

14 September 2006

Mr. Michael J. Hinton, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
Division of Environmental Remediation - Region 9
270 Michigan Avenue
Buffalo, New York 14203

RE: Monthly Progress Report - August 2006
Greif Bros. Facility - Tonawanda, New York
NYSDEC VCP Number V00334-9



***Key Actions
This Period:***

- Continued operation and maintenance (O&M) of the dense, non-aqueous phase liquid (DNAPL) recovery system in the Varnish Pit Area as an Interim Remedial Measure (IRM).
- Collected and recorded DNAPL and ground water levels in recovery wells, selected nearby monitoring wells, and vapor monitoring points. A table summarizing these data is presented on Pages 4 through 6. A graph summarizing these data is presented on Page 7.
- Collected and recorded light, non-aqueous phase liquid (LNAPL) and ground water level measurements from monitoring well MW-23. These data are summarized in a table on Pages 8 and 9.
- Transfer of aqueous DNAPL wastes from the 550-gallon storage container into the 1,500-gallon temporary waste storage container.
- Transfer of DNAPL product from 550-gallon storage container into 55-gallon drums.
- Continuation of planning and preparations for the implementation of low-vacuum enhancements to the recovery system, including procurement of equipment, prequalification of subcontractors, trenching and piping installation, and engineering specifications for treatment system building.
- Continued preparation of the Focused Feasibility Study (FFS) for the Varnish Pit Area.

- Received analytical data for soil samples collected for electrical resistivity bench testing as part of the FFS for the Varnish Pit Area.
- Received and reviewed laboratory analytical data for ground water samples collected from NYSDEC-approved sampling locations during the July 2006 quarterly ground water sampling event.
- Preparation of the quarterly ground water monitoring report presenting data and results from the April 2006 and July 2006 quarterly ground water sampling events.
- Preparation of a revised remedial project schedule.
- Continued preparation of an addendum appendix (Remedial Action Plan) for the NYSDEC-approved IRM Work Plan for waste management purposes.

***Problems/
Resolutions:***

None.

***Analytical Data
Received:***

- Laboratory analytical report for soil samples collected for electrical resistivity bench testing as part of the FFS.
- Laboratory analytical results for the July 2006 quarterly ground water sampling event.

A summary of unvalidated laboratory analytical results received in August 2006 for the July 2006 quarterly ground water sampling event is presented on Page 10.

***Documents
Submitted:***

- Monthly Progress Report for July 2006 dated 11 August 2006.

***Anticipated
Actions -
September 2006:***

- Continuation of DNAPL recovery system O&M on a weekly basis.
- Measurement of LNAPL and ground water level measurements in monitoring well MW-23 and submission of a proposed approach to evaluate the source of ground water in MW-23.
- Preparations for the implementation of low-vacuum enhancements to the recovery system, including procurement of equipment, prequalification of

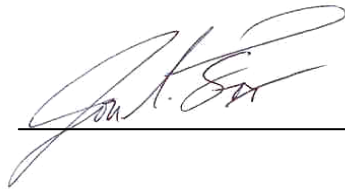
subcontractors, trenching and piping installation, and engineering specifications for treatment system building. A pre-construction kick-off meeting will be scheduled prior to the initiation of field work.

- Submission of a quarterly ground water monitoring report for the April 2006 and July 2006 quarterly ground water sampling events.
- Submission of a revised project schedule to NYSDEC.
- Submission of an addendum appendix (Remedial Action Plan for waste management purposes) for the IRM Work Plan.

**NYSDEC-
Approved Field
Decisions:**

None.

Prepared By:



Jon S. Fox, P.G.
Senior Project Manager

Date: 14 September 2006

Cc: Mr. Matt Forcucci (NYSDOH)
Mr. Pete Gruene (Palmetto Env. Mgmt. Solutions)
Mr. Edward Hinchey, P.G. (ERM)
Mr. Robert Powell, C.S.P., A.R.M. (Sonoco)
Mr. Dennis Roote, P.E. (ERM)
Mr. Joseph Ryan, Esq. (NYSDEC)
Mr. Gregory Sutton, P.E. (NYSDEC)
Mr. A. Joseph White (NYSDEC)
Mr. Patrick Wolfe (Greif Bros. Corporation)

SUMMARY OF DNAPL RECOVERY DATA
VARNISH PIT AREA DNAPL RECOVERY IRM

Date	Volume Recovered (gallons)		RW-1 Thickness (feet)		RW-2 Thickness (feet)		RW-4 Thickness (feet)	
	DNAPL	Water	DNAPL	Water	DNAPL	Water	DNAPL	Water
Pilot Test	270.0	0.0	5.62	3.56	0.88	3.90	NI	NI
12-Sept-05	54.9	1.9	1.79	7.75	1.56	7.94	1.47	7.42
1-Nov-05	4.8	296.2	2.57	6.66	3.39	5.81	2.17	6.32
11-Nov-05	3.6	38.8	1.77	6.17	3.42	5.68	1.30	7.18
14-Nov-05	0.6	97.2	1.74	6.49	3.14	5.68	1.28	7.11
15-Nov-05	14.1	49.0	1.73	5.79	2.27	6.53	1.30	7.00
16-Nov-05	0.0	120.3	1.86	4.64	2.32	6.29	1.28	6.89
17-Nov-05	2.0	77.6	1.75	5.54	2.27	6.02	1.28	6.77
18-Nov-05	0.0	52.9	1.79	6.88	2.37	6.33	1.28	6.81
21-Nov-05	0.0	338.8	1.98	1.07	2.67	5.27	1.32	6.29
22-Nov-05	0.0	50.3	2.04	2.63	2.69	5.40	1.31	6.29
23-Nov-05	0.0	74.0	2.06	6.08	2.72	5.51	1.33	6.28
28-Nov-05	5.6	362.4	2.13	5.63	2.78	4.86	1.56	5.54
1-Dec-05	0.0	8.7	2.11	5.77	2.80	5.05	1.76	5.44
2-Dec-05	0.0	52.0	2.08	5.39	2.69	4.58	1.59	5.45
6-Dec-05	10.4	163.2	2.24	3.06	2.76	4.69	1.58	5.04
7-Dec-05	3.4	48.0	2.02	0.02	2.77	4.66	1.63	4.96
8-Dec-05	1.8	48.5	2.02	0.16	2.62	0.42	1.58	4.90
9-Dec-05	7.4	24.6	1.99	0.18	2.60	0.26	1.58	4.81
12-Dec-05	30.3	72.8	2.01	0.15	2.81	4.34	1.56	2.74
13-Dec-05	6.3	14.6	2.03	0.02	3.62	0.94	2.96	3.08
14-Dec-05	7.6	0.6	2.00	0.08	2.68	1.15	3.04	3.14
15-Dec-05	17.0	29.8	2.03	0.01	2.63	1.18	1.61	0.25
19-Dec-05	1.9	5.7	2.00	0.07	2.81	4.17	2.63	3.55
21-Dec-05	12.3	38.7	2.00	0.10	2.66	1.68	1.78	1.04
22-Dec-05	7.6	6.5	1.99	0.07	2.66	2.95	1.41	0.22
27-Dec-05	8.0	18.5	2.03	0.03	2.49	0.17	2.20	3.95
28-Dec-05	7.4	18.6	2.00	0.10	2.56	0.05	1.37	0.03
29-Dec-05	5.3	2.9	2.00	0.10	2.57	0.05	1.37	0.03
3-Jan-06	2.6	38.7	2.01	0.02	2.49	0.03	1.38	0.10
6-Jan-06	6.6	10.2	1.97	0.08	2.46	0.05	1.37	0.11
10-Jan-06	16.8	2.5	1.96	1.04	2.48	0.11	1.47	0.02
12-Jan-06	10.0	0.0	2.00	0.08	2.52	0.07	1.37	0.03
19-Jan-06	4.7	34.8	1.97	0.05	2.48	0.13	1.37	0.02
23-Jan-06	6.0	14.3	1.98	0.11	2.47	0.12	1.37	0.03
26-Jan-06	6.5	11.3	1.96	0.07	2.49	0.12	1.37	0.05
30-Jan-06	4.3	14.8	1.93	0.15	2.49	0.09	1.49	0.33
2-Feb-06	3.2	0.1	1.96	0.07	2.49	0.14	1.36	0.06
3-Feb-06	0.5	5.6	1.96	0.07	2.49	0.13	1.35	0.07
6-Feb-06	0.5	24.0	1.95	0.25	2.47	0.13	1.58	1.74
9-Feb-06	3.5	18.9	1.94	0.07	2.47	0.12	1.34	0.06

Date	Volume Recovered (gallons)		RW-1 Thickness (feet)		RW-2 Thickness (feet)		RW-4 Thickness (feet)	
	DNAPL	Water	DNAPL	Water	DNAPL	Water	DNAPL	Water
13-Feb-06	7.2	9.8	1.95	0.08	2.53	0.08	1.36	0.04
16-Feb-06	3.9	8.6	1.96	0.07	2.50	0.42	1.35	0.07
20-Feb-06	4.0	12.8	1.92	0.11	2.49	1.62	1.34	0.14
27-Feb-06	5.3	13.2	1.93	0.10	2.51	4.41	1.35	0.05
3-Mar-06	2.6	32.0	1.93	0.17	2.42	0.16	1.35	0.03
7-Mar-06	2.6	21.6	1.94	0.09	2.42	0.08	1.35	0.10
10-Mar-06	0.0	5.8	1.94	0.01	2.43	0.05	1.36	0.11

Greif Bros. Facility - Tonawanda, New York

Monthly Progress Report - August 2006

NYSDEC VCP Number V00334-9

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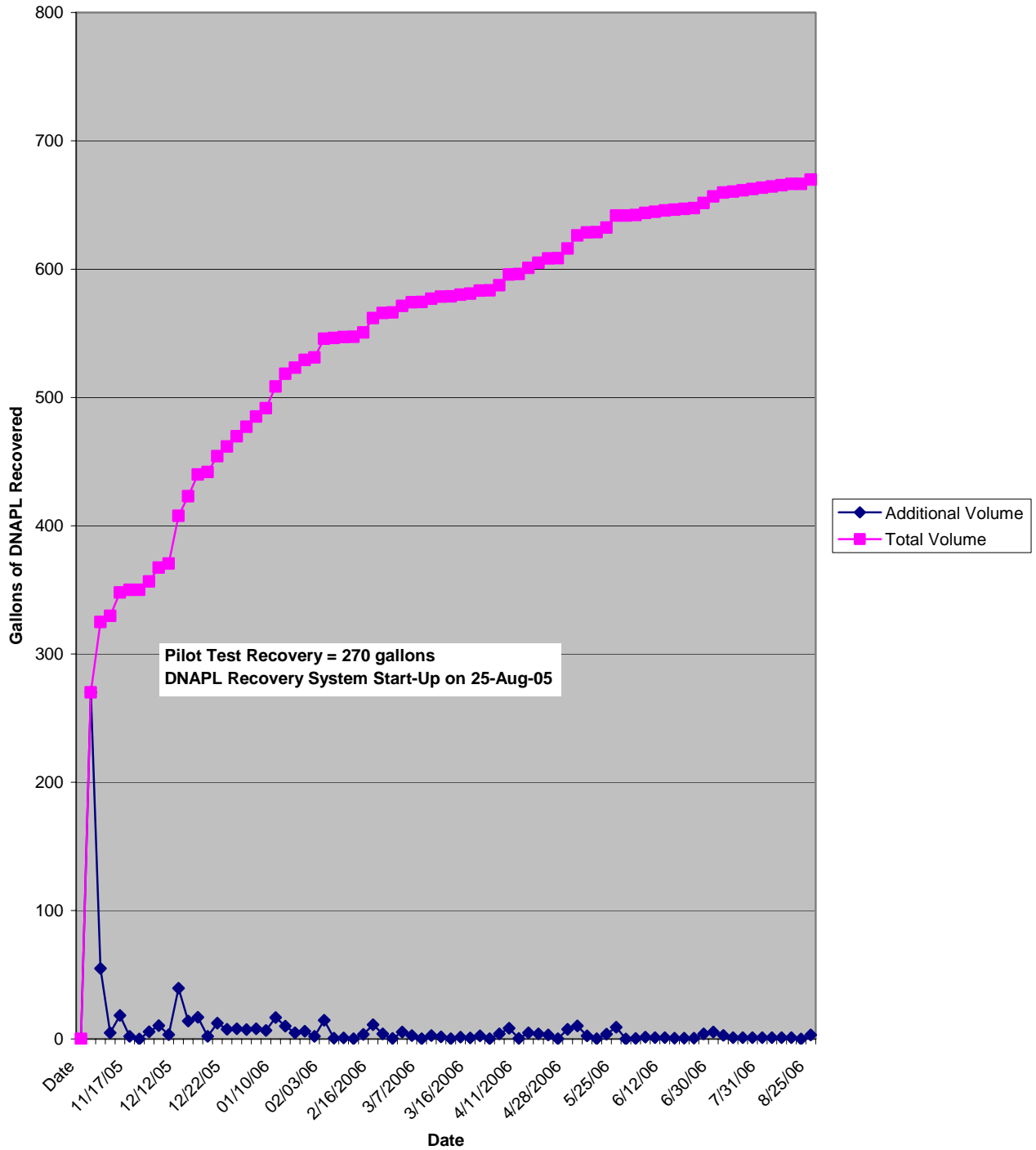
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13-Mar-06	1.4	12.2	1.93	0.17	2.38	0.18	1.35	0.04
16-Mar-06	0.7	12.3	1.94	0.08	2.39	0.19	1.35	0.05
20-Mar-06	2.4	11.7	1.48	0.06	2.02	0.20	1.05	2.33
23-Mar-06	4.0	16.2	1.46	0.14	1.99	0.17	0.82	0.03
30-Mar-06	4.9	15.7	1.46	0.07	1.96	0.23	0.80	0.07
3-April-06	3.5	31.3	1.46	0.12	1.96	0.18	0.80	0.04
7-Apr-06	4.8	15.5	1.46	0.07	1.96	0.20	0.81	0.04
11-Apr-06	4.0	6.9	1.46	0.13	1.96	0.20	0.80	0.04
13-Apr-06	2.2	7.9	1.47	0.12	1.96	0.18	0.80	0.02
17-Apr-06	1.1	21.4	1.45	0.08	1.96	0.23	0.80	0.08
21-Apr-06	3.2	13.7	1.44	0.14	1.96	0.16	0.80	0.02
28-Apr-06	4.3	21.9	1.46	0.07	2.01	0.07	0.80	0.10
09-May-06	10.2	32.8	1.46	0.04	1.99	0.19	0.80	0.05
11-May-06	2.4	9.4	1.46	0.13	2.04	0.12	0.80	0.05
16-May-06	3.7	13.1	1.44	0.10	2.00	0.20	0.80	0.08
19-May-06	2.6	11.2	1.46	0.07	2.01	0.19	0.80	0.08
23-May-06	2.6	13.1	1.45	0.13	1.97	0.15	0.80	0.05
25-May-06	4.0	4.4	NM	NM	NM	NM	NM	NM
1-June-06	0.5	19.5	1.46	0.09	2.04	0.04	0.80	0.03
6-June-06	1.4	1.8	1.46	0.08	2.06	0.10	0.79	0.03
8-June-06	1.0	16.8	1.46	0.09	2.05	0.10	0.78	0.07
12-June-06	1.0	13.0	1.45	0.10	2.00	0.19	0.80	0.05
15-June-06	0.6	12.6	1.43	0.10	2.10	0.08	0.79	0.05
19-June-06	0.6	12.4	1.43	0.15	2.06	0.12	0.80	0.02
23-June-06	0.6	11.0	1.46	0.07	0.96	0.12	0.80	0.04
26-June-06	3.9	5.4	0.10	0.03	1.96	1.6	0.31	1.23
30-June-06	5.9	16.0	0.00	0.08	0.36	2.3	0.00	0.00
3-Jul-06	2.9	9.6	0.06	0.10	0.24	1.74	0.28	1.38
17-Jul-06	1.0	8.5	0.06	2.18	0.30	6.64	0.55	5.55
25-Jul-06	1.0	18.6	0.06	1.68	0.34	6.64	0.58	5.52
27-Jul-06	1.0	28.8	0.00	0.08	0.36	6.62	0.58	0.00
31-Jul-06	1.0	40.4	0.00	0.08	0.23	3.63	0.65	2.63
3-Aug-06	1.0	20.2	NM	NM	NM	NM	NM	NM
7-Aug-06	1.0	19.1	0.00	0.10	0.23	0.52	0.00	0.20
11-Aug-06	1.1	12.4	0.00	0.16	0.24	1.50	0.00	0.09
14-Aug-06	0.0	5.0	0.00	0.30	0.25	3.72	0.00	0.12
25-Aug-06	3.2	32.2	NM	NM	NM	NM	NM	NM
TOTAL	663.8	2,966.1						

NOTES:

- Pilot test data reported at the end of the pilot test on 16 November 2004.
- NI = well not installed yet.
- NM = not measured on this date.
- Volume readings represent the volume recovered since the previous reading.

Summary of DNAPL Recovery
Varnish Pit Area DNAPL Recovery IRM
Greif Bros. Facility - Tonawanda, NY
NYSDEC VCP# V00334-9



SUMMARY OF LNAPL RECOVERY DATA - WELL MW-23

Date	Volume of LNAPL Recovered (gallons)	LNAPL Thickness in MW-23 (feet)	Water Thickness in MW-23 (feet)
9-Sept-05	0.00	0.40	3.38
12-Sept-05	0.00	0.41	3.23
20-Sept-05	0.00	0.52	2.98
11-Oct-05	0.00	0.56	2.67
21-Oct-05	0.00	0.57	2.78
26-Oct-05	0.00	0.60	2.78
2-Nov-05	0.00	0.68	2.67
11-Nov-05	0.04	0.27	2.53
15-Nov-05	0.10	0.61	2.10
16-Nov-05	0.04	0.25	1.55
17-Nov-05	0.03	0.18	1.22
18-Nov-05	0.00	0.08	0.97
21-Nov-05	0.02	0.15	1.09
22-Nov-05	0.04	0.27	0.68
23-Nov-05	0.04	0.26	0.49
29-Nov-05	0.04	0.23	0.54
2-Dec-05	0.00	0.20	0.42
6-Dec-05	0.03	0.20	0.51
7-Dec-05	0.00	0.16	0.36
8-Dec-05	0.03	0.16	0.40
9-Dec-05	0.00	0.07	0.35
12-Dec-05	0.00	0.07	0.41
19-Dec-05	0.00	0.17	0.39
22-Dec-05	0.03	0.17	0.54
27-Dec-05	0.00	0.14	0.45
29-Dec-05	0.03	0.17	0.48
3-Jan-06	0.02	0.15	0.37
6-Jan-06	0.00	0.12	0.30
10-Jan-06	0.00	0.08	0.42
12-Jan-06	0.00	0.13	0.35
19-Jan-06	0.02	0.12	0.48
26-Jan-06	0.03	0.18	0.50
30-Jan-06	0.00	0.18	0.57
2-Feb-06	0.03	0.17	0.61
3-Feb-06	0.00	0.17	0.40
6-Feb-06	0.00	0.20	0.40
9-Feb-06	0.00	0.20	0.45
13-Feb-06	0.00	0.20	0.54
16-Feb-06	0.00	0.14	0.66
20-Feb-06	0.00	0.07	0.75
27-Feb-06	0.02	0.15	0.75
3-Mar-06	0.03	0.17	0.48
7-Mar-06	0.03	0.17	0.38

Date	Volume of LNAPL Recovered (gallons)	LNAPL Thickness in MW-23 (feet)	Water Thickness in MW-23 (feet)
10-Mar-06	0.01	0.08	0.38
13-Mar-06	0.04	0.28	0.0
16-Mar-06	0.00	0.27	0.0
23-Mar-06	0.02	0.10	0.39
30-Mar-06	0.02	0.14	0.30
3-Apr-06	0.02	0.10	0.20
7-Apr-06	0.01	0.07	0.23
11-Apr-06	0.01	0.06	0.26
13-Apr-06	0.02	0.11	0.26
18-Apr-06	0.03	0.16	0.16
16-May-06	0.00	0.21	0.25
1-June-06	0.00	0.00	0.42
6-June-06	0.02	0.10	0.66
12-June-06	0.03	0.21	0.46
15-June-06	0.10	0.60	0.08
23-June-06	0.02	0.12	0.46
26-June-06	0.02	0.11	0.35
30-June-06	0.01	0.09	0.33
14-Aug-06	0.01	0.07	1.4
TOTAL	1.04		

NOTES:

- Data refers to light, non-aqueous phase liquid (LNAPL) measured and recovered from monitoring well MW-23 (the only well observed with LNAPL to date).
- LNAPL volumes are estimated based on the measured thickness of LNAPL in the well prior to removal and the cross-sectional volume of the well screen and are thought to be conservatively low (additional LNAPL migration into the well during bailing is not accounted for).
- Volume readings represent the volume recovered since the previous reading.
- LNAPL and ground water thickness data were collected as static level measurements prior to bailing of the well.

QUARTERLY GROUND WATER SAMPLING EVENT - JULY 2006

Sample Designation	MW-18	MW-21I	MW-22	MW-12	MW-13	MW-14	MW-21S	MW-24	MW-25
Ground Water Zone	Int	Int	Int	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Date Sampled	7/11/2006	7/11/2006	7/11/2006	7/11/2006	7/11/2006	7/11/2006	7/11/2006	7/11/2006	7/11/2006
VOCs (µg/L)									
Acetone	----	----	----	----	----	----	----	----	----
Benzene	----	----	----	----	----	----	----	97	1.1
2-Butanone	----	----	----	----	----	----	----	----	----
Chloroethane	17 J	----	----	----	----	----	----	----	0.40 J
Chloroform	----	----	----	----	----	----	----	----	----
1,1-Dichloroethane	1,200	----	1.6	2,600	9,600	2,500	----	58 J	7.8
1,2-Dichloroethane	----	----	----	----	----	----	----	----	----
1,1-Dichloroethene	120	----	0.41 J	520	16,000	1,400	----	----	0.95 J
cis-1,2-Dichloroethene	240	----	----	3,200	10,000	----	----	5,600	18
trans-1,2-Dichloroethene	----	----	----	61	420 J	----	----	37 J	0.99 J
Ethylbenzene	14 J	----	----	----	----	----	----	----	----
Methylene chloride	15 J	----	----	54	510 J	470 J	----	48 J	----
4-Methyl-2-pentanone	----	----	----	----	----	----	----	----	----
Tetrachloroethene	----	----	----	----	----	----	----	----	----
Toluene	----	----	----	----	----	----	----	36 J	----
1,1,1-Trichloroethane	160	----	----	660	41,000	----	3	----	9.5
1,1,2-Trichloroethane	----	----	----	----	----	----	----	----	----
Trichloroethene	110	----	3.5	640	61,000	45,000	0.91 J	10,000	3.1
1,2,4-Trimethylbenzene	12 J	----	----	----	----	----	----	----	----
Vinyl chloride	80	----	----	56	----	----	----	110	0.58 J
Xylene (total)	42 J	----	----	----	----	----	----	----	----
Natural Attenuation Parameters (mg/L - unless otherwise noted)									
Bicarbonate Alkalinity	391	509	417	774	682	606	544	399	240
Carbonate Alkalinity	8.6	----	----	----	----	----	----	----	----
Dissolved Oxygen (g/L)	4.44	5.92	4.86	4.46	4.57	6.92	3.6	6.38	3.89
Ethane(µg/L)	----	----	----	----	----	----	----	----	----
Ethene(µg/L)	----	----	----	----	----	----	----	----	----
Free Carbon Dioxide	NC	38	NC	NC	NC	65	90	NC	NC
Hydroxyl Alkalinity	----	----	----	----	----	----	----	----	----
Iron, Ferrous	0.0	0.0	0.2	0.0	0.7	0.2	0.0	3.5	0.6
pH (standard units)	8.83	7.42	7.37	6.97	6.38	7.30	7.00	8.42	6.73
Methane (µg/L)	----	1.2	2.0	3.1	220	----	----	100	5.5
Nitrate	----	----	----	----	----	----	0.088	----	0.58
Soluble Organic Carbon	4.7	1.7	1.2	3.2	14.9	2.6	1.7	7.4	2.5
Sulfate	512	112	517	172	196	112	88.5	1390	67.9
Sulfide	----	----	----	----	----	----	----	----	----
Temperature (degrees C)	14.78	17.67	16.47	18.18	17.08	18.14	18.66	21.58	18.25
Total Alkalinity	415	512	422	773	682	603	546	401	231
Total Dissolved Solids	1240	595	1180	1070	1830	774	572	3030	3980
Total Hardness	734	398	724	779	758	583	411	1780	2570

NOTES:

- J = an estimated value; the data indicates the presence of a compound that meets identification criteria but the result is less than the sample quantitation limit but greater than zero.
- ----- = the compound was not detected above the detection limit.
- NC - the free carbon dioxide was not calculated since one or more of the parameters necessary for the calculation were out of range of the scale limits on the nomograph utilized for the calculation.