TABLE 4.1

POTABLE WATER FOR SLURRY TEST RESULTS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Collection Date (mm/dd/yyyy)	Source	Total Hardness (mg/L $CaCO_3$)	Total Organic Carbon (TOC) (mg/L)	Total Dissolved Solids (TDS) (mg/L)	pH (pH)	Comments
Criteria		LT 50	LT 50	LT 500	6.5 to 7.5 SU	
05/08/2003	Jess Howe's Pond	19.5	LT 6	47	7.6	Notes 1, 2.
06/10/2004	Jess Howe's Pond	27	LT 10	47	7.2	
07/09/2004	Jess Howe's Pond	31 B	LT 10	10	7.2	
07/15/2004	Jess Howe's Pond	32	LT 10	46	7.5	
07/21/2004	Jess Howe's Pond	30	LT 10	48	7.4	
07/26/2004	Jess Howe's Pond	32	LT 10	49	8.5	Note 2.
08/02/2004	Jess Howe's Pond	29	NA	56	8.2	Notes 2,3.

Notes:
1. Initial characterization sample. PCBs non-detect, at detection limits ranging from 0.05 to 0.10 ug/L, depending on arochlor.
2. pH outside specified range of 6.5 to 7.5 SU. Did not affect performance of slurry.
3. NA = Sample result not available.

TABLE 4.2

FRESH SLURRY PROPERTY TEST RESULTS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Material	Date	Time	pH	Temp (^{o}F)	Viscosity (seconds)	Density (pcf)	Notes	Comments
Criteria			**9.5-10 SU**		**>80**	**>63.5**		
Fresh Slurry	7/9/2004	11:00	10.4	64	105	63		Notes 1, 2
	7/10/2004	7:30	10.4	71	120	62.4	Tank 1 (White)	Notes 1, 2
	7/10/2004	7:30	10.3	73	110	62.5	Tank 2 (Green)	Notes 1, 2
	7/10/2004	13:55	10.3	78	116	63	Outlet Pipe @ Trench	Notes 1, 2
	7/11/2004	7:25	10.5	72	120	63	Tank 2 (Green)	Notes 1, 2
	7/11/2004	14:10	10.4	78	105	62.4	Tank 2 (Green)	Notes 1, 2
	7/12/2004	7:50	10.5	76	110	62.4	Tank 2 (Green)	Notes 1, 2
	7/12/2004	7:50	10.5	73	90	62.4	Tank 1 (White)	Notes 1, 2
	7/12/2004	14:45	10.4	NT	95	63	Tank 1 (White)	Notes 1, 2
	7/13/2004	7:50	10.4	70	115	62.5	Tank 1 (White)	Notes 1, 2
	7/13/2004	7:50	10.4	71	110	62.5	Tank 2 (Green)	Notes 1, 2
	7/13/2004	13:30	10.3	70	97	62.4	Tank 1 (White)	Notes 1, 2
	7/13/2004	13:30	10.4	72	101	62.4	Tank 2 (Green)	Notes 1, 2
	7/13/2004	15:30	10.4	75	113	NT	Outlet Pipe @ Trench	Notes 1, 3
	7/14/2004	8:00	10.4	71	100	62.5	Tank 2 (Green)	Notes 1, 2
	7/14/2004	8:00	10.4	70	115	62.4	Tank 1 (White)	Notes 1, 2
	7/14/2004	16:00	10.5	74	85	NT	Tank 2 (Green)	Notes 1, 3
	7/14/2004	16:00	10.5	73	83	NT	Tank 1 (White)	Notes 1, 3
	7/15/2004	7:45	10.5	71	83	NT	Tank 1 (White)	Notes 1, 3
	7/15/2004	7:45	10.5	72	85	NT	Tank 2 (Green)	Notes 1, 3
	7/15/2004	15:30	10.5	72	90	NT	Tank 2 (Green)	Notes 1, 3
	7/15/2004	15:30	10.5	72	98	NT	Tank 1 (White)	Notes 1, 3
	7/16/2004	7:45	10.5	70	88	63.2	Tank 2 (Green)	Notes 1, 2
	7/16/2004	8:05	10.5	69.5	97	63.3	Tank 1 (White)	Notes 1, 2
	7/16/2004	4:00	10.5	72.5	100	NT	Tank 1 (White)	Notes 1, 3
	7/16/2004	4:15	10.5	72	95	NT	Tank 2 (Green)	Notes 1, 3
	7/17/2004	7:35	10.5	70	100	62	Tank 1 (White)	Notes 1, 2, 4
	7/17/2004	7:35	10.5	70	100	62	Tank 2 (Green)	Notes 1, 2, 4
	7/17/2004	8:05	10.5	68	113	63	Outlet Pipe @ Trench	Notes 1, 2
	7/17/2004		10.5	73	120	62.4	Tank 1 (White)	Notes 1, 2, 4
	7/17/2004		10.5	73	105	62.4	Tank 2 (Green)	Notes 1, 2, 4
	7/18/2004	7:30	10.5	71.5	100	63.9	Tank 2 (Green)	Note 1
	7/18/2004	7:50	10.5	71	115	63.9	Tank 1 (White)	Note 1
	7/18/2004	15:00	10.5	70	120	63.9	Tank 1 (White)	Note 1
	7/18/2004	15:00	10.5	70	115	63.9	Tank 2 (Green)	Note 1
	7/19/2004	7:20	10.5	69	120	64.3	Tank 1 (White)	Note 1
	7/19/2004	7:40	10.5	69	115	64.3	Tank 2 (Green)	Note 1
	7/19/2004	15:45	10.5	74	118	64.0	Tank 1 (White)	Note 1
	7/19/2004	15:30	10.5	74	115	64.0	Tank 2 (Green)	Note 1
	7/20/2004	7:45	10.5	71.5	115	64.1	Tank 1 (White)	Note 1
	7/20/2004	7:30	10.5	71.5	115	64.1	Tank 2 (Green)	Note 1
	7/20/2004	16:00	10.5	76	105	64.0	Tank 1 (White)	Note 1
	7/20/2004	16:15	10.5	75	113	64.0	Tank 2 (Green)	Note 1
	7/21/2004	7:45	10.5	70.5	100	64.0	Tank 1 (White)	Note 1
	7/21/2004	7:30	10.5	70	115	64.0	Tank 2 (Green)	Note 1
	7/21/2004	16:30	10.5	77	105	64.0	Tank 1 (White)	Note 1
	7/21/2004	16:15	10.5	77	105	64.0	Tank 2 (Green)	Note 1
	7/22/2004	7:45	10.5	70.5	100	64.0	Tank 1 (White)	Note 1
	7/22/2004	7:30	10.5	70	115	64.0	Tank 2 (Green)	Note 1
	7/22/2004	16:30	10.5	79	105	62.0	Tank 1 (White)	Notes 1, 2, 4
	7/22/2004	16:00	10.5	78.5	105	62.0	Tank 2 (Green)	Notes 1, 2, 4

TABLE 4.2

FRESH SLURRY PROPERTY TEST RESULTS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Material	Date	Time	pH	Temp (^{o}F)	Viscosity (seconds)	Density (pcf)	Notes	Comments
Fresh Slurry	7/23/2004	7:45	10.5	76	92	62.4	Tank 1 (White)	Notes 1, 2, 4
	7/23/2004	7:30	10.5	75.5	108	62.4	Tank 2 (Green)	Notes 1, 2, 4
	7/23/2004	15:10	10.5	79	93	62.4	Tank 1 (White)	Notes 1, 2, 4
	7/23/2004	15:20	10.5	79	93	62.4	Tank 2 (Green)	Notes 1, 2, 4
	7/28/2004	7:15	10.5	73	92	62.8	Tank 1 (White)	Notes 1, 2, 4
	7/28/2004	7:25	10.5	73	110	62.8	Tank 2 (Green)	Notes 1, 2, 4
	7/28/2004	15:30	10.5	68	100	62.9	Tank 1 (White)	Notes 1, 2
	7/28/2004	15:40	10.5	68	100	62.9	Tank 2 (Green)	Notes 1, 2
	7/29/2004	7:40	10.5	67	100	62.8	Tank 1 (White)	Notes 1, 2
	7/29/2004	7:30	10.5	70	100	62.8	Tank 2 (Green)	Notes 1, 2
	7/29/2004	16:30	10.5	74	100	62.8	Tank 1 (White)	Notes 1, 2
	7/29/2004	16:40	10.5	74	100	62.8	Tank 2 (Green)	Notes 1, 2
	7/30/2004	7:40	10.5	68	105	62.9	Tank 1 (White)	Notes 1, 2
	7/30/2004	7:30	10.5	70	100	62.6	Tank 2 (Green)	Notes 1, 2
	7/30/2004	14:55	10.5	75	95	62.8	Tank 1 (White)	Notes 1, 2
	7/30/2004	15:05	10.5	74	90	62.8	Tank 2 (Green)	Notes 1, 2
	7/31/2004	7:25	10.5	72	96	62.9	Tank 1 (White)	Notes 1, 2
	7/31/2004	7:35	10.5	71	96	62.9	Tank 2 (Green)	Notes 1, 2
	7/31/2004	15:05	10.5	75.5	98	62.6	Tank 1 (White)	Notes 1, 2
	7/31/2004	15:10	10.5	75	98	62.6	Tank 2 (Green)	Notes 1, 2
	8/1/2004	7:35	10.5	70	115	62.9	Tank 1 (White)	Notes 1, 2
	8/1/2004	7:25	10.5	72	100	62.9	Tank 2 (Green)	Notes 1, 2
	8/1/2004	15:35	10.5	78	100	62.5	Tank 1 (White)	Notes 1, 2
	8/1/2004	15:45	10.5	79	100	62.5	Tank 2 (Green)	Notes 1, 2
	8/2/2004	7:45	10.5	71	98	62.6	Tank 1 (White)	Notes 1, 2
	8/2/2004	7:35	10.5	70	98	62.6	Tank 2 (Green)	Notes 1, 2
	8/2/2004	17:20	10.5	78	93	63.0	Tank 1 (White)	Notes 1, 2
	8/2/2004	17:15	10.5	78	95	63.0	Tank 2 (Green)	Notes 1, 2
	8/3/2004	7:30	10.5	71	95	63.0	Tank 1 (White)	Notes 1, 2
	8/3/2004	7:20	10.5	72	98	63.0	Tank 2 (Green)	Notes 1, 2
	8/3/2004	16:00	10.5	79	95	62.7	Tank 1 (White)	Notes 1, 2
	8/3/2004	15:45	10.5	79	95	62.7	Tank 2 (Green)	Notes 1, 2
	8/4/2004	7:35	10.5	74	97	63.0	Tank 1 (White)	Notes 1, 2
	8/4/2004	8:00	10.5	74	94	63.0	Tank 2 (Green)	Notes 1, 2
	8/4/2004	16:00	10.5	77	100	62.8	Tank 1 (White)	Notes 1, 2
	8/4/2004	16:15	10.5	78	95	62.8	Tank 2 (Green)	Notes 1, 2
	8/5/2004	7:35	10.5	70	105	63.0	Tank 1 (White)	Notes 1, 2
	8/5/2004	7:45	10.5	70	95	63.0	Tank 2 (Green)	Notes 1, 2
	8/6/2004	7:40	10.5	64	105	62.9	Tank 1 (White)	Notes 1, 2
	8/6/2004	7:30	10.5	64	105	62.9	Tank 2 (Green)	Notes 1, 2
	8/6/2004	15:25	10.5	70	110	63.1	Tank 1 (White)	Notes 1, 2
	8/6/2004	15:30	10.5	68	100	63.1	Tank 2 (Green)	Notes 1, 2
	8/7/2004	7:40	10.5	64	110	62.8	Tank 1 (White)	Notes 1, 2
	8/7/2004	7:30	10.5	64	110	62.8	Tank 2 (Green)	Notes 1, 2
	8/7/2004	15:30	10.5	67	110	62.8	Tank 1 (White)	Notes 1, 2
	8/7/2004	15:45	10.5	67	110	62.8	Tank 2 (Green)	Notes 1, 2
	8/8/2004	7:25	10.5	60	110	62.8	Tank 1 (White)	Notes 1, 2
	8/8/2004	7:15	10.5	60	110	62.8	Tank 2 (Green)	Notes 1, 2
	8/8/2004	17:00	10.5	76	100	62.8	Tank 1 (White)	Notes 1, 2
	8/9/2004	8:45	10.5	64	130	62.8	Tank 1 (White)	Notes 1, 2
	8/9/2004	16:15	10.5	69	110	62.8	Tank 1 (White)	Notes 1, 2

Notes:

1. pH outside specified range of 9.5 to 10 SU. Did not affect performance of slurry.
2. Density less than the minimum of 63.5 pcf. Did not affect performance of slurry.
3. NT - Not Tested
4. Unit weight measured with a triple beam.

TABLE 4.3

IN TRENCH SLURRY PROPERTY TEST RESULTS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Material	Date	Time	pH	Temp (^{o}F)	Viscosity (seconds)	Density (pcf)	Notes	Comments
Criteria			**9.5-10 SU**		**>80**	**>63.5**		
In trench Slurry	7/9/2004	17:00	10.5	NT	120	NT		Notes 1,3
	7/10/2004	7:30	10.4	66.8	130	NT		Notes 1,3
	7/10/2004	13:55	9.8	74	137	67	Lime added to trench slurry at end of day	
	7/11/2004	9:00	10.1	73	130	66		Note 1
	7/11/2004	14:10	9.9	74	110	67.5	Lime added to trench slurry at end of day	
	7/12/2004	7:50	10.0	73	131	67	Bottom of Trench at Station 11+40	
	7/12/2004	15:45	10.0	71	110	65	Station 11+00	
	7/13/2004	7:50	10.1	68	115	64.5		Note 1
	7/13/2004	17:30	10.3	63	115	63	Station 11+00 (top)	Notes 1, 2
	7/14/2004	7:30	10.0	68	115	64.5	Station 10+90	
	7/14/2004	15:45	10.1	71	114	65	Station 10+70 (middle)	Note 1
	7/15/2004	7:45	10.1	71	83	63	Station 10+50, top	Note1, 2
	7/15/2004	16:30	10.0	70	90	64	Station 10+10, 10' BGS	
	7/16/2004	8:30	10.1	68	95	65.5	Station 10+20	Note 1
	7/16/2004	16:42	10.1	70	89	67	Station 9+80, 5' bgs	Note 1
	7/17/2004	7:50	10.1	68	89	65.5	Station 9+70, 15' bgs	Note 1
	7/18/2004	7:55	10.5	68	92	65	Station 9+30	Note 1
	7/18/2004	15:00	10.5	73	96	64	Station 9+60, 5' bgs	Note 1
	7/19/2004	7:30	10.3	69	115	65	Station 9+00, 5' bgs	Note 1
	7/19/2004	17:45	10.5	73	140	66.5	Station 8+70, 5'bgs	Note 1
	7/20/2004	11:40	10.6	76	120	64	Station 8+50	Note 1
	7/20/2004	17:45	10.6	75	115	64.5	Station 8+10	Note 1
	7/21/2004	8:00	11.0	69	117	64.5	Station 7+90, 8' bgs	Note 1
	7/21/2004	13:30	11.1	73	105	65.0	Station 7+90, 8' bgs	Note 1
	7/22/2004	8:15	10.6	72	115	64.0	Station 7+50, Surface	Note 1
	7/22/2004	15:40	10.3	75	121	64.5	Station 7+00, 10' bgs	Note 1
	7/23/2004	8:10	10.4	75	112	63.0	Station 6+90, Surface	Note 1, 2
	7/23/2004	15:45	10.1	73	114	66	Station 6+30, 11' bgs	Note 1
		8:10	10.1	66	56	62.5	Station 5+20, 5' bgs	Note 1, 2
		15:45	10.0	69	96	66	Station 5+10, 20' bgs	Note 6
	7/29/2004	8:44	10.0	67	72	64	Station 4+80, at 5' bgs	Note 4
	7/29/2004	17:05	10.2	79	101	64	Station 4+60, at 2' bgs	Note 1
	7/30/2004	8:55	9.8	68	98	65	Station 5+50, at 5' bgs	
	7/30/2004	16:08	10.3	77	89	64	Station 5+50, at 1' bgs	Note 1
	7/31/2004	8:35	10.0	67	85	65	Station 4+30, at 10' bgs	
	7/31/2004	14:05	9.9	69	90	66	Station 4+10, at 25' bgs	
	8/1/2004	11:00	9.8	67	88	66	Station 3+90, at 25' bgs	
	8/1/2004	16:10	9.9	70	93	65	Station 3+60, at 5' bgs	
	8/2/2004	9:10	9.9	69	96	65.5	Station 3+40, at 15' bgs	
	8/2/2004	17:35	9.5	69	92	63	Station 3+30, at 15' bgs	Note 2
	8/3/2004	10:35	9.8	67	93	65	Station 3+10, 20' bgs	
	8/3/2004	15:20	9.5	72	90	65.5	Station 3+00, 15' bgs	
	8/4/2004	8:45	9.5	71	108	65	Station 2+70, surface	
	8/4/2004	13:55	9.5	68	87	66	Station 2+55, 3' bgs	
	8/5/2004	11:00	10.3	74	78	63.5	Station 2+10, surface	Note 1, 4, 5
	8/5/2004	17:10	9.7	72	75	64	Station 2+10, surface	Note 4, 5
	8/6/2004	10:30	9.5	65	90	66.5	Station 2+10, 10' bgs	
	8/6/2004	13:50	10.0	66	116	66	Station 2+10, 5' bgs	
	8/7/2004	8:00	9.8	63	95	66.5	Station 1+60, Surface	
	8/7/2004	17:20	9.5	65	95	65.5	Station 2+80, Surface	
	8/8/2004	7:55	9.5	62.5	97	67	Station 1+40, 5' bgs	
	8/8/2004	12:45	9.5	63	97	68.5	Station 1+10, 8' bgs	
	8/9/2004	8:15	9.5	64	154	66	Station 0+60, 8' bgs	
	8/9/2004	12:45	9.5	64	122	68	Station 0+50, 10' bgs	
	8/10/2004	8:40	8.8	64	120	67	Station 0+20, 10' bgs	Note 1
	8/10/2004		9.0	68	117	67	Station 0+00, Surface	Note 1

Notes:
1. pH outside specified range of 9.5 to 10 SU. Did not affect performance of slurry.
2. Density less than the minimum of 63.5 pcf. Did not affect performance of slurry.
3. NT - Not Tested
4. Viscosity less than the minimum 80 sec. Corrective measures taken as described in report.
5. May be attributed to heavy rainfall the previous evening.
6. Backhoe

TABLE 4.4

GROUNDWATER EXTRACTION TRENCH EXCAVATION DEPTHS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Station Number	Approx. Start of Panel Location	Panel Number	Date	Surveyed Platform Elevation (FT)	Approximate Top of Dense Till/Bedrock (FT)	Final Excavation Depth (FT)	Panel Installation Depth (FT)	Depth of Excavation into Dense Till/Bedrock (FT)	Comments
11+50	11+47.5	51	7/11/2004	1760.0	15.0	23.0	20	8.0	Excavation backfilled with stone to panel installation depth.
11+40			7/11/2004	1760.0	18.0	28.9	20	10.9	Excavation backfilled with stone to panel installation depth.
11+30	11+25	50	7/11/2004	1760.0	17.0	30.3	18	13.3	Excavation backfilled with stone to panel installation depth.
11+20			7/12/2004	1760.0	15.0	25.5	18	10.5	Excavation backfilled with stone to panel installation depth.
11+10	11+02.5	49	7/12/2004	1760.0	14.5	18.5	18	4.0	Excavation backfilled with stone to panel installation depth.
11+00			7/13/2004	1760.0	16.5	18.0	18	1.5	
10+90			7/13/2004	1760.0	19.0	20.0	18	1.0	
10+80	10+80	48	7/13/2004	1760.0	16.6	19.2	18	2.6	
10+70			7/13/2004	1760.0	12.5	18.2	18	5.7	
10+60	10+57.5	47	7/14/2004	1760.0	--	18.2	18		
10+50			7/14/2004	1760.0	15.0	19.0	18	4.0	
10+40	10+35	46	7/14/2004	1760.0	15.0	18.4	18	3.4	
10+30			7/15/2004	1760.0	16.0	18.5	18	2.5	
10+20	10+12.5	45	7/15/2004	1760.0	16.0	20.0	19	4.0	
10+10			7/15/2004	1760.0	15.7	19.5	19	3.8	
10+00			7/16/2004	1760.0	16.0	20.0	19	4.0	
9+90	9+90	44	7/16/2004	1760.0	--	20.0	19		
9+80			7/16/2004	1760.0	17.3	20.0	19	2.7	
9+70	9+67.5	43	7/16/2004	1760.0	16.5	19.3	18.25	2.8	
9+60			7/16/2004	1760.0	16.0	18.0	18.25	2.0	
9+50	9+45	42	7/17/2004	1760.0	--	19.0	18		
9+40			7/18/2004	1760.0	16.0	20.0	18	4.0	
9+30	9+22.5	41	7/18/2004	1760.0	15.0	20.0	18	5.0	
9+20			7/18/2004	1760.0	14.0	18.0	18	4.0	
9+10			7/18/2004	1760.0	14.0	18.0	18	4.0	
9+00	9+00	40	7/19/2004	1760.0	15.0	17.8	18	2.8	
8+90			7/19/2004	1760.0	15.0	17.8	18	2.8	
8+80	8+77.5	39	7/19/2004	1760.0	15.0	20.5	19	5.5	
8+70			7/20/2004	1760.0	15.0	19.0	19	4.0	
8+60	8+55	38	7/20/2004	1760.0	15.0	18.4	18	3.4	
8+50			7/20/2004	1760.0	15.0	18.0	18	3.0	
8+40	8+32.5	37	7/20/2004	1760.0	16.0	19.0	19	3.0	
8+30			7/20/2004	1760.0	16.0	19.0	19	3.0	
8+20			7/20/2004	1760.0	16.0	19.0	19	3.0	
8+10	8+10	36	7/21/2004	1760.0	16.0	18.5	18.5	2.5	
8+00			7/21/2004	1760.0	16.0	19.0	18.5	3.0	
7+90	7+87.5	35	7/21/2004	1760.0	16.0	19.0	18	3.0	
7+80			7/21/2004	1760.0	16.0	19.0	18	3.0	
7+70	7+65	34	7/21/2004	1760.0	16.0	18.0	18	2.0	
7+60			7/21/2004	1760.0	16.0	18.0	18	2.0	
7+50	7+42.5	33	7/21/2004	1760.0	16.0	18.5	18.5	2.5	
7+40			7/22/2004	1760.0	16.0	18.5	18.5	2.5	
7+30			7/22/2004	1760.0	16.0	18.0	18.5	2.0	
7+20	7+20	32	7/22/2004	1760.0	16.0	18.0	18	2.0	
7+10			7/22/2004	1760.0	16.0	17.6	18	1.6	
7+00	6+97.5	31	7/22/2004	1760.0	15.0	19.5	17	4.5	
6+90			7/22/2004	1760.0	15.0	20.0	17	5.0	
6+80			7/23/2004	1760.0	15.0	19.0	17	4.0	
6+70	6+65	30	7/23/2004	1760.0	16.0	19.5	18.7	3.5	
6+60			7/23/2004	1760.0	16.0	19.0	18.7	3.0	
6+50	6+43	29	7/24/2004	1760.0	15.0	23.5	22.25	8.5	
6+40			7/24/2004	1760.0	15.0	22.5	22.25	7.5	
6+30	6+30	28	7/24/2004	1760.0	14.0	22.5	25.5	8.5	
6+20			7/24/2004	1760.0	14.0	25.5	25.5	11.5	
6+10			7/24/2004	1760.0	14.0	27.0	25.5	13.0	
6+00	5+99	27	7/24/2004	1760.0	17.0	27.0	27	10.0	
5+90			7/25/2004	1760.0	23.0	27.0	27	4.0	
5+80	5+76	26	7/25/2004	1760.0	23.0	26.8	28	3.8	
5+70			7/25/2004	1760.0	25.0	27.7	28	2.7	

TABLE 4.4

GROUNDWATER EXTRACTION TRENCH EXCAVATION DEPTHS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Station Number	Approx. Start of Panel Location	Panel Number	Date	Surveyed Platform Elevation (FT)	Approximate Top of Dense Till/Bedrock (FT)	Final Excavation Depth (FT)	Panel Installation Depth (FT)	Depth of Excavation into Dense Till/Bedrock (FT)	Comments
5+60			7/25/2004	1760.0	25.0	28.3	28	3.3	
5+50	5+55	25	7/27/2004	1760.0	25.0	29.2	29	4.2	
5+40			7/27/2004	1760.0	26.0	29.0	29	3.0	
5+30	5+33	24	7/28/2004	1760.0	27.0	28.0	29	1.0	
5+20			7/28/2004	1760.0	27.0	29.0	29	2.0	
5+10	5+10	23	7/28/2004	1760.0	27.0	29.0	29.5	2.0	
5+00			7/28/2004	1760.0	27.0	29.5	29.5	2.5	
4+90	4+88	22	7/29/2004	1760.0	27.0	29.5	28.75	2.5	
4+80			7/29/2004	1760.0	27.0	30.0	28.75	3.0	
4+70	4+75	21	7/30/2004	1760.0	26.0	30.0	28.5	4.0	
4+60			7/30/2004	1760.0	26.0	29.0	28.5	3.0	
4+50	4+55	20	7/30/2004	1760.0	26.0	29.0	29	3.0	
4+40			7/31/2004	1760.0	27.0	30.0	29	3.0	
4+30			7/31/2004	1760.0	27.0	29.8	29	2.8	
4+20	4+23	19	7/31/2004	1760.0	25.0	30.5	28.75	5.5	
4+10			7/31/2004	1760.0	25.0	29.5	28.75	4.5	
4+00	4+00	18	8/1/2004	1760.0	24.0	29.5	29	5.5	
3+90			8/1/2004	1760.0	24.0	29.5	29	5.5	
3+80	3+78	17	8/1/2004	1760.0	24.0	29.0	28.5	5.0	
3+70			8/1/2004	1760.0	24.0	29.0	28.5	5.0	
3+60	3+55	16	8/2/2004	1760.0	24.0	29.0	29	5.0	
3+50			8/2/2004	1760.0	24.0	29.5	29	5.5	
3+40			8/2/2004	1760.0	24.0	29.0	29	5.0	
3+30	3+25	15	8/2/2004	1760.0	24.0	29.0	26	5.0	
3+20			8/2/2004	1760.0	23.0	28.0	26	5.0	
3+10	3+10	14	8/3/2004	1760.0	23.0	29.0	28.5	6.0	
3+00			8/3/2004	1760.0	24.0	29.0	28.5	5.0	
2+90	2+85	13	8/3/2004	1760.0	24.0	29.0	28	5.0	
2+80			8/3/2004	1759.8	24.0	28.5	28	4.5	
2+70			8/4/2004	1759.6	24.0	29.0	28	5.0	
2+60	2+63	12	8/4/2004	1759.5	23.0	28.9	26.5	5.9	
2+50			8/4/2004	1759.4	23.0	27.5	26.5	4.5	
2+40	2+40	11	8/5/2004	1759.3	23.0	28.5	27.4	5.5	
2+30			8/5/2004	1759.2	21.0	28.0	27.4	7.0	
2+20	2+17	10	8/6/2004	1759.0	21.0	29.0	29	8.0	
2+10			8/6/2004	1759.0	22.0	29.0	29	7.0	
2+00	1+95	9	8/6/2004	1759.0	22.0	29.3	28.8	7.3	
1+90			8/6/2004	1759.0	22.0	29.0	28.8	7.0	
1+80			8/7/2004	1759.0	24.0	29.5	28.8	5.5	
1+70	1+72	8	8/7/2004	1759.0	24.0	30.5	29.25	6.5	
1+60			8/7/2004	1759.0	24.0	29.5	29.25	5.5	
1+50	1+50	7	8/7/2004	1759.0	24.0	30.0	28.8	6.0	
1+40			8/7/2004	1759.0	24.0	30.0	28.8	6.0	
1+30	1+27	6	8/8/2004	1759.0	24.0	30.0	30	6.0	
1+20			8/8/2004	1759.0	24.0	30.5	30	6.5	
1+10			8/8/2004	1759.0	25.0	30.5	30	5.5	
1+00	1+04	5	8/8/2004	1759.0	25.0	31.0	29	6.0	
0+90			8/8/2004	1759.0	25.0	30.0	29	5.0	
0+80	0+78	4	8/8/2004	1759.0	24.0	30.0	28.9	6.0	
0+70			8/8/2004	1759.0	24.0	29.5	28.9	5.5	
0+60	0+56	3	8/8/2004	1759.0	24.0	30.5	28	6.5	
0+50			8/9/2004	1759.0	24.0	30.0	28	6.0	
0+40			8/9/2004	1759.0	24.0	29.5	28	5.5	
0+30	0+33	2	8/9/2004	1759.0	24.0	29.5	28.5	5.5	
0+20			8/10/2004	1759.0	24.0	29.0	28.5	5.0	
0+10	0+13	1	8/10/2004	1759.0	25.0	29.0	28	4.0	
0+00			8/10/2004	1759.0	25.0	30.0	28	5.0	
-0+10			8/10/2004	1759.0	25.0	30.0	28	5.0	

TABLE 4.5

LIST OF DECOMMISSIONED WELLS, PIEZOMETERS AND OBSERVATION POINTS
RICHARDSON HILL ROAD LANDFILL
SIDNEY, NEW YORK

Well Identification	Well Depth (feet)	Well Construction							Abandonment Method				Date of Abandonment
		Description	Primary Casing Diameter	Casing Material	Secondary Casing	Casing Material	Third Casing	Casing Material	Well Pulled	Well Grouted	Well Cut BGS	Well Overdrilled	
MW-1	22.5	Single-cased	2"	SS	NA	NA	NA	NA	Y	Y	N	N	5/8/2003
MW-2	29.5	Single-cased	2"	SS	NA	NA	NA	NA	N	Y	Y	N	5/8/2003
MW-3DD	140.0	Triple-cased	2"	PVC/SCH 40	8"	Steel	12"	Steel	N	Y	N	Y	5/14/2003
MW-5S	18.5	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	4/29/2003
MW-6	20.5	Single-cased	2"	SS	NA	NA	NA	NA	Y	Y	N	N	5/5/2003
MW-14	20.0	Single-cased	2"	SS	NA	NA	NA	NA	Y	Y	N	N	5/9/2003
MW-17	33.2	Single-cased	2"	SS	NA	NA	NA	NA	N	Y	Y	N	5/8/2003
MW-18S	19.1	Single-cased	2"	SS/SCH 5	NA	NA	NA	NA	Y	Y	N	N	4/30/2003
MW-18D	50.2	Double-cased	2"	PVC	6"	Steel	NA	NA	N	Y	Y	Y(42 FT)	5/12/2003
MW-18DD	143.0	Triple-cased	2"	PVC/SCH 40	8"	Steel	12"	Steel	Y	Y	Y	Y	5/7/2003
MW-19	37.0	Single-cased	2"	PVC	NA	NA	NA	NA	N	Y	Y	N	5/9/2003
MW-OP-15	20.0	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	5/8/2003
MW-OP-16	32.0	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	5/8/2003
MW-549	12.0	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	4/29/2003
MW-A	9.2	Single-cased	6"	PVC	NA	NA	NA	NA	Y	Y	N	N	5/5/2003
MW-B	17.5	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	5/5/2003
MW-??	12.0	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	4/29/2003
MW-??	12.0	Single-cased	2"	PVC	NA	NA	NA	NA	Y	Y	N	N	4/29/2003
PZ-1	18.0	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/29/2003
PZ-2	16.1	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/30/2003
PZ-3	12.0	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	N	4/29/2003
PZ-4	34.4	Single-cased	1"	PVC/SCH 40	NA	NA	NA	NA	Y	Y	N	Y	4/29/2003
PZ-5	34.1	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/30/2003
PZ-6	16.1	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/30/2003
PZ-7	23.2	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/29/2003
PZ-8	22.2	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/29/2003
PZ-9	22.7	Single-cased	1"	PVC	NA	NA	NA	NA	Y	Y	N	Y	4/29/2003
OP-1	6.0	Single-cased	6"	PVC	NA	NA	NA	NA	Y	Y	N	N	5/8/2003
OP-2	6.0	Single-cased	6"	PVC	NA	NA	NA	NA	Y	Y	Y	N	5/8/2003
TW-1	15.1	Single-cased	6"	Steel	NA	NA	NA	NA	Y	Y	N	N	5/5/2003
TW-2	34.7	Single-cased	6"	SS	NA	NA	NA	NA	N	Y	Y	N	5/5/2003
TW-3	23.0	Single-cased	6"	Steel	NA	NA	NA	NA	Y	Y	N	N	4/29/2003
MW-3S	19.5	Single-cased	2"	SS	NA	NA	NA	NA	Destroyed during extraction trench construction in 2004 (Not decommissioned)				
MW-3D	48.9	Double-cased	2"	PVC/SCH 40	6"	Steel	NA	NA	Destroyed during extraction trench construction in 2004 (Not decommissioned)				
MW-5D	51.5	Single-cased	2"	SS	NA	NA	NA	NA	Destroyed during extraction trench construction in 2004 (Not decommissioned)				
MW-7D	37.0	Double-cased	2"	PVC/SCH 40	6"	Steel	NA	NA	Destroyed during extraction trench construction in 2004 (Not decommissioned)				
MW-8	25.0	Single-cased	2"	SS	NA	NA	NA	NA	Not Available				2003
MW-16	20.0	Single-cased	2"	SS	NA	NA	NA	NA	Not Available				2003

NOTE:
1. Wells MW-516, MW-519 and MW-546 could not be located during construction for decommissioning.

LEGEND:
NA = Not Applicable
PVC = Polyvinyl Chloride
SCH = Schedule
MW = Monitoring Well
OP = Observation Point
PZ = Piezometer
UK = Unknown
SS = Stainless Steel
BGS = Below Ground Surface

TABLE 7-1
RICHARDSON HILL ROAD LANDFILL SITE
REMEDIAL WORK ELEMENTS I AND II
COST SUMMARY

Cost Item	ROD Estimate (1997 $$)	ROD Estimate (2006 $$)[2]	Actual Cost (2006 $$)[3,5]	Notes
RA Capital Cost	$7,871,000	$10,232,000	$22,616,000	4
RA O&M Cost (Annual)	$479,000	$623,000	$700,000	5
RA O&M Cost (PW)[1]	$5,993,000	$7,787,000	$8,690,000	
RA Present Worth	$13,864,000	$18,019,000	$31,306,000	
Difference between Actual RA Capital Cost and ROD Capital Cost Estimate:	$12,384,000, or +121%.			6

Notes:

1. ROD assumed discount rate of 7% for future work (e.g., O&M).
2. ROD Costs for work performed from 1997 to 2006 adjusted from 1997 $$ to 2006 $$ using ENR Building Cost Index (4369/3364).
3. Actual costs provided by Amphenol adjusted to 2006 $$ using ENR Building Cost Index. See Appendix H for. information provided by Amphenol.
4. Actual RA Capital Costs do not include approximately $1,200,000 in EPA oversight costs (EPA, 2007b).
5. Actual O&M Costs in 2005 and 2006 were approximately $500,000 for each year. Costs in these years were primarily for GWTP. Other site maintenance and monitoring not conducted in these years (RWE I Remedial Action ongoing). Total annual O&M cost estimated at $700,000. See Appendix H for cost information provided by Amphenol.
6. Difference between RA Capital Cost and ROD Estimate attributable to factors that include weather, schedule, and inclusion in the RA of the excavation and restoration of Herrick Hollow Creek segments #9 through #13.