	24-Jun-88	Chloromethane	10	10	UG/L	U	U
0271	25-Apr-90	Chloromethane	10	10	UG/L	U	U
0076	13-Sep-88	Chloromethane	10	10	UG/L	U	U
0271	13-Sep-88	Chloromethane	10	10	UG/L	U	U
0271	24-Jun-88	Chloromethane	10	10	UG/L	U	U
0076	23-Mar-90	Chlorotoluene	1	1	UG/L	U	U
0076	31-Jul-90	Chlorotoluene	1	1	UG/L	U	U
0271	27-Feb-90	Chlorotoluene	1	1	UG/L	U	U
0271	27-Feb-90	Chlorotoluene	1	1	UG/L	U	U
0076	06-Nov-90	Chlorotoluene	1	1	UG/L	U	U
0271	31-Jul-90	Chlorotoluene	1	1	UG/L	U	U
0271	23-Mar-90	Chlorotoluene	1	1	UG/L	U	U
0271	06-May-91	Chlorotoluene	1	1	UG/L	U	U
0076	06-May-91	Chlorotoluene	1	1	UG/L	U	U
0076	15-Jun-90	Chlorotoluene	1	1	UG/L	U	U
0271	01-Feb-91	Chlorotoluene	1	1	UG/L	U	U
0271	24-Jan-90	Chlorotoluene	1	1	UG/L	U	U
0271	27-Feb-90	Chlorotoluene	1	1	UG/L	U	U
0076	24-Jan-90	Chlorotoluene	1	1	UG/L	U	U
0076	27-Feb-90	Chlorotoluene	1	1	UG/L	U	U
0271	05-Aug-91	Chlorotoluene	1	1	UG/L	U	U
0271	15-Jun-90	Chlorotoluene	1	1	UG/L	U	U
0076	01-Feb-91	Chlorotoluene	1	1	UG/L	U	U
0271	06-Nov-90	Chlorotoluene	1	1	UG/L	U	U
0076	11-Oct-93	Chromium	0.75	0.75	UG/L	U	U
0076	07-Apr-94	Chromium	0.82	0.82	UG/L	U	U
0271	07-Apr-94	Chromium	0.82	0.82	UG/L	U	U
0076	07-Apr-94	Chromium	0.82	0.82	UG/L	U	U
0271	07-Apr-94	Chromium	0.82	0.82	UG/L	U	U
0271	07-Apr-94	Chromium	0.82	0.82	UG/L	U	U
0271	07-Apr-94	Chromium	0.82	0.82	UG/L	U	U
0076	11-Oct-93	Chromium	1.4	0.75	UG/L	B	U
0271	11-Oct-93	Chromium	2	0.75	UG/L	B	U
0271	16-Sep-92	Chromium	3	3	UG/L	U	UJ
0076	16-Sep-92	Chromium	3	3	UG/L	U	UJ
0271	11-Oct-93	Chromium	3.1	0.75	UG/L	B	U
0076	23-Mar-92	Chromium	7	10	UG/L	U	U
0076	22-Jun-92	Chromium	8	8	UG/L	U	U
0271	22-Jun-92	Chromium	8	8	UG/L	U	U
0076	01-Feb-84	Chromium	9	9	UG/L	U	U
0271	01-Feb-91	Chromium	10	10	UG/L	U	U
0076	12-Dec-85	Chromium	10	10	UG/L	U	U
0271	13-Dec-85	Chromium	10	10	UG/L	U	U
0076	16-Dec-91	Chromium	10	10	UG/L	U	U
0076	01-Feb-91	Chromium	10	10	UG/L	U	U
0271	16-Dec-91	Chromium	10	10	UG/L	U	U
0271	06-Nov-90	Chromium	18.3	10	UG/L		
0076	06-Nov-90	Chromium	20.5	10	UG/L		
0271	05-Aug-91	Chromium	22	10	UG/L		
0076	06-May-91	Chromium	23.3	10	UG/L		
0271	06-May-91	Chromium	23.8	10	UG/L		
0271	05-Aug-91	Chromium	24.911	10	UG/L		
0271	01-Feb-91	Chromium-51	96	0	PCI/L	U	U
0076	01-Feb-91	Chromium-51	110	0	PCI/L	U	U
0076	06-May-91	Chrysene	10	10	UG/L	U	U
0271	16-Dec-91	Chrysene	10	10	UG/L	U	U
0271	06-May-91	Chrysene	10	10	UG/L	U	U
0076	06-Nov-90	Chrysene	10	10	UG/L	U	U
0271	05-Aug-91	Chrysene	10	10	UG/L	U	UJ
0076	22-Jun-92	Chrysene	10	10	UG/L	U	U
0076	01-Feb-91	Chrysene	10	10	UG/L	U	U
0271	06-Nov-90	Chrysene	10	10	UG/L	U	U
0271	11-Oct-93	Chrysene	10	10	UG/L	U	U
0076	23-Mar-92	Chrysene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	22-Jun-92	Chrysene	10	10	UG/L	U	U
0271	01-Feb-91	Chrysene	10	10	UG/L	U	U
0271	16-Sep-92	Chrysene	10	10	UG/L	U	U
0076	16-Dec-91	Chrysene	10	10	UG/L	U	U
0076	11-Oct-93	Chrysene	10	10	UG/L	U	U
0076	16-Sep-92	Chrysene	10	10	UG/L	U	U
0271	07-Apr-94	Chrysene	11	11	UG/L	U	U
0271	07-Apr-94	Chrysene	11	11	UG/L	U	U
0076	07-Apr-94	Chrysene	11	11	UG/L	U	U
0076	07-Apr-94	Cobalt	0.98	0.98	UG/L	U	U
0271	07-Apr-94	Cobalt	0.98	0.98	UG/L	U	U
0076	07-Apr-94	Cobalt	0.98	0.98	UG/L	U	U
0271	07-Apr-94	Cobalt	0.98	0.98	UG/L	U	U
0271	07-Apr-94	Cobalt	0.98	0.98	UG/L	U	U
0271	07-Apr-94	Cobalt	0.98	0.98	UG/L	U	U
0076	11-Oct-93	Cobalt	1.2	1.2	UG/L	U	U
0271	11-Oct-93	Cobalt	1.2	1.2	UG/L	U	U
0271	11-Oct-93	Cobalt	1.2	1.2	UG/L	U	U
0076	11-Oct-93	Cobalt	1.2	1.2	UG/L	U	U
0076	16-Sep-92	Cobalt	4	4	UG/L	U	U
0271	16-Sep-92	Cobalt	4	4	UG/L	U	U
0271	22-Jun-92	Cobalt	6	6	UG/L	U	U
0076	22-Jun-92	Cobalt	6	6	UG/L	U	U
0076	23-Mar-92	Cobalt	7	50	UG/L	U	U
0076	06-Nov-90	Cobalt	10	10	UG/L	U	U
0271	05-Aug-91	Cobalt	10	10	UG/L	U	U
0271	06-May-91	Cobalt	10	10	UG/L	U	U
0271	06-Nov-90	Cobalt	10	10	UG/L	U	U
0076	06-May-91	Cobalt	10	10	UG/L	U	U
0271	05-Aug-91	Cobalt	10	10	UG/L	U	U
0271	01-Feb-91	Cobalt	20	20	UG/L	U	U
0076	01-Feb-91	Cobalt	20	20	UG/L	U	U
0076	16-Dec-91	Cobalt	50	50	UG/L	U	U
0271	16-Dec-91	Cobalt	50	50	UG/L	U	U
0271	01-Feb-91	Cobalt-57	11	0	PCI/L	U	U
0076	01-Feb-91	Cobalt-57	110	0	PCI/L	U	U
0076	01-Feb-91	Cobalt-58	8.2	0	PCI/L	U	U
0271	01-Feb-91	Cobalt-58	14	0	PCI/L	U	U
0076	07-Apr-94	Cobalt-60	1.74	1.74	PCI/L	U	U
0271	07-Apr-94	Cobalt-60	3.35	3.35	PCI/L	U	U
0271	07-Apr-94	Cobalt-60	4.46	4.46	PCI/L	U	U
0271	11-Oct-93	Cobalt-60	10	10	PCI/L	U	U
0076	11-Oct-93	Cobalt-60	14	14	PCI/L	U	U
0076	16-Sep-92	Cobalt-60	14.9	14.9	PCI/L	U	U
0271	01-Feb-91	Cobalt-60	17	0	PCI/L	U	U
0271	16-Sep-92	Cobalt-60	18.3	18.3	PCI/L	U	U
0271	06-May-91	Cobalt-60	22.7	20	PCI/L	U	U
0076	06-May-91	Cobalt-60	22.7	20	PCI/L	U	U
0076	01-Feb-91	Cobalt-60	32	0	PCI/L	U	U
0076	11-Oct-93	Copper	1.6	0.5	UG/L	B	
0076	11-Oct-93	Copper	1.6	0.5	UG/L	B	
0076	07-Apr-94	Copper	2.5	0.83	UG/L	B	
0271	11-Oct-93	Copper	3.9	0.5	UG/L	B	
0076	16-Sep-92	Copper	4	2	UG/L		J
0271	16-Sep-92	Copper	4	2	UG/L		J
0271	11-Oct-93	Copper	4.4	0.5	UG/L	B	
0076	22-Jun-92	Copper	5	5	UG/L	U	U
0076	23-Mar-92	Copper	7	25	UG/L	U	U
0271	13-Dec-85	Copper	7	7	UG/L	U	U
0076	12-Dec-85	Copper	7	7	UG/L	U	U
0076	07-Apr-94	Copper	7.4	0.83	UG/L	B	
0271	07-Apr-94	Copper	7.5	0.83	UG/L	B	
0271	07-Apr-94	Copper	8.7	0.83	UG/L	B	
0271	07-Apr-94	Copper	8.9	0.83	UG/L	B	
0271	07-Apr-94	Copper	9.2	0.83	UG/L	B	
0271	22-Jun-92	Copper	9.9	5	UG/L	B	
0076	01-Feb-91	Copper	10	10	UG/L	U	U
0076	01-Feb-84	Copper	10	10	UG/L	U	U
0271	16-Dec-91	Copper	11.4	25	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	05-Aug-91	Copper	11.8	10	UG/L		
0271	05-Aug-91	Copper	13.458	10	UG/L		
0076	16-Dec-91	Copper	14.2	25	UG/L	U	UJ
0271	06-Nov-90	Copper	17	10	UG/L	B	
0271	06-May-91	Copper	17.6	10	UG/L	B	
0076	06-May-91	Copper	18.2	10	UG/L	B	
0271	01-Feb-91	Copper	40.4	10	UG/L		
0076	06-Nov-90	Copper	593	10	UG/L		
0076	23-Mar-92	Currrently Unknown Radioisotope	0	0.4	PCI/L		
0076	22-Jun-92	Currrently Unknown Radioisotope	0	0.4	PCI/L		
0271	22-Jun-92	Currrently Unknown Radioisotope	0	0.4	PCI/L		
0076	06-May-91	Currrently Unknown Radioisotope	1	1	PCI/L	U	U
0271	06-May-91	Currrently Unknown Radioisotope	1	1	PCI/L	U	U
0271	06-Nov-90	Currrently Unknown Radioisotope	1	0	PCI/L	U	U
0076	06-Nov-90	Currrently Unknown Radioisotope	1	0	PCI/L	U	U
0271	01-Feb-91	Currrently Unknown Radioisotope	1.4	0	PCI/L		
0076	01-Feb-91	Currrently Unknown Radioisotope	2.3	0	PCI/L		
0076	06-May-91	Currrently Unknown Radioisotope	46.1	1	PCI/L	U	U
0271	06-May-91	Currrently Unknown Radioisotope	47	1	PCI/L	U	U
0271	07-Apr-94	Cyanide	5	5	UG/L	U	U
0271	07-Apr-94	Cyanide	5	5	UG/L	U	U
0271	07-Apr-94	Cyanide	5	5	UG/L	U	U
0271	07-Apr-94	Cyanide	5	5	UG/L	U	U
0076	07-Apr-94	Cyanide	5	5	UG/L	U	U
0076	07-Apr-94	Cyanide	5	5	UG/L	U	U
0271	11-Oct-93	Cyanide	10	10	UG/L	U	U
0271	11-Oct-93	Cyanide	10	10	UG/L	U	U
0076	11-Oct-93	Cyanide	10	10	UG/L	U	U
0076	11-Oct-93	Cyanide	10	10	UG/L	U	U
0076	06-Nov-90	Delta-BHC	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Delta-BHC	0.05	0.05	UG/L	U	U
0076	01-Feb-91	Delta-BHC	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Delta-BHC	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Delta-BHC	0.05	0.05	UG/L	U	UJ
0076	06-May-91	Delta-BHC	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Delta-BHC	0.05	0.05	UG/L	U	U
0271	06-May-91	Delta-BHC	0.05	0.05	UG/L	U	U
0271	05-Aug-91	Delta-BHC	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Delta-BHC	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Delta-BHC	0.05	0.05	UG/L		U
0271	01-Feb-91	Delta-BHC	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Delta-BHC	0.051	0.051	UG/L	J	U
0271	07-Apr-94	Delta-BHC	0.052	0.052	UG/L	U	U
0076	16-Dec-91	Delta-BHC	0.052	0.052	UG/L	U	UJ
0076	22-Jun-92	Delta-BHC	0.052	0.052	UG/L	U	U
0271	16-Dec-91	Delta-BHC	0.052	0.052	UG/L	U	UJ
0076	23-Mar-92	Delta-BHC	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Delta-BHC	0.055	0.055	UG/L	U	U
0076	06-May-91	Delta-BHC	0.25	0.25	UG/L	U	U
0271	06-May-91	Delta-BHC	0.75	0.75	UG/L	U	U
0271	16-Sep-92	Di-n-butyl Phthalate	10	10	UG/L	JB	UJ
0271	06-Nov-90	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	16-Dec-91	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	01-Feb-84	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	06-Nov-90	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	12-Dec-85	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	06-May-91	Di-n-butyl Phthalate	10	10	UG/L	U	U
0271	06-May-91	Di-n-butyl Phthalate	10	10	UG/L	U	U
0271	11-Oct-93	Di-n-butyl Phthalate	10	10	UG/L	U	UJ
0271	05-Aug-91	Di-n-butyl Phthalate	10	10	UG/L	U	UJ
0076	23-Mar-92	Di-n-butyl Phthalate	10	10	UG/L	JB	UJ
0076	11-Oct-93	Di-n-butyl Phthalate	10	10	UG/L	U	UJ
0076	16-Sep-92	Di-n-butyl Phthalate	10	10	UG/L	JB	UJ
0271	22-Jun-92	Di-n-butyl Phthalate	10	10	UG/L	JB	UJ
0271	13-Dec-85	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	01-Feb-91	Di-n-butyl Phthalate	10	10	UG/L	U	U
0076	22-Jun-92	Di-n-butyl Phthalate	10	10	UG/L	JB	UJ
0271	01-Feb-91	Di-n-butyl Phthalate	10	10	UG/L	U	U
0271	16-Dec-91	Di-n-butyl Phthalate	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	07-Apr-94	Di-n-butyl Phthalate	11	11	UG/L	JB	U
0271	07-Apr-94	Di-n-butyl Phthalate	11	11	UG/L	JB	U
0271	07-Apr-94	Di-n-butyl Phthalate	11	11	UG/L	JB	U
0076	01-Feb-91	Di-n-octyl Phthalate	10	10	UG/L	U	U
0076	16-Sep-92	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	16-Dec-91	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	05-Aug-91	Di-n-octyl Phthalate	10	10	UG/L	U	UJ
0076	22-Jun-92	Di-n-octyl Phthalate	10	10	UG/L	U	U
0076	06-May-91	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	22-Jun-92	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	16-Sep-92	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	06-May-91	Di-n-octyl Phthalate	10	10	UG/L	U	U
0076	23-Mar-92	Di-n-octyl Phthalate	10	10	UG/L	U	U
0076	11-Oct-93	Di-n-octyl Phthalate	10	10	UG/L	U	U
0076	06-Nov-90	Di-n-octyl Phthalate	10	10	UG/L	U	U
0076	16-Dec-91	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	06-Nov-90	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	11-Oct-93	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	01-Feb-91	Di-n-octyl Phthalate	10	10	UG/L	U	U
0271	07-Apr-94	Di-n-octyl Phthalate	11	11	UG/L	U	UJ
0271	07-Apr-94	Di-n-octyl Phthalate	11	11	UG/L	U	UJ
0076	07-Apr-94	Di-n-octyl Phthalate	11	11	UG/L	U	UJ
0076	01-Feb-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	16-Sep-92	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	11-Oct-93	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	05-Aug-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	UJ
0271	22-Jun-92	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	01-Feb-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	16-Dec-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	23-Mar-92	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	16-Dec-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	06-May-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	06-Nov-90	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	06-May-91	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	11-Oct-93	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	06-Nov-90	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	16-Sep-92	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0076	22-Jun-92	Dibenzo(a,h)anthracene	10	10	UG/L	U	U
0271	07-Apr-94	Dibenzo(a,h)anthracene	11	11	UG/L	U	U
0271	07-Apr-94	Dibenzo(a,h)anthracene	11	11	UG/L	U	U
0076	07-Apr-94	Dibenzo(a,h)anthracene	11	11	UG/L	U	U
0271	01-Feb-91	Dibenzofuran	10	10	UG/L	U	U
0076	06-Nov-90	Dibenzofuran	10	10	UG/L	U	U
0271	16-Dec-91	Dibenzofuran	10	10	UG/L	U	U
0076	23-Mar-92	Dibenzofuran	10	10	UG/L	U	U
0076	16-Dec-91	Dibenzofuran	10	10	UG/L	U	U
0271	06-May-91	Dibenzofuran	10	10	UG/L	U	U
0271	05-Aug-91	Dibenzofuran	10	10	UG/L	U	UJ
0271	06-Nov-90	Dibenzofuran	10	10	UG/L	U	U
0076	06-May-91	Dibenzofuran	10	10	UG/L	U	U
0271	16-Sep-92	Dibenzofuran	10	10	UG/L	U	U
0076	11-Oct-93	Dibenzofuran	10	10	UG/L	U	U
0076	22-Jun-92	Dibenzofuran	10	10	UG/L	U	U
0076	01-Feb-91	Dibenzofuran	10	10	UG/L	U	U
0076	16-Sep-92	Dibenzofuran	10	10	UG/L	U	U
0271	22-Jun-92	Dibenzofuran	10	10	UG/L	U	U
0271	11-Oct-93	Dibenzofuran	10	10	UG/L	U	U
0271	07-Apr-94	Dibenzofuran	11	11	UG/L	U	U
0271	07-Apr-94	Dibenzofuran	11	11	UG/L	U	U
0076	07-Apr-94	Dibenzofuran	11	11	UG/L	U	U
0271	11-Oct-93	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	22-Jun-92	Dibromochloromethane	0.9	0.9	UG/L	U	UJ
0271	27-Feb-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	23-Mar-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	06-May-91	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	06-Nov-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	01-Feb-91	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	06-May-91	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	15-Jun-90	Dibromochloromethane	0.9	0.9	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	31-Jul-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	31-Jul-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	11-Oct-93	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	16-Sep-92	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	07-Apr-94	Dibromochloromethane	0.9	0.9	UG/L	U	UJ
0271	07-Apr-94	Dibromochloromethane	0.9	0.9	UG/L	U	UJ
0076	22-Jun-92	Dibromochloromethane	0.9	0.9	UG/L	U	UJ
0076	23-Mar-92	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	16-Jun-93	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	06-Nov-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	05-Aug-91	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	16-Sep-92	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	23-Mar-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	27-Feb-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	24-Jan-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	27-Feb-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	27-Feb-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	07-Apr-94	Dibromochloromethane	0.9	0.9	UG/L	U	UJ
0076	24-Jan-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	01-Feb-91	Dibromochloromethane	0.9	0.9	UG/L	U	U
0271	15-Jun-90	Dibromochloromethane	0.9	0.9	UG/L	U	U
0076	16-Dec-91	Dibromochloromethane	1	1	UG/L	U	U
0271	16-Dec-91	Dibromochloromethane	1	1	UG/L	U	U
0076	13-Sep-88	Dibromochloromethane	1	1	UG/L	U	U
0271	13-Sep-88	Dibromochloromethane	1	1	UG/L	U	U
0076	25-Apr-90	Dibromochloromethane	5	5	UG/L	U	U
0271	08-Mar-88	Dibromochloromethane	5	5	UG/L	U	U
0076	13-Sep-88	Dibromochloromethane	5	5	UG/L	U	U
0271	25-Apr-90	Dibromochloromethane	5	5	UG/L	U	U
0076	24-Jun-88	Dibromochloromethane	5	5	UG/L	U	U
0271	24-Jun-88	Dibromochloromethane	5	5	UG/L	U	U
0271	13-Sep-88	Dibromochloromethane	5	5	UG/L	U	U
0271	16-Dec-91	Dibromomethane	1	1	UG/L	U	UJ
0076	16-Dec-91	Dibromomethane	1	1	UG/L	U	UJ
0076	11-Oct-93	Dibromomethane	2	2	UG/L	U	UJ
0076	01-Feb-91	Dibromomethane	2	2	UG/L	U	UJ
0271	27-Feb-90	Dibromomethane	2	2	UG/L	U	U
0271	15-Jun-90	Dibromomethane	2	2	UG/L	U	U
0271	11-Oct-93	Dibromomethane	2	2	UG/L	U	U
0076	24-Jan-90	Dibromomethane	2	2	UG/L	U	U
0271	07-Apr-94	Dibromomethane	2	2	UG/L	U	U
0076	16-Jun-93	Dibromomethane	2	2	UG/L	U	U
0076	06-May-91	Dibromomethane	2	2	UG/L	U	UJ
0271	27-Feb-90	Dibromomethane	2	2	UG/L	U	U
0271	06-May-91	Dibromomethane	2	2	UG/L	U	UJ
0271	23-Mar-90	Dibromomethane	2	2	UG/L	U	U
0271	01-Feb-91	Dibromomethane	2	2	UG/L	U	UJ
0076	23-Mar-92	Dibromomethane	2	2	UG/L	U	U
0076	15-Jun-90	Dibromomethane	2	2	UG/L	U	U
0271	16-Sep-92	Dibromomethane	2	2	UG/L	U	U
0076	23-Mar-90	Dibromomethane	2	2	UG/L	U	U
0271	06-Nov-90	Dibromomethane	2	2	UG/L	U	UJ
0271	24-Jan-90	Dibromomethane	2	2	UG/L	U	U
0271	31-Jul-90	Dibromomethane	2	2	UG/L	U	U
0271	27-Feb-90	Dibromomethane	2	2	UG/L	U	U
0076	31-Jul-90	Dibromomethane	2	2	UG/L	U	U
0076	06-Nov-90	Dibromomethane	2	2	UG/L	U	UJ
0271	07-Apr-94	Dibromomethane	2	2	UG/L	U	U
0271	05-Aug-91	Dibromomethane	2	2	UG/L	U	UJ
0076	07-Apr-94	Dibromomethane	2	2	UG/L	U	U
0076	16-Sep-92	Dibromomethane	2	2	UG/L	U	U
0076	27-Feb-90	Dibromomethane	2	2	UG/L	U	U
0271	22-Jun-92	Dibromomethane	2.5	2	UG/L	B	UJ
0076	22-Jun-92	Dibromomethane	2.7	2	UG/L	B	UJ
0076	06-May-91	Dichlorodifluoromethane	1.8	1.8	UG/L	U	U
0271	06-May-91	Dichlorodifluoromethane	1.8	1.8	UG/L	U	U
0271	05-Aug-91	Dichlorodifluoromethane	1.8	1.8	UG/L	U	UJ
0271	13-Sep-88	Dichlorodifluoromethane	2	2	UG/L	U	U
0076	13-Sep-88	Dichlorodifluoromethane	2	2	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Dec-91	Dichlorodifluoromethane	2	2	UG/L	U	R
0076	16-Dec-91	Dichlorodifluoromethane	2	2	UG/L	U	R
0271	05-Aug-91	Dieldrin	0.02	0.02	UG/L	U	U
0271	01-Feb-91	Dieldrin	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Dieldrin	0.1	0.1	UG/L	U	U
0271	16-Dec-91	Dieldrin	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Dieldrin	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Dieldrin	0.1	0.1	UG/L	U	U
0076	06-May-91	Dieldrin	0.1	0.1	UG/L	U	U
0271	06-Nov-90	Dieldrin	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Dieldrin	0.1	0.1	UG/L	U	U
0076	01-Feb-91	Dieldrin	0.1	0.1	UG/L	U	U
0076	06-Nov-90	Dieldrin	0.1	0.1	UG/L	U	U
0076	16-Dec-91	Dieldrin	0.1	0.1	UG/L	U	U
0271	16-Sep-92	Dieldrin	0.1	0.1	UG/L	U	U
0076	16-Sep-92	Dieldrin	0.1	0.1	UG/L	U	U
0271	06-May-91	Dieldrin	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Dieldrin	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Dieldrin	0.1	0.1	UG/L	U	UJ
0076	23-Mar-92	Dieldrin	0.11	0.11	UG/L	U	U
0076	07-Apr-94	Dieldrin	0.11	0.11	UG/L	U	U
0076	06-May-91	Dieldrin	0.5	0.5	UG/L	U	U
0271	06-May-91	Dieldrin	1.5	1.5	UG/L	U	U
0271	16-Dec-91	Diethyl Phthalate	10	10	UG/L	U	U
0271	01-Feb-91	Diethyl Phthalate	10	10	UG/L	U	U
0076	16-Dec-91	Diethyl Phthalate	10	10	UG/L	U	U
0271	06-Nov-90	Diethyl Phthalate	10	10	UG/L	U	U
0271	06-May-91	Diethyl Phthalate	10	10	UG/L	U	U
0076	01-Feb-91	Diethyl Phthalate	10	10	UG/L	U	U
0076	11-Oct-93	Diethyl Phthalate	10	10	UG/L	U	U
0076	06-Nov-90	Diethyl Phthalate	10	10	UG/L	U	U
0271	11-Oct-93	Diethyl Phthalate	10	10	UG/L	U	U
0271	16-Sep-92	Diethyl Phthalate	10	10	UG/L	U	U
0076	16-Sep-92	Diethyl Phthalate	10	10	UG/L	U	U
0076	23-Mar-92	Diethyl Phthalate	10	10	UG/L	U	U
0076	06-May-91	Diethyl Phthalate	10	10	UG/L	U	U
0271	05-Aug-91	Diethyl Phthalate	10	10	UG/L	U	UJ
0271	22-Jun-92	Diethyl Phthalate	10	10	UG/L	U	U
0076	22-Jun-92	Diethyl Phthalate	10	10	UG/L	U	U
0271	07-Apr-94	Diethyl Phthalate	11	11	UG/L	U	U
0076	07-Apr-94	Diethyl Phthalate	11	11	UG/L	U	U
0271	07-Apr-94	Diethyl Phthalate	11	11	UG/L	U	U
0271	22-Jun-92	Dimethyl Phthalate	10	10	UG/L	U	U
0271	16-Sep-92	Dimethyl Phthalate	10	10	UG/L	U	U
0271	06-Nov-90	Dimethyl Phthalate	10	10	UG/L	U	U
0076	06-May-91	Dimethyl Phthalate	10	10	UG/L	U	U
0271	06-May-91	Dimethyl Phthalate	10	10	UG/L	U	U
0271	05-Aug-91	Dimethyl Phthalate	10	10	UG/L	U	UJ
0076	11-Oct-93	Dimethyl Phthalate	10	10	UG/L	U	U
0076	01-Feb-91	Dimethyl Phthalate	10	10	UG/L	U	U
0076	06-Nov-90	Dimethyl Phthalate	10	10	UG/L	U	U
0076	16-Dec-91	Dimethyl Phthalate	10	10	UG/L	U	U
0076	16-Sep-92	Dimethyl Phthalate	10	10	UG/L	U	U
0076	22-Jun-92	Dimethyl Phthalate	10	10	UG/L	U	U
0271	01-Feb-91	Dimethyl Phthalate	10	10	UG/L	U	U
0271	11-Oct-93	Dimethyl Phthalate	10	10	UG/L	U	U
0076	23-Mar-92	Dimethyl Phthalate	10	10	UG/L	U	U
0271	16-Dec-91	Dimethyl Phthalate	10	10	UG/L	U	U
0271	07-Apr-94	Dimethyl Phthalate	11	11	UG/L	U	U
0076	07-Apr-94	Dimethyl Phthalate	11	11	UG/L	U	U
0271	07-Apr-94	Dimethyl Phthalate	11	11	UG/L	U	U
0076	11-Oct-93	Dissolved Solids	518	4	MG/L		
0076	07-Apr-94	Dissolved Solids	562	4	MG/L		
0271	11-Oct-93	Dissolved Solids	589	4	MG/L		
0271	07-Apr-94	Dissolved Solids	685	4	MG/L		
0271	07-Apr-94	Dissolved Solids	719	4	MG/L		
0076	01-Feb-91	Endosulfan I	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Endosulfan I	0.05	0.05	UG/L	U	U
0271	05-Aug-91	Endosulfan I	0.05	0.05	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	06-May-91	Endosulfan I	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Endosulfan I	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Endosulfan I	0.05	0.05	UG/L	U	UJ
0076	06-Nov-90	Endosulfan I	0.05	0.05	UG/L	U	U
0271	01-Feb-91	Endosulfan I	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Endosulfan I	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Endosulfan I	0.05	0.05	UG/L	U	U
0271	06-May-91	Endosulfan I	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Endosulfan I	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Endosulfan I	0.051	0.051	UG/L	U	U
0271	16-Dec-91	Endosulfan I	0.052	0.052	UG/L	U	U
0076	22-Jun-92	Endosulfan I	0.052	0.052	UG/L	U	U
0076	16-Dec-91	Endosulfan I	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Endosulfan I	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Endosulfan I	0.053	0.053	UG/L	J	U
0076	07-Apr-94	Endosulfan I	0.055	0.055	UG/L	U	U
0076	06-May-91	Endosulfan I	0.25	0.25	UG/L	U	U
0271	06-May-91	Endosulfan I	0.75	0.75	UG/L	U	U
0271	05-Aug-91	Endosulfan II	0.04	0.04	UG/L	U	U
0076	06-May-91	Endosulfan II	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Endosulfan II	0.1	0.1	UG/L	U	U
0271	01-Feb-91	Endosulfan II	0.1	0.1	UG/L	U	U
0271	16-Dec-91	Endosulfan II	0.1	0.1	UG/L	U	U
0076	16-Dec-91	Endosulfan II	0.1	0.1	UG/L	U	U
0076	01-Feb-91	Endosulfan II	0.1	0.1	UG/L	U	U
0271	16-Sep-92	Endosulfan II	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Endosulfan II	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endosulfan II	0.1	0.1	UG/L	U	U
0076	06-Nov-90	Endosulfan II	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endosulfan II	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Endosulfan II	0.1	0.1	UG/L	U	UJ
0076	16-Sep-92	Endosulfan II	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Endosulfan II	0.1	0.1	UG/L	U	U
0271	06-May-91	Endosulfan II	0.1	0.1	UG/L	U	U
0271	06-Nov-90	Endosulfan II	0.1	0.1	UG/L	U	U
0076	23-Mar-92	Endosulfan II	0.11	0.11	UG/L	U	U
0076	07-Apr-94	Endosulfan II	0.11	0.11	UG/L	U	U
0076	06-May-91	Endosulfan II	0.5	0.5	UG/L	U	U
0271	06-May-91	Endosulfan II	1.5	1.5	UG/L	U	U
0271	11-Oct-93	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	06-May-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	16-Dec-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	01-Feb-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	01-Feb-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	05-Aug-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	16-Sep-92	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	06-May-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Endosulfan Sulfate	0.1	0.1	UG/L	U	UJ
0271	06-Nov-90	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	16-Dec-91	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	16-Sep-92	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	06-Nov-90	Endosulfan Sulfate	0.1	0.1	UG/L	U	U
0076	07-Apr-94	Endosulfan Sulfate	0.11	0.11	UG/L	U	U
0076	23-Mar-92	Endosulfan Sulfate	0.11	0.11	UG/L	U	U
0076	06-May-91	Endosulfan Sulfate	0.5	0.5	UG/L	U	U
0271	06-May-91	Endosulfan Sulfate	1.5	1.5	UG/L	U	U
0271	05-Aug-91	Endrin	0.06	0.06	UG/L	U	U
0076	06-Nov-90	Endrin	0.1	0.1	UG/L	U	U
0271	06-Nov-90	Endrin	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Endrin	0.1	0.1	UG/L	U	UJ
0271	16-Dec-91	Endrin	0.1	0.1	UG/L	U	U
0076	16-Dec-91	Endrin	0.1	0.1	UG/L	U	U
0076	16-Sep-92	Endrin	0.1	0.1	UG/L	U	U
0271	16-Sep-92	Endrin	0.1	0.1	UG/L	U	U
0271	06-May-91	Endrin	0.1	0.1	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	06-May-91	Endrin	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Endrin	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Endrin	0.1	0.1	UG/L	U	U
0076	01-Feb-91	Endrin	0.1	0.1	UG/L	U	U
0271	01-Feb-91	Endrin	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endrin	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Endrin	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endrin	0.1	0.1	UG/L	U	U
0076	23-Mar-92	Endrin	0.11	0.11	UG/L	U	U
0076	07-Apr-94	Endrin	0.11	0.11	UG/L	U	U
0076	06-May-91	Endrin	0.5	0.5	UG/L	U	U
0271	06-May-91	Endrin	1.5	1.5	UG/L	U	U
0271	07-Apr-94	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0271	05-Aug-91	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Endrin Aldehyde	0.1	0.1	UG/L	U	UJ
0271	07-Apr-94	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0271	16-Sep-92	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0076	16-Sep-92	Endrin Aldehyde	0.1	0.1	UG/L	U	U
0076	23-Mar-92	Endrin Aldehyde	0.11	0.11	UG/L	U	U
0076	07-Apr-94	Endrin Aldehyde	0.11	0.11	UG/L	U	U
0271	16-Sep-92	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	01-Feb-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	01-Feb-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Endrin Ketone	0.1	0.1	UG/L	U	UJ
0271	05-Aug-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	06-May-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	06-Nov-90	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	16-Dec-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	16-Sep-92	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	16-Dec-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	06-Nov-90	Endrin Ketone	0.1	0.1	UG/L	U	U
0271	06-May-91	Endrin Ketone	0.1	0.1	UG/L	U	U
0076	07-Apr-94	Endrin Ketone	0.11	0.11	UG/L	U	U
0076	23-Mar-92	Endrin Ketone	0.11	0.11	UG/L	U	U
0076	06-May-91	Endrin Ketone	0.5	0.5	UG/L	U	U
0271	06-May-91	Endrin Ketone	1.5	1.5	UG/L	U	U
0271	13-Sep-88	Ethylbenzene	1	1	UG/L	U	U
0076	16-Jun-93	Ethylbenzene	1	1	UG/L	U	U
0271	16-Dec-91	Ethylbenzene	1	1	UG/L	U	U
0076	23-Mar-92	Ethylbenzene	1	1	UG/L	U	UJ
0271	22-Jun-92	Ethylbenzene	1	1	UG/L	U	UJ
0076	16-Sep-92	Ethylbenzene	1	1	UG/L	U	UJ
0076	13-Sep-88	Ethylbenzene	1	1	UG/L	U	U
0076	22-Jun-92	Ethylbenzene	1	1	UG/L	U	UJ
0076	16-Dec-91	Ethylbenzene	1	1	UG/L	U	U
0271	16-Sep-92	Ethylbenzene	1	1	UG/L	U	UJ
0076	24-Jan-90	Ethylbenzene	2	2	UG/L	U	U
0271	06-May-91	Ethylbenzene	2	2	UG/L	U	UJ
0076	15-Jun-90	Ethylbenzene	2	2	UG/L	U	U
0271	24-Jan-90	Ethylbenzene	2	2	UG/L	U	U
0271	01-Feb-91	Ethylbenzene	2	2	UG/L	U	U
0271	23-Mar-90	Ethylbenzene	2	2	UG/L	U	U
0076	06-Nov-90	Ethylbenzene	2	2	UG/L	U	U
0271	31-Jul-90	Ethylbenzene	2	2	UG/L	U	U
0271	07-Apr-94	Ethylbenzene	2	2	UG/L	U	U
0076	23-Mar-90	Ethylbenzene	2	2	UG/L	U	U
0076	31-Jul-90	Ethylbenzene	2	2	UG/L	U	U
0271	27-Feb-90	Ethylbenzene	2	2	UG/L	U	U
0271	07-Apr-94	Ethylbenzene	2	2	UG/L	U	U
0076	01-Feb-91	Ethylbenzene	2	2	UG/L	U	U
0271	06-Nov-90	Ethylbenzene	2	2	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	15-Jun-90	Ethylbenzene	2	2	UG/L	U	U
0076	07-Apr-94	Ethylbenzene	2	2	UG/L	U	U
0076	06-May-91	Ethylbenzene	2	2	UG/L	U	UJ
0271	27-Feb-90	Ethylbenzene	2	2	UG/L	U	U
0271	11-Oct-93	Ethylbenzene	2	2	UG/L	U	U
0271	05-Aug-91	Ethylbenzene	2	2	UG/L	U	U
0076	11-Oct-93	Ethylbenzene	2	2	UG/L	U	UJ
0076	27-Feb-90	Ethylbenzene	2	2	UG/L	U	U
0271	27-Feb-90	Ethylbenzene	2	2	UG/L	U	U
0271	08-Mar-88	Ethylbenzene	5	5	UG/L	U	U
0076	25-Apr-90	Ethylbenzene	5	5	UG/L	U	U
0076	24-Jun-88	Ethylbenzene	5	5	UG/L	U	U
0271	25-Apr-90	Ethylbenzene	5	5	UG/L	U	U
0271	13-Sep-88	Ethylbenzene	5	5	UG/L	U	U
0271	24-Jun-88	Ethylbenzene	5	5	UG/L	U	U
0076	13-Sep-88	Ethylbenzene	5	5	UG/L	U	U
0271	13-Dec-85	Ethylbenzene	7.2	7.2	UG/L	U	U
0076	12-Dec-85	Ethylbenzene	7.2	7.2	UG/L	U	U
0271	13-Mar-86	Ethylbenzene	7.2	7.2	UG/L	U	U
0076	01-Feb-84	Ethylbenzene	10	10	UG/L	U	U
0076	06-May-91	Europium-152	10.8	1	PCI/L	U	U
0271	06-May-91	Europium-152	13.8	1	PCI/L	U	U
0076	01-Feb-91	Europium-152	100	0	PCI/L	U	U
0271	01-Feb-91	Europium-152	120	0	PCI/L	U	U
0271	01-Feb-91	Europium-154	26	0	PCI/L	U	U
0076	06-May-91	Europium-154	29.3	1	PCI/L	U	U
0271	06-May-91	Europium-154	35.9	1	PCI/L	U	U
0076	01-Feb-91	Europium-154	56	0	PCI/L	U	U
0271	01-Feb-91	Europium-155	33	0	PCI/L	U	U
0076	01-Feb-91	Europium-155	39	0	PCI/L	U	U
0076	06-May-91	Europium-155	71.5	1	PCI/L	U	U
0271	06-May-91	Europium-155	78.3	1	PCI/L	U	U
0271	16-Sep-92	Fluoranthene	10	10	UG/L	U	U
0271	06-Nov-90	Fluoranthene	10	10	UG/L	U	U
0076	23-Mar-92	Fluoranthene	10	10	UG/L	U	U
0271	11-Oct-93	Fluoranthene	10	10	UG/L	U	U
0271	05-Aug-91	Fluoranthene	10	10	UG/L	U	UJ
0076	22-Jun-92	Fluoranthene	10	10	UG/L	U	U
0076	16-Sep-92	Fluoranthene	10	10	UG/L	U	U
0271	22-Jun-92	Fluoranthene	10	10	UG/L	U	U
0076	06-May-91	Fluoranthene	10	10	UG/L	U	U
0076	11-Oct-93	Fluoranthene	10	10	UG/L	U	U
0076	16-Dec-91	Fluoranthene	10	10	UG/L	U	U
0076	01-Feb-91	Fluoranthene	10	10	UG/L	U	U
0076	06-Nov-90	Fluoranthene	10	10	UG/L	U	U
0271	06-May-91	Fluoranthene	10	10	UG/L	U	U
0271	01-Feb-91	Fluoranthene	10	10	UG/L	U	U
0271	16-Dec-91	Fluoranthene	10	10	UG/L	U	U
0271	07-Apr-94	Fluoranthene	11	11	UG/L	U	U
0076	07-Apr-94	Fluoranthene	11	11	UG/L	U	U
0271	07-Apr-94	Fluoranthene	11	11	UG/L	U	U
0271	16-Sep-92	Fluorene	10	10	UG/L	U	U
0076	22-Jun-92	Fluorene	10	10	UG/L	U	U
0076	06-May-91	Fluorene	10	10	UG/L	U	U
0271	06-May-91	Fluorene	10	10	UG/L	U	U
0271	01-Feb-91	Fluorene	10	10	UG/L	U	U
0076	16-Sep-92	Fluorene	10	10	UG/L	U	U
0271	06-Nov-90	Fluorene	10	10	UG/L	U	U
0271	22-Jun-92	Fluorene	10	10	UG/L	U	U
0076	01-Feb-91	Fluorene	10	10	UG/L	U	U
0076	16-Dec-91	Fluorene	10	10	UG/L	U	U
0271	11-Oct-93	Fluorene	10	10	UG/L	U	U
0076	11-Oct-93	Fluorene	10	10	UG/L	U	U
0271	16-Dec-91	Fluorene	10	10	UG/L	U	U
0076	06-Nov-90	Fluorene	10	10	UG/L	U	U
0271	05-Aug-91	Fluorene	10	10	UG/L	U	UJ
0076	23-Mar-92	Fluorene	10	10	UG/L	U	U
0271	07-Apr-94	Fluorene	11	11	UG/L	U	U
0076	07-Apr-94	Fluorene	11	11	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	07-Apr-94	Fluorene	11	11	UG/L	U	U
0271	07-Apr-94	Fluoride	0.14	0.1	MG/L		
0271	07-Apr-94	Fluoride	0.15	0.1	MG/L		
0271	11-Oct-93	Fluoride	0.15	0.1	MG/L		
0076	11-Oct-93	Fluoride	0.18	0.1	MG/L		
0076	07-Apr-94	Fluoride	0.18	0.1	MG/L		
0271	01-Feb-91	Gadolinium-153	31	0	PCI/L	U	U
0076	01-Feb-91	Gadolinium-153	38	0	PCI/L	U	U
0076	16-Sep-92	Gamma Chlordane	0.05	0.05	UG/L	U	U
0271	05-Aug-91	Gamma Chlordane	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Gamma Chlordane	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Gamma Chlordane	0.05	0.05	UG/L	U	UJ
0271	16-Sep-92	Gamma Chlordane	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Gamma Chlordane	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Gamma Chlordane	0.051	0.051	UG/L	U	U
0076	22-Jun-92	Gamma Chlordane	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Gamma Chlordane	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Gamma Chlordane	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Gamma Chlordane	0.055	0.055	UG/L	U	U
0076	01-Feb-91	Gamma Chlordane	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Gamma Chlordane	0.5	0.5	UG/L	U	U
0076	06-Nov-90	Gamma Chlordane	0.5	0.5	UG/L	U	U
0271	06-May-91	Gamma Chlordane	0.5	0.5	UG/L	U	U
0271	01-Feb-91	Gamma Chlordane	0.5	0.5	UG/L	U	U
0076	06-May-91	Gamma Chlordane	0.5	0.5	UG/L	U	U
0271	16-Dec-91	Gamma Chlordane	0.52	0.52	UG/L	U	U
0076	16-Dec-91	Gamma Chlordane	0.52	0.52	UG/L	U	U
0076	06-May-91	Gamma Chlordane	2.5	2.5	UG/L	U	U
0271	06-May-91	Gamma Chlordane	7.5	7.5	UG/L	U	U
0271	05-Aug-91	Gamma-BHC (Lindane)	0.04	0.04	UG/L	U	U
0271	01-Feb-91	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0076	06-May-91	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0076	01-Feb-91	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	UJ
0271	11-Oct-93	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0271	06-May-91	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0076	06-Nov-90	Gamma-BHC (Lindane)	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Gamma-BHC (Lindane)	0.051	0.051	UG/L	U	U
0076	22-Jun-92	Gamma-BHC (Lindane)	0.052	0.052	UG/L	U	U
0271	16-Dec-91	Gamma-BHC (Lindane)	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Gamma-BHC (Lindane)	0.052	0.052	UG/L	U	U
0076	16-Dec-91	Gamma-BHC (Lindane)	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Gamma-BHC (Lindane)	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Gamma-BHC (Lindane)	0.055	0.055	UG/L	U	U
0076	06-May-91	Gamma-BHC (Lindane)	0.25	0.25	UG/L	U	U
0271	06-May-91	Gamma-BHC (Lindane)	0.75	0.75	UG/L	U	U
0076	07-Apr-94	HMX	0.63	0.63	UG/L	U	U
0271	07-Apr-94	HMX	0.63	0.63	UG/L	U	U
0076	11-Oct-93	HMX	0.63	0.63	UG/L	U	UJ
0271	11-Oct-93	HMX	0.63	0.63	UG/L	U	UJ
0271	05-Aug-91	Heptachlor	0.03	0.03	UG/L	U	U
0076	11-Oct-93	Heptachlor	0.05	0.05	UG/L	U	UJ
0076	01-Feb-91	Heptachlor	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Heptachlor	0.05	0.05	UG/L	U	U
0076	06-Nov-90	Heptachlor	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Heptachlor	0.05	0.05	UG/L	U	U
0271	06-May-91	Heptachlor	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Heptachlor	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Heptachlor	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Heptachlor	0.05	0.05	UG/L	U	U
0076	06-May-91	Heptachlor	0.05	0.05	UG/L	U	U
0271	01-Feb-91	Heptachlor	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Heptachlor	0.051	0.051	UG/L	U	U
0076	22-Jun-92	Heptachlor	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Heptachlor	0.052	0.052	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Dec-91	Heptachlor	0.052	0.052	UG/L	U	U
0271	16-Dec-91	Heptachlor	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Heptachlor	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Heptachlor	0.055	0.055	UG/L	U	U
0076	06-May-91	Heptachlor	0.25	0.25	UG/L	U	U
0271	06-May-91	Heptachlor	0.75	0.75	UG/L	U	U
0076	01-Feb-91	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	06-May-91	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0076	11-Oct-93	Heptachlor Epoxide	0.05	0.05	UG/L	U	UJ
0271	01-Feb-91	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0076	16-Sep-92	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0076	06-Nov-90	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	16-Sep-92	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	07-Apr-94	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	05-Aug-91	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	06-Nov-90	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	11-Oct-93	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0076	06-May-91	Heptachlor Epoxide	0.05	0.05	UG/L	U	U
0271	22-Jun-92	Heptachlor Epoxide	0.051	0.051	UG/L	U	U
0271	16-Dec-91	Heptachlor Epoxide	0.052	0.052	UG/L	U	U
0076	16-Dec-91	Heptachlor Epoxide	0.052	0.052	UG/L	U	U
0271	07-Apr-94	Heptachlor Epoxide	0.052	0.052	UG/L	U	U
0076	22-Jun-92	Heptachlor Epoxide	0.052	0.052	UG/L	U	U
0076	23-Mar-92	Heptachlor Epoxide	0.053	0.053	UG/L	U	U
0076	07-Apr-94	Heptachlor Epoxide	0.055	0.055	UG/L	U	U
0076	06-May-91	Heptachlor Epoxide	0.25	0.25	UG/L	U	U
0271	06-May-91	Heptachlor Epoxide	0.75	0.75	UG/L	U	U
0076	23-Mar-92	Hexachlorobenzene	10	10	UG/L	U	U
0076	22-Jun-92	Hexachlorobenzene	10	10	UG/L	U	U
0271	11-Oct-93	Hexachlorobenzene	10	10	UG/L	U	U
0271	01-Feb-91	Hexachlorobenzene	10	10	UG/L	U	U
0076	06-May-91	Hexachlorobenzene	10	10	UG/L	U	U
0271	05-Aug-91	Hexachlorobenzene	10	10	UG/L	U	UJ
0076	11-Oct-93	Hexachlorobenzene	10	10	UG/L	U	U
0271	16-Sep-92	Hexachlorobenzene	10	10	UG/L	U	U
0271	06-May-91	Hexachlorobenzene	10	10	UG/L	U	U
0271	16-Dec-91	Hexachlorobenzene	10	10	UG/L	U	U
0076	16-Sep-92	Hexachlorobenzene	10	10	UG/L	U	U
0076	06-Nov-90	Hexachlorobenzene	10	10	UG/L	U	U
0076	16-Dec-91	Hexachlorobenzene	10	10	UG/L	U	U
0271	22-Jun-92	Hexachlorobenzene	10	10	UG/L	U	U
0076	01-Feb-91	Hexachlorobenzene	10	10	UG/L	U	U
0271	06-Nov-90	Hexachlorobenzene	10	10	UG/L	U	U
0271	07-Apr-94	Hexachlorobenzene	11	11	UG/L	U	U
0271	07-Apr-94	Hexachlorobenzene	11	11	UG/L	U	U
0076	07-Apr-94	Hexachlorobenzene	11	11	UG/L	U	U
0271	01-Feb-91	Hexachlorobutadiene	10	10	UG/L	U	U
0271	06-May-91	Hexachlorobutadiene	10	10	UG/L	U	U
0076	06-May-91	Hexachlorobutadiene	10	10	UG/L	U	U
0076	16-Sep-92	Hexachlorobutadiene	10	10	UG/L	U	U
0076	01-Feb-91	Hexachlorobutadiene	10	10	UG/L	U	U
0076	23-Mar-92	Hexachlorobutadiene	10	10	UG/L	U	U
0271	22-Jun-92	Hexachlorobutadiene	10	10	UG/L	U	UJ
0271	16-Dec-91	Hexachlorobutadiene	10	10	UG/L	U	U
0076	11-Oct-93	Hexachlorobutadiene	10	10	UG/L	U	U
0076	16-Dec-91	Hexachlorobutadiene	10	10	UG/L	U	U
0076	06-Nov-90	Hexachlorobutadiene	10	10	UG/L	U	U
0271	06-Nov-90	Hexachlorobutadiene	10	10	UG/L	U	U
0271	16-Sep-92	Hexachlorobutadiene	10	10	UG/L	U	U
0271	11-Oct-93	Hexachlorobutadiene	10	10	UG/L	U	U
0271	05-Aug-91	Hexachlorobutadiene	10	10	UG/L	U	UJ
0076	22-Jun-92	Hexachlorobutadiene	10	10	UG/L	U	U
0076	07-Apr-94	Hexachlorobutadiene	11	11	UG/L	U	U
0271	07-Apr-94	Hexachlorobutadiene	11	11	UG/L	U	U
0271	07-Apr-94	Hexachlorobutadiene	11	11	UG/L	U	U
0076	06-Nov-90	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	01-Feb-91	Hexachlorocyclopentadiene	10	10	UG/L	U	UJ
0271	22-Jun-92	Hexachlorocyclopentadiene	10	10	UG/L	U	UJ
0076	11-Oct-93	Hexachlorocyclopentadiene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	23-Mar-92	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0076	01-Feb-91	Hexachlorocyclopentadiene	10	10	UG/L	U	UJ
0076	16-Sep-92	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	05-Aug-91	Hexachlorocyclopentadiene	10	10	UG/L	U	UJ
0271	06-May-91	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0076	06-May-91	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0076	16-Dec-91	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	16-Sep-92	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	16-Dec-91	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	11-Oct-93	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	06-Nov-90	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0076	22-Jun-92	Hexachlorocyclopentadiene	10	10	UG/L	U	U
0271	07-Apr-94	Hexachlorocyclopentadiene	11	11	UG/L	U	U
0076	07-Apr-94	Hexachlorocyclopentadiene	11	11	UG/L	U	U
0271	07-Apr-94	Hexachlorocyclopentadiene	11	11	UG/L	U	U
0076	22-Jun-92	Hexachloroethane	10	10	UG/L	U	U
0271	22-Jun-92	Hexachloroethane	10	10	UG/L	U	U
0076	16-Sep-92	Hexachloroethane	10	10	UG/L	U	U
0076	23-Mar-92	Hexachloroethane	10	10	UG/L	U	U
0076	01-Feb-91	Hexachloroethane	10	10	UG/L	U	U
0076	06-Nov-90	Hexachloroethane	10	10	UG/L	U	U
0271	01-Feb-91	Hexachloroethane	10	10	UG/L	U	U
0271	06-Nov-90	Hexachloroethane	10	10	UG/L	U	U
0271	11-Oct-93	Hexachloroethane	10	10	UG/L	U	U
0271	05-Aug-91	Hexachloroethane	10	10	UG/L	U	UJ
0076	06-May-91	Hexachloroethane	10	10	UG/L	U	U
0271	16-Sep-92	Hexachloroethane	10	10	UG/L	U	U
0076	11-Oct-93	Hexachloroethane	10	10	UG/L	U	U
0271	16-Dec-91	Hexachloroethane	10	10	UG/L	U	U
0076	16-Dec-91	Hexachloroethane	10	10	UG/L	U	U
0271	06-May-91	Hexachloroethane	10	10	UG/L	U	U
0271	07-Apr-94	Hexachloroethane	11	11	UG/L	U	U
0076	07-Apr-94	Hexachloroethane	11	11	UG/L	U	U
0271	07-Apr-94	Hexachloroethane	11	11	UG/L	U	U
0271	16-Sep-92	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	06-May-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	16-Dec-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	23-Mar-92	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	22-Jun-92	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	11-Oct-93	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	05-Aug-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	UJ
0271	06-May-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	11-Oct-93	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	06-Nov-90	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	01-Feb-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	01-Feb-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	16-Dec-91	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0076	16-Sep-92	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	06-Nov-90	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	22-Jun-92	Indeno(1,2,3-cd)pyrene	10	10	UG/L	U	U
0271	07-Apr-94	Indeno(1,2,3-cd)pyrene	11	11	UG/L	U	U
0076	07-Apr-94	Indeno(1,2,3-cd)pyrene	11	11	UG/L	U	U
0271	07-Apr-94	Indeno(1,2,3-cd)pyrene	11	11	UG/L	U	U
0271	01-Feb-91	Iodine-131	11	0	PCI/L	U	U
0076	01-Feb-91	Iodine-131	19	0	PCI/L	U	U
0271	01-Feb-91	Iridium-192	12	0	PCI/L	U	U
0076	01-Feb-91	Iridium-192	15	0	PCI/L	U	U
0271	05-Aug-91	Iron	0.0301	0.01	UG/L		
0271	05-Aug-91	Iron	0.0336	0.01	UG/L		
0271	07-Apr-94	Iron	7.6	4.5	UG/L	B	U
0271	05-Aug-91	Iron	10	10	UG/L	U	U
0076	07-Apr-94	Iron	10	4.5	UG/L	B	U
0271	07-Apr-94	Iron	10.5	4.5	UG/L	B	U
0076	07-Apr-94	Iron	11.6	4.5	UG/L	B	U
0076	11-Oct-93	Iron	13.2	13.2	UG/L	U	U
0271	06-May-91	Iron	17.5	0.1	UG/L		
0076	06-May-91	Iron	17.7	0.1	UG/L		
0271	11-Oct-93	Iron	18.8	2.5	UG/L	B	
0271	06-May-91	Iron	19	10	UG/L	B	

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	22-Jun-92	Iron	19.8	19	UG/L	B	
0076	06-May-91	Iron	19.9	10	UG/L	B	UJ
0076	01-Feb-91	Iron	22.9	0	UG/L		
0076	16-Sep-92	Iron	28.3	10	UG/L		UJ
0076	11-Oct-93	Iron	28.8	2.5	UG/L	B	
0271	16-Sep-92	Iron	29.1	10	UG/L		UJ
0076	23-Mar-92	Iron	30	100	UG/L	U	U
0271	11-Oct-93	Iron	31.2	2.5	UG/L	B	
0271	06-Nov-90	Iron	32.6	10	UG/L	B	
0271	07-Apr-94	Iron	40.2	4.5	UG/L	B	U
0271	07-Apr-94	Iron	47	4.5	UG/L	B	U
0271	05-Aug-91	Iron	48.2	10	UG/L		J
0271	01-Feb-91	Iron	65.4	0	UG/L		
0076	22-Jun-92	Iron	69.6	19	UG/L	B	
0076	01-Feb-91	Iron	69.7	10	UG/L	B	
0271	16-Dec-91	Iron	100	100	UG/L	U	U
0076	16-Dec-91	Iron	100	100	UG/L	U	U
0271	01-Feb-91	Iron	153	10	UG/L		
0076	06-Nov-90	Iron	780	10	UG/L		
0076	01-Feb-91	Iron-59	34	0	PCI/L	U	U
0271	01-Feb-91	Iron-59	35	0	PCI/L	U	U
0271	16-Dec-91	Isophorone	10	10	UG/L	U	U
0271	22-Jun-92	Isophorone	10	10	UG/L	U	U
0076	23-Mar-92	Isophorone	10	10	UG/L	U	U
0076	06-May-91	Isophorone	10	10	UG/L	U	U
0271	05-Aug-91	Isophorone	10	10	UG/L	U	UJ
0076	16-Sep-92	Isophorone	10	10	UG/L	U	U
0271	06-May-91	Isophorone	10	10	UG/L	U	U
0271	11-Oct-93	Isophorone	10	10	UG/L	U	U
0076	16-Dec-91	Isophorone	10	10	UG/L	U	U
0076	22-Jun-92	Isophorone	10	10	UG/L	U	U
0271	01-Feb-91	Isophorone	10	10	UG/L	U	U
0076	01-Feb-91	Isophorone	10	10	UG/L	U	U
0076	06-Nov-90	Isophorone	10	10	UG/L	U	U
0271	06-Nov-90	Isophorone	10	10	UG/L	U	U
0271	16-Sep-92	Isophorone	10	10	UG/L	U	U
0076	11-Oct-93	Isophorone	10	10	UG/L	U	U
0271	07-Apr-94	Isophorone	11	11	UG/L	U	U
0076	07-Apr-94	Isophorone	11	11	UG/L	U	U
0271	07-Apr-94	Isophorone	11	11	UG/L	U	U
0271	01-Feb-91	Lanthanum-140	20	0	PCI/L	U	U
0076	01-Feb-91	Lanthanum-140	27	0	PCI/L	U	U
0076	07-Apr-94	Lead	0.8	0.8	UG/L	U	UJ
0271	07-Apr-94	Lead	0.8	0.8	UG/L	U	UJ
0271	07-Apr-94	Lead	0.8	0.8	UG/L	U	UJ
0271	07-Apr-94	Lead	0.8	0.8	UG/L	U	UJ
0271	07-Apr-94	Lead	0.8	0.8	UG/L	U	UJ
0076	16-Sep-92	Lead	2	2	UG/L	U	UJ
0271	11-Oct-93	Lead	2	2	UG/L	U	U
0271	11-Oct-93	Lead	2	2	UG/L	U	U
0271	06-May-91	Lead	2	2	UG/L	U	UJ
0271	05-Aug-91	Lead	2	2	UG/L	U	U
0076	23-Mar-92	Lead	2	3	UG/L	U	U
0076	11-Oct-93	Lead	2	2	UG/L	U	U
0076	11-Oct-93	Lead	2	2	UG/L	U	U
0076	22-Jun-92	Lead	2	2	UG/L	U	UJ
0076	06-May-91	Lead	2	2	UG/L	U	UJ
0271	16-Sep-92	Lead	2	2	UG/L	U	UJ
0271	06-Nov-90	Lead	2	2	UG/L	U	U
0271	05-Aug-91	Lead	2	2	UG/L	U	U
0271	22-Jun-92	Lead	2	2	UG/L	U	UJ
0076	01-Feb-91	Lead	2	2	UG/L	U	U
0271	01-Feb-91	Lead	2	2	UG/L	U	U
0076	16-Dec-91	Lead	2.7	3	UG/L	U	J
0271	16-Dec-91	Lead	3.4	3	UG/L		
0076	07-Apr-94	Lead	10.5	1	UG/L		
0076	01-Feb-84	Lead	30	30	UG/L		
0076	06-Nov-90	Lead	37.9	2	UG/L		
0271	13-Dec-85	Lead	40	40	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	12-Dec-85	Lead	40	40	UG/L		
0271	06-May-91	Lead-212	70	1	PCI/L	U	U
0076	06-May-91	Lead-212	70	1	PCI/L	U	U
0076	06-May-91	Lead-214	67.7	1	PCI/L	U	U
0271	06-May-91	Lead-214	85.1	1	PCI/L	U	U
0076	11-Oct-93	Lithium	2.9	4.8	UG/L	B	
0076	11-Oct-93	Lithium	2.9	4.8	UG/L	B	
0271	11-Oct-93	Lithium	2.9	4.8	UG/L	B	
0271	11-Oct-93	Lithium	2.9	4.8	UG/L	B	
0271	07-Apr-94	Lithium	13	13	UG/L	U	UJ
0076	07-Apr-94	Lithium	13	13	UG/L	U	U
0271	07-Apr-94	Lithium	13	13	UG/L	U	UJ
0271	07-Apr-94	Lithium	13	13	UG/L	U	UJ
0271	07-Apr-94	Lithium	13	13	UG/L	U	UJ
0076	07-Apr-94	Lithium	39.8	27.2	UG/L	B	U
0271	05-Aug-91	Magnesium	34	0.05	UG/L		
0271	05-Aug-91	Magnesium	34.4	0.05	UG/L		
0271	05-Aug-91	Magnesium	34.4	0.05	UG/L		
0076	16-Sep-92	Magnesium	29100	24	UG/L		
0076	22-Jun-92	Magnesium	29200	36	UG/L		
0076	07-Apr-94	Magnesium	30300	17.9	UG/L		
0076	16-Dec-91	Magnesium	30300	5000	UG/L		
0076	23-Mar-92	Magnesium	30400	5000	UG/L		J
0076	07-Apr-94	Magnesium	30500	17.9	UG/L		J
0076	11-Oct-93	Magnesium	30900	6	UG/L		J
0076	06-May-91	Magnesium	31000	50	UG/L		
0076	06-May-91	Magnesium	31600	0.1	UG/L		
0271	22-Jun-92	Magnesium	31600	36	UG/L		
0076	11-Oct-93	Magnesium	31900	6	UG/L		J
0076	01-Feb-91	Magnesium	32300	30	UG/L		
0271	16-Sep-92	Magnesium	32500	24	UG/L		
0271	07-Apr-94	Magnesium	32900	17.9	UG/L		
0271	11-Oct-93	Magnesium	33000	6	UG/L		J
0271	11-Oct-93	Magnesium	33100	6	UG/L		J
0271	07-Apr-94	Magnesium	33200	17.9	UG/L		
0271	05-Aug-91	Magnesium	33400	50	UG/L		
0271	07-Apr-94	Magnesium	33400	17.9	UG/L		J
0076	01-Feb-91	Magnesium	34500	0	UG/L		
0271	05-Aug-91	Magnesium	34757.094	50	UG/L		
0076	06-Nov-90	Magnesium	35100	50	UG/L		
0271	16-Dec-91	Magnesium	35200	5000	UG/L		
0271	06-Nov-90	Magnesium	35200	50	UG/L		
0271	06-May-91	Magnesium	37100	50	UG/L		
0271	01-Feb-91	Magnesium	37400	30	UG/L		
0271	06-May-91	Magnesium	37500	0.1	UG/L		
0271	07-Apr-94	Magnesium	37600	17.9	UG/L		J
0271	01-Feb-91	Magnesium	39600	0	UG/L		
0271	05-Aug-91	Manganese	0.0154	0.002	UG/L		
0271	05-Aug-91	Manganese	0.0156	0.002	UG/L		
0076	23-Mar-92	Manganese	2.8	15	UG/L	B	
0076	06-May-91	Manganese	3.4	0.1	UG/L		
0076	06-May-91	Manganese	4.7	2	UG/L	B	
0076	01-Feb-91	Manganese	5.1	2	UG/L	B	
0076	22-Jun-92	Manganese	6.8	2	UG/L	B	
0076	16-Sep-92	Manganese	9.2	2	UG/L		
0076	01-Feb-91	Manganese	9.51	0	UG/L		
0076	11-Oct-93	Manganese	11.3	0.5	UG/L	B	
0271	07-Apr-94	Manganese	11.4	0.33	UG/L	B	
0271	07-Apr-94	Manganese	11.6	0.33	UG/L	B	
0271	07-Apr-94	Manganese	11.8	0.33	UG/L	B	
0271	06-May-91	Manganese	12.1	0.1	UG/L		
0076	11-Oct-93	Manganese	12.2	0.5	UG/L	B	
0076	07-Apr-94	Manganese	12.3	0.33	UG/L	B	
0271	11-Oct-93	Manganese	13	0.5	UG/L	B	
0271	22-Jun-92	Manganese	13	2	UG/L	B	
0271	06-May-91	Manganese	13.4	2	UG/L	B	
0271	07-Apr-94	Manganese	13.7	0.33	UG/L	B	
0076	07-Apr-94	Manganese	13.8	0.33	UG/L	B	
0271	05-Aug-91	Manganese	14.4	2	UG/L		

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Dec-91	Manganese	15	15	UG/L	U	U
0271	16-Dec-91	Manganese	15	15	UG/L	U	U
0271	11-Oct-93	Manganese	15.2	0.5	UG/L		
0271	05-Aug-91	Manganese	15.33	2	UG/L		
0271	06-Nov-90	Manganese	17	2	UG/L		
0271	16-Sep-92	Manganese	17.1	2	UG/L		
0076	06-Nov-90	Manganese	19.1	2	UG/L		
0271	01-Feb-91	Manganese	20.2	2	UG/L		
0271	01-Feb-91	Manganese	24.8	0	UG/L		
0271	01-Feb-91	Manganese-54	14	0	PCI/L	U	U
0076	01-Feb-91	Manganese-54	15	0	PCI/L	U	U
0271	07-Apr-94	Mercury	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Mercury	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Mercury	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Mercury	0.1	0.1	UG/L	U	U
0076	11-Oct-93	Mercury	0.1	0.1	UG/L	U	U
0271	07-Apr-94	Mercury	0.1	0.1	UG/L	U	U
0271	22-Jun-92	Mercury	0.1	0.1	UG/L	U	UJ
0271	07-Apr-94	Mercury	0.1	0.1	UG/L	U	U
0076	07-Apr-94	Mercury	0.1	0.1	UG/L	U	U
0076	23-Mar-92	Mercury	0.1	0.2	UG/L	U	U
0076	07-Apr-94	Mercury	0.1	0.1	UG/L	U	U
0271	16-Sep-92	Mercury	0.1	0.1	UG/L	U	U
0271	11-Oct-93	Mercury	0.1	0.1	UG/L	U	U
0076	22-Jun-92	Mercury	0.1	0.1	UG/L	U	UJ
0076	16-Sep-92	Mercury	0.1	0.1	UG/L	U	U
0271	16-Dec-91	Mercury	0.2	0.2	UG/L	U	U
0271	05-Aug-91	Mercury	0.2	0.2	UG/L	U	U
0076	06-Nov-90	Mercury	0.2	0.2	UG/L	U	U
0271	05-Aug-91	Mercury	0.2	0.2	UG/L	U	U
0271	06-Nov-90	Mercury	0.2	0.2	UG/L	U	U
0271	06-May-91	Mercury	0.2	0.2	UG/L	U	U
0076	01-Feb-91	Mercury	0.2	0.2	UG/L	U	U
0271	01-Feb-91	Mercury	0.2	0.2	UG/L	U	U
0076	16-Dec-91	Mercury	0.2	0.2	UG/L	U	U
0076	06-May-91	Mercury	0.2	0.2	UG/L	U	U
0271	01-Feb-91	Mercury-203	10	0	PCI/L	U	U
0076	01-Feb-91	Mercury-203	15	0	PCI/L	U	U
0271	01-Feb-91	Methoxychlor	0.5	0.5	UG/L	U	U
0271	11-Oct-93	Methoxychlor	0.5	0.5	UG/L	U	U
0076	06-May-91	Methoxychlor	0.5	0.5	UG/L	U	U
0076	11-Oct-93	Methoxychlor	0.5	0.5	UG/L	U	UJ
0076	16-Sep-92	Methoxychlor	0.5	0.5	UG/L	U	U
0076	06-Nov-90	Methoxychlor	0.5	0.5	UG/L	U	U
0076	01-Feb-91	Methoxychlor	0.5	0.5	UG/L	U	U
0271	05-Aug-91	Methoxychlor	0.5	0.5	UG/L	U	U
0271	06-May-91	Methoxychlor	0.5	0.5	UG/L	U	U
0271	16-Sep-92	Methoxychlor	0.5	0.5	UG/L	U	U
0271	06-Nov-90	Methoxychlor	0.5	0.5	UG/L	U	U
0271	07-Apr-94	Methoxychlor	0.5	0.5	UG/L	U	U
0271	22-Jun-92	Methoxychlor	0.51	0.51	UG/L	U	U
0076	16-Dec-91	Methoxychlor	0.52	0.52	UG/L	U	U
0271	07-Apr-94	Methoxychlor	0.52	0.52	UG/L	U	U
0271	16-Dec-91	Methoxychlor	0.52	0.52	UG/L	U	U
0076	22-Jun-92	Methoxychlor	0.52	0.52	UG/L	U	U
0076	23-Mar-92	Methoxychlor	0.53	0.53	UG/L	U	U
0076	07-Apr-94	Methoxychlor	0.55	0.55	UG/L	U	U
0076	06-May-91	Methoxychlor	2.5	2.5	UG/L	U	U
0271	06-May-91	Methoxychlor	7.5	7.5	UG/L	U	U
0271	24-Jan-90	Methylene Chloride	2	2	UG/L	U	U
0271	31-Jul-90	Methylene Chloride	2	2	UG/L	U	U
0076	24-Jan-90	Methylene Chloride	2	2	UG/L	U	U
0076	06-Nov-90	Methylene Chloride	2	2	UG/L	U	UJ
0271	27-Feb-90	Methylene Chloride	2	2	UG/L	U	U
0076	23-Mar-90	Methylene Chloride	2	2	UG/L	U	U
0076	31-Jul-90	Methylene Chloride	2	2	UG/L	U	U
0076	15-Jun-90	Methylene Chloride	2	2	UG/L	U	U
0271	23-Mar-90	Methylene Chloride	2	2	UG/L	U	U
0271	27-Feb-90	Methylene Chloride	2	2	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	15-Jun-90	Methylene Chloride	2	2	UG/L	U	U
0076	27-Feb-90	Methylene Chloride	2	2	UG/L	U	U
0271	06-Nov-90	Methylene Chloride	2	2	UG/L	U	UJ
0271	27-Feb-90	Methylene Chloride	2	2	UG/L	U	U
0271	13-Dec-85	Methylene Chloride	2.8	2.8	UG/L	U	U
0271	13-Mar-86	Methylene Chloride	2.8	2.8	UG/L	U	U
0271	25-Apr-90	Methylene Chloride	3	5	UG/L	JB	
0271	13-Sep-88	Methylene Chloride	3	5	UG/L	JB	
0076	16-Jun-93	Methylene Chloride	4	4	UG/L	U	U
0076	16-Sep-92	Methylene Chloride	4	4	UG/L	U	UJ
0271	24-Jun-88	Methylene Chloride	4	5	UG/L	JB	
0076	23-Mar-92	Methylene Chloride	4	4	UG/L	U	UJ
0271	22-Jun-92	Methylene Chloride	4	4	UG/L	U	R
0076	13-Sep-88	Methylene Chloride	4	4	UG/L	U	U
0271	16-Dec-91	Methylene Chloride	4	4	UG/L	U	UJ
0271	16-Sep-92	Methylene Chloride	4	4	UG/L	U	UJ
0076	16-Dec-91	Methylene Chloride	4	4	UG/L	U	UJ
0076	22-Jun-92	Methylene Chloride	4	4	UG/L	U	R
0271	13-Sep-88	Methylene Chloride	4	4	UG/L	U	U
0076	24-Jun-88	Methylene Chloride	4	5	UG/L	JB	
0271	11-Oct-93	Methylene Chloride	5	5	UG/L	U	U
0271	07-Apr-94	Methylene Chloride	5	5	UG/L	U	U
0271	05-Aug-91	Methylene Chloride	5	5	UG/L	U	UJ
0076	11-Oct-93	Methylene Chloride	5	5	UG/L	U	UJ
0271	06-May-91	Methylene Chloride	5	5	UG/L	U	U
0271	07-Apr-94	Methylene Chloride	5	5	UG/L	U	UJ
0076	07-Apr-94	Methylene Chloride	5	5	UG/L	U	U
0076	06-May-91	Methylene Chloride	5	5	UG/L	U	U
0076	25-Apr-90	Methylene Chloride	6	5	UG/L	B	
0076	12-Dec-85	Methylene Chloride	7	2.8	UG/L		
0076	13-Sep-88	Methylene Chloride	9	5	UG/L	B	
0271	01-Feb-91	Methylene Chloride	9.8	2	UG/L		UJ
0076	01-Feb-84	Methylene Chloride	10	10	UG/L	U	U
0076	01-Feb-91	Methylene Chloride	10	2	UG/L		UJ
0271	08-Mar-88	Methylene Chloride	13	5	UG/L	B	
0271	07-Apr-94	Molybdenum	1.4	1.4	UG/L	U	UJ
0271	07-Apr-94	Molybdenum	1.6	1.4	UG/L	B	J
0271	11-Oct-93	Molybdenum	1.7	0.5	UG/L	B	U
0271	07-Apr-94	Molybdenum	1.7	1.4	UG/L	B	
0271	11-Oct-93	Molybdenum	1.8	0.5	UG/L	B	U
0076	07-Apr-94	Molybdenum	2	1.4	UG/L	B	
0271	07-Apr-94	Molybdenum	2	1.4	UG/L	B	
0076	11-Oct-93	Molybdenum	2	0.5	UG/L	B	U
0076	11-Oct-93	Molybdenum	2.1	0.5	UG/L	B	U
0076	07-Apr-94	Molybdenum	2.7	1.4	UG/L	B	
0076	22-Jun-92	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	06-May-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	16-Sep-92	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	06-Nov-90	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	06-May-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	23-Mar-92	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	06-Nov-90	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	01-Feb-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	01-Feb-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	05-Aug-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	UJ
0076	16-Sep-92	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	16-Dec-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	11-Oct-93	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	22-Jun-92	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0271	16-Dec-91	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	11-Oct-93	N-Nitroso-di-n-propylamine	10	10	UG/L	U	U
0076	07-Apr-94	N-Nitroso-di-n-propylamine	11	11	UG/L	U	U
0271	07-Apr-94	N-Nitroso-di-n-propylamine	11	11	UG/L	U	U
0271	07-Apr-94	N-Nitroso-di-n-propylamine	11	11	UG/L	U	U
0271	16-Dec-91	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0271	11-Oct-93	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0076	16-Sep-92	N-Nitrosodiphenylamine	10	10	UG/L	U	UJ
0271	06-Nov-90	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0271	22-Jun-92	N-Nitrosodiphenylamine	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	23-Mar-92	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0076	22-Jun-92	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0076	16-Dec-91	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0271	01-Feb-91	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0076	11-Oct-93	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0271	05-Aug-91	N-Nitrosodiphenylamine	10	10	UG/L	U	UJ
0076	06-May-91	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0271	16-Sep-92	N-Nitrosodiphenylamine	10	10	UG/L	U	UJ
0076	01-Feb-91	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0271	06-May-91	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0076	06-Nov-90	N-Nitrosodiphenylamine	10	10	UG/L	U	U
0076	07-Apr-94	N-Nitrosodiphenylamine	11	11	UG/L	U	U
0271	07-Apr-94	N-Nitrosodiphenylamine	11	11	UG/L	U	U
0271	07-Apr-94	N-Nitrosodiphenylamine	11	11	UG/L	U	U
0271	01-Feb-91	Naphthalene	10	10	UG/L	U	U
0271	06-Nov-90	Naphthalene	10	10	UG/L	U	U
0271	11-Oct-93	Naphthalene	10	10	UG/L	U	U
0076	06-May-91	Naphthalene	10	10	UG/L	U	U
0076	01-Feb-91	Naphthalene	10	10	UG/L	U	U
0271	06-May-91	Naphthalene	10	10	UG/L	U	U
0076	06-Nov-90	Naphthalene	10	10	UG/L	U	U
0076	16-Sep-92	Naphthalene	10	10	UG/L	U	U
0076	22-Jun-92	Naphthalene	10	10	UG/L	U	U
0076	23-Mar-92	Naphthalene	10	10	UG/L	U	U
0076	11-Oct-93	Naphthalene	10	10	UG/L	U	U
0076	16-Dec-91	Naphthalene	10	10	UG/L	U	U
0271	05-Aug-91	Naphthalene	10	10	UG/L	U	UJ
0271	16-Sep-92	Naphthalene	10	10	UG/L	U	U
0271	16-Dec-91	Naphthalene	10	10	UG/L	U	U
0271	22-Jun-92	Naphthalene	10	10	UG/L	U	U
0271	07-Apr-94	Naphthalene	11	11	UG/L	U	U
0076	07-Apr-94	Naphthalene	11	11	UG/L	U	U
0271	07-Apr-94	Naphthalene	11	11	UG/L	U	U
0076	06-May-91	Neptunium-237	145	1	PCI/L	U	U
0271	06-May-91	Neptunium-237	163	1	PCI/L	U	U
0271	11-Oct-93	Nickel	2	2	UG/L	U	U
0076	11-Oct-93	Nickel	2	2	UG/L	U	U
0076	11-Oct-93	Nickel	2.1	2.3	UG/L	B	
0271	11-Oct-93	Nickel	2.2	2.3	UG/L	B	
0076	07-Apr-94	Nickel	2.3	2.3	UG/L	U	U
0271	07-Apr-94	Nickel	2.3	2.3	UG/L	U	U
0271	07-Apr-94	Nickel	2.3	2.3	UG/L	U	U
0271	07-Apr-94	Nickel	2.3	2.3	UG/L	U	U
0271	07-Apr-94	Nickel	2.3	2.3	UG/L	U	UJ
0076	07-Apr-94	Nickel	2.3	2.3	UG/L	U	U
0076	01-Feb-84	Nickel	6	6	UG/L	U	U
0271	16-Sep-92	Nickel	9	9	UG/L	U	U
0076	16-Sep-92	Nickel	9	9	UG/L	U	U
0271	13-Dec-85	Nickel	10	10	UG/L	U	U
0076	12-Dec-85	Nickel	10	10	UG/L	U	U
0076	22-Jun-92	Nickel	18	18	UG/L	U	U
0076	23-Mar-92	Nickel	18	40	UG/L	U	U
0271	22-Jun-92	Nickel	18	18	UG/L	U	U
0271	05-Aug-91	Nickel	20	20	UG/L	U	U
0271	01-Feb-91	Nickel	20	20	UG/L	U	U
0271	06-Nov-90	Nickel	20	20	UG/L	U	U
0076	01-Feb-91	Nickel	20	20	UG/L	U	U
0271	05-Aug-91	Nickel	20	20	UG/L	U	U
0076	06-Nov-90	Nickel	21.8	20	UG/L	B	
0076	06-May-91	Nickel	24.9	20	UG/L	B	
0271	06-May-91	Nickel	27.1	20	UG/L	B	
0271	16-Dec-91	Nickel	40	40	UG/L	U	U
0076	16-Dec-91	Nickel	40	40	UG/L	U	U
0271	01-Feb-91	Niobium-95	14	0	PCI/L	U	U
0076	01-Feb-91	Niobium-95	15	0	PCI/L	U	U
0076	16-Dec-91	Nitrate	0.738	0.1	MG/L		
0271	16-Dec-91	Nitrate	2.55	0.1	MG/L		
0076	22-Jun-92	Nitrate/Nitrite	0.68	0.1	MG/L		
0076	16-Sep-92	Nitrate/Nitrite	0.84	0.1	MG/L		

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	06-May-91	Nitrate/Nitrite	1.1	0.1	MG/L		
0076	07-Apr-94	Nitrate/Nitrite	1.1	0.04	MG/L		
0271	05-Aug-91	Nitrate/Nitrite	1.18	0.1	MG/L		
0076	01-Feb-91	Nitrate/Nitrite	1.79	0	MG/L		
0076	11-Oct-93	Nitrate/Nitrite	1.9	0.04	MG/L		
0271	16-Sep-92	Nitrate/Nitrite	2	1	MG/L		
0271	22-Jun-92	Nitrate/Nitrite	2.4	0.5	MG/L		
0271	07-Apr-94	Nitrate/Nitrite	2.5	0.1	MG/L		
0271	07-Apr-94	Nitrate/Nitrite	2.5	0.1	MG/L		
0271	06-May-91	Nitrate/Nitrite	2.7	0.1	MG/L		
0271	01-Feb-91	Nitrate/Nitrite	4.03	0	MG/L		
0271	11-Oct-93	Nitrate/Nitrite	4.9	0.1	MG/L		
0076	16-Dec-91	Nitrite	0.1	0.1	MG/L	U	U
0271	16-Dec-91	Nitrite	0.1	0.1	MG/L	U	U
0076	07-Apr-94	Nitrobenzene	0.31	0.31	UG/L	U	UJ
0271	11-Oct-93	Nitrobenzene	0.31	0.31	UG/L	U	UJ
0271	07-Apr-94	Nitrobenzene	0.31	0.31	UG/L	U	UJ
0076	11-Oct-93	Nitrobenzene	0.31	0.31	UG/L	U	UJ
0271	11-Oct-93	Nitrobenzene	10	10	UG/L	U	U
0076	22-Jun-92	Nitrobenzene	10	10	UG/L	U	U
0271	05-Aug-91	Nitrobenzene	10	10	UG/L	U	UJ
0076	23-Mar-92	Nitrobenzene	10	10	UG/L	U	U
0271	16-Dec-91	Nitrobenzene	10	10	UG/L	U	U
0076	16-Dec-91	Nitrobenzene	10	10	UG/L	U	U
0271	06-May-91	Nitrobenzene	10	10	UG/L	U	U
0076	11-Oct-93	Nitrobenzene	10	10	UG/L	U	U
0271	16-Sep-92	Nitrobenzene	10	10	UG/L	U	U
0076	16-Sep-92	Nitrobenzene	10	10	UG/L	U	U
0076	06-Nov-90	Nitrobenzene	10	10	UG/L	U	U
0271	01-Feb-91	Nitrobenzene	10	10	UG/L	U	U
0076	06-May-91	Nitrobenzene	10	10	UG/L	U	U
0076	01-Feb-91	Nitrobenzene	10	10	UG/L	U	U
0271	22-Jun-92	Nitrobenzene	10	10	UG/L	U	U
0271	06-Nov-90	Nitrobenzene	10	10	UG/L	U	U
0076	07-Apr-94	Nitrobenzene	11	11	UG/L	U	U
0271	07-Apr-94	Nitrobenzene	11	11	UG/L	U	U
0271	07-Apr-94	Nitrobenzene	11	11	UG/L	U	U
0271	07-Apr-94	Nitrogen	0.1	0.1	MG/L	U	U
0271	07-Apr-94	Nitrogen	0.1	0.1	MG/L	U	U
0271	11-Oct-93	Nitrogen	0.18	0.1	MG/L		
0076	07-Apr-94	Nitrogen	0.52	0.1	MG/L		
0076	11-Oct-93	Nitrogen	0.62	0.1	MG/L		
0271	07-Apr-94	Organic Carbon	0.79	0.5	MG/L		
0271	07-Apr-94	Organic Carbon	0.85	0.5	MG/L		
0076	07-Apr-94	Organic Carbon	0.94	0.5	MG/L		
0271	11-Oct-93	Organic Carbon	1.1	0.5	MG/L		
0076	11-Oct-93	Organic Carbon	1.1	0.5	MG/L		
0076	07-Apr-94	PETN	1	1	UG/L	U	U
0271	07-Apr-94	PETN	1	1	UG/L	U	U
0076	11-Oct-93	PETN	1	1	UG/L	U	R
0271	11-Oct-93	PETN	1	1	UG/L	U	UJ
0271	13-Dec-85	Pentachlorophenol	3.6	3.6	UG/L	U	U
0076	12-Dec-85	Pentachlorophenol	3.7	3.7	UG/L	U	U
0076	01-Feb-84	Pentachlorophenol	25	25	UG/L	U	U
0076	11-Oct-93	Pentachlorophenol	26	26	UG/L	U	U
0271	11-Oct-93	Pentachlorophenol	26	26	UG/L	U	U
0076	07-Apr-94	Pentachlorophenol	26	26	UG/L	U	U
0076	22-Jun-92	Pentachlorophenol	26	26	UG/L	U	U
0076	16-Sep-92	Pentachlorophenol	26	26	UG/L	U	U
0076	23-Mar-92	Pentachlorophenol	26	26	UG/L	U	U
0271	07-Apr-94	Pentachlorophenol	26	26	UG/L	U	U
0271	22-Jun-92	Pentachlorophenol	26	26	UG/L	U	U
0271	07-Apr-94	Pentachlorophenol	26	26	UG/L	U	U
0271	16-Sep-92	Pentachlorophenol	26	26	UG/L	U	U
0271	06-May-91	Pentachlorophenol	50	50	UG/L	U	U
0076	16-Dec-91	Pentachlorophenol	50	50	UG/L	U	U
0076	06-May-91	Pentachlorophenol	50	50	UG/L	U	U
0076	01-Feb-91	Pentachlorophenol	50	50	UG/L	U	U
0271	16-Dec-91	Pentachlorophenol	50	50	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-Nov-90	Pentachlorophenol	50	50	UG/L	U	U
0271	05-Aug-91	Pentachlorophenol	50	50	UG/L	U	U
0076	06-Nov-90	Pentachlorophenol	50	50	UG/L	U	U
0271	01-Feb-91	Pentachlorophenol	50	50	UG/L	U	U
0271	05-Aug-91	Phenanthrene	10	10	UG/L	U	UJ
0271	06-May-91	Phenanthrene	10	10	UG/L	U	U
0271	22-Jun-92	Phenanthrene	10	10	UG/L	U	U
0271	16-Dec-91	Phenanthrene	10	10	UG/L	U	U
0271	01-Feb-91	Phenanthrene	10	10	UG/L	U	U
0076	16-Dec-91	Phenanthrene	10	10	UG/L	U	U
0271	16-Sep-92	Phenanthrene	10	10	UG/L	U	U
0076	06-Nov-90	Phenanthrene	10	10	UG/L	U	U
0076	22-Jun-92	Phenanthrene	10	10	UG/L	U	U
0076	16-Sep-92	Phenanthrene	10	10	UG/L	U	U
0076	23-Mar-92	Phenanthrene	10	10	UG/L	U	U
0271	11-Oct-93	Phenanthrene	10	10	UG/L	U	UJ
0271	06-Nov-90	Phenanthrene	10	10	UG/L	U	U
0076	01-Feb-91	Phenanthrene	10	10	UG/L	U	U
0076	11-Oct-93	Phenanthrene	10	10	UG/L	U	UJ
0076	06-May-91	Phenanthrene	10	10	UG/L	U	U
0271	07-Apr-94	Phenanthrene	11	11	UG/L	U	U
0076	07-Apr-94	Phenanthrene	11	11	UG/L	U	U
0271	07-Apr-94	Phenanthrene	11	11	UG/L	U	U
0271	13-Dec-85	Phenol	1.5	1.5	UG/L	U	U
0076	12-Dec-85	Phenol	1.5	1.5	UG/L	U	U
0271	11-Oct-93	Phenol	10	10	UG/L	U	U
0076	23-Mar-92	Phenol	10	10	UG/L	U	U
0271	05-Aug-91	Phenol	10	10	UG/L	U	U
0076	06-May-91	Phenol	10	10	UG/L	U	U
0076	06-Nov-90	Phenol	10	10	UG/L	U	U
0076	16-Dec-91	Phenol	10	10	UG/L	U	U
0076	22-Jun-92	Phenol	10	10	UG/L	U	U
0271	06-Nov-90	Phenol	10	10	UG/L	U	U
0076	16-Sep-92	Phenol	10	10	UG/L	U	U
0271	01-Feb-91	Phenol	10	10	UG/L	U	U
0271	16-Dec-91	Phenol	10	10	UG/L	U	U
0271	16-Sep-92	Phenol	10	10	UG/L	U	U
0076	11-Oct-93	Phenol	10	10	UG/L	U	U
0271	06-May-91	Phenol	10	10	UG/L	U	U
0271	22-Jun-92	Phenol	10	10	UG/L	U	U
0076	01-Feb-91	Phenol	10	10	UG/L	U	U
0271	07-Apr-94	Phenol	11	11	UG/L	U	U
0271	07-Apr-94	Phenol	11	11	UG/L	U	U
0076	07-Apr-94	Phenol	11	11	UG/L	U	U
0076	01-Feb-84	Phenol	25	25	UG/L	U	U
0076	07-Apr-94	Phosphate	0.05	0.05	MG/L	U	U
0271	07-Apr-94	Phosphate	0.05	0.05	MG/L	U	UJ
0076	11-Oct-93	Phosphate	0.1	0.05	MG/L		
0271	11-Oct-93	Phosphate	0.11	0.05	MG/L		
0271	07-Apr-94	Phosphate	0.22	0.05	MG/L		J
0076	22-Jun-92	Plutonium-238	0	0.5	PCI/L		
0076	23-Mar-92	Plutonium-238	0	0.5	PCI/L		
0271	22-Jun-92	Plutonium-238	0	0.5	PCI/L		
0076	07-Apr-94	Plutonium-238	0.0013	0.0013	PCI/L	U	U
0271	07-Apr-94	Plutonium-238	0.0082	0.0082	PCI/L	U	U
0271	07-Apr-94	Plutonium-238	0.0084	0.0084	PCI/L	U	U
0271	11-Oct-93	Plutonium-238	0.049	0.049	PCI/L	U	U
0076	16-Sep-92	Plutonium-238	0.0992	0.0992	PCI/L	U	U
0271	16-Sep-92	Plutonium-238	0.1	0.1	PCI/L	U	U
0076	11-Oct-93	Plutonium-238	0.12	0.12	PCI/L	U	U
0271	05-Aug-91	Plutonium-238	1	0	PCI/L	U	U
0271	01-Feb-91	Plutonium-238	1	0	PCI/L	U	U
0271	16-Dec-91	Plutonium-238	1	1	PCI/L	U	U
0271	06-Nov-90	Plutonium-238	1	0	PCI/L	U	U
0076	16-Dec-91	Plutonium-238	1	1	PCI/L	U	U
0076	01-Feb-91	Plutonium-238	1	0	PCI/L	U	U
0076	06-Nov-90	Plutonium-238	1	0	PCI/L	U	U
0076	22-Jun-92	Plutonium-239/240	0	0.5	PCI/L		
0076	07-Apr-94	Plutonium-239/240	0.0018	0.0013	PCI/L		

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	07-Apr-94	Plutonium-239/240	0.0065	0.0024	PCI/L		J
0271	07-Apr-94	Plutonium-239/240	0.0104	0.0059	PCI/L		J
0076	16-Sep-92	Plutonium-239/240	0.0389	0.0389	PCI/L	U	U
0076	11-Oct-93	Plutonium-239/240	0.047	0.047	PCI/L	U	U
0271	11-Oct-93	Plutonium-239/240	0.049	0.049	PCI/L	U	U
0271	16-Sep-92	Plutonium-239/240	0.1	0.1	PCI/L	U	U
0076	16-Dec-91	Plutonium-239/240	1	1	PCI/L	U	U
0076	06-May-91	Plutonium-239/240	1	1	PCI/L	U	U
0076	01-Feb-91	Plutonium-239/240	1	0	PCI/L	U	U
0271	16-Dec-91	Plutonium-239/240	1	1	PCI/L	U	U
0271	06-Nov-90	Plutonium-239/240	1	0	PCI/L	U	U
0076	06-Nov-90	Plutonium-239/240	1	0	PCI/L	U	U
0271	05-Aug-91	Plutonium-239/240	1	0	PCI/L	U	U
0271	06-May-91	Plutonium-239/240	1	1	PCI/L	U	U
0271	01-Feb-91	Plutonium-239/240	1	0	PCI/L	U	U
0076	23-Mar-92	Plutonium-239/240	1.7	0.5	PCI/L		
0271	22-Jun-92	Plutonium-239/240	2	0.5	PCI/L		
0271	05-Aug-91	Potassium	3.71	0.1	UG/L		
0271	05-Aug-91	Potassium	3.8	0.1	UG/L		
0271	11-Oct-93	Potassium	2390	693	UG/L	B	
0271	11-Oct-93	Potassium	2390	693	UG/L	B	
0271	01-Feb-91	Potassium	2470	1000	UG/L	B	UJ
0076	11-Oct-93	Potassium	2530	693	UG/L	B	
0076	11-Oct-93	Potassium	2530	693	UG/L	B	
0076	23-Mar-92	Potassium	2570	5000	UG/L	B	
0271	16-Sep-92	Potassium	2780	419	UG/L		UJ
0076	06-May-91	Potassium	2800	100	UG/L	B	
0076	06-May-91	Potassium	2870	0.05	UG/L		
0271	07-Apr-94	Potassium	2930	887	UG/L	B	
0271	07-Apr-94	Potassium	2990	887	UG/L	B	
0271	07-Apr-94	Potassium	2990	887	UG/L	B	
0076	22-Jun-92	Potassium	2990	970	UG/L	B	
0076	07-Apr-94	Potassium	3000	887	UG/L	B	
0076	07-Apr-94	Potassium	3050	887	UG/L	B	
0271	07-Apr-94	Potassium	3050	887	UG/L	B	
0271	06-May-91	Potassium	3100	0.05	UG/L		
0271	22-Jun-92	Potassium	3160	970	UG/L	B	
0271	06-May-91	Potassium	3190	100	UG/L	B	
0271	06-Nov-90	Potassium	3230	100	UG/L	B	
0076	16-Sep-92	Potassium	3280	419	UG/L		UJ
0076	06-Nov-90	Potassium	3320	100	UG/L	B	
0076	01-Feb-91	Potassium	3320	0	UG/L		
0076	01-Feb-91	Potassium	3400	1000	UG/L	B	UJ
0271	01-Feb-91	Potassium	3560	0	UG/L		
0271	05-Aug-91	Potassium	3650	100	UG/L		
0271	05-Aug-91	Potassium	3761	100	UG/L		
0271	16-Dec-91	Potassium	5000	5000	UG/L	U	U
0076	16-Dec-91	Potassium	5000	5000	UG/L	U	U
0271	07-Apr-94	Potassium-40	96.1	96.1	PCI/L	U	U
0271	07-Apr-94	Potassium-40	103	103	PCI/L	U	U
0076	07-Apr-94	Potassium-40	104	104	PCI/L	U	U
0076	11-Oct-93	Potassium-40	130	130	PCI/L	U	U
0271	01-Feb-91	Potassium-40	140	0	PCI/L	U	U
0076	01-Feb-91	Potassium-40	170	0	PCI/L	U	U
0271	11-Oct-93	Potassium-40	200	200	PCI/L	U	U
0076	16-Sep-92	Potassium-40	223	223	PCI/L	U	U
0271	16-Sep-92	Potassium-40	351	351	PCI/L	U	U
0271	06-May-91	Potassium-40	800	1	PCI/L	U	U
0076	06-May-91	Potassium-40	800	1	PCI/L	U	U
0271	06-May-91	Protactinium-233	50	1	PCI/L	U	U
0076	06-May-91	Protactinium-233	51.1	1	PCI/L	U	U
0076	06-May-91	Protactinium-234 metastable	3810	1	PCI/L	U	U
0271	06-May-91	Protactinium-234 metastable	6590	1	PCI/L	U	U
0271	22-Jun-92	Pyrene	10	10	UG/L	U	U
0076	01-Feb-91	Pyrene	10	10	UG/L	U	U
0076	06-May-91	Pyrene	10	10	UG/L	U	U
0271	06-May-91	Pyrene	10	10	UG/L	U	U
0076	22-Jun-92	Pyrene	10	10	UG/L	U	U
0271	16-Dec-91	Pyrene	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	16-Sep-92	Pyrene	10	10	UG/L	U	U
0076	06-Nov-90	Pyrene	10	10	UG/L	U	U
0271	01-Feb-91	Pyrene	10	10	UG/L	U	U
0076	11-Oct-93	Pyrene	10	10	UG/L	U	U
0271	16-Sep-92	Pyrene	10	10	UG/L	U	U
0076	16-Dec-91	Pyrene	10	10	UG/L	U	U
0271	11-Oct-93	Pyrene	10	10	UG/L	U	U
0076	23-Mar-92	Pyrene	10	10	UG/L	U	U
0271	05-Aug-91	Pyrene	10	10	UG/L	U	UJ
0271	06-Nov-90	Pyrene	10	10	UG/L	U	U
0271	07-Apr-94	Pyrene	11	11	UG/L	U	U
0271	07-Apr-94	Pyrene	11	11	UG/L	U	U
0076	07-Apr-94	Pyrene	11	11	UG/L	U	U
0271	11-Oct-93	RDX	0.63	0.63	UG/L	U	UJ
0076	07-Apr-94	RDX	0.63	0.63	UG/L	U	U
0076	11-Oct-93	RDX	0.63	0.63	UG/L	U	UJ
0271	07-Apr-94	RDX	0.63	0.63	UG/L	U	U
0076	06-May-91	Radium-223	92.9	1	PCI/L	U	U
0271	06-May-91	Radium-223	102	1	PCI/L	U	U
0076	06-May-91	Radium-225	13.3	1	PCI/L	U	U
0271	06-May-91	Radium-225	14.9	1	PCI/L	U	U
0076	23-Mar-92	Radium-226	0	0.2	PCI/L		
0271	07-Apr-94	Radium-226	0.22	0.22	PCI/L	U	U
0271	22-Jun-92	Radium-226	0.3	0.2	PCI/L		
0271	16-Sep-92	Radium-226	0.303	1	PCI/L		
0271	07-Apr-94	Radium-226	0.4	0.2	PCI/L		
0076	22-Jun-92	Radium-226	0.4	0.2	PCI/L		
0076	16-Sep-92	Radium-226	0.45	0.45	PCI/L	U	U
0076	07-Apr-94	Radium-226	0.52	0.23	PCI/L		
0076	11-Oct-93	Radium-226	0.69	0.69	PCI/L	U	U
0271	11-Oct-93	Radium-226	0.84	0.84	PCI/L	U	U
0076	16-Dec-91	Radium-226	1	1	PCI/L	U	U
0076	06-Nov-90	Radium-226	1	0	PCI/L	U	U
0076	06-May-91	Radium-226	1	1	PCI/L	U	U
0271	01-Feb-91	Radium-226	1	0	PCI/L	U	U
0271	16-Dec-91	Radium-226	1	1	PCI/L	U	U
0271	05-Aug-91	Radium-226	1	0	PCI/L	U	U
0076	01-Feb-91	Radium-226	1	0	PCI/L	U	U
0271	06-May-91	Radium-226	1	1	PCI/L	U	U
0271	06-Nov-90	Radium-226	1	0	PCI/L	U	U
0271	01-Feb-91	Ruthenium-103	11	0	PCI/L	U	U
0076	01-Feb-91	Ruthenium-103	17	0	PCI/L	U	U
0271	01-Feb-91	Ruthenium-106	140	0	PCI/L	U	U
0076	01-Feb-91	Ruthenium-106	170	0	PCI/L	U	U
0076	01-Feb-91	Scandium-46	1.3	0	PCI/L	U	U
0271	01-Feb-91	Scandium-46	17	0	PCI/L	U	U
0076	07-Apr-94	Selenium	0.9	0.9	UG/L	U	UJ
0076	07-Apr-94	Selenium	0.9	0.9	UG/L	U	UJ
0271	07-Apr-94	Selenium	0.9	0.9	UG/L	U	U
0271	07-Apr-94	Selenium	0.9	0.9	UG/L	U	UJ
0271	07-Apr-94	Selenium	0.9	0.9	UG/L	U	UJ
0076	11-Oct-93	Selenium	1	1	UG/L	U	UJ
0271	11-Oct-93	Selenium	1	1	UG/L	U	UJ
0271	11-Oct-93	Selenium	1	1	UG/L	U	UJ
0076	11-Oct-93	Selenium	1	1	UG/L	U	UJ
0271	22-Jun-92	Selenium	2	2	UG/L	U	U
0271	01-Feb-91	Selenium	2	2	UG/L	U	UJ
0076	23-Mar-92	Selenium	2	5	UG/L	U	UJ
0076	16-Dec-91	Selenium	2	5	UG/L	U	UJ
0076	01-Feb-91	Selenium	2	2	UG/L	U	UJ
0076	06-May-91	Selenium	2	2	UG/L	U	UJ
0271	16-Sep-92	Selenium	2	2	UG/L	U	UJ
0076	06-Nov-90	Selenium	2	2	UG/L	U	U
0271	05-Aug-91	Selenium	2	2	UG/L		UJ
0271	05-Aug-91	Selenium	2	2	UG/L	U	U
0076	22-Jun-92	Selenium	2	2	UG/L	U	U
0271	06-Nov-90	Selenium	2	2	UG/L	U	U
0076	16-Sep-92	Selenium	2	2	UG/L	U	UJ
0271	16-Dec-91	Selenium	2	5	UG/L	U	UJ

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-May-91	Selenium	2	2	UG/L	U	U
0076	01-Feb-84	Selenium	5	5	UG/L	U	U
0076	12-Dec-85	Selenium	5	5	UG/L	U	U
0271	13-Dec-85	Selenium	5	5	UG/L	U	U
0271	07-Apr-94	Selenium	9	9	UG/L	U	UJ
0271	11-Oct-93	Silver	0.75	0.75	UG/L	U	U
0271	11-Oct-93	Silver	0.75	0.75	UG/L	U	UJ
0076	11-Oct-93	Silver	0.75	0.75	UG/L	U	UJ
0076	11-Oct-93	Silver	0.75	0.75	UG/L	U	UJ
0271	07-Apr-94	Silver	1	1	UG/L	U	U
0076	07-Apr-94	Silver	1	1	UG/L	U	U
0076	07-Apr-94	Silver	1	1	UG/L	U	U
0271	07-Apr-94	Silver	1	1	UG/L	U	U
0271	07-Apr-94	Silver	1	1	UG/L	U	U
0271	07-Apr-94	Silver	1	1	UG/L	U	U
0076	16-Sep-92	Silver	3	3	UG/L	U	UJ
0271	16-Sep-92	Silver	3	3	UG/L	U	UJ
0271	01-Feb-91	Silver	5	5	UG/L	U	U
0271	22-Jun-92	Silver	6	6	UG/L	U	U
0076	22-Jun-92	Silver	6	6	UG/L	U	U
0076	01-Feb-91	Silver	7.4	5	UG/L	B	UJ
0076	23-Mar-92	Silver	8	10	UG/L	U	U
0271	16-Dec-91	Silver	10	10	UG/L	U	U
0076	16-Dec-91	Silver	10	10	UG/L	U	U
0271	06-Nov-90	Silver	16.9	10	UG/L		
0076	06-Nov-90	Silver	17.4	10	UG/L		
0271	05-Aug-91	Silver	20.9	10	UG/L		
0076	06-May-91	Silver	23.1	10	UG/L		
0271	05-Aug-91	Silver	23.198	10	UG/L		
0271	06-May-91	Silver	24.2	10	UG/L		
0271	01-Feb-91	Silver-110	49	0	PCI/L	U	U
0076	01-Feb-91	Silver-110	57	0	PCI/L	U	U
0271	05-Aug-91	Sodium	64	0.1	UG/L		
0271	05-Aug-91	Sodium	64.8	0.1	UG/L		
0271	05-Aug-91	Sodium	64.8	0.1	UG/L		
0076	16-Dec-91	Sodium	46600	5000	UG/L		
0076	22-Jun-92	Sodium	46800	51	UG/L		
0076	06-May-91	Sodium	46900	100	UG/L		
0076	16-Sep-92	Sodium	47700	18	UG/L		
0076	06-May-91	Sodium	49200	0.1	UG/L		
0076	11-Oct-93	Sodium	49300	4.5	UG/L		J
0076	11-Oct-93	Sodium	50400	4.5	UG/L		J
0076	01-Feb-91	Sodium	52000	0	UG/L		
0076	07-Apr-94	Sodium	53000	39.3	UG/L		
0076	23-Mar-92	Sodium	53100	5000	UG/L		J
0076	01-Feb-91	Sodium	53800	200	UG/L		
0076	07-Apr-94	Sodium	54900	39.3	UG/L		
0271	16-Sep-92	Sodium	61800	18	UG/L		
0271	05-Aug-91	Sodium	64400	100	UG/L		
0271	22-Jun-92	Sodium	64800	51	UG/L		
0271	06-Nov-90	Sodium	66500	100	UG/L		
0271	05-Aug-91	Sodium	66658.336	100	UG/L		
0076	06-Nov-90	Sodium	67000	100	UG/L		
0271	11-Oct-93	Sodium	68500	4.5	UG/L		J
0271	11-Oct-93	Sodium	69700	4.5	UG/L		J
0271	06-May-91	Sodium	71400	100	UG/L		
0271	16-Dec-91	Sodium	72800	5000	UG/L		
0271	06-May-91	Sodium	73200	0.1	UG/L		
0271	01-Feb-91	Sodium	78000	0	UG/L		
0271	07-Apr-94	Sodium	78600	39.3	UG/L		
0271	07-Apr-94	Sodium	81200	39.3	UG/L		
0271	01-Feb-91	Sodium	82400	200	UG/L		
0271	07-Apr-94	Sodium	84200	39.3	UG/L		
0271	07-Apr-94	Sodium	84200	39.3	UG/L		
0271	01-Feb-91	Sodium-22	9.1	0	PCI/L	U	U
0076	01-Feb-91	Sodium-22	20	0	PCI/L	U	U
0076	01-Feb-91	Strontium-85	22	0	PCI/L	U	U
0271	01-Feb-91	Strontium-85	25	0	PCI/L		
0076	06-May-91	Strontium-89	5	1	PCI/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-May-91	Strontium-89	5	1	PCI/L	U	U
0271	22-Jun-92	Strontium-90	0	1	PCI/L		
0076	23-Mar-92	Strontium-90	0.3	1	PCI/L		
0076	22-Jun-92	Strontium-90	0.3	1	PCI/L		
0271	16-Sep-92	Strontium-90	0.56	0.56	PCI/L	U	U
0271	11-Oct-93	Strontium-90	0.59	0.59	PCI/L	U	U
0076	16-Sep-92	Strontium-90	0.59	0.59	PCI/L	U	U
0076	11-Oct-93	Strontium-90	0.59	0.59	PCI/L	U	U
0271	05-Aug-91	Strontium-90	1	0	PCI/L	U	U
0076	07-Apr-94	Strontium-90	1.16	1.16	PCI/L	U	U
0271	07-Apr-94	Strontium-90	1.456	1.456	PCI/L	U	U
0271	07-Apr-94	Strontium-90	1.463	1.463	PCI/L	U	U
0271	01-Feb-91	Strontium-90	2	0	PCI/L	U	U
0076	01-Feb-91	Strontium-90	2	0	PCI/L	U	U
0271	06-Nov-90	Strontium-90	5	0	PCI/L	U	U
0076	16-Dec-91	Strontium-90	5	5	PCI/L	U	U
0271	06-May-91	Strontium-90	5	5	PCI/L	U	U
0076	06-May-91	Strontium-90	5	5	PCI/L	U	U
0271	16-Dec-91	Strontium-90	5	5	PCI/L	U	U
0076	06-Nov-90	Strontium-90	5	0	PCI/L	U	U
0271	08-Mar-88	Styrene	5	5	UG/L	U	U
0271	24-Jun-88	Styrene	5	5	UG/L	U	U
0076	13-Sep-88	Styrene	5	5	UG/L	U	U
0076	24-Jun-88	Styrene	5	5	UG/L	U	U
0076	25-Apr-90	Styrene	5	5	UG/L	U	U
0271	13-Sep-88	Styrene	5	5	UG/L	U	U
0271	25-Apr-90	Styrene	5	5	UG/L	U	U
0076	16-Dec-91	Sulfate	2	2	MG/L	U	U
0076	07-Apr-94	Sulfate	25	25	MG/L	U	U
0076	06-May-91	Sulfate	41.3	0.05	MG/L		
0076	22-Jun-92	Sulfate	44.2	10	MG/L		
0271	07-Apr-94	Sulfate	44.9	25	MG/L		
0271	07-Apr-94	Sulfate	54	25	MG/L		
0076	16-Sep-92	Sulfate	55.4	50	MG/L		
0076	23-Mar-92	Sulfate	56.5	25	MG/L		
0271	22-Jun-92	Sulfate	59	25	MG/L		
0271	05-Aug-91	Sulfate	62.2	2	MG/L		
0076	01-Feb-91	Sulfate	62.3	0	MG/L		
0271	16-Dec-91	Sulfate	70.1	2	MG/L		
0271	16-Sep-92	Sulfate	72.1	50	MG/L		
0271	06-May-91	Sulfate	74.5	0.05	MG/L		
0271	01-Feb-91	Sulfate	80	0	MG/L		
0076	11-Oct-93	Sulfate	81	25	MG/L		
0271	11-Oct-93	Sulfate	83	25	MG/L		
0076	11-Oct-93	Suspended Solids	4	4	MG/L	U	U
0076	07-Apr-94	Suspended Solids	5	5	MG/L	U	U
0271	07-Apr-94	Suspended Solids	5	5	MG/L	U	U
0271	07-Apr-94	Suspended Solids	5	5	MG/L	U	U
0271	11-Oct-93	Suspended Solids	8	4	MG/L		
0076	23-Mar-92	Tetrachloroethene	0.29	0.3	UG/L	J	J
0076	15-Jun-90	Tetrachloroethene	0.3	0.3	UG/L	U	U
0076	24-Jan-90	Tetrachloroethene	0.3	0.3	UG/L		
0076	22-Jun-92	Tetrachloroethene	0.3	0.3	UG/L	U	R
0076	01-Feb-91	Tetrachloroethene	0.3	0.3	UG/L		
0076	11-Oct-93	Tetrachloroethene	0.38	0.3	UG/L		J
0271	15-Jun-90	Tetrachloroethene	0.4	0.3	UG/L		
0076	16-Sep-92	Tetrachloroethene	0.4	0.3	UG/L		UJ
0076	31-Jul-90	Tetrachloroethene	0.4	0.3	UG/L		
0076	06-May-91	Tetrachloroethene	0.4	0.3	UG/L		J
0271	16-Sep-92	Tetrachloroethene	0.44	0.3	UG/L		UJ
0271	31-Jul-90	Tetrachloroethene	0.5	0.3	UG/L		
0076	07-Apr-94	Tetrachloroethene	0.51	0.3	UG/L		
0271	07-Apr-94	Tetrachloroethene	0.53	0.3	UG/L		
0271	07-Apr-94	Tetrachloroethene	0.6	0.3	UG/L		
0076	27-Feb-90	Tetrachloroethene	0.6	0.3	UG/L		
0271	22-Jun-92	Tetrachloroethene	0.6	0.3	UG/L		J
0271	27-Feb-90	Tetrachloroethene	0.7	0.3	UG/L		
0271	01-Feb-91	Tetrachloroethene	0.7	0.3	UG/L		
0271	11-Oct-93	Tetrachloroethene	0.75	0.3	UG/L		J

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	06-May-91	Tetrachloroethene	0.8	0.3	UG/L		J
0076	16-Jun-93	Tetrachloroethene	0.85	0.3	UG/L		J
0271	27-Feb-90	Tetrachloroethene	0.9	0.3	UG/L		
0076	16-Dec-91	Tetrachloroethene	1	1	UG/L	U	U
0271	16-Dec-91	Tetrachloroethene	1	1	UG/L	U	U
0271	27-Feb-90	Tetrachloroethene	1	0.3	UG/L		
0271	13-Sep-88	Tetrachloroethene	1	1	UG/L	U	U
0076	13-Sep-88	Tetrachloroethene	1	1	UG/L	U	U
0076	23-Mar-90	Tetrachloroethene	1.1	0.3	UG/L		
0271	24-Jan-90	Tetrachloroethene	1.1	0.3	UG/L		
0076	06-Nov-90	Tetrachloroethene	1.2	0.3	UG/L		J
0271	05-Aug-91	Tetrachloroethene	1.2	0.3	UG/L		J
0271	06-Nov-90	Tetrachloroethene	1.2	0.3	UG/L		J
0271	23-Mar-90	Tetrachloroethene	1.8	0.3	UG/L		
0271	24-Jun-88	Tetrachloroethene	2	5	UG/L	J	J
0271	13-Dec-85	Tetrachloroethene	4.1	4.1	UG/L	U	U
0271	13-Mar-86	Tetrachloroethene	4.1	4.1	UG/L	U	U
0076	12-Dec-85	Tetrachloroethene	4.1	4.1	UG/L	U	U
0076	13-Sep-88	Tetrachloroethene	5	5	UG/L	U	U
0271	08-Mar-88	Tetrachloroethene	5	5	UG/L	U	U
0076	24-Jun-88	Tetrachloroethene	5	5	UG/L	U	U
0271	13-Sep-88	Tetrachloroethene	5	5	UG/L	U	U
0076	25-Apr-90	Tetrachloroethene	5	5	UG/L	U	U
0271	25-Apr-90	Tetrachloroethene	5	5	UG/L	U	U
0076	01-Feb-84	Tetrachloroethene	10	10	UG/L	U	U
0271	11-Oct-93	Tetryl	3	3	UG/L	U	UJ
0076	07-Apr-94	Tetryl	3	3	UG/L	U	U
0076	11-Oct-93	Tetryl	3	3	UG/L	U	UJ
0271	07-Apr-94	Tetryl	3	3	UG/L	U	U
0271	07-Apr-94	Thallium	1.6	1.6	UG/L	U	U
0076	07-Apr-94	Thallium	1.6	1.6	UG/L	U	U
0271	07-Apr-94	Thallium	1.6	1.6	UG/L	U	U
0271	07-Apr-94	Thallium	1.6	1.6	UG/L	U	U
0271	07-Apr-94	Thallium	1.6	1.6	UG/L	U	U
0076	07-Apr-94	Thallium	1.6	1.6	UG/L	U	U
0076	22-Jun-92	Thallium	2	2	UG/L	U	U
0271	01-Feb-91	Thallium	2	2	UG/L	U	UJ
0271	16-Sep-92	Thallium	2	2	UG/L	U	UJ
0271	06-Nov-90	Thallium	2	2	UG/L	U	U
0271	16-Dec-91	Thallium	2	10	UG/L	U	UJ
0076	23-Mar-92	Thallium	2	10	UG/L	U	U
0076	01-Feb-91	Thallium	2	2	UG/L	U	UJ
0076	11-Oct-93	Thallium	2	2	UG/L	U	UJ
0076	16-Sep-92	Thallium	2	2	UG/L	U	UJ
0271	22-Jun-92	Thallium	2	2	UG/L	U	U
0271	05-Aug-91	Thallium	2	2	UG/L	U	U
0271	11-Oct-93	Thallium	2	2	UG/L	U	UJ
0076	11-Oct-93	Thallium	2	2	UG/L	U	UJ
0271	11-Oct-93	Thallium	2	2	UG/L	U	UJ
0271	05-Aug-91	Thallium	2	2	UG/L	U	U
0076	16-Dec-91	Thallium	2	10	UG/L	U	UJ
0076	06-Nov-90	Thallium	2.4	2	UG/L	B	
0076	06-May-91	Thallium	10	2	UG/L	U	U
0271	06-May-91	Thallium	10	2	UG/L	U	U
0076	06-May-91	Thallium-208	54.8	1	PCI/L	U	U
0271	06-May-91	Thallium-208	100	1	PCI/L	U	U
0271	06-May-91	Thorium-227	278	1	PCI/L	U	U
0076	06-May-91	Thorium-227	282	1	PCI/L	U	U
0271	22-Jun-92	Thorium-228	0	0.2	PCI/L		
0076	22-Jun-92	Thorium-228	0	0.2	PCI/L		
0076	23-Mar-92	Thorium-228	0	0.2	PCI/L		
0076	07-Apr-94	Thorium-228	0.05	0.05	PCI/L	U	U
0271	07-Apr-94	Thorium-228	0.061	0.061	PCI/L	U	U
0271	07-Apr-94	Thorium-228	0.072	0.072	PCI/L	U	U
0076	16-Sep-92	Thorium-228	0.15	0.15	PCI/L	U	U
0271	16-Sep-92	Thorium-228	0.2	0.2	PCI/L	U	U
0271	11-Oct-93	Thorium-228	0.635	0.29	PCI/L		
0076	11-Oct-93	Thorium-228	0.73	0.73	PCI/L	U	U
0271	01-Feb-91	Thorium-228	1	0	PCI/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	16-Dec-91	Thorium-228	1	1	PCI/L	U	U
0076	06-Nov-90	Thorium-228	1	0	PCI/L	U	U
0271	06-Nov-90	Thorium-228	1	0	PCI/L	U	U
0076	16-Dec-91	Thorium-228	1.3	1	PCI/L		
0076	01-Feb-91	Thorium-228	1.5	0	PCI/L		
0271	05-Aug-91	Thorium-228	2.17	0	PCI/L		
0076	06-May-91	Thorium-228	1940	1	PCI/L	U	U
0271	06-May-91	Thorium-228	2100	1	PCI/L	U	U
0271	22-Jun-92	Thorium-230	0	0.2	PCI/L		
0076	23-Mar-92	Thorium-230	0	0.2	PCI/L		
0076	22-Jun-92	Thorium-230	0	0.2	PCI/L		
0076	07-Apr-94	Thorium-230	0.033	0.033	PCI/L	U	U
0271	07-Apr-94	Thorium-230	0.033	0.033	PCI/L	U	U
0271	07-Apr-94	Thorium-230	0.051	0.051	PCI/L	U	U
0076	11-Oct-93	Thorium-230	0.14	0.14	PCI/L	U	UJ
0271	16-Sep-92	Thorium-230	0.142	1	PCI/L		
0271	11-Oct-93	Thorium-230	0.221	0.054	PCI/L		R
0076	16-Sep-92	Thorium-230	0.57	1	PCI/L		
0271	05-Aug-91	Thorium-230	1	0	PCI/L	U	U
0076	16-Dec-91	Thorium-230	1	1	PCI/L	U	U
0271	06-Nov-90	Thorium-230	1	0	PCI/L	U	U
0076	01-Feb-91	Thorium-230	1	0	PCI/L	U	U
0076	06-Nov-90	Thorium-230	1	0	PCI/L	U	U
0271	01-Feb-91	Thorium-230	1.5	0	PCI/L		
0271	16-Dec-91	Thorium-230	1.99	1	PCI/L		
0076	22-Jun-92	Thorium-232	0	0.2	PCI/L		
0076	23-Mar-92	Thorium-232	0	0.2	PCI/L		
0271	22-Jun-92	Thorium-232	0	0.2	PCI/L		
0076	07-Apr-94	Thorium-232	0.033	0.033	PCI/L	U	U
0271	07-Apr-94	Thorium-232	0.033	0.033	PCI/L	U	U
0271	07-Apr-94	Thorium-232	0.061	0.061	PCI/L	U	U
0076	16-Sep-92	Thorium-232	0.093	0.093	PCI/L	U	U
0271	11-Oct-93	Thorium-232	0.1	0.054	PCI/L		
0271	16-Sep-92	Thorium-232	0.14	0.14	PCI/L	U	U
0076	11-Oct-93	Thorium-232	0.28	0.28	PCI/L	U	U
0271	01-Feb-91	Thorium-232	1	0	PCI/L	U	U
0271	16-Dec-91	Thorium-232	1	1	PCI/L	U	U
0271	06-Nov-90	Thorium-232	1	0	PCI/L	U	U
0076	06-Nov-90	Thorium-232	1	0	PCI/L	U	U
0271	05-Aug-91	Thorium-232	1	0	PCI/L	U	U
0076	16-Dec-91	Thorium-232	1	1	PCI/L	U	U
0076	01-Feb-91	Thorium-232	1	0	PCI/L	U	U
0076	06-May-91	Thorium-234	341	1	PCI/L	U	U
0271	06-May-91	Thorium-234	341	1	PCI/L	U	U
0076	11-Oct-93	Tin	4.5	4.5	UG/L	U	U
0271	11-Oct-93	Tin	4.5	4.5	UG/L	U	U
0076	11-Oct-93	Tin	4.5	4.5	UG/L	U	U
0271	11-Oct-93	Tin	4.5	4.5	UG/L	U	U
0076	07-Apr-94	Tin	4.8	4.8	UG/L	U	U
0271	07-Apr-94	Tin	4.8	4.8	UG/L	U	UJ
0271	07-Apr-94	Tin	4.8	4.8	UG/L	U	U
0076	07-Apr-94	Tin	4.8	4.8	UG/L	U	U
0271	07-Apr-94	Tin	4.8	4.8	UG/L	U	U
0271	07-Apr-94	Tin	8.7	4.8	UG/L	B	J
0271	01-Feb-91	Tin-113	15	0	PCI/L	U	U
0076	01-Feb-91	Tin-113	23	0	PCI/L	U	U
0271	01-Feb-91	Tin-126	12	0	PCI/L	U	U
0076	01-Feb-91	Tin-126	46	0	PCI/L	U	U
0076	13-Sep-88	Toluene	1	1	UG/L	U	U
0271	13-Sep-88	Toluene	1	1	UG/L	U	U
0271	16-Dec-91	Toluene	1	1	UG/L	U	U
0076	16-Dec-91	Toluene	1	1	UG/L	U	U
0076	27-Feb-90	Toluene	2	2	UG/L	U	U
0271	06-Nov-90	Toluene	2	2	UG/L	U	U
0076	23-Mar-92	Toluene	2	2	UG/L	U	UJ
0271	24-Jan-90	Toluene	2	2	UG/L	U	U
0076	01-Feb-91	Toluene	2	2	UG/L	U	U
0076	24-Jan-90	Toluene	2	2	UG/L	U	U
0076	07-Apr-94	Toluene	2	2	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	31-Jul-90	Toluene	2	2	UG/L	U	U
0271	15-Jun-90	Toluene	2	2	UG/L	U	U
0076	16-Sep-92	Toluene	2	2	UG/L	U	UJ
0076	06-Nov-90	Toluene	2	2	UG/L	U	U
0271	27-Feb-90	Toluene	2	2	UG/L	U	U
0271	16-Sep-92	Toluene	2	2	UG/L	U	UJ
0271	27-Feb-90	Toluene	2	2	UG/L	U	U
0271	05-Aug-91	Toluene	2	2	UG/L	U	UJ
0271	27-Feb-90	Toluene	2	2	UG/L	U	U
0271	06-May-91	Toluene	2	2	UG/L	U	UJ
0271	23-Mar-90	Toluene	2	2	UG/L	U	U
0076	06-May-91	Toluene	2	2	UG/L	U	UJ
0271	31-Jul-90	Toluene	2	2	UG/L	U	U
0076	22-Jun-92	Toluene	2	2	UG/L	U	UJ
0271	07-Apr-94	Toluene	2	2	UG/L	U	U
0271	22-Jun-92	Toluene	2	2	UG/L	U	UJ
0271	07-Apr-94	Toluene	2	2	UG/L	U	U
0076	23-Mar-90	Toluene	2	2	UG/L	U	U
0076	15-Jun-90	Toluene	2	2	UG/L	U	U
0271	01-Feb-91	Toluene	2	2	UG/L	U	U
0076	11-Oct-93	Toluene	2	2	UG/L	U	UJ
0271	11-Oct-93	Toluene	2	2	UG/L	U	U
0076	16-Jun-93	Toluene	2	2	UG/L	U	U
0271	08-Mar-88	Toluene	3	5	UG/L	J	J
0076	13-Sep-88	Toluene	5	5	UG/L	U	U
0076	25-Apr-90	Toluene	5	5	UG/L	U	U
0271	25-Apr-90	Toluene	5	5	UG/L	U	U
0271	13-Sep-88	Toluene	5	5	UG/L	U	U
0076	24-Jun-88	Toluene	5	5	UG/L	U	U
0271	24-Jun-88	Toluene	5	5	UG/L	U	U
0076	12-Dec-85	Toluene	6	6	UG/L	U	U
0271	13-Dec-85	Toluene	6	6	UG/L	U	U
0271	13-Mar-86	Toluene	6	6	UG/L	U	U
0076	01-Feb-84	Toluene	10	10	UG/L	U	U
0271	06-May-91	Toxaphene	1	1	UG/L	U	U
0271	16-Dec-91	Toxaphene	1	1	UG/L	U	U
0271	01-Feb-91	Toxaphene	1	1	UG/L	U	U
0076	01-Feb-91	Toxaphene	1	1	UG/L	U	U
0076	06-Nov-90	Toxaphene	1	1	UG/L	U	U
0076	06-May-91	Toxaphene	1	1	UG/L	U	U
0271	06-Nov-90	Toxaphene	1	1	UG/L	U	U
0076	16-Dec-91	Toxaphene	1	1	UG/L	U	U
0271	05-Aug-91	Toxaphene	2.4	2.4	UG/L	U	U
0271	16-Sep-92	Toxaphene	5	5	UG/L	U	U
0076	16-Sep-92	Toxaphene	5	5	UG/L	U	U
0076	11-Oct-93	Toxaphene	5	5	UG/L	U	UJ
0076	06-May-91	Toxaphene	5	5	UG/L	U	U
0271	11-Oct-93	Toxaphene	5	5	UG/L	U	U
0271	07-Apr-94	Toxaphene	5	5	UG/L	U	U
0271	22-Jun-92	Toxaphene	5.1	5.1	UG/L	U	U
0076	22-Jun-92	Toxaphene	5.2	5.2	UG/L	U	U
0271	07-Apr-94	Toxaphene	5.2	5.2	UG/L	U	U
0076	23-Mar-92	Toxaphene	5.3	5.3	UG/L	U	U
0076	07-Apr-94	Toxaphene	5.5	5.5	UG/L	U	U
0271	06-May-91	Toxaphene	15	15	UG/L	U	U
0076	13-Sep-88	Trichloroethene	0.93	1	UG/L	J	J
0076	16-Dec-91	Trichloroethene	1	1	UG/L	U	U
0271	13-Sep-88	Trichloroethene	1	1	UG/L	U	U
0076	25-Apr-90	Trichloroethene	1	5	UG/L	J	J
0076	31-Jul-90	Trichloroethene	1.2	1.2	UG/L	U	U
0271	07-Apr-94	Trichloroethene	1.2	1.2	UG/L		J
0076	15-Jun-90	Trichloroethene	1.2	1.2	UG/L	U	U
0076	24-Jan-90	Trichloroethene	1.2	1.2	UG/L	U	U
0076	01-Feb-91	Trichloroethene	1.2	1.2	UG/L		
0271	07-Apr-94	Trichloroethene	1.3	1.2	UG/L		J
0076	23-Mar-92	Trichloroethene	1.4	1.2	UG/L		J
0271	31-Jul-90	Trichloroethene	1.4	1.2	UG/L		
0271	15-Jun-90	Trichloroethene	1.5	1.2	UG/L		
0076	22-Jun-92	Trichloroethene	1.6	1.2	UG/L		J

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	07-Apr-94	Trichloroethene	1.6	1.2	UG/L		J
0076	06-May-91	Trichloroethene	1.7	1.2	UG/L		J
0076	16-Sep-92	Trichloroethene	1.7	1.2	UG/L		UJ
0271	16-Sep-92	Trichloroethene	1.7	1.2	UG/L		UJ
0076	11-Oct-93	Trichloroethene	1.7	1.2	UG/L		J
0271	22-Jun-92	Trichloroethene	1.8	1.2	UG/L		J
0271	13-Mar-86	Trichloroethene	1.9	1.9	UG/L	U	U
0076	12-Dec-85	Trichloroethene	1.9	1.9	UG/L	U	U
0271	13-Dec-85	Trichloroethene	1.9	1.9	UG/L	U	U
0271	25-Apr-90	Trichloroethene	2	5	UG/L	J	J
0076	27-Feb-90	Trichloroethene	2	1.2	UG/L		
0076	24-Jun-88	Trichloroethene	2	5	UG/L	J	J
0076	13-Sep-88	Trichloroethene	2	5	UG/L	J	J
0271	01-Feb-91	Trichloroethene	2.1	1.2	UG/L		
0271	11-Oct-93	Trichloroethene	2.2	1.2	UG/L		J
0271	16-Dec-91	Trichloroethene	2.4	1	UG/L		
0271	27-Feb-90	Trichloroethene	2.5	1.2	UG/L		
0076	16-Jun-93	Trichloroethene	2.6	1.2	UG/L		J
0271	24-Jun-88	Trichloroethene	3	5	UG/L	J	J
0271	27-Feb-90	Trichloroethene	3	1.2	UG/L		
0271	27-Feb-90	Trichloroethene	3.1	1.2	UG/L		
0076	23-Mar-90	Trichloroethene	3.1	1.2	UG/L		
0271	24-Jan-90	Trichloroethene	3.5	1.2	UG/L		
0076	06-Nov-90	Trichloroethene	3.8	1.2	UG/L		J
0271	06-May-91	Trichloroethene	3.8	1.2	UG/L		J
0271	06-Nov-90	Trichloroethene	3.9	1.2	UG/L		J
0271	23-Mar-90	Trichloroethene	4	1.2	UG/L		
0271	05-Aug-91	Trichloroethene	4.6	1.2	UG/L		J
0271	08-Mar-88	Trichloroethene	5	5	UG/L	U	U
0271	13-Sep-88	Trichloroethene	5	5	UG/L	U	U
0076	01-Feb-84	Trichloroethene	10	10	UG/L	U	U
0076	23-Mar-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	27-Feb-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	06-May-91	Trichlorofluoromethane	2	2	UG/L	U	U
0271	01-Feb-91	Trichlorofluoromethane	2	2	UG/L	U	U
0076	06-May-91	Trichlorofluoromethane	2	2	UG/L	U	U
0271	23-Mar-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	16-Dec-91	Trichlorofluoromethane	2	2	UG/L	U	U
0076	22-Jun-92	Trichlorofluoromethane	2	2	UG/L	U	R
0271	07-Apr-94	Trichlorofluoromethane	2	2	UG/L	U	UJ
0076	15-Jun-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	06-Nov-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	23-Mar-92	Trichlorofluoromethane	2	2	UG/L	U	UJ
0271	27-Feb-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	06-Nov-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	15-Jun-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	16-Dec-91	Trichlorofluoromethane	2	2	UG/L	U	U
0271	31-Jul-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	01-Feb-91	Trichlorofluoromethane	2	2	UG/L	U	U
0076	31-Jul-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	16-Sep-92	Trichlorofluoromethane	2	2	UG/L	U	U
0076	11-Oct-93	Trichlorofluoromethane	2	2	UG/L	U	UJ
0271	07-Apr-94	Trichlorofluoromethane	2	2	UG/L	U	UJ
0271	22-Jun-92	Trichlorofluoromethane	2	2	UG/L	U	R
0271	27-Feb-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	16-Sep-92	Trichlorofluoromethane	2	2	UG/L	U	U
0271	11-Oct-93	Trichlorofluoromethane	2	2	UG/L	U	UJ
0076	24-Jan-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	16-Jun-93	Trichlorofluoromethane	2	2	UG/L	U	UJ
0271	05-Aug-91	Trichlorofluoromethane	2	2	UG/L	U	U
0076	27-Feb-90	Trichlorofluoromethane	2	2	UG/L	U	U
0076	07-Apr-94	Trichlorofluoromethane	2	2	UG/L	U	UJ
0271	24-Jan-90	Trichlorofluoromethane	2	2	UG/L	U	U
0271	13-Sep-88	Trichlorofluoromethane	2.2	1	UG/L		
0076	13-Sep-88	Trichlorofluoromethane	2.5	1	UG/L		
0076	12-Dec-85	Trichlorofluoromethane	5	5	UG/L	U	U
0271	13-Dec-85	Trichlorofluoromethane	5	5	UG/L	U	U
0271	13-Mar-86	Trichlorofluoromethane	5	5	UG/L	U	U
0076	01-Feb-84	Trichlorofluoromethane	10	10	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	01-Feb-91	Tritium	1.7	0	PCI/ML		
0076	13-Sep-88	Tritium	1.76	500	NCI/L		
0076	13-Sep-88	Tritium	1.78	500	NCI/L		
0271	13-Sep-88	Tritium	3.34	500	NCI/L		
0271	13-Sep-88	Tritium	3.35	500	NCI/L		
0271	01-Feb-91	Tritium	7.2	0	PCI/ML		
0076	16-Dec-91	Tritium	527	5	PCI/L		
0076	11-Oct-93	Tritium	649	270	PCI/L		
0076	22-Jun-92	Tritium	1100	460	PCI/L		
0076	06-May-91	Tritium	1184	500	PCI/L		
0076	23-Mar-92	Tritium	1200	460	PCI/L		
0076	07-Apr-94	Tritium	1350	473	PCI/L		
0076	16-Sep-92	Tritium	1420	500	PCI/L		
0271	11-Oct-93	Tritium	1490	270	PCI/L		
0271	22-Jun-92	Tritium	1800	460	PCI/L		
0271	16-Sep-92	Tritium	1970	500	PCI/L		
0271	07-Apr-94	Tritium	2070	481	PCI/L		
0271	07-Apr-94	Tritium	2170	471	PCI/L		
0271	05-Aug-91	Tritium	2340	0	PCI/L		
0271	16-Dec-91	Tritium	2530	5	PCI/L		
0076	06-Nov-90	Tritium	2970	0	PCI/L		
0271	06-Nov-90	Tritium	3110	0	PCI/L		
0271	06-May-91	Tritium	3772	500	PCI/L		
0076	07-Apr-94	Uranium-234	0.2	0.086	PCI/L		
0271	07-Apr-94	Uranium-234	0.25	0.036	PCI/L		
0271	07-Apr-94	Uranium-234	0.26	0.077	PCI/L		
0271	11-Oct-93	Uranium-234	0.279	0.095	PCI/L		
0271	16-Sep-92	Uranium-234	0.33	0.33	PCI/L	U	U
0076	16-Sep-92	Uranium-234	0.394	1	PCI/L		
0076	11-Oct-93	Uranium-234	0.463	0.14	PCI/L		
0076	23-Mar-92	Uranium-234	0.5	0.4	PCI/L		
0271	22-Jun-92	Uranium-234	0.5	0.4	PCI/L		
0076	22-Jun-92	Uranium-234	0.7	0.4	PCI/L		
0271	06-Nov-90	Uranium-234	1	0	PCI/L	U	U
0076	06-Nov-90	Uranium-234	1	0	PCI/L	U	U
0271	06-May-91	Uranium-234	1	1	PCI/L	U	U
0076	06-May-91	Uranium-234	1	1	PCI/L	U	U
0271	05-Aug-91	Uranium-234	1.38	0	PCI/L		
0076	16-Dec-91	Uranium-234	1.4	1	PCI/L		
0271	01-Feb-91	Uranium-234	4.8	0	PCI/L		
0076	01-Feb-91	Uranium-234	7.7	0	PCI/L		
0271	16-Dec-91	Uranium-234	8.14	1	PCI/L		
0271	07-Apr-94	Uranium-235	0.036	0.036	PCI/L	U	U
0271	07-Apr-94	Uranium-235	0.077	0.077	PCI/L	U	U
0076	07-Apr-94	Uranium-235	0.086	0.086	PCI/L	U	U
0271	11-Oct-93	Uranium-235/236	0.096	0.096	PCI/L	U	U
0076	11-Oct-93	Uranium-235/236	0.14	0.14	PCI/L	U	U
0271	16-Sep-92	Uranium-235/236	0.19	0.19	PCI/L	U	U
0076	16-Sep-92	Uranium-235/236	0.22	0.22	PCI/L	U	U
0271	16-Dec-91	Uranium-235/236	1	1	PCI/L	U	U
0076	16-Dec-91	Uranium-235/236	1	1	PCI/L	U	U
0271	05-Aug-91	Uranium-235/236	1	0	PCI/L	U	U
0271	07-Apr-94	Uranium-238	0.131	0.036	PCI/L		
0271	07-Apr-94	Uranium-238	0.15	0.077	PCI/L		
0076	11-Oct-93	Uranium-238	0.152	0.11	PCI/L		
0076	07-Apr-94	Uranium-238	0.2	0.086	PCI/L		
0271	22-Jun-92	Uranium-238	0.2	0.4	PCI/L		
0076	16-Sep-92	Uranium-238	0.22	0.22	PCI/L	U	U
0271	11-Oct-93	Uranium-238	0.233	0.11	PCI/L		
0076	23-Mar-92	Uranium-238	0.3	0.4	PCI/L		
0271	16-Sep-92	Uranium-238	0.348	1	PCI/L		
0076	22-Jun-92	Uranium-238	0.8	0.4	PCI/L		
0271	06-May-91	Uranium-238	1	1	PCI/L	U	U
0076	16-Dec-91	Uranium-238	1	1	PCI/L	U	U
0076	06-Nov-90	Uranium-238	1	0	PCI/L	U	U
0271	05-Aug-91	Uranium-238	1	0	PCI/L	U	U
0076	06-May-91	Uranium-238	1	1	PCI/L	U	U
0271	06-Nov-90	Uranium-238	1	0	PCI/L	U	U
0076	01-Feb-91	Uranium-238	1.6	0	PCI/L		

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	01-Feb-91	Uranium-238	2	0	PCI/L		
0271	16-Dec-91	Uranium-238	8.25	1	PCI/L		
0076	11-Oct-93	Vanadium	0.75	0.75	UG/L	U	UJ
0271	11-Oct-93	Vanadium	0.75	0.75	UG/L	U	UJ
0271	11-Oct-93	Vanadium	0.75	0.75	UG/L	U	U
0076	11-Oct-93	Vanadium	0.75	0.75	UG/L	U	UJ
0076	23-Mar-92	Vanadium	7.8	50	UG/L	B	J
0271	01-Feb-91	Vanadium	10	10	UG/L	U	U
0271	06-Nov-90	Vanadium	10	10	UG/L	U	U
0076	01-Feb-91	Vanadium	10	10	UG/L	U	U
0076	06-Nov-90	Vanadium	10.2	10	UG/L	B	
0271	16-Sep-92	Vanadium	10.3	2	UG/L		UJ
0271	07-Apr-94	Vanadium	10.6	0.9	UG/L		
0076	07-Apr-94	Vanadium	10.8	0.9	UG/L		
0271	07-Apr-94	Vanadium	10.9	0.9	UG/L		
0271	07-Apr-94	Vanadium	10.9	0.9	UG/L		
0076	16-Sep-92	Vanadium	11	2	UG/L		UJ
0076	07-Apr-94	Vanadium	11.2	0.9	UG/L		
0271	07-Apr-94	Vanadium	11.2	0.9	UG/L		
0271	05-Aug-91	Vanadium	11.7	10	UG/L		
0271	05-Aug-91	Vanadium	13.214	10	UG/L		
0076	06-May-91	Vanadium	14.2	10	UG/L	B	
0271	06-May-91	Vanadium	14.6	10	UG/L	B	
0076	22-Jun-92	Vanadium	21.7	6	UG/L		UJ
0271	22-Jun-92	Vanadium	24.4	2	UG/L		UJ
0076	16-Dec-91	Vanadium	32	50	UG/L	U	UJ
0271	16-Dec-91	Vanadium	33.8	50	UG/L	U	UJ
0271	11-Oct-93	Vinyl Acetate	3	3	UG/L	U	U
0271	07-Apr-94	Vinyl Acetate	3	3	UG/L	U	UJ
0076	07-Apr-94	Vinyl Acetate	3	3	UG/L	U	UJ
0076	11-Oct-93	Vinyl Acetate	3	3	UG/L	U	UJ
0271	07-Apr-94	Vinyl Acetate	3	3	UG/L	U	UJ
0271	24-Jun-88	Vinyl Acetate	10	10	UG/L	U	U
0076	13-Sep-88	Vinyl Acetate	10	10	UG/L	U	U
0271	13-Sep-88	Vinyl Acetate	10	10	UG/L	U	U
0271	08-Mar-88	Vinyl Acetate	10	10	UG/L	U	U
0076	24-Jun-88	Vinyl Acetate	10	10	UG/L	U	U
0271	25-Apr-90	Vinyl Acetate	10	10	UG/L	U	U
0076	25-Apr-90	Vinyl Acetate	10	10	UG/L	U	U
0076	13-Sep-88	Vinyl Chloride	0.2	0.2	UG/L	U	U
0271	13-Sep-88	Vinyl Chloride	0.2	0.2	UG/L	U	U
0271	11-Oct-93	Vinyl Chloride	1	1	UG/L	U	UJ
0076	07-Apr-94	Vinyl Chloride	1	1	UG/L	U	UJ
0076	11-Oct-93	Vinyl Chloride	1	1	UG/L	U	UJ
0271	07-Apr-94	Vinyl Chloride	1	1	UG/L	U	UJ
0271	07-Apr-94	Vinyl Chloride	1	1	UG/L	U	U
0076	16-Jun-93	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	01-Feb-91	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0076	24-Jan-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	15-Jun-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	06-May-91	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	06-May-91	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	01-Feb-91	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0076	16-Sep-92	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0076	23-Mar-92	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0271	23-Mar-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	27-Feb-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	15-Jun-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	27-Feb-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	05-Aug-91	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	24-Jan-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	27-Feb-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	22-Jun-92	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0271	06-Nov-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	06-Nov-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	16-Sep-92	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0271	31-Jul-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	27-Feb-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0076	23-Mar-90	Vinyl Chloride	1.8	1.8	UG/L	U	U

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0076	31-Jul-90	Vinyl Chloride	1.8	1.8	UG/L	U	U
0271	22-Jun-92	Vinyl Chloride	1.8	1.8	UG/L	U	UJ
0271	16-Dec-91	Vinyl Chloride	2	2	UG/L	U	U
0076	16-Dec-91	Vinyl Chloride	2	2	UG/L	U	U
0271	25-Apr-90	Vinyl Chloride	10	10	UG/L	U	U
0076	25-Apr-90	Vinyl Chloride	10	10	UG/L	U	U
0271	13-Dec-85	Vinyl Chloride	10	10	UG/L	U	U
0076	13-Sep-88	Vinyl Chloride	10	10	UG/L	U	U
0271	13-Mar-86	Vinyl Chloride	10	10	UG/L	U	U
0271	08-Mar-88	Vinyl Chloride	10	10	UG/L	U	U
0271	13-Sep-88	Vinyl Chloride	10	10	UG/L	U	U
0076	24-Jun-88	Vinyl Chloride	10	10	UG/L	U	U
0076	01-Feb-84	Vinyl Chloride	10	10	UG/L	U	U
0076	12-Dec-85	Vinyl Chloride	10	10	UG/L	U	U
0271	24-Jun-88	Vinyl Chloride	10	10	UG/L	U	U
0271	15-Jun-90	Xylenes, Total	1	1	UG/L	U	U
0076	13-Sep-88	Xylenes, Total	1	1	UG/L	U	U
0076	23-Mar-90	Xylenes, Total	1	1	UG/L	U	U
0271	27-Feb-90	Xylenes, Total	1	1	UG/L	U	U
0271	23-Mar-90	Xylenes, Total	1	1	UG/L	U	U
0076	01-Feb-91	Xylenes, Total	1	1	UG/L	U	U
0271	06-Nov-90	Xylenes, Total	1	1	UG/L	U	U
0076	24-Jan-90	Xylenes, Total	1	1	UG/L	U	U
0271	05-Aug-91	Xylenes, Total	1	1	UG/L	U	U
0076	06-Nov-90	Xylenes, Total	1	1	UG/L	U	U
0271	27-Feb-90	Xylenes, Total	1	1	UG/L	U	U
0271	01-Feb-91	Xylenes, Total	1	1	UG/L	U	U
0076	31-Jul-90	Xylenes, Total	1	1	UG/L	U	U
0271	13-Sep-88	Xylenes, Total	1	1	UG/L	U	U
0271	27-Feb-90	Xylenes, Total	1	1	UG/L	U	U
0076	27-Feb-90	Xylenes, Total	1	1	UG/L	U	U
0271	06-May-91	Xylenes, Total	1	1	UG/L	U	UJ
0076	06-May-91	Xylenes, Total	1	1	UG/L	U	UJ
0271	31-Jul-90	Xylenes, Total	1	1	UG/L	U	U
0076	15-Jun-90	Xylenes, Total	1	1	UG/L	U	U
0271	24-Jan-90	Xylenes, Total	1	1	UG/L	U	U
0076	16-Jun-93	Xylenes, Total	2	2	UG/L	U	U
0271	07-Apr-94	Xylenes, Total	2	2	UG/L	U	U
0076	16-Dec-91	Xylenes, Total	2	2	UG/L	U	U
0076	22-Jun-92	Xylenes, Total	2	2	UG/L	U	UJ
0271	11-Oct-93	Xylenes, Total	2	2	UG/L	U	U
0076	07-Apr-94	Xylenes, Total	2	2	UG/L	U	U
0271	07-Apr-94	Xylenes, Total	2	2	UG/L	U	U
0271	16-Sep-92	Xylenes, Total	2	2	UG/L	U	UJ
0271	16-Dec-91	Xylenes, Total	2	2	UG/L	U	U
0076	23-Mar-92	Xylenes, Total	2	2	UG/L	U	UJ
0076	16-Sep-92	Xylenes, Total	2	2	UG/L	U	UJ
0271	22-Jun-92	Xylenes, Total	2	2	UG/L	U	U
0076	11-Oct-93	Xylenes, Total	2	2	UG/L	U	U
0076	25-Apr-90	Xylenes, Total	5	5	UG/L	U	U
0076	24-Jun-88	Xylenes, Total	5	5	UG/L	U	U
0271	08-Mar-88	Xylenes, Total	5	5	UG/L	U	U
0271	13-Sep-88	Xylenes, Total	5	5	UG/L	U	U
0271	25-Apr-90	Xylenes, Total	5	5	UG/L	U	U
0271	24-Jun-88	Xylenes, Total	5	5	UG/L	U	U
0076	13-Sep-88	Xylenes, Total	5	5	UG/L	U	U
0271	01-Feb-91	Yttrium-88	16	0	PCI/L	U	U
0076	01-Feb-91	Yttrium-88	23	0	PCI/L	U	U
0076	07-Apr-94	Zinc	4.5	0.55	UG/L	B	U
0076	23-Mar-92	Zinc	6	20	UG/L	U	UJ
0076	22-Jun-92	Zinc	6	6	UG/L	U	U
0076	11-Oct-93	Zinc	6.1	1.8	UG/L	B	U
0271	11-Oct-93	Zinc	6.2	1.8	UG/L	B	U
0271	11-Oct-93	Zinc	6.4	1.8	UG/L	B	U
0271	05-Aug-91	Zinc	6.667	5	UG/L		
0076	16-Dec-91	Zinc	8.3	20	UG/L	U	UJ
0076	07-Apr-94	Zinc	8.9	0.55	UG/L	B	U
0076	06-May-91	Zinc	9.2	5	UG/L	B	UJ
0271	05-Aug-91	Zinc	9.7	5	UG/L		

Mound Production Well Data

Production Well	Date Collect	Parameter	Results	Detect. Limit	Units	Lab Qual.	Data Qual.
0271	07-Apr-94	Zinc	11.4	0.55	UG/L	B	U
0271	06-May-91	Zinc	11.9	5	UG/L	B	UJ
0271	07-Apr-94	Zinc	12	0.55	UG/L	B	U
0076	11-Oct-93	Zinc	13.2	1.8	UG/L	B	U
0271	07-Apr-94	Zinc	13.3	0.55	UG/L	B	U
0271	07-Apr-94	Zinc	14.8	0.55	UG/L	B	U
0271	16-Dec-91	Zinc	20	20	UG/L	U	U
0271	06-Nov-90	Zinc	20.3	5	UG/L		
0271	22-Jun-92	Zinc	28.9	2	UG/L		
0271	16-Sep-92	Zinc	31.1	7	UG/L		UJ
0076	16-Sep-92	Zinc	33	7	UG/L		UJ
0076	12-Dec-85	Zinc	40	40	UG/L	U	U
0271	13-Dec-85	Zinc	40	40	UG/L	U	U
0076	01-Feb-84	Zinc	47	7	UG/L		
0076	06-Nov-90	Zinc	52.2	5	UG/L		
0076	01-Feb-91	Zinc	55.5	5	UG/L		J
0271	01-Feb-91	Zinc	57.7	5	UG/L		J
0271	01-Feb-91	Zinc-65	15	0	PCI/L	U	U
0076	01-Feb-91	Zinc-65	53	0	PCI/L	U	U
0271	01-Feb-91	Zirconium-95	28	0	PCI/L	U	U
0076	01-Feb-91	Zirconium-95	55	0	PCI/L	U	U

APPENDIX C

RELEASE BLOCK D CURRENT AND FUTURE GROUNDWATER SCENARIOS

This Appendix describes the steps completed to estimate the potential future concentration of contaminants in the Mound Plant Production Wells. In summary, this was completed by assuming that all contaminants currently in the Bedrock Aquifer of the Mound property would migrate to the Buried Valley Aquifer (BVA), from which the Mound Plant Production Wells withdraw potable water for Mound facility use. The current bedrock contaminant concentrations were then added to the current contaminant concentrations in the Mound Plant Production Wells to obtain the estimated future contaminant concentrations.

The technique described here was designed to represent the most conservative (worst-case) future scenario possible. The steps completed to "model" the future contaminant concentrations in the Mound Plant Production Wells include:

1. A topographic map of the bedrock surface underlying the Mound facility was used to divide the bedrock surface into 20 areas termed "flow tubes." Ground water flow within the Bedrock Aquifer was assumed to generally follow the topography of the bedrock surface. The flow tubes were delineated based on drainage patterns suggested by the bedrock topographic map. Within each flow tube, therefore, ground water flows in the same general direction, on a slope of the same general gradient. Based on topography and gradient, ground water from the majority of these flow tubes will eventually flow into the BVA. Although several of the flow tubes do not appear to contribute to the BVA directly, they were considered to contribute to the BVA to make the future scenario as conservative as possible.

2. The contaminant concentration data from bedrock wells within a flow tube was examined. The maximum concentration of each analyte for any of the wells within a flow tube was assumed to be representative of the contamination within the flow tube. This maximum concentration was multiplied by the volume of water per unit time that flows within each flow tube in order to determine the mass of each contaminant that is contributed to the BVA production wells.

3. The total flow of each flow tube was determined by measuring the width and the gradient of the flow tube from the bedrock topographic map. These were multiplied by the assumed thickness of the bedrock aquifer (40 feet), and by the assumed hydraulic conductivity (0.1 feet/day). The product of these values is the volume of ground water flow per flow tube per unit time.

4. The maximum concentration of each analyte from each flow tube was applied to the total flow of each flow tube to determine a mass of contaminant entering the BVA per year per flow tube.

5. The contaminant mass from each flow tube was summed to provide the total mass of each contaminant contributed by the bedrock aquifer to the BVA per year.

6. The total mass of each contaminant was divided by an assumed Mound Plant water use of 500,000 gallons per day (182,000,000 gallons per year) to obtain the theoretical concentration of the bedrock contribution for all bedrock contaminants. Therefore, the

conservative assumption is made that the mass of contaminants that enter the BVA contribute to the production wells without any dilution from the BVA or any degradation.

7. This theoretical concentration was added to the current concentration of contaminants observed in the Mound Plant Production wells to obtain the theoretical worst case future ground water concentration.

This technique represents the most conservative scenario possible using currently available ground water data because dilution and degradation of contaminants within the bedrock and the BVA are not calculated, all the bedrock ground water is assumed to reach the BVA, and the maximum contaminant concentration are assumed to be representative.

The following table lists all analytes detected in either a bedrock well or a Mound Plant Production well, their respective concentrations, the combined estimated future maximum concentration, and the BVA background concentrations, for reference.

Estimated Future Maximum Concentrations in the BVA

Compounds in Production and Bedrock Wells	MCL mg/L	Bedrock Contrib to BVA (mg/L or pCi/L)	Prod Well Conc (mg/L or pCi/L)	Estimated Future Max. (mg/L or pCi/L)	BVA Background (mg/L or pCi/L)
1,1,1-Trichloroethane	0.2	0.004736	0.0018	0.0065	0.0007
1,1,2trichloro1,2,2-trifluoroethene		1.58E-05	0.0087	0.0087	NA
1,1-Dichloroethane		0	0.0035	0.0035	NA
1,1-Dichloroethene		0	1.7E-06	0.0017	NA
1,2-Dichloroethene		0.000314	0.0047	0.0050	NA
1,2-cis-Dichloroethene		0.000225	0.0021	0.0023	0.0010
1,2-trans-dichloroethene		0.000169	0.003	0.0032	NA
2-Butanone		0.013317	0.041	0.0543	NA
4-Methylphenol		0.000439	0	0.0004	NA
Acetone		0.000914	0.012	0.0129	NA
Actinium-227		0	0.355	0.3550	NA
Alkalinity		38.41599	335	335.0384	NA
Aluminum		0.275848	0.0737	0.3495	37.5230
Ammonia		0.285285	0.58	0.5803	0.1620
Antimony		0.000775	0	0.0008	0.0006
Barium		0	0.088424	0.0884	0.3102
Benzene	0.005	5.37E-05	0	0.0001	NA
Benzoic Acid		0.007126	0	0.0071	NA
Beryllium		8.06E-05	0	0.0001	NA
Bis(2-ethylhexyl)phthalate		0.0153	0	0.0153	0.0084
Bismuth		0.001616	0	0.0016	NA
Bismuth-210		0	0.39	0.3900	NA
Bromodichloromethane		0	0.0037	0.0037	NA
Cadmium		0	0.0077	0.0077	NA
Calcium		30.10967	126	156.1097	NA
Carbon Tetrachloride		1.29E-05	0	0.0000	NA
Chloride	250	99.33137	133	133.0993	105.8210
Chloroform		1.99E-05	0.0022	0.0022	0.0005
Chromium	0.1	0.496041	2.49E-05	0.4961	0.0061
Cobalt		0.003931	0	0.0039	0.0000
Copper		0.003361	0.593	0.5964	0.0012
Cyanide		0.000102	0	0.0001	NA
Dissolved Solids		163.8855	719	719.1639	603.2070
Fluoride		0.016088	0.18	0.1800	0.4190
Iron		0	0.78	0.7800	4.0649
Isophorone		0	0.01	0.0100	NA
Lead		0	0.04	0.0400	0.0101

Estimated Future Maximum Concentrations in the BVA

Compounds in Production and Bedrock Wells	Bedrock Contrib to BVA (mg/L or pCi/L)	Prod Well Conc (mg/L or pCi/L)	Estimated Future Max. (mg/L or pCi/L)	BVA Background (mg/L or pCi/L)
Lithium	0.003604	0	0.0036	0.0557
Magnesium	4.374434	39.6	43.9744	40.4281
Manganese	0	0.0248	0.0248	0.2296
Molybdenum	0.009611	0	0.0096	0.0056
Nickel	0.100253	0	0.1003	0.0350
Nitrate	0.018101	2.55	2.5500	NA
Nitrate/Nitrite	0.151874	4.9	4.9002	5.3490
Nitrite	0.000944	0.066	0.0660	NA
Nitrogen	0.153262	0.00062	0.7733	0.3240
Organic Carbon	0.720726	1.1	1.1007	1.9870
Phosphate	0.146365	0.22	0.3664	0.2310
Plutonium-238	0.003373	0	0.0034	0.0870
Plutonium-239/240	0.019913	2	2.0199	0.1250
Potassium	2.203355	3.8	6.0034	4.4611
Radium-226	0.240223	0.4	0.6402	0.9960
Silver	0	0.0242	0.0242	NA
Sodium	60.83225	82.4	143.2323	61.6459
Stronium-90	0.012059	0.3	0.3121	0.9750
Strontium-85	0	25	25.0000	NA
Sulfate	28.04066	0.083	111.0407	142.6550
Suspended Solids	73064.18	8	81.0642	26.4400
Tetrachloroethene	9.66E-05	0.002	0.0021	0.0000
Thorium-228	0.130991	2.17	2.3010	0.7790
Thorium-230	0.074547	1.99	2.0645	0.2890
Thorium-232	0.042228	0.1	0.1422	0.0000
Toluene	0.000235	0	0.0002	NA
Trichloroethene	0.000424	0.0046	0.0050	NA
Trichlorofluoromethane	4.41E-05	0.0025	0.0025	NA
Tritium	3226.755	7200	10426.7551	1485.4730
Uranium-233	0.000185	0	0.0002	NA
Uranium-234	0	8.14	8.1400	0.7920
Uranium-235	0.003634	0	0.0036	0.0450
Uranium-235/236	0.000321	0	0.0003	NA
Uranium-238	0	8.25	8.2500	0.6880
Vanadium	0.003638	0.0244	0.0280	0.0171
Xylenes, Total	4.34E-05	0	0.0000	NA
Zinc	0	0.0577	0.0577	0.1196

APPENDIX D

EXPOSURE PATHWAY INTAKE EQUATIONS

CONSTRUCTION WORKER - PATHWAY 1: INHALATION OF VOLATILES FROM SOIL

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times IR_{air} \times EF)}{(BW \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{VF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
IR_{air} = inhalation rate (20 m^3/da)
EF = exposure frequency (250 da/yr)
BW = body weight (70 kg)
VF = chemical specific volatilization factor (m^3/kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times EF \times ED \times IR_{air})}{(BW \times AT \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{VF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
EF = exposure frequency (250 da/yr)
ED = exposure duration (5 yr)
IR_{air} = inhalation rate (20 m^3/da)
BW = body weight (70 kg)
AT = averaging time (70 yr)
VF = chemical specific volatilization factor (m^3/kg)

Radionuclides

Intake = (pCi)

$$C_{air} \times ED \times EF \times IR_{air}$$

where,

$$C_{air} = C_{soil} \times 1000 (\frac{g}{kg}) \times \frac{1}{VF}$$

C_{air} = airborne constituent concentration (pCi/m^3)
C_{soil} = soil constituent concentration (pCi/g)
ED = exposure duration (5 yr)
EF = exposure frequency (250 da/yr)
IR_{air} = inhalation rate (20 m^3/da)
VF = chemical specific volatilization factor (m^3/kg)

CONSTRUCTION WORKER - PATHWAY 2: INHALATION OF DUST

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times IR_{air} \times EF)}{(BW \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{PEF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
IR_{air} = inhalation rate (20 m^3/da)
EF = exposure frequency (250 da/yr)
BW = body weight (70 kg)
PEF = particulate emission factor (4.28E+9 m^3/kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times EF \times ED \times IR_{air})}{(BW \times AT \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{PEF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
EF = exposure frequency (250 da/yr)
ED = exposure duration (5 yr)
IR_{air} = inhalation rate (20 m^3/da)
BW = body weight (70 kg)
AT = averaging time (70 yr)
PEF = particulate emission factor (4.28E+9 m^3/kg)

Radionuclides

Intake = (pCi)

$$C_{air} \times ED \times EF \times IR_{air}$$

where,

$$C_{air} = C_{soil} \times 1000 \left(\frac{g}{kg}\right) \times \frac{1}{PEF}$$

C_{air} = airborne constituent concentration (pCi/m^3)
C_{soil} = soil constituent concentration (pCi/g)
ED = exposure duration (5 yr)
EF = exposure frequency (250 da/yr)
IR_{air} = inhalation rate (20 m^3/da)
PEF = particulate emission factor (4.28E+9 m^3/kg)

CONSTRUCTION WORKER - PATHWAY 3: INGESTION OF DRINKING WATER

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{water} \times IR_{gw} \times EF)}{(BW \times 365 \frac{da}{yr})}$$

where,

C_{water} = groundwater chemical concentration (mg/L)
IR_{gw} = ingestion rate of groundwater (1.0 L/da)
EF = exposure frequency (250 da/yr)
BW = body weight (70 kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{water} \times IR_{gw} \times EF \times ED)}{(BW \times AT \times 365 \frac{da}{yr})}$$

where,

C_{water} = groundwater chemical concentration (mg/L)
IR_{gw} = ingestion rate of groundwater (1.0 L/da)
EF = exposure frequency (250 da/yr)
ED = exposure duration (5 yr)
BW = body weight (70 kg)
AT = averaging time (70 yr)

Radionuclides

Intake = (pCi)

$$C_{water} \times IR_{gw} \times EF \times ED$$

where,

C_{water} = groundwater radionuclide level (pCi/L)
IR_{gw} = ingestion rate of groundwater (1.0 L/da)
EF = exposure frequency (250 da/yr)
ED = exposure duration (5 yr)

CONSTRUCTION WORKER - PATHWAY 4: INHALATION DURING SHOWERING

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{water} \times K \times IR_{air} \times EF \times ET \times \frac{1\ da}{24\ hr})}{(BW \times 365\ \frac{da}{yr})}$$

where,

C_{water} =	groundwater chemical concentration (mg/L)
K =	volatilization factor (0.0005 x 1000 L/m^3)
IR_{air} =	inhalation rate (20 m^3/da)
EF =	exposure frequency (250 da/yr)
ET =	exposure time (0.167 hr/da)
BW =	body weight (70 kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{water} \times K \times IR_{air} \times EF \times ED \times ET \times \frac{1\ da}{24\ hr})}{(BW \times AT \times 365\ \frac{da}{yr})}$$

where,

C_{water} =	groundwater chemical concentration (mg/L)
K =	volatilization factor (0.0005 x 1000 L/m^3)
IR_{air} =	inhalation rate (20 m^3/da)
EF =	exposure frequency (250 da/yr)
ED =	exposure duration (5 yr)
ET =	exposure time (0.167 hr/da)
BW =	body weight (70 kg)
AT =	averaging time (70 yr)

Radionuclides

Intake = (pCi, H^3 - only)

$$C_w \times IR_{air} \times EF \times ED \times M_{total} \times \frac{1\ L}{1000g} \times ET \times \frac{1\ da}{24\ hr}$$

where,

C_w =	tritium concentration in water (pCi/L)
IR_{air} =	inhalation rate (20 m^3/da)
EF =	exposure frequency (250 da/yr)
ED =	exposure duration (5 yr)
M_{total} =	airborne mass concentration of water in shower (66.96 g/m^3)
ET =	shower duration (0.167 hr/da)

CONSTRUCTION WORKER - PATHWAY 5: DERMAL CONTACT WITH GROUNDWATER

Noncarcinogens

Intake (Dermally Absorbed Dose) = (mg/kg/da)

$$\frac{DA_{event} \times EV \times EF \times A}{BW \times 365 \frac{da}{yr}}$$

where,

(for organics)

$$DA_{event} = 2 \times K_p \times C_w \times 10^{-3} \frac{L}{cm^3} \times \sqrt{\frac{6 \times T \times t_{event}}{\pi}}$$

(for inorganics)

$$DA_{event} = K_p \times C_w \times t_{event} \times 10^{-3} \frac{L}{cm^3}$$

K_p =	chemical-specific permeability coefficient (cm/hr)
C_w =	groundwater concentration (mg/L)
T =	chemical-specific lag time (hr)
t_{event} =	shower duration (0.167 hr)
π =	pi (3.14159)
EV =	events/da (1 event/da)
EF =	exposure frequency (250 da/yr)
A =	body surface area (19,400 cm^2)
BW =	body weight (70 kg)

Carcinogens

Intake (Dermally Absorbed Dose) = (mg/kg/da)

$$\frac{DA_{event} \times EV \times EF \times A \times ED}{BW \times AT \times 365 \frac{da}{yr}}$$

where,

(for organics)

$$DA_{event} = 2 \times K_p \times C_w \times 10^{-3} \frac{L}{cm^3} \times \sqrt{\frac{6 \times T \times t_{event}}{\pi}}$$

(for inorganics)

$$DA_{event} = K_p \times C_w \times t_{event} \times 10^{-3} \frac{L}{cm^3}$$

K_p =	chemical-specific permeability coefficient (cm/hr)
C_w =	groundwater concentration (mg/L)
T =	chemical-specific lag time (hr)
t_{event} =	shower duration (0.167 hr)
EV =	events/da (1 event/da)
EF =	exposure frequency (250 da/yr)
A =	body surface area (19,400 cm^2)
ED =	exposure duration (5 yr)
BW =	body weight (70 kg)
AT =	averaging time (70 yr)

CONSTRUCTION WORKER -
PATHWAY 5: DERMAL CONTACT WITH GROUNDWATER (cont.)

Radionuclides

Intake = (pCi)

$$C_w \times A \times Kp_{trit} \times EF \times 1000 \frac{L}{m^3} \times ED \times ET$$

where,	C_w =	groundwater concentration (pCi/L)
	A =	body surface area (1.9 m^2)
	Kp_{trit} =	chemical-specific permeability coefficient (1.5E-5m/hr)
	EF =	exposure frequency (250 da/yr)
	ED =	exposure duration (5 yr)
	ET =	shower duration (0.167 hr/da)

CONSTRUCTION WORKER - PATHWAY 6: INGESTION OF SOIL BOUND CHEMICAL

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{soil} \times EF \times 10^{-6} \frac{kg}{mg} \times IR_{soil})}{(BW \times 365 \frac{da}{yr})}$$

where,
C_{soil} = soil chemical concentration (mg/kg)
EF = exposure frequency (250 da/yr)
IR_{soil} = ingestion rate (480 mg/da)
BW = body weight (70 kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{soil} \times EF \times ED \times 10^{-6} \frac{kg}{mg} \times IR_{soil})}{(AT \times BW \times 365 \frac{da}{yr})}$$

where,
C_{soil} = soil chemical concentration (mg/kg)
EF = exposure frequency (250 da/yr)
ED = exposure duration (5 yr)
IR_{soil} = ingestion rate (480 mg/da)
AT = averaging time (70 yr)
BW = body weight (70 kg)

Radionuclides

Intake = (pCi)

$$C_{soil} \times ED \times EF \times 10^{-3} \frac{g}{mg} \times IR_{soil}$$

where,
C_{soil} = soil chemical concentration (pCi/g)
ED = exposure duration (5 yr)
EF = exposure frequency (250 da/yr)
IR_{soil} = ingestion rate (480 mg/da)

CONSTRUCTION WORKER -
PATHWAY 7: EXTERNAL EXPOSURE TO RADIATION

Radionuclides

External Exposure = $C_{soil} \times T_e \times (1 - S_e) \times ED$

where,	External Exposure =	external exposure contact rate (pCi yr/g)
	C_{soil} =	radionuclide concentration in soil (pCi/g)
	T_e =	gamma shielding factor (0.333 dim.)
	S_e =	gamma exposure time factor (0.10 dim.)
	ED =	exposure duration (5 yr)

CONSTRUCTION WORKER - PATHWAY 8: DERMAL CONTACT WITH SOIL

Noncarcinogens

Intake (Dermally Absorbed Dose) = (mg/kg/da)

$$\frac{DA_{event} \times EF \times A}{BW \times 365 \frac{da}{yr}}$$

where,

$$DA_{event} = C_{soil} \times AF \times ABS \times 10^{-6} \frac{kg}{mg}$$

C_{soil} = soil concentration (mg/kg)
AF = adherence factor (0.2 mg/cm^2 - event)
ABS = chemical-specific absorption fraction (dim.)
EF = exposure frequency (250 events/yr)
A = skin surface area in contact with soil (5000 cm^2)
BW = body weight (70 kg)

Carcinogens

Intake (Dermally Absorbed Dose) = (mg/kg/da)

$$\frac{DA_{event} \times EF \times ED \times A}{BW \times AT \times 365 \frac{da}{yr}}$$

where,

$$DA_{event} = C_{soil} \times AF \times ABS \times 10^{-6} \frac{kg}{mg}$$

C_{soil} = soil concentration (mg/kg)
AF = adherence factor (0.2 mg/cm^2 - event)
ABS = chemical-specific absorption fraction (dim.)
EF = exposure frequency (250 events/yr)
ED = exposure duration (5 yr)
A = skin surface area in contact with soil (5000 cm^2)
BW = body weight (70 kg)
AT = averaging time (70 yr)

Radionuclides

Not used here

APPENDIX E

TOXICITY PROFILES

SITE EMPLOYEE -
PATHWAY 1: INHALATION OF VOLATILES FROM SOIL

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times IR_{air} \times EF)}{(BW \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{VF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
IR_{air} = inhalation rate (20 m^3/da)
EF = exposure frequency (250 da/yr)
BW = body weight (70 kg)
VF = chemical specific volatilization factor (m^3/kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times EF \times ED \times IR_{air})}{(BW \times AT \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{VF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
EF = exposure frequency (250 da/yr)
ED = exposure duration (25 yr)
IR_{air} = inhalation rate (20 m^3/da)
BW = body weight (70 kg)
AT = averaging time (70 yr)
VF = chemical specific volatilization factor (m^3/kg)

Radionuclides

Intake = (pCi)

$$C_{air} \times ED \times EF \times IR_{air}$$

where,

$$C_{air} = C_{soil} \times 1000 (\frac{g}{kg}) \times \frac{1}{VF}$$

C_{air} = airborne constituent concentration (pCi/m^3)
C_{soil} = soil constituent concentration (pCi/g)
ED = exposure duration (25 yr)
EF = exposure frequency (250 da/yr)
IR_{air} = inhalation rate (20 m^3/da)
VF = chemical specific volatilization factor (m^3/kg)

SITE EMPLOYEE -
PATHWAY 2: INHALATION OF DUST

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times IR_{air} \times EF)}{(BW \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{PEF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
IR_{air} = inhalation rate (20 m^3/da)
EF = exposure frequency (250 da/yr)
BW = body weight (70 kg)
PEF = particulate emission factor (4.28E+9 m^3/kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{air} \times EF \times ED \times IR_{air})}{(BW \times AT \times 365 \frac{da}{yr})}$$

where,

$$C_{air} = C_{soil} \times \frac{1}{PEF}$$

C_{air} = airborne constituent concentration (mg/m^3)
C_{soil} = soil constituent concentration (mg/kg)
EF = exposure frequency (250 da/yr)
ED = exposure duration (25 yr)
IR_{air} = inhalation rate (20 m^3/da)
BW = body weight (70 kg)
AT = averaging time (70 yr)
PEF = particulate emission factor (4.28E+9 m^3/kg)

Radionuclides

Intake = (pCi)

$$C_{air} \times ED \times EF \times IR_{air}$$

where,

$$C_{air} = C_{soil} \times 1000 \left(\frac{g}{kg}\right) \times \frac{1}{PEF}$$

C_{air} = airborne constituent concentration (pCi/m^3)
C_{soil} = soil constituent concentration (pCi/g)
ED = exposure duration (25 yr)
EF = exposure frequency (250 da/yr)
IR_{air} = inhalation rate (20 m^3/da)
PEF = particulate emission factor (4.28E+9 m^3/kg)

SITE EMPLOYEE -
PATHWAY 3: INGESTION OF DRINKING WATER

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{water} \times IR_{gw} \times EF)}{(BW \times 365 \frac{da}{yr})}$$

where,

C_{water} =	groundwater chemical concentration (mg/L)
IR_{gw} =	ingestion rate of groundwater (1.0 L/da)
EF =	exposure frequency (250 da/yr)
BW =	body weight (70 kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{water} \times IR_{gw} \times EF \times ED)}{(BW \times AT \times 365 \frac{da}{yr})}$$

where,

C_{water} =	groundwater chemical concentration (mg/L)
IR_{gw} =	ingestion rate of groundwater (1.0 L/da)
EF =	exposure frequency (250 da/yr)
ED =	exposure duration (25 yr)
BW =	body weight (70 kg)
AT =	averaging time (70 yr)

Radionuclides

Intake = (pCi)

$$C_{water} \times IR_{gw} \times EF \times ED$$

where,

C_{water} =	groundwater radionuclide level (pCi/L)
IR_{gw} =	ingestion rate of groundwater (1.0 L/da)
EF =	exposure frequency (250 da/yr)
ED =	exposure duration (25 yr)

SITE EMPLOYEE -
PATHWAY 6: INGESTION OF SOIL BOUND CHEMICAL

Noncarcinogens

Intake = (mg/kg/da)

$$\frac{(C_{soil} \times EF \times 10^{-6} \frac{kg}{mg} \times IR_{soil})}{(BW \times 365 \frac{da}{yr})}$$

where,
C_{soil} = soil chemical concentration (mg/kg)
EF = exposure frequency (250 da/yr)
IR_{soil} = ingestion rate (50 mg/da)
BW = body weight (70 kg)

Carcinogens

Intake = (mg/kg/da)

$$\frac{(C_{soil} \times EF \times ED \times 10^{-6} \frac{kg}{mg} \times IR_{soil})}{(AT \times BW \times 365 \frac{da}{yr})}$$

where,
C_{soil} = soil chemical concentration (mg/kg)
EF = exposure frequency (250 da/yr)
ED = exposure duration (25 yr)
IR_{soil} = ingestion rate (50 mg/da)
AT = averaging time (70 yr)
BW = body weight (70 kg)

Radionuclides

Intake = (pCi)

$$C_{soil} \times ED \times EF \times 10^{-3} \frac{g}{mg} \times IR_{soil}$$

where,
C_{soil} = soil chemical concentration (pCi/g)
ED = exposure duration (25 yr)
EF = exposure frequency (250 da/yr)
IR_{soil} = ingestion rate (50 mg/da)

SITE EMPLOYEE -
PATHWAY 7: EXTERNAL EXPOSURE TO RADIATION

Radionuclides

External Exposure = $C_{soil} \times T_e \times (1 - S_e) \times ED$

where,	External Exposure =	external exposure contact rate (pCi yr/g)
	C_{soil} =	radionuclide concentration in soil (pCi/g)
	T_e =	gamma shielding factor (0.083 dim.)
	S_e =	gamma exposure time factor (0.2 dim.)
	ED =	exposure duration (25 yr)

SITE EMPLOYEE -
PATHWAY 8: DERMAL CONTACT WITH SOIL

Noncarcinogens

Intake (Dermally Absorbed Dose) = (mg/kg/da)

$$\frac{DA_{event} \times EF \times A}{BW \times 365 \frac{da}{yr}}$$

where,

$$DA_{event} = C_{soil} \times AF \times ABS \times 10^{-6} \frac{kg}{mg}$$

C_{soil} = soil concentration (mg/kg)
AF = adherence factor (0.2 mg/cm^2 - event)
ABS = chemical-specific absorption fraction (dim.)
EF = exposure frequency (250 events/yr)
A = skin surface area in contact with soil (5000 cm^2)
BW = body weight (70 kg)

Carcinogens

Intake (Dermally Absorbed Dose) = (mg/kg/da)

$$\frac{DA_{event} \times EF \times ED \times A}{BW \times AT \times 365 \frac{da}{yr}}$$

where,

$$DA_{event} = C_{soil} \times AF \times ABS \times 10^{-6} \frac{kg}{mg}$$

C_{soil} = soil concentration (mg/kg)
AF = adherence factor (0.2 mg/cm^2 - event)
ABS = chemical-specific absorption fraction (dim.)
EF = exposure frequency (250 events/yr)
ED = exposure duration (25 yr)
A = skin surface area in contact with soil (5000 cm^2)
BW = body weight (70 kg)
AT = averaging time (70 yr)

Radionuclides

Not used here

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents*

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
Antimony	A report in 1928 of 70 people becoming ill after drinking lemonade from a bucket coated with an enamel containing antimony. Antimony concentration was 0.013%.	Survival but not growth reduced for rats exposed to 5 ppm antimony tartrate in water. Blood glucose levels in males and cholesterol in both sexes affected; myocardial damage in rats and rabbits from inhalation of antimony.	This substance has not been evaluated by the U.S. EPA for carcinogenic potential.	
Benzo(a) anthracene	No information is available on short-term dermal or inhalation effects with benzo(a)anthracene	No information on systemic effects. PAHs as a group may cause skin disorders and suppression of the immune system.	Classified as a B2, probable human carcinogen. Evidence exists that benzo(a)anthracene is carcinogenic to laboratory animals through dermal and ingestion exposure routes. Inhalation data is not available. May cause skin and lung cancer. No reports relating cancer in humans from exposure to benzo(a)anthracene exclusively, but exposure from PAH mixtures.	Mutagenic in laboratory experiments. Benzo(a)anthracene may be metabolized into reactive derivatives.
Benzo(a) pyrene	No information is available on short-term dermal or inhalation effects with benzo(a)pyrene (BaP)		Classified as a B2, probable human carcinogen. Evidence exists that benzo(a)pyrene is carcinogenic to laboratory animals through dermal and ingestion exposure routes. The animal data consists of dietary, gavage, inhalation, intertrachial instillation, dermal and subcutaneous studies in numerous strains of at least four species of rodents and several primates. Repeated BaP administration has been associated with increased incidences of total tumors and of tumors at the site of exposure. Distant site tumors have also been observed after BaP administration by various routes. Studies have produced tumors in the esophagus, larynx, forestomach, respiratory tract, upper and lower digestive tracts.	BaP has been shown to cause genotoxic effects in a broad range of prokaryotic and mammalian cell assay systems. In prokaryotes, BaP tested positive in DNA damage assays and in both forward and reverse mutation assays. Using mammalian cells, BaP tested positive in DNA damage assays, forward mutation assays, chromosomal effects and cell transformation assays.

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents* (cont.)

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
Benzo(b) fluoranthene	No information is available on short-term dermal or inhalation effects with benzo(b)fluoranthene		Classified as a B2, probable human carcinogen. Benzo(b)fluoranthene produced tumors in mice after lung implantation, interperitoneal or subcutaneous injection, and skin painting. tumors were noted in the lung and thorax, in the liver of males, but not females, and in the lungs of both sexes. Skin painting produced papillomas and carcinomas in mice.	Positive results have been reported for a reverse mutation assay in Salmonella TA98 and contradictory with other similar assays.
Benzo(ghi) perylene	No information is available on short-term dermal or inhalation effects with benzo(ghi)perylene		Not classifiable as to human carcinogenicity (D). Lung implants in female rats produced no apparent increase in tumors. Dermal applications of benzo(ghi)perylene produced no tumors and a papilloma was observed in the high-dose group. Skin painting and subcutaneous injections produced no skin or subcutaneous tumors.	Benzo(ghi)perylene produced positive results in tests for reverse mutation in three strains of Salmonella and forward mutation in one strain. Chinese hamster ovary cells also yielded positive results.
Beryllium	No information is available on short-term effects with beryllium.	Lifetime exposures to beryllium caused no effects on the heart, liver, kidney, or spleen, nor were effects observed on the lifespan or blood. Reported to produce embryolethality and terata in chick embryos.	Classified as a B2, probable human carcinogen. Beryllium has been shown to induce lung cancer via inhalation in rats and monkeys and to induce osteosarcomas in rabbits via intravenous or intramedullary injection.	Beryllium salts have been shown to be nonmutagenic in bacterial and yeast gene mutation assays. Chinese hamster ovary assays were positive. Chromosomal aberrations observed in other cell culture assays.
Bismuth				
Cadmium		Substantial data exist on the chronic toxicity of Cd to animals and humans. The most sensitive endpoint appears to be exposure of the human renal cortex to sufficient Cd to cause significant proteinurea.	Classified as a B1, probable human carcinogen. Evidence of carcinogenicity based on consistent results from epidemiology studies. Inhalation of cadmium leading to lung cancer is the primary cause. Mammary tumors and other tumors noted as well.	Results of mutagenicity tests in bacteria and yeasts have been inconclusive.

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents* (cont.)

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
Carbazole	Carbazole is moderately toxic to rats after acute exposure.	No information was located regarding the toxicity of carbazole after chronic exposure of humans or other animals.	There is limited evidence of the carcinogenicity of carbazole in animals. Classified as a Group B2 carcinogen. Neoplastic lesions were observed in the liver (neoplastic nodules, hepatocellular carcinomas), and forestomach (papillomas, squamous cell carcinomas) of mice fed carbazole. No information was located regarding the carcinogenicity of carbazole in humans.	Carbazole was not mutagenic in *Salmonella typhimurium* assays. No information was located regarding the developmental or reproductive toxicity of carbazole in humans or other animals.
Chromium	Major acute effect from oral exposure is renal tubular necrosis. Inhalation of chromate salts results in irritation and inflammation of nasal mucosa, ulceration, and perforation of nasal septum.	Chronic exposure to hexavalent chromium has resulted in kidney damage in animals and humans. Inhalation exposures to chromates in industrial settings have resulted in nasal membrane inflammation, chronic rhinitis, laryngitis, and pharyngitis. Exposures to skin can result in allergic skin reactions in sensitive individuals. Overall, hexavalent forms are more toxic than trivalent forms.	Classified as an A, human carcinogen. Excess lung cancer has been associated with chromate-producing industry workers. Chromatic salts are carcinogenic in rats exposed by inhalation.	Essential element. Toxicity is related to valence state.

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents* (cont.)

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
Cobalt	High doses can produce decreased appetite, weight loss, and debilitation. Death can occur in animals injected intravenously with cobalt salts.	Oral exposures of humans and animals can result in polycythemia (abnormal increase in red blood cells). Vomiting, diarrhea, and flushing have been reported in humans, changes in blood pressure and tinnitus (ear ringing), and deafness in animals after I.V. injection. Severe cardiac effects including effects on contractility, conductivity, and perhaps structural changes in the heart, and congestive heart failure offered among people drinking beer containing cobalt as a foam stabilizer at levels of approximately 1.5 mg/L, apparently because of synergistic effects of alcohol and cobalt. Among some children treated with cobalt therapeutically for anemia, toxicity included goiter, decreased thyroid function, increased cardiac and respiration rate, and skin and blood pressure changes. Cobalt may pose a health hazard to humans at levels above 1 mg/kg, especially people with ailments. Workers exposed occupationally may exhibit respiratory effects from irritation. Cobalt salts may produce allergic contact dermatitis. Cobalt inhibits enzyme reactions catalyzed by cytochrome P450 and may affect metabolism of other chemicals.	Classified as a B2, probable human carcinogen. Sarcomas at injection site have been observed in animals administered cobalt powder or salts subcutaneously or intramuscularly.	Essential nutrient as part of vitamin B12 in humans; found in diet; in livestock cobalt deficiencies cause anemia, weight loss, slow growth.
Copper	Used for control of algae and other organisms. A high single dose of copper produced GI irritation in humans. No data available for mammals or other humans.		Classified as D, not classified for carcinogenicity. Several long-term assays have shown no tumors in several strains of mice and rats.	High concentrations of copper compounds have been reported to induce mitosis in rat ascites cells and recessive lethals in Drosophila.

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents* (cont.)

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
1,1-Dichloroethene	Liver appears to be principal target. Biochemical changes and necrosis in liver in fasted rats have been reported to develop rapidly after inhalation. Liver damage in fasted rats can occur after one oral dose. At high concentrations, inhalation of 1,1-dichloroethene can cause central nervous system depression (CNS) in humans & unconsciousness.	Kidney injury can occur at relatively low doses. Reports of health effects on workers exposed to 1,1-dichloroethene include liver function abnormalities, headaches, vision problems, weakness, fatigue, and neurological sensory disturbances.	Classified as a C, possible human carcinogen. One group of investigators reported an increasing incidence of kidney tumors in mice exposed by inhalation and possibly mammary tumors in rats. Tumor initiator activity in mouse skin following several treatments with phorbol as promoter has been described.	Structure similar to vinyl chloride, a known human carcinogen; mutagenic in bacterial tests; may be fetotoxic in laboratory animals.
Fluorene	No information is available on short-term dermal or inhalation effects with benzo(ghi)perylene	Parameters used to assess subchronic toxicity in mice included food intake, body weight, clinical observations, and histopathological observations. Decreases in red blood cell count, packed cell volume, and hemoglobin, as well as increased serum bilirubin levels observed in most doses. Higher doses produced liver, kidney, and spleen weight increases as well. Skin painting of rats showed no positive results.	Not classifiable as to human carcinogenicity (D)	Fluorene produced no positive results in reverse mutation assays in five Salmonella strains or in on forward mutation assay.
Indeno(123cd) pyrene				

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents* (cont.)

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
Lead	Acute inorganic lead intoxication in humans is characterized by encephalopathy, abdominal pain, hemolysis, liver damage, renal tubular necrosis, seizures, coma, and respiratory arrest.	Chronic low level exposure to lead can affect the hematopoietic system, the nervous system, and the cardiovascular system, the nervous system, and the cardiovascular system. Lead inhibits several key enzymes involved in heme-biosynthesis. One characteristic effect of chronic lead intoxication is anemia, by reduced hemoglobin production and shortened erythrocyte survival. In humans, lead exposure has resulted in nervous system injury including reduced hand-eye coordination, reaction time, visual motor performance, and nerve conduction velocity. The developing child appears especially sensitive to lead-induced nervous system injury. Lead can also affect the immune system and produce gingival lead lines. Epidemiological studies have indicated that chronic lead exposure may be associated with increased blood pressure in humans. Exposure to lead is associated with sterility, abortion, neonatal mortality, and morbidity. Organolead compounds are neurotoxic.	Classified as a B2, probable human carcinogen. Lead salts have some evidence of carcinogenicity in animals. Renal tumors found with dietary and subcutaneous exposures to various lead salts.	Children are especially sensitive to low level exposures.
Molybdenum	No information is available on short-term dermal or inhalation effects with molybdenum.	Dietary intake correlated with increased serum uric acid levels, several biochemical endpoints and a gout-like illness affecting a Russian village. Gout-like symptoms included pain, swelling, inflammation, and deformities of the joints. Illnesses of the GI tract, liver and kidneys were reported. Long-term consumption of molybdenum in drinking water produced some mineral imbalances and increased copper excretion and resulting copper deficiencies.		Molybdenum is an essential dietary nutrient which is a constituent of several mammalian enzymes.

Table Appendix E.1. Toxicity Profiles for Release Block D Constituents* (cont.)

Chemical	Acute Toxicity Summary	Chronic Toxicity Summary	Cancer Potential	Other
Naphthalene	Inhalation of vapor may cause eye irritation, headache, and confusion. Ingestion may cause abdominal pain, nausea, and vomiting. Skin or eye contact may lead to systemic effects, and nemoletic effects such as anemia and decreased hemoglobin. In animal studies, bronchial necrosis was observed in rats.	Occurrence of cataracts upon naphthalene vapor and dust exposure has been observed in humans. Subchronic animal studies have shown that oral doses produced cataracts and degeneration of the retina. Dermatitis has been reported with repeated skin exposure. Two studies have reported hemolytic anemia in infants born to women exposed during pregnancy.	Not classifiable as to human carcinogenicity (D). Studies have not shown that naphthalene is carcinogenic. Naphthalene is commonly found in coal tar and epidemiological studies have shown coal tar to be carcinogenic. The role of naphthalene alone could not be determined.	Acute exposures to large doses may cause hemolytic effects (destruction of red blood cells). This effect is most pronounced in individuals with a heredity deficiency of glucose-6-phosphate dehydrogenase.
Phenanthrene	An irritant through inhalation and ingestion exposure. May also be dermally absorbed.	May be an allergin.	Not classifiable as to human carcinogenicity (D). Inadequate data for the evaluation in experimental animals.	Can cause photosensitization of the skin.
111-Trichloroethane	No information is available on short-term dermal or inhalation effects with 111-trichloroethane.	Oral exposure of 1,1,1-trichloroethane for six months produced hepatotoxicity in guinea pigs.	Not classifiable as to human carcinogenicity (D). Technical grade 111-trichloroethane is weakly mutagenic but is known to have 1,4-dioxane, a known human carcinogen, as a contaminant.	Mutagenicity testing of 1,1,1-trichloroethane has produced positive results in one Salmonella strain and negative effects in other assays.
112-Trichloro-122-trifluorethane	Exposure for 2.75 hours to 112-trichloro-122-trifluoro ethane produced slight psychomotor performance impairment at 19,161 mg/m3.	Inhalation studies with dogs, rabbits, and rats exposed to very high concentrations all reported negative results. No adverse effects were reported with long-term occupational exposures.	This substance has not been evaluated by the U.S. EPA for carcinogenic potential	

* - Note that all radionuclides are classified as A carcinogens (human carcinogens).

APPENDIX F

CALCULATED INTAKES AND RESIDUAL RISK TABLES

Table Appendix F.1. Construction Worker Calculated Constituent Intakes from Soil (Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation	Pathway 8 Soil Dermal
Organics								
Benzo(a)anthracene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(a)pyrene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(b)fluoranthene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Benzo(g,h,i)perylene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Carbazole	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Fluorene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Indeno(1,2,3-cd)pyrene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Naphthalene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Phenanthrene	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
1,1,2-Trichloro-1,2,2-trichloroethane	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Inorganics								
Antimony	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Bismuth	NA	0.000E+00	NA	NA	NA	0.000E+00	NA	0.000E+00
Radionuclides								
Plutonium-238 (pCi)	NA	7.593E-04	NA	NA	NA	7.800E+01	1.948E-01	NA

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Note: Intakes for carcinogens are calculated as average daily dose-lifetime,
Intakes for non-carcinogens are calculated as average daily doses.
Carcinogen status presented in Section 4 of this report.

Table Appendix F.2. Construction Worker Calculated Constituent Intakes from Groundwater (Current - Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal
Organics								
1,1-Dichloroethene	NA	NA	0.000E+00	0.000E+00	0.000E+00	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	6.536E-06	4.548E-07	1.838E-06	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.000E+00	0.000E+00	NAv	NA	NA	NA
Inorganics								
Cadmium	NA	NA	0.000E+00	NA	0.000E+00	NA	NA	NA
Copper	NA	NA	1.142E-05	NA	3.699E-08	NA	NA	NA
Lead	NA	NA	9.834E-05	NA	1.274E-09	NA	NA	NA
Radionuclides								
Actinium-227 (pCi)	NA	NA	0.000E+00	NA	NA	NA	NA	NA
Bismuth-210 (pCi)	NA	NA	0.000E+00	NA	NA	NA	NA	NA
Plutonium-239/240 (pCi)	NA	NA	1.563E+02	NA	NA	NA	NA	NA
Tritium (pCi)	NA	NA	1.857E+06	1.730E+04	8.838E+03	NA	NA	NA
Uranium-234 (pCi)	NA	NA	9.900E+02	NA	NA	NA	NA	NA
Uranium-238 (pCi)	NA	NA	8.600E+02	NA	NA	NA	NA	NA

NAv - Data not available to perform this calculation.

NA - Not applicable.

Table Appendix F.3. Construction Worker Calculated Constituent Intakes from Groundwater (Future - Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal
Organics			
1,1-Dichloroethene	0.000E+00	0.000E+00	0.000E+00
1,1,1-Trichloroethane	6.536E-06	4.548E-07	1.838E-06
1,1,2-Trichloro-1,2,2-trifluoroethane	0.000E+00	0.000E+00	NAv
Inorganics			
Beryllium (carcinogen)	0.000E+00	NA	0.000E+00
Beryllium (non-carcinogen)	0.000E+00	NA	0.000E+00
Bismuth	0.000E+00	NA	0.000E+00
Cadmium	0.000E+00	NA	0.000E+00
Chromium	5.945E-05	NA	3.852E-07
Cobalt	0.000E+00	NA	0.000E+00
Copper	1.142E-05	NA	3.699E-08
Lead	9.834E-05	NA	1.274E-09
Molybdenum	5.477E-05	NA	1.774E-07
Radionuclides			
Actinium-227 (pCi)	0.000E+00	NA	NA
Bismuth-210 (pCi)	0.000E+00	NA	NA
Plutonium-239/240 (pCi)	1.563E+02	NA	NA
Tritium (pCi)	1.857E+06	1.730E+04	8.838E+03
Uranium-234 (pCi)	9.900E+02	NA	NA
Uranium-238 (pCi)	8.600E+02	NA	NA

NAv - Data not available to perform this calculation.
NA - Not applicable.

Table Appendix F.4. Site Employee Calculated Constituent Intakes from Soil (Background) for Release Block

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation
Organics					
Benzo(a)anthracene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(a)pyrene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(b)fluoranthene	NA	0.000E+00	NA	0.000E+00	NA
Benzo(g,h,i)perylene	NA	0.000E+00	NA	0.000E+00	NA
Carbazole	NA	0.000E+00	NA	0.000E+00	NA
Fluorene	NA	0.000E+00	NA	0.000E+00	NA
Indeno(1,2,3-cd)pyrene	NA	0.000E+00	NA	0.000E+00	NA
Naphthalene	NA	0.000E+00	NA	0.000E+00	NA
Phenanthrene	NA	0.000E+00	NA	0.000E+00	NA
1,1,2-Trichloro-1,2,2-trichloroethane	NA	0.000E+00	NA	0.000E+00	NA
Inorganics					
Antimony	NA	0.000E+00	NA	0.000E+00	NA
Bismuth	NA	0.000E+00	NA	0.000E+00	NA
Radionuclides					
Plutonium-238 (pCi)	NA	3.797E-03	NA	4.063E+01	2.166E-01

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Table Appendix F.5. Site Employee Calculated Constituent Intakes from Groundwater (Current - Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation
Organics					
1,1-Dichloroethene	NA	NA	0.000E+00	NA	NA
1,1,1-Trichloroethane	NA	NA	6.536E-06	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	0.000E+00	NA	NA
Inorganics					
Cadmium	NA	NA	0.000E+00	NA	NA
Copper	NA	NA	1.142E-05	NA	NA
Lead	NA	NA	9.834E-05	NA	NA
Radionuclides					
Actinium-227 (pCi)	NA	NA	0.000E+00	NA	NA
Bismuth-210 (pCi)	NA	NA	0.000E+00	NA	NA
Plutonium-239/240 (pCi)	NA	NA	7.813E+02	NA	NA
Tritium (pCi)	NA	NA	9.284E+06	NA	NA
Uranium-234 (pCi)	NA	NA	4.950E+03	NA	NA
Uranium-238 (pCi)	NA	NA	4.300E+03	NA	NA

NA - Not applicable.

Table Appendix F.6. Site Employee Calculated Constituent Intakes from Groundwater (Future - Background) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 3 Groundwtr. Ingestion
Organics	
1,1-Dichloroethene	0.000E+00
1,1,1-Trichloroethane	6.536E-06
1,1,2-Trichloro-1,2,2-trifluoroethane	0.000E+00
Inorganics	
Beryllium (carcinogen)	0.000E+00
Beryllium (non-carcinogen)	0.000E+00
Bismuth	0.000E+00
Cadmium	0.000E+00
Chromium	5.945E-05
Cobalt	5.945E-05
Copper	1.142E-05
Lead	9.834E-05
Molybdenum	5.477E-05
Radionuclides	
Actinium-227 (pCi)	0.000E+00
Bismuth-210 (pCi)	0.000E+00
Plutonium-239/240 (pCi)	7.813E+02
Tritium (pCi)	9.284E+06
Uranium-234 (pCi)	4.950E+03
Uranium-238 (pCi)	4.300E+03

Table Appendix F.7. Characterization of Residual Risks at Release Block D - Construction Worker (Soil Pathways - Background)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Antimony	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Bismuth	NA	***	NA	NA	NA	***	NA	***	
Fluorene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Naphthalene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Phenanthrene	NA	***	NA	NA	NA	***	NA	***	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	Total Soil HI =
Total:						0.0E+00		0.0E+00	0.0E+00
Carcinogens (Risk)									
Benzo(a)anthracene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Benzo(a)pyrene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Benzo(b)fluoranthene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	
Benzo(g,h,i)perylene	NA	***	NA	NA	NA	***	NA	***	
Carbazole	NA	***	NA	NA	NA	***	NA	***	Total Carcinogenic
Indeno(1,2,3-cd)pyrene	NA	***	NA	NA	NA	0.0E+00	NA	0.0E+00	Risks =
Total:						0.0E+00		0.0E+00	0.0E+00
Radionuclides (Risk)									Total Radionuclide
Plutonium-238 (pCi)	NA	2.1E-11	NA	NA	NA	2.3E-08	3.7E-12	NA	Risks =
Total:		2.1E-11				2.3E-08	3.7E-12		2.3E-08

*** - Toxicity values not available.
NAv - Background value not available.
NA - Not applicable.

Table Appendix F.8. Characterization of Residual Risks at Release Block D - Construction Worker (Groundwater - Current - Background)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Cadmium	NA	NA	0.0E+00	NA	0.0E+00	NA	NA	NA	
Copper	NA	NA	***	NA	***	NA	NA	NA	
1,1-Dichloroethene	NA	NA	0.0E+00	NA	0.0E+00	NA	NA	NA	
Lead	NA	NA	***	NA	***	NA	NA	NA	
1,1,1-Trichloroethane	NA	NA	7.3E-05	***	2.0E-05	NA	NA	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	***	***	***	NA	NA	NA	Total HI =
Total:			7.3E-05		2.0E-05				9.3E-05
Carcinogens (Risk)									Total Carcinogenic
1,1-Dichloroethene	NA	NA	NA	0.0E+00	NA	NA	NA	NA	Risks =
Total:				0.0E+00					0.0E+00
Radionuclides (Risk)									
Actinium-227 (pCi)	NA	NA	0.0E+00	NA	NA	NA	NA	NA	
Bismuth-210 (pCi)	NA	NA	***	NA	NA	NA	NA	NA	
Plutonium-239/240 (pCi)	NA	NA	5.0E-08	NA	NA	NA	NA	NA	
Tritium (pCi)	NA	NA	1.3E-07	1.7E-09	6.4E-10	NA	NA	NA	Total
Uranium-234 (pCi)	NA	NA	4.4E-08	NA	NA	NA	NA	NA	Radionuclide
Uranium-238 (pCi)	NA	NA	6.1E-08	NA	NA	NA	NA	NA	Risks =
Total:			2.9E-07	1.7E-09	6.4E-10				2.9E-07

*** - Toxicity values not available.
NA - Not applicable.

Table Appendix F.9. Characterization of Residual Risks at Release Block D Construction Worker (Groundwater - Future - Background)

Constituent	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Construction Worker
Non-carcinogens (HQ)				
Beryllium	0.0E+00	NA	0.0E+00	
Bismuth	***	NA	***	
Cadmium	0.0E+00	NA	0.0E+00	
Chromium	1.2E-02	NA	7.7E-05	
Cobalt	***	NA	***	
Copper	***	NA	***	
1,1-Dichloroethene	0.0E+00	NA	0.0E+00	
Lead	***	NA	***	
Molybdenum	1.1E-02	NA	3.5E-05	
1,1,1-Trichloroethane	7.3E-05	***	2.0E-05	
1,1,2-Trichloro-1,2,2-trifluoroethane	***	***	***	Total HI =
Total:	2.3E-02		1.3E-04	2.3E-02
Carcinogens (Risk)				
Beryllium	0.0E+00	NA	0.0E+00	Total Carcinogenic
1,1-Dichloroethene	NA	0.0E+00	NA	Risks =
Total:	0.0E+00	0.0E+00	0.0E+00	0.0E+00
Radionuclides (Risk)				
Actinium-227 (pCi)	0.0E+00	NA	NA	
Bismuth-210 (pCi)	***	NA	NA	
Plutonium-239/240 (pCi)	5.0E-08	NA	NA	
Tritium (pCi)	1.3E-07	1.7E-09	6.4E-10	Total
Uranium-234 (pCi)	4.4E-08	NA	NA	Radionuclide
Uranium-238 (pCi)	5.3E-08	NA	NA	Risks =
Total:	2.8E-07	1.7E-09	6.4E-10	2.8E-07

*** - Toxicity values not available.
NA - Not applicable.

Table Appendix F.10. Characterization of Residual Risks at Release Block D - Site Employee (Soil Pathways - Backgrou

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Antimony	NA	***	NA	0.0E+00	NA	
Bismuth	NA	***	NA	***	NA	
Fluorene	NA	***	NA	0.0E+00	NA	
Naphthalene	NA	***	NA	0.0E+00	NA	
Phenanthrene	NA	***	NA	***	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	0.0E+00	NA	Total Soil HI =
Total:				0.0E+00		0.0E+00
Carcinogens (Risk)						
Benzo(a)anthracene	NA	***	NA	0.0E+00	NA	
Benzo(a)pyrene	NA	***	NA	0.0E+00	NA	
Benzo(b)fluoranthene	NA	***	NA	0.0E+00	NA	
Benzo(g,h,i)perylene	NA	***	NA	***	NA	
Carbazole	NA	***	NA	***	NA	Total Carcinogenic
Indeno(1,2,3-cd)pyrene	NA	***	NA	0.0E+00	NA	Risks =
Total:				0.0E+00		0.0E+00
Radionuclides (Risk)						Total Radionuclide
Plutonium-238 (pCi)	NA	1.0E-10	NA	1.2E-08	4.1E-12	Risks =
Total:		1.0E-10		1.2E-08	4.1E-12	1.2E-08

*** - Toxicity values not available.
NAv - Background value not available.
NA - Not applicable.

Table Appendix F.11. Characterization of Residual Risks at Release Block D - Site Employee (Groundwater - Current - Background)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Cadmium	NA	NA	0.0E+00	NA	NA	
Copper	NA	NA	***	NA	NA	
1,1-Dichloroethene	NA	NA	0.0E+00	NA	NA	
Lead	NA	NA	***	NA	NA	
1,1,1-Trichloroethane	NA	NA	7.3E-05	NA	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	***	NA	NA	Total HI =
Total:			7.3E-05			7.3E-05
Carcinogens (Risk)						
1,1-Dichloroethene	NA	NA	NA	NA	NA	Total Carcinogenic Risks = NA
Radionuclides (Risk)						
Actinium-227 (pCi)	NA	NA	0.0E+00	NA	NA	
Bismuth-210 (pCi)	NA	NA	***	NA	NA	
Plutonium-239/240 (pCi)	NA	NA	2.5E-07	NA	NA	
Tritium (pCi)	NA	NA	6.7E-07	NA	NA	Total
Uranium-234 (pCi)	NA	NA	2.2E-07	NA	NA	Radionuclide
Uranium-238 (pCi)	NA	NA	2.7E-07	NA	NA	Risks =
Total:			1.4E-06			1.4E-06

*** - Toxicity values not available.
NA - Not applicable.

Table Appendix F.12. Characterization of Residual Risks at Release Block D Site Employee (Groundwater - Future - Background)

Constituent	Pathway 3 Groundwtr. Ingestion	Site Employee
Non-carcinogens (HQ)		
Beryllium	0.0E+00	
Bismuth	***	
Cadmium	0.0E+00	
Chromium	1.2E-02	
Cobalt	***	
Copper	***	
1,1-Dichloroethene	0.0E+00	
Lead	***	
Molybdenum	1.1E-02	
1,1,1-Trichloroethane	7.3E-05	
1,1,2-Trichloro-1,2,2-trifluoroethane	***	Total HI =
Total:	2.3E-02	2.3E-02
Carcinogens (Risk)		Total Carcinogenic
Beryllium	0.0E+00	Risks =
Total:	0.0E+00	0.0E+00
Radionuclides (Risk)		
Actinium-227 (pCi)	0.0E+00	
Bismuth-210 (pCi)	***	
Plutonium-239/240 (pCi)	2.5E-07	
Tritium (pCi)	6.7E-07	Total
Uranium-234 (pCi)	2.2E-07	Radionuclide
Uranium-238 (pCi)	2.7E-07	Risks =
Total:	1.4E-06	1.4E-06

*** - Toxicity values not available.

Table Appendix F.13. Construction Worker Calculated Constituent Intakes from Soil (Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation	Pathway 8 Soil Dermal
Organics								
Benzo(a)anthracene	NA	1.233E-11	NA	NA	NA	1.267E-06	NA	2.639E-07
Benzo(a)pyrene	NA	1.015E-11	NA	NA	NA	1.042E-06	NA	2.172E-07
Benzo(b)fluoranthene	NA	1.530E-11	NA	NA	NA	1.572E-06	NA	3.275E-07
Benzo(g,h,i)perylene	NA	1.669E-12	NA	NA	NA	1.714E-07	NA	3.571E-08
Carbazole	NA	5.389E-13	NA	NA	NA	5.535E-08	NA	1.153E-08
Fluorene	NA	4.088E-11	NA	NA	NA	4.199E-06	NA	8.748E-07
Indeno(1,2,3-cd)pyrene	NA	6.725E-12	NA	NA	NA	6.907E-07	NA	1.439E-07
Naphthalene	NA	2.602E-11	NA	NA	NA	2.672E-06	NA	5.568E-07
Phenanthrene	NA	2.033E-10	NA	NA	NA	2.089E-05	NA	4.351E-06
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	1.372E-13	NA	NA	NA	1.409E-08	NA	2.935E-09
Inorganics								
Antimony	NA	6.692E-10	NA	NA	NA	6.874E-05	NA	1.432E-06
Bismuth	NA	2.606E-10	NA	NA	NA	2.677E-05	NA	5.577E-07
Radionuclides								
Plutonium-238 (pCi)	NA	1.571E-02	NA	NA	NA	1.614E+03	4.031E+00	NA

NA - Not applicable.

** - *External Radiation Exposure has units of pCi-yr/gm (Pathway 7).*

Note: Intakes for carcinogens are calculated as average daily dose-lifetime,
Intakes for non-carcinogens are calculated as average daily doses.
Carcinogen status presented in Section 4 of this report.

Table Appendix F.14. Construction Worker Calculated Constituent Intakes from Groundwater (Current - Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal
Organics								
1,1-Dichloroethene	NA	NA	1.663E-05	8.268E-08	3.401E-06	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	6.548E-06	4.556E-07	1.842E-06	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	8.513E-05	5.923E-06	NAv	NA	NA	NA
Inorganics								
Cadmium	NA	NA	1.859E-05	NA	6.023E-08	NA	NA	NA
Copper	NA	NA	5.802E-03	NA	1.880E-05	NA	NA	NA
Lead	NA	NA	2.455E-05	NA	3.182E-10	NA	NA	NA
Radionuclides								
Actinium-227 (pCi)	NA	NA	4.188E+02	NA	NA	NA	NA	NA
Bismuth-210 (pCi)	NA	NA	4.875E+02	NA	NA	NA	NA	NA
Plutonium-239/240 (pCi)	NA	NA	2.500E+03	NA	NA	NA	NA	NA
Tritium (pCi)	NA	NA	3.387E+06	3.156E+04	1.612E+04	NA	NA	NA
Uranium-234 (pCi)	NA	NA	1.018E+04	NA	NA	NA	NA	NA
Uranium-238 (pCi)	NA	NA	1.031E+04	NA	NA	NA	NA	NA

NAv - Data not available to perform this calculation.

NA - Not applicable.

Table Appendix F.15. Construction Worker Calculated Constituent Intakes from Groundwater (Future - Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal
Organics			
1,1-Dichloroethene	1.663E-05	8.268E-08	3.401E-06
1,1,1-Trichloroethane	5.284E-05	3.677E-06	1.486E-05
1,1,2-Trichloro-1,2,2-trifluoroethane	8.513E-05	5.923E-06	NAv
Inorganics			
Beryllium (carcinogen)	6.989E-08	NA	2.264E-10
Beryllium (non-carcinogen)	9.785E-07	NA	3.170E-09
Bismuth	1.566E-05	NA	5.072E-08
Cadmium	1.859E-05	NA	6.023E-08
Chromium	4.854E-03	NA	3.145E-05
Cobalt	3.816E-05	NA	4.945E-08
Copper	5.836E-03	NA	1.891E-05
Lead	2.455E-05	NA	3.182E-10
Molybdenum	9.393E-05	NA	3.043E-07
Radionuclides			
Actinium-227 (pCi)	4.188E+02	NA	NA
Bismuth-210 (pCi)	4.875E+02	NA	NA
Plutonium-239/240 (pCi)	2.525E+03	NA	NA
Tritium (pCi)	7.420E+06	6.915E+04	3.532E+04
Uranium-234 (pCi)	1.018E+04	NA	NA
Uranium-238 (pCi)	1.031E+04	NA	NA

NAv - Data not available to perform this calculation.
NA - Not applicable.

Table Appendix F.16. Site Employee Calculated Constituent Intakes from Soil (Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External** Radiation
Organics					
Benzo(a)anthracene	NA	6.058E-12	NA	6.482E-08	NA
Benzo(a)pyrene	NA	5.960E-12	NA	6.378E-08	NA
Benzo(b)fluoranthene	NA	6.303E-12	NA	6.744E-08	NA
Benzo(g,h,i)perylene	NA	5.650E-12	NA	6.046E-08	NA
Carbazole	NA	2.694E-12	NA	2.883E-08	NA
Fluorene	NA	7.773E-12	NA	8.317E-08	NA
Indeno(1,2,3-cd)pyrene	NA	5.830E-12	NA	6.238E-08	NA
Naphthalene	NA	1.052E-11	NA	1.125E-07	NA
Phenanthrene	NA	1.994E-11	NA	2.133E-07	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	1.372E-13	NA	1.468E-09	NA
Inorganics					
Antimony	NA	8.284E-10	NA	8.864E-06	NA
Bismuth	NA	2.606E-10	NA	2.789E-06	NA
Radionuclides					
Plutonium-238 (pCi)	NA	8.032E-02	NA	8.594E+02	4.582E+00

NA - Not applicable.

** - External Radiation Exposure has units of pCi-yr/gm (Pathway 7).

Table Appendix F.17. Site Employee Calculated Constituent Intakes from Groundwater (Current - Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation
Organics					
1,1-Dichloroethene	NA	NA	1.663E-05	NA	NA
1,1,1-Trichloroethane	NA	NA	6.548E-06	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	8.513E-05	NA	NA
Inorganics					
Cadmium	NA	NA	1.859E-05	NA	NA
Copper	NA	NA	5.802E-03	NA	NA
Lead	NA	NA	2.455E-05	NA	NA
Radionuclides					
Actinium-227 (pCi)	NA	NA	2.094E+03	NA	NA
Bismuth-210 (pCi)	NA	NA	2.438E+03	NA	NA
Plutonium-239/240 (pCi)	NA	NA	1.250E+04	NA	NA
Tritium (pCi)	NA	NA	1.693E+07	NA	NA
Uranium-234 (pCi)	NA	NA	5.088E+04	NA	NA
Uranium-238 (pCi)	NA	NA	5.156E+04	NA	NA

NA - Not applicable.

Table Appendix F.18. Site Employee Calculated Constituent Intakes from Groundwater (Future - Total) for Release Block D

Constituent (mg/kg-da) unless otherwise noted	Pathway 3 Groundwtr. Ingestion
Organics	
1,1-Dichloroethene	1.663E-05
1,1,1-Trichloroethane	5.284E-05
1,1,2-Trichloro-1,2,2-trifluoroethane	8.513E-05
Inorganics	
Beryllium (carcinogen)	3.495E-07
Beryllium (non-carcinogen)	9.785E-07
Bismuth	1.566E-05
Cadmium	1.859E-05
Chromium	4.854E-03
Cobalt	3.816E-05
Copper	5.836E-03
Lead	2.455E-05
Molybdenum	9.393E-05
Radionuclides	
Actinium-227 (pCi)	2.094E+03
Bismuth-210 (pCi)	2.438E+03
Plutonium-239/240 (pCi)	1.262E+04
Tritium (pCi)	3.710E+07
Uranium-234 (pCi)	5.088E+04
Uranium-238 (pCi)	5.156E+04

Table Appendix F.19. Characterization of Residual Risks at Release Block D - Construction Worker (Soil Pathways - Total)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Antimony	NA	***	NA	NA	NA	1.7E-01	NA	3.6E-03	
Bismuth	NA	***	NA	NA	NA	***	NA	***	
Fluorene	NA	***	NA	NA	NA	1.0E-09	NA	2.2E-05	
Naphthalene	NA	***	NA	NA	NA	5.3E-08	NA	1.1E-08	
Phenanthrene	NA	***	NA	NA	NA	***	NA	***	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	NA	NA	4.7E-10	NA	9.8E-11	Total Soil HI =
Total:						1.7E-01		3.6E-03	1.8E-01
Carcinogens (Risk)									
Benzo(a)anthracene	NA	***	NA	NA	NA	9.2E-07	NA	1.9E-07	
Benzo(a)pyrene	NA	***	NA	NA	NA	7.6E-06	NA	1.6E-06	
Benzo(b)fluoranthene	NA	***	NA	NA	NA	1.1E-06	NA	2.4E-07	
Benzo(g,h,i)perylene	NA	***	NA	NA	NA	***	NA	***	
Carbazole	NA	***	NA	NA	NA	***	NA	***	Total Carcinogenic
Indeno(1,2,3-cd)pyrene	NA	***	NA	NA	NA	5.0E-07	NA	1.1E-07	Risks =
Total:						1.0E-05		2.1E-06	1.2E-05
Radionuclides (Risk)									Total Radionuclide
Plutonium-238 (pCi)	NA	4.2E-10	NA	NA	NA	4.8E-07	7.7E-11	NA	Risks =
Total:		4.2E-10				4.8E-07	7.7E-11		4.8E-07

*** - Toxicity values not available.

NA - Not applicable.

Table Appendix F.20. Characterization of Residual Risks at Release Block D - Construction Worker (Groundwater - Current - Total)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Pathway 8 Soil Dermal	Construction Worker
Non-carcinogens (HQ)									
Cadmium	NA	NA	3.7E-02	NA	1.2E-04	NA	NA	NA	
Copper	NA	NA	***	NA	***	NA	NA	NA	
1,1-Dichloroethene	NA	NA	1.8E-06	NA	3.8E-07	NA	NA	NA	
Lead	NA	NA	***	NA	***	NA	NA	NA	
1,1,1-Trichloroethane	NA	NA	7.3E-05	***	2.0E-05	NA	NA	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	***	***	***	NA	NA	NA	Total HI =
Total:			3.7E-02		1.4E-04				3.7E-02
Carcinogens (Risk)									Total Carcinogenic
1,1-Dichloroethene	NA	NA	NA	9.9E-08	NA	NA	NA	NA	Risks =
Total:				9.9E-08					9.9E-08
Radionuclides (Risk)									
Actinium-227 (pCi)	NA	NA	2.6E-07	NA	NA	NA	NA	NA	
Bismuth-210 (pCi)	NA	NA	***	NA	NA	NA	NA	NA	
Plutonium-239/240 (pCi)	NA	NA	8.0E-07	NA	NA	NA	NA	NA	
Tritium (pCi)	NA	NA	2.4E-07	3.0E-09	1.2E-09	NA	NA	NA	Total
Uranium-234 (pCi)	NA	NA	4.5E-07	NA	NA	NA	NA	NA	Radionuclide
Uranium-238 (pCi)	NA	NA	6.4E-07	NA	NA	NA	NA	NA	Risks =
Total:			2.4E-06	3.0E-09	1.2E-09				2.4E-06

*** - Toxicity values not available.
NA - Not applicable.

Table Appendix F.21. Characterization of Residual Risks at Release Block D
Construction Worker (Groundwater - Future - Total)

Constituent	Pathway 3 Groundwtr. Ingestion	Pathway 4 Shower Inhalation	Pathway 5 Groundwtr. Dermal	Construction Worker
Non-carcinogens (HQ)				
Beryllium	2.0E-04	NA	6.3E-07	
Bismuth	***	NA	***	
Cadmium	3.7E-02	NA	1.2E-04	
Chromium	9.7E-01	NA	6.3E-03	
Cobalt	***	NA	***	
Copper	***	NA	***	
1,1-Dichloroethene	1.8E-06	NA	3.8E-07	
Lead	***	NA	***	
Molybdenum	1.9E-02	NA	6.1E-05	
1,1,1-Trichloroethane	5.9E-04	***	1.7E-04	
1,1,2-Trichloro-1,2,2-trifluoroethane	***	***	***	Total HI =
Total:	1.0E+00		6.6E-03	1.0E+00
Carcinogens (Risk)				
Beryllium	3.0E-07	NA	9.7E-10	Total Carcinogenic
1,1-Dichloroethene	NA	9.9E-08	NA	Risks =
Total:	3.0E-07	9.9E-08	9.7E-10	4.0E-07
Radionuclides (Risk)				
Actinium-227 (pCi)	2.6E-07	NA	NA	
Bismuth-210 (pCi)	***	NA	NA	
Plutonium-239/240 (pCi)	8.1E-07	NA	NA	
Tritium (pCi)	5.3E-07	6.6E-09	2.5E-09	Total
Uranium-234 (pCi)	4.5E-07	NA	NA	Radionuclide
Uranium-238 (pCi)	6.4E-07	NA	NA	Risks =
Total:	2.7E-06	6.6E-09	2.5E-09	2.7E-06

*** - Toxicity values not available.
NA - Not applicable.

Table Appendix F.22. Characterization of Residual Risks at Release Block D - Site Employee (Soil Pathways - Total)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Antimony	NA	***	NA	2.2E-02	NA	
Bismuth	NA	***	NA	***	NA	
Fluorene	NA	***	NA	2.1E-06	NA	
Naphthalene	NA	***	NA	2.3E-09	NA	
Phenanthrene	NA	***	NA	***	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	***	NA	4.9E-11	NA	Total Soil HI =
Total:				2.2E-02		2.2E-02
Carcinogens (Risk)						
Benzo(a)anthracene	NA	***	NA	4.7E-08	NA	
Benzo(a)pyrene	NA	***	NA	4.7E-07	NA	
Benzo(b)fluoranthene	NA	***	NA	4.9E-08	NA	
Benzo(g,h,i)perylene	NA	***	NA	***	NA	
Carbazole	NA	***	NA	***	NA	Total Carcinogenic
Indeno(1,2,3-cd)pyrene	NA	***	NA	4.6E-08	NA	Risks =
Total:				6.1E-07		6.1E-07
Radionuclides (Risk)						Total Radionuclide
Plutonium-238 (pCi)	NA	2.2E-09	NA	2.6E-07	8.7E-11	Risks =
Total:		2.2E-09		2.6E-07	8.7E-11	2.6E-07

*** - Toxicity values not available.
NA - Not applicable.

Table Appendix F.23. Characterization of Residual Risks at Release Block D - Site Employee (Groundwater - Current - Total)

Constituent	Pathway 1 Soil VOC Inhalation	Pathway 2 Soil/Dust Inhalation	Pathway 3 Groundwtr. Ingestion	Pathway 6 Soil Ingestion	Pathway 7 External Radiation	Site Employee
Non-carcinogens (HQ)						
Cadmium	NA	NA	3.7E-02	NA	NA	
Copper	NA	NA	***	NA	NA	
1,1-Dichloroethene	NA	NA	1.8E-06	NA	NA	
Lead	NA	NA	***	NA	NA	
1,1,1-Trichloroethane	NA	NA	7.3E-05	NA	NA	
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	***	NA	NA	Total HI =
Total:			3.7E-02			3.7E-02
Carcinogens (Risk)						
1,1-Dichloroethene	NA	NA	NA	NA	NA	Total Carcinogenic Risks = NA
Radionuclides (Risk)						
Actinium-227 (pCi)	NA	NA	1.3E-06	NA	NA	
Bismuth-210 (pCi)	NA	NA	***	NA	NA	
Plutonium-239/240 (pCi)	NA	NA	4.0E-06	NA	NA	
Tritium (pCi)	NA	NA	1.2E-06	NA	NA	Total
Uranium-234 (pCi)	NA	NA	2.2E-06	NA	NA	Radionuclide
Uranium-238 (pCi)	NA	NA	3.2E-06	NA	NA	Risks =
Total:			1.2E-05			1.2E-05

*** - Toxicity values not available.
NA - Not applicable.

APPENDIX G

SOIL CONSTITUENTS FOR RELEASE BLOCK D

Table Appendix F.24. Characterization of Residual Risks at Release Block D Site Employee (Groundwater - Future - Total)

Constituent	Pathway 3 Groundwtr. Ingestion	Site Employee
Non-carcinogens (HQ)		
Beryllium	2.0E-04	
Bismuth	***	
Cadmium	3.7E-02	
Chromium	9.7E-01	
Cobalt	***	
Copper	***	
1,1-Dichloroethene	1.8E-06	
Lead	***	
Molybdenum	1.9E-02	
1,1,1-Trichloroethane	5.9E-04	
1,1,2-Trichloro-1,2,2-trifluoroethane	***	Total HI =
Total:	1.0E+00	1.0E+00
Carcinogens (Risk)		Total Carcinogenic
Beryllium	1.5E-06	Risks =
Total:	1.5E-06	1.5E-06
Radionuclides (Risk)		
Actinium-227 (pCi)	1.3E-06	
Bismuth-210 (pCi)	***	
Plutonium-239/240 (pCi)	4.0E-06	
Tritium (pCi)	2.7E-06	Total
Uranium-234 (pCi)	2.2E-06	Radionuclide
Uranium-238 (pCi)	3.2E-06	Risks =
Total:	1.3E-05	1.3E-05

*** - Toxicity values not available.

Header Information for Appendix G table

station -	station identifier
smp_id -	sample identifier
date_col -	date sample collected
s_dep -	starting sample depth (feet)
e_dep -	ending sample depth (feet)
par_name -	parameter name
calc_results -	Result used for calculations, either sample result for detected analyses or 1/2 the detection limit for non-detected analyses. Also contains averaged results for samples with field or laboratory duplicate
units -	units of measurement
type	type of sample - either grab or screening
qual -	data qualifier U - below detection limit J - estimated value (considered detectable, may have secondary qualifiers) B - detected in associated method blank (for organics) reported value is <CRDL but >IDL (for inorganics)
mean -	arithmetic mean
std dev -	standard deviation
95%UCL -	95% upper confidence level
detects -	number of detects per parameter
# analy. -	number of analyses per parameter

Soil Constituents for Release Block D

station	smp_id	date_col	s_dep	e_dep	par_name	Calc results	units	type	qual	mean	std dev	95% UCL	detects	# analy.
MND33-0072	0072-0002	03-Dec-91	3	6.5	1,1,1-Trichloroethane	**2.5**	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	1,1,1-Trichloroethane	2.5	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
MND33-0076	0076-0002	6-Dec-91	3	5	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	1,1,1-Trichloroethane	3	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	1,1,1-Trichloroethane	3	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	1,1,1-Trichloroethane	3	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	1,1,1-Trichloroethane	3	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	1,1,1-Trichloroethane	3	UG/KG	Grab	UJ	2.95833333	0.141	**3.015**	1	**24**
AG	RAG306	13-Apr-94	18	24	1,1,2-Trichloro-1,2,2-trifluoroethane	**2**	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	1,1,2-Trichloro-1,2,2-trifluoroethane	**3**	UG/KG	Grab	J				1	
AH	RAH305	14-Apr-94	0	6	1,1,2-Trichloro-1,2,2-trifluoroethane	6	UG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	1,1,2-Trichloro-1,2,2-trifluoroethane	6.5	UG/KG	Grab	U	4.375	2.213	**6.543**	2	**4**
	NAC012	08-Feb-96	0	3	2-Butanone	8	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	2-Butanone	**10**	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	2-Butanone	22	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	2-Butanone	**28**	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	2-Butanone	5.5	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	2-Butanone	5.5	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	2-Butanone	5.5	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	2-Butanone	5.5	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	2-Butanone	5.5	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	2-Butanone	5.5	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	2-Butanone	5.5	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	2-Butanone	5.5	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	2-Butanone	6	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	2-Butanone	6	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	2-Butanone	6	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	2-Butanone	6	UG/KG	Grab	U				0	

MND33-0076	0076-0002	6-Dec-91	3	5	2-Butanone	6	UG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	2-Butanone	6	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	2-Butanone	6	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	2-Butanone	6.5	UG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	2-Butanone	6.5	UG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	2-Butanone	6.5	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	2-Butanone	5.5	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	2-Butanone	5.5	UG/KG	Grab	UJ	7.6875	5.497	9.887	4	**24**
MND33-0076	0076-0001	06-Dec-91	0	2	2-Chlorophenol	**100**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	2-Chlorophenol	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	2-Chlorophenol	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	2-Chlorophenol	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	2-Chlorophenol	195	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	2-Chlorophenol	190	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	2-Chlorophenol	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	2-Chlorophenol	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	2-Chlorophenol	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	2-Chlorophenol	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	2-Chlorophenol	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	2-Chlorophenol	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	2-Chlorophenol	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	2-Chlorophenol	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	2-Chlorophenol	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	2-Chlorophenol	390	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	2-Chlorophenol	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	2-Chlorophenol	385	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	2-Chlorophenol	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	2-Chlorophenol	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	2-Chlorophenol	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	2-Chlorophenol	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	2-Chlorophenol	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	2-Chlorophenol	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	2-Chlorophenol	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	2-Chlorophenol	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	2-Chlorophenol	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	2-Chlorophenol	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	2-Chlorophenol	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	2-Chlorophenol	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	2-Chlorophenol	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	2-Chlorophenol	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	2-Chlorophenol	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	2-Chlorophenol	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	2-Chlorophenol	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	2-Chlorophenol	175	UG/KG	Grab	UJ	386.944444	383.013	**512.059**	1	**36**
MND33-0076	0076-0001	06-Dec-91	0	2	2-Methylnaphthalene	**1400**	UG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	2-Methylnaphthalene	**770**	UG/KG	Grab	J				1	

	NAC013	07-Feb-96	0	3	2-Methylnaphthalene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	2-Methylnaphthalene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	2-Methylnaphthalene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	2-Methylnaphthalene	195	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	2-Methylnaphthalene	190	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	2-Methylnaphthalene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	2-Methylnaphthalene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	2-Methylnaphthalene	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	2-Methylnaphthalene	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	2-Methylnaphthalene	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	2-Methylnaphthalene	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	2-Methylnaphthalene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	2-Methylnaphthalene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	2-Methylnaphthalene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	2-Methylnaphthalene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	2-Methylnaphthalene	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	2-Methylnaphthalene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	2-Methylnaphthalene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	2-Methylnaphthalene	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	2-Methylnaphthalene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	2-Methylnaphthalene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	2-Methylnaphthalene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	2-Methylnaphthalene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	2-Methylnaphthalene	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	2-Methylnaphthalene	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	2-Methylnaphthalene	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	2-Methylnaphthalene	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	2-Methylnaphthalene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	2-Methylnaphthalene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	2-Methylnaphthalene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	2-Methylnaphthalene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	2-Methylnaphthalene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	2-Methylnaphthalene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	2-Methylnaphthalene	175	UG/KG	Grab	UJ	439.305556	416.984	**575.518**	2	**36**
MND33-0076	0076-0002	6-Dec-91	3	5	4-Methyl-2-pentanone	**2**	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	4-Methyl-2-pentanone	6.5	UG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	4-Methyl-2-pentanone	6.5	UG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	4-Methyl-2-pentanone	6.5	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	4-Methyl-2-pentanone	6.5	UG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	

	NAC027	07-Feb-96	0	3	4-Methyl-2-pentanone	6	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	4-Methyl-2-pentanone	5.5	UG/KG	Grab	U	5.70833333	0.871	**6.057**	1	**24**
MND33-0079	0079-0002	08-Dec-91	3	5	Acenaphthene	**6400**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Acenaphthene	**135**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Acenaphthene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Acenaphthene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Acenaphthene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Acenaphthene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Acenaphthene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Acenaphthene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Acenaphthene	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Acenaphthene	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Acenaphthene	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Acenaphthene	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Acenaphthene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Acenaphthene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Acenaphthene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Acenaphthene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Acenaphthene	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Acenaphthene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Acenaphthene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Acenaphthene	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Acenaphthene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Acenaphthene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Acenaphthene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Acenaphthene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Acenaphthene	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Acenaphthene	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Acenaphthene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Acenaphthene	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Acenaphthene	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Acenaphthene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Acenaphthene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Acenaphthene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Acenaphthene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Acenaphthene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Acenaphthene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Acenaphthene	175	UG/KG	Grab	UJ	565.138889	1069.723	**914.575**	2	**36**

MND33-0058	0058-0002	14-Nov-91	3	5	Acenaphthylene	**220**	UG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Acenaphthylene	130	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Acenaphthylene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Acenaphthylene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Acenaphthylene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Acenaphthylene	195	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Acenaphthylene	190	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Acenaphthylene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Acenaphthylene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Acenaphthylene	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Acenaphthylene	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Acenaphthylene	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Acenaphthylene	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Acenaphthylene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Acenaphthylene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Acenaphthylene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Acenaphthylene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Acenaphthylene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Acenaphthylene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Acenaphthylene	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Acenaphthylene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Acenaphthylene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Acenaphthylene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Acenaphthylene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Acenaphthylene	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Acenaphthylene	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Acenaphthylene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Acenaphthylene	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Acenaphthylene	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Acenaphthylene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Acenaphthylene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Acenaphthylene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Acenaphthylene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Acenaphthylene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Acenaphthylene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Acenaphthylene	175	UG/KG	Grab	UJ	387.916667	381.958	**512.687**	2	**36**
MND33-0059	0059-0003	18-Nov-91	8	12	Acetone	140	UG/KG	Grab	B				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Acetone	**230**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Acetone	210	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Acetone	110	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Acetone	36	UG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Acetone	4.25	UG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Acetone	3	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Acetone	6.5	UG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Acetone	6.5	UG/KG	Grab	U				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Acetone	6	UG/KG	Grab	U				0	

AH	RAH305	14-Apr-94	0	6	Acetone	6	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Acetone	6	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Acetone	6	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Acetone	5.5	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Acetone	5.5	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Acetone	5.5	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Acetone	5.5	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Acetone	5.5	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Acetone	3	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Acetone	46	UG/KG	Grab	UB				0	
	NAC012	08-Feb-96	0	3	Acetone	41	UG/KG	Grab	UB				0	
	NAC034	06-Feb-96	0	3	Acetone	8.5	UG/KG	Grab	UB				0	
	NAC027	07-Feb-96	0	3	Acetone	6	UG/KG	Grab	UB				0	
	NAC016	05-Feb-96	0	3	Acetone	5.5	UG/KG	Grab	UB	37.8229167	65.943	**64.205**	7	**24**
AG	RAG306	13-Apr-94	18	24	Aluminum	**22900**	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Aluminum	21500	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Aluminum	**15400**	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Aluminum	8150	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Aluminum	10700	MG/KG	Grab	*				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Aluminum	8025	MG/KG	Grab	*				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Aluminum	7780	MG/KG	Grab	*				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Aluminum	7530	MG/KG	Grab	*				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Aluminum	6620	MG/KG	Grab	*				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Aluminum	6310	MG/KG	Grab	*				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Aluminum	6110	MG/KG	Grab	*				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Aluminum	6035	MG/KG	Grab	*				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Aluminum	5730	MG/KG	Grab	*				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Aluminum	5480	MG/KG	Grab	*				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Aluminum	5060	MG/KG	Grab	*				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Aluminum	4450	MG/KG	Grab	*				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Aluminum	4210	MG/KG	Grab	*				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Aluminum	3260	MG/KG	Grab	*				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Aluminum	2920	MG/KG	Grab	*				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Aluminum	2680	MG/KG	Grab	*				1	
	NAC016	05-Feb-96	0	3	Aluminum	14100	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Aluminum	13100	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Aluminum	12800	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Aluminum	11500	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Aluminum	11100	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Aluminum	10500	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Aluminum	8460	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Aluminum	8040	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Aluminum	7920	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Aluminum	7170	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Aluminum	6830	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Aluminum	6820	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Aluminum	6450	MG/KG	Grab					1	

MND33-0057	0057-0001	12-Nov-91	0	2	Aluminum	6390	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Aluminum	5410	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Aluminum*	*3180*	*MG/KG*	*Grab*					*1*	
MND33-0058	0058-0002	14-Nov-91	3	5	Aluminum	1240	MG/KG	Grab		8158.37838	4714.724	**9677.536**	37	**37**
MND33-0079	0079-0002	08-Dec-91	3	5	Anthracene	**11650**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Anthracene	**375**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Anthracene	310	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Anthracene	140	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Anthracene	110	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Anthracene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Anthracene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Anthracene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Anthracene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Anthracene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Anthracene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Anthracene	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Anthracene	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Anthracene	950	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Anthracene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Anthracene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Anthracene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Anthracene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Anthracene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Anthracene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Anthracene	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Anthracene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Anthracene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Anthracene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Anthracene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Anthracene	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Anthracene	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Anthracene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Anthracene	355	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Anthracene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Anthracene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Anthracene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Anthracene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Anthracene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Anthracene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Anthracene	175	UG/KG	Grab	UJ	704.861111	1914.639	**1330.297**	5	**36**
MND33-0077	0077-0001	07-Dec-91	0	2	Antimony	**39.2**	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Antimony	37.6	MG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Antimony	34.6	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Antimony	30.9	MG/KG	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Antimony	27.4	MG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Antimony	21.5	MG/KG	Grab	J				1	

MND33-0071	0071-0001	03-Dec-91	0	2	Antimony	20.3	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Antimony	16.4	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Antimony	14.4	MG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Antimony	0.235	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Antimony	0.225	MG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Antimony	0.225	MG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Antimony	0.225	MG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Antimony	0.215	MG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Antimony	0.215	MG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Antimony	0.21	MG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Antimony	1.675	MG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Antimony	1.65	MG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Antimony	1.65	MG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Antimony	0.4025	MG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Antimony	0.385	MG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Antimony	**21.8**	MG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Antimony	21.45	MG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Antimony	14.6	MG/KG	Grab	J				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Antimony	14.5	MG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Antimony	13.1	MG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Antimony	12.5	MG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Antimony	11.3	MG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Antimony	4.6	MG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Antimony	1.6	MG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Antimony	15	MG/KG	Grab	J				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Antimony	13.8	MG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Antimony	1.75	MG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Antimony	1.5	MG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Antimony	0.4	MG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Antimony	0.39	MG/KG	Grab	UJ				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Antimony*	*0.55*	*MG/KG*	*Grab*	*U*	10.7689865	11.997	**14.635**	19	**37**
						Site Employee uses only Shallow values				11.8863095	14.570	**18.118**	9	**21**
MND33-0078	0078-0001	07-Dec-91	0	2	Aroclor-1248	**59**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Aroclor-1248	20	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Aroclor-1248	20	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Aroclor-1248	20	UG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Aroclor-1248	20	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Aroclor-1248	20	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Aroclor-1248	20	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Aroclor-1248	20	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Aroclor-1248	19.5	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Aroclor-1248	19.5	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Aroclor-1248	19	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Aroclor-1248	19	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Aroclor-1248	18.5	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Aroclor-1248	18.5	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Aroclor-1248	9.825	UG/KG	Grab	U				0	

MND33-0079	0079-0002	08-Dec-91	3	5	Aroclor-1248	362.2	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Aroclor-1248	49.2	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Aroclor-1248	49	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Aroclor-1248	47.88	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Aroclor-1248	47.75	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Aroclor-1248	47.2	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Aroclor-1248	46.45	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Aroclor-1248	46.3	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Aroclor-1248	45.65	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Aroclor-1248	45.4	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Aroclor-1248	45.4	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Aroclor-1248	45.15	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Aroclor-1248	44.55	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Aroclor-1248	43.65	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Aroclor-1248	43.65	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Aroclor-1248	43.6	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Aroclor-1248	43.6	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Aroclor-1248	20	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Aroclor-1248	4.05	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Aroclor-1248	4.05	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Aroclor-1248	3.95	UG/KG	Grab	UJ	40.3195833	57.426	**59.079**	1	**36**
MND33-0058	0058-0001	13-Nov-91	0	2	Aroclor-1254	**302.5**	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Aroclor-1254	45	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Aroclor-1254	45	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Aroclor-1254	45	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Aroclor-1254	45	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Aroclor-1254	45	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Aroclor-1254	20	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Aroclor-1254	19.5	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Aroclor-1254	19.5	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Aroclor-1254	19	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Aroclor-1254	19	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Aroclor-1254	18.5	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Aroclor-1254	18.5	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Aroclor-1254	9.825	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Aroclor-1254	724.45	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Aroclor-1254	98.4	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Aroclor-1254	98	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Aroclor-1254	95.775	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Aroclor-1254	95.5	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Aroclor-1254	94.45	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Aroclor-1254	92.9	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Aroclor-1254	92.55	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Aroclor-1254	91.3	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Aroclor-1254	90.8	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Aroclor-1254	90.8	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Aroclor-1254	90.65	UG/KG	Grab	UJ				0	

MND33-0071	0071-0001	03-Dec-91	0	2	Aroclor-1254	90.35	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Aroclor-1254	89.1	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Aroclor-1254	87.3	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Aroclor-1254	87.3	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Aroclor-1254	87.2	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Aroclor-1254	87.15	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Aroclor-1254	45	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Aroclor-1254	4.05	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Aroclor-1254	4.05	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Aroclor-1254	3.95	UG/KG	Grab	UJ	83.6763889	122.173	**123.585**	1	**36**
AG	RAG305	13-Apr-94	0	6	Arsenic	**12.35**	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Arsenic	8.7	MG/KG	Grab					1	
	0057-0001	12-Nov-91	0	2	Arsenic	7.5	MG/KG	Grab					1	
MND33-0059	0058-0001	13-Nov-91	0	2	Arsenic	5.8	MG/KG	Grab	J				1	
MND33-0077	0072-0001	03-Dec-91	0	2	Arsenic	3.8	MG/KG	Grab	J				1	
MND33-0073	0074-0001	05-Dec-91	0	2	Arsenic	3	MG/KG	Grab	J				1	
MND33-0071	0079-0001	08-Dec-91	0	2	Arsenic	2.7	MG/KG	Grab	J				1	
MND33-0075	0078-0001	07-Dec-91	0	2	Arsenic	2.5	MG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Arsenic	2.45	MG/KG	Grab	JS				1	
MND33-0078	0075-0001	06-Dec-91	0	2	Arsenic	2.4	MG/KG	Grab	J				1	
MND33-0079	0071-0001	03-Dec-91	0	2	Arsenic	2.3	MG/KG	Grab	J				1	
MND33-0074	0076-0001	06-Dec-91	0	2	Arsenic	2.2	MG/KG	Grab	J				1	
MND33-0077	0073-0001	04-Dec-91	0	2	Arsenic	2.1	MG/KG	Grab	J				1	
AG	NAC012	08-Feb-96	0	3	Arsenic	1.9	MG/KG	Grab	B				1	
MND33-0079	0077-0001	07-Dec-91	0	2	Arsenic	1.8	MG/KG	Grab	J				1	
	NAC027	07-Feb-96	0	3	Arsenic	1.8	MG/KG	Grab	JS				1	
350	NAC016	05-Feb-96	0	3	Arsenic	1.7	MG/KG	Grab					1	
MND33-0076	NAC013	07-Feb-96	0	3	Arsenic	1.2	MG/KG	Grab	B				1	
	NAC025	06-Feb-96	0	3	Arsenic	0.95	MG/KG	Grab	JS				1	
MND33-0059	NAC024	06-Feb-96	0	3	Arsenic	0.415	MG/KG	Grab	JS				1	
MND33-0057	0059-0001	13-Nov-91	0	2	Arsenic	0.22	MG/KG	Grab					1	
MND33-0071	0057-0002	13-Nov-91	3	5	Arsenic	4.6	MG/KG	Grab	J				1	
MND33-0058	0079-0002	08-Dec-91	3	5	Arsenic	4.2	MG/KG	Grab	J				1	
MND33-0072	0076-0002	6-Dec-91	3	5	Arsenic	3.1	MG/KG	Grab	J				1	
MND33-0076	0077-0002	07-Dec-91	3	5	Arsenic	2.8	MG/KG	Grab	J				1	
MND33-0077	0072-0002	03-Dec-91	3	6.5	Arsenic	2.1	MG/KG	Grab	J				1	
MND33-0072	0059-0002	18-Nov-91	3	7	Arsenic	2	MG/KG	Grab	J				1	
MND33-0057	0058-0002	14-Nov-91	3	5	Arsenic	1.7	MG/KG	Grab	J				1	
MND33-0058	0071-0002	03-Dec-91	3	5	Arsenic	1.5	MG/KG	Grab	J				1	
	0078-0002	07-Dec-91	3	4	Arsenic	1.3	MG/KG	Grab	J				1	
MND33-0078	0058-0003	14-Nov-91	8	10	Arsenic	6.6	MG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Arsenic	4.8	MG/KG	Grab					1	
MND33-0059	0077-0003	07-Dec-91	8	9	Arsenic	3.6	MG/KG	Grab	J				1	
MND33-0058	0059-0003	18-Nov-91	8	12	Arsenic	1.5	MG/KG	Grab	J				1	
	RAH306	14-Apr-94	18	24	Arsenic	**15.8**	MG/KG	Grab					1	
	RAG306	13-Apr-94	18	24	Arsenic	14.05	MG/KG	Grab					1	
AH	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Arsenic*	*1.4*	*MG/KG*	*Grab*	*B*	3.7522973	3.645	**4.927**	37	**37**

Soil Constituents for Release Block D

						Site Employee uses only Shallow values				3.22785714	2.984	**4.504**	21	**21**
AG	RAG306	13-Apr-94	18	24	Barium	**168.5**	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Barium	113	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Barium	**112.5**	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Barium	90.4	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Barium	87.6	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Barium	78.8	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Barium	78.4	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Barium	70.5	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Barium	68.7	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Barium	54.8	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Barium	53.4	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Barium	51	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Barium	49.2	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Barium	48.5	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Barium	48.1	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Barium	46.85	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Barium	45.9	MG/KG	Grab	B				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Barium	45.1	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Barium	44.1	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Barium	43.8	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Barium	41	MG/KG	Grab	B				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Barium	39.9	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Barium	39	MG/KG	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Barium	38.6	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Barium	36.75	MG/KG	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Barium	35.7	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Barium	35.6	MG/KG	Grab	B				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Barium	33.8	MG/KG	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Barium	33.6	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Barium	32.8	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Barium	29.6	MG/KG	Grab	B				1	
	NAC024	06-Feb-96	0	3	Barium	28.4	MG/KG	Grab	B				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Barium	27	MG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Barium	26.4	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Barium	26.2	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Barium*	*5.3*	*MG/KG*	*Grab*	*B*				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Barium	5	MG/KG	Grab		51.7243243	31.549	**61.890**	37	**37**
AG	RAG305	13-Apr-94	0	6	Benzo(a)anthracene	455	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Benzo(a)anthracene	230	UG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Benzo(a)anthracene	100	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Benzo(a)anthracene	85.5	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Benzo(a)anthracene	47	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Benzo(a)anthracene	18	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Benzo(a)anthracene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Benzo(a)anthracene	195	UG/KG	Grab	U				0	

	NAC024	06-Feb-96	0	3	Benzo(a)anthracene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Benzo(a)anthracene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Benzo(a)anthracene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Benzo(a)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Benzo(a)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Benzo(a)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Benzo(a)anthracene	370	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Benzo(a)anthracene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Benzo(a)anthracene	355	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Benzo(a)anthracene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Benzo(a)anthracene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Benzo(a)anthracene	185	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Benzo(a)anthracene	**525**	UG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Benzo(a)anthracene	**41500**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Benzo(a)anthracene	1800	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Benzo(a)anthracene	170	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Benzo(a)anthracene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Benzo(a)anthracene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Benzo(a)anthracene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Benzo(a)anthracene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Benzo(a)anthracene	385	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Benzo(a)anthracene	360	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Benzo(a)anthracene	640	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Benzo(a)anthracene	160	UG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Benzo(a)anthracene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Benzo(a)anthracene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Benzo(a)anthracene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Benzo(a)anthracene	210	UG/KG	Grab	UJ	1534.11111	6862.588	**3775.845**	12	**36**
						Site Employee uses only Shallow values				283.833333	204.445	**371.274**	7	**21**
AG	RAG305	13-Apr-94	0	6	Benzo(a)pyrene	**570**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Benzo(a)pyrene	460	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Benzo(a)pyrene	250	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Benzo(a)pyrene	110	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Benzo(a)pyrene	87	UG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Benzo(a)pyrene	84	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Benzo(a)pyrene	42	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Benzo(a)pyrene	21	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Benzo(a)pyrene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Benzo(a)pyrene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Benzo(a)pyrene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Benzo(a)pyrene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Benzo(a)pyrene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Benzo(a)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Benzo(a)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Benzo(a)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Benzo(a)pyrene	370	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Benzo(a)pyrene	355	UG/KG	Grab	UJ				0	

AH	RAH305	14-Apr-94	0	6	Benzo(a)pyrene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Benzo(a)pyrene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Benzo(a)pyrene.	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Benzo(a)pyrene	**33500**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Benzo(a)pyrene	1700	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Benzo(a)pyrene	120	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Benzo(a)pyrene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Benzo(a)pyrene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Benzo(a)pyrene	390	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Benzo(a)pyrene	385	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Benzo(a)pyrene	385	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Benzo(a)pyrene	360	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Benzo(a)pyrene	570	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Benzo(a)pyrene	220	UG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Benzo(a)pyrene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Benzo(a)pyrene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Benzo(a)pyrene	130	UG/KG	Grab	J				1	
AH	RAH306	14-Apr-94	18	24	Benzo(a)pyrene	210	UG/KG	Grab	UJ	1299.76389	5533.606	**3107.373**	14	**36**
						Site Employee uses only Shallow values				274.714286	210.882	**364.908**	8	**21**
AG	RAG305	13-Apr-94	0	6	Benzo(b)fluoranthene	**740**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Benzo(b)fluoranthene	365	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Benzo(b)fluoranthene	240	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Benzo(b)fluoranthene	85	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Benzo(b)fluoranthene	39	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Benzo(b)fluoranthene	22	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Benzo(b)fluoranthene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Benzo(b)fluoranthene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Benzo(b)fluoranthene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Benzo(b)fluoranthene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Benzo(b)fluoranthene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Benzo(b)fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Benzo(b)fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Benzo(b)fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Benzo(b)fluoranthene	370	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Benzo(b)fluoranthene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Benzo(b)fluoranthene	355	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Benzo(b)fluoranthene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Benzo(b)fluoranthene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Benzo(b)fluoranthene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Benzo(b)fluoranthene	175	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Benzo(b)fluoranthene	**53000**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Benzo(b)fluoranthene	1500	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Benzo(b)fluoranthene	440	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Benzo(b)fluoranthene	235	UG/KG	Grab	J				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Benzo(b)fluoranthene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Benzo(b)fluoranthene	390	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Benzo(b)fluoranthene	385	UG/KG	Grab	UJ				0	

MND33-0076	0076-0002	6-Dec-91	3	5	Benzo(b)fluoranthene	385	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Benzo(b)fluoranthene	360	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Benzo(b)fluoranthene	1000	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Benzo(b)fluoranthene	140	UG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Benzo(b)fluoranthene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Benzo(b)fluoranthene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Benzo(b)fluoranthene	60.5	UG/KG	Grab	J				1	
AH	RAH306	14-Apr-94	18	24	Benzo(b)fluoranthene	210	UG/KG	Grab	UJ	1818.72222	8778.705	**4686.376**	13	**36**
						Site Employee uses only Shallow values				293.619048	216.815	**386.351**	6	**21**
AG	RAG305	13-Apr-94	0	6	Benzo(g,h,i)perylene	**370**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Benzo(g,h,i)perylene	220	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Benzo(g,h,i)perylene	190	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Benzo(g,h,i)perylene	94	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Benzo(g,h,i)perylene	33	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Benzo(g,h,i)perylene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Benzo(g,h,i)perylene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Benzo(g,h,i)perylene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Benzo(g,h,i)perylene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Benzo(g,h,i)perylene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Benzo(g,h,i)perylene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Benzo(g,h,i)perylene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Benzo(g,h,i)perylene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Benzo(g,h,i)perylene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Benzo(g,h,i)perylene	370	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Benzo(g,h,i)perylene	355	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Benzo(g,h,i)perylene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Benzo(g,h,i)perylene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Benzo(g,h,i)perylene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Benzo(g,h,i)perylene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Benzo(g,h,i)perylene	175	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Benzo(g,h,i)perylene	**780**	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Benzo(g,h,i)perylene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Benzo(g,h,i)perylene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Benzo(g,h,i)perylene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Benzo(g,h,i)perylene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Benzo(g,h,i)perylene	385	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Benzo(g,h,i)perylene	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Benzo(g,h,i)perylene	224.5	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Benzo(g,h,i)perylene	185	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Benzo(g,h,i)perylene	150	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Benzo(g,h,i)perylene	1800	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Benzo(g,h,i)perylene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Benzo(g,h,i)perylene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Benzo(g,h,i)perylene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Benzo(g,h,i)perylene	210	UG/KG	Grab	UJ	381.986111	394.937	**510.996**	7	**36**
						Site Employee uses only Shallow values				267.357143	184.700	**346.353**	5	**21**

MND33-0058	0058-0002	14-Nov-91	3	5	Benzo(k)fluoranthene	**1300**	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Benzo(k)fluoranthene	**517.5**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Benzo(k)fluoranthene	400	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Benzo(k)fluoranthene	220	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Benzo(k)fluoranthene	200	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Benzo(k)fluoranthene	160	UG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Benzo(k)fluoranthene	135	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Benzo(k)fluoranthene	67.5	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Benzo(k)fluoranthene	46	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Benzo(k)fluoranthene	17	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Benzo(k)fluoranthene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Benzo(k)fluoranthene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Benzo(k)fluoranthene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Benzo(k)fluoranthene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Benzo(k)fluoranthene	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Benzo(k)fluoranthene	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Benzo(k)fluoranthene	950	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Benzo(k)fluoranthene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Benzo(k)fluoranthene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Benzo(k)fluoranthene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Benzo(k)fluoranthene	390	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Benzo(k)fluoranthene	385	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Benzo(k)fluoranthene	385	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Benzo(k)fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Benzo(k)fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Benzo(k)fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Benzo(k)fluoranthene	370	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Benzo(k)fluoranthene	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Benzo(k)fluoranthene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Benzo(k)fluoranthene	355	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Benzo(k)fluoranthene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Benzo(k)fluoranthene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Benzo(k)fluoranthene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Benzo(k)fluoranthene	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Benzo(k)fluoranthene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Benzo(k)fluoranthene	175	UG/KG	Grab	UJ	402.930556	421.439	**540.598**	10	**36**
MND33-0075	0075-0001	06-Dec-91	0	2	Benzoic Acid	**750**	UG/KG	Grab	J				1	
AH	RAH305	14-Apr-94	0	6	Benzoic Acid	92	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Benzoic Acid	88.5	UG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Benzoic Acid	**83.5**	UG/KG	Grab	J				1	
AH	RAH306	14-Apr-94	18	24	Benzoic Acid	82	UG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Benzoic Acid	76	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Benzoic Acid	9000	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Benzoic Acid	9000	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Benzoic Acid	4600	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Benzoic Acid	2050	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Benzoic Acid	2000	UG/KG	Grab	UJ				0	

MND33-0059	0059-0003	18-Nov-91	8	12	Benzoic Acid	1950	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Benzoic Acid	1900	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Benzoic Acid	1900	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Benzoic Acid	1850	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Benzoic Acid	1850	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Benzoic Acid	1850	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Benzoic Acid	1825	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Benzoic Acid	1800	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Benzoic Acid	1800	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Benzoic Acid	1800	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Benzoic Acid	1750	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Benzoic Acid	1750	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Benzoic Acid	1700	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Benzoic Acid	1700	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Benzoic Acid	950	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Benzoic Acid	950	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Benzoic Acid	900	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Benzoic Acid	850	UG/KG	Grab	UJ	1961.96552	2154.016	**2745.932**	6	**29**
MND33-0077	0077-0003	07-Dec-91	8	9	Beryllium	**0.98**	MG/KG	Grab	B				1	
AG	RAG306	13-Apr-94	18	24	Beryllium	0.915	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Beryllium	0.89	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Beryllium	0.81	MG/KG	Grab	B				1	
	NAC027	07-Feb-96	0	3	Beryllium	**0.81**	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Beryllium	0.8	MG/KG	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Beryllium	0.78	MG/KG	Grab	B				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Beryllium	0.78	MG/KG	Grab	B				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Beryllium	0.78	MG/KG	Grab	B				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Beryllium	0.775	MG/KG	Grab	B				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Beryllium	0.76	MG/KG	Grab	B				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Beryllium	0.75	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Beryllium	0.73	MG/KG	Grab	B				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Beryllium	0.7	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Beryllium	0.68	MG/KG	Grab	B				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Beryllium	0.68	MG/KG	Grab	B				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Beryllium	0.67	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Beryllium	0.665	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Beryllium	0.66	MG/KG	Grab	B				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Beryllium	0.66	MG/KG	Grab	B				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Beryllium	0.66	MG/KG	Grab	B				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Beryllium	0.65	MG/KG	Grab	B				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Beryllium	0.65	MG/KG	Grab	B				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Beryllium	0.63	MG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Beryllium	0.61	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Beryllium*	*0.6*	*MG/KG*	*Grab*	*U*				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Beryllium	0.51	MG/KG	Grab	B				1	
	NAC016	05-Feb-96	0	3	Beryllium	0.46	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Beryllium	0.44	MG/KG	Grab					1	

MND33-0057	0057-0003	13-Nov-91	8	12	Beryllium	0.43	MG/KG	Grab	B				1	
	NAC034	06-Feb-96	0	3	Beryllium	0.43	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Beryllium	0.4	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Beryllium	0.4	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Beryllium	0.32	MG/KG	Grab	B				1	
	NAC024	06-Feb-96	0	3	Beryllium	0.29	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Beryllium	0.2	MG/KG	Grab	B				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Beryllium	0.14	MG/KG	Grab	B	0.62418919	0.198	**0.688**	36	**37**
MND33-0057	0057-0003	13-Nov-91	8	12	Bis(2-ethylhexyl)phthalate	**4200**	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Bis(2-ethylhexyl)phthalate	3700	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Bis(2-ethylhexyl)phthalate	**3650**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Bis(2-ethylhexyl)phthalate	3600	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Bis(2-ethylhexyl)phthalate	2400	UG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Bis(2-ethylhexyl)phthalate	1800	UG/KG	Grab	J				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Bis(2-ethylhexyl)phthalate	1500	UG/KG	Grab	J				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Bis(2-ethylhexyl)phthalate	1300	UG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	700	UG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Bis(2-ethylhexyl)phthalate	620	UG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Bis(2-ethylhexyl)phthalate	570	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	480	UG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	430	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Bis(2-ethylhexyl)phthalate	400	UG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	350	UG/KG	Grab	J				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Bis(2-ethylhexyl)phthalate	330	UG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	290	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Bis(2-ethylhexyl)phthalate	236.5	UG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Bis(2-ethylhexyl)phthalate	150	UG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	140	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	100	UG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	87	UG/KG	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	82	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	35	UG/KG	Grab	J				1	
	NAC024	06-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	26	UG/KG	Grab	J				1	
	NAC027	07-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	24	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	23.5	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	205	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Bis(2-ethylhexyl)phthalate	180	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Bis(2-ethylhexyl)phthalate	410	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Bis(2-ethylhexyl)phthalate	385	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Bis(2-ethylhexyl)phthalate	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Bis(2-ethylhexyl)phthalate	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Bis(2-ethylhexyl)phthalate	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Bis(2-ethylhexyl)phthalate	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Bis(2-ethylhexyl)phthalate	190	UG/KG	Grab	UJ	817.75	1186.828	**1205.439**	27	**36**
	NAC016	05-Feb-96	0	3	Bismuth	0.82	MG/KG	Grab	B				1	
AG	RAG305	13-Apr-94	0	6	Bismuth	5.7	MG/KG	Grab	B				1	

350	0350-0024	2-Mar-93	23.4	24.2	Bismuth	5.9	MG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Bismuth	3.3	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Bismuth	3.25	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Bismuth	3.15	MG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Bismuth	0.39	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Bismuth	0.38	MG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Bismuth	0.375	MG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Bismuth	0.365	MG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Bismuth	0.36	MG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Bismuth	0.36	MG/KG	Grab	U	2.02916667	2.148	3.245	2	12
MND33-0077	0077-0001	07-Dec-91	0	2	Cadmium	10.2	MG/KG	Grab	*				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Cadmium	9.4	MG/KG	Grab	*				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Cadmium	8.1	MG/KG	Grab	*				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Cadmium	6.6	MG/KG	Grab	*				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Cadmium	5.3	MG/KG	Grab	*				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Cadmium	4.7	MG/KG	Grab	*				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Cadmium	4.2	MG/KG	Grab	*				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Cadmium	3.55	MG/KG	Grab	*				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Cadmium	3.45	MG/KG	Grab	*				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Cadmium	3.1	MG/KG	Grab	*				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Cadmium	3.1	MG/KG	Grab	*				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Cadmium	2.6	MG/KG	Grab	*				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Cadmium	2.2	MG/KG	Grab	*				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Cadmium	2.1	MG/KG	Grab	J				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Cadmium	1.7	MG/KG	Grab	J				1	
350	0350-0024	2-Mar-93	23.4	24.2	Cadmium	1.55	MG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Cadmium	0.3	MG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Cadmium	0.2975	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Cadmium	0.29	MG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Cadmium	0.29	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Cadmium	0.285	MG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Cadmium	0.285	MG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Cadmium	0.285	MG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Cadmium	0.28	MG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Cadmium	0.275	MG/KG	Grab	U				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Cadmium	0.27	MG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Cadmium	0.265	MG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Cadmium	0.035	MG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Cadmium	0.035	MG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Cadmium	0.035	MG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Cadmium	0.035	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Cadmium	6	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Cadmium	5.7	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Cadmium	4.6	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Cadmium	4	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Cadmium	2.3	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Cadmium	2.2	MG/KG	Grab		2.70033784	2.795	3.601	21	37

350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Calcium*	***276000***	*MG/KG*	*Grab*					1	
	NAC013	07-Feb-96	0	3	Calcium	**222000**	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Calcium	217000	MG/KG	Grab	*				1	
	NAC024	06-Feb-96	0	3	Calcium	210000	MG/KG	Grab	JD				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Calcium	178000	MG/KG	Grab	*				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Calcium	169000	MG/KG	Grab	*				1	
	NAC025	06-Feb-96	0	3	Calcium	162000	MG/KG	Grab	JD				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Calcium	156000	MG/KG	Grab	*				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Calcium	147000	MG/KG	Grab	*				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Calcium	142000	MG/KG	Grab	*				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Calcium	140000	MG/KG	Grab	*				1	
	NAC016	05-Feb-96	0	3	Calcium	133690	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Calcium	131000	MG/KG	Grab	*				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Calcium	131000	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Calcium	127000	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Calcium	114000	MG/KG	Grab	*				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Calcium	113000	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Calcium	112000	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Calcium	110000	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Calcium	107000	MG/KG	Grab	*				1	
	NAC034	06-Feb-96	0	3	Calcium	106000	MG/KG	Grab	JD				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Calcium	105000	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Calcium	101000	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Calcium	94300	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Calcium	88900	MG/KG	Grab	*				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Calcium	79750	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Calcium	74100	MG/KG	Grab	*				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Calcium	72600	MG/KG	Grab	*				1	
	NAC027	07-Feb-96	0	3	Calcium	68800	MG/KG	Grab	JD				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Calcium	64600	MG/KG	Grab	*				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Calcium	62000	MG/KG	Grab	*				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Calcium	46000	MG/KG	Grab	*				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Calcium	15500	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Calcium	6425	MG/KG	Grab	*				1	
AG	RAG305	13-Apr-94	0	6	Calcium	5315	MG/KG	Grab	*				1	
AH	RAH306	14-Apr-94	18	24	Calcium	5010	MG/KG	Grab	*				1	
AH	RAH305	14-Apr-94	0	6	Calcium	2180	MG/KG	Grab	*	110680.27	63979.176	**131295.360**	37	**37**
	NAC034	06-Feb-96	0	3	Carbazole	**165**	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Carbazole	141	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Carbazole	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Carbazole	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Carbazole	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Carbazole	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Carbazole	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Carbazole	180	UG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Carbazole	215	UG/KG	Grab	UJ				0	

AH	RAH306	14-Apr-94	18	24	Carbazole	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Carbazole	205	UG/KG	Grab	UJ	190.090909	21.682	202.904	2	11
	NAC013	07-Feb-96	0	3	Carbon Disulfide	4	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Carbon Disulfide	3	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Carbon Disulfide	3	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Carbon Disulfide	3	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Carbon Disulfide	3	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Carbon Disulfide	3	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Carbon Disulfide	3	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Carbon Disulfide	2.5	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Carbon Disulfide	3	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Carbon Disulfide	3	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Carbon Disulfide	3	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Carbon Disulfide	3	UG/KG	Grab	UJ	3.02083333	0.232	3.114	1	24
AG	RAG305	13-Apr-94	0	6	Cesium-137	0.253	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Cesium-137	0.0995	PCI/G	Grab	U				0	
	NAC025	06-Feb-96	0	3	Cesium-137	0.0925	PCI/G	Grab	U				0	
	NAC027	07-Feb-96	0	3	Cesium-137	0.0845	PCI/G	Grab	U				0	
	NAC034	06-Feb-96	0	3	Cesium-137	0.081	PCI/G	Grab	U				0	
	NAC012	08-Feb-96	0	3	Cesium-137	0.0585	PCI/G	Grab	U				0	
	NAC013	07-Feb-96	0	3	Cesium-137	0.0473	PCI/G	Grab	U				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Cesium-137	0.05	PCI/G	Grab	UJ				0	
	NAC024	06-Feb-96	0	3	Cesium-137	0.383	PCI/G	Grab					1	
AH	RAH305	14-Apr-94	0	6	Cesium-137	0.296	PCI/G	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Cesium-137	0.121	PCI/G	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Cesium-137	0.111	PCI/G	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Cesium-137	0.0834	PCI/G	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Cesium-137	0.0833	PCI/G	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Cesium-137	0.0675	PCI/G	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Cesium-137	0.0647	PCI/G	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Cesium-137	0.0433	PCI/G	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Cesium-137	0.0283	PCI/G	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Cesium-137	0.0196	PCI/G	Grab					1	

MND33-0077	0077-0001	07-Dec-91	0	2	Cesium-137	0.0152	PCI/G	Grab					1	
MND17-8601	8601-5003	17-Aug-95	0.5	3	Cesium-137	0.01	PCI/G	Grab	U				0	
MND17-8602	8602-5003	17-Aug-95	0.5	3	Cesium-137	0.01	PCI/G	Grab	U				0	
MND17-8604	8604-5003	17-Aug-95	0.5	3	Cesium-137	0.01	PCI/G	Grab	U				0	
MND17-8605	8605-5003	17-Aug-95	0.5	3	Cesium-137	0.01	PCI/G	Grab	U				0	
MND17-8603	8603-5003	17-Aug-95	0.5	3	Cesium-137	0.02	PCI/G	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Cesium-137	**0.0761**	PCI/G	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Cesium-137	0.0634	PCI/G	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Cesium-137	0.0488	PCI/G	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Cesium-137	0.0419	PCI/G	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Cesium-137	0.05	PCI/G	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Cesium-137	0.0522	PCI/G	Grab					1	
AG	RAG306	13-Apr-94	18	24	Cesium-137	0.01478	PCI/G	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Cesium-137	0.0483	PCI/G	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Cesium-137*	*0.05*	*PCI/G*	*Grab*	*U*				0	
C0163	2452	1995		3	Cesium-137	0.25	PCI/G	Grab	U				0	
S0661	5834	1995		0	Cesium-137	0.25	PCI/G	Grab	U				0	
S0955	5949	1995		0	Cesium-137	0.25	PCI/G	Grab	U				0	
S0975	5964	1995		0	Cesium-137	0.25	PCI/G	Grab	U				0	
S0956	2949	1995		0	Cesium-137	**1.7**	PCI/G	Grab					1	
S0929	5920	1995		0	Cesium-137	1.3	PCI/G	Grab					1	
S0921	5915	1995		0	Cesium-137	1.1	PCI/G	Grab					1	
S0940	5923	1995		0	Cesium-137	1	PCI/G	Grab					1	
S0920	5819	1995		0	Cesium-137	0.9	PCI/G	Grab					1	
S0942	5929	1995		0	Cesium-137	0.9	PCI/G	Grab		0.20938615	0.366	**0.309**	26	**52**
						Site Employee uses only Shallow values				0.08433077	0.092	**0.120**	14	**26**
AH	RAH305	14-Apr-94	0	6	Chloride	9.3	MG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Chloride	9.725	MG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Chloride	9.725	MG/KG	Grab	UJ				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Chloride*	***59***	*MG/KG*	*Grab*					1	
AH	RAH306	14-Apr-94	18	24	Chloride	34.4	MG/KG	Grab		*24.43*	22.113	*43.812*	2	***5***
AH	RAH306	14-Apr-94	18	24	Chromium	**29.6**	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Chromium	28.45	MG/KG	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Chromium	**26.7**	MG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Chromium	26.5	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Chromium	26	MG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Chromium	25.9	MG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Chromium	25.6	MG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Chromium	24.8	MG/KG	Grab	J				1	

MND33-0077	0077-0001	07-Dec-91	0	2	Chromium	24.6	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Chromium	24.4	MG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Chromium	24.4	MG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Chromium	24.3	MG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Chromium	24.1	MG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Chromium	24.1	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Chromium	23.8	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Chromium	23.4	MG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Chromium	23.2	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Chromium	23.2	MG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Chromium	23.1	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Chromium	22.5	MG/KG	Grab	J				1	
	NAC025	06-Feb-96	0	3	Chromium	18.1	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Chromium	17.7	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Chromium	17.3	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Chromium	16.2	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Chromium	14.6	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Chromium	13.2	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Chromium	13.15	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Chromium	12.7	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Chromium	11.7	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Chromium	11.6	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Chromium	10.8	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Chromium	9.8	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Chromium*	*8.6*	*MG/KG*	*Grab*					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Chromium	7.9	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Chromium	7.9	MG/KG	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Chromium	2.8	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Chromium	24.6	MG/KG	Grab		19.3864865	7.092	**21.672**	37	**37**
MND33-0079	0079-0002	08-Dec-91	3	5	Chrysene	**51500**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Chrysene	1700	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Chrysene	**700**	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Chrysene	640	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Chrysene	300	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Chrysene	210	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Chrysene	140	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Chrysene	88.5	UG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Chrysene	56.5	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Chrysene	51	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Chrysene	22	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Chrysene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Chrysene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Chrysene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Chrysene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Chrysene	1850	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Chrysene	950	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Chrysene	410	UG/KG	Grab	UJ				0	

MND33-0059	0059-0003	18-Nov-91	8	12	Chrysene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Chrysene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Chrysene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Chrysene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Chrysene	385	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Chrysene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Chrysene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Chrysene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Chrysene	370	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Chrysene	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Chrysene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Chrysene	355	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Chrysene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Chrysene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Chrysene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Chrysene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Chrysene	175	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Chrysene	515	UG/KG	Grab		1816.125	8526.033	**4601.240**	12	**36**
MND33-0077	0077-0003	07-Dec-91	8	9	Cobalt	**14.2**	MG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Cobalt	13.7	MG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Cobalt	**13.4**	MG/KG	Grab	B				1	
AG	RAG306	13-Apr-94	18	24	Cobalt	13.3	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Cobalt	13.3	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Cobalt	12.7	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Cobalt	11.9	MG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Cobalt	11.6	MG/KG	Grab	B				1	
	NAC027	07-Feb-96	0	3	Cobalt	11.6	MG/KG	Grab	B				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Cobalt	11.5	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Cobalt	11.4	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Cobalt	11.2	MG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Cobalt	10.4	MG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Cobalt	9.9	MG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Cobalt	9.8	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Cobalt	9.5	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Cobalt	9.4	MG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Cobalt	9.1	MG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Cobalt	8.9	MG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Cobalt	8.8	MG/KG	Grab	J				1	
	NAC025	06-Feb-96	0	3	Cobalt	8.7	MG/KG	Grab	B				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Cobalt	8.3	MG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Cobalt	8	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Cobalt	7.7	MG/KG	Grab	B				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Cobalt	7.7	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Cobalt	7.6	MG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Cobalt	7.5	MG/KG	Grab	B				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Cobalt	7.5	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Cobalt	7.4	MG/KG	Grab	J				1	

AH	RAH305	14-Apr-94	0	6	Cobalt	7.3	MG/KG	Grab	B				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Cobalt	7.3	MG/KG	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Cobalt	7.1	MG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Cobalt	6.2	MG/KG	Grab	J				1	
	NAC024	06-Feb-96	0	3	Cobalt	5.9	MG/KG	Grab	B				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Cobalt	5.9	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Cobalt*	*3.05*	*MG/KG*	*Grab*	*U*				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Cobalt	1.05	MG/KG	Grab	U	9.18378378	2.933	**10.129**	35	**37**
	NAC025	06-Feb-96	0	3	Copper	**30.5**	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Copper	21.75	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Copper	21.3	MG/KG	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Copper	19.8	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Copper	19.3	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Copper	19.2	MG/KG	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Copper	19.1	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Copper	16	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Copper	15.8	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Copper	15.4	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Copper	15.15	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Copper	14.1	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Copper	13.7	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Copper	13.6	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Copper	13.5	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Copper	13	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Copper	12.5	MG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Copper	12.3	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Copper	12.1	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Copper	11.8	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Copper	8.2	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Copper	21.2	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Copper	20.4	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Copper	19.9	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Copper	17.4	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Copper	16.3	MG/KG	Grab	*				1	
MND33-0076	*0076-0002*	*6-Dec-91*	*3*	*5*	*Copper*	*15.7*	*MG/KG*	*Grab*					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Copper	13.3	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Copper	12.8	MG/KG	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Copper	4.8	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Copper	19.3	MG/KG	Grab	*				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Copper	17.6	MG/KG	Grab					1	
MND33-0058	*0058-0003*	*14-Nov-91*	*8*	*10*	*Copper*	*16.5*	*MG/KG*	*Grab*					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Copper	12.9	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Copper	**33.1**	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Copper	29	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Copper*	*7.3*	*MG/KG*	*Grab*	*B*	16.6378378	5.820	**18.513**	37	**37**
						Site Employee uses only Shallow values				16.1	4.832	**18.167**	21	**21**

MND33-0076	0076-0002	6-Dec-91	3	5	Cyanide	**0.62**	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Cyanide	0.57	MG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Cyanide	0.32	MG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Cyanide	0.16	MG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Cyanide	0.14	MG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Cyanide	0.325	MG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Cyanide	0.3225	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Cyanide	0.315	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Cyanide	0.31	MG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Cyanide	0.305	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Cyanide	0.295	MG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Cyanide	0.295	MG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Cyanide	0.285	MG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Cyanide	0.28	MG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Cyanide	0.28	MG/KG	Grab	U				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Cyanide	0.1	MG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Cyanide	0.1	MG/KG	Grab	U				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Cyanide	0.1	MG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Cyanide	0.075	MG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Cyanide	0.06	MG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Cyanide	0.06	MG/KG	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Cyanide*	*0.06*	*MG/KG*	*Grab*	*U*				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Cyanide	0.001	MG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Cyanide	0.001	MG/KG	Grab	UJ				0	
	NAC016	05-Feb-96	0	3	Cyanide	**1**	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Cyanide	0.56	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Cyanide	0.11	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Cyanide	0.11	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Cyanide	0.11	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Cyanide	0.11	MG/KG	Grab		0.24598333	0.217	**0.323**	11	30
MND33-0059	0059-0002	18-Nov-91	3	7	Di-n-butyl Phthalate	**140**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Di-n-butyl Phthalate	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Di-n-butyl Phthalate	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Di-n-butyl Phthalate	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Di-n-butyl Phthalate	195	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Di-n-butyl Phthalate	190	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Di-n-butyl Phthalate	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Di-n-butyl Phthalate	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Di-n-butyl Phthalate	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Di-n-butyl Phthalate	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Di-n-butyl Phthalate	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Di-n-butyl Phthalate	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Di-n-butyl Phthalate	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Di-n-butyl Phthalate	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Di-n-butyl Phthalate	392.5	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Di-n-butyl Phthalate	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Di-n-butyl Phthalate	385	UG/KG	Grab	UJ				0	

MND33-0078	0078-0002	07-Dec-91	3	4	Di-n-butyl Phthalate	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Di-n-butyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Di-n-butyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Di-n-butyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Di-n-butyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Di-n-butyl Phthalate	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Di-n-butyl Phthalate	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Di-n-butyl Phthalate	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Di-n-butyl Phthalate	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Di-n-butyl Phthalate	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Di-n-butyl Phthalate	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Di-n-butyl Phthalate	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Di-n-butyl Phthalate	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Di-n-butyl Phthalate	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Di-n-butyl Phthalate	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Di-n-butyl Phthalate	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Di-n-butyl Phthalate	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Di-n-butyl Phthalate	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Di-n-butyl Phthalate	175	UG/KG	Grab	UJ	387.083333	382.253	**511.950**	1	**36**
	NAC024	06-Feb-96	0	3	Di-n-octyl Phthalate	**89**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Di-n-octyl Phthalate	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Di-n-octyl Phthalate	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Di-n-octyl Phthalate	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Di-n-octyl Phthalate	195	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Di-n-octyl Phthalate	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Di-n-octyl Phthalate	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Di-n-octyl Phthalate	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Di-n-octyl Phthalate	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Di-n-octyl Phthalate	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Di-n-octyl Phthalate	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Di-n-octyl Phthalate	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Di-n-octyl Phthalate	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Di-n-octyl Phthalate	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Di-n-octyl Phthalate	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Di-n-octyl Phthalate	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Di-n-octyl Phthalate	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Di-n-octyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Di-n-octyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Di-n-octyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Di-n-octyl Phthalate	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Di-n-octyl Phthalate	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Di-n-octyl Phthalate	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Di-n-octyl Phthalate	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Di-n-octyl Phthalate	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Di-n-octyl Phthalate	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Di-n-octyl Phthalate	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Di-n-octyl Phthalate	215	UG/KG	Grab	UJ				0	

AH	RAH306	14-Apr-94	18	24	Di-n-octyl Phthalate	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Di-n-octyl Phthalate	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Di-n-octyl Phthalate	192.5	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Di-n-octyl Phthalate	190	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Di-n-octyl Phthalate	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Di-n-octyl Phthalate	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Di-n-octyl Phthalate	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Di-n-octyl Phthalate	175	UG/KG	Grab	UJ	391.361111	381.741	**516.061**	1	36
MND33-0058	0058-0002	14-Nov-91	3	5	Dibenz(a,h)anthracene	**190**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Dibenz(a,h)anthracene	**69**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Dibenz(a,h)anthracene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Dibenz(a,h)anthracene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Dibenz(a,h)anthracene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Dibenz(a,h)anthracene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Dibenz(a,h)anthracene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Dibenz(a,h)anthracene	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Dibenz(a,h)anthracene	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Dibenz(a,h)anthracene	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Dibenz(a,h)anthracene	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Dibenz(a,h)anthracene	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Dibenz(a,h)anthracene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Dibenz(a,h)anthracene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Dibenz(a,h)anthracene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Dibenz(a,h)anthracene	390	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Dibenz(a,h)anthracene	385	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Dibenz(a,h)anthracene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Dibenz(a,h)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Dibenz(a,h)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Dibenz(a,h)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Dibenz(a,h)anthracene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Dibenz(a,h)anthracene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Dibenz(a,h)anthracene	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Dibenz(a,h)anthracene	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Dibenz(a,h)anthracene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Dibenz(a,h)anthracene	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Dibenz(a,h)anthracene	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Dibenz(a,h)anthracene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Dibenz(a,h)anthracene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Dibenz(a,h)anthracene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Dibenz(a,h)anthracene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Dibenz(a,h)anthracene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Dibenz(a,h)anthracene	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Dibenz(a,h)anthracene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Dibenz(a,h)anthracene	175	UG/KG	Grab	UJ	385.25	383.745	**510.604**	2	36
MND33-0079	0079-0002	08-Dec-91	3	5	Dibenzofuran	**3800**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Dibenzofuran	**97.5**	UG/KG	Grab	J				1	

	NAC013	07-Feb-96	0	3	Dibenzofuran	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Dibenzofuran	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Dibenzofuran	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Dibenzofuran	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Dibenzofuran	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Dibenzofuran	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Dibenzofuran	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Dibenzofuran	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Dibenzofuran	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Dibenzofuran	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Dibenzofuran	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Dibenzofuran	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Dibenzofuran	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Dibenzofuran	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Dibenzofuran	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Dibenzofuran	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Dibenzofuran	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Dibenzofuran	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Dibenzofuran	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Dibenzofuran	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Dibenzofuran	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Dibenzofuran	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Dibenzofuran	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Dibenzofuran	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Dibenzofuran	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Dibenzofuran	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Dibenzofuran	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Dibenzofuran	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Dibenzofuran	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Dibenzofuran	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Dibenzofuran	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Dibenzofuran	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Dibenzofuran	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Dibenzofuran	175	UG/KG	Grab	UJ	491.875	682.640	714.866	2	36
MND33-0076	0076-0002	6-Dec-91	3	5	Ethylbenzene	3	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Ethylbenzene	3	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	

	NAC013	07-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Ethylbenzene	3	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Ethylbenzene	2.5	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Ethylbenzene	3	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Ethylbenzene	3	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Ethylbenzene	3	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Ethylbenzene	3	UG/KG	Grab	UJ	2.97916667	0.102	**3.020**	1	**24**
MND33-0079	0079-0002	08-Dec-91	3	5	Fluoranthene	**65000**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Fluoranthene	2000	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Fluoranthene	1300	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Fluoranthene	1120	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Fluoranthene	750	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Fluoranthene	550	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Fluoranthene	340	UG/KG	Grab	J				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Fluoranthene	260	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Fluoranthene	230	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Fluoranthene	220	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Fluoranthene	145	UG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Fluoranthene	140	UG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Fluoranthene	110	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Fluoranthene	100	UG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Fluoranthene	92	UG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Fluoranthene	88	UG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Fluoranthene	85.5	UG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Fluoranthene	85	UG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Fluoranthene	83	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Fluoranthene	38	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Fluoranthene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Fluoranthene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Fluoranthene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Fluoranthene	180	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Fluoranthene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Fluoranthene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Fluoranthene	392.5	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Fluoranthene	385	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Fluoranthene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Fluoranthene	360	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Fluoranthene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Fluoranthene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Fluoranthene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Fluoranthene	185	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Fluoranthene	**1400**	UG/KG	Grab		2177.47222	10778.033	**5698.227**	21	**36**

	NAC034	06-Feb-96	0	3	Fluorene	**170**	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Fluorene	76	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Fluorene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Fluorene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Fluorene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Fluorene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Fluorene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Fluorene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Fluorene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Fluorene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Fluorene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Fluorene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Fluorene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Fluorene	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Fluorene	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Fluorene	215	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Fluorene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Fluorene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Fluorene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Fluorene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Fluorene	175	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Fluorene	**6300**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Fluorene	110	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Fluorene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Fluorene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Fluorene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Fluorene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Fluorene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Fluorene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Fluorene	360	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Fluorene	1800	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Fluorene	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Fluorene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Fluorene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Fluorene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Fluorene	210	UG/KG	Grab	UJ	547.944444	1058.625	**893.755**	4	**36**
						Site Employee uses only Shallow values				272.547619	178.974	**349.094**	2	**21**
AG	RAG306	13-Apr-94	18	24	Fluoride	3.8	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Fluoride	**2.2**	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Fluoride	1.4	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Fluoride	2.2	MG/KG	Grab	J				1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Fluoride*	***6.38***	*MG/KG*	*Grab*		3.196	1.982	**4.933**	5	**5**
AG	RAG305	13-Apr-94	0	6	Indeno(1,2,3-cd)pyrene	**390**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	210	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Indeno(1,2,3-cd)pyrene	150	UG/KG	Grab	J				1	

	NAC016	05-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	27	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Indeno(1,2,3-cd)pyrene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Indeno(1,2,3-cd)pyrene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	370	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	355	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Indeno(1,2,3-cd)pyrene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Indeno(1,2,3-cd)pyrene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Indeno(1,2,3-cd)pyrene	175	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Indeno(1,2,3-cd)pyrene	**20500**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Indeno(1,2,3-cd)pyrene	810	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Indeno(1,2,3-cd)pyrene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Indeno(1,2,3-cd)pyrene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Indeno(1,2,3-cd)pyrene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Indeno(1,2,3-cd)pyrene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Indeno(1,2,3-cd)pyrene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Indeno(1,2,3-cd)pyrene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Indeno(1,2,3-cd)pyrene	360	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Indeno(1,2,3-cd)pyrene	120	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Indeno(1,2,3-cd)pyrene	1800	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Indeno(1,2,3-cd)pyrene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Indeno(1,2,3-cd)pyrene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Indeno(1,2,3-cd)pyrene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Indeno(1,2,3-cd)pyrene	210	UG/KG	Grab	UJ	956.722222	3373.088	**2058.576**	7	**36**
						Site Employee uses only Shallow values				278.071429	183.533	**356.568**	4	**21**
AH	RAH306	14-Apr-94	18	24	Iron	**43600**	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Iron	38650	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Iron	**30800**	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Iron	27900	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Iron	27850	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Iron	26600	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Iron	24200	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Iron	24100	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Iron	23800	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Iron	22150	MG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Iron	21100	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Iron	20000	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Iron	18900	MG/KG	Grab					1	

MND33-0074	0074-0001	05-Dec-91	0	2	Iron	17600	MG/KG	Grab	J				1	
AH	RAH305	14-Apr-94	0	6	Iron	17400	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Iron	16850	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Iron	16600	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Iron	16300	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Iron	16100	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Iron	16100	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Iron	15900	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Iron	15800	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Iron	14600	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Iron	14300	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Iron	13800	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Iron	13200	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Iron	12900	MG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Iron	12200	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Iron	11400	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Iron	11100	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Iron*	*10900*	*MG/KG*	*Grab*					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Iron	9770	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Iron	9610	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Iron	7400	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Iron	6900	MG/KG	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Iron	6010	MG/KG	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Iron	2880	MG/KG	Grab		17710	8642.318	**20494.690**	37	37
AG	RAG305	13-Apr-94	0	6	Lead	**35.8**	MG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Lead	**31.3**	MG/KG	Grab	*				1	
	NAC013	07-Feb-96	0	3	Lead	29.4	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Lead	21.3	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Lead	19.8	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Lead	18.5	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Lead	17.55	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Lead	14.9	MG/KG	Grab	*				1	
	NAC034	06-Feb-96	0	3	Lead	14.9	MG/KG	Grab	JS				1	
	NAC027	07-Feb-96	0	3	Lead	14.3	MG/KG	Grab	JS				1	
	NAC016	05-Feb-96	0	3	Lead	14.1	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Lead	11.6	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Lead	10.9	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Lead	10.55	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Lead	9.8	MG/KG	Grab	*				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Lead	9.6	MG/KG	Grab	*				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Lead	9.5	MG/KG	Grab	*				1	
	NAC012	08-Feb-96	0	3	Lead	9.3	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Lead	8	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Lead	7.95	MG/KG	Grab	*				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Lead	7.6	MG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Lead	7.5	MG/KG	Grab	*				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Lead	7.4	MG/KG	Grab	*				1	

MND33-0075	0075-0001	06-Dec-91	0	2	Lead	7	MG/KG	Grab	*				1	
	NAC025	06-Feb-96	0	3	Lead	6.9	MG/KG	Grab	JS				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Lead	6.5	MG/KG	Grab	*				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Lead	6.5	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Lead	5.7	MG/KG	Grab	*				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Lead	5.6	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Lead	5.6	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Lead	5.4	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Lead	5.4	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Lead	5.2	MG/KG	Grab	JS				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Lead	4.9	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Lead	4.2	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Lead*	*3*	*MG/KG*	*Grab*					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Lead	1.7	MG/KG	Grab		11.2202703	7.909	**13.769**	37	**37**
	NAC034	06-Feb-96	0	3	Lithium	9.6	MG/KG	Grab	B				1	
	NAC024	06-Feb-96	0	3	Lithium	12.8	MG/KG	Grab	B				1	
	NAC025	06-Feb-96	0	3	Lithium	16.3	MG/KG	Grab	B				1	
	NAC027	07-Feb-96	0	3	Lithium	17	MG/KG	Grab	B				1	
	NAC013	07-Feb-96	0	3	Lithium	17.8	MG/KG	Grab	B				1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Lithium*	*20.3*	*MG/KG*	*Grab*					1	
	NAC016	05-Feb-96	0	3	Lithium	25.1	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Lithium	**25.3**	MG/KG	Grab		18.025	5.484	21.825	8	**8**
MND33-0077	0077-0001	07-Dec-91	0	2	Magnesium	**64500**	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Magnesium	63700	MG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Magnesium	53900	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Magnesium	47700	MG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Magnesium	46500	MG/KG	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Magnesium	42900	MG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Magnesium	31700	MG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Magnesium	30300	MG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Magnesium	**27900**	MG/KG	Grab	J				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Magnesium	27200	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Magnesium	26700	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Magnesium	26300	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Magnesium	25750	MG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Magnesium	25000	MG/KG	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Magnesium	21900	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Magnesium	21200	MG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Magnesium	19900	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Magnesium	19050	MG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Magnesium	18000	MG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Magnesium	16800	MG/KG	Grab	*				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Magnesium	16400	MG/KG	Grab	J				1	
	NAC024	06-Feb-96	0	3	Magnesium	15700	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Magnesium*	*15000*	*MG/KG*	*Grab*					1	
	NAC025	06-Feb-96	0	3	Magnesium	14900	MG/KG	Grab					1	

	NAC016	05-Feb-96	0	3	Magnesium	14600	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Magnesium	13400	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Magnesium	12200	MG/KG	Grab	*				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Magnesium	11400	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Magnesium	10500	MG/KG	Grab	J				1	
	NAC027	07-Feb-96	0	3	Magnesium	9760	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Magnesium	8220	MG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Magnesium	7250	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Magnesium	5210	MG/KG	Grab	*				1	
AG	RAG306	13-Apr-94	18	24	Magnesium	5160	MG/KG	Grab	*				1	
AG	RAG305	13-Apr-94	0	6	Magnesium	3665	MG/KG	Grab	*				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Magnesium	3330	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Magnesium	1720	MG/KG	Grab	*	22305.8108	16211.041	**27529.261**	37	**37**
AG	RAG306	13-Apr-94	18	24	Manganese	**757**	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Manganese	698	MG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Manganese	685	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Manganese	**659**	MG/KG	Grab	JD				1	
	NAC012	08-Feb-96	0	3	Manganese	658	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Manganese	649	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Manganese	641	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Manganese	617	MG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Manganese	606.5	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Manganese	543	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Manganese	513	MG/KG	Grab	JD				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Manganese	504	MG/KG	Grab	J				1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Manganese*	*485*	*MG/KG*	*Grab*					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Manganese	484	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Manganese	474	MG/KG	Grab	J				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Manganese	449.5	MG/KG	Grab	J				1	
	NAC025	06-Feb-96	0	3	Manganese	429	MG/KG	Grab	JD				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Manganese	409	MG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Manganese	405	MG/KG	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Manganese	395	MG/KG	Grab	J				1	
	NAC024	06-Feb-96	0	3	Manganese	393	MG/KG	Grab	JD				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Manganese	392	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Manganese	385	MG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Manganese	373	MG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Manganese	363.5	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Manganese	358	MG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Manganese	342	MG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Manganese	338	MG/KG	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Manganese	330	MG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Manganese	296	MG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Manganese	289	MG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Manganese	284	MG/KG	Grab	J				1	
AH	RAH305	14-Apr-94	0	6	Manganese	265	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Manganese	258	MG/KG	Grab	J				1	

MND33-0077	0077-0001	07-Dec-91	0	2	Manganese	253	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Manganese	229	MG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Manganese	60.9	MG/KG	Grab		439.740541	158.711	**490.880**	37	**37**
	NAC034	06-Feb-96	0	3	Mercury	0.1	MG/KG	Grab	JB				1	
	NAC027	07-Feb-96	0	3	Mercury	**0.13**	MG/KG	Grab	JD				1	
AG	RAG305	13-Apr-94	0	6	Mercury	0.065	MG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Mercury	0.065	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Mercury	0.065	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Mercury	0.06	MG/KG	Grab	U				0	
350	0350-0024	2-Mar-93	23.4	24.2	Mercury	0.06	MG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Mercury	0.055	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Mercury	0.03	MG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Mercury	0.03	MG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Mercury	0.03	MG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Mercury	0.01	MG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Mercury	0.01	MG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Mercury	0.01	MG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Mercury	0.01	MG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Mercury	0.01	MG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Mercury	0.06	MG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Mercury	0.055	MG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Mercury	0.055	MG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Mercury	0.055	MG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Mercury	0.055	MG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Mercury	0.05	MG/KG	Grab	UJ				0	
	NAC025	06-Feb-96	0	3	Mercury	0.03	MG/KG	Grab	UJ				0	
	NAC024	06-Feb-96	0	3	Mercury	0.025	MG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Mercury	**0.12**	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Mercury	0.11	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Mercury	0.11	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Mercury	0.11	MG/KG	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Mercury	0.11	MG/KG	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Mercury	0.11	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Mercury	0.11	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Mercury	0.11	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Mercury	0.1	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Mercury	0.1	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Mercury	0.1	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Mercury	0.04	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Mercury	0.02	MG/KG	Grab		0.06418919	0.038	**0.076**	15	**37**
AG	RAG305	13-Apr-94	0	6	Methoxychlor	**5.5**	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Methoxychlor	60	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Methoxychlor	60	UG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Methoxychlor	60	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Methoxychlor	60	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Methoxychlor	60	UG/KG	Grab	U				0	

MND33-0059	0059-0001	13-Nov-91	0	2	Methoxychlor	60	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Methoxychlor	10	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Methoxychlor	10	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Methoxychlor	10	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Methoxychlor	9.5	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Methoxychlor	9.5	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Methoxychlor	9.5	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Methoxychlor	9.5	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Methoxychlor	362.2	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Methoxychlor	136.15	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Methoxychlor	60	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Methoxychlor	49.2	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Methoxychlor	49	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Methoxychlor	47.875	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Methoxychlor	47.75	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Methoxychlor	47.2	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Methoxychlor	46.45	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Methoxychlor	45.65	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Methoxychlor	45.4	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Methoxychlor	45.4	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Methoxychlor	45.15	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Methoxychlor	45.05	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Methoxychlor	44.55	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Methoxychlor	43.65	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Methoxychlor	43.65	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Methoxychlor	43.6	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Methoxychlor	43.6	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Methoxychlor	4.65	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Methoxychlor	2.1	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Methoxychlor	2.1	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Methoxychlor	2.025	UG/KG	Grab	UJ	46.9162162	59.596	**66.119**	1	**37**
AH	RAH306	14-Apr-94	18	24	Methylene Chloride	**66**	UG/KG	Grab	B				1	
AH	RAH305	14-Apr-94	0	6	Methylene Chloride	**56**	UG/KG	Grab	B				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Methylene Chloride	11	UG/KG	Grab	B				1	
AG	RAG306	13-Apr-94	18	24	Methylene Chloride	10.5	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Methylene Chloride	6.5	UG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Methylene Chloride	8.5	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Methylene Chloride	3	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Methylene Chloride	2.5	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Methylene Chloride	10.5	UG/KG	Grab	UB				0	

	NAC025	06-Feb-96	0	3	Methylene Chloride	8.5	UG/KG	Grab	UB				0	
	NAC034	06-Feb-96	0	3	Methylene Chloride	7.5	UG/KG	Grab	UB				0	
	NAC024	06-Feb-96	0	3	Methylene Chloride	7	UG/KG	Grab	UB				0	
	NAC027	07-Feb-96	0	3	Methylene Chloride	6.5	UG/KG	Grab	UB				0	
	NAC012	08-Feb-96	0	3	Methylene Chloride	6	UG/KG	Grab	UB				0	
	NAC013	07-Feb-96	0	3	Methylene Chloride	6	UG/KG	Grab	UB				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Methylene Chloride	10	UG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Methylene Chloride	9	UG/KG	Grab		10.6666667	15.837	17.002	7	24
	NAC025	06-Feb-96	0	3	Molybdenum	2.3	MG/KG	Grab	B				1	
	NAC027	07-Feb-96	0	3	Molybdenum	1.9	MG/KG	Grab	B				1	
	NAC034	06-Feb-96	0	3	Molybdenum	1.6	MG/KG	Grab	B				1	
	NAC012	08-Feb-96	0	3	Molybdenum	1.3	MG/KG	Grab	B				1	
	NAC016	05-Feb-96	0	3	Molybdenum	1.3	MG/KG	Grab	B				1	
	NAC013	07-Feb-96	0	3	Molybdenum	0.81	MG/KG	Grab	B				1	
	NAC024	06-Feb-96	0	3	Molybdenum	0.63	MG/KG	Grab	B				1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Molybdenum*	*3.05*	*MG/KG*	*Grab*	*U*				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Molybdenum	14.5	MG/KG	Grab		3.04333333	4.360	5.892	8	9
MND33-0079	0079-0002	08-Dec-91	3	5	N-Nitrosodiphenylamine	83	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	N-Nitrosodiphenylamine	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	N-Nitrosodiphenylamine	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	N-Nitrosodiphenylamine	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	N-Nitrosodiphenylamine	195	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	N-Nitrosodiphenylamine	190	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	N-Nitrosodiphenylamine	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	N-Nitrosodiphenylamine	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	N-Nitrosodiphenylamine	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	N-Nitrosodiphenylamine	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	N-Nitrosodiphenylamine	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	N-Nitrosodiphenylamine	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	N-Nitrosodiphenylamine	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	N-Nitrosodiphenylamine	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	N-Nitrosodiphenylamine	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	N-Nitrosodiphenylamine	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	N-Nitrosodiphenylamine	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	N-Nitrosodiphenylamine	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	N-Nitrosodiphenylamine	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	N-Nitrosodiphenylamine	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	N-Nitrosodiphenylamine	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	N-Nitrosodiphenylamine	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	N-Nitrosodiphenylamine	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	N-Nitrosodiphenylamine	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	N-Nitrosodiphenylamine	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	N-Nitrosodiphenylamine	360	UG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	N-Nitrosodiphenylamine	355	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	N-Nitrosodiphenylamine	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	N-Nitrosodiphenylamine	215	UG/KG	Grab	UJ				0	

AG	RAG306	13-Apr-94	18	24	N-Nitrosodiphenylamine	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	N-Nitrosodiphenylamine	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	N-Nitrosodiphenylamine	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	N-Nitrosodiphenylamine	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	N-Nitrosodiphenylamine	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	N-Nitrosodiphenylamine	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	N-Nitrosodiphenylamine	175	UG/KG	Grab	UJ	391.194444	381.878	**515.939**	1	**36**
MND33-0076	0076-0001	06-Dec-91	0	2	Naphthalene	**230**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Naphthalene	29	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Naphthalene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Naphthalene	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Naphthalene	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Naphthalene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Naphthalene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Naphthalene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Naphthalene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Naphthalene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Naphthalene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Naphthalene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Naphthalene	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Naphthalene	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Naphthalene	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Naphthalene	215	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Naphthalene	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Naphthalene	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Naphthalene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Naphthalene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Naphthalene	175	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Naphthalene	**1650**	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Naphthalene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Naphthalene	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Naphthalene	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Naphthalene	385	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Naphthalene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Naphthalene	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Naphthalene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Naphthalene	360	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Naphthalene	1800	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Naphthalene	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Naphthalene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Naphthalene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Naphthalene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Naphthalene	210	UG/KG	Grab	UJ	426.777778	436.332	**569.310**	3	**36**
						Site Employee uses only Shallow values				273.166667	180.638	**350.425**	2	**21**
AG	RAG306	13-Apr-94	18	24	Nickel	**52.05**	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Nickel	41.9	MG/KG	Grab					1	

	NAC012	08-Feb-96	0	3	Nickel	**26.4**	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Nickel	25.9	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Nickel	25.5	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Nickel	24.7	MG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Nickel	24.5	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Nickel	24.1	MG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Nickel	23.9	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Nickel	23.4	MG/KG	Grab	J				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Nickel	22.9	MG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Nickel	22.7	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Nickel	22.6	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Nickel	22.2	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Nickel	21.6	MG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Nickel	20.4	MG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Nickel	19.7	MG/KG	Grab	J				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Nickel	19.4	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Nickel	19.3	MG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Nickel	18.6	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Nickel	17.9	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Nickel	17.8	MG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Nickel	17.8	MG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Nickel	17.7	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Nickel	17.6	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Nickel	16.8	MG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Nickel	16.5	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Nickel	15.5	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Nickel	15	MG/KG	Grab	J				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Nickel	14.6	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Nickel	13.6	MG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Nickel	13	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Nickel	12.6	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Nickel	12.3	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Nickel	11	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Nickel*	*6.1*	*MG/KG*	*Grab*	*U*				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Nickel	3	MG/KG	Grab		20.0148649	8.532	**22.764**	36	**37**
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Nitrate*	*2.07*	*MG/KG*	*Grab*		*2.07*	*0.000*	*#NUM!*	*1*	*1*
	NAC034	06-Feb-96	0	3	Nitrate-Nitrite-N	**3.7**	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Nitrate-Nitrite-N	2.6	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Nitrate-Nitrite-N	2.4	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Nitrate-Nitrite-N	2.2	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Nitrate-Nitrite-N	2.1	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Nitrate-Nitrite-N	2	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Nitrate-Nitrite-N	1.8	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Nitrate/Nitrite	0.5675	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Nitrate/Nitrite	**0.325**	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Nitrate/Nitrite	0.315	MG/KG	Grab	U				0	

AH	RAH305	14-Apr-94	0	6	Nitrate/Nitrite	0.31	MG/KG	Grab	U	1.66522727	1.132	2.334	8	11
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Organic Carbon*	*10189.1*	*MG/KG*	*Grab*		*10189.1*	*0.000*	*#NUM!*	*1*	*1*
MND33-0076	0076-0001	06-Dec-91	0	2	Pentachlorophenol	**120**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Pentachlorophenol	500	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Pentachlorophenol	490	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Pentachlorophenol	490	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Pentachlorophenol	9000	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Pentachlorophenol	9000	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Pentachlorophenol	4600	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Pentachlorophenol	2050	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Pentachlorophenol	2000	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Pentachlorophenol	1950	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Pentachlorophenol	1900	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Pentachlorophenol	1900	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Pentachlorophenol	1850	UG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Pentachlorophenol	1850	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Pentachlorophenol	1850	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Pentachlorophenol	1825	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Pentachlorophenol	1800	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Pentachlorophenol	1800	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Pentachlorophenol	1800	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Pentachlorophenol	1800	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Pentachlorophenol	1750	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Pentachlorophenol	1750	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Pentachlorophenol	1700	UG/KG	Grab	UJ				0	
	NAC027	07-Feb-96	0	3	Pentachlorophenol	970	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Pentachlorophenol	950	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Pentachlorophenol	950	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Pentachlorophenol	940	UG/KG	Grab	UJ				0	
	NAC024	06-Feb-96	0	3	Pentachlorophenol	920	UG/KG	Grab	UJ				0	
	NAC025	06-Feb-96	0	3	Pentachlorophenol	910	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Pentachlorophenol	900	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Pentachlorophenol	900	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Pentachlorophenol	850	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Pentachlorophenol	550	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Pentachlorophenol	550	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Pentachlorophenol	500	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Pentachlorophenol	500	UG/KG	Grab	UJ	1782.36111	1950.011	**2419.352**	1	36
MND33-0057	0057-0001	12-Nov-91	0	2	Phenanthrene	370	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Phenanthrene	305	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Phenanthrene	160	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Phenanthrene	110	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Phenanthrene	63	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Phenanthrene	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Phenanthrene	195	UG/KG	Grab	U				0	

	NAC027	07-Feb-96	0	3	Phenanthrene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Phenanthrene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Phenanthrene	180	UG/KG	Grab	U				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Phenanthrene	950	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Phenanthrene	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Phenanthrene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Phenanthrene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Phenanthrene	370	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Phenanthrene	355	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Phenanthrene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Phenanthrene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Phenanthrene	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Phenanthrene	175	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Phenanthrene	**1200**	UG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Phenanthrene	**49500**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Phenanthrene	1300	UG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Phenanthrene	130	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Phenanthrene	1850	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Phenanthrene	392.5	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Phenanthrene	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Phenanthrene	385	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Phenanthrene	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Phenanthrene	232.5	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Phenanthrene	960	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Phenanthrene	300	UG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Phenanthrene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Phenanthrene	400	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Phenanthrene	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Phenanthrene	210	UG/KG	Grab	UJ	1770.91667	8190.882	**4446.552**	11	**36**
						Site Employee uses only Shallow values				320.142857	271.500	**436.263**	6	**21**
MND33-0076	0076-0001	06-Dec-91	0	2	Phenol	**120**	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Phenol	205	UG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Phenol	195	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Phenol	195	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Phenol	195	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Phenol	190	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Phenol	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Phenol	180	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Phenol	1850	UG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Phenol	1800	UG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Phenol	950	UG/KG	Grab	UJ				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Phenol	420	UG/KG	Grab	UJ				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Phenol	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Phenol	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Phenol	392.5	UG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Phenol	390	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Phenol	385	UG/KG	Grab	UJ				0	

MND33-0058	0058-0002	14-Nov-91	3	5	Phenol	385	UG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Phenol	385	UG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Phenol	375	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Phenol	375	UG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Phenol	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Phenol	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Phenol	370	UG/KG	Grab	UJ				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Phenol	360	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Phenol	360	UG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Phenol	355	UG/KG	Grab	UJ				0	
AG	RAG305	13-Apr-94	0	6	Phenol	215	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Phenol	215	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Phenol	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Phenol	205	UG/KG	Grab	UJ				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Phenol	192.5	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Phenol	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Phenol	185	UG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Phenol	185	UG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Phenol	175	UG/KG	Grab	UJ	387.5	382.599	512.480	1	36
AH	RAH305	14-Apr-94	0	6	Plutonium-238	26	PCI/G	Grab					1	
AG	RAG305	13-Apr-94	0	6	Plutonium-238	24.5	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Plutonium-238	1.4	PCI/G	Grab					1	
	NAC034	06-Feb-96	0	3	Plutonium-238	0.574	PCI/G	Grab					1	
AG	RAG303	13-Apr-94	0	2	Plutonium-238	0.5275	PCI/G	Grab	J				1	
	NAC024	06-Feb-96	0	3	Plutonium-238	0.523	PCI/G	Grab					1	
	NAC025	06-Feb-96	0	3	Plutonium-238	0.288	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Plutonium-238	0.259	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Plutonium-238	0.253	PCI/G	Grab					1	
	NAC012	08-Feb-96	0	3	Plutonium-238	0.101	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Plutonium-238	0.0107	PCI/G	Grab					1	
	01N03	1995	0		Plutonium-238	60	PCI/G	Screening					1	
	03N02	1995	0		Plutonium-238	49	PCI/G	Screening					1	
	92021014	1992	0		Plutonium-238	46	PCI/G	Screening					1	
	8805067	1988	0		Plutonium-238	40	PCI/G	Screening					1	
	88050414	1988	0		Plutonium-238	38	PCI/G	Screening					1	
	03N01	1995	0		Plutonium-238	38	PCI/G	Screening					1	
	88052776	1988	0		Plutonium-238	33	PCI/G	Screening					1	
	88050412	1988	0		Plutonium-238	33	PCI/G	Screening					1	
	88052771	1988	0		Plutonium-238	31	PCI/G	Screening					1	
	03N04	1995	0		Plutonium-238	31	PCI/G	Screening					1	
	05N02	1995	0		Plutonium-238	30	PCI/G	Screening					1	
	8902241	1989	0		Plutonium-238	28	PCI/G	Screening					1	
	05N04	1995	0		Plutonium-238	27	PCI/G	Screening					1	
	88052763	1988	0		Plutonium-238	26	PCI/G	Screening					1	
	8902245	1989	0		Plutonium-238	26	PCI/G	Screening					1	
	89031022	1989	0		Plutonium-238	26	PCI/G	Screening					1	
	88050420	1988	0		Plutonium-238	25	PCI/G	Screening					1	

	9406036	1994	0		Plutonium-238	25	PCI/G	Screening				1	
	01N02	1995	0		Plutonium-238	25	PCI/G	Screening				1	
	01N06	1995	0		Plutonium-238	25	PCI/G	Screening				1	
	02N02	1995	0		Plutonium-238	25	PCI/G	Screening				1	
	03N03	1995	0		Plutonium-238	25	PCI/G	Screening				1	
	04N03	1995	0		Plutonium-238	25	PCI/G	Screening				1	
	880607127	1988	0		Plutonium-238	23	PCI/G	Screening				1	
	88052780	1988	0		Plutonium-238	23	PCI/G	Screening				1	
	88052773	1988	0		Plutonium-238	23	PCI/G	Screening				1	
	88052766	1988	0		Plutonium-238	22	PCI/G	Screening				1	
	88050416	1988	0		Plutonium-238	21	PCI/G	Screening				1	
	88050411	1988	0		Plutonium-238	21	PCI/G	Screening				1	
	88052779	1988	0		Plutonium-238	20	PCI/G	Screening				1	
	880607125	1988	0		Plutonium-238	20	PCI/G	Screening				1	
	89031019	1989	0		Plutonium-238	20	PCI/G	Screening				1	
	89031023	1989	0		Plutonium-238	20	PCI/G	Screening				1	
	89031021	1989	0		Plutonium-238	19	PCI/G	Screening				1	
	8902246	1989	0		Plutonium-238	19	PCI/G	Screening				1	
	92020316	1992	0		Plutonium-238	19	PCI/G	Screening				1	
	88052775	1988	0		Plutonium-238	18	PCI/G	Screening				1	
	88050415	1988	0		Plutonium-238	18	PCI/G	Screening				1	
	88050410	1988	0		Plutonium-238	18	PCI/G	Screening				1	
	8801114	1988	0		Plutonium-238	17	PCI/G	Screening				1	
	88050419	1988	0		Plutonium-238	17	PCI/G	Screening				1	
	91051615	1991	0		Plutonium-238	17	PCI/G	Screening				1	
	8801112	1988	0		Plutonium-238	16	PCI/G	Screening				1	
	88052785	1988	0		Plutonium-238	16	PCI/G	Screening				1	
	88050417	1988	0		Plutonium-238	16	PCI/G	Screening				1	
	88050413	1988	0		Plutonium-238	16	PCI/G	Screening				1	
	88052787	1988	0		Plutonium-238	15	PCI/G	Screening				1	
	91060632	1991	0		Plutonium-238	15	PCI/G	Screening				1	
	8805065	1988	0		Plutonium-238	14	PCI/G	Screening				1	
	8805047	1988	0		Plutonium-238	14	PCI/G	Screening				1	
	8902242	1989	0		Plutonium-238	14	PCI/G	Screening				1	
	91051614	1991	0		Plutonium-238	14	PCI/G	Screening				1	
	9202204	1992	0		Plutonium-238	14	PCI/G	Screening				1	
	9202048	1992	0		Plutonium-238	14	PCI/G	Screening				1	
	8805063	1988	0		Plutonium-238	13	PCI/G	Screening				1	
	88052777	1988	0		Plutonium-238	13	PCI/G	Screening				1	
	8805012	1988	0		Plutonium-238	13	PCI/G	Screening				1	
	8902247	1989	0		Plutonium-238	13	PCI/G	Screening				1	
	92021012	1992	0		Plutonium-238	13	PCI/G	Screening				1	
	9202047	1992	0		Plutonium-238	13	PCI/G	Screening				1	
	07N02	1995	0		Plutonium-238	12	PCI/G	Screenin	U			0	
	880607135	1988	0		Plutonium-238	12	PCI/G	Screening				1	
	880607131	1988	0		Plutonium-238	12	PCI/G	Screening				1	
	880607128	1988	0		Plutonium-238	12	PCI/G	Screening				1	
	88052767	1988	0		Plutonium-238	12	PCI/G	Screening				1	

	8805049	1988	0		Plutonium-238	12	PCI/G	Screening				1	
	9105287	1991	0		Plutonium-238	12	PCI/G	Screening				1	
	9105282	1991	0		Plutonium-238	12	PCI/G	Screening				1	
	92020320	1992	0		Plutonium-238	12	PCI/G	Screening				1	
	9202106	1992	0		Plutonium-238	12	PCI/G	Screening				1	
	07N01	1995	0		Plutonium-238	11	PCI/G	Screenin	U			0	
	880607138	1988	0		Plutonium-238	11	PCI/G	Screening				1	
	880607137	1988	0		Plutonium-238	11	PCI/G	Screening				1	
	880607133	1988	0		Plutonium-238	11	PCI/G	Screening				1	
	8801111	1988	0		Plutonium-238	11	PCI/G	Screening				1	
	88050418	1988	0		Plutonium-238	11	PCI/G	Screening				1	
	91052199	1991	0		Plutonium-238	11	PCI/G	Screening				1	
	92010720	1992	0		Plutonium-238	11	PCI/G	Screening				1	
	02N03	1995	0		Plutonium-238	10.5	PCI/G	Screenin	U			0	
	03N06	1995	0		Plutonium-238	10.5	PCI/G	Screenin	U			0	
	07N03	1995	0		Plutonium-238	10.5	PCI/G	Screenin	U			0	
	04N05	1995	0		Plutonium-238	10	PCI/G	Screenin	U			0	
	880607129	1988	0		Plutonium-238	10	PCI/G	Screening				1	
	8805048	1988	0		Plutonium-238	10	PCI/G	Screening				1	
	8902244	1989	0		Plutonium-238	10	PCI/G	Screening				1	
	91051610	1991	0		Plutonium-238	10	PCI/G	Screening				1	
	92020319	1992	0		Plutonium-238	10	PCI/G	Screening				1	
	02N05	1995	0		Plutonium-238	9.5	PCI/G	Screenin	U			0	
	06N02	1995	0		Plutonium-238	9.5	PCI/G	Screenin	U			0	
	27	1996	0		Plutonium-238	9	PCI/G	Screenin	U			0	
	880607134	1988	0		Plutonium-238	9	PCI/G	Screening				1	
	880607130	1988	0		Plutonium-238	9	PCI/G	Screening				1	
	9105205	1991	0		Plutonium-238	9	PCI/G	Screening				1	
	9105153	1991	0		Plutonium-238	9	PCI/G	Screening				1	
	91061841	1991	0		Plutonium-238	9	PCI/G	Screening				1	
	9202066	1992	0		Plutonium-238	9	PCI/G	Screening				1	
	9202108	1992	0		Plutonium-238	9	PCI/G	Screening				1	
	92010715	1992	0		Plutonium-238	9	PCI/G	Screening				1	
S0652	*2829*	1995	0		Plutonium-238	*8.56*	PCI/G	*Lab/Grab*				1	
	02N06	1995	0		Plutonium-238	8.5	PCI/G	Screenin	U			0	
	05N03	1995	0		Plutonium-238	8	PCI/G	Screenin	U			0	
	880607136	1988	0		Plutonium-238	8	PCI/G	Screening				1	
	8805013	1988	0		Plutonium-238	8	PCI/G	Screening				1	
	91053119	1991	0		Plutonium-238	8	PCI/G	Screening				1	
	9202104	1992	0		Plutonium-238	8	PCI/G	Screening				1	
	92020311	1992	0		Plutonium-238	8	PCI/G	Screening				1	
	01N05	1995	0		Plutonium-238	7.5	PCI/G	Screenin	U			0	
	12	1996	0		Plutonium-238	7.5	PCI/G	Screenin	U			0	
	06N05	1995	0		Plutonium-238	7	PCI/G	Screenin	U			0	
	9105207	1991	0		Plutonium-238	7	PCI/G	Screening				1	
	92020323	1992	0		Plutonium-238	7	PCI/G	Screening				1	
	92020317	1992	0		Plutonium-238	7	PCI/G	Screening				1	
	9201287	1992	0		Plutonium-238	7	PCI/G	Screening				1	

	92010718	1992	0		Plutonium-238	7	PCI/G	Screening				1	
	02N01	1995	0		Plutonium-238	6	PCI/G	Screenin	U			0	
	34	1996	0		Plutonium-238	6	PCI/G	Screenin	U			0	
	88052765	1988	0		Plutonium-238	6	PCI/G	Screening				1	
	91053120	1991	0		Plutonium-238	6	PCI/G	Screening				1	
	92020410	1992	0		Plutonium-238	6	PCI/G	Screening				1	
	9202205	1992	0		Plutonium-238	6	PCI/G	Screening				1	
	06N06	1995	0		Plutonium-238	5.5	PCI/G	Screenin	U			0	
	07N05	1995	0		Plutonium-238	5.5	PCI/G	Screenin	U			0	
	04N04	1995	0		Plutonium-238	5	PCI/G	Screenin	U			0	
	880607132	1988	0		Plutonium-238	5	PCI/G	Screening				1	
	91060312	1991	0		Plutonium-238	5	PCI/G	Screening				1	
	91051612	1991	0		Plutonium-238	5	PCI/G	Screening				1	
	9105151	1991	0		Plutonium-238	5	PCI/G	Screening				1	
	910521103	1991	0		Plutonium-238	5	PCI/G	Screening				1	
	92021015	1992	0		Plutonium-238	5	PCI/G	Screening				1	
	92010722	1992	0		Plutonium-238	5	PCI/G	Screening				1	
	03N05	1995	0		Plutonium-238	4.5	PCI/G	Screenin	U			0	
S0656	*2834*	1995	0		*Plutonium-238*	*4.31*	PCI/G	*Lab/Grab*				1	
	25	1996	0		Plutonium-238	4	PCI/G	Screenin	U			0	
	8805011	1988	0		Plutonium-238	4	PCI/G	Screening				1	
	91060310	1991	0		Plutonium-238	4	PCI/G	Screening				1	
	9105208	1991	0		Plutonium-238	4	PCI/G	Screening				1	
	92020322	1992	0		Plutonium-238	4	PCI/G	Screening				1	
	9202065	1992	0		*Plutonium-238*	4	PCI/G	Screening				1	
	92010721	1992	0		Plutonium-238	4	PCI/G	Screening				1	
	9202064	1992	0		Plutonium-238	4	PCI/G	Screening				1	
	92020313	1992	0		Plutonium-238	4	PCI/G	Screening				1	
S0943	*2938*	1995	0		Plutonium-238	*3.78*	PCI/G	*Lab/Grab*				1	
	04N02	1995	0		Plutonium-238	3.5	PCI/G	Screenin	U			0	
	01N04	1995	0		Plutonium-238	3	PCI/G	Screenin	U			0	
	92020312	1992	0		Plutonium-238	3	PCI/G	Screening				1	
	9202105	1992	0		Plutonium-238	3	PCI/G	Screening				1	
	24	1996	0		Plutonium-238	2.5	PCI/G	Screenin	U			0	
S0924	*2889*	1995	0		Plutonium-238	*2.23*	PCI/G	*Lab/Grab*				1	
S0919	*2894*	1995	0		Plutonium-238	*2.18*	PCI/G	*Lab/Grab*				1	
	08N01	1995	0		Plutonium-238	2	PCI/G	Screenin	U			0	
	88052764	1988	0		Plutonium-238	2	PCI/G	Screening				1	
	88052761	1988	0		Plutonium-238	2	PCI/G	Screening				1	
	9105206	1991	0		Plutonium-238	2	PCI/G	Screening				1	
	91061842	1991	0		Plutonium-238	2	PCI/G	Screening				1	
	91060311	1991	0		Plutonium-238	2	PCI/G	Screening				1	
	9105286	1991	0		Plutonium-238	2	PCI/G	Screening				1	
	9105281	1991	0		Plutonium-238	2	PCI/G	Screening				1	
S0961	*2948*	1995	0		Plutonium-238	*1.78*	PCI/G	*Lab/Grab*				1	
S0946	*2604*	1995	0		Plutonium-238	*1.74*	PCI/G	*Lab/Grab*				1	
S0664	*5829*	1995	0		Plutonium-238	*1.73*	PCI/G	*Lab/Grab*				1	
S0955	*5949*	1995	0		Plutonium-238	*1.73*	PCI/G	*Lab/Grab*				1	

S0922	2892	1995	0		Plutonium-238	1.72	PCI/G	Lab/Grab				1	
S0665	2836	1995	0		Plutonium-238	1.72	PCI/G	Lab/Grab				1	
S0920	5819	1995	0		Plutonium-238	1.64	PCI/G	Lab/Grab				1	
S0654	5815	1995	0		Plutonium-238	1.51	PCI/G	Lab/Grab				1	
	01N01	1995	0		Plutonium-238	1.5	PCI/G	Screenin	U			0	
	07N06	1995	0		Plutonium-238	1.5	PCI/G	Screenin	U			0	
S0651	5817	1995	0		Plutonium-238	1.48	PCI/G	Lab/Grab				1	
S0927	2890	1995	0		Plutonium-238	1.41	PCI/G	Lab/Grab				1	
S0655	2827	1995	0		Plutonium-238	1.41	PCI/G	Lab/Grab				1	
S0933	5921	1995	0		Plutonium-238	1.25	PCI/G	Lab/Grab				1	
S0918	2891	1995	0		Plutonium-238	1.23	PCI/G	Lab/Grab				1	
S0949	2606	1995	0		Plutonium-238	1.2	PCI/G	Lab/Grab				1	
S0932	2939	1995	0		Plutonium-238	1.14	PCI/G	Lab/Grab				1	
S0935	5922	1995	0		Plutonium-238	1.1	PCI/G	Lab/Grab				1	
S0921	5915	1995	0		Plutonium-238	1.08	PCI/G	Lab/Grab				1	
S0655	2828	1995	0		Plutonium-238	1.01	PCI/G	Lab/Grab				1	
	08N06	1995	0		Plutonium-238	1	PCI/G	Screenin	U			0	
	88052768	1988	0		Plutonium-238	1	PCI/G	Screening				1	
	8902243	1989	0		Plutonium-238	1	PCI/G	Screening				1	
	91061844	1991	0		Plutonium-238	1	PCI/G	Screening				1	
	91061839	1991	0		Plutonium-238	1	PCI/G	Screening				1	
	93051221	1993	0		Plutonium-238	1	PCI/G	Screening				1	
S0666	5828	1995	0		Plutonium-238	0.95	PCI/G	Lab/Grab				1	
S0944	2608	1995	0		Plutonium-238	0.94	PCI/G	Lab/Grab				1	
C0167	2466	1995	0		Plutonium-238	0.92	PCI/G	Lab/Grab				1	
S0941	5924	1995	0		Plutonium-238	0.9	PCI/G	Lab/Grab				1	
S0977	5966	1995	0		Plutonium-238	0.77	PCI/G	Lab/Grab				1	
S0956	2949	1995	0		Plutonium-238	0.76	PCI/G	Lab/Grab				1	
S0975	5964	1995	0		Plutonium-238	0.75	PCI/G	Lab/Grab				1	
S0926	2893	1995	0		Plutonium-238	0.75	PCI/G	Lab/Grab				1	
S0653	2830	1995	0		Plutonium-238	0.7	PCI/G	Lab/Grab				1	
S0929	5920	1995	0		Plutonium-238	0.7	PCI/G	Lab/Grab				1	
S0948	2605	1995	0		Plutonium-238	0.67	PCI/G	Lab/Grab				1	
S0925	5916	1995	0		Plutonium-238	0.65	PCI/G	Lab/Grab				1	
S0945	2607	1995	0		Plutonium-238	0.61	PCI/G	Lab/Grab				1	
S0974	5969	1995	0		Plutonium-238	0.59	PCI/G	Lab/Grab				1	
S0940	5923	1995	0		Plutonium-238	0.56	PCI/G	Lab/Grab				1	
C0168	2469	1995	0		Plutonium-238	0.54	PCI/G	Lab/Grab				1	
S0942	5929	1995	0		Plutonium-238	0.52	PCI/G	Lab/Grab				1	
S0970	2941	1995	0		Plutonium-238	0.52	PCI/G	Lab/Grab				1	
	05N05	1995	0		Plutonium-238	0.5	PCI/G	Screenin	U			0	
	06N03	1995	0		Plutonium-238	0.5	PCI/G	Screenin	U			0	
S0960	5955	1995	0		Plutonium-238	0.49	PCI/G	Lab/Grab				1	
C0163	2452	1995	0		Plutonium-238	0.48	PCI/G	Lab/Grab				1	
S0954	5954	1995	0		Plutonium-238	0.45	PCI/G	Lab/Grab				1	
C0164	2437	1995	0		Plutonium-238	0.45	PCI/G	Lab/Grab				1	
S0981	2621	1995	0		Plutonium-238	0.44	PCI/G	Lab/Grab				1	
S0978	5967	1995	0		Plutonium-238	0.43	PCI/G	Lab/Grab				1	

C0197	8513	1995	0		Plutonium-238	0.43	PCI/G	Lab/Grab				1	
C0166	2459	1995	0		Plutonium-238	0.42	PCI/G	Lab/Grab				1	
S0962	5956	1995	0		Plutonium-238	0.41	PCI/G	Lab/Grab				1	
S0923	5919	1995	0		Plutonium-238	0.4	PCI/G	Lab/Grab				1	
S0938	5925	1995	0		Plutonium-238	0.4	PCI/G	Lab/Grab				1	
S0934	5926	1995	0		Plutonium-238	0.4	PCI/G	Lab/Grab				1	
C0167	2467	1995	0		Plutonium-238	0.4	PCI/G	Lab/Grab				1	
S0957	2950	1995	0		Plutonium-238	0.39	PCI/G	Lab/Grab				1	
S0667	5830	1995	0		Plutonium-238	0.38	PCI/G	Lab/Grab				1	
S0930	2967	1995	0		Plutonium-238	0.35	PCI/G	Lab/Grab				1	
S0657	5835	1995	0		Plutonium-238	0.35	PCI/G	Lab/Grab				1	
S0939	5931	1995	0		Plutonium-238	0.33	PCI/G	Lab/Grab				1	
C0164	2435	1995	0		Plutonium-238	0.31	PCI/G	Lab/Grab				1	
S0976	5968	1995	0		Plutonium-238	0.3	PCI/G	Lab/Grab				1	
C0166	2458	1995	0		Plutonium-238	0.3	PCI/G	Lab/Grab				1	
S0947	5865	1995	0		Plutonium-238	0.23	PCI/G	Lab/Grab				1	
C0163	2454	1995	0		Plutonium-238	0.23	PCI/G	Lab/Grab				1	
C0169	2475	1995	0		Plutonium-238	0.21	PCI/G	Lab/Grab				1	
S0661	5834	1995	0		Plutonium-238	0.21	PCI/G	Lab/Grab				1	
C0198	8512	1995	0		Plutonium-238	0.19	PCI/G	Lab/Grab				1	
C0163	2451	1995	0		Plutonium-238	0.18	PCI/G	Lab/Grab				1	
S0971	5958	1995	0		Plutonium-238	0.15	PCI/G	Lab/Grab				1	
S0963	5957	1995	0		Plutonium-238	0.14	PCI/G	Lab/Grab				1	
C0164	2434	1995	0		Plutonium-238	0.13	PCI/G	Lab/Grab				1	
S0959	5947	1995	0		Plutonium-238	0.08	PCI/G	Lab/Grab				1	
C0164	2438	1995	0		Plutonium-238	0.08	PCI/G	Lab/Grab				1	
C0166	2461	1995	0		Plutonium-238	0.08	PCI/G	Lab/Grab				1	
S0964	5948	1995	0		Plutonium-238	0.07	PCI/G	Lab/Grab				1	
C0169	2473	1995	0		Plutonium-238	0.07	PCI/G	Lab/Grab				1	
C0166	2456	1995	0		Plutonium-238	0.07	PCI/G	Lab/Grab				1	
C0166	2460	1995	0		Plutonium-238	0.07	PCI/G	Lab/Grab				1	
C0195	8273	1995	0		Plutonium-238	0.06	PCI/G	Lab/Grab				1	
C0168	2470	1995	0		Plutonium-238	0.06	PCI/G	Lab/Grab				1	
C0163	2455	1995	0		Plutonium-238	0.06	PCI/G	Lab/Grab				1	
C0164	2440	1995	0		Plutonium-238	0.06	PCI/G	Lab/Grab				1	
C0166	2463	1995	0		Plutonium-238	0.06	PCI/G	Lab/Grab				1	
S0950	5864	1995	0		Plutonium-238	0.05	PCI/G	Lab/Grab				1	
C0195	8272	1995	0		Plutonium-238	0.05	PCI/G	Lab/Grab				1	
C0163	2453	1995	0		Plutonium-238	0.05	PCI/G	Lab/Grab				1	
C0164	2436	1995	0		Plutonium-238	0.05	PCI/G	Lab/Grab				1	
C0166	2457	1995	0		Plutonium-238	0.05	PCI/G	Lab/Grab				1	
C0167	2468	1995	0		Plutonium-238	0.04	PCI/G	Lab/Grab				1	
C0166	2462	1995	0		Plutonium-238	0.04	PCI/G	Lab/Grab				1	
S0951	5953	1995	0		Plutonium-238	0.03	PCI/G	Lab/Grab				1	
C0169	2474	1995	0		Plutonium-238	0.03	PCI/G	Lab/Grab				1	
S0972	2623	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab				1	
S0973	2622	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab				1	
C0168	2472	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab				1	

C0168	2471	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab					1	
C0164	2439	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab					1	
C0197	8514	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab					1	
S0669	2837	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab					1	
S0668	5831	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab					1	
C0166	2465	1995	0		Plutonium-238	0.02	PCI/G	Lab/Grab					1	
S0958	5952	1995	0		Plutonium-238	0.005	PCI/G	Lab/Grab	U				0	
C0196	8515	1995	0		Plutonium-238	0.005	PCI/G	Lab/Grab	U				0	
C0166	2464	1995	0		Plutonium-238	0.005	PCI/G	Lab/Grab	U				0	
	04N06	1995	0		Plutonium-238	0	PCI/G	Screenin	U				0	
	05N06	1995	0		Plutonium-238	0	PCI/G	Screenin	U				0	
	07N04	1995	0		Plutonium-238	0	PCI/G	Screenin	U				0	
	13	1996	0		Plutonium-238	0	PCI/G	Screenin	U				0	
	88052778	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052781	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052774	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052772	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052770	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052769	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052762	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052783	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052786	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	8805068	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	88052784	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	8805066	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	8805064	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	880607126	1988	0		Plutonium-238	0	PCI/G	Screening					1	
	91060634	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91060633	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91060635	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	9105152	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	9105204	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91061840	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91060613	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91060612	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	9106055	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91051611	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91051616	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	910521101	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	910521102	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91051613	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91053121	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	9106039	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91061843	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	9105154	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	91060611	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	910521100	1991	0		Plutonium-238	0	PCI/G	Screening					1	
	92021016	1992	0		Plutonium-238	0	PCI/G	Screening					1	

	92021013	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92021017	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92021018	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	9202049	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	9202046	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92020321	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92020318	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	9201288	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	9202107	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92020315	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92010717	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92010719	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92010716	1992	0		Plutonium-238	0	PCI/G	Screening					1	
	92020314	1992	0		Plutonium-238	0	PCI/G	Screening					1	
MND17-8605	8605-5003	17-Aug-95	0.5	3	Plutonium-238	19.3	PCI/G	Grab	U				0	
MND17-8602	8602-5003	17-Aug-95	0.5	3	Plutonium-238	17.7	PCI/G	Grab	U				0	
MND17-8604	8604-5003	17-Aug-95	0.5	3	Plutonium-238	17.35	PCI/G	Grab	U				0	
MND17-8603	8603-5003	17-Aug-95	0.5	3	Plutonium-238	13.15	PCI/G	Grab	U				0	
MND17-8601	8601-5003	17-Aug-95	0.5	3	Plutonium-238	11.8	PCI/G	Grab	U				0	
AG	RAG304	13-Apr-94	2	12	Plutonium-238	0.333	PCI/G	Grab	J				1	
AH	RAH304	14-Apr-94	2	12	Plutonium-238	0.117	PCI/G	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Plutonium-238	**26**	PCI/G	Grab					1	
AH	RAH306	14-Apr-94	18	24	Plutonium-238	10	PCI/G	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Plutonium-238*	*0.015*	*PCI/G*	*Grab*	*U*	6.73772412	9.499	7.747	295	**340**
						Site Employee uses only Shallow values				6.72943642	9.489	**7.746**	293	**335**
					Log transformed data used in report.					*2.14*	*8.710*	*2.690*		
					Log transformed data used in report.	*Site Employee uses only Shallow values*				*2.19*	*8.510*	*2.750*		
	NAC024	06-Feb-96	0	3	Plutonium-239/240	**0.0141**	PCI/G	Grab	J				1	
AG	RAG303	13-Apr-94	0	2	Plutonium-239/240	0.01277	PCI/G	Grab	J				1	
AG	RAG304	13-Apr-94	2	12	Plutonium-239/240	**0.01012**	PCI/G	Grab	J				1	
	NAC025	06-Feb-96	0	3	Plutonium-239/240	0.00665	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Plutonium-239/240	0.00413	PCI/G	Grab	J				1	
	NAC034	06-Feb-96	0	3	Plutonium-239/240	0.00369	PCI/G	Grab	J				1	
	NAC012	08-Feb-96	0	3	Plutonium-239/240	0.00154	PCI/G	Grab	J				1	
AH	RAH304	14-Apr-94	2	12	Plutonium-239/240	0.0184	PCI/G	Grab	U				0	
AH	RAH303	14-Apr-94	0	2	Plutonium-239/240	0.0154	PCI/G	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Plutonium-239/240*	*0.0075*	*PCI/G*	*Grab*	*U*				0	
	NAC027	07-Feb-96	0	3	Plutonium-239/240	0.001905	PCI/G	Grab	U				0	
	NAC013	07-Feb-96	0	3	Plutonium-239/240	0.00152	PCI/G	Grab	UJ	0.00814375	0.006	0.011	7	**12**
	NAC016	05-Feb-96	0	3	Potassium	**2090**	MG/KG	Grab	B				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Potassium	**1770**	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Potassium*	*1720*	*MG/KG*	*Grab*	*B*				1	
	NAC012	08-Feb-96	0	3	Potassium	1630	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Potassium	1565	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Potassium	1380	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Potassium	1320	MG/KG	Grab	B				1	

AH	RAH306	14-Apr-94	18	24	Potassium	1310	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Potassium	1270	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Potassium	1190	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Potassium	1128.5	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Potassium	1100	MG/KG	Grab	B				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Potassium	1080	MG/KG	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Potassium	980	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Potassium	965	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Potassium	948	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Potassium	922	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Potassium	874	MG/KG	Grab	B				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Potassium	869	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Potassium	851	MG/KG	Grab	B				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Potassium	829	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Potassium	757	MG/KG	Grab	B				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Potassium	748	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Potassium	734	MG/KG	Grab	B				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Potassium	696	MG/KG	Grab	B				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Potassium	653	MG/KG	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Potassium	621	MG/KG	Grab	B				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Potassium	602	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Potassium	598	MG/KG	Grab	B				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Potassium	571	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Potassium	552	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Potassium	525	MG/KG	Grab	B				1	
	NAC025	06-Feb-96	0	3	Potassium	443	MG/KG	Grab	B				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Potassium	443	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Potassium	398	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Potassium	310	MG/KG	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Potassium	291	MG/KG	Grab		938.743243	437.741	**1079.790**	37	**37**
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Potassium-40*	***34.9***	*PCI/G*	*Grab*					1	
AG	RAG306	13-Apr-94	18	24	Potassium-40	24.9	PCI/G	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Potassium-40	**24.9**	PCI/G	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Potassium-40	24.8	PCI/G	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Potassium-40	24.4	PCI/G	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Potassium-40	22.4	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Potassium-40	21.7	PCI/G	Grab	J				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Potassium-40	20.6	PCI/G	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Potassium-40	20.4	PCI/G	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Potassium-40	20	PCI/G	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Potassium-40	20	PCI/G	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Potassium-40	19.9	PCI/G	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Potassium-40	19.4	PCI/G	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Potassium-40	19	PCI/G	Grab					1	
AG	RAG305	13-Apr-94	0	6	Potassium-40	18.95	PCI/G	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Potassium-40	18.4	PCI/G	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Potassium-40	18.3	PCI/G	Grab					1	

	NAC025	06-Feb-96	0	3	Potassium-40	18.1	PCI/G	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Potassium-40	18.1	PCI/G	Grab					1	
AH	RAH306	14-Apr-94	18	24	Potassium-40	17.5	PCI/G	Grab					1	
AH	RAH305	14-Apr-94	0	6	Potassium-40	16.6	PCI/G	Grab					1	
	NAC034	06-Feb-96	0	3	Potassium-40	16.5	PCI/G	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Potassium-40	16.5	PCI/G	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Potassium-40	15.9	PCI/G	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Potassium-40	15.8	PCI/G	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Potassium-40	15.8	PCI/G	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Potassium-40	15.7	PCI/G	Grab					1	
	NAC012	08-Feb-96	0	3	Potassium-40	15.5	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Potassium-40	15.2	PCI/G	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Potassium-40	14.6	PCI/G	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Potassium-40	13.9	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Potassium-40	12	PCI/G	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Potassium-40	11.7	PCI/G	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Potassium-40	10.5	PCI/G	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Potassium-40	9.15	PCI/G	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Potassium-40	7.13	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Potassium-40	4.65	PCI/G	Grab	J	17.6697297	5.529	**19.451**	37	**37**
MND33-0079	0079-0002	08-Dec-91	3	5	Pyrene	**62000**	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Pyrene	3000	UG/KG	Grab	J				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Pyrene	1300	UG/KG	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Pyrene	935	UG/KG	Grab	J				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Pyrene	650	UG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Pyrene	530	UG/KG	Grab	J				1	
MND33-0058	0058-0003	14-Nov-91	8	10	Pyrene	420	UG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Pyrene	360	UG/KG	Grab	J				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Pyrene	230	UG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Pyrene	230	UG/KG	Grab	J				1	
MND33-0058	0058-0001	13-Nov-91	0	2	Pyrene	140	UG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Pyrene	140	UG/KG	Grab	J				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Pyrene	120	UG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Pyrene	90	UG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Pyrene	87	UG/KG	Grab	J				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Pyrene	87	UG/KG	Grab	J				1	
MND33-0076	0076-0002	6-Dec-91	3	5	Pyrene	83	UG/KG	Grab	J				1	
AG	RAG306	13-Apr-94	18	24	Pyrene	82	UG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Pyrene	79	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Pyrene	37	UG/KG	Grab	J				1	
	NAC013	07-Feb-96	0	3	Pyrene	205	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Pyrene	195	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Pyrene	185	UG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Pyrene	180	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Pyrene	410	UG/KG	Grab	UJ				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Pyrene	400	UG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Pyrene	392.5	UG/KG	Grab	UJ				0	

MND33-0078	0078-0002	07-Dec-91	3	4	Pyrene	385	UG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Pyrene	375	UG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Pyrene	375	UG/KG	Grab	UJ				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Pyrene	360	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Pyrene	210	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Pyrene	205	UG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Pyrene	190	UG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Pyrene	185	UG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Pyrene	**1050**	UG/KG	Grab		2108.40278	10280.622	**5466.672**	21	**36**
MND33-0074	0074-0001	05-Dec-91	0	2	Radium-224	**12.2**	PCI/G	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Radium-224	1.305	PCI/G	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Radium-224	**1.25**	PCI/G	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Radium-224	1.21	PCI/G	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Radium-224	1.17	PCI/G	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Radium-224	1.17	PCI/G	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Radium-224	1.11	PCI/G	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Radium-224	1.1	PCI/G	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Radium-224	1.04	PCI/G	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Radium-224	1.01	PCI/G	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Radium-224	0.95	PCI/G	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Radium-224	0.916	PCI/G	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Radium-224	0.886	PCI/G	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Radium-224	0.883	PCI/G	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Radium-224	0.878	PCI/G	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Radium-224	0.862	PCI/G	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Radium-224	0.73	PCI/G	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Radium-224	0.718	PCI/G	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Radium-224	0.705	PCI/G	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Radium-224	0.697	PCI/G	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Radium-224	0.677	PCI/G	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Radium-224	0.657	PCI/G	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Radium-224	0.629	PCI/G	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Radium-224	0.551	PCI/G	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Radium-224	0.369	PCI/G	Grab		1.34692	2.274	**2.238**	25	**25**
AG	RAG306	13-Apr-94	18	24	Radium-226	**3.055**	PCI/G	Grab					1	
AH	RAH306	14-Apr-94	18	24	Radium-226	2.97	PCI/G	Grab	J				1	
AH	RAH305	14-Apr-94	0	6	Radium-226	**2.3**	PCI/G	Grab	J				1	
AG	RAG305	13-Apr-94	0	6	Radium-226	1.7477	PCI/G	Grab	J				1	
MND17-8605	8605-5003	17-Aug-95	0.5	3	Radium-226	1.7	PCI/G	Grab					1	
S0929	5920	1995		0	Radium-226	1.5	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Radium-226	1.5	PCI/G	Grab					1	
MND17-8604	8604-5003	17-Aug-95	0.5	3	Radium-226	1.3	PCI/G	Grab					1	
S0942	5929	1995		0	Radium-226	1.3	PCI/G	Grab					1	
	NAC025	06-Feb-96	0	3	Radium-226	1.22	PCI/G	Grab					1	
S0940	5923	1995		0	Radium-226	1.2	PCI/G	Grab					1	
S0920	5819	1995		0	Radium-226	1.1	PCI/G	Grab					1	

S0921	5915	1995		0	Radium-226	1.1	PCI/G	Grab					1	
S0975	5964	1995		0	Radium-226	1.1	PCI/G	Grab					1	
S0956	2949	1995		0	Radium-226	1	PCI/G	Grab					1	
S0955	5949	1995		0	Radium-226	1	PCI/G	Grab					1	
	NAC016	05-Feb-96	0	3	Radium-226	0.934	PCI/G	Grab					1	
MND17-8601	8601-5003	17-Aug-95	0.5	3	Radium-226	0.9	PCI/G	Grab					1	
MND17-8603	8603-5003	17-Aug-95	0.5	3	Radium-226	0.9	PCI/G	Grab					1	
C0163	2452	1995		3	Radium-226	0.9	PCI/G	Grab					1	
	NAC034	06-Feb-96	0	3	Radium-226	0.872	PCI/G	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Radium-226	0.83	PCI/G	Grab					1	
MND17-8602	8602-5003	17-Aug-95	0.5	3	Radium-226	0.8	PCI/G	Grab					1	
S0661	5834	1995		0	Radium-226	0.8	PCI/G	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Radium-226	0.766	PCI/G	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Radium-226	0.756	PCI/G	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Radium-226	0.755	PCI/G	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Radium-226	0.748	PCI/G	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Radium-226	0.74	PCI/G	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Radium-226	0.7275	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Radium-226	0.714	PCI/G	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Radium-226	0.662	PCI/G	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Radium-226*	*0.658*	*PCI/G*	*Grab*					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Radium-226	0.656	PCI/G	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Radium-226	0.651	PCI/G	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Radium-226	0.648	PCI/G	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Radium-226	0.63	PCI/G	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Radium-226	0.63	PCI/G	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Radium-226	0.603	PCI/G	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Radium-226	0.6	PCI/G	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Radium-226	0.595	PCI/G	Grab					1	
	NAC012	08-Feb-96	0	3	Radium-226	0.592	PCI/G	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Radium-226	0.552	PCI/G	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Radium-226	0.548	PCI/G	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Radium-226	0.506	PCI/G	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Radium-226	0.499	PCI/G	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Radium-226	0.482	PCI/G	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Radium-226	0.42	PCI/G	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Radium-226	0.409	PCI/G	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Radium-226	0.387	PCI/G	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Radium-226	0.369	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Radium-226	0.1445	PCI/G	Grab	U	0.93224423	0.576	**1.089**	51	**52**
MND33-0059	0059-0002	18-Nov-91	3	7	Radium-228	**1.52**	PCI/G	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Radium-228	1.26	PCI/G	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Radium-228	**1.25**	PCI/G	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Radium-228	1.22	PCI/G	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Radium-228	1.11	PCI/G	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Radium-228	1.05	PCI/G	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Radium-228	1.03	PCI/G	Grab					1	

MND33-0059	0059-0001	13-Nov-91	0	2	Radium-228	1.02	PCI/G	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Radium-228	0.98	PCI/G	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Radium-228	0.912	PCI/G	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Radium-228	0.892	PCI/G	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Radium-228	0.861	PCI/G	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Radium-228	0.848	PCI/G	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Radium-228	0.829	PCI/G	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Radium-228	0.821	PCI/G	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Radium-228	0.8	PCI/G	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Radium-228	0.694	PCI/G	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Radium-228	0.684	PCI/G	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Radium-228	0.671	PCI/G	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Radium-228	0.668	PCI/G	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Radium-228	0.631	PCI/G	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Radium-228	0.574	PCI/G	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Radium-228	0.408	PCI/G	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Radium-228	0.333	PCI/G	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Radium-228	0.11	PCI/G	Grab		0.84704	0.314	**0.970**	25	**25**
MND33-0077	0077-0003	07-Dec-91	8	9	Silicon	1100	MG/KG	Grab		1100	0.000	#NUM!	1	**1**
MND33-0071	0071-0002	03-Dec-91	3	5	Silver	**18.6**	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Silver	17.7	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Silver	**17.6**	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Silver	16.8	MG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Silver	16.6	MG/KG	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Silver	16.5	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Silver	16.5	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Silver	16.3	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Silver	15.3	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Silver	14.2	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Silver	14	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Silver	13.6	MG/KG	Grab	J				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Silver	12.9	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Silver	12.9	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Silver	12.7	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Silver	12.6	MG/KG	Grab	J				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Silver	11.6	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Silver	9.3	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Silver*	*3.05*	*MG/KG*	*Grab*	*U*				0	
AG	RAG305	13-Apr-94	0	6	Silver	0.625	MG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Silver	0.6	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Silver	0.6	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Silver	0.6	MG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Silver	0.29	MG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Silver	0.285	MG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Silver	0.285	MG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Silver	0.28	MG/KG	Grab	U				0	

MND33-0059	0059-0001	13-Nov-91	0	2	Silver	0.275	MG/KG	Grab	U				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Silver	0.27	MG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Silver	0.265	MG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Silver	0.145	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Silver	0.14	MG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Silver	0.14	MG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Silver	0.14	MG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Silver	0.135	MG/KG	Grab	U				0	
	NAC025	06-Feb-96	0	3	Silver	0.135	MG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Silver	0.135	MG/KG	Grab	U	7.40797297	7.470	**9.815**	18	37
	NAC012	08-Feb-96	0	3	Sodium	**2490**	MG/KG	Grab					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Sodium	625	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Sodium	519	MG/KG	Grab	B				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Sodium	420	MG/KG	Grab	B				1	
	NAC016	05-Feb-96	0	3	Sodium	398	MG/KG	Grab	B				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Sodium	386	MG/KG	Grab	B				1	
	NAC013	07-Feb-96	0	3	Sodium	328	MG/KG	Grab	B				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Sodium	302	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Sodium	293	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Sodium	265	MG/KG	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Sodium	**256.5**	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Sodium	245	MG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Sodium	245	MG/KG	Grab	JB				1	
AG	RAG305	13-Apr-94	0	6	Sodium	244.5	MG/KG	Grab	U				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Sodium	241	MG/KG	Grab					1	
AH	RAH306	14-Apr-94	18	24	Sodium	239	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Sodium	234	MG/KG	Grab	U				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Sodium	233	MG/KG	Grab	B				1	
MND33-0057	0057-0002	13-Nov-91	3	5	Sodium	217	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Sodium	203	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Sodium	199	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Sodium	195	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Sodium	190	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Sodium	188	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Sodium	182.5	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Sodium	176	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Sodium	172	MG/KG	Grab	JB				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Sodium	168	MG/KG	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Sodium	167	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Sodium	162	MG/KG	Grab	B				1	
MND33-0059	0059-0003	18-Nov-91	8	12	Sodium	162	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Sodium	157	MG/KG	Grab	JB				1	
350	0350-0024	2-Mar-93	23.4	24.2	Sodium	153	MG/KG	Grab	B				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Sodium	151	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Sodium	143	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Sodium	126	MG/KG	Grab	JB				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Sodium	57.3	MG/KG	Grab		300.886486	386.193	**425.324**	33	37

AH	RAH305	14-Apr-94	0	6	Strontium-90	0.2055	PCI/G	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Strontium-90	0.21725	PCI/G	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Strontium-90	0.2385	PCI/G	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Strontium-90	0.57	PCI/G	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Strontium-90*	***0.854***	*PCI/G*	*Grab*		*0.41705*	0.288	*0.669*	1	***5***
AH	RAH305	14-Apr-94	0	6	Sulfate	15.45	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Sulfate	15.8	MG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Sulfate	16.175	MG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Sulfate	16.2	MG/KG	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Sulfate*	***129***	*MG/KG*	*Grab*		*38.525*	50.578	*82.858*	1	***5***
AG	RAG305	13-Apr-94	0	6	Thallium	0.465	MG/KG	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Thallium	0.465	MG/KG	Grab	U				0	
AH	RAH306	14-Apr-94	18	24	Thallium	0.455	MG/KG	Grab	U				0	
AH	RAH305	14-Apr-94	0	6	Thallium	0.445	MG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Thallium	0.225	MG/KG	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Thallium*	*0.225*	*MG/KG*	*Grab*	*U*				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Thallium	0.115	MG/KG	Grab	U				0	
MND33-0058	0058-0001	13-Nov-91	0	2	Thallium	0.1125	MG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Thallium	0.11	MG/KG	Grab	U				0	
MND33-0057	0057-0001	12-Nov-91	0	2	Thallium	0.11	MG/KG	Grab	U				0	
	NAC012	08-Feb-96	0	3	Thallium	0.105	MG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Thallium	0.24	MG/KG	Grab	UJ				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Thallium	0.2325	MG/KG	Grab	UJ				0	
MND33-0074	0074-0001	05-Dec-91	0	2	Thallium	0.23	MG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Thallium	0.225	MG/KG	Grab	UJ				0	
MND33-0071	0071-0001	03-Dec-91	0	2	Thallium	0.225	MG/KG	Grab	UJ				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Thallium	0.225	MG/KG	Grab	UJ				0	
MND33-0072	0072-0001	03-Dec-91	0	2	Thallium	0.22	MG/KG	Grab	UJ				0	
MND33-0075	0075-0001	06-Dec-91	0	2	Thallium	0.22	MG/KG	Grab	UJ				0	
MND33-0078	0078-0001	07-Dec-91	0	2	Thallium	0.22	MG/KG	Grab	UJ				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Thallium	0.22	MG/KG	Grab	UJ				0	
MND33-0079	0079-0001	08-Dec-91	0	2	Thallium	0.22	MG/KG	Grab	UJ				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Thallium	0.22	MG/KG	Grab	UJ				0	
MND33-0071	*0071-0002*	*03-Dec-91*	3	5	*Thallium*	0.215	MG/KG	Grab	UJ				0	
MND33-0073	0073-0001	04-Dec-91	0	2	Thallium	0.215	MG/KG	Grab	UJ				0	
MND33-0076	0076-0001	06-Dec-91	0	2	Thallium	0.21	MG/KG	Grab	UJ				0	
MND33-0077	0077-0001	07-Dec-91	0	2	Thallium	0.21	MG/KG	Grab	UJ				0	
	NAC027	07-Feb-96	0	3	Thallium	0.19	MG/KG	Grab	UJ				0	
	NAC024	06-Feb-96	0	3	Thallium	0.18	MG/KG	Grab	UJ				0	
	NAC025	06-Feb-96	0	3	Thallium	0.18	MG/KG	Grab	UJ				0	
	NAC034	06-Feb-96	0	3	Thallium	0.18	MG/KG	Grab	UJ				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Thallium	0.115	MG/KG	Grab	UJ				0	
MND33-0059	0059-0001	13-Nov-91	0	2	Thallium	0.11	MG/KG	Grab	UJ				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Thallium	0.1	MG/KG	Grab	UJ				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Thallium	0.1	MG/KG	Grab	UJ				0	

MND33-0059	0059-0003	18-Nov-91	8	12	Thallium	0.1	MG/KG	Grab	UJ				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Thallium	**0.23**	MG/KG	Grab		0.21256757	0.100	**0.245**	1	**37**
	NAC025	06-Feb-96	0	3	Thorium-228	**1.16**	PCI/G	Grab					1	
AG	RAG303	13-Apr-94	0	2	Thorium-228	1.1045	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Thorium-228	1.04	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Thorium-228	0.986	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Thorium-228	0.899	PCI/G	Grab	J				1	
	NAC034	06-Feb-96	0	3	Thorium-228	0.884	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Thorium-228	0.775	PCI/G	Grab					1	
	NAC012	08-Feb-96	0	3	Thorium-228	0.697	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Thorium-228	0.247	PCI/G	Grab		0.86583333	0.276	1.046	9	**9**
MND17-8605	8605-5003	17-Aug-95	0.5	3	Thorium-230	1.9	PCI/G	Grab	U				0	
MND17-8604	8604-5003	17-Aug-95	0.5	3	Thorium-230	1.6	PCI/G	Grab	U				0	
AG	RAG303	13-Apr-94	0	2	Thorium-230	**1.585**	PCI/G	Grab	J				1	
	NAC027	07-Feb-96	0	3	Thorium-230	1.57	PCI/G	Grab					1	
MND17-8602	8602-5003	17-Aug-95	0.5	3	Thorium-230	1.5	PCI/G	Grab	U				0	
	NAC025	06-Feb-96	0	3	Thorium-230	1.49	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Thorium-230	1.37	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Thorium-230	1.36	PCI/G	Grab					1	
MND17-8601	8601-5003	17-Aug-95	0.5	3	Thorium-230	1.35	PCI/G	Grab	U				0	
	NAC034	06-Feb-96	0	3	Thorium-230	1.34	PCI/G	Grab					1	
MND17-8603	8603-5003	17-Aug-95	0.5	3	Thorium-230	1.2	PCI/G	Grab	U				0	
	NAC024	06-Feb-96	0	3	Thorium-230	0.988	PCI/G	Grab					1	
	NAC012	08-Feb-96	0	3	Thorium-230	0.803	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Thorium-230	0.359	PCI/G	Grab		1.31535714	0.385	1.517	9	**14**
AG	RAG303	13-Apr-94	0	2	Thorium-232	1.215	PCI/G	Grab	J				1	
	NAC025	06-Feb-96	0	3	Thorium-232	1	PCI/G	Grab					1	
	NAC034	06-Feb-96	0	3	Thorium-232	0.963	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Thorium-232	0.938	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Thorium-232	0.915	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Thorium-232	0.907	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Thorium-232	0.893	PCI/G	Grab					1	
AG	RAG305	13-Apr-94	0	6	Thorium-232	0.775	PCI/G	Grab	U				0	
	NAC012	08-Feb-96	0	3	Thorium-232	0.769	PCI/G	Grab					1	
AH	RAH305	14-Apr-94	0	6	Thorium-232	0.65	PCI/G	Grab	U				0	
	NAC013	07-Feb-96	0	3	Thorium-232	0.21	PCI/G	Grab					1	
	2469	1995	0		Thorium-232	7	PCI/G	Screening					1	
	5958	1995	0		Thorium-232	2.5	PCI/G	Screening					1	
	8902245	1989	0		Thorium-232	2.4	PCI/G	Screening					1	
	89031023	1989	0		Thorium-232	2.3	PCI/G	Screening					1	
	89031022	1989	0		Thorium-232	2.2	PCI/G	Screening					1	
	2829	1995	0		Thorium-232	2	PCI/G	Screening					1	
	2830	1995	0		Thorium-232	2	PCI/G	Screening					1	
	2827	1995	0		Thorium-232	2	PCI/G	Screening					1	
	2828	1995	0		Thorium-232	2	PCI/G	Screening					1	

	88050414	1988	0		Thorium-232	1.9	PCI/G	Screening				1	
	88050412	1988	0		Thorium-232	1.8	PCI/G	Screening				1	
	92021014	1992	0		Thorium-232	1.8	PCI/G	Screening				1	
	88052779	1988	0		Thorium-232	1.6	PCI/G	Screening				1	
	88050413	1988	0		Thorium-232	1.6	PCI/G	Screening				1	
	88052780	1988	0		Thorium-232	1.5	PCI/G	Screening				1	
	88052786	1988	0		Thorium-232	1.5	PCI/G	Screening				1	
	91051615	1991	0		Thorium-232	1.5	PCI/G	Screening				1	
	9105152	1991	0		Thorium-232	1.5	PCI/G	Screening				1	
	9202066	1992	0		Thorium-232	1.5	PCI/G	Screening				1	
	880607134	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	880607129	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	880607127	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	880607125	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	88052787	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	8805065	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	88052784	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	8805063	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	88052785	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	8805012	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	88050411	1988	0		Thorium-232	1.4	PCI/G	Screening				1	
	8902246	1989	0		Thorium-232	1.4	PCI/G	Screening				1	
	9105205	1991	0		Thorium-232	1.4	PCI/G	Screening				1	
	9105287	1991	0		Thorium-232	1.4	PCI/G	Screening				1	
	9105282	1991	0		Thorium-232	1.4	PCI/G	Screening				1	
	880607136	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	880607133	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052778	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052781	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052773	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052770	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052763	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052783	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88052775	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	8805066	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	88050420	1988	0		Thorium-232	1.3	PCI/G	Screening				1	
	92021016	1992	0		Thorium-232	1.3	PCI/G	Screening				1	
	9202049	1992	0		Thorium-232	1.3	PCI/G	Screening				1	
	9201287	1992	0		Thorium-232	1.3	PCI/G	Screening				1	
	9202065	1992	0		Thorium-232	1.3	PCI/G	Screening				1	
	880607138	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	880607135	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	880607132	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	880607130	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	880607128	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	88052774	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	88052772	1988	0		Thorium-232	1.2	PCI/G	Screening				1	
	88052771	1988	0		Thorium-232	1.2	PCI/G	Screening				1	

	8805013	1988	0		Thorium-232	1.2	PCI/G	Screening					1	
	88050410	1988	0		Thorium-232	1.2	PCI/G	Screening					1	
	9105153	1991	0		Thorium-232	1.2	PCI/G	Screening					1	
	91060310	1991	0		Thorium-232	1.2	PCI/G	Screening					1	
	9202204	1992	0		Thorium-232	1.2	PCI/G	Screening					1	
	880607131	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	8801114	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	8801112	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	88052768	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	88052764	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	88050415	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	8805011	1988	0		Thorium-232	1.1	PCI/G	Screening					1	
	89031021	1989	0		Thorium-232	1.1	PCI/G	Screening					1	
	91060312	1991	0		Thorium-232	1.1	PCI/G	Screening					1	
	9105208	1991	0		Thorium-232	1.1	PCI/G	Screening					1	
	91061844	1991	0		Thorium-232	1.1	PCI/G	Screening					1	
	92021012	1992	0		Thorium-232	1.1	PCI/G	Screening					1	
	9202048	1992	0		Thorium-232	1.1	PCI/G	Screening					1	
	92020410	1992	0		Thorium-232	1.1	PCI/G	Screening					1	
	92020323	1992	0		Thorium-232	1.1	PCI/G	Screening					1	
	92020317	1992	0		Thorium-232	1.1	PCI/G	Screening					1	
	9202107	1992	0		Thorium-232	1.1	PCI/G	Screening					1	
	88052769	1988	0		Thorium-232	1	PCI/G	Screening					1	
	88052767	1988	0		Thorium-232	1	PCI/G	Screening					1	
	88052762	1988	0		Thorium-232	1	PCI/G	Screening					1	
	88050419	1988	0		Thorium-232	1	PCI/G	Screening					1	
	88050416	1988	0		Thorium-232	1	PCI/G	Screening					1	
	8805049	1988	0		Thorium-232	1	PCI/G	Screening					1	
	89031019	1989	0		Thorium-232	1	PCI/G	Screening					1	
	8902242	1989	0		Thorium-232	1	PCI/G	Screening					1	
	8902244	1989	0		Thorium-232	1	PCI/G	Screening					1	
	91061841	1991	0		Thorium-232	1	PCI/G	Screening					1	
	91051612	1991	0		Thorium-232	1	PCI/G	Screening					1	
	9105204	1991	0		Thorium-232	1	PCI/G	Screening					1	
	91061840	1991	0		Thorium-232	1	PCI/G	Screening					1	
	91060613	1991	0		Thorium-232	1	PCI/G	Screening					1	
	9202046	1992	0		Thorium-232	1	PCI/G	Screening					1	
	92020320	1992	0		Thorium-232	1	PCI/G	Screening					1	
	9202106	1992	0		Thorium-232	1	PCI/G	Screening					1	
	92020312	1992	0		Thorium-232	1	PCI/G	Screening					1	
	5964	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2621	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2604	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2605	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5815	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5966	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2891	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5967	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	

	5864	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5865	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2607	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5817	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2606	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2890	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	8512	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2889	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2948	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5915	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5921	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2623	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5916	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2949	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5920	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2608	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5968	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5954	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2893	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5955	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2892	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5953	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2894	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2938	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5956	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5969	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2950	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5919	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2622	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5923	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5952	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5819	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5957	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	8272	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	8273	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5922	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2967	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2939	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5828	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5829	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2834	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5948	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2470	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2472	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2471	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2475	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2474	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2473	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	

	5924	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	8515	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5947	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2452	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2451	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2455	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2454	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2453	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5949	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5830	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5834	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5925	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2836	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5835	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5926	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2466	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2467	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2468	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2439	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2440	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2438	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2434	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2435	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2437	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2436	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5929	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	8514	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	8513	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2941	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5931	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2837	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	5831	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2464	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2456	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2459	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2458	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2457	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2465	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2463	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2462	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2461	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	2460	1995	0		Thorium-232	1	PCI/G	Screenin	U				0	
	88052766	1988	0		Thorium-232	0.9	PCI/G	Screening					1	
	88052761	1988	0		Thorium-232	0.9	PCI/G	Screening					1	
	88052776	1988	0		Thorium-232	0.9	PCI/G	Screening					1	
	8805067	1988	0		Thorium-232	0.9	PCI/G	Screening					1	
	88050418	1988	0		Thorium-232	0.9	PCI/G	Screening					1	
	8805047	1988	0		Thorium-232	0.9	PCI/G	Screening					1	

	8902241	1989	0		Thorium-232	0.9	PCI/G	Screening				1	
	91051610	1991	0		Thorium-232	0.9	PCI/G	Screening				1	
	91053120	1991	0		Thorium-232	0.9	PCI/G	Screening				1	
	9105206	1991	0		Thorium-232	0.9	PCI/G	Screening				1	
	91061842	1991	0		Thorium-232	0.9	PCI/G	Screening				1	
	9202047	1992	0		Thorium-232	0.9	PCI/G	Screening				1	
	9202205	1992	0		Thorium-232	0.9	PCI/G	Screening				1	
	92010720	1992	0		Thorium-232	0.9	PCI/G	Screening				1	
	92010721	1992	0		Thorium-232	0.9	PCI/G	Screening				1	
	9202064	1992	0		Thorium-232	0.9	PCI/G	Screening				1	
	92020315	1992	0		Thorium-232	0.9	PCI/G	Screening				1	
	9406036	1994	0		Thorium-232	0.9	PCI/G	Screening				1	
	880607137	1988	0		Thorium-232	0.8	PCI/G	Screening				1	
	8805068	1988	0		Thorium-232	0.8	PCI/G	Screening				1	
	8805064	1988	0		Thorium-232	0.8	PCI/G	Screening				1	
	880607126	1988	0		Thorium-232	0.8	PCI/G	Screening				1	
	8805048	1988	0		Thorium-232	0.8	PCI/G	Screening				1	
	91060634	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	91051614	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	91053119	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	9105207	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	9105151	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	91061839	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	91060612	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	9106055	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	91051611	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	9105286	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	9105281	1991	0		Thorium-232	0.8	PCI/G	Screening				1	
	92020316	1992	0		Thorium-232	0.8	PCI/G	Screening				1	
	92020319	1992	0		Thorium-232	0.8	PCI/G	Screening				1	
	92010722	1992	0		Thorium-232	0.8	PCI/G	Screening				1	
	92010717	1992	0		Thorium-232	0.8	PCI/G	Screening				1	
	07N03	1995	0		Thorium-232	0.75	PCI/G	Screenin	U			0	
	8801111	1988	0		Thorium-232	0.7	PCI/G	Screening				1	
	88052777	1988	0		Thorium-232	0.7	PCI/G	Screening				1	
	88050417	1988	0		Thorium-232	0.7	PCI/G	Screening				1	
	91060311	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	91051616	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	910521101	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	910521102	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	91051613	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	91053121	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	9106039	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	91061843	1991	0		Thorium-232	0.7	PCI/G	Screening				1	
	92021015	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	92021013	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	92021017	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	92020321	1992	0		Thorium-232	0.7	PCI/G	Screening				1	

	92020318	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	9201288	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	9202108	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	92010715	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	9202104	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	9202105	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	92010719	1992	0		Thorium-232	0.7	PCI/G	Screening				1	
	01N05	1995	0		Thorium-232	0.65	PCI/G	Screenin	U			0	
	05N03	1995	0		Thorium-232	0.65	PCI/G	Screenin	U			0	
	06N02	1995	0		Thorium-232	0.65	PCI/G	Screenin	U			0	
	07N01	1995	0		Thorium-232	0.65	PCI/G	Screenin	U			0	
	25	1996	0		Thorium-232	0.65	PCI/G	Screenin	U			0	
	88052765	1988	0		Thorium-232	0.6	PCI/G	Screening				1	
	8902243	1989	0		Thorium-232	0.6	PCI/G	Screening				1	
	9105154	1991	0		Thorium-232	0.6	PCI/G	Screening				1	
	92021018	1992	0		Thorium-232	0.6	PCI/G	Screening				1	
	92010718	1992	0		Thorium-232	0.6	PCI/G	Screening				1	
	92010716	1992	0		Thorium-232	0.6	PCI/G	Screening				1	
	93051221	1993	0		Thorium-232	0.6	PCI/G	Screening				1	
	05N02	1995	0		Thorium-232	0.6	PCI/G	Screenin	U			0	
	07N04	1995	0		Thorium-232	0.6	PCI/G	Screenin	U			0	
	27	1996	0		Thorium-232	0.6	PCI/G	Screenin	U			0	
	01N03	1995	0		Thorium-232	0.55	PCI/G	Screenin	U			0	
	01N06	1995	0		Thorium-232	0.55	PCI/G	Screenin	U			0	
	04N04	1995	0		Thorium-232	0.55	PCI/G	Screenin	U			0	
	05N04	1995	0		Thorium-232	0.55	PCI/G	Screenin	U			0	
	06N03	1995	0		Thorium-232	0.55	PCI/G	Screenin	U			0	
	8902247	1989	0		Thorium-232	0.5	PCI/G	Screening				1	
	91052199	1991	0		Thorium-232	0.5	PCI/G	Screening				1	
	910521103	1991	0		Thorium-232	0.5	PCI/G	Screening				1	
	91060611	1991	0		Thorium-232	0.5	PCI/G	Screening				1	
	92020322	1992	0		Thorium-232	0.5	PCI/G	Screening				1	
	92020313	1992	0		Thorium-232	0.5	PCI/G	Screening				1	
	92020314	1992	0		Thorium-232	0.5	PCI/G	Screening				1	
	01N01	1995	0		Thorium-232	0.5	PCI/G	Screenin	U			0	
	02N02	1995	0		Thorium-232	0.5	PCI/G	Screenin	U			0	
	03N03	1995	0		Thorium-232	0.5	PCI/G	Screenin	U			0	
	04N05	1995	0		Thorium-232	0.5	PCI/G	Screenin	U			0	
	06N05	1995	0		Thorium-232	0.5	PCI/G	Screenin	U			0	
	12	1996	0		Thorium-232	0.5	PCI/G	Screenin	U			0	
	01N02	1995	0		Thorium-232	0.45	PCI/G	Screenin	U			0	
	02N03	1995	0		Thorium-232	0.45	PCI/G	Screenin	U			0	
	03N02	1995	0		Thorium-232	0.45	PCI/G	Screenin	U			0	
	03N05	1995	0		Thorium-232	0.45	PCI/G	Screenin	U			0	
	08N01	1995	0		Thorium-232	0.45	PCI/G	Screenin	U			0	
	34	1996	0		Thorium-232	0.45	PCI/G	Screenin	U			0	
	910521100	1991	0		Thorium-232	0.4	PCI/G	Screening				1	
	92020311	1992	0		Thorium-232	0.4	PCI/G	Screening				1	

	02N05	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	02N06	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	03N04	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	04N03	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	05N05	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	06N06	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	07N05	1995	0		Thorium-232	0.4	PCI/G	Screenin	U				0	
	01N04	1995	0		Thorium-232	0.35	PCI/G	Screenin	U				0	
	03N01	1995	0		Thorium-232	0.35	PCI/G	Screenin	U				0	
	03N06	1995	0		Thorium-232	0.35	PCI/G	Screenin	U				0	
	07N02	1995	0		Thorium-232	0.35	PCI/G	Screenin	U				0	
	24	1996	0		Thorium-232	0.3	PCI/G	Screenin	U				0	
	02N01	1995	0		Thorium-232	0.25	PCI/G	Screenin	U				0	
	91060633	1991	0		Thorium-232	0.2	PCI/G	Screening					1	
	91060635	1991	0		Thorium-232	0.2	PCI/G	Screening					1	
	04N02	1995	0		Thorium-232	0.2	PCI/G	Screenin	U				0	
	13	1996	0		Thorium-232	0.2	PCI/G	Screenin	U				0	
	04N06	1995	0		Thorium-232	0.15	PCI/G	Screenin	U				0	
	05N06	1995	0		Thorium-232	0.15	PCI/G	Screenin	U				0	
	07N06	1995	0		Thorium-232	0.15	PCI/G	Screenin	U				0	
	08N06	1995	0		Thorium-232	0.1	PCI/G	Screenin	U				0	
	91060632	1991	0		Thorium-232	0	PCI/G	Screening					1	
MND17-8605	8605-5003	17-Aug-95	0.5	3	Thorium-232	0.6	PCI/G	Grab					1	
MND17-8602	8602-5003	17-Aug-95	0.5	3	Thorium-232	0.5	PCI/G	Grab					1	
MND17-8601	8601-5003	17-Aug-95	0.5	3	Thorium-232	0.4	PCI/G	Grab					1	
MND17-8604	8604-5003	17-Aug-95	0.5	3	Thorium-232	0.3	PCI/G	Grab					1	
MND17-8603	8603-5003	17-Aug-95	0.5	3	Thorium-232	0.2	PCI/G	Grab					1	
AH	RAH306	14-Apr-94	18	24	Thorium-232	0.85	PCI/G	Grab	U				0	
AG	RAG306	13-Apr-94	18	24	Thorium-232	0.775	PCI/G	Grab	U	0.95166172	0.493	1.004	190	**337**
						Site Employee uses only Shallow values				0.95249254	0.495	**1.005**	190	**335**
MND33-0059	0059-0002	18-Nov-91	3	7	Thorium-234	**1.48**	PCI/G	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Thorium-234	1.34	PCI/G	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Thorium-234	**1.17**	PCI/G	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Thorium-234	1.14	PCI/G	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Thorium-234	1.1225	PCI/G	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Thorium-234	1.11	PCI/G	Grab					1	
MND33-0058	0058-0002	14-Nov-91	3	5	Thorium-234	1.08	PCI/G	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Thorium-234	0.961	PCI/G	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Thorium-234	0.934	PCI/G	Grab					1	
MND33-0076	0076-0001	06-Dec-91	0	2	Thorium-234	0.859	PCI/G	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Thorium-234	0.854	PCI/G	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Thorium-234	0.845	PCI/G	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Thorium-234	0.837	PCI/G	Grab					1	
MND33-0074	0074-0001	05-Dec-91	0	2	Thorium-234	0.826	PCI/G	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Thorium-234	0.81	PCI/G	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Thorium-234	0.801	PCI/G	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Thorium-234	0.787	PCI/G	Grab					1	

MND33-0077	0077-0001	07-Dec-91	0	2	Thorium-234	0.778	PCI/G	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Thorium-234	0.739	PCI/G	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Thorium-234	0.71	PCI/G	Grab					1	
MND33-0077	0077-0002	07-Dec-91	3	5	Thorium-234	0.627	PCI/G	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Thorium-234	0.559	PCI/G	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Thorium-234	0.523	PCI/G	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Thorium-234	0.444	PCI/G	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Thorium-234	0.4	PCI/G	Grab		0.86946	0.265	**0.973**	25	**25**
	NAC025	06-Feb-96	0	3	Tin	0.89	MG/KG	Grab	B				1	
	NAC013	07-Feb-96	0	3	Tin	1.1	MG/KG	Grab	B				1	
	NAC027	07-Feb-96	0	3	Tin	1.1	MG/KG	Grab	B				1	
	NAC034	06-Feb-96	0	3	Tin	1.2	MG/KG	Grab	B				1	
	NAC012	08-Feb-96	0	3	Tin	1.6	MG/KG	Grab	B				1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Tin*	*2.75*	*MG/KG*	*Grab*	*U*				0	
	NAC016	05-Feb-96	0	3	Tin	**1.7**	MG/KG	Grab	B				1	
	NAC024	06-Feb-96	0	3	Tin	0.3	MG/KG	Grab	U	1.33	0.717	1.827	6	**8**
MND33-0077	0077-0002	07-Dec-91	3	5	Toluene	2.5	UG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Toluene	2	UG/KG	Grab	J				1	
MND33-0077	0077-0003	07-Dec-91	8	9	Toluene	2	UG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Toluene	2	UG/KG	Grab	J				1	
	NAC025	06-Feb-96	0	3	Toluene	**2**	UG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Toluene	2	UG/KG	Grab	J				1	
	NAC012	08-Feb-96	0	3	Toluene	3	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Toluene	3	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Toluene	3	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Toluene	3	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Toluene	3	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Toluene	3	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Toluene	3	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Toluene	3	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Toluene	3	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Toluene	3	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Toluene	3	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Toluene	3	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Toluene	2.5	UG/KG	Grab	U				0	
AG	RAG305	13-Apr-94	0	6	Toluene	3	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Toluene	3	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Toluene	3	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Toluene	3	UG/KG	Grab	UJ				0	
MND33-0076	0076-0002	6-Dec-91	3	5	Toluene	**16**	UG/KG	Grab		3.29166667	2.738	**4.387**	7	**24**
AH	RAH302	14-Apr-94	12	24	Tritium	0.0825	PCI/G	Grab	U				0	
AG	RAG302	13-Apr-94	12	24	Tritium	0.105	PCI/G	Grab	U				0	
AH	RAH301	14-Apr-94	0	12	Tritium	0.109	PCI/G	Grab	U				0	
AG	RAG301	13-Apr-94	0	12	Tritium	0.12275	PCI/G	Grab	U				0	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Tritium*	***0.098***	*PCI/G*	*Grab*		0.10345	0.015	**0.116**	1	**5**

	NAC025	06-Feb-96	0	3	Uranium-234	**1.07**	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Uranium-234	1.07	PCI/G	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Uranium-234*	***1.03***	*PCI/G*	*Grab*					1	
	NAC034	06-Feb-96	0	3	Uranium-234	0.977	PCI/G	Grab					1	
AG	RAG303	13-Apr-94	0	2	Uranium-234	0.794	PCI/G	Grab					1	
	NAC016	05-Feb-96	0	3	Uranium-234	0.765	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Uranium-234	0.724	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Uranium-234	0.718	PCI/G	Grab					1	
	NAC012	08-Feb-96	0	3	Uranium-234	0.693	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Uranium-234	0.378	PCI/G	Grab		0.8219	0.218	0.957	10	**10**
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Uranium-235/236*	*0.165*	*PCI/G*	*Grab*	*U*				0	
AG	RAG303	13-Apr-94	0	2	Uranium-235	**0.1195**	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Uranium-235	0.0592	PCI/G	Grab	J				1	
	NAC034	06-Feb-96	0	3	Uranium-235	0.0563	PCI/G	Grab	J				1	
	NAC025	06-Feb-96	0	3	Uranium-235	0.0467	PCI/G	Grab	J				1	
	NAC016	05-Feb-96	0	3	Uranium-235	0.0467	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Uranium-235	0.0408	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Uranium-235	0.028	PCI/G	Grab	J				1	
	NAC012	08-Feb-96	0	3	Uranium-235	0.0231	PCI/G	Grab	J				1	
	NAC013	07-Feb-96	0	3	Uranium-235	0.0094	PCI/G	Grab	UJ	0.05947	0.047	0.089	8	**10**
MND17-8601	8601-5003	17-Aug-95	0.5	3	Uranium-238	1.25	PCI/G	Grab	U				0	
MND17-8602	8602-5003	17-Aug-95	0.5	3	Uranium-238	1.25	PCI/G	Grab	U				0	
MND17-8604	8604-5003	17-Aug-95	0.5	3	Uranium-238	1.25	PCI/G	Grab	U				0	
MND17-8605	8605-5003	17-Aug-95	0.5	3	Uranium-238	1.2	PCI/G	Grab	U				0	
	NAC016	05-Feb-96	0	3	Uranium-238	**1.14**	PCI/G	Grab					1	
	NAC025	06-Feb-96	0	3	Uranium-238	1.14	PCI/G	Grab					1	
MND17-8603	8603-5003	17-Aug-95	0.5	3	Uranium-238	1	PCI/G	Grab	U				0	
	NAC034	06-Feb-96	0	3	Uranium-238	0.978	PCI/G	Grab					1	
AG	RAG303	13-Apr-94	0	2	Uranium-238	0.974	PCI/G	Grab					1	
AH	RAH303	14-Apr-94	0	2	Uranium-238	0.907	PCI/G	Grab					1	
	NAC027	07-Feb-96	0	3	Uranium-238	0.869	PCI/G	Grab					1	
	NAC024	06-Feb-96	0	3	Uranium-238	0.839	PCI/G	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Uranium-238*	***0.728***	*PCI/G*	*Grab*					1	
	NAC012	08-Feb-96	0	3	Uranium-238	0.681	PCI/G	Grab					1	
	NAC013	07-Feb-96	0	3	Uranium-238	0.424	PCI/G	Grab		0.97533333	0.242	1.098	10	**15**
AH	RAH306	14-Apr-94	18	24	Vanadium	**38.3**	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Vanadium	31.1	MG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Vanadium	**30.45**	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Vanadium	27	MG/KG	Grab					1	
MND33-0075	0075-0001	06-Dec-91	0	2	Vanadium	26.2	MG/KG	Grab					1	
MND33-0071	0071-0001	03-Dec-91	0	2	Vanadium	24.5	MG/KG	Grab					1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Vanadium	23.9	MG/KG	Grab					1	
MND33-0079	0079-0001	08-Dec-91	0	2	Vanadium	23.8	MG/KG	Grab					1	
	NAC016	05-Feb-96	0	3	Vanadium	23.8	MG/KG	Grab					1	

MND33-0074	0074-0001	05-Dec-91	0	2	Vanadium	23.1	MG/KG	Grab					1	
MND33-0072	0072-0001	03-Dec-91	0	2	Vanadium	22.5	MG/KG	Grab					1	
MND33-0079	0079-0002	08-Dec-91	3	5	Vanadium	22.5	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Vanadium	22.4	MG/KG	Grab					1	
MND33-0078	0078-0001	07-Dec-91	0	2	Vanadium	22.2	MG/KG	Grab					1	
MND33-0073	0073-0001	04-Dec-91	0	2	Vanadium	22.1	MG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Vanadium	22.05	MG/KG	Grab					1	
MND33-0059	0059-0003	18-Nov-91	8	12	Vanadium	22	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Vanadium	21.9	MG/KG	Grab					1	
MND33-0059	0059-0002	18-Nov-91	3	7	Vanadium	21.8	MG/KG	Grab	J				1	
MND33-0077	0077-0001	07-Dec-91	0	2	Vanadium	21.8	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Vanadium	21.3	MG/KG	Grab					1	
	NAC027	07-Feb-96	0	3	Vanadium	21.3	MG/KG	Grab					1	
AH	RAH305	14-Apr-94	0	6	Vanadium	18.7	MG/KG	Grab					1	
MND33-0078	0078-0002	07-Dec-91	3	4	Vanadium	18.6	MG/KG	Grab					1	
MND33-0071	0071-0002	03-Dec-91	3	5	Vanadium	17.8	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Vanadium	16.6	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Vanadium	16.45	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Vanadium	16.3	MG/KG	Grab					1	
	NAC034	06-Feb-96	0	3	Vanadium	14.9	MG/KG	Grab					1	
MND33-0057	0057-0003	13-Nov-91	8	12	Vanadium	13.2	MG/KG	Grab					1	
MND33-0059	0059-0001	13-Nov-91	0	2	Vanadium	13	MG/KG	Grab					1	
	NAC013	07-Feb-96	0	3	Vanadium	12.9	MG/KG	Grab					1	
MND33-0057	0057-0001	12-Nov-91	0	2	Vanadium	12.1	MG/KG	Grab					1	
	NAC025	06-Feb-96	0	3	Vanadium	10.5	MG/KG	Grab					1	
	NAC024	06-Feb-96	0	3	Vanadium	7.3	MG/KG	Grab					1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Vanadium*	*3.05*	*MG/KG*	*Grab*	*U*				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Vanadium	1.9	MG/KG	Grab		19.7108108	7.306	**22.065**	36	**37**
MND33-0076	0076-0002	6-Dec-91	3	5	Xylenes, Total	**19**	UG/KG	Grab					1	
AG	RAG305	13-Apr-94	0	6	Xylenes, Total	3	UG/KG	Grab	UJ				0	
AG	RAG306	13-Apr-94	18	24	Xylenes, Total	3	UG/KG	Grab	UJ				0	
AH	RAH305	14-Apr-94	0	6	Xylenes, Total	3	UG/KG	Grab	UJ				0	
AH	RAH306	14-Apr-94	18	24	Xylenes, Total	3	UG/KG	Grab	UJ				0	
	NAC012	08-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	
	NAC013	07-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	
	NAC016	05-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0057	0057-0002	13-Nov-91	3	5	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0058	0058-0002	14-Nov-91	3	5	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0058	0058-0003	14-Nov-91	8	10	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0059	0059-0002	18-Nov-91	3	7	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0059	0059-0003	18-Nov-91	8	12	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0071	0071-0002	03-Dec-91	3	5	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0077	0077-0002	07-Dec-91	3	5	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0077	0077-0003	07-Dec-91	8	9	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0079	0079-0002	08-Dec-91	3	5	Xylenes, Total	3	UG/KG	Grab	U				0	
	NAC024	06-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	

	NAC025	06-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	
	NAC027	07-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	
	NAC034	06-Feb-96	0	3	Xylenes, Total	3	UG/KG	Grab	U				0	
MND33-0057	0057-0003	13-Nov-91	8	12	Xylenes, Total	2.5	UG/KG	Grab	U				0	
MND33-0078	0078-0002	07-Dec-91	3	4	Xylenes, Total	1	UG/KG	Grab	J	3.5625	3.314	**4.888**	2	**24**
MND33-0059	0059-0003	18-Nov-91	8	12	Zinc	**754**	MG/KG	Grab	J				1	
AH	RAH305	14-Apr-94	0	6	Zinc	**238**	MG/KG	Grab	*				1	
AH	RAH306	14-Apr-94	18	24	Zinc	125	MG/KG	Grab	*				1	
AG	RAG305	13-Apr-94	0	6	Zinc	109.65	MG/KG	Grab	J				1	
	NAC027	07-Feb-96	0	3	Zinc	109	MG/KG	Grab					1	
AG	RAG306	13-Apr-94	18	24	Zinc	82.3	MG/KG	Grab	*				1	
MND33-0059	0059-0002	18-Nov-91	3	7	Zinc	79.5	MG/KG	Grab	J				1	
	NAC016	05-Feb-96	0	3	Zinc	70.5	MG/KG	Grab					1	
	NAC012	08-Feb-96	0	3	Zinc	68.5	MG/KG	Grab					1	
MND33-0058	0058-0003	14-Nov-91	8	10	Zinc	66.2	MG/KG	Grab	*				1	
	NAC025	06-Feb-96	0	3	Zinc	64.6	MG/KG	Grab					1	
MND33-0057	0057-0002	13-Nov-91	3	5	Zinc	64	MG/KG	Grab	*				1	
MND33-0079	0079-0002	08-Dec-91	3	5	Zinc	60.6	MG/KG	Grab	J				1	
	NAC034	06-Feb-96	0	3	Zinc	50.3	MG/KG	Grab					1	
MND33-0058	0058-0001	13-Nov-91	0	2	Zinc	49.25	MG/KG	Grab	*				1	
	NAC013	07-Feb-96	0	3	Zinc	44.9	MG/KG	Grab					1	
MND33-0077	0077-0003	07-Dec-91	8	9	Zinc	44.8	MG/KG	Grab	J				1	
MND33-0058	0058-0002	14-Nov-91	3	5	Zinc	44.2	MG/KG	Grab	*				1	
MND33-0072	0072-0001	03-Dec-91	0	2	Zinc	43.2	MG/KG	Grab	J				1	
MND33-0059	0059-0001	13-Nov-91	0	2	Zinc	40.6	MG/KG	Grab	*				1	
MND33-0057	0057-0003	13-Nov-91	8	12	Zinc	40.1	MG/KG	Grab	*				1	
MND33-0075	0075-0001	06-Dec-91	0	2	Zinc	39.6	MG/KG	Grab	J				1	
MND33-0072	0072-0002	03-Dec-91	3	6.5	Zinc	39.45	MG/KG	Grab	J				1	
MND33-0074	0074-0001	05-Dec-91	0	2	Zinc	37.4	MG/KG	Grab	J				1	
MND33-0071	0071-0002	03-Dec-91	3	5	Zinc	32.7	MG/KG	Grab	J				1	
MND33-0079	0079-0001	08-Dec-91	0	2	Zinc	32.5	MG/KG	Grab	J				1	
MND33-0077	0077-0002	07-Dec-91	3	5	Zinc	31.9	MG/KG	Grab	J				1	
MND33-0057	0057-0001	12-Nov-91	0	2	Zinc	31.5	MG/KG	Grab	J				1	
MND33-0071	0071-0001	03-Dec-91	0	2	Zinc	29	MG/KG	Grab	J				1	
	NAC024	06-Feb-96	0	3	Zinc	28.9	MG/KG	Grab					1	
MND33-0076	0076-0002	6-Dec-91	3	5	Zinc	27.7	MG/KG	Grab	J				1	
MND33-0078	0078-0002	07-Dec-91	3	4	Zinc	25.7	MG/KG	Grab	J				1	
MND33-0078	0078-0001	07-Dec-91	0	2	Zinc	22.9	MG/KG	Grab	J				1	
MND33-0076	0076-0001	06-Dec-91	0	2	Zinc	21.4	MG/KG	Grab	J				1	
MND33-0073	0073-0001	04-Dec-91	0	2	Zinc	18.9	MG/KG	Grab	J				1	
350	*0350-0024*	*2-Mar-93*	*23.4*	*24.2*	*Zinc*	*15.2*	*MG/KG*	*Grab*					1	
MND33-0077	0077-0001	07-Dec-91	0	2	Zinc	14.3	MG/KG	Grab	J	72.9256757	122.087	**112.264**	37	**37**

APPENDIX H

CHROMIUM AND GROUNDWATER -

RELEASE BLOCK D RRE

An assumption has been made here that the chromium detected in the shallow bedrock wells, which in turn enters the underlying Buried Valley Aquifer (BVA), is entirely the Cr^{+6} species. This is a relatively conservative assumption in that chromium found in the environment tends to be the relatively insoluble Cr^{+3}, rather than the more soluble Cr^{+6}. A possible amount of Cr^{+6} as a percent of the total chromium is 1/7, with 6/7 being Cr^{+3}.

Overall incremental Hazard Indexes (HI) and risks, attributable to Mound related activities were calculated with the assumption of all chromium being Cr^{+6}. Assuming the 1/7 ratio to be representative of potential Cr^{+6} detected at the Mound facility, the incremental HI values can be recalculated. The calculations reflect the different toxicity of the Cr^{+3} and the Cr^{+6} species. The oral reference dose (oral RfD), applicable to ingested chromium, for Cr^{+3} is 1.0 mg/kg-da, while the oral RfD for Cr^{+6} is 0.005 mg/kg-da. The resulting recalculated HI values are presented below.

As can be seen from Table H.1, the resulting HI values for the Construction Worker and Pathway 3 associated with exposure to Cr^{+3} and Cr^{+6} were 4.11E-3 and 0.137, respectively. The resulting HI values for the Construction Worker and Pathway 5 (the only other pathway considered) associated with exposure to Cr^{+3} and Cr^{+6} were 2.66E-5 and 8.88E-4, respectively. The resulting HI values for the Site Employee and Pathway 3 (the only pathway considered) associated with exposure to Cr^{+3} and Cr^{+6} were 4.11E-3 and 0.137, respectively.

The recalculated summed HI values across all contaminants and applicable pathways are summarized in Table H.2. As can be seen, the summed hazards decrease from about 1.0 to about 0.18 for each of the two exposure scenarios. If the portion of the total chromium is different than the 1/7 Cr+6 and 6/7 Cr+3 assumed in the calculations in the tables below, the summed HI values would be propotionally different as well. Overall it appears that the assumption used in Section V of this report (100% Cr+6) overestimates the HI values potentially by a factor of about six-fold.

Table H.1. Recalculation of Incremental Hazard Indices Associated with Mound Activities

	Intakes mg/kg-da Cr+3	Intakes mg/kg-da Cr+6	Oral RfD mg/kg-da Cr+3	Oral RfD mg/kg-da Cr+6	Hazard Index Cr+3	Hazard Index Cr+6
Const. Worker						
Path.3	4.11E-3	6.85E-4	1.0	0.005	4.11E-3	0.137
Path. 5	2.66E-5	4.44E-6	1.0	0.005	2.66E-5	8.88E-4
Site Employee						
Path. 3	4.11E-3	6.85E-4	1.0	0.005	4.11E-3	0.137

Table H.2. Recalculated Summed Hazard Indices Associated with Mound Activities

	Construction Worker	Site Employee
Summed HI (from RRE Tables, Section V.)	1.00	1.00
Summed HI excluding Cr	0.0338	0.040
Summed HI including Cr^{+3} and Cr^{+6} recalculated HI	0.176	0.181