

Report

49184

Remedial Investigation

*Richardson Hill Road Municipal Landfill
Sidney, New York*

Revised: March 1997

5000 Brittonfield Parkway
P.O. Box 4873
Syracuse, New York 13221

301863

301864

Table 1

Soil Vapor Survey Results - (9/27-10/3/90)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Coordinates			Total Peak Area	Total VOC (ppm)	Peak Description
North	East	West			
0		100	0	<0.005	BND
100		100	0.75	0.1	CHL
200		100	0.5	<0.005	CHL
300		100	3.5	0.3	CHL
400		100	935	96.3	CHLBTX
500		100	15.5	1.6	CHL
600		100	2	0.2	BCHLBTX
700		100	4.5	0.4	CHLBTX
800		100	3	0.3	CHLBTX
900		100	3	0.3	CHLBTX
1000		100	0.5	<0.005	BTX
1100		100	35	3.6	CHLBTX
1200		100	0.5	<0.005	ND
100		200	1	0.1	BCHL
400		200	125	12.8	CHLBTX
700		200	20	2	CHLBTX
1000		200	5	0.5	B
1100		200	16	1.6	B
0		300	1	0.1	ND
100		300	1.5	0.1	B
300		300	21	2.1	BCHLBTX
400		300	17	1.7	BBTX
500		300	8	0.8	BCHL
600		300	4	0.4	BCHL
700		300	5	0.5	BCHL
900		300	0	<0.005	ND
1000		300	6.4	0.6	B
100		400	1	0.1	BND
400		400	1	0.1	B
700		400	20.5	2.1	BCHL
800		400	12	1.2	BCHL
125		650	1	0.1	ND
225		675	1	0.1	ND
100		775	2.5	0.2	BCHL
0	0	0	3	0.3	B
100	0	0	10	1	B
200	0	0	8	0.8	B
300	0	0	0.5	<0.005	CHLBTX
400	0	0	1	0.1	CHL
500	0	0	70	7.2	B
600	0	0	450	46.3	CHL
700	0	0	173	17.8	CHLBTX
800	0	0	86	8.8	CHLBTX

Table 1

Soil Vapor Survey Results - (9/27-10/3/90)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Coordinates			Total Peak Area	Total VOC (ppm)	Peak Description
North	East	West			
900	0	0	1	0.1	CHLBTX
1000	0	0	0.5	<0.005	ND
1100	0	0	1.5	0.1	B
1200	0	0	1.5	0.1	B
100	100		4	0.4	CHL
400	100		22	2.2	CHL
600	100		7.5	0.7	CHL
700	100		70	7.2	CHLBTX
800	100		7.5	0.7	CHL
900	100		102	10.5	CHL
1000	100		0.5	<0.005	CHLBTX
1100	100		7.5	0.7	B
500	150		0.25	<0.005	ND
550	150		0.25	<0.005	ND
600	150		225	23.1	BTX
725	150		5	0.5	CHL
800	150		1.75	0.2	CHL
825	150		0	<0.005	BTX
900	175		0	<0.005	ND
400	200		10	1	CHL
500	200		16	1.6	CHL
600	200		3	0.3	CHLBTX
700	200		9	0.9	CHLBTX
800	200		23	2.3	CHLBTX
850	200		0.55	<0.005	ND
1100	200		0	<0.005	ND
900	250		1	0.1	CHL
800	280		29	3	CHL
900	300		5	0.5	CHL
1100	300		0	<0.005	ND
1000	350		12	1.2	CHL
1700	600		1	0.1	ND
1800	600		0	<0.005	ND
1900	600		0	<0.005	ND
1700	700		4	0.4	BCHL
1800	700		0	<0.005	ND
1900	700		0	<0.005	ND
1700	800		20	2	BCHL
1800	800		8.5	0.9	BBTX
1930	800		0	<0.005	ND
1700	900		1	0.1	BCHL
1800	900		3	0.3	CHLBTX
1900	900		0	<0.005	ND

301866

Table 1

Soil Vapor Survey Results - (9/27-10/3/90)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Coordinates			Total Peak Area	Total VOC (ppm)	Peak Description
North	East	West			
1850	950		0	<0.005	ND
1800	960		70	7.2	BBTX
1700	1000		0	<0.005	ND
1700	1100		32	3.3	B
1600	1150		0	<0.005	ND
1775	1225		1.4	0.1	CHL

Peak Descriptions:

B - Early eluting VOCs which appear within the first twenty seconds of a chromatographic run.

BTX - Chromatograms which exhibit behavior consistent with that of benzene, toluene, xylene.

CHL - Chromatograms which exhibit behavior consistent with that of chlorinated VOCs.

(e.g. TCE and trans 1,2 dichloroethene)

CHLBTX - Chromatograms which exhibit a combination of the CHL and BTX behavior

ND - Chromatograms which exhibit no response above the detection limit

The letter "B" appearing before any description indicates that the early eluting VOCs are the major constituent in that particular sample

301867

Table 2

Summary of Surface Soil Analyses
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID	Date Collected	PCB (ppm)	Oil & Grease (ppm)
SS-1	11/18/88	470	4,500
SS-2	11/18/88	8.1	5,800
SS-3	11/18/88	0.23	1,400
SS-4	11/18/88	0.43	1,200
SS-5	11/18/88	0.084	760
SS-6	11/18/88	0.36	1,500
SS-7	11/18/88	<0.08	<80
SS-8	11/18/88	0.094	2,400
SS-9	11/18/88	58	NA
SS-10	11/18/88	0.44	5,400
SSC-7	10/90	51	NA
SSC-11	10/90	33	NA
SSC-16	10/90	480	NA
SSC-18	10/90	63	NA
SSC-24	10/90	12	NA
SSC-131	10/90	38	NA
ASS-1	5/94	<0.38	220
ASS-2	5/94	<0.37	<150
ASS-3	5/94	950	3,700
ASS-4	5/94	730	280,000

NOTE: NA - Not analyzed.

301868

Table 3

Surface Soil PCB Screening Results
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Composite No.	Aroclor 1248 (ppm)	Composite No.	Aroclor 1248 (ppm)
SSC-1	<0.5	SSC-20	<0.5
SSC-2	<0.5	SSC-21	<0.5
SSC-3	<0.5	SSC-22	63.5
SSC-4	2.1	SSC-23	25.1
SSC-5	1.1	SSC-24	78.4
SSC-6	<0.5	SSC-25	7.0
SSC-7	188.6	SSC-26	77.2
SSC-8	<0.5	SSC-27	8.3
SSC-9	11.2	SSC-28	5.0
SSC-10	<0.5	SSC-29	<0.5
SSC-11	626.7	SSC-30	60.3
SSC-12	15.8	SSC-31	155.6
SSC-13	15.0	SSC-32	13.5
SSC-14	11.7	SSC-33	<0.5
SSC-15	<0.5	SSC-34	27.2
SSC-16	222.0	SSC-35	<0.5
SSC-17	34.5	SSC-36	19.5
SSC-18	133.8	SSC-37	39.2
SSC-19	<0.5	SSC-38	42.2

301869

Table 4

Subsurface Soil VOC and PCB Screening Data - (11/90)
 Richardson Hill Road Municipal Landfill Site
 Sidney, New York

Soil Boring	Depth (Ft)	Sample Wt. PID (g)	Sample Wt. FID (g)	VOC Data				PCB Value (ppm)
				PID Screen Value (ppm)	FID Screen Value (ppm)	Standard PID Value	Standard FID Value	
SB-1	0-2'	200.8	207.3	2.5	9	0.01	0.04	
SB-1	2-4'	204	186.5	0	2	0	0.01	0
SB-1	4-6'	224	247	0	0.5	0	0	
SB-1	6-8'	186	222.6	0	0.5	0	0	0
SB-1	8-10'	209.5	193.6	0	1	0	0.01	
SB-1	10-12'	237.9	197.8	0	3	0	0.02	0
SB-1	12-14'	169.9	180.9	1	5.8	0.01	0.03	
SB-1	14-16'	213.5	225	0	2.6	0	0.01	0
SB-2	0-2'	225.4	227	0	0	0	0	
SB-2	2-4'	223.7	240.1	0	0	0	0	0
SB-2	4-6'	212.3	246.3	0	0	0	0	
SB-2	6-8'	210.7	222.5	0.5	3	0	0.01	0
SB-2	8-10'	226.6	198.3	1	5	0	0.03	
SB-2	10-12'	231.4	192.3	0	0	0	0	0
SB-2	12-14'	NR	25.9	---	120	---	4.63	
SB-2	14-16'	201.1	272	1	4	0	0.01	0
3-3	0-2'	183.5	136.2	0	0	0	0	
SB-3	2-4'	185.2	232	0	1	0	0	0
SB-3	4-6'	211.8	235.2	0	0	0	0	
SB-3	6-8'	227.6	274.5	0	0	0	0	0
SB-3	8-10'	219.5	213	0	0	0	0	
SB-3	10-12'	220.1	216.2	0	0	0	0	0
SB-3	12-14'	261.4	231.8	0	0	0	0	
SB-3	14-16'	227.9	230.7	0	0	0	0	0
SB-4	0-2'	177	171	0	0	0	0	
SB-4	2-4'	207.6	202	0	0	0	0	0
SB-4	4-6'	165.8	195.9	0	0	0	0	
SB-4	6-8'	175	167.2	0	0	0	0	0
SB-4	8-10'	186.6	145.7	0.5	0	0	0	
SB-4	10-12'	118.1	133.3	0	0	0	0	0
SB-4	12-14'	199.7	276.5	0	5	0	0.02	
SB-4	14-16'	222.3	244.9	0	0	0	0	0
SB-5	0-2'	174.8	186.8	0	0	0	0	
SB-5	2-4'	178.6	214.3	0	0	0	0	0
SB-5	4-6'	214.7	261.2	0	7	0	0.03	
SB-5	6-8'	199.6	215.5	0	3	0	0.01	0
SB-5	8-10'	271.7	228.1	0	0	0	0	
SB-5	10-12'	210.7	215.2	0	0	0	0	0
SB-5	12-14'	216.6	216.2	0	3.5	0	0.02	
SB-5	14-16'	203.1	197.8	0	1.3	0	0.01	0
SB-6	0-2'	141.4	170.8	0	0	0	0	
SB-6	2-4'	165.8	175.2	0	0	0	0	0

301870

Table 4

Subsurface Soil VOC and PCB Screening Data - (11/90)
 Richardson Hill Road Municipal Landfill Site
 Sidney, New York

Soil Boring	Depth (Ft)	Sample Wt. PID (g)	Sample Wt. FID (g)	VOC Data				PCB Value (ppm)
				PID Screen Value (ppm)	FID Screen Value (ppm)	Standard PID Value	Standard FID Value	
SB-6	4-6'	160.8	231.6	0	0	0	0	
SB-6	6-8'	171.1	239	0	0	0	0	0
SB-6	8-10'	206.7	192.3	0	0	0	0	
SB-6	10-12'	206.8	237.7	5	0	0.02	0	0
SB-6	12-14'	126	124	0	0	0	0	
SB-6	14-16'	155.7	162.9	0	0	0	0	0
SB-7	0-2'	175	172.8	0	0	0	0	
SB-7	2-4'	200.1	222.7	0	0	0	0	0
SB-7	4-6'	240	230.2	0	0	0	0	
SB-7	6-8'	225	254.4	0	0	0	0	0
SB-7	8-10'	241.2	199.5	0	0	0	0	
SB-7	10-12'	NR	NR	---	---	---	---	0
SB-7	12-14'	210.2	212.5	0	0	0	0	
SB-7	14-16'	210.6	218.9	0	0	0	0	0
SB-8	0-2'	234.3	230.1	0	0	0	0	
SB-8	2-4'	192.6	272.7	0	0	0	0	0
SB-8	4-6'	267.6	250.8	0	0	0	0	
SB-8	6-8'	194.9	211.3	0	0	0	0	0
SB-8	8-10'	196.6	209.5	0	0	0	0	
SB-8	10-12'	226.9	233.5	0	0	0	0	0
SB-8	12-14'	195.3	222.1	0	0	0	0	
SB-8	14-16'	222.7	203.5	0	0	0	0	0
SB-9	0-2'	174.3	194.5	0	0	0	0	
SB-9	2-4'	230.9	212	0	1.5	0	0.01	1.5
SB-9	4-6'	173	153.9	0	0	0	0	
SB-9	6-8'	174.8	227.1	0.5	0	0	0	0
SB-9	8-10'	125	139	1	0	0.01	0	
SB-9	10-12'	191	268.2	0	0.5	0	0	0.5
SB-9	12-14'	187	221	0	0	0	0	
SB-9	14-16'	97	131	1	3.5	0.01	0.03	3.5
SB-10	0-2'	170	174.3	2	47	0.01	0.27	
SB-10	2-4'	NR	87.9	---	360	---	4.1	10
SB-10	4-6'	179.8	153.9	75	880	0.42	5.72	
SB-10	6-8'	107	220.6	20	200	0.19	0.91	60
SB-10	8-10'	242.5	180	75	120	0.31	0.67	
SB-10	10-12'	211.8	235.5	35	240	0.17	1.02	1.8
SB-10	12-14'	NR	NR	---	---	---	---	
SB-10	14-16'	51	73	15	280	0.29	3.84	30.4
SB-11	0-2'	164.7	263.8	4.5	0	0.03	0	
SB-11	2-4'	156.9	163.4	5	5.5	0.03	0.03	0
SB-11	4-6'	170.7	188.6	6.5	0.5	0.04	0	
SB-11	6-8'	160.1	165.5	0	1	0	0.01	0

301871

Table 4

Subsurface Soil VOC and PCB Screening Data - (11/90)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Soil Boring	Depth (Ft)	Sample Wt. PID (g)	Sample Wt. FID (g)	VOC Data				PCB Value (ppm)
				PID Screen Value (ppm)	FID Screen Value (ppm)	Standard PID Value	Standard FID Value	
SB-11	8-10'	157.4	149.4	0	0	0	0	
SB-11	10-12'	171	185	0	0	0	0	0
SB-11	12-14'	114.2	133.9	0	0.5	0	0	
SB-11	14-16'	162.5	92.3	2.5	5.5	0.02	0.06	0
SB-12	0-2'	172.1	143.8	1	8	0.01	0.06	
SB-12	2-4'	159.5	122.5	2.5	10	0.02	0.08	20
SB-12	4-6'	210.1	198	0	0.5	0	0	
SB-12	6-8'	158	219	0	10	0	0.05	29.2
SB-12	8-10'	173	171	0	15	0	0.09	
SB-12	10-12'	201	180.7	0	16	0	0.09	28.1
SB-12	12-14'	413.4	190	0	15	0	0.08	
SB-12	14-16'	219.3	230	0	0	0	0	0
SB-13	0-2'	158.9	212.9	0	50	0	0.23	
SB-13	2-4'	199.8	198.4	0	0	0	0	0
SB-13	4-6'	217.5	186.9	0	0	0	0	
SB-13	6-8'	208.1	217.9	0	0	0	0	0
SB-13	8-10'	214.5	229.9	0	0	0	0	
SB-13	10-12'	182.7	229.3	0	0	0	0	0
SB-13	12-14'	211.1	209.5	0	0	0	0	
SB-13	14-16'	193	242	0	0	0	0	0
SB-14	0-2'	189	227	0	0	0	0	
SB-14	2-4'	179.5	198	0	0	0	0	0
SB-14	4-6'	253	250.5	0	0	0	0	
SB-14	6-8'	240	203.5	0	0	0	0	0
SB-14	8-10'	217.3	236.3	0	0	0	0	
SB-14	10-12'	227.2	249	0	0	0	0	0
SB-14	12-14'	211.1	261	0	0	0	0	
SB-14	14-16'	265.8	223	0	0	0	0	0
SB-15	0-2'	132	142.2	0	0	0	0	
SB-15	2-4'	213.3	211	0	0	0	0	0
SB-15	4-6'	184	148.3	0	0	0	0	
SB-15	6-8'	188.3	196.5	0	1	0	0.01	0
SB-15	8-10'	211.6	200.3	0	0	0	0	
SB-15	10-12'	199	187.7	10	0	0.05	0	0
SB-15	12-14'	154.3	168	20	0	0.13	0	
SB-15	14-16'	169.5	200.2	0	0	0	0	0
SB-16	0-2'	137.7	197	0.2	110	0.01	0.56	
SB-16	2-4'	247	226.5	0.1	11	0	0.05	0
SB-16	4-6'	225	206.7	0.1	11	0	0.05	
SB-16	6-8'	152.6	155	0.2	5.4	0	0.03	0
SB-16	8-10'	203.2	137.8	0.7	9.2	0	0.07	
SB-16	10-12'	169.2	179.5	1.3	16	0.01	0.09	3.6

301872

Table 4

Subsurface Soil VOC and PCB Screening Data - (11/90)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Soil Boring	Depth (Ft)	Sample Wt. PID (g)	Sample Wt. FID (g)	VOC Data				PCB Value (ppm)
				PID Screen Value (ppm)	FID Screen Value (ppm)	Standard PID Value	Standard FID Value	
SB-16	12-14'	215.7	187	4.2	3.2	0.02	0.02	
SB-16	14-16'	190.3	183.6	9.1	5.3	0.05	0.03	1.6
SB-17	0-2'	114.6	87.3	0	11	0	0.13	
SB-17	2-4'	91	116.8	0.2	1000	0	8.56	4.9
SB-17	4-6'	196.6	103.9	2.8	1000	0.01	9.62	
SB-17	6-8'	97.7	116	0.9	950	0.01	8.19	0
SB-17	8-10'	107	92.9	23	844	0.21	9.09	
SB-17	10-12'	227.3	189.8	0.5	640	0	3.37	3.9
SB-17	12-14'	NR	NR	—	—	—	—	
SB-17	14-16'	163.2	172.1	1.9	275	0.01	1.6	7.9
SB-18	0-2'	96.8	93.1	0.6	1	0.01	0.01	
SB-18	2-4'	204.1	185.1	0.2	2.4	0	0.01	0
SB-18	4-6'	213	203.8	0.8	3	0	0.01	
SB-18	6-8'	197.3	203.7	0.8	11	0	0.05	0
SB-18	8-10'	170.3	198.4	1	20	0.01	0.1	
SB-18	10-12'	235	218.2	2.3	31	0.01	0.14	0
SB-18	12-14'	195.1	174.4	1	29	0.01	0.17	
SB-18	14-16'	156.9	183	3.6	26	0.02	0.14	0
SB-19	0-2'	171.6	169.3	0	0.4	0	0	
SB-19	2-4'	75.9	55.7	0.2	2.4	0	0.04	0
SB-19	4-6'	111.5	100.6	1	6.9	0.01	0.07	
SB-19	6-8'	189.8	226.5	0	0.2	0	0	0
SB-19	8-10'	176.2	187.1	0	0.2	0	0	
SB-19	10-12'	166.6	169.8	0	0	0	0	0
SB-19	12-14'	203.6	188	0	0	0	0	
SB-19	14-16'	170.8	194.6	0	0	0	0	0
SB-20	0-2'	216.9	185.5	0	0	0	0	
SB-20	2-4'	221.4	191.7	0	0	0	0	0
SB-20	4-6'	200.4	228.7	0	0	0	0	
SB-20	6-8'	187.1	263	1	9.6	0.01	0.04	0
SB-20	8-10'	181.1	191	2.8	21	0.02	0.11	
SB-20	10-12'	214.2	234.6	3	120	0.01	0.51	0
SB-20	12-14'	216.2	185.8	3	120	0.01	0.65	
SB-20	14-16'	176.7	215.3	4.4	220	0.02	1.02	3.9

NOTE: PCB analyses done on 4 ft. composited sample.

NR - No Recovery.

— - Not Evaluated.

301873

Table 5

Sediment PCB Screening Results
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Screening Sample No.	Aroclor 1248 (ppm)	Composite No.	Aroclor 1248 (ppm)
Sed #1	92	Sed #36+20	35
Sed #2	21	Sed #36+40	7.5
Sed #3	9	Sed #37	29
Sed #7	<5	Sed #38	175
Sed #8	<5	Sed #38+20	<5
Sed #12	<5	Sed #38+40	<5
Sed #13	13	Sed #39	63.0
Sed #17	<5	Sed #40	17.0
Sed #18	<5	Sed #40+20	23.0
Sed #19	<5	Sed #40+40	<5
Sed #21	70	Sed #41	<5
Sed #23	<5	Sed #42	11
Sed #25	<5	Sed #42+20	<5
Sed #27	8	Sed #42+40	<5
Sed #29	28	Sed #53	<5
Sed #31	109	Sed #55	<5
Sed #32	<5	Sed #58	<5
Sed #33	13.5	Sed #59	<5
Sed #34	22	Sed #63	<5
Sed #35	110	Sed #67	<5
Sed #36	25	Sed #71	5

301874

Table 6
Well As-Built and
Ground Water and Surface Water Elevations
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Well No.	Ground Elevation (feet)	Stainless Steel/PVC Casing Elev. (feet)	Coordinates		Well Depth Below Grade (feet)	Screened Interval Elevation (feet)	Hydraulic Conductivity (gpd/ft.2)	Ground Water Elevations (ft)									
			North	East				11/10/88	11/16/88	12/9/88	1/20/89	2/22/89	8/29/90	11/6/90	11/13/90	12/10/90	12/8/91
MW-1	1805.5	1807.87	11714.77	7029.99	22.5	1783.00 - 1799.30	0.3	1792.09	1790.64	1792.04	1787.84	1787.18	1786.79	1789.22	1791.42	1790.63	1790.06
MW-2	1785.6	1787.69	11689.44	7111.26	29.5	1756.10 - 1772.40	IST	1781.06	1762.35	1761.26	1758.88	1758.93	1758.98	1759.07	1759.14	1759.15	1759.03
MW-3	1752.4	1752.11	11718.97	7235.98	19.5	1732.90 - 1749.20	114.6	1749.11	1749.95	1749.65	1748.10	1749.98	1749.50	1749.89	1750.27	1749.93	1750.14
MW-3D	1753.1	1753.08	11726.90	7242.63	48.9	1701.20 - 1719.20	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
MW-3DD	1753.4	1753.43	11734.30	7239.25	140.0	1613.40 - 1628.40	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
MW-4S	1760.9	1763.18	12069.81	7319.95	22.5	1738.40 - 1754.70	56.6	1761.53	1758.46	1758.62	1756.31	1759.37	1756.30	1759.03	1759.86	1759.08	1759.58
MW-4D	1761.0	1768.09	12075.32	7321.36	46.6	1714.44 - 1730.14	0.002	---	---	---	---	---	---	---	---	---	NA
MW-5S(2)	1753.6	1753.68	11570.75	7213.44	18.5	1735.10 - 1751.40	0.1	1749.05	1748.88	1748.71	1748.03	1748.51	1748.28	1748.45	1748.80	1748.56	1748.63
OP-3(2)	1753.8	1753.56	NA	NA	13.2	1740.60 - 1750.60	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
MW-5D	1753.9	1753.49	11563.35	7211.52	51.5	1702.40 - 1718.70	49.0	1749.29	1748.84	1750.09	1748.49	1749.05	1748.96	1749.12	1749.52	1749.20	1749.41
MW-6	1765.1	1766.98	11269.49	7099.87	20.5	1744.60 - 1760.90	0.4	1762.84	1761.04	1761.84	1758.19	1758.95	1759.55	1759.44	1760.06	1759.63	1760.17
MW-7S	1754.7	1754.52	10685.95	6974.87	19.7	1735.00 - 1751.30	0.7	1748.84	1748.79	1748.70	1748.85	1748.70	1748.68	1748.92	1748.81	1748.69	1748.82
MW-7D	1754.9	1754.37	10658.30	6970.57	38.1	1716.81 - 1732.51	0.002	---	---	---	---	---	---	---	---	---	NA
MW-8	1768.2	1768.58	12696.90	7890.51	24.5	1771.70 - 1788.00	0.4	1791.29	1788.14	1790.53	1786.81	1789.01	1787.53	1787.51	1789.97	1788.05	1788.84
MW-9	1769.5	1801.42	12587.94	7767.85	44.5	1755.00 - 1760.50	4.0	1783.91	1781.45	1783.25	1778.68	1780.39	1778.19	1779.94	1783.03	1780.58	1781.64
MW-9D	1800.4	1801.97	12586.12	7775.50	67.1	1733.30 - 1748.30	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
MW-10	1763.7	1765.67	12126.82	7842.00	14.0	1749.70 - 1761.20	49.4	1783.57	1762.32	1762.02	1761.69	1762.49	1761.76	1762.06	1762.75	1762.20	1762.36
MW-11S*	1890.5	1892.42	11498.97	6515.01	34.8	1855.73 - 1868.23	22.8	---	---	---	---	---	---	1877.47	1883.06	1880.44	1881.78
MW-11D*	1899.5	1891.43	11508.87	6518.50	60.2	1829.33 - 1845.63	1.4	---	---	---	---	---	---	1837.14	1834.77	1834.71	1834.83
MW-12*	1841.9	1843.74	12020.49	6856.98	43.8	1796.07 - 1803.57	0.16	---	---	---	---	---	---	1805.60	1808.24	1808.16	1806.96
MW-13*	1767.0	1768.89	12215.04	7581.73	20.1	1746.87 - 1763.17	1.8	---	---	---	---	---	---	1761.84	1762.49	1761.70	1762.13
MW-14*	1796.3	1798.51	12895.17	7658.84	20.0	1776.33 - 1792.63	1.4	---	---	---	---	---	---	1787.00	1787.41	1786.80	1786.84
MW-15*	1792.0	1794.35	12388.12	7813.65	24.3	1767.75 - 1784.05	5.2	---	---	---	---	---	---	1780.95	1785.82	1782.66	1784.48
MW-16*	1793.3	1795.33	12590.40	8117.30	19.1	1774.18 - 1790.48	4.6	---	---	---	---	---	---	1788.15	1789.58	1788.53	1788.42
MW-17*	1825.4	1827.51	11300.00	6765.00	33.2	1792.21 - 1797.71	IST	---	---	---	---	---	---	1794.29	1794.30	1794.02	1793.51
MW-18S*	1762.9	1764.93	11023.40	6979.70	19.1	1743.79 - 1760.09	9.3	---	---	---	---	---	---	1760.40	1761.93	1760.78	1761.19
MW-18D*	1763.1	1764.93	11028.66	6984.65	50.2	1712.94 - 1729.24	0.02	---	---	---	---	---	---	1747.82	1748.65	1748.26	1746.78
MW-18DD	1764.8	1766.71	11037.95	6970.82	140.8	1624.00 - 1639.00	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
MW-19	1793.2	1795.6	12300.46	7357.37	39.6	1753.59 - 1769.29	0.2	---	---	---	---	---	---	---	---	---	NA
SW-1*	1786.2	1790.02	12659.29	8100.11	---	---	---	---	---	---	---	---	---	1786.91	1786.82	DRY	DRY
SW-2*	1785.8	1789.68	12917.84	7845.04	---	---	---	---	---	---	---	---	---	1786.87	1786.78	1786.44	1786.06
SW-3*	1786.1	1790.04	12720.62	7547.75	---	---	---	---	---	---	---	---	---	1786.93	1786.84	1786.49	1786.22
SW-4*	1747.3	1750.57	11638.84	7265.90	---	---	---	---	---	---	---	---	---	1748.14	1748.20	1748.08	1748.33
SW-5*	1747.4	1750.96	11340.28	7191.53	---	---	---	---	---	---	---	---	---	1748.11	1748.17	1748.04	1748.37
SW-6*	1746.6	1750.59	11149.04	7266.77	---	---	---	---	---	---	---	---	---	1746.13	1748.20	1746.06	1746.31
TW-1	1762.7	1764.69	11048.31	7014.96	15.1	1747.64 - 1757.64	---	---	---	---	---	---	---	---	---	---	NA
TW-2	1766.2	1768.09	11345.54	7131.12	34.7	1731.51 - 1752.71	---	---	---	---	---	---	---	---	---	---	NA
TW-3	1753.5	1753.8	11785.35	7219.25	22.0	1731.46 - 1752.66	---	---	---	---	---	---	---	---	---	---	NA
PZ-1	1762.4	1764.39	11042.23	7014.43	16.2	1746.24 - 1756.24	---	---	---	---	---	---	---	---	---	---	NA
PZ-2	1761.7	1764.01	11060.43	7019.79	16.1	1745.61 - 1755.61	---	---	---	---	---	---	---	---	---	---	NA
PZ-3	1762.8	1765.05	11034.09	6989.64	13.8	1748.98 - 1753.98	---	---	---	---	---	---	---	---	---	---	NA
PZ-4	1765.9	1767.59	11340.01	7131.32	34.4	1731.54 - 1741.54	---	---	---	---	---	---	---	---	---	---	NA
PZ-5	1765.9	1767.63	11355.33	7132.66	34.1	1731.84 - 1741.84	---	---	---	---	---	---	---	---	---	---	NA
PZ-6	1765.4	1767.28	11370.54	7134.49	34.3	1731.11 - 1741.11	---	---	---	---	---	---	---	---	---	---	NA
PZ-7	1753.5	1753.47	11779.33	7218.69	23.2	1730.26 - 1740.26	---	---	---	---	---	---	---	---	---	---	NA

301875

Table 6
Well As-Built and
Ground Water and Surface Water Elevations
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Well No.	Ground Elevation (feet)	Stainless Steel/PVC Casing Elev. (feet)	Coordinates		Well Depth Below Grade (feet)	Screened Interval Elevation (feet)	Hydraulic Conductivity (gpd/ft.2)	Ground Water Elevations (ft)									
			North	East				11/10/88	11/16/88	12/9/88	1/20/89	2/22/89	8/29/90	11/8/90	11/13/90	12/10/90	12/6/91
PZ-8	1753.7	1754.01	11798.03	7224.11	22.2	1731.50 - 1741.50	---	---	---	---	---	---	---	---	---	---	NA
PZ-9	1753.9	1754.21	11812.98	7226.97	22.7	1731.25 - 1741.25	---	---	---	---	---	---	---	---	---	---	NA
Spizzini		1774.97															
MP MW-9S	1809.3	1810.81	NA	NA	33.0	1776.30 - 1789.30	---	---	---	---	---	---	---	---	---	---	---
MP MW-9D	1813.7	1810.98	NA	NA	68.0	1745.70 - 1760.70	---	---	---	---	---	---	---	---	---	---	---
MP MW-10S	1860.5	1859.92	NA	NA	45.0	1815.50 - 1829.50	---	---	---	---	---	---	---	---	---	---	---
MP MW-10D	1857.8	1859.01	NA	NA	80.0	1777.77 - 1792.77	---	---	---	---	---	---	---	---	---	---	---
MP MW-11S	1772.0	1771.53	NA	NA	25.0	1747.00 - 1757.00	---	---	---	---	---	---	---	---	---	---	---
MP MW-11D	1769.3	1770.9	NA	NA	50.0	1719.33 - 1729.33	---	---	---	---	---	---	---	---	---	---	---
MP MW-12S	1764.1	1764.76	NA	NA	40.0	1724.13 - 1739.13	---	---	---	---	---	---	---	---	---	---	---
MP MW-12D	1766.9	1766.39	NA	NA	78.5	1688.40 - 1704.80	---	---	---	---	---	---	---	---	---	---	---
MP MW-12DD	1763.1	1764.29	NA	NA	140.0	1623.00 - 1633.00	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
MP MW-23	1805.3	1807.3	NA	NA	24.5	1780.80 - 1790.80	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

NOTES:

- IST Insufficient Saturated Thickness
- Not Applicable
- () Measured NAPL Thickness
- These points were located by Stadia.
- NA Not Available
- NI Not Installed
- MP Well installed by Malcolm Pirnie, Inc.

- (1) Modified elevation due to removal of retaining ring on well (-0.08 ft.).
- (2) Destroyed during UAO implementation. Replaced by OP-3

There is a discrepancy of 0.19 ft between the datum established by O'Brien & Gere and the datum established by Malcolm Pirnie, Inc.

301876

Table 6
Well As-Built and
Ground Water and Surface Water Elevations
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Well No.	Ground Water Elevations (ft)											
	1/3/92	2/4/92	3/3/92	4/7/92	5/5/92	6/2/92	7/8/92	8/11/92	9/1/92	10/6/92	11/03/92	2/27/95
MW-1	1788.71	1789.04	1788.95	1790.76	1791.76	1787.61	1785.97	1786.44	1786.20	1786.55	1788.56	1787.54
MW-2	1759.13	1759.37	1759.39	1759.34	1759.43	1759.17	1758.91	1758.98	1758.78	1758.99	1759.11	1759.10
MW-3	1749.54	1749.39	1749.62	1750.05	1750.41	1749.73	1749.07	1749.27	1749.21	1749.26	1750.23	NA
MW-3D	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1749.00
MW-3DD	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1709.55
MW-4S	1757.58	1757.46	1758.25	1759.02	1759.67	1756.9	1754.81	1754.86	1754.93	1755.79	1758.87	1758.70
MW-4D	1759.35	1759.43	1759.34	1759.00	1765.23	1781.97	1763.25	1763.36	1763.29	1763.67	1764.37	1762.62
MW-5S(2)	1748.13 (.24)	1747.90 (.42)	1748.00 (.37)	1748.42 (.80)	1748.82 (.31)	1748.65 (.22)	1748.21 (.27)	NA	1748.09 (.25)	1748.01 (.30)	1748.82	Abandoned
OP-3(2)	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1742.66
MW-5D	1748.90	1748.76	1748.91	1749.02	1749.71	1749.24	1748.63	NA	1748.73	1748.74	1749.52	1748.59
MW-6	1760.18	1760.34	1760.65	1760.99	1761.53	1760.96	1758.67	1759.16	1758.18	1757.85	1760.08	1759.65
MW-7S	1748.77	1748.62	1748.58	1748.60	1748.67	1748.49	1748.20	1748.25	1748.26	1748.38	1748.89	1748.39
MW-7D	1746.97	1746.97	1747.15	1747.52	1747.60	1745.95	1745.51	NA	1745.81	1746.93	1746.14	1745.08
MW-8	NA	1766.61	1787.15	1787.23	1788.11	1787.04	1786.12	1786.20	1786.26	1786.46	1787.36	1786.53
MW-9	1778.90	1778.27	1779.18	1779.72	1780.86	1778.02	1776.08	1776.17	1776.94	1777.55	1779.38	1777.05
MW-9D	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1768.58
MW-10	1761.90	1761.89	1762.01	1762.21	1762.55	1762.10	1761.12	1761.16	1761.16	1761.46	1762.20	1762.15
MW-11S*	1875.55	1874.30	1879.24	1879.98	1881.16	1868.52	1858.21	1861.36	1859.35	1865.31	1879.26	1861.10
MW-11D*	1834.80	1834.78	1834.76	1834.79	1834.83	1834.80	1834.76	1834.76	1834.69	1834.71	1834.72	1834.78
MW-12*	1805.85	1805.23	1805.73	1806.67	1809.46	1804.29	1802.76	1803.39	1803.35	1803.94	1806.67	1803.28
MW-13*	1761.41	1761.14	1761.34	1761.84	1762.23	1761.10	1760.19	1760.30	1760.42	1760.97	1762.01	1761.33
MW-14*	1786.21	1785.97	1786.15	1786.25	1786.69	1786.49	1785.93	1785.98	1786.04	1786.00	1786.41	1786.05
MW-15*	1780.94	1780.35	1781.62	1781.62	1782.31	1779.65	1777.74	1778.22	1778.65	1779.98	1781.10	1781.00
MW-16*	1787.37	1787.29	1787.59	1787.92	1788.74	1787.91	1786.93	1787.05	1787.07	1787.13	1788.13	1787.24
MW-17*	1793.33	1793.29	1793.45	1793.63	1793.99	1793.10	DRY	DRY	DRY	NA	1793.35	1792.83
MW-18S*	1760.08	1759.97	1760.58	1760.85	1761.18	1759.86	1758.06	1758.61	1758.45	1758.53	1760.60	1759.41
MW-18D*	1747.88	1747.72	1747.76	1748.07	1748.37	1748.24	1747.36	1747.68	1747.56	1747.38	1748.17	1746.56
MW-18DD	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1711.43
MW-19	1773.08	1773.09	1773.28	1773.65	1773.98	1772.58	1771.84	1770.89	1770.97	1772.13	1773.10	1772.54
SW-1*	DRY	DRY	DRY	DRY	DRY	1786.37	DRY	DRY	DRY	NA	NA	NA
SW-2*	1786.15	NA	DRY	1785.81	1785.85	1785.98	1785.73	1785.66	1785.71	1785.64	1785.78	NA
SW-3*	1786.28	1785.63	DRY	1785.95	DRY	1786.32	1786.02	DRY	1785.99	1785.96	1786.09	NA
SW-4*	1747.90	1747.46	NA	1747.97	1748.47	1748.48	1748.13	NA	1748.18	1748.11	1748.47	NA
SW-5*	1747.98	1747.76	1747.76	1748.07	1748.52	1748.55	1748.19	NA	1748.22	1748.18	1748.53	NA
SW-6*	1747.84	1747.65	NA	1747.93	NA	NA	1748.09	NA	1748.12	1748.06	1748.43	NA
TW-1	1759.19	1759.09	1759.12	1759.28	1759.31	1759.07	1758.66	1759.08	1759.09	1759.12	1759.93	1759.09
TW-2	1749.16	1749.09	1749.15	1749.86	1750.40	1749.85	1748.86	1749.00	1748.87	1748.98	1749.65	1748.31
TW-3	1751.08	1750.99	1751.45	1751.92	1752.37	1751.25	1750.15	NA	1750.34	1750.44	1752.30	1750.21
PZ-1	1759.17	1759.07	1759.14	1759.24	1759.28	1759.00	1758.53	1759.04	1759.04	1759.06	1759.88	1759.65
PZ-2	1759.41	1759.31	1759.40	1759.51	1759.54	1759.27	1758.71	1759.29	1759.24	1759.24	1760.13	1758.53
PZ-3	1760.46	1760.36	1760.84	1761.12	1761.54	1760.25	1758.59	1759.12	1758.96	1759.02	1760.94	Damaged
PZ-4	1749.20	1749.13	1749.18	1749.89	1750.43	1749.89	1749.91	1749.02	1748.91	1748.79	1749.69	1748.19
PZ-5	1749.52	1749.37	1749.36	1750.16	1750.72	1750.12	1749.03	1749.11	1749.00	1748.91	1749.85	1748.61
PZ-6	1749.13	1749.01	1749.03	1749.71	1750.24	1749.75	1748.86	1749.06	1748.93	1748.85	1749.72	1749.13
PZ-7	1751.06	1750.96	1751.38	1751.83	1752.32	1751.17	1750.46	NA	1750.31	1750.38	1752.08	1749.94

Table 6
Well As-Built and
Ground Water and Surface Water Elevations
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Well No.	Ground Water Elevations (ft)											
	1/3/92	2/4/92	3/3/92	4/7/92	5/5/92	6/2/92	7/6/92	8/11/92	9/1/92	10/6/92	11/03/92	2/27/95
PZ-8	1751.10	1751.02	1751.41	1751.91	1752.41	1751.24	1749.97	NA	1750.34	1750.46	1752.16	1750.04
PZ-9	1751.13	NA	1751.46	1751.98	1752.48	1751.28	1750.39	NA	1750.33	1750.41	1752.15	1750.13
Spizziri	1773.50	1773.44	1773.39	1773.57	1773.69	1773.52	1773.49	1773.50	1773.50	1773.54	1773.65	---
MP MW-9S	1794.97	1794.95	1795.11	1795.38	1795.92	1795.02	1794.16	NA	NA	NA	NA	1794.50
MP MW-9D	1769.05	1769.01	1769.13	1769.62	1770.14	1769.07	1768.08	NA	NA	NA	NA	1768.63
MP MW-10S	1825.29	1825.72	1826.69	1827.07	1827.77	1825.74	1824.43	NA	NA	NA	NA	1824.79
MP MW-10D	1807.89	1807.63	1808.88	1809.57	1809.99	1806.83	1805.07	NA	NA	NA	NA	1805.63
MP MW-11S	1752.57	1752.43	1752.77	1753.10	1753.72	1752.73	1750.98	NA	NA	NA	NA	1751.23
MP MW-11D	1751.78	1751.68	1751.94	1752.22	1752.69	1752.82	1750.62	NA	NA	NA	NA	1750.60
MP MW-12S	1748.14	1747.88	1748.66	1748.80	1749.37	1748.38	1748.98	NA	NA	NA	NA	1745.88
MP MW-12D	1743.59	1743.43	1743.89	1744.23	1744.80	1743.40	1742.22	NA	NA	NA	NA	1736.12
MP MW-12DD	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1705.83
MP MW-23	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	1792.25

NOTES:

- IST Insufficient Saturated Thickness
- Not Applicable
- () Measured NAPL Thickness
- These points were located by Stadia.
- NA Not Available
- NI Not Installed
- MP Well installed by Malcolm Pirnie, Inc.
- (1) Modified elevation due to removal of retaining ring on well (-0.08 ft.).
- (2) Destroyed during UAO implementation. Replaced by OP-3

There is a discrepancy of 0.19 ft between the datum established by O'Brien & Gere and the datum established by Malcolm Pirnie, Inc.

301873

Table 7

**Pumping Test Results - Overburden Ground Water
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York**

Test	Duration of Test/Flow Rate	Transmissivity (gpd/ft)					Source of Data	Storativity	Aquifer Characteristics from Recovery Graphs
		Cooper-Jacob	Recovery Data	Neuman Curve Matching	Distance Drawdown	Mean			
TW-1 Test	1140 minutes at 0.87 gpm	141	60	128	NA	110	TW-1		Variation in S
		138	66	114	NA	106	PZ-1	0.005/0.001	Theoretical Aquifer
		178	68	154	NA	133	PZ-2	0.0007/0.008	Variation in S
		792	696	722	NA	737	PZ-3	0.003/0.004	Limited Extent of Aquifer
		1,094	NA	1,093	NA	1,094	MW-18S	0.007/0.005	NA
		NA	NA	NA	90	90	NA	0.009	NA
TW-2 Test	1440 Minutes at 0.25 gpm	41	28	38	NA	36	TW-2		Recharged
		42	31	42	NA	38	PZ-4	0.004/0.004	Recharged
		72	39	84	NA	65	PZ-5	0.0007/0.0006	Recharged
		90	67	104	NA	87	PZ-6	0.0003/0.0005	Recharged
		220	NA	198	NA	209	MW-6	0.002/0.002	NA
		NA	NA	NA	89	89	NA	0.001	NA
TW-3 Test	1030 Minutes at 2.6 gpm	508	940	319	NA	589	TW-3		Recharged
		1,907	1,125	766	NA	1,266	PZ-7	0.004/0.002	Recharged
		1,760	2,019	921	NA	1,567	PZ-8	0.0006/0.0006	Variation in S
		2,288	2,860	1,186	NA	2,111	PZ-9	0.0003/0.0003	Limited Extent of Aquifer
		4,576	NA	3,342	NA	3,959	MW-3	0.0003/0.0003	Limited Extent of Aquifer
		NA	NA	NA	903	903	NA	0.006	NA

Note: All transmissivity values are in gpd/ft².
NA - Not available or not applicable

TME:bdm/AMP031.49

301875

Table 8
 South Pond Discharge Data in Herrick Hollow Creek
 Amphenol Corporation
 Richardson Hill Road Municipal Landfill Site Remedial Investigation
 Sidney, New York

Date	Measuring Station	Stream Area (ft.2)	Stream Flow (ft.2/sec)	Stream Discharge (ft.2/sec)	Stream Discharge (gpm)
12/5/91	VR-1	0.35	1.18	0.41	184
	VR-2	0.85	0.90	0.77	346
1/3/92	VR-1	0.50	0.44	0.22	99
	VR-2	0.81	0.50	0.41	184
2/4/92	VR-1	0.38	0.46	0.17	76
	VR-2	0.84	0.34	0.29	130
3/3/92	VR-1	0.50	0.89	0.45	202
	VR-2	0.80	0.44	0.35	157
4/7/92	VR-1	0.45	0.72	0.32	144
	VR-2	0.48	0.77	0.37	166
5/5/92	VR-1	0.45	1.88	0.85	382
	VR-2	0.80	1.32	1.06	476
6/2/92	VR-1	0.41	0.50	0.21	94
	VR-2	0.70	0.43	0.30	135
7/6/92	VR-1	0.23	0.54	0.12	54
	VR-2	0.32	0.38	0.12	54
8/92	VR-1	NA	NA	NA	NA
	VR-2	NA	NA	NA	NA
9/1/92	VR-1	0.38	0.26	0.10	45
	VR-2	0.44	0.12	0.05	22
10/6/92	VR-1	0.38	0.33	0.13	58
	VR-2	NA	NA	NA	NA
11/3/92	VR-1	NA	NA	NA	NA
	VR-2	NA	NA	NA	NA

NOTES: NA - Not Available
 Stream Area in square feet.
 Stream Discharge in cubic feet per second.

Table 9
RQD Summary Table
Richardson Hill Road Municipal Landfill Site
Remedial Investigation
Sidney, New York

Well	Core Run Interval	RQD (%)
MW-3D	28.0 - 33.0	83
	33.0 - 38.0	46
	38.0 - 43.0	NA
	40.5 - 45.0	63
MW-3DD	60.5 - 65.0	90
	65.0 - 65.4	NA
	65.4 - 70.0	71
	70.0 - 70.7	NA
	70.7 - 75.0	68
	75.0 - 75.5	NA
	75.5 - 80.0	85
	80.0 - 85.0	98
	85.0 - 90.0	77
	90.0 - 95.0	52
	95.0 - 100.0	95
	100.0 - 105.0	98
	105.5 - 108.5	58
	119.0 - 123.0	86
	123.0 - 128.0	85
MW-9D	128.0 - 133.0	93
	133.0 - 138.0	91
	48.0 - 53.0	31
	53.0 - 58.0	42
MW-18DD	58.0 - 63.0	31
	63.0 - 68.0	NA
	60.0 - 63.5	70
	63.5 - 68.5	86
MW-18DD	68.5 - 73.5	78
	73.5 - 78.5	95
	78.5 - 83.5	92
	83.5 - 88.5	99
	88.5 - 93.5	100
	93.5 - 98.5	83
	100.0 - 105.0	83
	105.0 - 110.0	NA
	105.5 - 100.0	87
	110.0 - 115.0	100
	115.0 - 120.0	80
	120.0 - 125.0	69
	125.0 - 130.0	79
	130.0 - 135.0	97
	135.0 - 140.0	95

Note: NA - Insufficient recovery to measure RQD.

Table 10

Residential Water Supply (Spring) Sampling Results
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Residence I.D. Number	Well (W)/ Spring (S)	Sampling Dates	Parameters/ Analytical Method	Detected Compounds (ppb) and Comments
1 Spizziri	S	9/9/85	PCBs, Volatiles (601, 503.1)	111TCA = 2, TCE = 62
		10/17/90	Volatiles (502.1/503.1)	TCE = 44, Napthalene = 4
2 Whitehurst	S	9/9/85	PCBs, Volatiles (601, 503.1)	11DCA = 1, TCE = 66, t12DCE = 32
		10/14/86	PCBs, Volatiles (601, 503.1)	TCE = 13, t12DCE = 13
		10/17/90	Volatiles (502.1/503.1) Bacteria, Metals	11DCA = 1, c12DCE = 5, TCE = 5 Bacteria level acceptable, No metal above NYS Standard
3 Wyatt	S	9/9/85	PCBs, Volatiles (601, 503.1)	111TCA = 66, t12DCE = 29, TCE = 1,025, 1122PCE = 14
		10/14/86	PCBs, Volatiles (601, 503.1)	11DCA = 3, 111TCA = 73, PCE = 5, t12DCE = 30, TCE = 540
		10/17/90	Volatiles (502.1/503.1) Bacteria	12DCA = 12, c12DCE = 40, 111TCA = 20, TCE = 810, 1122PCE = 10 Bacteria level acceptable
4 S. Smith	NA	NA	NA	Mobile home abandoned - No longer in use
5	NA	NA	NA	Mobile home abandoned - No longer in use
6 & 7 6-Covtauos 7-Mulder	S	6/12/85	PCBs, Volatiles (601, 503.1)	Not detected Homes 6 & 7 share a spring for their water supply
		11/16/90	Volatiles (502.1/503.1)	TCE = 1
		8/7/91	Volatiles (502.1)	Not detected
8 Verpault	S	9/9/85	PCBs, Volatiles (601, 503.1)	Not detected
9	NA	NA	NA	Unknown
10 Hanes	NA	NA	ND	Not detected - Bedrock Well

NOTES: NA - Not Available.
ND - Not Detected.

Table 11

Summary of PCB, Oil & Grease, and Headspace Data - Subsurface
 Richardson Hill Road Municipal Landfill Site - Remedial Investigation
 Sidney, New York

Boring No.	Sample Depth (ft)	PCB (ppm)	Oil & Grease (ppm)	Standardized Headspace VOC
B1-2	2-4	2,400	33,000	2.05
B1-4	4-6	12	1,100	0.29
B1-10	10-12	5.5	860	---
B2-2	2-4	230	11,000	0
B2-6	6-8	41	24,000	0
B2-10	10-12	7.3	2,900	0
B3-2	2-4	150	4,300	1.20
B3-8	8-10	18	4,800	1.25
B3-14		120	5,900	---
B4-2	2-4	1,400	50,000	1.42
B4-8	8-10	4.6	2,000	2.41
B4-20	20-22	0.35	240	---
B5-2	2-4	650	44,000	4.77
B5-6	6-8	4.7	1,800	3.35
B5-14	14-16	17	4,200	2.53
B6-2	2-4	600	2,500	---
B6-8	8-10	7.4	2,700	---
B6-14	14-16	66	8,200	---
B7-2	2-4	680	34,000	---
B7-8	8-10	23	4,400	---
B7-14	14-16	15	3,600	---
B8-A	2-4	400	16,000	---
B8-2	2-4	320	17,000	2.43
B8-6	6-8	13	2,000	2.82
B8-14	14-16	16	2,600	2.28
B9-2	2-4	2,400	58,000	2.59
B9-6	6-8	41	3,300	---
B9-15	15-17	110	5,200	4.75
B10-1	6-8	1.6	<200	0.001
B10-2	10-12	1.2	<200	0.003
B10-3	14-16	9.8	310	0.32
B12-1	4-6	10	14,000	0.56
B12-2	10-12	8.2	2,700	0.81
B12-3	15-17	8.9	3,300	0.66
B14-1	6-8	8.5	1,300	0.54
B14-2	10-12	8.9	6,300	0.40
B14-3	14-16	4.5	<200	0.62
B16-1	6-8	61	4,600	0.46
B16-2	10-12	480	18,000	0.62
B16-3	14-16	150	6,700	1.50
B16-4		55	4,400	---
B17-1	5-7	670	31,000	2.07

Table 11

Summary of PCB, Oil & Grease, and Headspace Data - Subsurface
 Richardson Hill Road Municipal Landfill Site - Remedial Investigation
 Sidney, New York

Boring No.	Sample Depth (ft)	PCB (ppm)	Oil & Grease (ppm)	Standardized Headspace VOC
B17-2	10-12	61	3,100	---
B17-3	14-16	120	7,600	0.98
B24-1	4-6	9.1	3,900	0.56
B24-2	10-12	0.26	870	0.83
B24-3	14-16	3	1,200	0.73
B24-4	---	1.2	1,600	---
B28-1	4-6	2.1	1,100	0.68
B28-2	8-10	38	1,300	1.51
B28-3	14-16	1.8	1,900	1.30
B29-1	2-4	200	19,000	0.66
B29-2	8-10	19	3,400	1.08
B29-3	14-16	25	3,100	0.96
B30-1	4-6	2.8	510	0
B30-2	10-12	2.1	2,100	0.14
B30-3	14-16	<0.080	<200	0.05
B33-1	5.5-7.5	1,000	25,000	0.77
B33-2	10-12	20	1,200	1.31
B33-3	14-16	27	1,500	0.59
B34-A	3-5	45	3,400	---
B34-1	6-8	2,600	28,000	0.41
B34-2	10-12	130	5,500	2.09
B34-3	14-16	64	3,300	1.37
B35-1	6-10	270	40,000	<4.63
B35-2	10-12	7.6	2,300	2.07
B35-3	14-16	20	2,300	2.74
B36-A	3-5	7,000	94,000	---
B36-1	8-10	320	15,000	<6.24
B36-2	10-12	140	9,400	<9.03
B36-3	14-16	17	1,200	---
B37-1	6-8	670	10,800	0.045
B37-2	10-12	190	6,000	0.29
B37-3	14-16	15	2,100	0.52
B38-1	6-8	140	990	0.17
B38-2	10-12	170	9,100	0.54
B38-3	14-16	27	3,300	0.49
B39-1	6-8	6.9	9,700	0.22
B39-2	10-12	65	1,500	0.88
B39-3	14-16	680	5,100	0.90
SS-1	---	470	4,500	---
SS-2	---	8.1	5,800	---
SS-3	---	0.23	1,400	---
SS-4	---	0.43	1,200	---

Table 11

Summary of PCB, Oil & Grease, and Headspace Data - Subsurface
 Richardson Hill Road Municipal Landfill Site - Remedial Investigation
 Sidney, New York

Boring No.	Sample Depth (ft)	PCB (ppm)	Oil & Grease (ppm)	Standardized Headspace VOC
SS-5	---	0.084	760	---
SS-6	---	0.36	1,500	---
SS-7	---	<0.08	1,700	---
SS-8	---	0.094	2,400	---
SS-9	---	5 ^c	15,000	---
SS-10	---	0.44	5,400	---
SS-11	---	380	4,000	---
MW1-1	8-10	76	4,500	---
MW1-2	14-16	89	2,100	---
MW1-3	21-23	12	260	---
MW2-1	4-6	87	9,400	---
MW2-2	8-10	21	4,200	---
MW2-3	14-16	28	5,700	---
MW3-2	12-14	0.68	<200	---
MW3-3	18-20	0.11	<200	---
MW3-4	---	0.089	<200	---
MW4-1	4-6	<0.08	85	---
MW4-2	10-12	0.24	52	---
MW4-3	14-16	<0.08	20	---
MW5S-1	4-6	1.4	560	---
MW5S-2	8-10	8.3	2,100	---
MW5S-3	14-16	3.4	1,000	---
Field Dup.	14-16	3.6	900	---
MW6-1	4-6	1.3	1,300	---
MW6-2	10-12	1.2	2,100	---
MW6-3	14-16	0.085	340	---
MW7-1	4-6	<0.08	220	---
MW7-2	8-10	<0.08	<200	---
MW7-3	14-16	<0.08	260	---
MW8-1	4-6	0.17	280	---
MW8-2	20-22	<0.08	210	---
MW9-1	4-6	<0.08	270	---
MW9-2	20-22	0.17	260	---
MW9-3	40-41	<0.08	<200	---
MW10	6-8	0.08	<200	---
MW-10	---	0.5	1.4	---
MW-4	---	0.5	<1.0	---
MW-3	---	6.4	1.1	---
MW-5S	---	0.6	<1.0	---
MW-5D	---	830	30	---
MW-7	---	<0.5	<1.0	---
MW-9	---	<0.5	<1.0	---

Table 11

Summary of PCB, Oil & Grease, and Headspace Data - Subsurface
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Boring No.	Sample Depth (ft)	PCB (ppm)	Oil & Grease (ppm)	Standardized Headspace VOC
MW-8	---	<0.5	1.4	---
MW-6	---	0.11	8.2	---
MW-2	---	1.4	13	---
MW-1	---	0.15	20	---

Table 12

Organic Vapor Analyses (Headspace)
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Sample No.	Depth (ft)	Method	Sample Wt. (grams)	Volatile Concentration Value (ppm)	Standardized Value
B1-2	2-4	PID	201.0	411.0	2.05
B1-2	2-4	OVA	201.0	450.0	2.24
B1-4	4-6	PID	201.0	58.0	0.29
B1-4	4-6	OVA	201.0	20.0	0.10
B1-6	6-8	PID	201.0	12.1	0.06
B1-6	6-8	OVA	201.0	2.0	0.01
B2-2	2-4	PID	214.9	0.0	0
B2-2	2-4	OVA	220.8	0.0	0
B2-6	4-6	PID	168.8	0.0	0
B2-6	4-6	OVA	190.3	0.0	0
B2-10	10-12	PID	215.1	0.0	0
B2-10	10-12	OVA	256.8	0.0	0
B3-2	2-4	PID	171.0	203.0	1.20
B3-8	8-10	PID	191.0	239.0	1.25
B3-14	14-16	PID	131.5	426.0	3.24
B4-2	2-4	PID	165.5	235.0	1.42
B4-2	2-4	OVA	162.5	220.0	1.35
B4-8	8-10	PID	198.7	478.0	2.41
B4-8	8-10	OVA	187.7	48.0	0.26
B5-2	2-4	PID	54.1	258.0	4.77
B5-2	2-4	OVA	66.0	1000.0	15.15
B5-6	6-8	PID	159.6	535.0	3.35
B5-6	6-8	OVA	95.0	180.0	1.89
B5-14	14-16	PID	184.0	465.0	2.53
B5-14	14-16	OVA	175.0	20.0	0.11
B8-2	2-4	PID	120.5	293.0	2.43
B8-2	2-4	OVA	133.0	220.0	1.65
B8-6	6-8	PID	167.0	471.0	2.82
B8-6	6-8	OVA	216.0	50.0	0.23
B8-14	14-16	PID	134.5	307.0	2.28
B8-14	14-16	OVA	131.0	0.0	0
B9-2	2-4	PID	159.0	412.0	2.59
B9-2	2-4	OVA	182.0	280.0	1.54
B9-3	3-5	PID	195.0	590.0	3.03
B9-3	3-5	OVA	199.5	130.0	0.65
B9-15	15-17	PID	88.0	418.0	4.75
B9-15	15-17	OVA	100.1	20.0	0.20
B10-1	6-8	OVA	239.0	4.5	0.02
B10-1	6-8	PID	194.7	0.2	0.001
B10-2	10-12	OVA	208.1	5.0	0.024
B10-2	10-12	PID	222.1	0.6	0.003
B10-3	14-16	OVA	113.8	36.0	0.32

Table 12

Organic Vapor Analyses (Headspace)
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Sample No.	Depth (ft)	Method	Sample Wt. (grams)	Volatile Concentration Value (ppm)	Standardized Value
B12-1	4-6	PID	234.2	130.2	0.56
B12-1	4-6	OVA	281.0	550.0	1.96
B12-2	10-12	PID	313.8	255.4	0.81
B12-2	10-12	OVA	270.0	+1000	<3.70
B12-3	14-16	PID	261.0	173.3	0.66
B12-3	14-16	OVA	201.7	630.0	3.12
B14-1	6-8	PID	175.0	94.6	0.54
B14-1	6-8	OVA	186.8	225.0	1.20
B14-2	10-12	PID	216.4	87.5	0.40
B14-2	10-12	OVA	199.0	310.0	1.56
B14-3	14-16	PID	143.0	88.2	0.62
B14-3	N/A	---	---	---	---
B16-1	6-8	PID	200.0	92.7	0.46
B16-1	6-8	OVA	247.7	270.0	0.92
B16-2	10-12	PID	222.2	361.0	0.62
B16-2	10-12	OVA	235.0	+1000	<4.26
B16-3	14-16	PID	234.2	351.0	1.50
B16-3	14-16	OVA	283.9	+1000	<3.52
B17-1	5-7	PID	221.2	457.0	2.07
B17-1	5-7	OVA	176.6	+1000	<5.67
B17-3	14-16	PID	222.7	217.8	0.98
B17-3	14-16	OVA	202.8	780.0	3.85
B24-1	4-6	PID	192.4	107.6	0.56
B24-1	4-6	OVA	226.7	380.0	1.68
B24-2	10-12	PID	149.3	124.6	0.83
B24-2	10-12	OVA	174.2	275.0	1.58
B24-3	14-16	PID	192.2	141.2	0.73
B24-3	14-16	OVA	170.4	440.0	0.39
B25-1	4-6	PID	149.9	89.9	0.60
B25-1	4-6	OVA	188.3	89.0	0.47
B25-2	8-10	PID	198.1	95.6	0.48
B25-2	8-10	OVA	271.6	175.0	0.64
B25-3	14-16	PID	164.4	19.3	0.12
B25-3	14-16	OVA	214.9	260.0	1.21
B28-1	4-6	PID	206.6	139.9	0.68
B28-1	4-6	OVA	191.2	460.0	2.41
B28-2	8-10	PID	197.0	298.0	1.51
B28-2	8-10	OVA	196.6	<1000	<5.1
B28-3	14-16	PID	140.5	182.4	1.30
B28-3	14-16	OVA	161.1	320.0	1.99
B29-1	2-4	OVA	191.1	760.0	3.98
B29-1	2-4	PID	162.7	107.0	0.66

Table 12

Organic Vapor Analyses (Headspace)
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Sample No.	Depth (ft)	Method	Sample Wt. (grams)	Volatile Concentration Value (ppm)	Standardized Value
B29-2	8-10	OVA	220.5	600.0	2.72
B29-2	8-10	PID	149.3	161.0	1.08
B29-3	14-16	OVA	194.6	700.0	3.60
B29-3	14-16	PID	190.5	182.0	0.96
B30-1	4-6	PID	197.3	0.0	0
B30-1	4-6	OVA	203.5	4.0	0.02
B30-2	10-12	PID	194.3	72.4	0.14
B30-2	10-12	OVA	200.0	52.0	0.26
B30-3	14-16	OVA	228.8	66.0	0.29
B30-3	14-16	PID	213.8	10.0	0.05
B33-1	5.5-7.5	PID	203.2	156.9	0.77
B33-1	5.5-7.5	OVA	160.8	+1000	<6.22
B33-2	10-12	PID	168.1	220.5	1.31
B33-2	10-12	OVA	175.0	+1000	<5.71
B33-3	14-16	PID	177.8	105.1	0.59
B33-3	14-16	OVA	180.0	220.0	1.22
B34-1	6-8	PID	117.7	48.3	0.41
B34-1	6-8	OVA	133.0	530.0	3.98
B34-2	10-12	PID	193.1	403.0	2.09
B34-2	10-12	OVA	236.8	+1000	<4.22
B34-3	14-16	OVA	235.7	+1000	<4.24
B34-3	14-16	PID	225.8	309.0	1.37
B35-1	6-10	PID	216.1	+1000	<4.63
B35-1	6-10	OVA	194.4	269.0	1.38
B35-2	10-12	PID	255.2	528.0	2.07
B35-2	10-12	OVA	257.2	+1000	3.89
B35-3	14-16	PID	197.8	542.0	2.74
B35-3	14-16	OVA	251.9	+1000	<3.97
B36-1	8-10	OVA	160.2	+1000	<6.24
B36-2	10-12	OVA	142.3	+1000	<9.03
B37-1	6-10	PID	203.8	9.2	0.045
B37-1	6-10	OVA	184.5	20.0	0.11
B37-2	10-12	PID	257.0	74.7	0.29
B37-2	10-12	OVA	220.6	150.0	0.68
B37-3	14-16	PID	261.8	136.1	0.52
B37-3	14-16	OVA	287.7	300.0	1.04
B38-1	6-10	PID	170.8	28.4	0.17
B38-1	6-10	OVA	164.6	22.0	0.13
B38-2	10-12	PID	245.0	133.1	0.54
B38-2	10-12	OVA	187.2	100.0	0.53
B38-3	14-16	PID	296.7	146.8	0.49
B38-3	14-16	OVA	283.6	180.0	0.63

Table 12

Organic Vapor Analyses (Headspace)
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Sample No.	Depth (ft)	Method	Sample Wt. (grams)	Volatile Concentration Value (ppm)	Standardized Value
B39-1	6-10	PID	258.3	55.9	0.22
B39-1	6-10	OVA	253.7	150.0	0.59
B39-2	10-12	PID	240.1	210.9	0.88
B39-2	10-12	OVA	222.0	275.0	1.24
B39-3	14-16	PID	252.7	227.7	0.90
B39-3	14-16	OVA	281.5	610.0	2.17

Table 13

Summary of Volatile Organic Parameters
and PCBs in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Boring No.:	B6-2	B7-2	B8-A	B34-A	B34-A	B34-A	B36-A
Depth:	(3-5')	(2-5')	(2-4')	(3-5')	MS	MSD	(3-5')
Date Collected:	11/10/88	11/10/88	11/10/88	11/10/88	11/10/88	11/10/88	11/10/88
Chloromethane	1.0 U	1.0 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Bromomethane	1.0 U	1.0 U	15 U	7.2 U	7.2 U	7.2 U	6.6 U
Vinyl chloride	1.0 U	1.0 U	15 U	7.2 U	7.2 U	7.2 U	6.6 U
Chloroethane	1.0 U	1.0 U	15 U	7.2 U	7.2 U	7.2 U	6.6 U
Methylene chloride	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Acetone	1.0 U	1.0 U	13 B	7.2 U	8.2 B	9 B	6.6 U
Carbon Disulfide	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
1,1-Dichloroethane	0.5 U	0.5 U	7.3 U	3.6 U	5.6	8	3.3 U
1,1-Dichloroethane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
1,2-Dichloroethane (total)	1.02	1.2	17	9.7	11	23	3.3 U
Chloroform	0.5 U	0.3 J	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
1,2-Dichloroethane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
2-Butanone	1.0 U	1.0 U	25 B	7.2 U	15 B	13 B	6.6 U
1,1,1-Trichloroethane	0.5 U	0.3 J	6.5 J	3.6 U	3.6 U	3.6 U	3.3 U
Carbon Tetrachloride	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Vinyl Acetate	1.0 U	1.0 U	15 U	7.2 U	7.2 U	7.2 U	6.6 U
Bromodichloromethane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
1,2-Dichloropropane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
c-1,3-Dichloropropane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Trichloroethene	0.5 U	0.5 U	220	110	140	160 E	2.3 J
Dibromochloromethane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
1,1,2-Trichloroethane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Benzene	0.5 U	0.5 U	7.3 U	3.6 U	8.6	7.1	3.3 U
1,3-Dichloropropane	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Bromoform	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
4-Methyl-2-pentanone	1.0 U	1.0 U	15 U	7.2 U	7.2 U	7.2 U	6.6 U
2-Hexanone	1.0 U	1.0 U	15 U	7.2 U	7.2 U	7.2 U	6.6 U
Tetrachloroethene	0.5 U	0.3 J	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
1,1,2,2-Tetrachloroethane	0.5 U	0.2 J	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Toluene	24 E	38 E	50	35	46	48	110
Chlorobenzene	0.5 U	0.2 J	7.3 U	3.6 U	7.8	8.1	3.3 U
Ethylbenzene	1.73	1.6	7.3 U	3.6 U	3.6 U	1.4 J	3.9
Styrene	0.5 U	0.5 U	7.3 U	3.6 U	3.6 U	3.6 U	3.3 U
Xylenes	3.3	2.7	5.2 J	3.6 U	3.6 U	3.6 U	3.7
PCBs	600	680	45	400	---	---	7000

NOTES:

All analytical values reported in ppm.
 J - Estimated Value.
 B - Analyte found in method blank.
 U - Not detected.
 E - Concentration exceeds the calibration range of the GC/MS instrument.
 --- - Not analyzed.

Table 13

Summary of Volatile Organic Parameters
and PCBs in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Boring No.:	WASH	WASH	TRIP	TRIP	SB-5	SB-10	SB-12
Depth:	BLANK	BLANK	BLANK	BLANK	4-6'	4-6'	6-8'
Date Collected:	11/10/88	11/16/88	11/10/88	11/16/88	11/16/90	11/16/90	11/16/90
Chloromethane	0.005 U	0.01 U	0.005 U	0.01 U	0.011 U	0.08 U	0.011 U
Bromomethane	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.08 U	0.011 U
Vinyl chloride	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.08 U	0.011 U
Chloroethane	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.08 U	0.011 U
Methylene chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Acetone	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.4	0.015 B
Carbon Disulfide	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
1,1-Dichloroethene	0.003 B	0.005 U	0.003 B	0.005 U	0.006 U	0.04 U	0.005 U
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
1,2-Dichloroethene (total)	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.033 J	0.005 U
Chloroform	0.005 U	0.003 J	0.005 U	0.001 B	0.006 U	0.04 U	0.005 U
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
2-Butanone	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.08 U	0.011 U
1,1,1-Trichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Carbon Tetrachloride	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Vinyl Acetate	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.08 U	0.011 U
Bromodichloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
c-1,3-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Trichloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Dibromochloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Benzene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.15	0.005 U
1,3-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Bromoform	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
4-Methyl-2-pentanone	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.04 U	0.011 U
2-Hexanone	0.01 U	0.01 U	0.01 U	0.01 U	0.011 U	0.04 U	0.011 U
Tetrachloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Toluene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	2.2 J	0.001 JB
Chlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.24	0.005 U
Ethylbenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	1.2	0.005 U
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	0.04 U	0.005 U
Xylenes	0.005 U	0.005 U	0.005 U	0.005 U	0.006 U	3	0.005 U
PCBs	3.7	0.0011	---	---	---	---	---

NOTES:

All analytical values reported in ppm.

J - Estimated Value.

B - Analyte found in method blank.

U - Not detected.

E - Concentration exceeds the calibration
range of the GC/MS instrument.

--- - Not analyzed.

Table 13

Summary of Volatile Organic Parameters
and PCBs in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Boring No.:	SB-17	SB-20
Depth:	14-16'	14-16'
Date Collected:	11/15/90	11/16/90
Chloromethane	5.6 U	0.011 U
Bromomethane	5.6 U	0.011 U
Vinyl chloride	5.6 U	0.011 U
Chloroethane	5.6 U	0.011 U
Methylene chloride	2.8 U	0.006 U
Acetone	4 J	0.025 B
Carbon Disulfide	2.8 U	0.006 U
1,1-Dichloroethene	2.8 U	0.006 U
1,1-Dichloroethane	2.8 U	0.006 U
1,2-Dichloroethene (total)	2.8 U	0.006 J
Chloroform	2.8 U	0.006 U
1,2-Dichloroethane	2.8 U	0.006 U
2-Butanone	5.6 U	0.011 U
1,1,1-Trichloroethane	2.8 U	0.006 U
Carbon Tetrachloride	2.8 U	0.006 U
Vinyl Acetate	5.6 U	0.011 U
Bromodichloromethane	2.8 U	0.006 U
1,2-Dichloropropane	2.8 U	0.006 U
c-1,3-Dichloropropane	2.8 U	0.006 U
Trichloroethene	2.8 U	0.006 U
Dibromochloromethane	2.8 U	0.006 U
1,1,2-Trichloroethane	2.8 U	0.006 U
Benzene	2.8 U	0.006 U
1,3-Dichloropropane	2.8 U	0.006 U
Bromoform	2.8 U	0.006 U
4-Methyl-2-pentanone	5.6 U	0.011 U
2-Hexanone	5.6 U	0.011 U
Tetrachloroethene	2.8 U	0.006 U
1,1,2,2-Tetrachloroethane	2.8 U	0.006 U
Toluene	2.8 U	0.001 JB
Chlorobenzene	2.8 U	0.006 U
Ethylbenzene	2.8 U	0.006 U
Styrene	2.8 U	0.006 U
Xylenes	2.8 U	0.006 U
PCBs	---	---

NOTES:

All analytical values reported in ppm.

J - Estimated Value.

B - Analyte found in method blank.

U - Not detected.

--- - Not analyzed.

301893

Table 14

SRI Subsurface Soil Analytical Summary
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Location:	OP-15	OP-15	OP-16	OP-16	OP-17	OP-17	OP-18	OP-18	OP-18
Depth:	14-16'	16-18'	22-24'	28-30'	4-6'	22-24'	4-6'	14-16'	20-22'
Date Collected:	5/10/94	5/10/94	5/10/94	5/10/94	5/11/94	5/11/94	5/11/94	5/11/94	5/11/94
Trichloroethene	0.81 (1.0)	<0.11	<0.11	<0.11	<0.11 (0.13)	<0.11 (<0.11)	<0.11	1.6	<0.11
Tetrachloroethene	0.30 (0.31)	<0.11	<0.11	<0.11	<0.11	<0.11 (<0.11)	<0.11	<0.11	<0.11
1,2-Dichloroethene (total)	<0.11 (<0.11)	<0.11	<0.11	<0.11	0.17 (0.12)	0.15 (<0.11)	<0.11	<0.11	0.430
Toluene	<0.11 (<0.11)	<0.11	<0.11	<0.11	<0.11 (<0.11)	<0.11 (<0.11)	<0.11	0.19	<0.11
Ethylbenzene	<0.11 (<0.11)	<0.11	<0.11	<0.11	<0.11 (0.26)	<0.11 (<0.11)	<0.11	0.37	<0.11
Xylenes	<0.33 (<0.11)	<0.33	<0.33	<0.33	1.1 (0.86)	<0.32 (<0.11)	<0.34	0.73	<0.33
PCB - 1248	31	5.9	4.6	4.7	25	0.38	2.4 (2.7)	2.7	NA

Notes: Values in parentheses represent confirmation column analyses.

Values reported in mg/kg.

NA - Not Analyzed.

301894

Table 15

**Summary of Semi-Volatile Organic Parameters
in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

Boring No.:	SB-5	SB-10	SB-12	SB-17	SB-20	FIELD
Depth:	4-6'	4-6'	6-8'	14-16'	14-16'	BLANK
Date Collected:	11/16/90	11/16/90	11/16/90	11/16/90	11/16/90	11/16/90
1,3-Dichlorobenzene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
1,4-Dichlorobenzene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
1,2-Dichlorobenzene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Hexachloroethane	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
bis(2-Chloroethyl)ether	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
bis(2-Chloroisopropyl)ether	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
N-Nitroso-di-n-propylamine	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Nitrobenzene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Hexachlorobenzene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
1,2,4-Trichlorobenzene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Isophorone	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Naphthalene	0.38 U	58 U	0.36 U	0.100 J	0.38 U	0.011 U
bis(2-Chloroethoxy)methane	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Hexachlorocyclopentadiene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2-Chloronaphthalene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Acenaphthylene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Acenaphthene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Dimethylphthalate	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2,6-Dinitrotoluene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Fluorene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
4-Chlorophenyl-phenylether	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2,4-Dinitrotoluene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Diethylphthalate	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
N-Nitrosodiphenylamine	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
4-Bromophenyl-phenylether	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Phenanthrene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Anthracene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Di-n-butylphthalate	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Fluoranthene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Pyrene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Butylbenzylphthalate	0.38 U	700	0.36 U	3.7 U	0.38 U	0.011 U
bis(2-Ethylhexyl)phthalate	0.044 JB	7.0 JB	0.056 JB	0.93 JB	0.076 JB	0.004 JB
Chrysene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Benzo(a)anthracene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
3,3'-Dichlorobenzidine	0.77 U	120 U	0.72 U	7.5 U	0.76 U	0.022 U
Di-n-octylphthalate	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Benzo(b)fluoranthene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Benzo(k)fluoranthene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Benzo(a)pyrene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Indeno(1,2,3-cd)pyrene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Dibenz(a,h)anthracene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Benzo(g,h,i)perylene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2-Chlorophenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2-Nitrophenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Phenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2,4-Dimethylphenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2,4-Dichlorophenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2,4,6-Trichlorophenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
4-Chloro-3-methylphenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2,4-Dinitrophenol	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
2,4-Methyl-4,6-dinitrophenol	—	—	—	—	—	—
Pentachlorophenol	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
4-Nitrophenol	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
Benzyl alcohol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U

Table 15

**Summary of Semi-Volatile Organic Parameters
in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

Boring No.:	SB-5	SB-10	SB-12	SB-17	SB-20	FIELD
Depth:	4-6'	4-6'	6-8'	14-16'	14-16'	BLANK
Date Collected:	11/16/90	11/16/90	11/16/90	11/16/90	11/16/90	11/16/90
2-Methylphenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
4-Methylphenol	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
Benzoic acid	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
4-Chloroaniline	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
2-Methylnaphthalene	0.38 U	58 U	0.36 U	0.220 J	0.38 U	0.011 U
2,4,5-Trichlorophenol	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
2-Nitroaniline	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
3-Nitroaniline	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
Dibenzofuran	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
4-Nitroaniline	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U
Hexachlorobutadiene	0.38 U	58 U	0.36 U	3.7 U	0.38 U	0.011 U
4,6-Dinitro-2-methylphenol	1.9 U	290 U	1.8 U	19 U	1.9 U	0.054 U

NOTES:

All analytical values reported in mg/kg (ppm)

J - Estimated value

B - Analyte found in method blank

U - Not detected

— Not analyzed

Table 15

Summary of Semi-Volatile Organic Parameters
in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Boring No.: Depth: Date Collected:	B6-2 3-5' 11/10/88	B7-2 2-5' 11/10/88	FIELD WATER BLANK 11/10/88
1,3-Dichlorobenzene	0.013 U	0.15 U	0.011 U
1,4-Dichlorobenzene	0.013 U	0.15 U	0.011 U
1,2-Dichlorobenzene	0.013 U	0.15 U	0.011 U
Hexachloroethane	0.013 U	0.15 U	0.011 U
bis(2-Chloroethyl) ether	0.013 U	0.15 U	0.011 U
bis(2-Chloroisopropyl) ether	0.013 U	0.15 U	0.011 U
N-Nitroso-di-n-propylamine	0.013 U	0.15 U	0.011 U
Nitrobenzene	0.013 U	0.15 U	0.011 U
Hexachlorobenzene	0.013 U	0.15 U	0.011 U
1,2,4-Trichlorobenzene	0.013 U	0.15 U	0.011 U
Isophorone	0.013 U	0.15 U	0.011 U
Naphthalene	0.013 U	0.15 U	0.011 U
bis(2-Chloroethoxy) methane	0.013 U	0.15 U	0.011 U
Hexachlorocyclopentadiene	0.013 U	0.15 U	0.011 U
2-Chloronaphthalene	0.013 U	0.15 U	0.011 U
Acenaphthylene	0.013 U	0.15 U	0.011 U
Acenaphthene	0.013 U	0.15 U	0.011 U
Dimethylphthalate	0.013 U	0.15 U	0.011 U
2,6-Dinitrotoluene	0.013 U	0.15 U	0.011 U
Fluorene	0.013 U	0.15 U	0.011 U
4-Chlorophenyl-phenylether	0.013 U	0.15 U	0.011 U
2,4-Dinitrotoluene	0.013 U	0.15 U	0.011 U
Diethylphthalate	0.013 U	0.15 U	0.011 U
N-Nitrosodiphenylamine	0.013 U	0.15 U	0.011 U
4-Bromophenyl-phenylether	0.013 U	0.15 U	0.011 U
Phenanthrene	0.013 U	0.15 U	0.011 U
Anthracene	0.013 U	0.15 U	0.011 U
Di-n-butylphthalate	0.013 U	0.15 U	0.011 U
Fluoranthene	0.013 U	0.15 U	0.011 U
Pyrene	0.013 U	0.15 U	0.011 U
Butylbenzylphthalate	0.013 U	0.15 U	0.011 U
bis(2-Ethylhexyl)phthalate	0.013 U	0.15 U	0.011 U
Chrysene	0.013 U	0.15 U	0.011 U
Benzo(a)anthracene	0.013 U	0.15 U	0.011 U
3,3'-Dichlorobenzidine	0.013 U	0.15 U	0.011 U
Di-n-octylphthalate	0.025 U	0.31 U	0.021 U
Benzo(b)fluoranthene	0.013 U	0.15 U	0.011 U
Benzo(k)fluoranthene	0.013 U	0.15 U	0.011 U
Benzo(a)pyrene	0.013 U	0.15 U	0.011 U
Indeno(1,2,3-cd)pyrene	0.013 U	0.15 U	0.011 U
Dibenz(a,h)anthracene	0.013 U	0.15 U	0.011 U
Benzo(g,h,i)perylene	0.013 U	0.15 U	0.011 U
2-Chlorophenol	0.013 U	0.15 U	0.011 U
2-Nitrophenol	0.013 U	0.15 U	0.011 U
Phenol	0.013 U	0.15 U	0.011 U
2,4-Dimethylphenol	0.013 U	0.15 U	0.011 U
2,4-Dichlorophenol	0.013 U	0.15 U	0.011 U
2,4,6-Trichlorophenol	0.013 U	0.15 U	0.011 U
4-Chloro-3-methylphenol	0.013 U	0.15 U	0.011 U
2,4-Dinitrophenol	0.013 U	0.15 U	0.011 U
2,4-Methyl-4,6-dinitrophenol	0.062 U	0.75 U	0.053 U
Pentachlorophenol	0.062 U	0.75 U	0.053 U
4-Nitrophenol	0.062 U	0.75 U	0.053 U
Benzyl alcohol	0.062 U	0.75 U	0.053 U

301897

Table 15

**Summary of Semi-Volatile Organic Parameters
in Subsurface Soils
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

Boring No.:	B6-2	B7-2	FIELD WATER
Depth:	3-5'	2-5'	BLANK
Date Collected:	11/10/88	11/10/88	11/10/88
2-Methylphenol	0.013 U	0.15 U	0.011 U
4-Methylphenol	0.013 U	0.15 U	0.011 U
Benzoic acid	0.013 U	0.15 U	0.011 U
4-Chloroaniline	0.062 U	0.75 U	0.053 U
2-Methylnaphthalene	0.013 U	0.15 U	0.011 U
2,4,5-Trichlorophenol	0.013 U	0.15 U	0.011 U
2-Nitroaniline	0.062 U	0.75 U	0.053 U
3-Nitroaniline	0.062 U	0.75 U	0.053 U
Dibenzofuran	0.062 U	0.75 U	0.053 U
4-Nitroaniline	0.013 U	0.15 U	0.011 U
Hexachlorobutadiene	0.062 U	0.75 U	0.053 U
4,6-Dinitro-2-methylphenol	—	—	—

NOTES:

All analytical values reported in mg/kg (ppm)

J - Estimated value

B - Analyte found in method blank

U - Not detected

— Not analyzed

Table 16

Summary of Pesticides and PCBs in Subsurface Soils
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Boring No.:	B6-2	B7-2	SB-2	SB-5	SB-5	SB-10	SB-10	SB-10	SB-12	SB-12	SB-12	SB-13
Depth (Ft):	3-5'	2-5'	4-8'	4-6'	4-8'	0-4'	4-6'	8-12'	0-4'	6-8'	8-12'	0-4'
Date Collected:	10/6/88	10/6/88	11/5/90	11/15/90	11/6/90	11/8/90	11/14/90	11/8/90	11/8/90	11/15/90	11/8/90	11/9/90
alpha-BHC	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
gamma-BHC	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
beta-BHC	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
Heptachlor	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
delta-BHC	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
Aldrin	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
Heptachlor Epoxide	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
Endosulfan I	<130	<120	<0.013	<0.014	<0.013	<1.4	<2,100	<15	<1.4	<0.013	<0.013	<0.014
4,4'-DDE	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Dieldrin	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Endrin	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
4,4'-DDD	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Endosulfan II	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
4,4'-DDT	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Endosulfan Sulfate	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Endrin Aldehyde	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Methoxychlor	<1,300	<1,200	<0.13	<0.14	<0.13	<14	<21,000	<150	<14	<0.13	<0.13	<0.14
Endrin Ketone	<260	<240	<0.026	<0.028	<0.026	<2.8	<4,200	<30	<2.8	<0.026	<0.026	<0.028
Chlorodane	<1,300	<1,200	<0.13	<0.14	<0.13	<14	<21,000	<150	<14	<0.13	<0.13	<0.14
Toxaphene	<2,600	<2,400	<0.26	<0.28	<0.26	<28	<42,000	<300	<28	<0.26	<0.26	<0.28
PCB-1221	<1,300	<1,200	<0.13	<0.14	<0.13	<14	<21,000	<150	<14	<0.13	<0.13	<0.14
PCB-1232	<1,300	<1,200	<0.13	<0.14	<0.13	<14	<21,000	<150	<14	<0.13	<0.13	<0.14
PCB-1016/1242	<1,300	<1,200	<0.13	<0.14	<0.13	<14	<21,000	<150	<14	<0.13	<0.13	<0.14
PCB-1248	800	650	<0.13	<0.14	<0.13	19	14,000	170	13	<0.13	<0.13	<0.14
PCB-1254	<2,600	<2,400	<0.26	0.062 J	<0.26	<28	<42,000	<300	<28	<0.26	<0.26	<0.28
PCB-1260	<2,600	<2,400	<0.26	<0.14	<0.26	<28	<42,000	<300	<28	<0.26	<0.26	<0.28

NOTES:

All values reported in mg/kg (ppm)

J - Indicates an estimated value

301899

Table 16

**Summary of Pesticides and PCBs in Subsurface Soils
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York**

Boring No.:	SB-17	SB-17	SB-20	Field	Field	Laboratory
Depth (Ft):	0-4'	14-16'	14-16'	Blank	Blank	Blank
Date Collected:	11/12/90	11/15/90	11/15/90	10/6/88	11/14/90	10/88
alpha-BHC	<16	<13	<0.014	<0.00005	<0.00005	<0.008
gamma-BHC	<16	<13	<0.014	<0.00005	<0.00005	<0.008
beta-BHC	<16	<13	<0.014	<0.00005	<0.00005	<0.008
Heptachlor	<16	<13	<0.014	<0.00005	<0.00005	<0.008
delta-BHC	<16	<13	<0.014	<0.00005	<0.00005	<0.008
Aldrin	<16	<13	<0.014	<0.00005	<0.00005	<0.008
Heptachlor Epoxide	<16	<13	<0.014	<0.00005	<0.00005	<0.008
Endosulfan I	<16	<13	<0.014	<0.00005	<0.00005	<0.008
4,4'-DDE	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Dieldrin	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Endrin	<32	<26	<0.028	<0.0001	<0.0001	<0.016
4,4'-DDD	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Endosulfan II	<32	<26	<0.028	<0.0001	<0.0001	<0.016
4,4'-DDT	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Endosulfan Sulfate	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Endrin Aldehyde	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Methoxychlor	<160	<130	<0.14	<0.0005	<0.0005	<0.08
Endrin Ketone	<32	<26	<0.028	<0.0001	<0.0001	<0.016
Chlorodane	<160	<130	<0.14	<0.0005	<0.0005	<0.08
Toxaphene	<320	<260	<0.28	<0.001	<0.001	<0.16
PCB-1221	<160	<130	<0.14	<0.0005	<0.0005	<0.08
PCB-1232	<160	<130	<0.14	<0.0005	<0.0005	<0.08
PCB-1016/1242	<160	<130	<0.14	<0.0005	<0.0005	<0.08
PCB-1248	110	120	0.13	0.0011	<0.0005	<0.08
PCB-1254	<320	<260	0.055 J	<0.001	<0.001	<0.16
PCB-1260	<320	<260	<0.14	<0.001	<0.001	<0.16

NOTES:

All values reported in mg/kg (ppm)

J - Indicates an estimated value

301900

TABLE 17
SUMMARY OF METALS IN SUBSURFACE SOILS
RICHARDSON HILL ROAD LANDFILL SITE - REMEDIAL INVESTIGATION
SIDNEY, NEW YORK

	Boring No.:	B6-2	B7-2	SB-5	SB-10	SB-12	SB-17	SB-20	FIELD
	Depth (Ft):	3-5'	2-5'	4-6'	4-6'	6-8'	14-16'	14-16'	BLANK
	Date Collected:	10/6/88	10/6/88	11/16/90	11/16/90	11/16/90	11/16/90	11/16/90	11/16/90
	<u>NYS RANGE</u>								
ALUMINUM	1,000-25,000	15200	13500	14500	14800	17500	12300	14700	20 U
ANTIMONY	NE	15.8 U	16.7 U	5.75 U	8.75 U	5.45 U	5.55 U	5.7 U	50 U
ARSENIC	3-12	6.5	10.9	10.5	3.29	4.02	10.5	9.21	2 U
BARIUM	15-600	85.5	109	95.7	99.4	220	59.2	68.9	10 U
BERYLLIUM	0-1.75	2.1	1.7	0.514 B	1.38	1.3	0.451 B	0.487 B	1 U
CADMIUM	0.01-0.88	1.8	2.5	0.345 U	2.77	0.327 U	0.333 U	0.342 U	3 U
CALCIUM	130-35,000	547 B	547 B	852	3500	852	648	903	200 U
CHROMIUM	1.5-40	27.4	48.6	18.9	32	22	14.4	20.7	5 U
COBALT	2.5-60	11.1 B	8.6 B	13.8	11.6	13.5	12.9	14.6	5 U
COPPER	37.4-112.2	104	25.3	33	424	7.37	27.4	10.3	5 U
IRON	17,500-25,000	27600	19600	33400	53100	32000	25300	35600	36 B
LEAD	1-12.5	136	63.9	7.92	87.1	4.95	14.6	3.1	1 U
MAGNESIUM	1,700-6,000	3580 B	2440 B	5360	3540	6370	4120	5710	200 U
MANGANESE	50-5,000	445	339	911	1450	277	961	291	3 B
MERCURY	0.042-0.066	0.13	0.14 U	0.155 U	0.175 U	0.109 U	0.111 U	0.114 U	0.2 U
NICKEL	8.5-25	28.2	22.8	32.5	35.1	37.6	26.3	33.2	15 U
POTASSIUM	8,500-43,000	853 B	733 B	1100	855 B	1660	1010	1780	1000 U
SELENIUM	<0.1-0.125	0.3 U	0.3 U	0.345 U	0.612 B	0.327 U	0.333 U	0.342 U	3 U
SILVER	NE	2.6 U	2.8 U	0.23 U	1.17 B	0.218 U	0.222 U	0.228 U	3 B
SODIUM	6,000-8,000	107 B	83.3 U	218 B	533 B	205 B	214 B	289 B	200 U
THALLIUM	NE	0.5 U	0.6 U	0.115 U	0.175 U	0.109 U	0.111 U	0.114 U	1 U
VANADIUM	25-60	17.4	18.1	18.2	23.1	19.5	15.1	21.8	5 U
ZINC	37-60	116	129	74.4	413	80	65.7	64.3	5 U
CYANIDE		1.6 U	1.7 U	0.575 U	0.875 U	0.545 U	0.555 U	0.57 U	

NOTES:

All values reported in mg/kg (ppm). U - The analyte was not detected.
B - The reported value is less than the Contract Required
Detection Limit, but greater than the Instrument Detection Limit.
NYS concentration range in uncontaminated soils from background
concentrations of 20 elements in soils with special regard for
New York State by E. Carol McGovern.

301901

Table 18
Summary of Volatile Organic Parameters (Test Pits)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

SAMPLE ID: DATE COLLECTED:	TP-1 7/13/92	TP-2 7/13/92	TP-3 7/13/92	TP-4 7/13/92	TP-5 7/13/92	TP-6 7/13/92	BLIND DUPL. 7/13/92	EQUIP. BLANK * 7/13/92	QCTRIIP BLANK * 7/13/92
Chloromethane	<1.1	<1.3	<1.2	<1.3	<1.4	<1.2	<1.3	<0.01	<0.01
Bromomethane	<1.1	<1.3	<1.2	<1.3	<1.4	<1.2	<1.3	<0.01	<0.01
Vinyl Chloride	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Chloroethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Methylene Chloride	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,1-Dichloroethene	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,1-Dichloroethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,2-Dichloroethane(total)	<0.11	0.59	<1.2	<0.13 (0.12)	<1.4	<0.12 (0.077)	<1.3	<0.001	<0.001
Chloroform	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,2-Dichloroethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,1,1-Trichloroethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Carbon Tetrachloride	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Bromodichloromethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,2-Dichloropropane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
cis-1,3-Dichloropropene	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Trichloroethene	<0.11	<0.13	<1.2 (0.66)	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Benzene	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Dibromochloromethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
1,1,2-Trichloroethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
trans-1,3-Dichloropropene	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
2-Chloroethylvinyl ether	<1.1	<1.3	<1.2	<1.3	<1.4	<1.2	<1.3	<0.01	<0.01
Bromoform	<1.1	<1.3	<1.2	<1.3	<1.4	<1.2	<1.3	<0.01	<0.01
1,1,2,2-Tetrachloroethane	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Tetrachlorethene	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12 (0.1)	<1.3	<0.001	<0.001
Toluene	<0.11	<1.3	17	1.7	21	0.87	17	<0.001	<0.001
Chlorobenzene	<0.11	<0.13	<1.2	<0.13	<1.4	<0.12	<1.3	<0.001	<0.001
Ethylbenzene	<0.11	<0.13	9.2	1.3	9.3	1.1	11	<0.001	<0.001
Xylene(total)	<0.34	<0.4	<3.5	<0.38	7	1.7	8	<0.003	<0.003
1,2-Dichlorobenzene	<0.57	<0.67	<5.8	<0.64	<6.8	<0.6	<6.6	<0.005	<0.005
1,3-Dichlorobenzene	<0.57	<0.67	<5.8	<0.64	<6.8	<0.6	<6.6	<0.005	<0.005
1,4-Dichlorobenzene	<0.57	<0.67	<5.8	<0.64	<6.8	<0.6	<6.6	<0.005	<0.005

Values reported in mg/kg dry weight (ppm) unless otherwise noted.

* - Values reported in mg/l (ppm).

Values in parentheses are estimated; detected, but below the quantitation limit.

NOTES:

301902

Table 19

Dual Column Confirmation Results (Test Pits)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID: Date Collected:	TP-2 7/13/92	TP-5 7/13/92
trans-1,2-Dichloroethene	<0.13	<1.4
cis-1,2-Dichloroethene	1.1	<1.4
Toluene	0.84	29
Ethylbenzene	<0.13	3
Xylenes (total)	<0.27	8.2
PCB Aroclor 1242	ND	1.2
PCB Aroclor 1248	0.037	ND
Percent Total Solids	0.075	0.073

NOTES:

All values reported in m
ND - Not detected
Confirmation Column:

TABLE 20

TEST PIT PCB ANALYSES
 RICHARDSON HILL ROAD MUNICIPAL LANDFILL SITE -
 REMIDIAL INVESTIGATION
 SIDNEY, NEW YORK

SAMPLE ID: DATE COLLECTED:	TP-1 7/13/92	TP-2 7/13/92	TP-3 7/13/92	TP-4 7/13/92	TP-5 7/13/92	TP-6 7/13/92	BLIND DUPL. 7/13/92	EQUIP. BLANK * 7/13/92
PCB	300	43	4.4	3600	1100	1.5	1200	<0.065
Aroclor	1248	1248	1248	1248	1242	1248	1242	NA
Percent Total Solids	87	75	86	78	73	84	76	NA

*this is not
concentr
→ 0.124*

NOTES: Values reported in mg/kg (ppm), unless noted otherwise.

* - Values reported in g/l (ppb).

NA - Not analyzed

301904

Table 21
Summary of Organic Parameters in Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.:	MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-3	MW-3	MW-3
Date Collected:	11/18/88	08/30/90	12/11/90	12/28/94	11/17/88	08/30/90	12/11/90	12/29/94	11/16/88	08/30/90	12/11/90
1,1,1-Trichloroethane	350	530	200	220	1,300	920	1,300	830	440	180	180
1,1,2,2-Tetrachloroethane	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
1,1,2-Trichloroethane	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
1,1-Dichloroethane	<50	<100	<100	<100	360	170	390	<500	200	<100	<100
1,1-Dichloroethene	<50	<100	<100	<100	<250	<100	100	<500	45	<100	<100
1,2-Dichlorobenzene	NA	<500	<500	<500	NA	<500	<500	<2500	NA	<500	<500
1,2-Dichloroethane	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
1,2-Dichloroethylene (total)	1,000	5,000	1,800	2,100	21,000	22,000	24,000	23,000	12,000	5,700	7,000
1,2-Dichloropropane	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
1,3-Dichlorobenzene	NA	<500	<500	<500	NA	<500	<500	<2500	NA	<500	<500
1,4-Dichlorobenzene	NA	<500	<500	<500	NA	<500	<500	<2500	NA	<500	<500
2-Chloroethylvinyl ether	<100	<1,000	<1,000	<1,000	<500	<1,000	<1,000	<5,000	<10	<1,000	<1,000
Acetone	<100	NA	NA	NA	1,100	NA	NA	NA	26	NA	NA
Benzene	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
Bromodichloromethane	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
Bromoform	<50	<1,000	<1,000	<1,000	<250	<1,000	<1,000	<5,000	<5	<1,000	<1,000
Bromomethane	<100	<100	<1,000	<1,000	<500	<100	<1,000	<1,000	<10	<100	<1,000
Carbon Tetrachloride	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
Chlorobenzene	<50	<100	<100	<100	<250	<100	<100	<500	19	<100	<100
Chloroethane	<100	<100	<100	<100	<500	<100	<100	<500	<10	<100	<100
Chloroform	<50	<100	<100	<100	<250	<1,000	<1,000	<500	9	<100	<100
Chloromethane	<100	<100	<1,000	<1,000	<500	<100	<1,000	<5,000	<10	<100	<1,000
Chloromethylmethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<50	<100	<100	<100	<250	<100	<100	<500	<5	<100	<100
Dichlorodifluoromethane	NA	<1,000	<1,000	<1,000	NA	<10,000	<10,000	NA	NA	<1,000	<1,000
Dichloromethane	NA	NA	NA	<100	NA	NA	NA	<500	NA	NA	NA
Ethylbenzene	140	<100	<100	<100	190 J	120	<100	<500	15	<100	<100
Methylene chloride	<50	<100	<100	<100	<250	<100	120	<100	<5	<100	<100
trichloroethene	59	<100	<100	<100	<250	<100	<100	<500	66	<100	<100
luene	1,700	430	670	110	1,800	990	1,400	1,500	92	<100	<100
Trichloroethene	4,700	8,400	5,000	4,200	2,800	490	1,800	530	4,400	4,300	3,000
Trichlorofluoromethane	NA	<100	<100	<100	NA	<100	<100	<500	NA	<100	<100
Vinyl chloride	91 J	<100	<100	<100	3,500	1,900	2,200	4,200	280	<100	<100
Xylenes	180 N	<300	<300	<300	<250	<300	<300	<300	25	<300	<300
TOTAL VOC DETECTION	8,230	14,360	7,470	6,630	32,050	26,590	31,310	29,860	17,619	10,160	10,160

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301905

Table 21
Summary of Organic Parameters In Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.:	MW-3	MW-3D	MW-3DD	MW-4S	MW-4S	MW-4S	MW-4S	MW-4S	MW-4D	MW-4D	MW-5S
Date Collected:	12/29/94	3/16/95	3/16/95	11/16/88	08/29/90	12/11/90	05/04/92	12/22/94	05/04/92	12/22/94	11/16/88
1,1,1-Trichloroethane	250	20	<1	<5	<1	<1	<1	<1	<1	<1	430 J
1,1,2,2-Tetrachloroethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
1,1,2-Trichloroethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
1,1-Dichloroethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
1,1-Dichloroethene	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
1,2-Dichlorobenzene	<500	<50	<5	NA	<5	<5	<5	<5	<5	<5	NA
1,2-Dichloroethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
1,2-Dichloroethylene (total)	10,000	520	<1	<5	<1	<1	<1	<1	<1	2	6,000
1,2-Dichloropropane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
1,3-Dichlorobenzene	<500	<50	<5	NA	<5	<5	<5	<5	<5	<5	NA
1,4-Dichlorobenzene	<500	<50	<5	NA	<5	<5	<5	<5	<5	<5	NA
2-Chloroethylvinyl ether	<1,000	<100	<10	<10	<10	<10	<10	<10	<10	<10	<1000
Acetone	NA	NA	NA	53	NA	NA	NA	NA	NA	NA	3,600
Benzene	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Bromodichloromethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Bromoform	<1,000	<100	<10	<5	<10	<10	<10	<10	<10	<10	<500
Bromomethane	<1,000	<100	<10	<10	<1	<10	<10	<10	<100 *	<10	<1000
Carbon Tetrachloride	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Chlorobenzene	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Chloroethane	<100	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1000
Chloroform	<1000	<10	<1	<5	<1	<1	<1	<1	1	<1	<500
Chloromethane	<1,000	<100	<10	<10	<1	<10	<10	<10	<100 *	<10	<1000
Chloromethylmethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Dichlorodifluoromethane	NA	<100	<10	NA	<10	<10	NA	<10	NA	<10	NA
Dichloromethane	<100	<10	<1	NA	NA	NA	NA	<1	NA	<1	NA
Ethylbenzene	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Ethylene chloride	<100	NA	NA	1 J	<1	<1	<1	<1	<1	<1	120 J
Hexachloroethane	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Toluene	<100	<10	<1	<5	<1	<1	<1	<1	<1	<1	<500
Trichloroethene	2,500	270	<1	10	10	10	1	3	<1	3	2,000
Trichlorofluoromethane	<100	<10	<1	NA	<1	<1	NA	<1	NA	<1	NA
Vinyl chloride	270	<10	<1	<10	<1	<1	<1	<1	<1	<1	<1000
Xylenes	<300	<30	<3	<5	<3	<3	<3	<3	<3	<3	<500
TOTAL VOC DETECTION	13,020	810	ND	104	10	10	1	3	1	5	12,350

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301906

Table 21
Summary of Organic Parameters in Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.: Date Collected:	MW-5S 08/30/90	MW-5S 12/11/90	MW-5S 05/04/92	MW-5D 11/16/88	MW-5D 08/29/90	MW-5D 12/11/90	MW-5D 12/05/91	MW-5D 05/04/92	MW-5D 12/29/94	MW-6 11/17/88	MW-6 08/30/90
1,1,1-Trichloroethane	<100	<100	129	170	210	<100	180	210	<100	81	<100
1,1,2,2-Tetrachloroethane	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
1,1,2-Trichloroethane	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
1,1-Dichloroethane	<100	<100	<100	96	<100	<100	<100	110	<100	27	<100
1,1-Dichloroethene	<100	<100	<100	22	<100	<100	<100	<100	<100	13	<100
1,2-Dichlorobenzene	<500	<500	<500	NA	<500	<500	<500	<500	<500	NA	<500
1,2-Dichloroethane	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
1,2-Dichloroethylene (total)	3,900	2,900	2,200	4,100	7,200	4,400	5,300	6,800	1,700	1,300	1,000
1,2-Dichloropropane	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
1,3-Dichlorobenzene	<500	<500	<500	NA	<500	<500	<500	<500	<500	NA	<500
1,4-Dichlorobenzene	<500	<500	<500	NA	<500	<500	<500	<500	<500	NA	<500
2-Chloroethylvinyl ether	<1,000	<1,000	<1000	<10	<1,000	<1,000	<1000	<1000	<1000	<10	<1,000
Acetone	NA	NA	NA	150	NA	NA	NA	NA	NA	27	NA
Benzene	<100	<100	<100	1 J	<100	<100	<100	<100	<100	<5	<100
Bromodichloromethane	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
Bromoform	<1,000	<1,000	<1000	<5	<1,000	<1,000	<1000	<1000	<1000	<5	<1,000
Bromomethane	<100	<1,000	<1000	<10	<100	<1,000	<1000	<1000	<1000	<10	<100
Carbon Tetrachloride	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
Chlorobenzene	<100	<100	<100	4 J	<100	<100	<100	<100	<100	7	<100
Chloroethane	<100	<100	<100	<10	<100	<100	<100	<100	<100	<10	<100
Chloroform	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
Chloromethane	<100	<1,000	<1000	<10	<100	<1,000	<1000	<1000	<1000	<10	<100
Chloromethylmethyl ether	NA	NA	NA	NA	NA	NA	<10,000	NA	NA	NA	NA
Dibromochloromethane	<100	<100	<100	<5	<100	<100	<100	<100	<100	<5	<100
Dichlorodifluoromethane	<1,000	<1,000	NA	NA	<1,000	<1,000	<1000	NA	<1000	NA	<1,000
Dichloromethane	NA	NA	NA	NA	NA	NA	<100	NA	<100	NA	NA
Ethylbenzene	<100	<100	<100	19	<100	<100	<100	<100	<100	2	<100
Methylene chloride	<100	130	<100	5	<100	120	NA	<100	<100	<5	<100
1,1,1,2-Tetrachloroethane	<100	<100	<100	<5	<100	<100	<100	<100	<100	5	<100
1,2,4-Trichlorobenzene	<100	<100	<100	200	360	150	170	230	<100	<5	<100
Trichloroethane	<100	<100	<100	480	<100	210	310	200	270	430	140
Trichlorofluoromethane	<100	<100	NA	NA	<100	<100	<100	NA	<100	NA	<100
Vinyl chloride	<100	<100	<100	190	<100	<100	<100	120	<100	190	<100
Xylenes	<300	<300	<300	24	<300	<300	<300	<300	<300	<5	<300
TOTAL VOC DETECTION	3,800	2,730	2,320	5,431	7,770	4,880	5,940	7,670	1,970	2,042	1,140

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301907

Table 21
Summary of Organic Parameters In Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.:	MW-6	MW-6	MW-7S	MW-7S	MW-7S	MW-7S	MW-7S	MW-7D	MW-7D	MW-8	MW-8
Date Collected:	12/11/90	12/28/94	11/16/88	08/29/90	12/11/90	05/04/92	12/23/94	05/04/92	12/22/94	11/17/88	08/29/90
1,1,1-Trichloroethane	52	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,1,2,2-Tetrachloroethane	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,1,2-Trichloroethane	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,1-Dichloroethane	27	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,1-Dichloroethene	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,2-Dichlorobenzene	<50	<250	NA	<5	<5	<5	<5	<5	<5	NA	<5
1,2-Dichloroethane	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,2-Dichloroethylene (total)	1,500	390	<8	4	4	2	2	<1	8	<10	<1
1,2-Dichloropropane	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
1,3-Dichlorobenzene	<50	<250	NA	<5	<5	<5	<5	<5	<5	NA	<5
1,4-Dichlorobenzene	<50	<250	NA	<5	<5	<5	<5	<5	<5	NA	<5
2-Chloroethylvinyl ether	<100	<500	<17	<10	<10	<10	<10	<10	<10	<20	<10
Acetone	NA	NA	<17	NA	NA	NA	NA	NA	NA	<20	NA
Benzene	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Bromodichloromethane	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Bromoform	<100	<500	<8	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<100	<500	<17	<1	<10	<10	<10	<10	<10	<20	<1
Carbon Tetrachloride	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Chlorobenzene	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Chloroethane	20	<50	<17	<1	<1	<1	<1	<1	<1	<20	<1
Chloroform	<100	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Chloromethane	<100	<500	<17	<1	<10	<10	<10	<10	<10	<20	<1
Chloromethylmethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Dichlorodifluoromethane	<1,000	NA	NA	<10	<10	NA	<10	NA	NA	NA	<10
Dichloromethane	NA	<50	NA	NA	NA	NA	<1	NA	NA	NA	NA
Ethylbenzene	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Methylene chloride	<10	NA	<8	<1	<1	<1	<1	<1	<1	<10	<1
trichloroethene	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
luene	<10	<50	<8	<1	<1	<1	<1	<1	<1	<10	<1
Trichloroethene	210	<50	<8	3	3	2	6	<1	2	<10	2
Trichlorofluoromethane	<10	<50	NA	<1	<1	NA	<1	NA	NA	NA	<1
Vinyl chloride	200	84	<17	<1	<1	<1	<1	<1	<1	<20	<1
Xylenes	<30	<150	<8	<3	<3	<3	<3	<3	<3	<10	<3
TOTAL VOC DETECTION	2,009	474	ND	7	7	4	8	ND	10	ND	2

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301908

Table 21
Summary of Organic Parameters In Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.:	MW-8	MW-8	MW-9	MW-9	MW-9	MW-9	MW-9D	MW-10	MW-10	MW-10	MW-10
Date Collected:	12/11/90	12/23/94	11/16/88	08/29/90	12/11/90	12/28/94	3/16/95	11/16/88	08/29/90	12/11/90	12/22/94
1,1,1-Trichloroethane	<1	<1	<50	23	14	14	14	<5	<1	<1	<1
1,1,2,2-Tetrachloroethane	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<50	<10	<10	<10	<10	<5	<1	<1	<1
1,1-Dichloroethane	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
1,1-Dichloroethene	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
1,2-Dichlorobenzene	<5	<5	NA	<5	<5	<50	<50	NA	<5	<5	<5
1,2-Dichloroethane	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
1,2-Dichloroethylene(total)	<1	<1	<50	3	3	<10	<10	<5	1	<1	<1
1,2-Dichloropropane	<1	<1	<50	<10	<10	<100	<10	<5	<1	<1	<1
1,3-Dichlorobenzene	<5	<5	NA	<5	<5	<50	<50	NA	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	NA	<5	<5	<50	<50	NA	<5	<5	<5
2-Chloroethylvinyl ether	<10	<10	<100	<10	<10	<100	<100	<10	<10	<10	<10
Acetone	NA	NA	<100	NA	NA	NA	NA	<10	NA	NA	NA
Benzene	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Bromodichloromethane	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Bromoform	<10	<10	<50	<10	<10	<100	<100	<5	<10	<10	<10
Bromomethane	<10	<10	<100	<1	<10	<100	<100	<10	<1	<10	<10
Carbon Tetrachloride	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Chlorobenzene	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Chloroethane	<1	<1	<100	<1	<1	<10	<10	<10	<1	<1	<1
Chloroform	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Chloromethane	<10	<10	<100	<1	<10	<100	<100	<10	<1	<10	<10
Chloromethylmethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<1	<1	<50	<10	<10	<100	<10	<5	<1	<1	<1
Dichlorodifluoromethane	<10	<10	NA	<10	<10	<100	<100	NA	<10	<10	<10
Dichloromethane	NA	NA	NA	NA	NA	11	<10	NA	NA	NA	NA
Ethylbenzene	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Methylene chloride	<1	<1	<50	<1	<1	<1	NA	<5	<1	<1	<1
Tetrachloroethene	<1	<1	<50	7	3	<10	<10	<5	<1	<1	<1
Toluene	<1	<1	<50	<1	<1	<10	<10	<5	<1	<1	<1
Trichloroethene	<1	1	310	340	220	280	150	12	9	5	4
Trichlorofluoromethane	<1	<1	NA	<1	<1	<10	<10	NA	<1	<1	<1
Vinyl chloride	<1	<1	<100	<1	<1	<10	<10	<10	<1	<1	<1
Xylenes	<3	<3	<50	<3	<3	<30	<30	<5	<3	<3	<3
TOTAL VOC DETECTION	ND	1	310	373	240	305	164	12	10	5	4

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301909

Table 21
Summary of Organic Parameters In Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.: Date Collected:	MW-11S 12/11/90	MW-11S 05/04/92	MW-11S 12/23/94	MW-11D 12/11/90	MW-11D 12/05/91	MW-11D 05/04/92	MW-11D 12/29/94	MW-12 12/11/90	MW-12 12/23/94	MW-13 12/11/90	MW-13 12/23/94
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	3
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethylene(total)	<1	<1	<1	<1	<1	<1	<1	<1	6	8	7
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1
1,3-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Chloroethylvinyl ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloromethylmethyl ether	NA	NA	NA	NA	<100	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1
Dichlorodifluoromethane	<10	NA	<10	<10	<10	NA	<10	<10	<10	<10	<10
Dichloromethane	NA	NA	<1	NA	1 B	NA	<1	NA	NA	NA	<1
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1
trachloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
luene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	2	<1	1	7	5	3	9	<1	12	140	80
Trichlorofluoromethane	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
TOTAL VOC DETECTION	2	ND	1	7	6	3	9	ND	18	154	90

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301910

Table 21
Summary of Organic Parameters in Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.:	MW-14	MW-14	MW-15	MW-15	MW-16	MW-16	MW-17	MW-17	MW-18S	MW-18S	MW-18S
Date Collected:	12/11/90	12/29/94	12/11/90	12/22/94	12/11/90	12/29/94	12/11/90	12/29/94	12/11/90	05/04/92	12/28/94
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	J	<100	<100	<100
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,1,2-Trichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,1-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,1-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<500	<500	<500
1,2-Dichloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,2-Dichloroethylene(total)	<1	<1	<1	<1	2	3	4	25	2,100	1,200	1,700
1,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
1,3-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<500	<500	<500
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5	<500	<500	<500
2-Chloroethylvinyl ether	<10	<10	<10	<10	<10	<10	<10	<10	<1,000	<1000	<1000
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Bromodichloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<1,000	<1000	<1000
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<1,000	<1000	<1000
Carbon Tetrachloride	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Chlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Chloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Chloroform	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<1,000	<1000	<1000
Chloromethylmethyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Dichlorodifluoromethane	<10	<10	<10	<10	<10	<10	<10	<10	<1,000	NA	NA
Dichloromethane	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<100
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Methylene chloride	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
trichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
oluene	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	<100
Trichloroethene	9	1	<1	<1	18	18	6	55	<100	<100	140
Trichlorofluoromethane	<1	<1	<1	<1	<1	<1	<1	<1	<100	NA	<100
Vinyl chloride	<1	<1	<1	<1	<1	<1	<1	<1	<100	<100	180
Xylenes	<3	<3	<3	<3	<3	<3	<3	<3	<300	<300	<300
TOTAL VOC DETECTION	9	1	ND	ND	20	21	10	86	2,100	1,200	2,020

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoromethane, or any combination of the two compounds.

301911

Table 21
Summary of Organic Parameters In Ground Water
(Overburden & Bedrock)
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.:	MW-18D	MW-18D	MW-18D	MW-18D	MW-18DD	MW-19	MW-19
Date Collected:	12/11/90	12/05/91	05/04/92	12/28/94	3/16/95	05/04/92	12/23/94
1,1,1-Trichloroethane	<100	<100	<100	<100	<1	<1	<1
1,1,2,2-Tetrachloroethane	<100	<100	<100	<100	<1	<1	<1
1,1,2-Trichloroethane	<100	<100	<100	<100	<1	<1	<1
1,1-Dichloroethane	<100	<100	<100	<100	<1	<1	<1
1,1-Dichloroethene	<100	<100	<100	<100	<1	<1	<1
1,2-Dichlorobenzene	<500	<500	<500	<500	<5	<5	<5
1,2-Dichloroethane	<100	<100	<100	<100	<1	<1	<1
1,2-Dichloroethylene(total)	2,200	2,500	2,900	2,700	<1	<1	<1
1,2-Dichloropropane	<100	<100	<100	<100	<1	<1	<1
1,3-Dichlorobenzene	<500	<500	<500	<500	<5	<5	<5
1,4-Dichlorobenzene	<500	<500	<500	<500	<5	<5	<5
2-Chloroethylvinyl ether	<1,000	<1000	<1000	<1000	<10	<10	<10
Acetone	NA	NA	NA	NA	NA	NA	NA
Benzene	<100	<100	<100	<100	<1	<1	<1
Bromodichloromethane	<100	<100	<100	<100	<1	<1	<1
Bromoform	<1,000	<1000	<1000	<1000	<10	<10	<10
Bromomethane	<1,000	<1000	<1000	<1000	<10	<10	<10
Carbon Tetrachloride	<100	<100	<100	<100	<1	<1	<1
Chlorobenzene	<100	<100	<100	<100	<1	<1	<1
Chloroethane	<100	<100	<100	<100	<1	<1	<1
Chloroform	<100	<100	<100	<100	<1	<1	<1
Chloromethane	<1,000	<1000	<1000	<1000	<10	<10	<10
Chloromethylmethyl ether	NA	<10,000	NA	NA	NA	NA	NA
Dibromochloromethane	<100	<100	<100	<100	<1	<1	<1
Dichlorodifluoromethane	<1,000	<1000	NA	NA	<10	NA	<10
Dichloromethane	NA	<100	NA	<100	<1	NA	<1
Ethylbenzene	<100	<100	<100	<100	<1	<1	<1
Methylene chloride	<100	NA	<100	<100	NA	<1	<1
Trichloroethene	<100	<100	<100	<100	<1	<1	<1
Toluene	<100	<100	<100	<100	<1	<1	<1
Trichloroethane	310	270	370	400	<1	29	29
Trichlorofluoromethane	<100	<100	NA	<100	<1	NA	<1
Vinyl chloride	<100	<100	110	280	<1	<1	<1
Xylenes	<300	<300	<300	<300	<3	<3	<3
TOTAL VOC DETECTION	2,510	2,770	3,380	3,380	ND	29	29

NOTES: All values reported in ug/l (ppb).

NA - Not analyzed.

J - Estimated value.

B - Probable laboratory contaminant.

1) 1988 analysis performed using GC/MS Methods (Method 8240).

2) 1990, 1992, and 1994 analysis performed using GC Methods (601/602, 8010/8020).

* - Elevated quantitation limit due to matrix interference.

** - The value reported for Vinyl Chloride may represent Vinyl Chloride, Dichlorodifluoro or any combination of the two compounds.

301912

TABLE 22

GROUND WATER DUAL COLUMN CONFIRMATION RESULTS
 RICHARDSON HILL ROAD MUNICIPAL LANDFILL SITE -
 REMEDIAL INVESTIGATION
 SIDNEY, NEW YORK

DATE COLLECTED:	MW-4D	MW-5D	MW-5D
SAMPLE ID:	5/4/92	12/5/91	5/4/92
Ethylbenzene	NA	14	NA
Toluene	<1	180	220
m-Xylene	NA	7	NA
o-Xylene	NA	4	NA
p-Xylene	NA	2	NA
Vinyl chloride	<1	NA	<100 (79)
trans-1,2-Dichloroethene	<1	<100 (18)	<100 (21)
cis-1,2-Dichloroethene	<1	4800	5100
Chloroform	<1 (0.6)	NA	<100
1,1,1-Trichloroethane	<1	410 *	120
Trichloroethene	<1	410 *	200

NOTES:

All values reported in g/l (ppb).

NA - Not analyzed

* - 1,1,1-Trichloroethane and trichloroethene coelute using an N-Octane on Porasil C column. The response at this retention time was quantitated using a trichloroethene response factor.

8010 Confirmation Column: N Octane on Porasil C

80/100 MESH 6' x 0.1" ID, for 12/5/91 results.

8020 Confirmation Column: 5% SP1200/1.75% Bentone

34 Supelcoport 100/120 MESH 6' x 0.085 ID, for 12/5/91 results.

Confirmation Column: DB-624 30 m x 0.53 mm ID, for 5/4/91 results.

Values in parentheses are estimated values; detected, but below the quantitation limit.

301913

Table 23

Summary of Semivolatile Parameters in Ground Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.:	MW-1	MW-2	MW-6	MW-8	WASH BLANK
Date Collected:	11/18/88	11/17/88	11/16/88	11/17/88	11/17/88
1,3-Dichlorobenzene	<11	<11	<11	<11	<11
1,4-Dichlorobenzene	<11	<11	<11	<11	<11
1,2-Dichlorobenzene	<11	<11	<11	<11	<11
Hexachloroethane	<11	<11	<11	<11	<11
Bis(2-chloroethyl) ether	<11	<11	<11	<11	<11
Bis(2-chloroisopropyl) ether	<11	<11	<11	<11	<11
N-Nitrosodi-n-propylamine	<11	<11	<11	<11	<11
Nitrobenzene	<11	<11	<11	<11	<11
Hexachlorobenzene	<11	<11	<11	<11	<11
1,2,4-Trichlorobenzene	<11	<11	<11	<11	<11
Isophorone	<11	<11	<11	<11	<11
Naphthalene	2 J	<11	<11	<11	<11
Bis(2-chloroethoxy) methane	<11	<11	<11	<11	<11
Hexachlorocyclopentadiene	<11	<11	<11	<11	<11
2-Chloronaphthalene	<11	<11	<11	<11	<11
Acenaphthylene	<11	<11	<11	<11	<11
Acenaphthene	<11	<11	<11	<11	<11
Dimethyl phthalate	<11	<11	<11	<11	<11
2,6-Dinitrotoluene	<11	<11	<11	<11	<11
Fluorene	<11	<11	<11	<11	<11
4-Chlorophenyl phenyl ether	<11	<11	<11	<11	<11
4-Dinitrotoluene	<11	<11	<11	<11	<11
ethylphthalate	<11	4 J	<11	<11	<11
N-nitrosodiphenylamine	<11	<11	<11	<11	<11
Hexachlorobutadiene	<11	<11	<11	<11	<11
4-Bromophenyl phenyl ether	<11	<11	<11	<11	<11
Phenanthrene	<11	<11	<11	<11	<11
Anthracene	<11	<11	<11	<11	<11
Di-n-butyl phthalate	<11	<11	1 J	1 J	<11
Fluoranthene	<11	<11	<11	<11	<11
Pyrene	<11	<11	<11	<11	<11
Butyl benzyl phthalate	<11	<11	<11	1 J	<11
Bis(2-ethylhexyl)phthalate	54 B	21 B	27 B	22 B	13 B
Chrysene	<11	<11	<11	<11	<11
Benzo(a)anthracene	<11	<11	<11	<11	<11
3,3-Dichlorobenzidine	<22	<22	<22	<22	<22
Di-n-octylphthalate	<11	<11	<11	<11	<11
Benzo(b)fluoranthene	<11	<11	<11	<11	<11
Benzo(k)fluoranthene	<11	<11	<11	<11	<11
Benzo(a)pyrene	<11	<11	<11	<11	<11
Indeno (1,2,3-cd)pyrene	<11	<11	<11	<11	<11
dibenzo(a,h)anthracene	<11	<11	<11	<11	<11
Benzo(g,h,i)perylene	<11	<11	<11	<11	<11
2-Chlorophenol	<11	<11	<11	<11	<11
2-Nitrophenol	<11	<11	<11	<11	<11
Phenol	<11	<11	<11	<11	<11
2,4-Dimethylphenol	<11	<11	<11	<11	<11
2,4-Dichlorophenol	<11	<11	<11	<11	<11
2,4,6-Trichlorophenol	<11	<11	<11	<11	<11
4-Chloro-3-methylphenol	<11	<11	<11	<11	<11
2,4-Dinitrophenol	<54	<54	<55	<55	<55
2,4-Methyl-4,6-dinitrophenol	<54	<54	<55	<55	<55
Pentachlorophenol	<54	<54	<55	<55	<55
Nitrophenol	<54	<54	<55	<55	<55

Table 23

Summary of Semivolatile Parameters in Ground Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.:	MW-1	MW-2	MW-6	MW-8	WASH BLANK
Date Collected:	11/18/88	11/17/88	11/16/88	11/17/88	11/17/88
Benzyl Alcohol	2 J	18	<11	<11	<11
2-Methylphenol	<11	<11	<11	<11	<11
4-Methylphenol	1 J	<11	<11	<11	<11
Benzoic Acid	<54	<54	<55	<55	<55
4-Chloroaniline	<11	<11	<11	<11	<11
2-Methylnaphthalene	<11	<11	<11	<11	<11
2,4,5-Trichlorophenol	<54	<54	<55	<55	<55
2-Nitroaniline	<54	<54	<55	<55	<55
3-Nitroaniline	<54	<54	<55	<55	<55
Dibenzofuran	<11	<11	<11	<11	<11
4-Nitroaniline	<54	<54	<55	<55	<55

NOTES:

All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 B - The analyte is found in the associated blank
 as well as in the sample.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 -- - Not Analyzed.

Table 23

Summary of Semivolatile Parameters in Ground Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.:	MW-5D	MW-11D	MW-18D	Equip Blank #3	Equip Blank
Date Collected:	12/13/90	12/13/90	12/13/90	12/13/90	12/14/90
1,3-Dichlorobenzene	10 U	11 U	10 U	10 U	11 U
1,4-Dichlorobenzene	10 U	11 U	10 U	10 U	11 U
1,2-Dichlorobenzene	10 U	11 U	10 U	10 U	11 U
Hexachloroethane	10 U	11 U	10 U	10 U	11 U
Bis(2-chloroethyl) ether	10 U	11 U	10 U	10 U	11 U
Bis(2-chloroisopropyl) ether	10 U	11 U	10 U	10 U	11 U
N-Nitrosodi-n-propylamine	10 U	11 U	10 U	10 U	11 U
Nitrobenzene	10 U	11 U	10 U	10 U	11 U
Hexachlorobenzene	10 U	11 U	10 U	10 U	11 U
1,2,4-Trichlorobenzene	10 U	11 U	10 U	10 U	11 U
Isophorone	10 U	11 U	10 U	10 U	11 U
Naphthalene	10 U	11 U	2 JD	10 U	11 U
Bis(2-chloroethoxy) methane	10 U	11 U	10 U	10 U	11 U
Hexachlorocyclopentadiene	10 U	11 U	10 U	10 U	11 U
2-Chloronaphthalene	10 U	11 U	10 U	10 U	11 U
Acenaphthylene	10 U	11 U	10 U	10 U	11 U
Acenaphthene	10 U	11 U	10 U	10 U	11 U
Dimethyl phthalate	10 U	11 U	10 U	10 U	11 U
2,6-Dinitrotoluene	10 U	11 U	10 U	10 U	11 U
Fluorene	10 U	11 U	10 U	10 U	11 U
4-Chlorophenyl phenyl ether	10 U	11 U	10 U	10 U	11 U
2,4-Dinitrotoluene	10 U	11 U	10 U	10 U	11 U
Diethylphthalate	10 U	11 U	10 U	10 U	11 U
N-nitrosodiphenylamine	10 U	11 U	10 U	10 U	11 U
Hexachlorobutadiene	10 U	11 U	10 U	10 U	11 U
4-Bromophenyl phenyl ether	10 U	11 U	10 U	10 U	11 U
Phenanthrene	10 U	11 U	10 U	10 U	11 U
Anthracene	10 U	11 U	10 U	10 U	11 U
Di-n-butyl phthalate	10 U	10 U	1 JD	10 U	10 U
Fluoranthene	10 U	11 U	10 U	10 U	11 U
Pyrene	10 U	11 U	10 U	10 U	11 U
Butyl benzy' phthalate	10 U	11 U	10 U	10 U	11 U
Bis(2-ethylhexyl)phthalate	10 U	1 JBD	7 JBD	2 JBD	1 U
Chrysene	10 U	11 U	10 U	10 U	11 U
Benzo(a)anthracene	10 U	11 U	10 U	10 U	11 U
3,3-Dichlorobenzidine	21 U	22 U	21 U	20 U	22 U
Di-n-octylphthalate	10 U	11 U	10 U	10 U	11 U
Benzo(b)fluoranthene	10 U	11 U	10 U	10 U	11 U
Benzo(k)fluoranthene	10 U	11 U	10 U	10 U	11 U
Benzo(a)pyrene	10 U	11 U	10 U	10 U	11 U
Indeno (1,2,3-cd)pyrene	10 U	11 U	10 U	10 U	11 U
dibenzo(a,h)anthracene	10 U	11 U	10 U	10 U	11 U
Benzo(g,h,i)perylene	10 U	11 U	10 U	10 U	11 U
2-Chlorophenol	10 U	11 U	10 U	10 U	11 U
2-Nitrophenol	10 U	11 U	10 U	10 U	11 U
Phenol	10 U	11 U	10 U	10 U	11 U
2,4-Dimethylphenol	10 U	11 U	10 U	10 U	11 U
2,4-Dichlorophenol	10 U	11 U	10 U	10 U	11 U
2,4,6-Trichlorophenol	10 U	11 U	10 U	10 U	11 U
4-Chloro-3-methylphenol	10 U	11 U	10 U	10 U	11 U
2,4-Dinitrophenol	52 U	54 U	52 U	50 U	54 U
2,4-Methyl-4,6-dinitrophenol	52 U	54 U	52 U	50 U	54 U
Pentachlorophenol	52 U	54 U	52 U	50 U	54 U
-Nitrophenol	52 U	54 U	52 U	50 U	54 U

301916

Table 23

Summary of Semivolatile Parameters in Ground Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.:	MW-5D	MW-11D	MW-18D	Equip Blank #3	Equip Blank
Date Collected:	12/13/90	12/13/90	12/13/90	12/13/90	12/14/90
Benzyl Alcohol	2 JD	11 U	10 U	10 U	11 U
2-Methylphenol	10 U	11 U	10 U	10 U	11 U
4-Methylphenol	10 U	11 U	10 U	10 U	11 U
Benzoic Acid	52 U	54 U	52 U	50 U	54 U
4-Chloroaniline	10 U	11 U	10 U	10 U	11 U
2-Methylnaphthalene	10 U	11 U	10 U	10 U	11 U
2,4,5-Trichlorophenol	52 U	54 U	52 U	50 U	54 U
2-Nitroaniline	52 U	54 U	52 U	50 U	54 U
3-Nitroaniline	52 U	54 U	52 U	50 U	54 U
Dibenzofuran	10 U	11 U	10 U	10 U	11 U
4-Nitroaniline	--	--	--	--	--

NOTES:

All values reported in ug/l (ppb).

U - The analyte was not detected.

J - Indicates an estimated value.

B - The analyte is found in the associated blank
as well as in the sample.D - Identifies all compounds identified in an analysis
at a secondary dilution factor.

-- - Not Analyzed.

301917

Table 24

Summary of Pesticide/PCB in Ground Water
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Well No.:	MW-1	MW-2	MW-6	MW-8	WASH BLANK
Date Collected:	11/18/88	11/17/88	11/17/88	11/17/88	11/17/88
alpha-BHC	<5	<50	<5	<0.2	<0.05
gamma-BHC	<5	<50	<5	<0.2	<0.05
beta-BHC	<5	<50	<5	<0.2	<0.05
Heptachlor	<5	<50	<5	<0.2	<0.05
delta-BHC	<5	<50	<5	<0.2	<0.05
Aldrin	<5	<50	<5	<0.2	<0.05
Heptachlor Epoxide	<5	<50	<5	<0.2	<0.05
Endosulfan I	<5	<50	<5	<0.2	<0.05
4-4'-DDE	<10	<100	<10	<0.1	<0.1
Dieldrin	<10	<100	<10	<0.1	<0.1
Endrin	<10	<100	<10	<0.1	<0.1
4-4'-DDD	<10	<100	<10	<0.1	<0.1
Endosulfan II	<10	<100	<10	<0.1	<0.1
4-4'-DDT	<10	<100	<10	<0.1	<0.1
Endosulfan Sulfate	<10	<100	<10	<0.1	<0.1
Endrin Aldehyde	<10	<100	<10	<0.1	<0.1
Methoxychlor	<50	<500	<50	<0.5	<0.5
Endrin Ketone	<10	<100	<10	<0.1	<0.1
Chlordane	<50	<500	<50	<0.5	<0.5
Toxaphene	<100	<1,000	<100	<1	<0.1
PCB-1221	<50	<500	<50	<0.5	<0.5
PCB-1232	<50	<500	<50	<0.5	<0.5
PCB-1016/1242	<50	<500	<50	<0.5	<0.5
PCB-1248	150	1,400	110	<0.5	<0.5
PCB-1254	<100	<1,000	<100	<1	<1
PCB-1260	<100	<1,000	<100	<1	<1

NOTE: All values reported in ug/kg (ppb)

301918

Table 25

Summary of PCBs in Ground Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Well No.	8/29/90	12/11/90	12/5/91	5/4/92	12/23-28/94	3/13/95
MW-1	180	560	---	---	94(2)	---
MW-2	37	35	---	---	2.0 J(1)	---
MW-3	1.4	1	---	---	1.0 J(2)	---
MW-3D	NI	NI	NI	NI	NI	<0.068
MW-3DD	NI	NI	NI	NI	NI	<0.073
MW-4S	0.57	0.2	---	0.3	<0.065 U	---
MW-4D	NI	NI	---	<0.065	<0.068 U	---
MW-5C	500	120	---	160	---	---
MW-5D	0.27	0.2	0.36	0.2	<0.066 U	---
MW-6	34	24	---	---	1.0(2)	---
MW-7S	0.24	0.1	---	<0.065	<0.066 U	---
MW-7D	NI	NI	---	<0.065	<0.066 UJ	---
MW-8S	0.29	<0.1	---	---	0.2(1)	---
MW-9	0.16	0.1	0.19	---	<0.065 U	---
MW-9D	NI	NI	NI	NI	---	<0.069
MW-10	0.31	0.3	---	---	<0.067 U	---
MW-11S	NI	0.4	---	0.2	<0.066 U	---
MW-11D	NI	1.3	0.43	0.6	0.47(1)	---
MW-12	NI	0.4	---	---	<0.065 UJ	---
MW-13	NI	<0.1	---	---	<0.066 U	---
MW-14	NI	<0.1	---	---	<0.066 UJ	---
MW-15	NI	<0.1	---	---	<0.065 U	---
MW-16	NI	<0.1	---	---	<0.066 J	---
MW-17	NI	0.9	---	---	4.4 J(1)	---
MW-18S	NI	0.7	---	0.6	1.0 J(2)	---
MW-18D	NI	0.1	---	0.2	0.43 J(2)	---
MW-18DD	NI	NI	NI	NI	NI	<0.073
MW-19	NI	NI	NI	<0.065	<0.066 U	---
Equipment Blank	0.16	<0.1	<0.065	<0.065	<0.065 U	<0.068
Equipment Blank	0.34	<0.1	---	---	<0.065 U	---

NOTE: All values reported in ug/l (ppb).

--- - Not sampled.

J - Estimated value.

U - Undetected

NI - Not installed.

(1) - Altered Aroclor 1248.

(2) - Aroclor 1242.

(3) - MW-5S destroyed in 8/94.

301919

Table 26

Summary of Unfiltered Metals in Ground Water
Richardson Hill Road Municipal Landfill Site - Remedial Investigation
Sidney, New York

Well No.: Collected:		MW-1 11/18/88	MW-2 11/17/88	MW-5D 12/11/90	MW-6 11/16/88	MW-8 11/17/88	MW-11D 12/11/90	MW-18D 12/11/90	EQUIP BLANK 12/11/90	EQUIP BLANK 12/12/90
NYS CLASS GA STANDARDS										
Aluminum	NE	17.6	43.1	7,550	745.0	6.46	46,500	8,180	32 B	40 B
Antimony	3 **	<0.06	<0.06	50 U	0.66	<0.06	50 U	50 U	50 U	50 U
Arsenic	25	0.014	0.034	34.3	0.086	<0.01	25.4	7.3 B	2 U	2 U
Barium	1,000	0.448	0.643	235	7.72	<0.2	412	200	10 U	10 U
Beryllium	3 **	<0.005	<0.005	1 U	0.028	<0.005	4 B	1 U	1 U	1 U
Cadmium	10	0.010	0.008	3 U	0.105	<0.005	3 U	3 U	3 U	3 U
Calcium	NE	31.0	41.9	11,300	70.7	7.89	43,900	61,900	1110 B	1190 B
Chromium	50	0.154	0.125	30	1.09	0.139	564	214	5 U	5 U
Cobalt	NE	<0.05	<0.05	22 B	0.899	<0.05	95	8 B	5 U	5 U
Copper	200	0.375	0.113	80	1.66	0.034	214	40	11 B	15 B
Iron	300	88.8	106.0	22,300	1690.0	13.4	98,100	15,400	38 B	35 B
Lead	25	0.211	0.064	30.3	0.51	0.008	61.4	11.9	1 U	1.4 B
Manganese	35,000	33.0	27.2	5,980	43.2	0.429	22,400	12,800	200 U	200 U
Magnesium	300	18.8	37.2	5,320	281.0	<5.0	2,470	826	2 B	3 B
Mercury	2	0.0012	<0.0002	0.2 U	0.0012	<0.0002	3.19	0.2 U	0.2 U	0.281 B
Nickel	NE	0.182	0.179	31 B	2.17	0.097	323	119	15 U	15 U
Potassium	NE	<5.0	5.79	2,600 B	36.4	<5.0	30,700	10,600	1000 U	1000 U
Selenium	10	<0.005	<0.05	3 U	<0.05	<0.005	15 U	15 U	3 U	3 U
Silver	50	<0.01	<0.01	4 B	0.047	<0.01	4 B	2 U	2 U	2 U
Sodium	20,000	7.31	13.2	5,090	11.8	<5.0	28,900	18,200	2050 B	2160 B
Thallium	4 **	<0.01	<0.01	1 U	<0.01	<0.01	1 U	1 U	5 U	1 U
Vanadium	NE	<0.05	0.065	16 B	1.07	<0.05	67	13 B	5 U	5 U
Zinc	300	0.511	0.297	78	4.14	0.048	385	109	18 B	21
Cyanide	100	<0.01	<0.01	NA	<0.01	<0.01	NA	NA	NA	10 U

NOTES:

All values reported in g/l (ppb).

U - The analyte was not detected.

B - The reported value is less than the Contract
Required Detection Limit but greater than
the Instrument Detection Limit.

NA - Not analyzed

* - NYS Class GA Guidance Value

NYS MCLs are 10 NYCRR 5-1 MCLs

301920

Table 27
Packer Test Analytical Summary
Richardson Hill Road Municipal Landfill Site
Remedial Investigation
Sidney, New York

Well	Packer Test Interval	Total VOCs (ug/L)	Total PCBs (ug/L)
MW-3DD	60.5 - 80.0	<1	<0.068
	82.0 - 95.0	<1	<0.068
	95.0 - 119.0	<1	<0.066
	121.0 - 138.0	<1	<0.066
MW-18DD	62.0 - 78.5	<1	<0.066
	78.5 - 98.5	13	<0.065
	102.0 - 120.0	3	<0.066
	122.0 - 140.0	3	<0.066

Table 28

**Summary of Volatile Organic Parameters in Sediment
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

SAMPLE ID	SED TCL #1	SED TCL #2	SED TCL #2	SED TCL #3	SED TCL #4
DATE COLLECTED:	12/12/90	12/11/90	FIELD DUP. 12/11/90	12/12/90	12/12/90
COMPOUND					
Chloromethane	0.04 U	3.3 U	0.041 U	0.033 U	0.017 U
Bromomethane	0.04 U	3.3 U	0.041 U	0.033 U	0.017 U
Vinyl chloride	0.02 J	3.3 U	0.034 J	0.033 U	0.017 U
Chloroethane	0.04 U	3.3 U	0.041 U	0.033 U	0.017 U
Methylene chloride	0.02 U	1.6 U	0.006 J	0.003 J	0.002 J
Acetone	0.17 B	2.1 JB	0.38 B	0.3 B	0.16 B
Carbon Disulfide	0.02 U	1.6 U	0.024	0.002 J	0.001 J
1,1-Dichloroethene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
1,1-Dichloroethane	0.009 J	1.6 U	0.21	0.016 U	0.009 U
1,2-Dichloroethene (total)	0.12	3.5	0.8	0.016 U	0.009 U
Chloroform	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
1,2-Dichloroethane	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
2-Butanone	0.049 B	0.7 B	0.052 B	0.087 B	0.042 B
1,1,1-Trichloroethane	0.02 U	0.47 J	0.009 J	0.016 U	0.009 U
Carbon Tetrachloride	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Vinyl Acetate	0.04 U	3.3 U	0.041 U	0.033 U	0.017 U
Bromodichloromethane	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
1,2-Dichloropropane	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
c-1,3-Dichloropropene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Trichloroethene	0.014 J	0.3 J	0.009 J	0.016 U	0.009 U
Dibromochloromethane	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
1,1,2-Trichloroethane	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Benzene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
t-1,3-Dichloropropene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Bromoform	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
4-Methyl-2-pentanone	0.04 U	3.3 U	0.041 U	0.033 U	0.017 U
2-Hexanone	0.04 U	3.3 U	0.041 U	0.033 U	0.017 U
Tetrachloroethene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
1,1,2,2-Tetrachloroethane	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Toluene	0.002 J	0.27 J	0.018 J	0.003 J	0.006 J
Chlorobenzene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Ethylbenzene	0.02 U	1.6 U	0.028	0.016 U	0.009 U
Styrene	0.02 U	1.6 U	0.021 U	0.016 U	0.009 U
Xylenes	0.02 U	0.42 U	0.036	0.08	0.004 J

NOTES:

All analytical values reported in ppm.

J - Estimated value.

B - Analyte found in method blank.

U - Not detected.

301922

Table 29

Dual Column Confirmation Results for Sediment
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID Date Collected	SED-91-5 12/2/91	SED-91-12 12/3/91
Chloroethane	0.031	----
1,1-Dichloroethane	0.29	<0.002
cis-1,2-Dichloroethene	0.026	0.003
trans-1,2-Dichloroethene	0.018	<0.002
Dichloromethane	0.084 B	0.037 B
Ethylbenzene	0.45	0.004
Toluene	0.048	0.003
m-Xylene	0.18	0.003
o-Xylene	0.083	0.003
p-Xylene	0.034	<0.002

NOTES:

All values reported in mg/kg dry weight (ppm).

B - Probable laboratory contaminant.

---- Not available

8010 Confirmation Column: N-Octane on Porasil

C 80/100 MESH 6' x 0.1" ID.

301923

Table 30

Summary of Semivolatile Parameters in Sediment
Richardson Hill Road Municipal Landfill Site
Sidney, New York

SAMPLE ID:	SED TCL #1	SED TCL #2	SED TCL #2	SED TCL #3	SED TCL #4
DATE COLLECTED:	12/12/90	12/11/90	FIELD DUP. 12/11/90	12/12/90	12/12/90
Phenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
bis(2-Chloroethyl) ether	13 UD	100 UD	150 UD	11 UD	5.7 UD
2-Chlorophenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
1,3-Dichlorobenzene	13 UD	100 UD	150 UD	11 UD	5.7 UD
1,4-Dichlorobenzene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Benzyl alcohol	13 UD	100 UD	150 UD	11 UD	5.7 UD
1,2-Dichlorobenzene	13 UD	100 UD	150 UD	11 UD	5.7 UD
2-Methylphenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
bis(2-Chloroisopropyl) ether	13 UD	100 UD	150 UD	11 UD	5.7 UD
4-Methylphenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
N-Nitroso-di-n-propylamine	13 UD	100 UD	150 UD	11 UD	5.7 UD
Hexachloroethane	13 UD	100 UD	150 UD	11 UD	5.7 UD
Nitrobenzene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Isophorone	13 UD	100 UD	150 UD	11 UD	5.7 UD
2-Nitrophenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,4-Dimethylphenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
Benzoic acid	67 UD	510 UD	760 UD	56 UD	29 UD
bis(2-Chloroethoxy) methane	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,4-Dichlorophenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
1,2,4-Trichlorobenzene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Naphthalene	13 UD	100 UD	150 UD	11 UD	5.7 UD
4-Chloroaniline	13 UD	100 UD	150 UD	11 UD	5.7 UD
Hexachlorobutadiene	13 UD	100 UD	150 UD	11 UD	5.7 UD
4-Chloro-3-methylphenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
2-Methylnaphthalene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Hexachlorocyclopentadiene	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,4,6-Trichlorophenol	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,4,5-Trichlorophenol	67 UD	510 UD	760 UD	56 UD	29 UD
2-Chloronaphthalene	13 UD	100 UD	150 UD	11 UD	5.7 UD
2-Nitroaniline	67 UD	510 UD	760 UD	56 UD	29 UD
Dimethylphthalate	13 UD	100 UD	150 UD	11 UD	5.7 UD
Acenaphthylene	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,6-Dinitrotoluene	13 UD	100 UD	150 UD	11 UD	5.7 UD
3-Nitroaniline	67 UD	510 UD	760 UD	56 UD	29 UD
Acenaphthene	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,4-Dinitrophenol	67 UD	510 UD	760 UD	56 UD	29 UD
4-Nitrophenol	67 UD	510 UD	760 UD	56 UD	29 UD
Dibenzofuran	13 UD	100 UD	150 UD	11 UD	5.7 UD
2,4-Dinitrotoluene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Diethylphthalate	13 UD	100 UD	150 UD	11 UD	5.7 UD
4-Chlorophenyl-phenylether	13 UD	100 UD	150 UD	11 UD	5.7 UD
Fluorene	13 UD	100 UD	150 UD	11 UD	5.7 UD
4-Nitroaniline	67 UD	510 UD	760 UD	56 UD	29 UD
4,6-Dinitro-2-methylphenol	13 UD	510 UD	760 UD	56 UD	29 UD
N-Nitrosodiphenylamine	13 UD	100 UD	150 UD	11 UD	5.7 UD
4-Bromophenyl-phenylether	13 UD	100 UD	150 UD	11 UD	5.7 UD
Hexachlorobenzene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Pentachlorophenol	67 UD	510 UD	760 UD	56 UD	29 UD
Phenanthrene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Anthracene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Di-n-butylphthalate	13 UD	100 UD	150 UD	11 UD	5.7 UD
Fluoranthene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Pyrene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Butylbenzylphthalate	13 UD	100 UD	150 UD	11 UD	5.7 UD

Table 30

**Summary of Semivolatile Parameters in Sediment
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

SAMPLE ID:	SED TCL #1	SED TCL #2	SED TCL #2	SED TCL #3	SED TCL #4
DATE COLLECTED:	12/12/90	12/11/90	FIELD DUP. 12/11/90	12/12/90	12/12/90
3,3'-Dichlorobenzidine	27 UD	200 UD	300 UD	22 UD	11 UD
Benzo(a)anthracene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Chrysene	13 UD	100 UD	150 UD	11 UD	5.7 UD
bis(2-Ethylhexyl)phthalate	13 UD	100 UD	150 UD	11 UD	5.7 UD
Di-n-octylphthalate	13 UD	100 UD	150 UD	11 UD	5.7 UD
Benzo(b)fluoranthene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Benzo(k)fluoranthene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Benzo(a)pyrene	13 UD	100 UD	150 UD	11 UD	0.5 JD
Indeno(1,2,3-cd)pyrene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Dibenz(a,h)anthracene	13 UD	100 UD	150 UD	11 UD	5.7 UD
Benzo(g,h,i)perylene	13 UD	100 UD	150 UD	11 UD	5.7 UD

NOTES:

All analytical values reported in mg/kg (ppm)

J - Estimated value

B - Analyte found in method blank

U - Not detected

D - Diluted

Table 31

Summary of Pesticides and PCBs in Sediment
Richardson Hill Road Municipal Landfill Site
Sidney, New York

	EQUIP										BLANK *
SAMPLE ID:	SED-92-1	SED-92-2	SED-92-3	SED-92-4	SED-92-5	SED-92-6	SED-92-7	SED-92-8	SED-92-9	SED-92-10	
DATE COLLECTED:	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92
alpha-BHC	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
beta-BHC	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
delta-BHC	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
gamma-BHC	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
Heptachlor	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
Aldrin	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
Heptachlor Epoxide	0.012 U	0.014 U	0.35 U	1.6 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
Endosulfan I	0.012 U	0.014 U	0.35 U	3.3 U	0.071 U	0.12 U	0.015 U	0.01 U	0.013 U	0.011 U	5E-05 U
Dieldrin	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
4,4-DDE	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
Endrin	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
Endosulfan II	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
4,4-DDD	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
Endosulfan Sulfate	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
4,4-DDT	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
Methoxychlor	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
Endrin Ketone	0.024 U	0.029 U	0.69 U	3.3 U	0.14 U	0.23 U	0.029 U	0.02 U	0.026 U	0.021 U	0.0001 U
alpha Chlordane	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
gamma Chlordane	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
Toxaphene	0.24 U	0.29 U	6.9 U	33 U	1.4 U	2.3 U	0.29 U	0.2 U	0.26 U	0.21 U	0.001 U
Aroclor-1016	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
Aroclor-1221	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
Aroclor-1232	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
Aroclor-1242	0.12 U	0.14 U	3.5 U	16 U	0.71 U	1.2 U	0.15 U	0.1 U	0.13 U	0.11 U	0.0005 U
Aroclor-1248	0.078 J	0.068 J	5.3	14 J	1.3	6.6	0.89	0.093 J	0.13 U	0.059 J	0.0005 U
Aroclor-1254	0.24 U	0.29 U	6.9 U	33 U	1.4 U	2.3 U	0.29 U	0.2 U	0.26 U	0.21 U	0.001 U
Aroclor-1260	0.24 U	0.29 U	6.9 U	33 U	1.4 U	2.3 U	0.29 U	0.2 U	0.26 U	0.21 U	0.001 U

NOTES:

Values reported in mg/kg (ppm) unless noted otherwise.

* Values reported in mg/l (ppm).

U - Not detected

J - Estimated value

301926

Table 32

Summary of PCBs in Sediment
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.	Date Collected	PCB
SED PCB #1	12/12/90	<1.7
SED PCB #1 Field Dup.	12/12/90	<1.5
SED PCB #2	12/12/90	66
SED PCB #3	12/12/90	110
SED PCB #4	12/12/90	6.3
SED PCB #5	12/13/90	30
SED PCB #6	12/13/90	240
SED PCB #7	12/13/90	220
SED PCB #8	12/13/90	55
SED PCB #9	12/13/90	<0.6
SED PCB #10	12/13/90	<1.0
Reagent Blank	12/13/90	<0.5

NOTE: All values reported in mg/kg, dry weight (ppm).

Table 33
Summary of PCBs in Sediment
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID:	SED-01-1	SED-01-2	SED-01-3	SED-01-4	SED-01-5	SED-01-6	SED-01-7	SED-01-8	SED-01-9	SED-01-10	SED-01-11
Date Collected:	12/2/91	12/2/91	12/2/91	12/2/91	12/2/91	12/3/91	12/3/91	12/3/91	12/3/91	12/3/91	12/3/91
PCB	6.8	3.7	30	<2	420	35	79	11	4.2	1300	<3
Aroclor	1248	1248	1248	---	1248	1248	1248	1248	1248	1248	---
Percent Total Solids	17	41	11	42	8	10	35	14	22	29	22

Sample ID:	SED-01-12	SED-01-13	SED-01-14	SED-01-15	SED-01-16	SED-01-17	SED-01-18	SED-01-19	SED-01-20	BLIND DUPL.	EQUIP. BLANK *
Date Collected:	12/3/91	12/3/91	12/3/91	12/3/91	12/4/91	12/4/91	12/4/91	12/4/91	12/4/91	12/4/91	12/3/91
PCB	<2	<2	<2	<3	6.8	2.8	1.7	1.8	<1	290	<0.065
Aroclor	----	---	----	----	1248	1248**	1248**	1248	----	1248	NA
Percent Total Solids	47	34	35	24	38	78	75	44	57	21	NA

NOTES: Values reported in mg/kg dry weight (ppm) unless noted otherwise.
 * - Values reported in g/l (ppb).
 ** - Sample lost in a laboratory accident.
 NA - Not analyzed
 ---- Not available

301926

Table 34

Sediment Analytical Data - Metals
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

		SED TCL #1	SED TCL #2	SED TCL #2	SED TCL #3	SED TCL #4
	NYS RANGE	12/12/90	12/11/90	FIELD DUP. 12/11/90	12/12/90	12/12/90
ALUMINUM	1,000-25,000	9900	10100	6470	13900	7800
ANTIMONY	NE	20 U	15.2 U	22.7 U	16.6 U	8.6 U
ARSENIC	3-12	6.84	35.2	25.8	9.62	6.95
BARIUM	15-600	198	305	251	158	124
BERYLLIUM	0-1.75	0.4 U	0.971 B	0.713 B	1.04 B	0.533 B
CADMIUM	0.01-0.88	1.2 U	0.909 U	1.37 U	0.999 U	0.516 U
CALCIUM	130-35,000	2860	3560	7390	7780	1150
CHROMIUM	1.5-40	11.4	55.3	28.3	14.5	9.84
COBALT	2.5-60	6.3 B	22.9	8.17 B	5.83 B	8.81
COPPER	37.4-112.2	15.9	34.5	17.9	21.4	9.24
IRON	17,500-25,000	12700	14100	24500	24800	15300
LEAD	1-12.5	380	54.5	29.9	32.3	14.1
MAGNESIUM	1,700-6,000	1830 B	2450	2460	1680	1540
MANGANESE	50-5,000	650	1610	2860	411	1110
MERCURY	0.042-0.066	0.4 U	0.303 U	0.455 U	0.333 U	0.172 U
NICKEL	8.5-25	7.25 B	29.3	12.2 B	8.18 B	9.81
POTASSIUM	8,500-43,000	400 U	685 B	455 U	333 U	278 B
SELENIUM	<0.1-0.125	1.2 U	0.909 U	1.37 U	5 U	2.92 B
SILVER	NE	0.8 U	0.606 U	0.91 U	0.666 U	0.344 U
SODIUM	6,000-8,000	518 B	504 B	602 B	485 B	267 B
THALLIUM	NE	1.2 U	0.909 U	1.37 U	0.999 U	0.516 U
VANADIUM	25-60	13.2 B	13.5 B	12.7 B	18.8	10.7
ZINC	37-60	70.6	66.1	59.2	94.7	45.6
CYANIDE		2.0 U	1.52 U	2.28 U	1.67 U	0.86 U

NOTES:

All values reported in mg/kg (ppm).

U - The analyte was not detected.

B - The reported value is less than the Contract

Required Detection Limit but greater than
the Instrument Detection Limit.NYS concentration range in uncontaminated soils from background
concentrations of 20 elements in soils with special regard for
New York State by E. Carol McGovern.

Table 35

**Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

Sample ID: Date Collected:	SWTCL #1 12/11/90	SWTCL #2 12/11/90	SWTCL #3 12/11/90	SWTCL #4 12/11/90	TRIP BLANK 12/11/90	SW91-1 12/2/91
Chloromethane	10 U	100 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	100 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	200 D	10 U	10 U	10 U	1 U
Chloroethane	10 U	100 U	10 U	10 U	10 U	1 U
Methylene Chloride	5 U	50 U	5 U	5 U	5 U	—
Acetone	10 U	10 U	10 U	10 U	10 U	—
Carbon Disulfide	5 U	50 U	5 U	5 U	5 U	—
1,1-Dichloroethane	5 U	50 U	5 U	5 U	5 U	1 U
1,1-Dichloroethane	5 U	48 JD	5 U	5 U	5 U	1 U
1,2-Dichloroethane (total)	80	1,600 D	5 U	1 J	5 U	20
Chloroform	5 U	50 U	5 U	5 U	5 U	1 U
1,2-Dichloroethane	5 U	50 U	5 U	5 U	5 U	1 U
2-Butanone	10 U	100 U	10 U	10 U	10 U	—
1,1,1-Trichloroethane	2 J	65 D	5 U	5 U	5 U	1 U
Carbon Tetrachloride	5 U	50 U	5 U	5 U	5 U	1 U
Vinyl Acetate	10 U	100 U	10 U	10 U	10 U	—
Bromodichloromethane	5 U	50 U	5 U	5 U	5 U	1 U
1,2-Dichloropropane	5 U	50 U	5 U	5 U	5 U	1 U
cis-1,3-Dichloropropene	5 U	50 U	5 U	5 U	5 U	1 U
Trichloroethene	4 J	50 D	4 J	5 U	5 U	1 U
Dibromochloromethane	5 U	50 U	5 U	5 U	5 U	1 U
1,1,2-Trichloroethane	5 U	50 U	5 U	5 U	5 U	1 U
Benzene	5 U	50 U	5 U	5 U	5 U	1 U
Trans-1,3-Dichloropropene	5 U	50 U	5 U	5 U	5 U	1 U
Chloroform	5 U	50 U	5 U	5 U	5 U	10 U
Methyl-2-pentanone	10 U	100 U	10 U	10 U	10 U	—
2-Hexanone	10 U	100 U	10 U	10 U	10 U	—
Tetrachloroethene	5 U	50 U	5 U	5 U	5 U	1 U
1,1,2,2-Tetrachloroethane	5 U	50 U	5 U	5 U	5 U	1 U
Toluene	5 U	10 JD	5 U	5 U	5 U	1 U
Chlorobenzene	5 U	50 U	5 U	5 U	5 U	1 U
Ethylbenzene	5 U	50 U	5 U	5 U	5 U	1 U
Styrene	5 U	50 U	5 U	5 U	5 U	—
Xylene (total)	5 U	50 U	5 U	5 U	5 U	3 U
Dichloromethane						1 U

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 -- - Not analyzed.

301930

Table 35

Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID:	SW91-2	SW91-3	SW91-4	SW91-5	SW91-6	SW91-7
Date Collected:	12/2/91	12/2/91	12/2/91	12/2/91	12/3/91	12/3/91
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	-	-	-	-	-	-
Acetone	-	-	-	-	-	-
Carbon Disulfide	-	-	-	-	-	-
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	26	20	19	23	16	18
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	-	-	-	-	-	-
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Acetate	-	-	-	-	-	-
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	-	-	-	-	-	-
Xylene (total)	3 U	3 U	3 U	3 U	3 U	3 U
Dichloromethane	1 U	1 U	1 U	1 U	1 U	1 U

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 -- - Not analyzed.

301931

Table 35

**Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

Sample ID: Date Collected:	SW91-8 12/3/91	SW91-9 12/3/91	SW91-10 12/3/91	SW91-11 12/3/91	SW91-12 12/3/91	SW91-13 12/3/91
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	-	-	-	-	-	-
Acetone	-	-	-	-	-	-
Carbon Disulfide	-	-	-	-	-	-
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	15	15	15	7	12	3
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	-	-	-	-	-	-
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Acetate	-	-	-	-	-	-
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U
2-Methyl-2-pentanone	-	-	-	-	-	-
2-Hexanone	-	-	-	-	-	-
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	-	-	-	-	-	-
Xylene (total)	3 U	3 U	3 U	3 U	3 U	3 U
Dichloromethane	1 U	1 U	1 U	1 U	1 U	1 U

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 - - Not analyzed.

301932

Table 35

**Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York**

Sample ID:	SW91-14	SW91-15	SW91-16	SW91-17	SW91-18	SW91-19
Date Collected:	12/3/91	12/3/91	12/4/91	12/4/91	12/4/91	12/4/91
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	--	--	--	--	--	--
Acetone	--	--	--	--	--	--
Carbon Disulfide	--	--	--	--	--	--
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (total)	10	9	10	4	1	1 U
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	--	--	--	--	--	--
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Acetate	--	--	--	--	--	--
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1 U	1 U	1 U	1 U	1 U	1 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U
Methyl-2-pentanone	--	--	--	--	--	--
2-Hexanone	--	--	--	--	--	--
Tetrachloroethene	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	--	--	--	--	--	--
Xylene (total)	3 U	3 U	3 U	3 U	3 U	3 U
Dichloromethane	1 U	1 U	1 U	3 B	1 U	1 U

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 -- - Not analyzed.

301933

Table 35

Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID: Date Collected:	SW91-20 12/4/91	DUPL 12/4/91	QCTRI BLANK 12/4/91	SW-92-1 9/29/92	SW-92-2 9/29/92	SW-92-3 9/29/92
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	1 U	1 U	1 U	10 U	10 U	10 U
Chloroethane	1 U	1 U	1 U	10 U	10 U	10 U
Methylene Chloride	-	-	-	5 U	5 U	5 U
Acetone	-	-	-	10 U	10 U	10 U
Carbon Disulfide	-	-	-	29	5 U	5 U
1,1-Dichloroethene	1 U	1 U	1 U	5 U	5 U	5 U
1,1-Dichloroethane	1 U	1 U	1 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	1 U	17	1 U	5 U	3 J	10
Chloroform	1 U	1 U	1 U	5 U	5 U	5 U
1,2-Dichloroethane	1 U	1 U	1 U	5 U	5 U	5 U
2-Butanone	-	-	-	10 U	10 U	10 U
1,1,1-Trichloroethane	1 U	1 U	1 U	5 U	5 U	5 U
Carbon Tetrachloride	1 U	1 U	1 U	5 U	5 U	5 U
Vinyl Acetate	-	-	-	-	-	-
Bromodichloromethane	1 U	1 U	1 U	5 U	5 U	5 U
1,2-Dichloropropane	1 U	1 U	1 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	1 U	1 U	1 U	5 U	5 U	5 U
Trichloroethene	0	1 U	1 U	5 U	5 U	2 J
Dibromochloromethane	1 U	1 U	1 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1 U	1 U	1 U	5 U	5 U	5 U
Benzene	1 U	1 U	1 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	1 U	1 U	1 U	5 U	5 U	5 U
Bromoform	10 U	10 U	10 U	5 U	5 U	5 U
2-Methyl-2-pentanone	-	-	-	10 U	10 U	10 U
2-Hexanone	-	-	-	10 U	10 U	10 U
Tetrachloroethene	1 U	1 U	1 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	5 U	5 U	5 U
Toluene	1 U	1 U	1 U	5 U	5 U	5 U
Chlorobenzene	1 U	1 U	1 U	5 U	5 U	5 U
Ethylbenzene	1 U	1 U	1 U	5 U	5 U	5 U
Styrene	-	-	-	5 U	5 U	5 U
Xylene (total)	3 U	3 U	3 U	5 U	5 U	5 U
Dichloromethane	1 U	1 U	1 U	-	-	-

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 -- - Not analyzed.

301934

Table 35

Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID:	SW-92-4	SW-92-5	SW-92-6	SW-92-7	SW-92-8	SW-92-9
Date Collected:	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5 U	5 U	0.9 J	5 U	5 U	1 JB
Acetone	10 U	7 J	10 U	10 U	10 U	10 U
Carbon Disulfide	5 U	4 J	5 U	10	5 U	1 J
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethene (total)	9	2 J	5 U	5 U	5 U	5 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	--	--	--	--	--	--
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	1 J	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U
Trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 U
Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	5 U	0.7 J	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U
Dichloromethane	--	--	--	--	--	--

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 -- - Not analyzed.

301935

Table 35

Summary of Volatile Organic Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site
Sidney, New York

Sample ID:	SW-92-10	TRIP
Date Collected:	9/29/92	BLANK
	9/29/92	9/29/92
Chloromethane	10 U	10 U
Bromomethane	10 U	10 U
Vinyl Chloride	10 U	10 U
Chloroethane	10 U	10 U
Methylene Chloride	5 U	2 J
Acetone	10 U	10 U
Carbon Disulfide	12	5 U
1,1-Dichloroethene	5 U	5 U
1,1-Dichloroethane	5 U	5 U
1,2-Dichloroethene (total)	5 U	5 U
Chloroform	5 U	5 U
1,2-Dichloroethane	5 U	5 U
2-Butanone	10 U	10 U
1,1,1-Trichloroethane	5 U	5 U
Carbon Tetrachloride	5 U	5 U
Vinyl Acetate	-	-
Bromodichloromethane	5 U	5 U
1,2-Dichloropropane	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U
Trichloroethene	5 U	5 U
Dibromochloromethane	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U
Benzene	5 U	5 U
Trans-1,3-Dichloropropene	5 U	5 U
Bromoform	5 U	5 U
Methyl-2-pentanone	10 U	10 U
2-Hexanone	10 U	10 U
Tetrachloroethene	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U
Toluene	5 U	5 U
Chlorobenzene	5 U	5 U
Ethylbenzene	5 U	5 U
Styrene	5 U	5 U
Xylene (total)	5 U	5 U
Dichloromethane	-	-

NOTES: All values reported in ug/l (ppb).
 U - The analyte was not detected.
 J - Indicates an estimated value.
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor.
 B - Probable laboratory contaminant.
 - - Not analyzed.

301936

Table 36

**Surface Water Dual Column Confirmation Results
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York**

DATE COLLECTED: SW-4D
SAMPLE ID: 12/4/91

Trichloroethene

11

NOTES:

Value reported in ug/l (ppb).
8010 Confirmation Column: N-Octane on Porasil
C 80/100 MESH 6' x 0.1" ID.

301937

Table 37

Summary of Semivolatile Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.	SWTCL #1	SWTCL #2	SWTCL #2	SWTCL #3	SWTCL #4
Date Collected	12/12/90	12/12/90	FIELD DUP 12/12/90	12/12/90	12/12/90
Phenol	10 U	10 U	10 U	10 U	11 U
bis(2-Chloroethyl) ether	10 U	10 U	10 U	10 U	11 U
2-Chlorophenol	10 U	10 U	10 U	10 U	11 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	11 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	11 U
Benzyl Alcohol	10 U	10 U	10 U	10 U	11 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	11 U
2-Methylphenol	10 U	10 U	10 U	10 U	11 U
bis(2-Chloroisopropyl) ether	10 U	10 U	10 U	10 U	11 U
4-Methylphenol	10 U	10 U	10 U	10 U	11 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U	11 U
Hexachloroethane	10 U	10 U	10 U	10 U	11 U
Nitrobenzene	10 U	10 U	10 U	10 U	11 U
Isophorone	10 U	10 U	10 U	10 U	11 U
2-Nitrophenol	10 U	10 U	10 U	10 U	11 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	11 U
Benzoic Acid	50 U	50 U	51 U	50 U	53 U
bis(2-Chloroethoxy)methane	10 U	10 U	10 U	10 U	11 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	11 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	11 U
Naphthalene	10 U	10 U	10 U	10 U	11 U
4-Chloroaniline	10 U	10 U	10 U	10 U	11 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	11 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	11 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	11 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	11 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	11 U
2,4,5-Trichlorophenol	50 U	50 U	51 U	50 U	53 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	11 U
2-Nitroaniline	50 U	50 U	51 U	50 U	53 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	11 U
Acenaphthylene	10 U	10 U	10 U	10 U	11 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	11 U
3-Nitroaniline	50 U	50 U	51 U	50 U	53 U
Acenaphthene	10 U	10 U	10 U	10 U	11 U
2,4-Dinitrophenol	50 U	50 U	51 U	50 U	53 U
4-Nitrophenol	50 U	50 U	51 U	50 U	53 U
Dibenzofuran	10 U	10 U	10 U	10 U	11 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	11 U
Diethylphthalate	10 U	10 U	10 U	10 U	11 U
4-Chlorophenyl-phenylether	10 U	10 U	10 U	10 U	11 U
Fluorene	10 U	10 U	10 U	10 U	11 U
4-Nitroaniline	50 U	50 U	51 U	50 U	53 U
4,6-Dinitro-2-methylphenol	50 U	50 U	51 U	50 U	53 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	11 U
4-Bromophenyl-phenylether	10 U	10 U	10 U	10 U	11 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	11 U
Pentachlorophenol	50 U	50 U	51 U	50 U	53 U
Phenanthrene	10 U	10 U	10 U	10 U	11 U
Anthracene	10 U	10 U	10 U	10 U	11 U
di-n-Butylphthalate	2 JD	1 JD	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	11 U
Pyrene	10 U	10 U	10 U	10 U	11 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U	11 U

301938

Table 37

Summary of Semivolatile Parameters in Surface Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

Well No.	SWTCL #1	SWTCL #2	SWTCL #2	SWTCL #3	SWTCL #4
Date Collected	12/12/90	12/12/90	FIELD DUP 12/12/90	12/12/90	12/12/90
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	21 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	11 U
Chrysene	10 U	10 U	10 U	10 U	11 U
bis(2-Ethylhexyl)phthalate	3 JBD	2 JBD	3 JBD	1 JBD	10 U
di-n-Octylphthalate	10 U	10 U	10 U	10 U	11 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	11 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	11 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	11 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	11 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	11 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	11 U

NOTES: All values reported in ug/l (ppb)
 U - The analyte was not detected
 J - Indicates an estimated value
 B - Analyte was also found in the associated blank
 D - Identifies all compounds identified in an analysis
 at a secondary dilution factor

Table 38

Summary of Pesticide/PCB in Surface Water
Richardson Hill Road Municipal Landfill Site -
Remedial Investigation
Sidney, New York

	Well No.:	SWTCL #1	SWTCL #2	SWTCL #3	SWTCL #4	EQUIP BLANK
	Date Collected:	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90
alpha-BHC		0.05 U	5 U	0.05 U	0.05 U	0.05 U
beta-BHC		0.05 U	5 U	0.05 U	0.05 U	0.05 U
delta-BHC		0.05 U	5 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)		0.05 U	5 U	0.05 U	0.05 U	0.05 U
Heptachlor		0.05 U	5 U	0.05 U	0.05 U	0.05 U
Aldrin		0.05 U	5 U	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide		0.05 U	5 U	0.05 U	0.05 U	0.05 U
Endosulfan I		0.05 U	5 U	0.05 U	0.05 U	0.05 U
Dieldrin		0.1 U	10 U	0.1 U	0.1 U	0.1 U
4-4'-DDE		0.1 U	10 U	0.1 U	0.1 U	0.1 U
Endrin		0.1 U	10 U	0.1 U	0.1 U	0.1 U
Endosulfan II		0.1 U	10 U	0.1 U	0.1 U	0.1 U
4-4'-DDD		0.1 U	10 U	0.1 U	0.1 U	0.1 U
Endosulfan Sulfate		0.1 U	10 U	0.1 U	0.1 U	0.1 U
4-4'-DDT		0.1 U	10 U	0.1 U	0.1 U	0.1 U
Methoxychlor		0.5 U	50 U	0.5 U	0.5 U	0.5 U
Endrin Ketone		0.1 U	10 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane		0.5 U	50 U	0.5 U	0.5 U	0.5 U
gamma-Chlordane		0.5 U	50 U	0.5 U	0.5 U	0.5 U
Toxaphene		1 U	100 U	1 U	1 U	1 U
PCB-1016		0.5 U	50 U	0.5 U	0.5 U	0.5 U
PCB-1221		0.5 U	50 U	0.5 U	0.5 U	0.5 U
PCB-1232		0.5 U	50 U	0.5 U	0.5 U	0.5 U
PCB-1242		0.5 U	50 U	0.5 U	0.5 U	0.5 U
PCB-1248		0.5 U	50 U	0.5 U	0.5 U	0.5 U
PCB-1254		1 U	100 U	1 U	1 U	1 U
PCB-1260		1 U	100 U	1 U	1 U	1 U

NOTE:

All values reported in ug/kg (ppb)

U - The analyte was not detected

TABLE 39

SURFACE WATER PCB ANALYSES
 RICHARDSON HILL ROAD MUNICIPAL LANDFILL SITE -
 REMEDIAL INVESTIGATION
 SIDNEY, NEW YORK

WELL NO.:	SW PCB #1	MS SW PCB #1	MSD SW PCB #1	FD SW PCB #1	SW PCB #3	SW PCB #4	SW PCB #5	REAGENT BLANK
DATE COLLECTED	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90	12/12/90
PCB	1.7	0.6	0.4	<0.1	2.9	0.34	0.13	<0.1
Aroclor	1248	1248	1248	---	1248	1248	1248	---

NOTES: All values reported in ug/l (ppb).
 * - Altered Aroclor pattern.
 ----- Not available
 MS - Matrix Spike
 MSD - Matrix Spike Duplicate
 FD - Field Duplicate

301941

TABLE 39

SURFACE WATER PCB ANALYSES
 RICHARDSON HILL ROAD MUNICIPAL LANDFILL SITE -
 REMEDIAL INVESTIGATION
 SIDNEY, NEW YORK

SAMPLE ID:	SW91-1	SW91-2	SW91-3	SW91-4	SW91-5	SW91-6	SW91-7	SW91-8	SW91-9	SW91-10	SW91-11
DATE COLLECTED	12/2/91	12/2/91	12/2/91	12/2/91	12/2/91	12/3/91	12/3/91	12/3/91	12/3/91	12/3/91	12/3/91

PCB	0.21	0.32	0.26	0.23	0.78	0.29	0.98	0.19	0.73	2.9	0.19
Aroclor	1248	1248	1248	1248	1248 + 1260	1248	1248	1248	1248	1248	1248

SAMPLE ID	SW91-12	SW91-13	SW91-14	SW91-15	SW91-16	SW91-17	SW91-18	SW91-19	SW91-20	BLIND DUPL.
DATE COLLECTED	12/3/91	12/3/91	12/3/91	12/3/91	12/4/91	12/4/91	12/4/91	12/4/91	12/4/91	12/4/91

PCB	0.64	0.53	0.25	*	0.26	0.42	0.15	0.2	<0.065	0.25
Aroclor	1248	1248	1248	1248	1248	1248	1248	1248	-----	1248

NOTES: All values reported in ug/l (ppb).
 * - Sample lost in a laboratory accident.
 ----- Not available

301942

Table 40

Surface Water Pesticide/PCB Data
Richardson Hill Road Municipal Landfill Site - RI
Sidney, New York

Well No.:	SW-92-1	SW-92-2	SW-92-3	SW-92-4	SW-92-5	SW-92-6
Date Collected:	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92	9/29/92
alpha-BHC	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
beta-BHC	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
delta-BHC	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
gamma-BHC	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
Heptachlor	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
Aldrin	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
Heptachlor Epoxide	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
Endosulfan I	0.051 U	0.13 U	0.051 U	0.051 U	0.052 U	0.14 U
Dieldrin	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
4,4-DDE	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
Endrin	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
Endosulfan II	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
4,4-DDD	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
Endosulfan Sulfate	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
4,4-DDT	0.1 U	0.26 U	0.1 U	0.1 U	0.1 U	0.27 U
Methoxychlor	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
Endrin Ketone	0.1 U	2.6 U	0.1 U	0.1 U	0.1 U	0.27 U
alpha Chlordane	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
gamma Chlordane	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
Toxaphene	1 U	2.6 U	1 U	1 U	1 U	2.7 U
Aroclor-1016	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
Aroclor-1221	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
Aroclor-1232	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
Aroclor-1242	0.51 U	1.3 U	0.51 U	0.51 U	0.52 U	1.4 U
Aroclor-1248	0.51 U	0.43 U	0.51 U	0.51 U	0.52 U	4.6
Aroclor-1254	1 U	2.6 U	1 U	1 U	1 U	2.7 U
Aroclor-1260	1 U	2.6 U	1 U	1 U	1 U	2.7 U

NOTES: All values reported in ug/l (ppb)
The analyte was not detected

Table 40

Surface Surface Water Pesticide/PCB Data
 Richardson Hill Richardson Hill Road Municipal Landfill Site - RI
 Sidney, New York

Well No.:	SW-92-7	SW-92-8	SW-92-9	SW-92-10
Date Collected:	9/29/92	9/29/92	9/29/92	9/29/92
alpha-BHC	0.051 U	0.05 U	0.052 U	0.053 U
beta-BHC	0.051 U	0.05 U	0.052 U	0.053 U
delta-BHC	0.051 U	0.05 U	0.052 U	0.053 U
gamma-BHC	0.051 U	0.05 U	0.052 U	0.053 U
Heptachlor	0.051 U	0.05 U	0.052 U	0.053 U
Aldrin	0.051 U	0.05 U	0.052 U	0.053 U
Heptachlor Epoxide	0.051 U	0.05 U	0.052 U	0.053 U
Endosulfan I	0.051 U	0.05 U	0.052 U	0.053 U
Dieldrin	0.1 U	0.1 U	0.1 U	0.11 U
4,4-DDE	0.1 U	0.1 U	0.1 U	0.11 U
Endrin	0.1 U	0.1 U	0.1 U	0.11 U
Endosulfan II	0.1 U	0.1 U	0.1 U	0.11 U
4,4-DDD	0.1 U	0.1 U	0.1 U	0.11 U
Endosulfan Sulfate	0.1 U	0.1 U	0.1 U	0.11 U
4,4-DDT	0.1 U	0.1 U	0.1 U	0.11 U
Methoxychlor	0.51 U	0.5 U	0.52 U	0.53 U
Endrin Ketone	0.1 U	0.1 U	0.1 U	0.11 U
alpha Chlordane	0.51 U	0.5 U	0.52 U	0.53 U
gamma Chlordane	0.51 U	0.5 U	0.52 U	0.53 U
Toxaphene	1 U	1 U	1 U	1.1 U
Aroclor-1016	0.51 U	0.5 U	0.52 U	53 U
Aroclor-1221	0.51 U	0.5 U	0.52 U	53 U
Aroclor-1232	0.51 U	0.5 U	0.52 U	53 U
Aroclor-1242	0.51 U	0.5 U	0.52 U	53 U
Aroclor-1248	0.51 U	0.5 U	0.52 U	53 U
Aroclor-1254	1 U	1 U	1 U	1.1 U
Aroclor-1260	1 U	1 U	1 U	1.1 U

NOTES: All values reported in ug/l (ppb)
 The analyte was not detected

Table 41

Surface Water Metals Data
Richardson Hill Road Municipal Landfill Site - RI
Sidney, New York

	SWTCL #1 12/12/90	SWTCL #2 12/11/90	SWTCL #2 FIELD DUP. 12/11/90	SWTCL #3 12/12/90	SWTCL #4 12/12/90
ALUMINUM	110 B	609	723	213	1390
ANTIMONY	50 U	50 U	50 U	50 U	50 U
ARSENIC	2 U	6.7 B	9.4 B	2 U	3.1 B
BARIUM	18 B	75 B	83 B	31 B	88 B
BERYLLIUM	1 U	1 U	1 U	1 U	1 U
CADMIUM	3 U	3 U	3 U	3 U	3 U
CALCIUM	7490	15800	15200	6790	7990
CHROMIUM	5 U	5 U	5 U	5 U	5 U
COBALT	5 U	5 U	5 U	5 U	5 U
COPPER	9 B	25	19 B	15 B	15 B
IRON	344	8990	11600	1010	7350
LEAD	1 U	2.7 B	2.8 B	2 B	7.4
MAGNESIUM	2100 B	4640 B	4470 B	2170 B	2480 B
MANGANESE	56	2850	3010	127	636
MERCURY	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
NICKEL	15 U	15 U	15 U	15 U	15 U
POTASSIUM	1040 B	1000 U	1000 U	1090 B	1000 U
SELENIUM	3 U	3 U	3 U	3 U	3 U
SILVER	2 B	2 U	2 U	3 B	2 U
SODIUM	3680 B	5020	4750 B	3230 B	3880 B
THALLIUM	1 U	1 U	1 U	1 U	1 U
VANADIUM	5 U	5 U	5 U	5 U	6 B
ZINC	16 B	38	30	15 B	33
CYANIDE	10 U	10 U	10 U	10 U	10 U

NOTES:

All values reported in g/l (ppb).

U - The analyte was not detected.

B - The reported value is less than the Contract
 Required Detection Limit but greater than
 the Instrument Detection Limit.

Table 42

Summary of Air Monitoring Results - Volatiles
 (NIOSH methods 1003 and 5503)
 Richardson Hill Road Municipal Landfill Site -
 Remedial Investigation
 Sidney, New York

Sample Location:	1 Front	1 Back	2 Front	2 Back	3 Front	3 Back	4A Front	4B Front	Trip Blank	
Date Collected:	9/28/88	9/28/88	9/28/88	9/28/88	9/28/88	9/28/88	9/28/88	9/28/88	Front 9/28/88	Back 9/28/88
Bromoform	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichlorobenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachloroethane	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzyl Chloride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon Tetrachloride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobromomethane	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloroform	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-Dichloroethane	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-Dichloroethylene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylene Dichloride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methyl Chloroform	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2-Trichloroethane	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-Trichloropropane	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTE: All values reported in mg/m³.

301946

Table 43

Summary of Air Monitoring Results - PCBs
 (NIOSH methods 1003 and 5503)
 Richardson Hill Road Municipal Landfill Site -
 Remedial Investigation
 Sidney, New York

Sample Location	Date Collected	PCBs
1 Front	9/28/88	<0.001
1 Back	9/28/88	<0.001
1 Filter	9/28/88	<0.001
3A Front	9/28/88	<0.001
3A Back	9/28/88	<0.001
3A Filter	9/28/88	<0.001
5A Front	9/28/88	<0.001
5A Back	9/28/88	<0.001
5A Filter	9/28/88	<0.001
5 Front	9/28/88	<0.001
5 Back	9/28/88	<0.001
5 Filter	9/28/88	<0.001
Trip Blanks		
Front	9/28/88	<0.001
Back	9/28/88	<0.001
Filter	9/28/88	<0.001

NOTE: All values reported in mg/m^3 .

Table 44
Richardson Hill Road Municipal Landfill Site
Surface Soil - RI Data Summary

Surface Soil

Analyte	Number of Detections	Number Analyzed	Min Conc. mg/l	Mean Conc. mg/kg	Max. Detected Conc. mg/kg	Screening Conc. mg/kg	Background Conc. mg/kg	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC ?
Aluminum	3	3	12000	13000	15000	7800	32200			
PCB/Aroclor 1248	29	34	0.018	39	480	0.08		0.032	0.032	COPC
Arsenic	3	3	9	11	11.5	0.37	28			
Barium	3	3	63	83	110	550	165			
Beryllium	1	2	0.35	0.575	0.80	0.15	1.03	0.70	0.70	
Cadmium	1	3	0.19	0.413	0.7	4	0.69	0.70	0.70	
Calcium	2	3	295	1198	2100			590.00	590.00	
Chromium	3	3	15	22.4	37.2	39	31			
Cobalt	3	3	10	12	14.0	470	17			
Copper	3	3	39	62	78.4	310	31			
Iron	3	3	22000	25133	28400	2300	59400			
Lead	3	3	24	35	46	400**	82			
Magnesium	3	3	2600	3457	3970		4480			
Manganese	3	3	726	909	1200	39	681			COPC
Nickel	3	3	18	23	26.6	160	28			
Potassium	2	3	630	803	750		1335			
Vanadium	3	3	16	18	20	55	55			
Zinc	2	2	81	90	91	2300	154			

*. Respective lowest and highest reported detection limit from among all samples of each analyte.

Notes:

1. Compounds were eliminated as COPCs consistent with RAGS Guidance.
2. Screening values based on USEPA Region III risk -based concentration table (October 20, 1995) unless otherwise noted.
3. Background levels based on two times the mean background concentration.
4. Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/95) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs.
5. Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration.

301945

Table 45
Richardson Hill Road Municipal Landfill Site
Subsurface Soil - RI Data Summary

Subsurface Soil

Analyte	Number of Detections	Number Analyzed	Min Conc. mg/kg	Max. Detected Conc. mg/kg	Screening Conc. mg/kg	Background Conc. mg/kg	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC ?
1,1,1-Trichloroethane	2	7	0.3	6.5	700				
1,1,2,2-Tetrachloroethane	1	7	0.2	0.2	3.2				
1,1-Dichloroethene	2	7	5.6	6	1.1				COPC
1,2-Dichloroethene	6	7	1.02	23	78		0.005	7.3	
2-Butanone	3	7	13	25	4700		0.011	7.2	
Acetone	3	7	8.2	13	780		0.011	7.2	
Aluminum	6	6	12300	17500	7800	32200			
Arsenic	6	6	3.29	10.9	0.37	28			
Barium	6	6	59.2	220	550	165			
Benzene	2	7	8.6	7.1	22		0.005	7.3	
Beryllium	6	6	0.451	2.1	0.15	1.03			COPC
Butylbenzylphthalate	1	7	0.1	0.1	310		0.013	58	
Cadmium	3	6	1.8	2.77	3.9	0.69	0.327	0.345	
Calcium	6	6	547	3500					
Chlorobenzene	3	7	0.2	8.1	160		0.005	7.3	
Chloroform	1	7	0.3	0.3	100		0.005	7.3	
Chromium**	6	6	14.4	48.6	7800	31			
Cobalt	6	6	8.6	14.6	470	17			
Copper	6	6	7.37	424	39	31			COPC
Ethylbenzene	4	7	1.4	3.9	780		0.005	7.3	
Iron	6	6	19600	53100		59400			
Lead	6	6	3.1	136	400**	62			
Magnesium	6	6	2440	6370		4480			
Manganese	6	6	277	1450	681	681			COPC
Mercury	1	6	0.13	0.13	2.3		0.109	0.175	
Naphthalene	1	2	700	700	1600		0.013	3.7	
Nickel	6	6	22.8	37.6	160	28			
PCB	109	123	0.08	7000	0.083		0.08	0.5	COPC
PCB-1248	9	14	0.13	14000	0.083		0.13	0.14	COPC
Potassium	6	6	733	1780		1335			
Selenium	1	6	0.612	0.612	39	2.1	0.3	0.345	
Silver	1	6	1.17	1.17	39		0.218	2.8	
Sodium	5	6	107	533		140.6	83.3	83.3	
Tetrachloroethene	1	7	0.3	0.3	12		0.005	7.8	
Toluene	7	7	24	110	1600		0.006	7.3	
Trichloroethene	5	7	2.3	220	58		0.005	2.8	COPC
Vanadium	6	6	15.1	23.1	55	55			
Xylenes	4	7	2.7	5.2	16000		0.005	3.6	
Zinc	6	6	64.3	413	2300	154			

* - Respective lowest and highest reported detection limit from among all samples of each analyte.

** - It is likely that the maximum detectable concentration is largely Cr III. Therefore, chromium was not retained as a COPC.

Notes:

- Compounds were eliminated as COPCs consistent with RAGS Guidance.
- Screening values based on USEPA Region III risk-based concentration table (October 20, 1995) unless otherwise noted.
- Background levels based on two times the mean background concentration.
- Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/95) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs.
- Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration.

301949

Table 46
Richardson Hill Road Municipal Landfill Site
Site Ground Water - RI Data Summary

Ground Water

Analyte	Number of Detects	Number Analyzed	Minimum Conc. ug/L	Maximum Conc. ug/L	Screening Conc. ug/L	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC?
1,1,1-Trichloroethane	25	80	6	1300	130	1	100	COPC
1,1-Dichloroethane	10	76	27	390	81	1	500	COPC
1,1-Dichloroethene	5	55	13	100	0.04	1	500	COPC
1,2-Dichloroethane	3	3	1000	26000	6.1			COPC
1,2-Dichloroethene (total)	7	20	2	6800	5.5	1	1	COPC
4-Methylphenol	1	10	1	1	18	10	11	
Acetone	9	18	26	3800	370	10	100	COPC
Aluminum	12	17	0.207	48500	3700	0.2	20	
Antimony	2	17	0.68	50	1.5	0.06	50	COPC
Arsenic	18	25	0.014	88	1.1	0.01	2	COPC
Barium	11	17	0.214	412	260	0.2	10	COPC
Benzene	1	74	1	1	0.36	1	500	
Benzyl Alcohol	3	10	2	16	1100	10	11	
Beryllium	3	17	0.028	4	0.018	0.005	1	COPC
Bromodichloromethane	1	74	1	1	0.17	1	500	
Butylbenzyl phthalate	1	5	1	1	730	11	11	
Cadmium	4	17	0.006	3	1.8	0.005	3	COPC
Calcium	16	17	5.93	61900		200	200	
Chlorobenzene	4	75	4	19	3.9	1	500	COPC
Chloroethane	1	74	20	20	880	1	1000	
Chloroform	4	76	1	410	0.15	1	1000	COPC
Chromium	10	17	0.011	564	18	0.01	5	
Cobalt	4	17	0.899	95	220	0.05	5	
Copper	9	17	0.034	214	140	0.025	5	COPC
Di-n-butyl phthalate	2	5	1	1	370	11	11	
Diethylphthalate	1	10	4	4	2900	10	11	
Ethylbenzene	10	78	2	220	130	1	500	COPC
Iron	22	25	0.208	1890000	1100	20	20	
Lead	16	25	0.008	510	15 **	0.005	1	COPC
Magnesium	14	17	2	5320		1	5	
Manganese	14	17	0.094	22400	18	200	200	COPC
Mercury	6	17	0.0012	3.19	1.1	0.0002	0.2	COPC
Methylene Chloride	10	68	1	130	4.1	1	100	COPC
Naphthalene	2	10	2	2		10	11	
Nickel	8	17	0.048	323	73	0.04	15	COPC
PCB/Aroclor 1248	41	56	0.1	580	0.0087	0.065	0.8	COPC
Potassium	8	17	5.79	30700		5	1000	
Silver	4	17	0.047	4	18	0.01	2	
Sodium	14	17	6.64	28900		5	200	
Tetrachloroethene	6	55	3	68	1.1	1	500	COPC

* - Respective lowest and highest reported detection limit from among all samples of each analyte

** - Federal Action Level, Safe Drinking Water Act, USEPA (1995) Drinking Water Standards

301950

Table 46 cont.
Richardson Hill Road Municipal Landfill Site
Site Ground Water - RI Data Summary

Ground Water

Analyte	Number of Detects	Number Analyzed	Minimum Conc. ug/L	Maximum Conc. ug/L	Screening Conc ug/L	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC?
Toluene	15	78	7	1800	75	1	500	COPC
Trichloroethane	3	3	450	3800	130			COPC
Trichloroethene	44	75	1	8400	1.6	1	100	COPC
Vanadium	5	17	0.085	87	28	0.05	5	COPC
Vinyl Chloride	13	79	150	3500	0.019			COPC
Xylene	4	55	24	180	1200			
Zinc	14	17	0.012	385	1100	0.01	5	
bis(2-Ethylhexyl)phthalate	3	5	1	7	4.8	1	10	COPC
cis-1,2-Dichloroethene	1	2	100	100	6.1	1	1	COPC
cis-1,3-Dichloropropylene	1	20	1	1	0.077	1	100	
di-n-Butylphthalate	1	5	1	1		10	10	
m-Xylene	1	1	4	4	140			
o-Xylene	1	1	2	2	140			
p-Xylene	2	2	1	100	52			COPC
trans-1,2-Dichloroethene	28	54	1	24000	12	1	50	COPC

* - Respective lowest and highest reported detection limit from among all samples of each analyte.

** - Federal Action Level, Safe Drinking Water Act, USEPA (1995) Drinking Water Standards

Notes:

1. Compounds were eliminated as COPCs consistent with RAGS Guidance.
2. Screening values based on USEPA Region III risk -based concentration table (October 20,1995) unless otherwise noted.
3. Background levels based on two times the mean background concentration.
4. Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/85) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs.
5. Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration.

301951

Table 46a
Richardson Hill Road Municipal Landfill Site
North Area Ground Water - RI Data Summary

North Ground Water

Analyte	Number of Detects	Number Analyzed	Minimum Conc. ug/L	Maximum Conc. ug/L	Screening Conc. ug/L	Retained as COPC?
1,1,1-Trichloroethane	3	13	0.008	13400	130	COPC
Aluminum	1	2	6.46	6.46	3700	
Arsenic	2	4	3	3	1.1	COPC
Butyl benzyl phthalate	1	1	1	1	730	
Chromium	1	2	0.14	0.14	18	
Copper	1	2	0.03	0.03	140	
Di-n-butyl phthalate	1	1	1	1	370	
Manganese	2	2	0.1	0.43	18	
Nickel	1	2	0.1	0.1	73	
PCB/Aroclor 1248	3	10	0.1	0.29	0.0087	COPC
Tetrachloroethene	2	10	3	7	1.1	COPC
Trichloroethane	7	7	2	340	1.8	COPC
Zinc	2	2	0.012	0.05	1100	
trans-1,2-Dichloroethene	4	10	2	8	12	

* - Respective lowest and highest reported detection limit from among all samples of each analyte.

NA - Not available

Notes:

1. Compounds were eliminated as COPCs consistent with RAGS Guidance.
2. Screening values based on USEPA Region III risk -based concentration table (October 20,1995) unless otherwise noted.
3. Background levels based on two times the mean background concentration.
4. Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/95) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs.
5. Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration.

301952

Table 47
Richardson Hill Road Municipal Landfill Site
Sediment - RI Data Summary

Sediment

Analyte	Number of Detections	Number Analyzed	Min Conc. mg/kg	Mean Conc. mg/kg	Max. Detected Conc. mg/kg	Screening Conc. mg/kg	Background Conc. mg/kg	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC?
1,1-Dichloroethane	6	40	0.0005	0.063	0.3	780		0.001	0.34	
1,2-Dichloroethylene (total)	10	41	0.0005	0.128	3.5	70		0.001	0.34	
1,4-Dichlorobenzene	1	9	0.003	0.041	0.003	2.7				
Acetone	5	6	0.0075	0.177	0.41	780		0.015	0.015	
Aluminum	7	7	8750	14879	34100	7800	21105			
PCB/Aroclor-1248	65	76	0.059	44.3	1300	0.063		0.065	3.8	COPC
Arsenic	2	2	6.8	21.0	35.2	0.43				COPC
Barium	7	7	125	264.7	500	550	213.9			
Benzene	1	9	0.004	0.041	0.004	22				
Calcium	3	3	2860	3533	4180					
Carbon Disulfide	8	19	0.002	0.052	0.058	780		0.006	0.009	
Chlorobenzene	5	38	0.0005	0.024	0.063	160		0.001	0.34	
Chloroethane	2	39	0.0005	0.023	0.031	3100		0.001	0.34	
Chromium**	7	7	11.4	23.7	55.3	7800	30.25			
Cobalt	1	1	22.9	22.9	22.9	470	13.55			
Copper	3	7	10.8	27.0	80.3	310	52.75			
Ethylbenzene	7	40	0.0005	0.048	0.45	780		0.001	0.34	
Iron	7	7	10500	16043	23800	2300	31550			
Lead	7	7	32.4	88.9	380	400	107.1			
Magnesium	2	2	2450	3425	4400		3820			
Manganese	8	8	462	1220	2860	39	921			COPC
Chloromethane (Methyl chloride)	3	38	0.0085	0.108	0.046	85				
2-Butanone (Methyl ethyl ketone)	13	17	0.0065	0.109	0.25	4700		0.013	0.015	
Dichloromethane (Methylene chloride)	5	19	0.0005	0.020	0.18	85				
Nickel	1	1	29.3	29.3	29.3	160	25.5			
Potassium	1	2	200	1051	1725					
Selenium	1	4	0.4545	1.0	2.4	39	5	0.909	5	
Toluene	15	40	0.0005	0.118	1.4	1600		0.001	0.34	
Vanadium	5	5	15.7	24.4	33.3	55				
Vinyl Chloride	2	9	0.0125	0.209	0.41	0.34		0.028	0.19	COPC
Xylene (total)	4	28	0.002	0.084	0.38	16000	35.5	0.004	1	
Zinc	7	7	88.1	85.4	118	2300				
cis-1,2-Dichloroethane	6	11	0.003	0.113	0.82	78	178.35		0.002	
trans-1,2-Dichloroethane	3	11	0.001	0.067	0.26	160				
m-Xylene	2	2	0.003	0.092	0.18	27				
o-Xylene	2	2	0.003	0.043	0.083	16000				
p-Xylene	1	2	0.001	0.018	0.034	160		0.002	0.002	

* - Respective lowest and highest reported detection limit from among all samples of each analyte

** - It is likely that the maximum detectable concentration is largely Cr III. Therefore, chromium was not retained as a COPC.

Notes:

- Compounds were eliminated as COPCs consistent with RAGS Guidance.
- Screening values based on USEPA Region III risk-based concentration table (October 20, 1995) unless otherwise noted.
- Background levels based on two times the mean background concentration.
- Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/95) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs.
- Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration.

301953

Table 48
Richardson Hill Road Municipal Landfill Site
Surface Water - RI Data Summary

Surface Water

Analyte	Number of Detections	Number Analyzed	Min Conc. ug/l	Mean Conc. ug/l	Max. Detected Conc. ug/l	Screening Conc. ug/l	Background Conc. ug/l	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC?
1,1,1-Trichloroethane	2	39	0.5	3.01	65	130		1	1	
1,1-Dichloroethane	1	39	0.5	2.59	48	81		1	5	
1,2-Dichloroethylene (total)	25	33	0.5	56.53	1600	5.5		5	5	COPC
Acetone	3	18	5	5.558	9	370		10	10	
Aluminum	7	7	43.5	265	723	3700	225.05			
PCB/Aroclor-1248	26	43	0	1.77	4.6	0.0087		0	53	COPC
Barium	3	3	42.8	44.3	88	260	28.45		5	
Calcium	8	8	7	4818	15800		9015			
Carbon Disulfide	7	18	1	6.8	29	100		5	50	
Copper	1	1	25	25	25	150	10.05			
Iron	8	8	2	2934	11600	1100	1090			
Lead	1	2	0.5	1.95	7.4	15	3.5	1	5	
Magnesium	5	5	2	3	4640		3152			
Manganese	8	8	1	848.9	3010	18	158.25			COPC
Mercury	3	8	0.05	0.105	0.17	1				
Dichloromethane (Methylene Chloride)	8	38	0.5	2.4	8	4.1		1	50	COPC
Potassium	4	6	1	167	1090			1000	1000	
Sodium	6	8	2	839	5020		3935			
Tetrachloroethylene	1	39	0.5	1.35	0.7	1.1		1	50	
Toluene	1	39	0.5	1.61	10	75		1	5	
Trichloroethylene	6	40	0.5	3.13	59	1.6		1	11	COPC
Vinyl chloride	2	39	0.5	7.60	200	0.019		1	10	COPC
Zinc	3	3	12.1	26.7	38	1100				
cis-1,2-Dichloroethane	4	8	2	5.83	23	8.1				COPC
di-n-Butylphthalate	2	3	1	2.6	2	370		10	10	

*- Respective lowest and highest reported detection limit from among all samples of each analyte.

Notes:

- Compounds were eliminated as COPCs consistent with RAGS Guidance
- Screening values based on USEPA Region III risk -based concentration table (October 20, 1995) unless otherwise noted
- Background levels based on two times the mean background concentration
- Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/95) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs
- Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration

301954

Table 49
Richardson Hill Road Municipal Landfill Site
Spring Water - RI Data Summary

Analyte	Number of Detects	Number Analyzed	Minimum ug/L	Maximum ug/L	Screening Conc. ug/L	Lowest Minimum* Detection Limit	Highest Minimum* Detection Limit	Retained as COPC?
1,1,1-Trichloroethane	1	2	2	2	130			COPC**
Trichloroethene	2	2	44	62	1.6			COPC
Naphthalene	1	2	4	4	150			COPC**

* - Respective lowest and highest reported detection limit from among all samples of each analyte

** - Compounds retained as COPCs because the spring is used as a potable water supply.

Notes:

1. Compounds were eliminated as COPCs consistent with RAGS Guidance
2. Screening values based on USEPA Region III risk -based concentration table (October 20, 1995) unless otherwise noted
3. Background levels based on two times the mean background concentration
4. Consistent with the Sidney Landfill Risk Assessment (Malcolm Pirnie, 2/95) aluminum and essential inorganic nutrients (calcium, iron, magnesium, potassium, and sodium) were eliminated as COPCs
5. Analytes detected at the site were, unless otherwise noted, selected as COPCs if the site concentration detected exceeded both the screening value and the background concentration

301955

Table 50
Richardson Hill Road Municipal Landfill Site
Summary of Chemicals of Potential Concern

COPCs

Analyte	Surface Soil	Sediment	Surface Water	Subsurface Soil	Spring Water	Ground Water	North Area Ground Water
1,1,1-Trichloroethane					X	X	X
1,1-Dichloroethane						X	
1,1-Dichloroethene				X		X	
1,2-Dichloroethene			X			X	
Acetone						X	
Antimony						X	
Arsenic		X				X	X
Barium						X	
Beryllium				X		X	
Cadmium						X	
Chlorobenzene						X	
Chloroform						X	
Copper				X		X	
Ethylbenzene						X	
Lead						X	
Manganese	X	X	X	X		X	
Mercury						X	
Dichloromethane (Methylene Chloride)			X			X	
Naphthalene					X		
Nickel						X	
PCB/Aroclor 1248	X	X	X	X		X	X
Tetrachloroethene						X	X
Toluene						X	
Trichloroethane						X	
Trichloroethene			X	X	X	X	X
Vanadium						X	
Vinyl Chloride		X	X			X	
cis-1,2-Dichloroethene			X			X	
p-Xylene						X	
trans-1,2-Dichloroethene						X	

301956

Table 51
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment

Summary of Exposure Pathways.

Exposure Pathway		Receptor			Exposure Route	Pathway Quantified?	Comment
		CW	R	RU			
Contact with Surface Soils	Complete			✓	II, DC	Yes	a
Contact with Subsurface soils	Complete	✓			II, DC	Yes	b
Contact with Surface Water/Sediment	Complete			✓	II, DC	Yes	c
Inhalation of Outdoor Air	Complete		✓		IV, ID	No	d
Spring Water - current use of spring water as domestic water supply. North Area.	Complete		✓		DC, I, IS	Yes	e
Site Ground Water - Potential future use of shallow ground water as a domestic water supply.	Incomplete					No	f
North Area Ground Water	Complete		✓		I	Yes	g
Ingestion of Fish	Incomplete					No	h

I - Ingestion, II - Incidental Ingestion

CW - Construction Worker, R - Resident

RU - Recreator, RF - Recreational Fisherman

DC - Dermal Contact, IV - Inhalation of Vapors

ID - Inhalation of Dust, IS - Inhalation while Showering

- a) Chemical residues may be present in surface soils and may be contacted by potential recreators at the landfill. Note that although complete, the surface soil exposure route for the construction worker was not quantified since the subsurface route was believed to be the predominate exposure pathway.
- b) Subsurface soils may be contacted by potential future construction workers if the landfill is excavated.
- c) Subsurface soils may be contacted by construction workers if soils are excavated.
- d) While exposure to VOCs and ambient dust is possible, these exposures are negligible relative to other potential exposures at the site, since PCBs and VOCs were not detected during ambient air monitoring activities conducted at the RHRML site.
- e) Spring water is currently used as a domestic water supply. Amphenol has installed water treatment systems which reduce analyte concentrations in the water to potable standards. However, pursuant to discussions with USEPA, the household use of spring water, assuming no remediation, has been quantified in this risk assessment.
- f) Shallow site ground water is defined as the ground water/leachate that exists between RHRMLS and the South Pond. For the following reasons, it is impractical to assume any use of this ground water for residential or commercial purposes in the reasonably foreseeable future: site topography, depth to bedrock, the short distance between the landfill and South Pond which includes Richardson Hill Road (approximately 250 ft. including easements), and the difficulty that would be encountered in drilling a well into the bedrock. In any event, since the system is contaminated, it will obviously require remediation.
- g) At the recommendation of USEPA, the ingestion of North Area ground water has been addressed. North Area ground water is, however, not hydraulically connected to that of the Site. Only ingestion has been quantified.
- h) No edible fish were obtained from the South Pond and down gradient ponds following seining and electroshocking activities. As such, it is unlikely that the South Pond and down gradient ponds support sufficient edible fish populations. Therefore, the fish ingestion pathway is not likely to be significant exposure mechanism at the Site.

301957

Table 52
Richardson Hill Road Municipal Landfill Site
Summary of Exposure Point Concentrations

Analyte	Number of Detects	Number Analyzed	Minimum Concentration	Maximum Concentration	Average Conc (Arithmetic Mean)	Standard Deviation	Standard Error	t Value **	95 % UCL	RME Conc.
Surface Soil (mg/kg)										
Aroclor 1248	29	34	0.02	480	39.00	112.00	20.80	1.699	74.34	74
Manganese	6	6	157	1200	625.00					1200
Subsurface soil (mg/kg)										
1,1-Dichloroethene	2	7	5.6	6						6
Beryllium	9	9	0.451	2.1	1.30					2
Copper	9	9	7.37	424	85.00					424
Manganese	9	9	277	1450	606.00					1450
PCB/Aroclor 1248	120	135	0.08	14000	367.91	1502.06	137.12	1.658	582.62	583
Trichloroethene	5	7	2.3	220	126.00					220
Sediment (mg/kg)										
Aroclor-1248	65	76	0.06	1300	44.25	160	19.85	1.669	77.37	77
Arsenic	7	7	4.8	35.2	11.60					35
Benzo(a)pyrene	1	4	0.5	0.5	15.60					1
Manganese	8	8	462	2860	1220					2860
Vinyl chloride	2	10	0.007	0.41	0.08					0.41
Surface Water (ug/l)										
1,2-Dichloroethene (total)	26	35	0.5	1600	56.53	268	52.56	1.708	146.20	146
cis-1,2-Dichloroethene	4	6	2.0	23	5.83					23
PCB/Aroclor-1248	26	45	0.00	4.6	1.70	5.3	1.04	1.708	3.47	3
Manganese	10	10	1.0	3010	755.40					3010
Dichloromethane (Methylene chloride)	4	41	0.5	8	2.40					8
Trichloroethene	7	42	0.5	59	1.98					59
Vinyl chloride*	2	41	0.5	200	7.48					7
Spring Water (ug/l)										
1,1,1,-Trichloroethane	1	2	2	2	2.00					2
Trichloroethene	2	2	44	62	53.00					62
Naphthalene	1	2	4	4	4.00					4
North Area Ground Water (ug/l)										
Arsenic	2	4	3	3	3.00					3
1,1,1,-Trichloroethane	3	13	0.008	13400						13400
Aroclor 1248	3	10	0.01	0.29	0.18					0.29
Tetrachloroethene	2	10	3	7	5.00					7
Trichloroethene	7	10	2	340	148.00					340

Table values are rounded to the nearest whole number for RME concentration except for North Area ground water.

* The maximum concentration of vinyl chloride was not used as the RME concentration for surface water due to the low frequency of detection. The RME concentration was calculated as the arithmetic mean of the data, assuming that non-detects are present at one-half the detection limit.

** t Value = Value at (n-1) degrees of freedom and 95% confidence where n is the number of observations.

301958

Table 53
Richardson Hill Road Municipal Landfill
Summary of CDI Equations

Pathway	Equation to Calculate Chronic Daily Intake (CDI)
Incidental Ingestion of Soil or Sediment	$CDI = \frac{C_{soil} * IR_{soil} * FI * EF * ED * 1E-6 \text{ kg/mg}}{BW * AT}$
Dermal Contact with Soil or Sediment	$CDI = \frac{C_{soil} * SA * ABS * AF * EF * ED * 1E-6 \text{ kg/mg}}{BW * AT}$
Incidental Ingestion of Water	$CDI = \frac{C_{water} * IR_{water} * ET * EF * ED * 0.001 \text{ (}\mu\text{g/mg)}}{BW * AT}$
Dermal Contact with Water	$CDI = \frac{C_{water} * SA * 0.001 \text{ mg/}\mu\text{g} * PC * ET * EF * ED * 0.001 \text{ l/cm}^3}{BW * AT}$
Inhalation of Vapor While Showering	$CDI = (((C_{water} * (0.001 \text{ mg/}\mu\text{g}) * FV * FL * SD) / BV) / IR_{air} * ET * EF * ED) / (BW * AT)$

Key to Table Parameter Values (Tables 53 - 57)

CDI - (no units)
 C_{soil} - (mg/kg)
 C_{water} - ($\mu\text{g/L}$)
 C_{air} - ($\mu\text{g/m}^3$) - concentration of COPC in air
 D_{air} - (mg/kg) - concentration of dust in air
 C_{fish} - (mg/kg) - concentration of analyte in fish
 IR_{soil} - (mg/day) - ingestion rate of soil
 IR_{water} - (L/hr) - ingestion rate of water
 IR_{air} - (m^3/hr) - inhalation rate of air
 IR_{fish} - (kg/meal) - ingestion rate of fish
EF - (days/year) - exposure frequency
ED - (years) - exposure duration
BW - (kg) - body weight
ET - (hours/day) - exposure time
ABS - (no units) - dermal absorption constant
AF - (mg/cm^2) - soil to skin adherence factor
AT - (days) - averaging time
PC - (cm/hour) - dermal permeability constant
SA - (cm^2/day) - skin surface area available
FV - (no units) - fraction of COPC volatilized
FI - (no units) - fraction of soil/sediment ingested from site
BV - (m^3) - bathroom volume
FL - (L/hour) - shower flow rate

Table 54
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment
Chronic Daily Intake Parameter Estimates

Remedial Construction Worker

Pathway	Parameter	Description	Upper Bound	Justification	Reference
General	EF	Exposure Frequency (days/year)	50	Judgement for estimated duration of construction activities	Site Specific
	ED	Exposure Duration (years)	1	Judgement	Site Specific
	BW	Body Weight (kg)	70	USEPA recommended value for adults	USEPA 1989
	AT	Averaging Time (non-cancer) (days)	365		USEPA 1989
	AT	Averaging Time (cancer) (days)	25550	USEPA recommended value	USEPA 1989
Incidental Ingestion of, and Dermal Contact with Surface/Sub-surface Soils	C _{soil}	Concentration in Soil (mg/kg)	Chem. Spec.	Based on analytical data (see text)	Chem. Spec.
	I _{rsoil}	Soil Ingestion Rate (mg/day)	480	USEPA recommended value	USEPA 1989b
	SA	Skin Surface Area Available (cm ² /day)	5800	The average value represents 25 % of the estimated median total skin surface area for adults in the United States, whereas the upper bound value reflects 25 % of the upper 95th percentile of total skin surface area.	USEPA 1992d
	FI	Fraction Ingested from Site (no units)	1		
	AF	Soil to Skin Adherence Factor (mg/cm ²)	0.2	USEPA recommended value	USEPA 1992d
	ABS	Dermal Absorbtion Constant (no units)	Chem. Spec.	Value obtained from literature review.	Chem. Spec.

301961

Table 55
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment
Chronic Daily Intake Parameter Estimates

Adolescent Recreational User

Pathway	Parameter	Description	Upper Bound	Justification	Reference
General	EF	Exposure Frequency (days/year)	50	The average and upper bound estimates assume that the adolescent would be active at the site an average of once every two weeks, or once every week as a reasonable upper bound.	
	ED	Exposure Duration (years)	6	Adolescent recreator is defined as 12 - 18 years of age.	USEPA 1989
	BW	Body Weight (kg)	57.7	Adolescent recreator is defined as 12 - 18 years of age.	USEPA 1989
	AT	Averaging Time (non-cancer) (days)	2190	USEPA recommended value	USEPA 1989
	AT	Averaging Time (cancer) (days)	25550	USEPA recommended value	USEPA 1989
Incidental Ingestion of, and Dermal Contact with Soils/Sediments	C _{soil}	Concentration in Soil (mg/kg)	Chem. Spec.	Based on analytical data	Chem. Spec.
	IR _{soil}	Soil Ingestion Rate (mg/day)	100	USEPA recommends a default RME soil intake rate of 200 mg/day for children, or 0 mg/day for adults. Therefore, an RME value of 100 mg/day was selected for adolescent recreators.	USEPA 1989
	FI	Fraction Ingested from Site (no units)	1		
	SA	Skin Surface Area Available (cm ² /day)	5800	USEPA recommended value	USEPA 1992
	AF	Soil to Skin Adherence Factor (mg/cm ²)	1.0	USEPA recommended value for average and RME adherence factors.	USEPA 1992
	ABS	Absorbtion Constant (no units)	Chem. Spec.	Value obtained from literature review.	Chem. Spec.

301962

Table 55 (cont.)
 Richardson Hill Road Municipal Landfill
 Human Health Risk Assessment
 Chronic Daily Intake Parameter Estimates

Adolescent Recreational User

Contact with Surface	C_{water}	Concentration in Water ($\mu\text{g/L}$)	Chem. Spec.	Chem. Spec.	Based on analytical data	Chem. Spec.
Water	IR_{water}	Water Ingestion Rate (ml/hour)	10	10	Professional Judgement	
	EF	Exposure Frequency (hr/day)	1	2	Professional Judgement	

Table 56
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment

Current Adult Resident - North Area
(Spring User)

Pathway	Parameter	Description	Upper Bound	Justification	Reference
General	EF	Exposure Frequency (days/year)	350	Conservative Estimate	
	ED	Exposure Duration (years)	24	Average and upper 95 percentile for time spent at a given residence for the United States population	USEPA 1989
	BW	Body Weight (kg)	70	USEPA recommended value for adults	USEPA 1989
	AT	Averaging Time (non-cancer) (days)	8760	USEPA recommended value	USEPA 1989
	AT	Averaging Time (cancer) (days)	25550	USEPA recommended value	USEPA 1989
Dermal Contact with Spring Water	C _{water}	Chemical Concentration in Water (mg/L)	Chem. Spec.	Based on analytical data	Chem. Spec.
	SA	Skin Surface Area Available for Contact (cm ²)	19400	USEPA recommended value	USEPA 1992
	PC	Chemical Specific Permeability Constant (cm/hr)	Chem. Spec.	Value obtained from literature review.	Chem. Spec.
	ET	Exposure Time (hours/day)	0.3	Judgment	
Ingestion of Drinking Water	C _{water}	Concentration in Water	Chem. Spec.		
	IR _{water}	Ingestion Rate (l/day)	2.0	Recommended default values	USEPA 1989

301964

Table 56 (cont.)
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment

Current Adult Resident (Spring User)

Pathway	Parameter	Description	Upper Bound	Justification	Reference
Inhalation of Vapors while Showering	C_{water}	Concentration of VOC in Water ($\mu\text{g/L}$)	Chem. Spec.	RAGS part B presents estimates of volatilized fractions from household sources ranging from 30% from toilets to 90% from dishwashers. Based on these data, average and RME Fvs of 50% and 75% respectively were estimated.	Judgement
	FL	Fraction of Chemical Volatilized (no units)	1.0		
	FV	Shower Flow Rate (L/hr)	3420	USEPA 1989 states that estimated shower flow rates in the United States range from 5 to 15 gallons/minute (1140 to 3429 l/min). Based on these estimates, average and RME flow rates of 2140 and 3420 l/hr respectively were selected.	USEPA 1989
	BV	Bathroom Volume (m^3)	12	Judgement	
	IR_{air}	Inhalation Rate in Shower (m^3/hour)	0.6	Default value	USEPA 1989
	ET	Exposure Time (hours/day)	0.2	Estimated median and 90th percentile for time spent showering for householders in Australia	USEPA 1989

Table 56a
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment

Current Child Resident - North Area
(Spring User)

Pathway	Parameter	Description	Upper Bound	Justification	Reference
General	EF	Exposure Frequency (days/year)	350	Conservative Estimate	
	ED	Exposure Duration (years)	6	Average and upper 95 percentile for time spent at a given residence for the United States population	USEPA 1989
	BW	Body Weight (kg)	15	USEPA recommended value for adults	USEPA 1989
	AT	Averaging Time (non-cancer) (days)	2190	USEPA recommended value	USEPA 1989
	AT	Averaging Time (cancer) (days)	25550	USEPA recommended value	USEPA 1989
Dermal Contact with Spring Water	C _{water}	Chemical Concentration in Water (mg/L)	Chem. Spec.	Based on analytical data	Chem. Spec.
	SA	Skin Surface Area Available for Contact (cm ²)	9310	USEPA recommended value	USEPA 1992
	PC	Chemical Specific Permeability Constant (cm/hr)	Chem. Spec.	Value obtained from literature review.	Chem. Spec.
	ET	Exposure Time (hours/day)	0.2	Judgment	
Ingestion of Drinking Water	C _{water}	Concentration in Water	Chem. Spec.		
	IR _{water}	Ingestion Rate (l/day)	1	Recommended default values	USEPA 1989

301966

Table 56a (cont.)
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment

Current Child Resident (Spring User)

Pathway	Parameter	Description	Upper Bound	Justification	Reference
Inhalation of Vapors while Showering	C_{water}	Concentration of VOC in Water ($\mu\text{g/L}$)	Chem. Spec.	RAGS part B presents estimates of volatilized fractions from household sources ranging from 30% from toilets to 90% from dishwashers. Based on these data, average and RME Fvs of 50% and 75% respectively were estimated.	Judgement
	FL	Fraction of Chemical Volatilized (no units)	1.0		
	FV	Shower Flow Rate (L/hr)	3420	USEPA 1989 states that estimated shower flow rates in the United States range from 5 to 15 gallons/minute (1140 to 3429 l/min). Based on these estimates, average and RME flow rates of 2140 and 3420 l/hr respectively were selected.	USEPA 1989
	BV	Bathroom Volume (m^3)	12	Judgement	
	IR_{air}	Inhalation Rate in Shower (m^3/hour)	0.6	Default value	USEPA 1989
	ET	Exposure Time (hours/day)	0.2	Estimated median and 90th percentile for time spent showering for householders in Australia	USEPA 1989

301967

Table 57
Richardson Hill Road Municipal Landfill
Human Health Risk Assessment

Adult Resident - North Area

Pathway	Parameter	Description	Upper Bound	Justification	Reference
General	EF	Exposure Frequency (days/year)	350	Conservative Estimate	
	ED	Exposure Duration (years)	24	Average and upper 95 percentile for time spent at a given residence for the United States population	USEPA 1989
	BW	Body Weight (kg)	70	USEPA recommended value for adults	USEPA 1989
	AT	Averaging Time (non-cancer) (days)	8760	USEPA recommended value	USEPA 1989
	AT	Averaging Time (cancer) (days)	25550	USEPA recommended value	USEPA 1989
Ingestion of Drinking Water (Spring Water)	C _{water}	Concentration in Water (µg/L)	Chem. Spec.		
	IR _{water}	Ingestion Rate (L/day)	2	Recommended default values	USEPA 1989

Table 58
Richardson Hill Road Municipal Landfill Site
Summary of Toxicologic Data for COPCs

Chemical Name	Chronic Oral RfD mg/kg-day	Chronic Inhal RfD mg/kg-day	Cancer Weight-of-Evidence Class	Oral SF (mg/kg-day) ⁻¹	Inhal SF (mg/kg-day) ⁻¹	Source
Arsenic	0.0003		A	1.5	**15.1	IRIS 1995
Beryllium	0.005		B2	4.3	8.4	IRIS 1995
Copper	0.04		D			ECAO
1,2-Dichloroethene (mixed isomers)	0.009		NA			IRIS 1995
Dichloromethane (Methylene chloride)	0.06			0.0075		IRIS 1995
1,1,1-Trichloroethane			D			IRIS 1995
Manganese	**0.023		D			IRIS 1995
Naphthalene	0.04		D			ECAO
Polychlorinated biphenyls (PCBs)*	2E-05		B2	7.7		IRIS 1995
Trichloroethene	0.006			0.011	0.006	ECAO
Tetrachloroethene	0.01		C-B2	0.052		IRIS/ECAO
Vinyl chloride			A	1.9	0.3	HEAST 1995

* - RfD value used is for Aroclor 1254.

** - adjusted value.

301969

Table 59
Richardson Hill Road Municipal Landfill Site
Adjusted Chronic Reference Dose and Slope Factors for Dermal Exposure

Analyte	Chronic Oral RfD (mg/kg-day)	Oral Slope Factor (mg/kg-day)	GI Absorption Efficiency (a)	Adjusted Chronic RfD for Dermal Exposure	Adjusted Slope Factor for Dermal Exposure
Arsenic	3.0E-04	1.75	0.8	2.4E-04	2.19
Beryllium	5.0E-03	4.3	0.01	5.0E-05	430
Copper	4.0E-02		0.6	2.2E-02	
1,2-Dichloroethene	9.0E-03		0.9	8.1E-03	
Dichloromethane (Methylene chloride)	6.0E-02	0.0075			
1,1,1-Trichloroethane	9.0E-02		0.8	7.2E-02	
Manganese	5.0E-03		0.04	2.0E-04	
Naphthalene	4.0E-02		0.9	3.6E-02	
PCB/Aroclor-1248	2.0E-05	7.7	0.8	1.6E-05	9.625
Trichloroethene	6.0E-03	0.011	1	6.0E-03	0.011
Tetrachloroethene	1.0E-02	0.052	1		
Vinyl chloride		1.9	1		1.9

(a) - Absorption efficiency estimates compiled primarily from Agency for Toxic Substance Disease Registry (ATSDR) toxicity profiles.

301970

TABLE 60
Richardson Hill Road Municipal Landfill Site
RME HAZARD INDEX ESTIMATE

Receptor	Pathway	Compound	Chronic Daily Intake (mg/kg-day)	Reference Dose (RfD) (mg/kg-day)	Hazard Quotient	Pathway Total	Receptor Hazard Index
Construction Worker	Ingestion of Subsurface Soils	1,1-Dichloroethene	5.60E-06	9.0E-03	6.3E-04		
		Aroclor-1248	5.48E-04	2.0E-05	2.7E+01		
		Beryllium	1.90E-06	5.0E-03	3.8E-04		
		Copper	3.98E-04	4.0E-02	1.0E-02		
		Manganese	1.38E-03	2.3E-02	5.9E-02		
		Trichloroethene	2.07E-04	6.0E-03	3.4E-02	27	
	Dermal Contact with Subsurface Soils	Aroclor-1248	3.97E-04	1.6E-05	2.5E+01	25	52

NA - Not Available

301971

TABLE 60 cont.
Richardson Hill Road Municipal Landfill Site
RME HAZARD INDEX ESTIMATE

Receptor	Pathway	Compound	Chronic Daily Intake (mg/kg-day)	Reference Dose (RfD) (mg/kg-day)	Hazard Quotient	Pathway Total	Receptor Hazard Index
Adolescent Recreator	Incidental Ingestion of Surface Soils	Arochlor 1248	1.76E-05	2.0E-05	8.8E-01	0.89	
		Manganese	2.85E-04	2.3E-02	1.2E-02		
	Dermal Contact with Surface Soils	Arochlor 1248	6.11E-05	2.0E-05	3.8E+00	3.80	
	Incidental Ingestion of Sediments - South Pond	Arsenic	8.31E-06	3.0E-04	2.8E-02	0.97	
		Aroclor-1248	1.83E-05	2.0E-05	9.1E-01		
		Benzo(a)pyrene	2.40E-07	C*			
		Beryllium	4.70E-07	5.0E-03	9.5E-05		
		Manganese	6.79E-04	2.3E-02	3.0E-02		
		Vinyl Chloride	1.10E-07	C*			
	Dermal Contact with Sediments - South Pond	Arsenic	1.45E-05	3.0E-04	6.0E-02	3.23	
		Aroclor-1248	6.36E-05	2.0E-05	4.0E+00		
	Incidental Ingestion of Surface Water - South Pond	1,2-Dichloroethene (total)	6.93E-06	9.0E-03	7.7E-04	0.02	
		cis-1,2-Dichloroethene	1.09E-06	1.0E-02	1.1E-04		
		Arsenic	4.30E-07	3.0E-04	1.4E-03		
		PCB/Aroclor-1248	1.40E-07	2.0E-05	7.1E-03		
		Manganese	1.43E-04	2.3E-02	6.2E-03		
		Dichloromethane (Methylene chloride)	3.80E-07	8.0E-02	6.3E-06		
		Trichloroethene	2.80E-06	8.0E-03	4.7E-04		
		Vinyl Chloride	5.00E-08	C*			
	Dermal Contact With Surface Water - South Pond	1,2-Dichloroethene	3.45E-06	C*		3.81	
		cis-1,2-Dichloroethene	6.33E-06	1.0E-02	7.0E-04		
		Arsenic	2.50E-07	3.0E-04	1.0E-03		
		PCB/Aroclor-1248	5.78E-05	2.0E-05	3.8E+00		
		Manganese	1.66E-04	2.3E-02	1.8E-01		
		Dichloromethane (Methylene chloride)	9.90E-07	8.0E-02	2.2E-05		
		Trichloroethene	2.60E-05	8.0E-03	4.3E-03		
		Vinyl Chloride	1.50E-08	C*			

* Evaluated based on carcinogenic effects.

301972

TABLE 60 cont.
Richardson Hill Road Municipal Landfill Site
RME HAZARD INDEX ESTIMATE

Receptor	Pathway	Compound	Chronic Daily Intake (mg/kg-day)	Reference Dose (RfD) (mg/kg-day)	Hazard Quotient	Pathway Total	Receptor Hazard Index
Current Adult Resident	Ingestion of Spring water	1,1,1-Trichloroethane	5.48E-05	NA			
		Trichloroethene	1.89E-03	6.0E-03	2.8E-01		
		Naphthalene	1.14E-04	4.0E-02	2.7E-03	0.29	
	Dermal Contact with Spring Water	1,1,1-Trichloroethane	1.81E-06	NA			
		Trichloroethene	5.27E-05	6.0E-03	8.8E-03		
		Naphthalene	1.46E-05	4.0E-02	4.1E-04	0.01	
	Inhalation of Vapors while Showering	1,1,1-Trichloroethane	1.87E-04	NA			
		Trichloroethene	5.80E-03	NA			
		Naphthalene	3.75E-04	4.0E-02	9.4E-03	0.01	0.3
Future North Area Adult Resident	Ingestion of North Area Ground Water	Tetrachloroethene	1.92E-04	1.0E-02	1.9E-02		
		Aroclor-1248	1.90E-04	1.0E-02	1.9E-02		
		Arsenic	8.22E-05	3.0E-04	2.7E-01		
		Trichloroethene	9.32E-03	6.0E-03	1.6E+00	2.20	2
Current Child Resident	Ingestion of Spring water	1,1,1-Trichloroethane	1.28E-03	NA			
		Trichloroethene	3.94E-03	6.0E-03	6.6E-01		
		Naphthalene	2.56E-04	4.0E-02	6.4E-03	0.67	
	Dermal Contact with Spring Water	1,1,1-Trichloroethane	4.05E-06	NA			
		Trichloroethene	1.18E-04	6.0E-03	2.0E-02		
		Naphthalene	3.29E-05	4.0E-02	9.1E-04	0.02	
	Inhalation of Vapors while Showering	1,1,1-Trichloroethane	8.75E-04	NA			
		Trichloroethene	2.70E-02	NA			
		Naphthalene	1.75E-03	4.0E-02	4.4E-02	0.04	0.1
Future North Area Child Resident	Ingestion of North Area Ground Water	Tetrachloroethene	4.50E-04	1.0E-02	4.5E-02		
		Aroclor-1248	2.00E-05	2.0E-05	9.3E-02		
		Arsenic	1.90E-04	3.0E-04	6.4E-01		
		Trichloroethene	2.17E-02	6.0E-03	3.6E+00	5.20	5

* Evaluated based on carcinogenic effects.
NA - Not Available

301975

TABLE 61
Richardson Hill Road Municipal Landfill Site
RME CANCER RISK ESTIMATES

Receptor	Pathway	Compound	Chronic Daily Intake (mg/kg-day)	Slope Factor (mg/kg-day)	Cancer Risk	Pathway Total	Receptor Cancer Risk
Construction Worker	Incidental Ingestion of Subsurface Soils	Aroclor-1248	7.80E-06	9.6E+00	6.0E-05	6.0E-05	0.0
		Beryllium	2.70E-08	4.3E+00	1.2E-07		
		Trichloroethene	2.95E-06	1.1E-02	3.2E-08		
	Dermal Contact Soils	Aroclor-1248	5.67E-06	9.6E+00	5.5E-05	5.5E-05	
Adolescent Recreator	Incidental Ingestion of Surface Soils	Aroclor 1248	1.51E-06	9.6E+00	1.2E-05	1.2E-05	0.0
	Dermal Contact with Surface Soils	Aroclor 1248	5.24E-06	9.6E+00	5.0E-05	5.0E-05	
	Incidental Ingestion of Sediments - South Pond	Arsenic	7.12E-07	1.8E+00	1.2E-08	1.3E-05	
		Aroclor-1248	1.57E-06	7.7E+00	1.2E-05		
		Benzo(a)pyrene	2.00E-08	7.3E+00	1.5E-07		
		Vinyl chloride	1.00E-07	1.9E+00	1.9E-08		
		Beryllium	4.10E-08	4.3E+00	1.8E-07		
	Dermal Contact with Sediments - South Pond	Arsenic	1.24E-06	1.9E+00	2.3E-08	5.5E-05	
		Aroclor-1248	5.45E-06	9.6E+00	5.2E-05		
	Incidental Ingestion of Surface Water - South Pond	Arsenic	3.70E-08	1.5E+00	5.5E-08	2.1E-07	
		Aroclor-1248	1.20E-08	7.7E+00	9.4E-08		
		Benzo(a)pyrene	9.40E-08	NA			
		Trichloroethene	2.40E-07	1.1E-02	2.6E-09		
		Vinyl Chloride	3.00E-08	1.9E+00	5.8E-08		
	Dermal Contact With Surface Water - South Pond	Arsenic	2.10E-08	1.9E+00	4.0E-08	4.8E-05	
		Aroclor-1248	4.96E-08	9.6E+00	4.8E-05		
		Dichloromethane (Methylene chloride)	8.50E-08	1.0E-02	8.5E-10		
Trichloroethene		2.20E-06	1.1E-02	2.5E-08			
Vinyl Chloride		1.29E-07	1.9E+00	2.4E-07			

301974

TABLE 61 cont.
Richardson Hill Road Municipal Landfill Site
RME CANCER RISK ESTIMATES

Receptor	Pathway	Compound	Chronic Daily Intake (mg/kg-day)	Slope Factor (mg/kg-day)	Cancer Risk	Pathway Total	Receptor Cancer Risk
Current Adult Resident	Ingestion of Spring Water	Trichloroethene	5.8E-04	1.1E-02	6.4E-06	6.4E-06	1.9E-05
	Dermal Contact with Spring Water	Trichloroethene	1.8E-05	1.1E-02	2.0E-07	2.0E-07	
	Inhalation Vapors while Showering Water	Trichloroethene	2.0E-03	6.0E-03	1.2E-05	1.2E-05	
Future North Area Adult Resident	Ingestion of North Area Ground Water	Tetrachloroethene	7.0E-05	5.2E-02	3.4E-06	1.0E-04	1.0E-04
		Aroclor 1248	0.0E+00	7.7E+00	2.1E-05		
		Arsenic	3.0E-05	1.5E+00	4.2E-05		
		Trichloroethene	3.2E-03	1.1E-02	3.5E-05		
Current Child Resident	Ingestion of Spring Water	Trichloroethene	3.4E-04	1.1E-02	3.7E-06	3.7E-06	1.8E-05
	Dermal Contact with Spring Water	Trichloroethene	1.0E-05	1.1E-02	1.1E-07	1.1E-07	
	Inhalation Vapors while Showering Water	Trichloroethene	2.3E-03	6.0E-03	1.4E-05	1.4E-05	
Future North Area Child Resident	Ingestion of North Area Ground Water	Tetrachloroethene	3.8E-05	5.2E-02	2.0E-06	5.9E-05	5.9E-05
		Aroclor 1248	2.0E-06	7.7E+00	1.2E-05		
		Arsenic	1.6E-05	1.5E+00	2.5E-05		
		Trichloroethene	1.9E-03	1.1E-02	2.0E-05		

NOTES: 1 A Hazard Index less than one is considered to be acceptable to USEPA with respect to potential carcinogenic effects.

2 Cancer risks less than the range of 10^{-4} to 10^{-6} are considered acceptable to the USEPA as cited in NCP.

301975

Table 62
Observed Wildlife of Study Area
Richardson Hill Road Municipal Landfill Site

Observed ¹ Wildlife Species		Time - Date of Survey			
Common Name	Scientific Name	Dawn 6/30/95	Midday 6/19-23/95	Dusk 6/29/95	Night 6/29/95
Pisces¹					
fathead minnow	<i>Pimephales promelas</i>		X		
Reptilian					
brown water snake	<i>Nerodia taxispilota</i>		X		
Amphibian					
bullfrog	<i>Rana castesbeiana</i>		X	X	
green frog	<i>Rana clamitans</i>		X	X	X
pickeral frog	<i>Rana palustris</i>		X		
Northern leopard frog	<i>Rana pipiens</i>		X		
red-spotted newt	<i>Notophthalmus viridescens</i> <i>viridescens</i>		X		
spotted salamander	<i>Ambystoma maculatum</i>		X		
Avian					
red-winged blackbird	<i>Agelaius phoeniceus</i>	X	X	X	
great blue heron	<i>Ardea herodias</i>		X	X	
American robin	<i>Turdus migratorius</i>	X	X	X	
Canada goose	<i>Branta canadensis</i>	X		X	
red-tailed hawk	<i>Buteo jamaicensis</i>		X		
mourning dove	<i>Zenaida macroura</i>	X	X		
downy woodpecker	<i>Picoides pubescens</i>		X		
Eastern phoebe	<i>Sayornis phoebe</i>		X		
Eastern kingbird	<i>Tyrannus tyrannus</i>	X	X	X	
barn swallow	<i>Hirundo rustica</i>		X		
tree swallow	<i>Tachycineta bicolor</i>	X			
wood duck	<i>Aix sponsa</i>		X		
mallard	<i>Anas platyrhynchos</i>	X			

301976

Table 62 - continued
Observed Wildlife of Study Area
Richardson Hill Road Municipal Landfill Site

Observed ¹ Wildlife Species		Time - Date of Survey			
Common Name	Scientific Name	Dawn 6/30/95	Midday 6/19-23/95	Dusk 6/29/95	Night 6/29/95
gray catbird	<i>Dumetella carolinensis</i>		X	X	
Northern flicker	<i>Colaptes auratus</i>		X		
cedar waxwing	<i>Bombycilla cedrorum</i>			X	
common yellowthroat	<i>Geothlypis trichas</i>	X	X	X	
chestnut-sided warbler	<i>Dendroica pensylvanica</i>				
yellow warbler	<i>Dendroica petechia</i>		X	X	
veery	<i>Catharus fuscescens</i>			X	
blue jay	<i>Cyanocitta cristata</i>	X	X		
black-capped chickadee	<i>Parus atricapillus</i>	X	X		
field sparrow	<i>Spizella pusilla</i>				
chipping sparrow	<i>Spizella passerina</i>	X	X		
song sparrow	<i>Melospiza melodia</i>		X		
European starling	<i>Sturnus vulgaris</i>	X			
Northern mockingbird	<i>Mimus polyglottos</i>	X			
rufous-sided towhee	<i>Pipilo erythrophthalmus</i>	X	X		
American crow	<i>Corvus brachyrhynchos</i>	X	X		
white-breasted nuthatch	<i>Sitta carolinensis</i>		X		
Northern oriole	<i>Icterus galbula</i>		X		
indigo bunting	<i>Passerina cyanea</i>		X		
brown-headed cowbird	<i>Molothrus ater</i>		X		
turkey	<i>Meleagris gallopavo</i>		X		
belted kingfisher	<i>Ceryle alcyon</i>		X		
common grackle	<i>Quiscalus quiscula</i>		X		
turkey vulture	<i>Cathartes aura</i>		X		
vireo	<i>Vireo</i> sp.		X		

301977

Table 62 - continued
Observed Wildlife of Study Area
Richardson Hill Road Municipal Landfill Site

Observed ¹ Wildlife Species		Time - Date of Survey			
Common Name	Scientific Name	<u>Dawn</u> 6/30/95	<u>Midday</u> 6/19-23/95	<u>Dusk</u> 6/29/95	<u>Night</u> 6/29/95
Mammalian					
white-tailed deer	<i>Odocoileus virginianus</i>		X	X	X
red squirrel	<i>Tamiasciurus hudsonicus</i>			X	
beaver	<i>Castor canadensis</i>				
woodchuck	<i>Marmota monax</i>		X		
Eastern chipmunk	<i>Tamias striatus</i>			X	
Eastern cottontail	<i>Sylvilagus floridanus</i>	X			
Notes: ¹ = indicators of listed species include tracks, scat, dens, burrows, songs and/or calls ² = aquatic fauna were surveyed during biota sampling events					

301978

Table 63
Control Pond and Vicinity Observed Wildlife
Richardson Hill Road Municipal Landfill Site

Observed ¹ Wildlife Species		Time - Date of Survey			
Common Name	Scientific Name	Dawn 6/30/95	Midday 6/19-23/95	Dusk 6/29/95	Night 6/29/95
Pisces²					
pumpkinseed	<i>Lepomis gibbosus</i>		X		
creek chub	<i>Semotilus atromaculatus</i>		X		
Eastern blacknose dace	<i>Rhinichthys atratulus</i>		X		
fathead minnow	<i>Pimephales promelas</i>		X		
Amphibian					
bullfrog	<i>Rana castesbeiana</i>	X	X	X	X
green frog	<i>Rana clamitans</i>	X	X	X	X
leopard frog	<i>Rana pipiens</i>		X		
red-spotted newt	<i>Notophthalmus viridescens</i> <i>viridescens</i>		X		
Avian					
red-winged blackbird	<i>Agelaius phoeniceus</i>	X	X	X	
great blue heron	<i>Ardea herodias</i>		X	X	
American robin	<i>Turdus migratorius</i>		X	X	
Northern cardinal	<i>Cardinalis cardinalis</i>	X	X		
red-tailed hawk	<i>Buteo jamaicensis</i>		X		
mourning dove	<i>Zenaida macroura</i>		X		
Northern flicker	<i>Colaptes auratus</i>		X		
hairy woodpecker	<i>Picoides villosus</i>		X		
Eastern phoebe	<i>Sayornis phoebe</i>		X		
Eastern kingbird	<i>Tyrannus tyrannus</i>		X	X	
barn swallow	<i>Hirundo rustica</i>		X	X	
tree swallow	<i>Tachycineta bicolor</i>		X		
mallard	<i>Anas platyrhynchos</i>	X	X		
wood duck	<i>Aix sponsa</i>	X			

Table 63 - continued
Control Pond and Vicinity Observed Wildlife
Richardson Hill Road Municipal Landfill Site

Observed ¹ Wildlife Species		Time - Date of Survey			
Common Name	Scientific Name	Dawn 6/30/95	Midday 6/19-23/95	Dusk 6/29/95	Night 6/29/95
American woodcock	<i>Scolopax minor</i>	X		X	
rufous-sided towhee	<i>Pipilo erythrophthalmus</i>		X		
song sparrow	<i>Melospiza melodia</i>	X	X		
chipping sparrow	<i>Spizella passerina</i>		X		
white-throated sparrow	<i>Zonotrichia albicollis</i>	X	X	X	
common yellowthroat	<i>Geothlypis trichas</i>		X		
wood thrush	<i>Hylocichla mustelina</i>		X	X	
blue jay	<i>Cyanocitta cristata</i>		X		
American crow	<i>Corvus brachyrhynchos</i>		X		
white-breasted nuthatch	<i>Sitta carolinensis</i>		X		
American goldfinch	<i>Carduelis tristis</i>		X		
Mammalian					
white-tailed deer	<i>Odocoileus virginianus</i>			X	
red squirrel	<i>Tamiasciurus hudsonicus</i>	X	X	X	
woodchuck	<i>Marmota monax</i>		X		
Eastern chipmunk	<i>Tamias striatus</i>			X	
Eastern cottontail	<i>Sylvilagus floridanus</i>				
beaver	<i>Castor canadensis</i>			X	X
bat	<i>Myotis</i> sp.	X		X	X
Notes:					
¹ = indicators of listed species include tracks, scat, dens, burrows, songs and/or calls					
² = aquatic fauna were surveyed during biota sampling events					

301980

Table 64
Aquatic Organism Population Data
Richardson Hill Road Municipal Landfill Site

Species	South Pond Organisms/Seine (30 Runs)	Control Pond Organisms/Seine (34 Runs)
Fathead Minnow	4.43	2.9
Pumpkinseed	0	35.3
Creek Chub	0	0.15
Blacknose Dace	0	0.24
Red-Spotted Newt	11.6	2.2
Spotted Salamander	2.5	0.09
Frog	12/hour	2/hour

Table 65
Vegetation Summary
Richardson Hill Road Municipal Landfill Site

Common Name	Latin Name	Mixed Hardwood	Old Field/ Shrubland	Pine Stand	Mowed Pathway	Palustrine Wetlands
Red maple	<i>Acer rubrum</i>	X	X		X	X
American beech	<i>Fagus grandifolia</i>	X				
Oak	<i>Quercus</i> spp.	X	X		X	
Quaking aspen	<i>Populus tremuloides</i>	X				
Black cherry	<i>Prunus serotina</i>	X	X			
White ash	<i>Fraxinus americana</i>	X	X		X	X
White birch	<i>Betula papyrifera</i>	X				
Hickory	<i>Carya</i> spp.	X				
American elm	<i>Ulmus americana</i>	X				
Willow	<i>Salix</i> spp.					X
Hawthorn	<i>Crataegus</i> spp.		X			
Hemlock	<i>Tsuga canadensis</i>	X				
White Pine	<i>Pinus strobus</i>	X	X	X		
Red Pine	<i>Pinus resinosa</i>	X	X	X		
Scotch Pine	<i>Pinus sylvestris</i>	X	X	X		
Spruce	<i>Picea</i> spp.	X				
Staghorn sumac	<i>Rhus typhina</i>		X		X	
Dogwood	<i>Cornus</i> spp.		X		X	X
Spirea	<i>Spiraea</i> spp.					
Rose	<i>Rosa</i> spp.		X		X	
Raspberry	<i>Rubus</i> spp.		X			
Blackberry	<i>Rubus</i> spp.					
Grasses	Graminae				X	
Sensitive Ferns	<i>Onclea sensibilis</i>				X	
Cinnamon Fern	<i>Osmunda cinnamomea</i>				X	
Sedges	<i>Carex</i> spp.					X
Juncus	<i>Scirpus</i> spp.					X

301982

Table 65 - continued
Vegetation Summary
Richardson Hill Road Municipal Landfill Site

Common Name	Latin Name	Mixed Hardwood	Old Field/ Shrubland	Pine Stand	Mowed Pathway	Palustrine Wetlands
Cattail	<i>Typha latifolia</i>					X
Purple loosestrife	<i>Lythrum salicaria</i>					X
Common reed	<i>Phragmites australis</i>					X
Duckweed	<i>Lemna</i> spp.					X

301983

Table 66
Summary of Physical and Biological Characteristics of Reference Sites
Richardson Hill Road Municipal Landfill Site

	South Pond	Site 1	Site 2	Site 3	Site 4	Site 5
Distance from site (mi)		2	5.2	5.4	1.0	6
Direction from site		West	West	West	East	Northwest
Approximate size (acres)	3.5	3.7	1.2	21	4.3	6.2
Approximate depth (ft)	4	unknown	5	unknown	3	3
Substrate	silt, gravel, cobble	silt, gravel, debris	silt	silt, clay, cobble	organics, cobble, silt, sand clay	vegetation, silt, cobble, pebble
Temperature (°C)	68	68	70	72	72.6	74.5
pH	8.57	8.70	8.48	8.43	8.47	9.45
Conductivity (µmhos)	90.7	33.5	51.8	50.2	75.2	205
Dissolved Oxygen (mg/l)	6.6	7.7	7.6	8.4	9.1	8.0
Aquatic Biology	newts, minnows, beaver	newts, recreational fish	salamanders, frogs beaver	great blue heron, beaver	beaver	bass, sunfish, minnows, turtles, mallards
Surrounding Land Use	road, wetlands, mixed forest	mixed hardwood forests	wet meadow, pine forest, hayfields	emergent and shrub wetlands, mixed forest, agricultural fields	shrub swamp, mixed hardwood forest	road, conifers, shrubs, mixed hardwoods, open field

301984

Table 67

**Control Pond Surface Water Analytical Results
Richardson Hill Road Municipal Landfill Site**

Analyte	Concentration (ug/L)				
	Site 1	Site 2	Site 3	Site 4	Site 5
Aluminum	126 B	166 B	98.5 B	59.6 B	57.4 B
Antimony	18.2 U	18.2 U	18.2 U	18.2 U	18.2 U
Arsenic	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Barium	9.8 B	17.8 B	20.5 B	8.8 B	1.3 U
Beryllium	0.5 U	0.5 U	0.5 U	0.50 U	0.50 U
Cadmium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Calcium	3080 B	4700 B	4790 B	5460	17800
Chromium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Copper	7.7 B	3.6 U	3.6 U	5.2 B	3.6 U
Iron	150	748	615	667	114
Lead	2.0 B	1.8 B	1.8 B	1.4 B	1.0 B
Magnesium	924 B	1780 B	1860B	1740 B	2450 B
Manganese	49.4	101	21.1	145	88
Mercury	0.1 U	0.10 U	0.1 U	0.10 U	0.11 B
Nickel	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U
Potassium	529 B	2060 B	815 B	404 B	289 B
Selenium	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U
Silver	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U
Sodium	1040 B	2760 B	2320 B	1750 B	27700
Thallium	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Vanadium	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
Zinc	3.4 U	4.5 B	7.4 B	3.4 U	3.4 U

Table 68

**Control Pond Sediment Analytical Results
Richardson Hill Road Municipal Landfill Site**

Analyte	Concentration (mg/kg)				
	Site 1	Site 2	Site 3	Site 4	Site 5
Aluminum	13000	11700	9690	7820	189000
Antimony	13.1 U	10.2 U	32.9 U	11.2 U	107 U
Arsenic	2.5 B	3.6 B	3.7 B	2.4 B	66.5
Barium	91.8 B	111	109 B	116 B	640 B
Beryllium	0.14 U	0.11 U	0.35 U	0.12 U	4.7 B
Cadmium	0.76 U	0.59 U	1.9 U	0.82 B	6.3 U
Calcium	1270 B	1120 B	2830 B	4080	18400 B
Chromium	13.7	14.6	22	10.2	221
Cobalt	7.1 B	8.3 B	7.3 B	4.4 B	124 B
Copper	64.1	11.1 B	17.9 B	12.4 B	247
Iron	14600	20400	17400	10700	311000
Lead	134	20	25.6	34.6	209
Magnesium	2340 B	2120 B	2160 B	1220 B	45200
Manganese	426	303	413	700	3870
Mercury	0.18 U	0.62	0.43 U	0.16 U	0.09 U
Nickel	14.6 B	13.5 B	15.0 B	7.9 B	313
Potassium	691 B	643 B	956 B	443 B	7730 B
Selenium	1.9 U	1.5 U	4.9 U	1.7 U	16.0 U
Silver	1.2 U	0.97 U	3.2 U	2.0 B	10.3 U
Sodium	125 B	96.4 B	283 B	129 B	2370 B
Thallium	2.2 U	1.7 U	5.4 U	1.9 U	17.7 U
Vanadium	17 B	17.9 B	20.1 B	16.0 B	253 B
Zinc	96.4	79.3	134	47	1120
TOC	68600	55100	208000	88400	23000
Cyanide	1.8	1.4	4.7	1.6	0.99

Table 69

**Background Inorganic Concentrations
Richardson Hill Road Municipal Landfill Site**

Analyte	Range	
	Surface Water (ug/L)	Sediment (mg/kg)
Aluminum	59.6 - 166	7820 - 13000
Antimony	18.2 - 18.2	10.2 - 32.9
Arsenic	1.8 - 1.8	2.4 - 3.7
Barium	8.8 - 20.5	91.8 - 116
Beryllium	0.5 - 0.5	0.11 - 0.35
Cadmium	1.5 - 1.5	0.59 - 1.9
Calcium	3080 - 5460	1120 - 4080
Chromium	5.0 - 5.0	10.2 - 22
Cobalt	3.1 - 3.1	4.4 - 8.3
Copper	3.6 - 7.7	11.1 - 64.1
Iron	150 - 748	10700 - 20400
Lead	1.4 - 2.0	20 - 134
Magnesium	924 - 1860	1220 - 2340
Manganese	21.1 - 145	303 - 700
Mercury	0.1 - 0.1	0.16 - 0.62
Nickel	6.3 - 6.3	7.9 - 15.0
Potassium	404 - 2060	443 - 956
Selenium	2.8 - 2.8	1.5 - 4.9
Silver	4.1 - 4.1	0.97 - 3.2
Sodium	1040 - 2760	96.4 - 283
Thallium	3.1 - 3.1	1.7 - 5.4
Vanadium	3.7 - 3.7	16.0 - 20.1
Zinc	3.4 - 7.4	47 - 134
TOC		55100 - 20800
Cyanide		1.4 - 4.7

301987

Table 70
Analytical Sample Summary
Richardson Hill Road Municipal Landfill Site

Parameter	Matrix	# Samps.	QA/QC *	Tot Samps
Toxicity	Water	4	-	4
Toxicity	Sediment	2	-	2
PCBs (8080)	Water	6	2	8
PCBs (8080)	Sediment	6	2	8
PCBs (8080)	Fish	46	6	52
PCBs (8080)	Soil	4	3	7
PCBs (8080)	Worm	4	3	7
VOCs (8240)	Water	6	4**	10
VOCs (8240)	Sediment	6	3	9
VOCs (8240)	Fish	24	6	30
Metals***	Water	10	3	13
Metals***	Sediment	10	3	13
Metals***	Soil	4	3	7
Metals***	Fish	24	6	30
Metals***	Worm	4	3	7
TOC (415.1)	Sediment	5	LCS	5
Grain Size	Sediment	6	-	6
Alkalinity	Water	10	LCS	10
% Lipid	Fish	46	LCS	35

* QA/QC Samples consist of matrix spike, matrix spike duplicate, and duplicate samples.

** Includes one trip blank per cooler

*** Metals include SW6010 metals and arsenic (SW7060).

LCS QA/QC provided by laboratory using laboratory control sample (LCS)

Table 71
In-field Water Quality Summary
Richardson Hill Road Municipal Landfill Site

Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μmhos/cm)	pH (NTUs)
Control Pond				
6/20/95	30	4.2	100	6.58
6/30/95	23	8.0	370	7.9
7/5/95	24	6.5	84	8.28
7/12/95	22	6.7	63	7.0
7/25/95	24	8.0	70	7.8
South Pond East				
6/20/95	32	3.7	140	6.06
6/30/95	20	2.0	140	7.24
7/5/95	27	8.6	142	8.35
7/12/95	20	6.4	93	7.56
South Pond West				
6/20/95	30	3.8	140	6.04
6/30/95	24	10.5	130	7.5
7/5/95	26	8.6	122	8.64
7/12/95	23	9.0	96	7.75
7/25/95	23	9.0	120	7.61
South Pond South				
6/20/95	32	3.7	150	6.42
6/30/95	23	5.5	140	7.2
7/5/95	25	2.3	340	8.5
7/12/95	22	6.6	95	7.77
7/25/95	23	7.5	120	7.46

301989

Table 71 - continued
In-field Water Quality Summary
Richardson Hill Road Municipal Landfill Site

Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (µmhos/cm)	pH (NTUs)
Outlet Pond				
6/20/95	33	7.0	135	6.13
6/30/95	22	6.3	110	7.68
7/5/95	27	4.6	152	7.75
7/12/95	21	8.9	91	8.6
7/25/95	23	10.5	130	7.8
Downstream Pond				
6/23/95	24	3.7	70	6.14

301990

Table 72a
Surface Water Inorganic Analytical Results (µg/L)
Richardson Hill Road Municipal Landfill Site

	SW-02	SW-03	SW-04	SW-05	SW-06
Aluminum	89.8	43.5	147	137	106
Antimony	3.8U	3.8U	3.8U	3.8U	3.8U
Arsenic	2.5B	2.5B	2.2B	3.9B	3.5B
Barium	38.2B	45.8	44.3	16.7B	42.8
Beryllium	0.004U	0.004U	0.004U	0.004U	0.004U
Cadmium	0.004U	0.004U	0.004U	0.005B	0.50B
Calcium	12,000	11,300	11,100	11,700	7,100
Chromium	1.1U	1.1U	1.1U	1.1U	1.1U
Cobalt	0.48U	0.48U	0.48U	0.48U	0.48U
Copper	2.3B	1.8B	1.4B	1.1B	1.5B
Iron	734	964	837	2,270	2,340
Lead	1.0B	1.2B	0.86B	1.8	0.92B
Magnesium	3,780	3,560	3,490	3,500	2,350
Manganese	282	354	237	1,230	1,420
Mercury	0.10U	0.10U	0.17	0.14	0.13
Nickel	1.0U	1.3B	1.1B	1.0U	1.0U
Potassium	2,240	2,190	2,010	1,720	550B
Selenium	0.56U	0.56U	0.56U	0.64B	0.56U
Silver	0.10U	0.10U	0.10U	0.10U	0.10U
Sodium	3,270	3,020	2,930	3,550	2,080
Thallium	0.62U	0.62U	0.62U	0.62U	0.62U
Vanadium	0.73B	0.97B	0.73B	0.80B	0.92B
Zinc	12.1	2.0B	1.9B	4.8B	1.9B
Alkalinity to pH 4.5 (mg CaCO ₃ /L)	44.5	45.4	43.8	43.8	29.7

301991

Table 72b
Surface Water Volatile Analytical Results (µg/L)
Richardson Hill Road Municipal Landfill Site

	SW-01	SW-02	SW-03	SW-03RE	SW-04	SW-05	SW-06
Chloromethane	10U	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	6JX	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U	10U
Methylene Chloride	4JX	3JX	4JX	8X	4JX	4JX	8X
Acetone	10X	9JX	9JX	10U	10U	10U	10U
Carbon Disulfide	5U	5U	21X	4JX	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U
trans-1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U
cis-1,2-Dichloroethene	5U	23X	2JX	2JX	5U	3JX	5U
Chloroform	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U
2-Butanone	10U	10U	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U	10U	10U	10U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U
2-Chloroethylvinylether	10U	10U	10U	10U	10U	10U	10U
Trichloroethene	5U	2JX	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U

301992

Table 72b - continued
Surface Water Volatile Analytical Results ($\mu\text{g/L}$)
Richardson Hill Road Municipal Landfill Site

	SW-01	SW-02	SW-03	SW-03RE	SW-04	SW-05	SW-06
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U
Tetrachloroethene	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U	5U
Xylene (total)	5U	5U	5U	5U	5U	5U	5U
1,3-Dichlorobenzene	5U	5U	5U	5U	5U	5U	5U
1,4-Dichlorobenzene	5U	5U	5U	5U	5U	5U	5U
1,2-Dichlorobenzene	5U	5U	5U	5U	5U	5U	5U

301993

Table 72c
Surface Water Pesticides and PCBs Analytical Results (µg/L)
Richardson Hill Road Municipal Landfill Site

	SW-01	SW-02	SW-03	SW-04	SW-05	SW-06
alpha-BHC	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
beta-BHC	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
delta-BHC	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
gamma-BHC (Lindane)	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
Heptachlor	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
Aldrin	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
Heptachlor epoxide	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
Endosulfan I	0.048U	0.048U	0.048U	0.048U	0.048U	0.048U
Dieldrin	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
4,4'-DDE	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
Endrin	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
Endosulfan II	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
4,4'-DDD	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
Endosulfan sulfate	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
4,4'-DDT	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
Methoxychlor	0.48U	0.48U	0.48U	0.48U	0.48U	0.48U
Endrin ketone	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
Endrin aldehyde	0.095U	0.095U	0.095U	0.095U	0.095U	0.095U
Technical Chlordane	1.9U	1.9U	1.9U	1.9U	1.9U	1.9U
Toxaphene	4.8U	4.8U	4.8U	4.8U	4.8U	4.8U
Aroclor-1016	0.95U	0.95U	0.95U	0.95U	0.95U	0.95U
Aroclor-1221	1.9U	1.9U	1.9U	1.9U	1.9U	1.9U
Aroclor-1232	0.95U	0.95U	0.95U	0.95U	0.95U	0.95U
Aroclor-1242	0.95U	0.95U	1.2U	0.95U	0.95U	0.95U
Aroclor-1248	0.95U	0.95U	0.77J	0.95U	0.95U	0.95U
Aroclor-1254	0.95U	0.95U	0.95U	0.95U	0.95U	0.95U
Aroclor-1260	0.95U	0.95U	0.95U	0.95U	0.95U	0.95U

301994

TABLE 72d
Explanation of Data Qualifiers
Richardson Hill Road Municipal Landfill Site

ORGANIC COMPOUND DATA QUALIFIERS

- U Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, 2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, 3) when the retention time data indicate the presence of a compound that meets the pesticide/Aroclor identification criteria and the result is less than the CRQL but greater than zero. Note: the "J" code is not used and the compound is not reported as being identified for pesticide/Aroclor results less than the CRQL, if the technical judgement of the pesticide residue analysis expert determines that the peaks used for compound identification resulted from instrument noise or other interferences (column bleed, solvent contamination, etc.).
- N Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- P This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two CG columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- C This flag applies to pesticide results where the identification has been confirmed by GC/MS. If CG/MS confirmation was attempted but was unsuccessful, do not apply this flag, instead use a laboratory-defined flag, discussed below.
- B This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified target compound.
- E This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.
- D This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample or extract.
- X Other specific flags may be required to properly define the results. If used, they must be fully described, and such description attached to the Sample Data Summary Package and the SDG Narrative. Begin by using "X". If more than one flag is required, use "Y" and "Z" as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several

flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some samples. The laboratory-defined flags are limited to the letters "X", "Y", and "Z". The "X" qualifier was used by the analytical laboratory for this data set to indicate manual data entry into the reporting software.

INORGANIC COMPOUND DATA QUALIFIERS

C (Concentration) qualifier - Enter "B" if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but greater than or equal to the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected, a "U" must be entered.

Q qualifier - Specified entries and their meanings are as follows:

- E The reported value is estimated because of the presence of interference. An explanatory note must be included under Comments on the Cover Page (if the problem applies to all samples) or on the specific FORM I-IN (if it is an isolated problem).
- M Duplicate injection precision not met.
- N Spiked sample recovery not within control limits.
- S The reported value was determined by the Method of Standard Additions (MSA).
- W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance. (See Exhibit E.)
- * Duplicate analysis not within control limits.
- + Correlation coefficient for the MSA is less than 0.995.

301996

Table 73a
Sediments Inorganic Analytical Results (mg/kg)
Richardson Hill Road Municipal Landfill Site

	SED-02	SED-03	SED-04	SED-05	SED-06
Aluminum	34,100	8,750	15,400	11,600	14,300
Antimony	0.28U	1.3B	1.6B	0.27U	1.3B
Arsenic	6.2B	6.0B	14.2B	4.8B	7.8B
Barium	500	194	302	125	229
Beryllium	1.5B	0.95B	1.5B	0.99B	1.4B
Cadmium	0.50U	0.72U	1.5U	1.1B	0.69U
Calcium	4180	2,470B	2,620B	1,790B	1,990B
Chromium	35.1	12.3	17.5	14.0	20.4
Cobalt	6.7B	6.1B	9.8B	6.7B	10.0B
Copper	80.3	14.7B	21.8B	10.6B	11.5B
Iron	16,500	10,500	23,800	14,700	20,000
Lead	35.0	35.2	51.2	33.8	32.4
Magnesium	4,400	1,380B	1,980B	2,090B	2,810B
Manganese	919	462	1,280	657	1,320
Mercury	0.19B	0.16U	0.37U	0.13B	0.15U
Nickel	24.5B	9.5B	14.6B	12.7B	18.7B
Potassium	3,250	666B	895B	714B	947B
Selenium	2.4	1.9B	5.3B	1.2U	2.4B
Silver	0.83U	1.2U	2.5U	0.80U	1.1U
Sodium	184B	150B	334B	138B	194B
Thallium	1.4U	2.0U	4.3U	1.4U	1.9U
Vanadium	33.3	15.7	29.5	21.2	22.1
Zinc	85.2	69.8	112	76.4	118
TOC-soil	14100	110000	18300	241000	67500

301997

Table 73b
Sediment Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	SED-01	SED-02	SED-02DL	SED-03	SED-03RE	SED-04	SED-04DL	SED-05	SED-06	SED-06DL
Chloromethane	14U	20U	91U	38U	38U	13J	290U	25U	35U	160U
Bromomethane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Vinyl Chloride	14U	77	410D	38U	38U	58U	290U	25U	35U	160U
Chloroethane	14U	23	91U	38U	38U	58U	290U	25U	35U	160U
Methylene Chloride	5BJ	8BJ	44BDJ	18BJ	17BJ	18BJ	180BDJ	8BJ	31BJ	110BDJ
Acetone	49B	680BE	570BD	350B	400B	1,100B	590BD	120B	1,200BE	1,900B D
Carbon Disulfide	7U	5J	45U	58	19J	29U	150U	4J	18U	81U
1,1-Dichloroethene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
1,1-Dichloroethane	14U	140	220D	38U	38U	58U	290U	25U	35U	160U
trans-1,2-Dichloroethene	14U	140	260D	38U	38U	58U	290U	25U	35U	160U
cis-1,2-Dichloroethene	14U	74	820D	21J	15J	58U	290U	25U	35U	160U
Chloroform	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
1,2-Dichloroethane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
utanone	10J	190	120DJ	120	64J	250	590U	34J	210	250DJ
1,1,1-Trichloroethane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Carbon Tetrachloride	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Vinyl Acetate	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Bromodichloromethane	7U	10U	45U	19U	19U	29U	150U	13U	18U	81U
1,2-Dichloropropane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
cis-1,3-Dichloropropene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
2-Chloroethylvinylether	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Trichloroethene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Dibromochloromethane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
1,1,2-Trichloroethane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Benzene	14U	4J	91U	38U	38U	58U	290U	25U	35U	160U
trans-1,3-Dichloropropene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Bromoform	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
4-Methyl-2-Pentanone	29U	39U	180U	77U	77U	120U	590U	51U	70U	320U
2-Hexanone	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
achloroethene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U

301998

Table 73b - continued
Sediment Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	SED-01	SED-02	SED-02DL	SED-03	SED-03RE	SED-04	SED-04DL	SED-05	SED-06	SED-06DL
1,1,2,2-Tetrachloroethane	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Toluene	6J	400E	660D	320	190	1,400E	1,200D	4J	35U	160U
Chlorobenzene	14U	56	83DJ	38U	38U	58U	290U	25U	35U	160U
Ethylbenzene	14U	190	200D	38U	38U	58U	290U	25U	35U	160U
Styrene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
Xylene (total)	14U	370X	380DX	38U	38U	58U	290U	25U	35U	160U
1,3-Dichlorobenzene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
1,4-Dichlorobenzene	14U	3J	91U	38U	38U	58U	290U	25U	35U	160U
1,2-Dichlorobenzene	14U	20U	91U	38U	38U	58U	290U	25U	35U	160U
TICs		4,643J	14,110J	432J	220J			30J		

301999

Table 73c
Sediment - Pesticides and PCBs Analytical Results (µg/kg)
Richardson Hill Road Municipal Landfill Site

	SED-01	SED-02	SED-02DL	SED-03	SED-03RL	SED-04	SED-04DL	SED-05	SED-05DL	SED-06	SED-06DL
alpha-BHC	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
beta-BHC	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
delta-BHC	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
gamma-BHC (Lindane)	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
Heptachlor	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
Aldrin	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
Heptachlor epoxide	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
Endosulfan I	2.4U	3.3U	33U	6.5U	65U	9.5U	95U	4.2U	42U	5.8U	58U
Dieldrin	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
4,4'-DDE	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
Endrin	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
Endosulfan II	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
DDD	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
Endosulfan sulfate	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
4,4'-DDT	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
Methoxychlor	24U	33U	330U	65U	650U	95U	950U	42U	420U	58U	580U
Endrin ketone	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
Endrin aldehyde	4.8U	6.5U	65U	13U	130U	19U	190U	8.4U	84U	12U	120U
Technical Chlordane	95U	130U	1300U	260U	2600U	380U	3800U	170U	1700U	230U	2300U
Toxaphene	240U	330U	3300U	650U	6500U	950U	9500U	420U	4200U	580U	5800U
Aroclor-1016	48U	65U	650U	130U	1300U	190U	1900U	84U	840U	120U	1200U
Aroclor-1221	95U	130U	1300U	260U	2600U	380U	3800U	170U	1700U	230U	2300U
Aroclor-1232	48U	65U	650U	130U	1300U	190U	1900U	84U	840U	120U	1200U
Aroclor-1242	48U	65U	650U	130U	1300U	190U	1900U	84U	840U	120U	1200U
Aroclor-1248	48U	11000P	13000D	18000	25000D	4500P	6500D	15000P	41000PD	8400P	17000PD
Aroclor-1254	48U	65U	650U	130U	1300U	190U	1900U	84U	840U	120U	1200U
Aroclor-1260	48U	65U	650U	130U	1300U	190U	1900U	84U	840U	120U	1200U

302000

Table 73d
Sediment - PCBs Analytical Results
Richardson Hill Road Municipal Landfill Site

Sample Identification	Aroclor 1248 Concentration (mg/kg)	Aroclor 1254 Concentration (mg/kg)	Percent Solids	Total Organic Carbon Concentration (mg/kg)
Segment 1-FP		0.093	61.0	37.464
Segment 1-SC		0.033	66.0	21.660
Segment 2-FP	0.15	0.2	58.0	40.920
Segment 2-SC	0.17	0.18	52.0	26.488
Segment 3-FP (Duplicate)		0.9	59.0	44.061(42.373)
Segment 3-SC		0.24	70.0	21.857
Segment 4-SC	0.16	0.15	65.0	15.791
Segment 5-FP	0.066	0.15	65.0	34.296
Segment 5-SC	<0.25	0.58	65.0	21.572
Segment 6-FP	<0.32	0.95	57.0	74.196
Segment 6-SC(Duplicate)	0.11	0.13	69.0	28.752(32.115)
Segment 7-FP	0.18	0.23	58.0	67.018
Segment 7-SC (Duplicate)	<0.25(0.24)	0.46(0.72)	60.0 (60)	33.965 (30.546)
Segment 8-FP	0.094		45.0	107.606
Segment 8-SC	0.18		57.0	44.749
Segment 9 (0-6')	2.2		41.0	115.597
Segment 9 (6-12")	2		41.0	134.290
Segment 10 (0-6")	1.2		38.0	191.039
Segment 10 (6-12")	4.5		45.0	121.306
Segment 10-SC	3.2		41.0	117.987
Segment 10-FP	<0.06		28.0	247.353
Segment 11-FP	0.079		45.0	110.568
Segment 11-SC	3.7		53.0	58.724 (53.754)
Segment 11 (0-6")	5.7		30.0	298.803
Segment 11 (6-12")	8.7		32.0	261.968
Segment 12 (0-6")	7.5		34.0	218.920

Table 73d - Continued
Sediment - PCBs Analytical Results
Richardson Hill Road Municipal Landfill Site

Sample Identification	Aroclor 1248 Concentration (mg/kg)	Aroclor 1254 Concentration (mg/kg)	Percent Solids	Total Organic Carbon Concentration (mg/kg)
Segment 12 (6-12")	10		45.0	98.820
Segment 12-SC	3.2		38.0	102.339
Segment 12-FP	0.2		56.0	70.266
Segment 12 - East Dam (0-6")	0.48		20.0	615.350
Segment 13 (0-6")	2.8		30.0	247.690
Segment 13 (6-12")	36		30.0	348.066
Segment 13-SC	7		36.0	185.519
Segment 13-FP	<0.044		31.0	278.548
Segment 13 - North Dam (0-6") (Duplicate)	14 (10)		44.0 (46)	100.872 (92.584)
Segment 14-FP	7.8		50.0	85.466
Segment 14-SC	28		66.0	81.559
Segment 15-FP	24		46.0	129.989
Segment 15-SC	38		45.0	117.180
Segment 16-FP	13		37.0	183.724
Segment 16-SC	180		54.0	99.954
Segment 17-FP	20		42.0	150.162
Segment 17-SC (Duplicate)	16		57.0	29.168 (32.140)
Segment 18 (0-6") (Duplicate)	67 (50)		35.0 (30)	309.686 (326.513)
Segment 18-SC	170		33.0	328.727
Segment 18-FP	<0.032		46.0	114.120
Segment 19-FP	1.1		18.0	695.055
Segment 19 (0-6")	15		23.0	470.348
Segment 19 (6-12")	150		29.0	529.379
Segment 19-SC	170		33.0	406.485
Segment 20-FP	1.2		45.0	112.744
Segment 20 (0-6")	3		24.0	415.396
Segment 20 (6-12") (Duplicate)	11		30.0	281.933 (371.667)

Table 73d - Continued
Sediment - PCBs Analytical Results
Richardson Hill Road Municipal Landfill Site

Sample Identification	Aroclor 1248 Concentration (mg/kg)	Aroclor 1254 Concentration (mg/kg)	Percent Solids	Total Organic Carbon Concentration (mg/kg)
Segment 21 (0-6")	22		25.0	389.220
Segment 21 (6-12")	24		28.0	385.929
Notes: FP = floodplain. SC = stream channel. N/A = not analyzed				

Table 74
Sediment Grain Size Summary
Richardson Hill Road Municipal Landfill Site

Location	Sieve Size - Percent Passing Sieve											
	1"	3/4"	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200
Control Pond	100	96.2	90.6	87.9	85.1	83.1	79.6	74.2	72.5	68.9	63.0	55.9
South Pond West	-	100	97.1	97.1	96.1	95.8	94.0	90.5	88.9	86.1	83.1	78.4
South Pond South	-	-	-	-	-	100	94.0	80.1	72.2	58.7	51.2	34.4
South Pond East	-	-	-	-	-	100	98.7	88.3	84.4	79.3	75.4	70.0
Outlet Pond	-	-	100	99.6	99.6	99.6	98.1	90.6	85.6	76.2	65.3	52.0
Downstream	-	-	-	100	99.7	99.6	98.9	97.8	97.2	95.4	92.6	88.2

Note: Test Methods ASTM D422, D1140

302004

January 16, 1996 AE kah(82)a Richardson Hill

Table 75a
Biota Inorganic Analytical Results (mg/kg)
Richardson Hill Road Municipal Landfill Site

	FHMA-01	FHMY-01	FROGA-01	FROGY-01	NEWTA-01	NEWTY-01
Aluminum	260	3,590	133B	11,800	480	2,820
Antimony	0.93B	1.3B	0.58U	1.9B	0.93B	1.5B
Arsenic	1.7U	2.9U	1.7U	12.8B	1.7U	8.2B
Barium	27.3B	92.8B	33.7B	330	140B	47.2B
Beryllium	0.19U	0.32U	0.19U	0.32U	0.19U	0.37U
Cadmium	1.0U	1.8U	1.1U	1.8U	1.1U	2.0U
Calcium	35,800	41,900	16,200	6,110B	47,400	18,700
Chromium	6.9B	9.2U	5.5U	29.8B	5.5U	11.8B
Cobalt	2.3U	3.9U	2.3U	9.0B	2.7B	4.4U
Copper	35.8B	15.2B	71.6B	28.3B	10.1B	14.7B
Iron	378	3,700	346	20,500	741	3,210
Lead	2.9B	8.3B	2.8B	32.6	2.6B	9.0B
Magnesium	1,430B	1,960B	1,140B	2,450B	1,360B	2,060B
Manganese	107B	865B	95.4B	10,300	160B	372B
Mercury	0.23U	0.38U	0.24U	0.46U	0.26U	0.48U
Nickel	4.9U	8.4U	5.0U	10.2B	5.0U	9.6U
Potassium	12,100	7,710B	10,800	9,380	8,840	18,200
Selenium	2.7U	4.5U	2.7U	4.5U	2.7U	5.2U
Silver	1.7U	2.9U	1.7U	2.9U	1.7U	3.3U
Sodium	4,240B	3,450B	5,250	9,520	4,910	7,460B
Thallium	3.0U	5.0U	3.0U	5.0U	3.0U	5.7U
Vanadium	2.8U	5.1B	2.8U	17.4B	2.8U	5.4U
Zinc	150B	207B	59.1B	107B	111B	153

302005

Table 75a - continued
Biota Inorganic Analytical Results (mg/kg)
Richardson Hill Road Municipal Landfill Site

	FHMY-02	FROGA-02	FROGY-02	NEWTA-02	FISHA-02
Aluminum	160B	80.8B	2.520	244	3.620
Antimony	1.1B	0.64B	0.66U	0.78B	0.64U
Arsenic	2.9U	1.8U	4.2B	1.6U	3.2B
Barium	30.7B	53.9B	152B	182	203B
Beryllium	0.32U	0.19U	0.22U	0.18U	0.21U
Cadmium	1.8U	1.1U	1.2U	0.98U	1.2U
Calcium	26,000	28,500	11,400	68,800	38,700
Chromium	9.1U	5.6U	7.9B	7.9B	11.2B
Cobalt	3.8U	2.3U	3.5B	2.1U	2.6U
Copper	16.9B	8.8B	7.5B	6.3B	418
Iron	933	322	3,380	734	5,570
Lead	5.0B	2.8B	4.6B	3.6B	7.1B
Magnesium	1,630B	1,220B	1,210B	1,710B	1,820B
Manganese	177	82.2B	1580B	270B	564B
Mercury	0.40U	0.28U	0.27U	0.25U	0.27U
Nickel	8.3U	5.1U	5.7U	4.6U	5.6U
Potassium	15,300	10,600	10,300	8,460	11,600
Selenium	4.5U	2.7U	3.1U	2.5U	3.0U
Silver	2.9U	1.8U	2.0U	1.6U	1.9U
Sodium	5,220B	5,480U	7,080	5,570	4,870B
Thallium	5.0U	3.0U	3.4U	2.8U	3.3U
Vanadium	4.6U	2.8U	4.1B	2.6U	5.3B
Zinc	188B	69.9B	49.2B	140B	192B

302006

Table 75a - continued
Biota Inorganic Analytical Results (mg/kg)
Richardson Hill Road Municipal Landfill Site

	FHMA-03	FROGA-03	FROGY-03	NEWTA-03	FISHA-03
Aluminum	185B	253	3,420	402	637
Antimony	0.61U	0.57B	1.1B	0.56U	0.54U
Arsenic	1.8U	1.6U	4.0B	1.7U	1.6U
Barium	45.7B	28.7B	168B	126B	48.2B
Beryllium	0.20U	0.18U	0.27U	0.19U	0.18U
Cadmium	1.1U	0.99U	1.5U	1.0U	1.0U
Calcium	28,500	36,000	10,200	57,600	18,100
Chromium	5.8U	5.8B	11.9B	5.3U	10.2B
Cobalt	2.5U	2.2U	3.8B	2.2U	2.2U
Copper	7.2B	10.7B	7.1B	4.7B	7.2B
Iron	480	351	8,540	1,350	1,400
Lead	1.7B	2.2B	5.5B	2.3B	2.2B
Magnesium	1,340B	1,450B	1,320B	1,570B	1,270B
Manganese	139B	90.6B	2,600B	372B	350B
Mercury	0.25U	0.24U	0.38U	0.21U	0.23
Nickel	5.3U	4.7U	7.0U	4.8U	4.7U
Potassium	13,500	10,500	10,300	9,200	12,500
Selenium	2.9U	2.5U	3.8U	2.6U	2.5U
Silver	1.8U	1.6U	2.4U	1.7U	1.6U
Sodium	5,460	5,100	9,140	5,360	4,750
Thallium	3.2U	2.8U	4.2U	2.9U	2.8U
Vanadium	3.0U	2.6U	4.3B	2.7U	2.6U
Zinc	206B	72.6B	41.9B	147B	156B

302007

Table 75a - continued
Biota Inorganic Analytical Results (mg/kg)
Richardson Hill Road Municipal Landfill Site

	FHMA-04	FROGA-04	NEWTA-04
Aluminum	472	554	1,220
Antimony	0.58U	0.75B	0.59U
Arsenic	1.7U	2.0U	1.8U
Barium	43.4B	59.5B	134B
Beryllium	0.19U	0.22U	0.20U
Cadmium	1.1U	1.2U	1.1U
Calcium	33,000	34,900	62,300
Chromium	5.5U	8.8B	10.3B
Cobalt	2.3U	2.6U	2.4U
Copper	8.2B	7.8B	9.2B
Iron	475	919	1,510
Lead	1.8B	2.0B	2.7B
Magnesium	1,440B	1,410B	1,650B
Manganese	199B	385B	220B
Mercury	0.25U	0.28U	0.38
Nickel	5.1U	5.7U	5.1U
Potassium	13,400	10,600	9,540
Selenium	2.7U	3.1U	2.8U
Silver	1.7U	2.0U	1.8U
Sodium	4,990	5,690	5,340
Thallium	3.0U	3.4U	3.1U
Vanadium	2.8U	3.2U	2.9U
Zinc	141B	74.9B	158B

302008

Table 75b
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FHMA01	FHMA01DUP	FHMA03	FHMA04	FHMY01
Chloromethane	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U
Methylene Chloride	7B	6B	22B	6B	7
Acetone	28B	10B	35B	9J	12
Carbon Disulfide	5U	5U	5U	5U	5U
1,1 Dichloroethene	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U
trans-1,2-Dichloroethene	5U	5U	5U	5U	5U
cis-1,2-Dichloroethene	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U
2-Butanone	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U	10U
Bromodichloromethane	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U
2-Chloroethylvinylether	10U	10U	10U	10U	10U
Trichloroethene	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U

302009

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FHMA01	FHMA01DUP	FHMA03	FHMA04	FHMY01
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U
Tetrachloroethene	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U
Xylene (total)	5U	5U	5U	5U	5U
1,3-Dichlorobenzene	5U	5U	5U	5U	5U
1,4-Dichlorobenzene	5U	5U	5U	5U	5U
1,2-Dichlorobenzene	5U	5U	5U	5U	5U

302010

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FHMY02	FISHA02	FISHA02DUP	FISHA04	FROGA01
Chloromethane	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U
Methylene Chloride	5B	4J	16	6B	10
Acetone	7BJ	10U	19	17	13
Carbon Disulfide	5U	5U	5U	5U	5U
1,1 Dichloroethene	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U
trans-1,2-Dichloroethene	5U	5U	5U	5U	5U
cis-1,2-Dichloroethene	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U
2-Butanone	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U	10U
Bromodichloromethane	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U
2-Chloroethylvinylether	10U	10U	10U	10U	10U
Trichloroethene	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U

302011

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FHMY02	FISHA02	FISHA02DUP	FISHA04	FROGA01
4-Methyl-2-Pentanone	10U	10U	10U	10U	2J
2-Hexanone	10U	10U	10U	10U	10U
Tetrachloroethene	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U
Xylene (total)	5U	5U	5U	5U	5U
1,3-Dichlorobenzene	5U	5U	5U	5U	5U
1,4-Dichlorobenzene	5U	5U	5U	5U	5U
1,2-Dichlorobenzene	5U	5U	5U	5U	5U

302012

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FROGA02	FROGA03	FROGA04	FROGY01	FROGY01DUP
Chloromethane	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U
Methylene Chloride	4J	13	9B	17	4J
Acetone	10U	10U	16	40	10U
Carbon Disulfide	5U	5U	5U	5U	5U
1,1 Dichloroethene	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U
trans-1,2-Dichloroethene	5U	5U	5U	5U	5U
cis-1,2-Dichloroethene	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U
2-Butanone	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U	10U
Bromodichloromethane	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U
2-Chloroethylvinylether	10U	10U	10U	10U	10U
Trichloroethene	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U

302013

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FROGA02	FROGA03	FROGA04	FROGY01	FROGY01DUP
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U
Tetrachloroethene	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U
Xylene (total)	5U	5U	5U	5U	5U
1,3-Dichlorobenzene	5U	5U	5U	5U	5U
1,4-Dichlorobenzene	5U	5U	5U	5U	5U
1,2-Dichlorobenzene	5U	5U	5U	5U	5U

302014

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FROGY02	FROGY03	NEWTA01	NEWTA01DUP	NEWTA02
Chloromethane	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U
Methylene Chloride	4J	17	6B	5U	6
Acetone	10U	16	10U	9BJ	10U
Carbon Disulfide	5U	5U	5U	5U	5U
1,1 Dichloroethene	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U
trans-1,2-Dichloroethene	5U	5U	5U	5U	5U
cis-1,2-Dichloroethene	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U
2-Butanone	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U	10U
Bromodichloromethane	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U
2-Chloroethylvinylether	10U	10U	10U	10U	10U
Trichloroethene	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U

302015

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FROGY02	FROGY03	NEWTA01	NEWTA01DUP	NEWTA02
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U	10U
Tetrachloroethene	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U
Xylene (total)	5U	5U	5U	5U	5U
1,3-Dichlorobenzene	5U	5U	5U	5U	5U
1,4-Dichlorobenzene	5U	5U	5U	5U	5U
1,2-Dichlorobenzene	5U	5U	5U	5U	5U

302016

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	NEWTA03	NEWTA04	NEWTA04DUP	NEWTY01
Chloromethane	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U
Methylene Chloride	16	5B	5B	6
Acetone	15	10U	10U	10U
Carbon Disulfide	5U	5U	5U	5U
1,1 Dichloroethene	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U
trans-1,2-Dichloroethene	5U	5U	5U	5U
cis-1,2-Dichloroethene	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U
2-Butanone	10U	10U	10U	10U
1,1,1-Trichloroethane	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U
Bromodichloromethane	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U
2-Chloroethylvinylether	10U	10U	10U	10U
Trichloroethene	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U
Benzene	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U

302017

Table 75b - continued
Biota Volatile Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	NEWTA03	NEWTA04	NEWTA04DUP	NEWTY01
4-Methyl-2-Pentanone	10U	10U	10U	10U
2-Hexanone	10U	10U	10U	10U
Tetrachloroethene	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U
Toluene	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U
Styrene	5U	5U	5U	5U
Xylene (total)	5U	5U	5U	5U
1,3-Dichlorobenzene	5U	5U	5U	5U
1,4-Dichlorobenzene	5U	5U	5U	5U
1,2-Dichlorobenzene	5U	5U	5U	5U

302018

Table 75c
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FHMA0 1DL	FHMA0 1DDL	FHMA 03	FHMA 04DL	FHMY0 1DL	FHMY 02DL	FISHA 02DL
alpha-BHC	330U	330U	1.6U	83U	82U	33U	1700U
beta-BHC	330U	330U	1.6U	83U	82U	33U	1700U
delta-BHC	330U	330U	1.6U	83U	82U	33U	1700U
gamma-BHC (Lindane)	330U	330U	1.6U	83U	82U	33U	1700U
Heptachlor	330U	330U	1.6U	83U	82U	33U	1700U
Aldrin	330U	330U	1.6U	83U	82U	33U	1700U
Heptachlor epoxide	330U	330U	1.6U	83U	82U	33U	1700U
Endosulfan I	330U	330U	1.6U	83U	82U	33U	1700U
Dieldrin	660U	650U	3.3U	170U	160U	66U	3300U
4,4'-DDE	660U	650U	3.3U	170U	160U	66U	3300U
Endrin	660U	650U	3.3U	170U	160U	66U	3300U
Endosulfan II	660U	650U	3.3U	170U	160U	66U	3300U
4,4'-DDD	660U	650U	3.3U	170U	160U	66U	3300U
Endosulfan sulfate	660U	650U	3.3U	170U	160U	66U	3300U
4,4'-DDT	660U	650U	3.3U	170U	160U	66U	3300U
Methoxychlor	3300U	3300U	16U	830U	820U	330U	17000U
Endrin ketone	660U	650U	3.3U	170U	160U	66U	3300U
Endrin aldehyde	660U	650U	3.3U	170U	160U	66U	3300U
Technical Chlordane	13000U	13000U	66U	3300U	3300U	1300U	66000U
Toxaphene	33000U	33000U	160U	8300U	8200U	3300U	170000U
Aroclor-1016	6600U	6500U	33U	1700U	1600U	660U	33000U
Aroclor-1221	13000U	13000U	66U	3300U	3300U	1300U	66000U
Aroclor-1232	6600U	65000U	33U	1700U	1600U	660U	33000U
Aroclor-1242	6600U	65000U	33U	1700U	1600U	660U	33000U
Aroclor-1248	29000PD	25000PD	33U	13000D	6200PD	8400D	280000D
Aroclor-1254	6600U	6500U	33U	1700U	1600U	660U	33000U
Aroclor-1260	6600U	6500U	33U	1700U	1600U	660U	33000U
Percent Lipids	2.3	2.5	0.3	1.7	1.1	1.1	1.3

302019

Table 75c - continued
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FISH A02DDL	FISH A03DL	FROG A01DL	FROG A02DL	FROG A03	FROG A04DL	FROG Y01DL
alpha-BHC	1600U	17U	16U	17U	1.6U	3.3U	81U
beta-BHC	1600U	17U	16U	17U	1.6U	3.3U	81U
delta-BHC	1600U	17U	16U	17U	1.6U	3.3U	81U
gamma-BHC (Lindane)	1600U	17U	16U	17U	1.6U	3.3U	81U
Heptachlor	1600U	17U	16U	17U	1.6U	3.3U	81U
Aldrin	1600U	17U	16U	17U	1.6U	3.3U	81U
Heptachlor epoxide	1600U	17U	16U	17U	1.6U	3.3U	81U
Endosulfan I	1600U	17U	16U	17U	1.6U	3.3U	81U
Dieldrin	3300U	33U	33U	33U	3.2U	6.7U	160U
4,4'-DDE	3300U	33U	33U	33U	3.2U	6.7U	160U
Endrin	3300U	33U	33U	33U	3.2U	6.7U	160U
Endosulfan II	3300U	33U	33U	33U	3.2U	6.7U	160U
4,4'-DDD	3300U	33U	33U	33U	3.2U	6.7U	160U
Endosulfan sulfate	3300U	33U	33U	33U	3.2U	6.7U	160U
4,4'-DDT	3300U	33U	33U	33U	3.2U	6.7U	160U
Methoxychlor	16000U	170U	160U	170U	16U	33U	810U
Endrin ketone	3300U	33U	33U	33U	3.2U	6.7U	160U
Endrin aldehyde	3300U	33U	33U	33U	3.2U	6.7U	160U
Technical Chlordane	65000U	660U	660U	670U	65U	130U	3300U
Toxaphene	160000U	1700U	1600U	1700U	160U	330U	8100U
Aroclor-1016	33000U	330U	330U	330U	32U	67U	1600U
Aroclor-1221	65000U	660U	660U	670U	65U	130U	3300U
Aroclor-1232	33000U	330U	330U	330U	32U	67U	1600U
Aroclor-1242	33000U	330U	330U	330U	32U	67U	1600U

302020

Table 75c - continued
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FISH A02DDL	FISH A03DL	FROG A01DL	FROG A02DL	FROG A03	FROG A04DL	FROG Y01DL
Aroclor-1248	32000D	5600D	1600D	1800D	32U	230D	4100PD
Aroclor-1254	33000U	330U	330U	330U	32U	67U	1600U
Aroclor-1260	33000U	330U	330U	330U	32U	67U	1600U
Percent Lipids	NA	0.5	0.5	0.2	0.2	0.3	0.3

302021

Table 75c - continued
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FROG Y01DDL	FROG Y02DL	FROG Y03DL	NEWT A01DL	NEWT A01DDL	NEWT A02DL	NEWT A03DL
alpha-BHC	33U	16U	16U	160U	160U	82U	3.3U
beta-BHC	33U	16U	16U	160U	160U	82U	3.3U
delta-BHC	33U	16U	16U	160U	160U	82U	3.3U
gamma-BHC (Lindane)	33U	16U	16U	160U	160U	82U	3.3U
Heptachlor	33U	16U	16U	160U	160U	82U	3.3U
Aldrin	33U	16U	16U	160U	160U	82U	3.3U
Heptachlor epoxide	33U	16U	16U	160U	160U	82U	3.3U
Endosulfan I	33U	16U	16U	160U	160U	82U	3.3U
Dieldrin	66U	33U	32U	330U	330U	160U	6.6U
4,4'-DDE	66U	33U	32U	330U	330U	160U	6.6U
Endrin	66U	33U	32U	330U	330U	160U	6.6U
Endosulfan II	66U	33U	32U	330U	330U	160U	6.6U
4,4'-DDD	66U	33U	32U	330U	330U	160U	6.6U
Endosulfan sulfate	66U	33U	32U	330U	330U	160U	6.6U
4,4'-DDT	66U	33U	32U	330U	330U	160U	6.6U
Methoxychlor	330U	160U	160U	1600U	1600U	820U	33U
Endrin ketone	66U	33U	32U	330U	330U	160U	6.6U
Endrin aldehyde	66U	33U	32U	330U	330U	160U	6.6U
Technical Chlordane	1300U	660U	650U	6500U	6600U	3300U	130U
Toxaphene	3300U	1600U	1600U	16000U	16000U	8200U	330U
Aroclor-1016	660U	330U	320U	3300U	3300U	1600U	66U
Aroclor-1221	1300U	660U	650U	6500U	6600U	3300U	130U
Aroclor-1232	660U	330U	320U	3300U	3300U	1600U	66U
Aroclor-1242	660U	330U	320U	3300U	3300U	1600U	66U

302022

Table 75c - continued
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	FROG Y01DDL	FROG Y02DL	FROG Y03DL	NEWT A01DL	NEWT A01DDL	NEWT A02DL	NEWT A03DL
Aroclor-1248	2900PD	140JPD	320U	7800PD	8900PD	4800PD	66U
Aroclor-1254	660U	330U	320U	3300U	3300U	1600U	66U
Aroclor-1260	660U	330U	320U	3300U	3300U	1600U	66U
Percent Lipids	0.1	0.7	0.4	1.5	NA	0.9	0.2

302023

Table 75c - continued
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	NEWT A04DL	NEWT A04DDL	NEWT Y01DL
alpha-BHC	33U	33U	81U
beta-BHC	33U	33U	81U
delta-BHC	33U	33U	81U
gamma-BHC (Lindane)	33U	33U	81U
Heptachlor	33U	33U	81U
Aldrin	33U	33U	81U
Heptachlor epoxide	33U	33U	81U
Endosulfan I	33U	33U	81U
Dieldrin	66U	66U	160U
4,4'-DDE	66U	66U	160U
Endrin	66U	66U	160U
Endosulfan II	66U	66U	160U
4,4'-DDD	66U	66U	160U
Endosulfan sulfate	66U	66U	160U
4,4'-DDT	66U	66U	160U
Methoxychlor	330U	330U	810U
Endrin ketone	66U	66U	160U
Endrin aldehyde	66U	66U	160U
Technical Chlordane	1300U	1300U	3200U
Toxaphene	3300U	3300U	8100U
Aroclor-1016	660U	660U	1600U
Aroclor-1221	1300U	1300U	3200U
Aroclor-1232	660U	660U	1600U
Aroclor-1242	660U	660U	1600U

302024

Table 75c - continued
Biota Pesticides and PCBs Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

	NEWT A04DL	NEWT A04DDL	NEWT Y01DL
Aroclor-1248	7200D	7600D	5400PD
Aroclor-1254	660U	660U	1600U
Aroclor-1260	660U	660U	1600U
Percent Lipids	0.2	0.5	0.5

302025

Table 76a
Surface Soil and Worm Inorganic Analytical Results (mg/kg)
Richardson Hill Road Municipal Landfill Site

Compound	Concentration Units (mg/kg)					
	CS-1	CS-2	CS-3	SOIL-LF-1	WORM C	WORM-1
Aluminum	18200	13100	17000	15000	876	5700
Antimony	0.17U	0.14U	0.24B	0.16U	0.69U	1.1B
Arsenic	18.5	11.8	11.9	11.5	3.8U	5.1B
Barium	125	54.5	67.6	74.5	20.5B	82.3B
Beryllium	0.85B	0.25B	0.44B	0.77B	0.34U	0.55B
Cadmium	0.39U	0.32U	0.32U	0.38U	5.5	37.5
Calcium	827B	545B	1130B	523B	5980	6220
Chromium	21.2B	11.2B	13.5B	37.2	3.7U	9.8B
Cobalt	14.9	3.4B	7.0B	14.0	5.5B	6.4B
Copper	18.1B	12.3B	15.9B	76.4	6.8B	33.0B
Iron	30000	29500	29600	28400	1360	8260
Lead	30.0B	25.6B	37.5	38.4B	3.3B	21.0B
Magnesium	3260	1280	2180	3970	885B	2070B
Manganese	377B	157B	487B	726	47.0B	414B
Mercury	0.07U	0.06U	0.11B	0.07U	0.28U	0.30B
Nickle	21.6B	7.9B	13.0B	26.6	4.1U	12.9B
Potassium	1040B	304B	658B	1030B	6520	7080
Selenium	0.85B	1.1B	1.2	0.74B	2.9U	1.9U
Silver	0.93U	0.77U	0.75U	0.90U	3.8U	2.5U
Sodium	37.3B	15.3B	17.7B	27.5B	3480B	2490B
Thallium	1.5U	1.2U	1.2U	1.4U	5.9U	3.9U
Vanadium	28.4	29.1	25.0	18.1	3.7U	9.7B
Zinc	94.2B	43.4B	92.9B	108B	220B	665

Table 76b
Surface Soil and Worm Pesticide/PCB Analytical Results (µg/kg)
Richardson Hill Road Municipal Landfill Site

Compound	Concentration Units (µg/kg)	
	WORM-1DL	LF-1DL
Alpha-BHC	33U	210U
Beta-BHC	33U	210U
Delta-BHC	33U	210U
Gamma-BHC (Lindane)	33U	210U
Heptachlor	33U	210U
Aldrin	33U	210U
Heptachlor epoxide	33U	210U
Endosulfane I	33U	210U
Dieldrin	66U	430U
4,4'-DDE	66U	430U
Endrin	66U	430U
Endosulfan II	66U	430U
4,4'-DDD	66U	430U
Endosulfan sulfate	66U	430U
4,4'-DDT	66U	2100U
Methoxychlor	330U	430U
Endrin ketone	66U	430U
Endrin aldehyde	66U	8500U
Technical Chlordane	1300U	21000U
Toxaphene	3300U	4300U
Aroclor-1016	660U	8500U
Aroclor-1221	1300U	8500U
Aroclor-1232	660U	4300U
Aroclor-1242	660U	4300U

Table 76b - continued
Surface Soil and Worm Pesticide/PCB Analytical Results ($\mu\text{g/kg}$)
Richardson Hill Road Municipal Landfill Site

Compound	Concentration Units ($\mu\text{g/kg}$)	
	WORM-1DL	LF-1DL
Aroclor-1248	9900D	31000D
Aroclor-1254	660U	4300U
Aroclor-1260	660U	4300U

Table 77
Surface Water COPCs
Richardson Hill Road Municipal Landfill Site

Compound	max detection (ppb)	comparison criteria (ppb)
aluminum	723	87 (USEPA)
barium	45.8	3.8 **
calcium	15800	no value
copper	25	7.5*
iron	11600	300 (NYS)
magnesium	4640	35000
manganese	3010	80.3 **
mercury	0.17	0.012
potassium	1090	no value
sodium	5020	no value
zinc	38	30*
vinyl chloride	200	87.8**
1,1-DCA	48	46.6**
1,2-DCE	1600	31.2**
1,1,1-TCA	65	62.1**
TCE	59	465**
toluene	10	176**
carbon disulfide	29	8.89**
methylene chloride	8	2240**
acetone	9	11.200**
tetrachloroethene	0.7	125**
di-N-butylphthalate	2	32.7**
PCB Aroclor 1248	4.6	0.001

* Calculated based on site surface water hardness of 58.6 ppm

** Secondary Chronic Values from Suter and Mabrey, 1994

bold - COC

302029

Table 78
Sediment COPCs
Richardson Hill Road Municipal Landfill Site

Compound	Max Det (ppm)	Criteria (ppm)
aluminum	34100	no value
arsenic	35.2	6 (NYS)
barium	500	20 **
calcium	4180	no value
chromium	55.3	26
cobalt	22.9	no value
copper	80.3	16 (NYS)
iron	23800	20000 (NYS)
lead	380	31 (NYS)
magnesium	4400	no value
manganese	2860	460 (NYS)
nickel	29.3	16 (NYS)
potassium	3250	no value
vanadium	33.3	no value
vinyl chloride	0.41	0.021 **
methylene chloride	0.019	0.427 **
carbon disulfide	0.058	0.013 **
1,1-DCA	0.3	0.027 **
1,2-DCE	3.5	0.023 **
1,1,1-TCA	0.47	0.179 **
TCE	0.3	1.07 **
toluene	1.4	0.786 **
ethylbenzene	0.45	4.36 **
xylene	0.38	1.21 **
chloroethane	0.031	0.325 ** (1,2-DCA)
PCB Aroclor 1254	0.72	0.06*
PCB Aroclor 1248	1300	0.03*

* Values from MOE (1994)

** Values from Hull & Suter (1994)

bold - COC

302030

Table 79
Soil COPCs
Richardson Hill Road Municipal Landfill Site

Compound	Max Detect	Background	NJDEP Soil Guidelines
cadmium	0.70	<0.39	3
calcium	2100	1130	--
chromium	37.2	21.2	100
copper	76.4	18.1	170
lead	46	37.5	250 - 1000
magnesium	3970	3260	--
manganese	1200	487	--
nickel	26.6	21.6	100
zinc	108	94.2	350
PCB Aroclor 1254	0.95		
PCB Aroclor 1248	626.7		

- units are mg/kg
- bold - coc

302031

Table 80
Exposure Pathway Summary
Richardson Hill Road Municipal Landfill Site

Medium	Receptors	COPCs	Exposure Mechanism	Pathway Status
Surface Water	invertebrates, amphibians, reptiles, birds, mammals	Al, Ba, Ca, Cu, Fe, Mg, Mn, Hg, K, Na, Zn, vinyl chloride, 1,1-DCA, 1,2-DCE, 1,1,1-TCA, TCE, toluene, CS ₂ , methylene chloride, acetone, tetrachloroethene, di-N-butylphthalate, PCB Aroclor 1254 and PCB Aroclor 1248	dermal contact, ingestion	Complete
Sediments	amphibians, reptiles, fish, birds, mammals	Al, As, Ba, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, V, vinyl chloride, methylene chloride, CS ₂ , 1,1-DCA, 1,2-DCE, 1,1,1-TCA, TCE, toluene, ethylbenzene, xylenes, chloroethane, PCB Aroclor 1254 and PCB Aroclor 1248	dermal contact, ingestion	Complete
Soil	terrestrial birds and mammals	Cd, Ca, Cr, Cu, Pb, Mg, Mn, Ni, Zn, PCB Aroclor 1254 and PCB Aroclor 1248	dermal contact, ingestion	Complete
Aquatic biota	great blue heron, kingfisher, waterfowl, mink,	Al, As, Cr, Cu, Fe, Pb, Mn, Ni, Zn, 1,1-DCA, 1,2-DCE, 1,1,1-TCA, CS ₂ , vinyl chloride, benzo(a)pyrene, PCB Aroclor 1248	ingestion	Complete

302032

Table 81
Caged Fish Study - PCB Analytical Results
Richardson Hill Road Municipal Landfill Site

Sample Name	0 days	9 days	14 days	21 days	34 days
PCB Concentration (ug/kg) Following Exposure (days)					
PCB Control		51U			2000U***
PCB West		5200D	3900	10000PD	11000PD
PCB East		1400*		2800D	
PCB South		3900	4100PD	6000D	9300PD
PCB Outlet		2300	4600D	6500PD	13000PD***
% Lipids Following Exposure (days)					
PCB Control		1.4			
PCB West		2.3	**	1.6	
PCB East		1.5*		1.0	
PCB South		2.3	1.6	1.2	
PCB Outlet		0.8	1.3	**	

* Exposure duration of 5 days

** Insufficient sample for analysis

*** Samples were mis-labeled when collected

302033

TABLE 82
Life History Hazard Quotient Inputs
Richardson Hill Road Municipal Landfill Site

Life History Data	Great Blue Heron	Mink	Deer Mouse
Daily intake rate (dIR) forage (kg-d)	0.401	0.381	0.007
Body weight (kg)	2.229	0.852	0.022
dIR forage /bw (kg/kg-day)	0.180	0.220	0.300
Home Range	1.9 mi	1.6 mi	0.1 acres
Area Use Factor (AUF) Site/Available Habitat	0.090	0.110	1.000
Fraction of total dietary composition: (% wet weight)			
Fish (% of dIR forage/day):	94.000	66.000	
dIR fish/bw (kg/kg-day)	0.169	0.145	
Amphibians (% of dIR forage/day)	4.000	2.000	
dIR amphibians/bw (kg/kg-day)	0.007	0.004	
Invertebrates (% of dIR forage/day)	1.000	11.000	25.000
dIR invertebrates/bw (kg/kg-day)	0.018	0.024	0.075
Vegetation (% of dIR forage-day)		17.000	75.000
dIR vegetation (kg/kg-day)		0.037	0.225
Surface water and incidental soil/sediment ingestion:			
Water ingestion (% of body weight/day)	2.000	6.300	19.000
dIR water/bw (kg/kg -day)	0.045	0.110	0.004
Soil/sediment ingestion (% of dIRforage/day)	5.000	5.300	2.000
dIRsoil = (kg/kg/day)	0.010	0.012	0.006

* HQ model inputs from USEPA, 1993b

302034

Table 83
Selected Threshold Values
Richardson Hill Road Municipal Landfill Site

Chemical of Concern (Media)	Great Blue Heron STV(1) Test Species	Mink STV(2) Test Species	Deer Mouse STV(3) Test Species
Aluminum (SW)	45.167 ringed dove	0.607 mouse	
Arsenic (SED)	3.852 mallard duck	0.040 mouse	
Barium (SW, SED)	7.794 chicken	3.845 rat	
Cadmium (SS)			0.212 mouse
Chromium (SED, SS)	0.807 black duck	2.320 rat	8.174 rat
Copper (SW, SED, SS)	20.263 chicken	11.710 mink	41.263 mink
Lead (SED, SS)	1.473 American kestrel	5.658 rat	19.936 rat
Manganese (SW, SED, SS)	62.234 rat (mink endpoint species)	62.234 rat	219.290 rat
Mercury (SW)	0.005 mallard duck	0.015 mink	
Nickel (SED, SS)	53.534 mallard duckling	28.288 rat	99.680 rat
Zinc (SW, SS)	2.250 mallard duck	113.152 rat	398.720 rat
Carbon disulfide (SW, SED) (4)	3.000 mouse * 0.1 UF	3.000 mouse * 0.1 UF	
1,1,1-Trichloroethane (SW, SED)	33.100 mink * 0.1 UF (mouse)	330.780 mouse	
1,1-Dichloroethane (SW, SED) (5)	15.070 chicken	16.540 mouse	
1,2-Dichloroethylene (SW, SED)	1.420 mink * 0.1 UF (mouse)	14.210 mouse	
Toluene (SED)	0.817 mink * 0.1 UF (rat)	8.168 rat	
Vinyl Chloride (SW, SED)	0.012 mink * 0.1 UF (rat)	0.120 rat	
Aroclor 1248 (SW, SED, SS)	0.135 ring-necked pheasant (Aroclor 1254)	0.137 mink (Aroclor 1254)	0.135 mouse (Aroclor 1254)
Aroclor 1254 (SED, SS)	0.135 ring-necked pheasant	0.137 mink	0.135 mouse

(1) Endpoint species is Great Blue Heron unless otherwise noted

(2) Endpoint species is the mink

(3) Endpoint species is the white-footed mouse (*Peromyscus leucopus*)

(4) STV from Agency for Toxic Substance and Disease Registry (1993).

(5) STVs for 1,2-Dichloroethane

UF = uncertainty factor applied for interspecies values

Note: All values are from Opresko et. al, 1994

302035

Table 84
Great Blue Heron Hazard Quotient Calculation

Chemical of Concern	Mean Data (ppm)		Biota Mean Data (ppm)				TDI	STV	HQ
	water	sediment	fish	amphibian	Invertebrate				
					BCF	concentration			
Aluminum(1)	0.265	14878.571	1067.500	3808.250	0.380	5653.857	31.692	45.167	0.702
Arsenic	0.001	21.012	0.920	0.880	5.466	114.852	0.050	0.052	0.013
Barium	0.044	264.714	0.000	256.000	2.089	552.988	0.470	7.794	0.060
Chromium(2)	0.001	23.714	8.025	13.150	0.008	0.142	0.150	0.807	0.186
Copper	0.025	43.570	25.925	31.175	1.300	56.641	0.460	20.253	0.023
Lead	0.001	88.871	4.775	11.750	18.620	1654.778	0.420	1.473	0.285
Manganese	1.180	1219.750	314.000	2731.850	2.170	2646.858	7.973	62.234	0.128
Mercury	0.000	0.110	0.153	0.182	0.471	0.052	0.003	0.005	0.509
Nickel	0.004	29.300	3.230	2.860	4.527	132.641	0.096	53.534	0.002
Zinc	0.027	85.443	173.750	107.525	11.460	124.747	2.805	2.250	1.247
Carbon disulfide	0.007	0.052	0.003	0.003	4.882	0.255	0.000	3.000	0.000
1,1,1-Trichloroethane	0.003	0.072	0.003	0.003	7.822	0.565	0.000	33.100	0.000
1,1-Dichloroethane	0.003	0.063	0.003	0.003	2.089	0.131	0.000	15.070	0.000
1,2-Dichloroethylene	0.060	0.123	0.003	0.003	2.884	0.292	0.000	1.420	0.000
Toluene	0.002	0.118	0.003	0.003	12.299	1.450	0.000	0.817	0.000
Vinyl chloride	0.008	0.279	0.005	0.005	0.929	0.260	0.000	0.012	0.032
Aroclor 1254 (3)	0.004	0.302	4.600	2.530	0.180	0.054	0.072	0.135	0.533
Aroclor 1248(3)	0.002	44.250	22.100	4.600	0.180	7.965	0.377	0.135	2.790

Key:

- 1 - Aluminum BCF derived from site specific soil and worm samples.
- 2 - Chromium BCF derived from Neff et al. (1978) as cited in Eisler (1986a).
- 3 - Aroclor 1248 and 1254 BCF derived from Meier and Rediske (1984) as cited in Eisler (1986b).

STV - literature based selected threshold value (mg chemical / kg body weight / day)

BCF - bioconcentration factor

TDI -total daily intake

HQ - hazard quotient

Notes:

- BCFs derived from Lyman et al. (1988) regression equation using Log K values except Al and Aroclor 1248.
- Table contains COPCs only.
- STVs from Opresko, Sample, and Suter (1994).
- Analyte concentration in fish reported as wet weight.

Table 85
Mink Hazard Quotient Calculation

Chemical of Concern	Mean Data (ppm)				Biota Mean Data (ppm)				TDI	STV	HQ
	water	sediment	fish	amphibian	Invertebrate	plant	plant	plant			
Aluminum(2)	0.265	14878.571	1067.500	3808.250	0.380	5653.857	0.560	833.200	56.458	0.607	93.012
Arsenic	0.001	21.012	0.920	0.880	6.488	114.852	1.814	8.812	0.383	0.04	0.08745
Barium	0.044	264.714	0.000	256.000	2.089	552.988	3.578	94.715	2.326	3.845	0.604856
Chromium(3)	0.001	23.714	0.025	18.150	0.006	0.122	0.780	1.850	0.73	2.62	0.075
Copper	0.025	43.570	25.925	31.175	1.300	56.641	4.990	21.741	0.726	11.710	0.062
Lead	0.001	88.871	1.775	1.780	18.820	165.778	0.780	6.751	1.829	5.858	0.318
Manganese	1.180	1219.750	314.000	2731.850	2.170	2646.858	3.480	424.473	16.708	62.234	0.268
Mercury	0.000	0.110	0.153	0.182	0.471	0.082	0.283	0.113	0.003	0.015	0.218
Nickel	0.004	29.300	3.230	2.860	4.527	132.641	2.072	6.071	0.469	28.288	0.017
Zinc	0.027	85.443	1.23750	10.7525	1.480	124.727	4.800	49.804	3.431	18.152	0.030
Carbon disulfide	0.007	0.052	0.003	0.003	4.882	0.255	1.965	0.010	0.001	3.000	0.000
1,1,1-Trichloroethane	0.003	0.072	0.003	0.003	2.822	0.585	3.109	0.010	0.002	330.780	0.000
1,1-Dichloroethane	0.003	0.063	0.003	0.003	2.089	0.131	3.576	0.022	0.001	16.540	0.000
1,2-Dichloroethylene	0.000	0.123	0.003	0.003	2.884	0.292	3.258	0.020	0.002	17.210	0.000
Toluene	0.002	0.118	0.003	0.003	12.299	1.450	1.023	0.012	0.004	8.168	0.001
Vinyl Chloride	0.008	0.209	0.005	0.005	0.929	0.198	0.998	0.010	0.002	10.200	0.013
Aroclor 1254 (4)	0.004	0.302	4.600	2.530	0.180	0.054	0.010	0.000	0.075	0.137	0.549
Aroclor 1248(4)	0.002	44.250	22.100	4.600	0.180	7.885	0.010	0.044	0.433	0.372	3.163

Key:

- 1 - Calculated concentration includes a wet weight to dry weight PUF conversion factor of 0.1.
 - 2 - Aluminum BCF derived from site specific soil and worm samples. Invertebrate concentration = sediment concentration * BCF.
 - 3 - Chromium BCF derived from Neff et al. (1978) as cited in Eisler (1986a).
 - 4 - Aroclor 1248 and 1254 BCF derived from Meier and Rediske (1984) as cited in Eisler (1986).
- STV - literature based selected threshold value (mg chemical / kg body weight / day)
 BCF - bioconcentration factor
 PUF - plant uptake factor
 TDI -total daily intake
 HQ - hazard quotient

Notes:

- BCFs derived from Lyman et al. (1982) regression equation using Log K values except Al and Aroclor 1248.
- PUFs derived from Baes et al. (1984) and Travis and Arms (1988) using Log K values.
- Table contains COPCs only.
- STVs from Opresko, Sample, and Suter (1994).
- Analyte concentration in fish reported as wet weight.

302037

Table 86
Deer Mouse Hazard Quotient Calculation

Chemical of Concern	Mean Site Data (ppm)		Blot Mean Site Data (ppm)				TDI	STV	HQ
	water	soil	Invertebrate(1)		plant				
			BCF	concentration(1)	PUF	concentration(2)			
Cadmium	0.001	0.410	14.500	5.945	13.177	0.540	0.570	0.212	2.688
Chromium (as Cr VI)	0.001	22.400	0.100	2.240	0.078	0.175	0.842	8.174	0.042
Copper	0.025	61.800	0.090	5.562	4.990	30.838	7.727	41.263	0.187
Lead	0.001	35.000	0.090	3.150	0.780	2.680	1.045	19.936	0.052
Manganese	1.180	908.670	0.060	54.520	3.480	316.217	80.695	219.290	0.368
Nickel	0.004	23.200	0.150	3.480	2.072	4.807	1.482	99.680	0.015
Zinc	0.027	80.500	2.000	161.000	4.600	37.030	20.890	398.720	0.052
Aroclor 1254 (3)	0.004	0.670	0.319	0.214	0.010	0.001	0.020	0.135	0.150
Aroclor 1248	0.002	38.680	0.319	12.339	0.010	0.039	1.166	0.135	8.639

Key:

- 1 - Invertebrate BCFs derived from site specific soil and worm samples. Invertebrate concentration = soil concentration * BCF.
- 2 - Calculated concentration includes a wet weight to dry weight PUF conversion factor of 0.1.
- 3 - Invertebrate and plant concentrations derived from Aroclor 1248 BCF and PUF values.
- STV - literature based selected threshold value (mg chemical / kg body weight / day)
- PUF - plant uptake factor
- TDI -total daily intake
- HQ - hazard quotient

Notes:

- PUFs derived from Baes et al. (1984) and Travis and Arms (1988) using Log K values.
- Table contains COPCs only.
- STVs from Opresko, Sample, and Suter (1994).
- Analyte concentration in fish reported as wet weight.

302038