



DuPont Pompton Lakes Works
2000 Cannonball Road
Pompton Lakes, NJ 07442

November 6, 2013

Mr. Philip D. Flax
USEPA REGION 2
290 Broadway
Mail Code: 22ND FL
New York, NY 10007-1866

**RE: EISB Pilot Study Status Report #4
DuPont Pompton Lakes Works
Pompton Lakes, New Jersey**

Dear Mr. Flax:

Enclosed is the monthly status report that summarizes activities associated with the interim remedial measure (IRM) pilot study using enhanced in-situ bioremediation (EISB) being conducted in accordance with the Agency-approved *Implementation Work Plan for Application of EISB to Intermediate Groundwater Near Well 128* dated January 31, 2012 and *Technical Memorandum –Response to Comments* dated March 30, 2012.

This status report covers the time period of October 1 through 31, 2013.

If you have any questions, please contact me at (973) 492-7733.

Sincerely,

A handwritten signature in black ink that reads "David E. Epps".

David E. Epps, P.G.
Project Director, Pompton Lakes Works
DuPont Corporate Remediation Group

cc: Anthony Cinque – NJDEP
PLW Central File

Monthly Progress Report – EISB Pilot Study
Report Period – October 1, 2013 through October 31, 2013

DuPont Pompton Lakes Works
Pompton Lakes, New Jersey

This monthly report summarizes activities completed from October 1 to 31, 2013 associated with the interim remedial measure (IRM) pilot study using enhanced in-situ bioremediation (EISB) in the intermediate aquifer in the area of monitoring well cluster 128 (see Figure 1 for Site layout). Work is being conducted in accordance with the Agency-approved *Implementation Work Plan for Application of EISB to Intermediate Groundwater Near Well 128* dated January 31, 2012 and *Technical Memorandum – Response to Comments* dated March 30, 2012.

Activities Completed During Reporting Period (October 1, 2013 to October 31, 2013)

Activities completed during the reporting period included system operation and sampling.

Recirculation System Operation/Maintenance

- Groundwater was extracted from EW01 at a rate of approximately 2 gallons per minute (GPM) between October 1st and October 8th. On October 8th, the flow system was shut down for mechanical rehabilitation of EW01.
- Bromide concentrations in groundwater were monitored on October 2nd prior to EW01 rehabilitation activities.
- Sodium lactate was amended to the re-injected groundwater once per day from October 1st to October 8th at a target time weighted average of lactate at 165 milligrams per liter (mg/L).
- Routine system maintenance (e.g., particulate filter change outs, flow rate adjustments) were conducted between October 1st and October 8th. Routine system maintenance has not been conducted since the system was shut down for rehabilitation activities on October 8th.
- There was one leak detection sensor alarm in the injection well vault on October 3rd. The system was inspected for leaks and after none were detected, the alarm was cleared and the system was reset.
- No high pressure alarms occurred between October 1st and 31st.
- Mechanical rehabilitation of EW01 occurred October 9th and 10th. No sediment was found in the bottom of EW01. Evidence of biological fouling was found on the pump and inside of the discharge piping.
- A standard operating procedure was developed to complete an alternative treatment of EW01 using Nu-Well 110 (granular acid) and Nu-Well 310 (bioacid dispersant that breaks down biofilm and disperses mineral salts). Both of these products are specifically designed for use

in well rehabilitation and will be used in accordance with the manufacturer's specifications. Following treatment, EW01 will be thoroughly pumped until the pH of the pumped water is within +/- 1 standard units of groundwater pH prior to treatment. This work is scheduled to be completed on November 4th and 5th, with system restart planned for November 6th.

Results to Date

Groundwater Pumping

From system start-up (June 24, 2013) to October 31, 2013, the total recirculated groundwater was 343,060 gallons.

Water Level Monitoring

Manual water level measurements were collected on October 2nd (during system operation) and on October 16th (while the system was shut down during rehabilitation activities) in the surrounding monitoring wells (Table 1). Results are reported as depth-to-water in units of feet below top of casing (ft btoc) and as the converted elevation in units of feet relative to mean sea level (ft msl). Level logger data from IW01, IW02, IW03, EW01, 128I, and 128S will be included in the final pilot study report. Drawdown in the extraction well (EW01) during operation is typically 14 feet and mounding at IW02 is 3.5 feet (based on data from level loggers). However, prior to system rehabilitation, drawdown in EW01 increased to approximately 45 feet. On September 10th, the extraction well flow rate was adjusted down to 2 GPM to help decrease the rate of drawdown in EW01. Mechanical rehabilitation was completed between October 9th and 10th and further rehabilitation is planned for early November 2013. Following rehabilitation activities, the extraction well flow rate will be adjusted back to 3 GPM.

Water Quality Monitoring

Groundwater samples were not collected during the reporting period from the wells in the 128 area since the system was shut down for rehabilitation activities at EW01. A summary of the water quality field parameter data recorded during well purging and prior to sampling is provided in Table 2 and the volatile organic compound (VOC), dissolved hydrocarbon gases (DHG), and total organic carbon (TOC) data from baseline up to the third monthly sampling event (September 25th) is presented in Table 3. The results prior to EW01 rehabilitation indicate that VOC concentrations of dichloroethene (cis and trans), vinyl chloride, ethane, and ethane are starting to increase slightly in the target intermediate zone of ML02, ML04, and EW01. Slight increases in ethene and ethane have also been seen in the same zone in ML02, ML04, and EW01. A complete copy of the analytical results generated during these events will be provided in the final study report.

Bromide Tracer Monitoring

Bromide detections at the various well locations are shown in Figure 2. The intent of the bromide measurements is to serve as a tracer to groundwater flow under re-circulating conditions and to aid in the understanding of extraction well capture efficiency, pore volume estimations, and correlating changes in VOC concentrations to EISB-related activities. Potassium bromide was continuously amended to the re-injected groundwater from June 24th through August 16th.

Results to date for the field analysis of bromide indicate that re-injected groundwater has reached the target intermediate zone (nominally from 40 to 65 feet below ground surface [ft bgs]) in ML02 and ML04. Bromide has been detected in the intermediate zone at IW03 (the closest injection well) and IW01 at a maximum of 54 mg/L (August 20th) and 53 mg/L (September 5th), respectively. EW01 concentrations had spiked at 22 mg/L on September 5th. By October 2nd, concentrations had decreased below 10 mg/L. Based on the observed bromide concentrations in the extraction well at the end of four months of operation, it appears the travel time of bromide is longer than anticipated. By October 2nd, bromide concentrations in the target intermediate zone continued to remain below 20 mg/L which indicates that the center of mass had passed through the system in September as shown in Figure 2. No further sampling of bromide will occur in November and December 2013.

Summary

Once EW01 has been rehabilitated to sustainable conditions, the system will be turned back on and amendment of lactate will proceed throughout the month of November. Future groundwater monitoring activities will continue to monitor concentrations of key parameters in order to evaluate the operation and performance of the EISB system.

Activities Scheduled for Next Reporting Period (November 1~30, 2013)

Activities to be completed during November 2013 include:

- Alternative treatment of EW01 (week of November 4th),
- Re-startup of the EISB system following rehabilitation of EW01,
- Continued operation of the pilot-scale EISB system,
- 4th monthly monitoring event (week of November 18th).

The system will be routinely checked to confirm operation and monitor groundwater flow conditions.

Attachments

Table 1: Depth to Groundwater

Table 2: Field Parameter Results

Table 3: Select Target Compound Results

Figure 1: Site Layout

Figure 2: Field Measured Bromide Concentrations

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)		
128S	218.99	5/1/2013	12:40	9.9	209.09		
		6/21/2013	16:03	8.3	210.69		
		6/24/2013	11:40	8.78	210.21		
		07/19/13	9:44	8.93	210.06		
		07/23/13	14:49	9.05	209.94		
		07/29/13	15:15	9.25	209.74		
		08/06/13	16:10	9.48	209.51		
		08/08/13	13:15	9.52	209.47		
		08/16/13	10:47	9.66	209.33		
		08/20/13	13:35	9.76	209.23		
		08/29/13	13:02	10.01	208.98		
		09/05/13	13:56	10.22	208.77		
		09/16/13	11:55	10.53	208.46		
128I	218.79	5/2/2013	9:00	9.56	209.23		
		6/21/2013	16:19	8.09	210.70		
		6/24/2013	11:46	8.07	210.72		
		07/19/13	9:47	8.75	210.04		
		07/23/13	14:34	8.80	209.99		
		07/29/13	15:05	9.07	209.72		
		08/06/13	16:00	9.29	209.50		
		08/08/13	13:12	9.26	209.53		
		08/16/13	10:44	9.51	209.28		
		08/20/13	13:40	9.63	209.16		
		08/29/13	12:51	9.94	208.85		
		09/05/13	13:45	10.10	208.69		
		09/16/13	11:45	10.42	208.37		
EW01-Upper	218.71	5/16/2013	14:45	9.50	209.21		
		6/21/2013	15:07	7.88	210.83		
		6/24/2013	13:48	7.86	210.85		
		6/28/2013	10:48	7.95	210.76		
		07/09/13	12:18	8.38	210.33		
		07/19/13	10:53	8.46	210.25		
		07/23/13	8:54	8.59	210.12		
		07/26/13	13:40	8.53	210.18		
		08/06/13	10:20	9.08	209.63		
		08/08/13	13:34	9.07	209.64		
		10/16/13	8:56	10.79	207.92		
		IW01-Upper	217.65	5/14/2013	10:37	9.64	208.01
				6/21/2013	16:34	7.98	209.67
6/24/2013	11:31			7.95	209.70		
07/03/13	11:55			8.11	209.54		
07/09/13	11:45			8.45	209.20		
07/10/13	13:42			8.25	209.40		
07/19/13	9:54			8.54	209.11		
		07/23/13	13:50	8.68	208.97		

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
IW01-Upper	217.65	07/26/13	12:20	8.78	208.87
		07/29/13	14:00	8.87	208.78
		08/06/13	15:23	9.11	208.54
		08/08/13	12:05	9.19	208.46
		08/16/13	10:37	9.31	208.34
		08/20/13	13:05	9.41	208.24
		08/22/13	8:44	9.48	208.17
		08/28/13	15:03	9.64	208.01
		09/05/13	13:11	9.85	207.80
		09/13/13	14:43	10.09	207.56
		09/19/13	13:34	10.25	207.40
		09/25/13	11:25	10.20	207.45
		10/02/13	13:45	10.56	207.09
10/16/13	10:06	10.92	206.73		
IW01-Lower	217.65	5/14/2013	14:38	9.73	207.92
		6/21/2013	16:36	8.06	209.59
		6/24/2013	11:33	8.04	209.61
		07/04/13	11:53	8.15	209.50
		07/09/13	11:43	8.55	209.10
		07/10/13	13:42	8.30	209.35
		07/19/13	9:53	8.92	208.73
		07/23/13	13:45	8.45	209.20
		07/26/13	12:21	8.87	208.78
		07/29/13	14:01	8.65	209.00
		08/06/13	15:22	9.18	208.47
		08/08/13	12:03	9.18	208.47
		08/16/13	10:37	9.41	208.24
		08/20/13	13:05	9.50	208.15
		08/22/13	8:45	9.57	208.08
		08/28/13	15:04	9.73	207.92
		09/05/13	13:10	9.96	207.69
		09/13/13	14:43	10.23	207.42
09/19/13	13:35	10.39	207.26		
09/25/13	11:35	10.55	207.10		
10/02/13	13:44	10.75	206.90		
10/16/13	10:06	11.06	206.59		
IW02-Upper	217.59	6/4/2013	10:15	8.38	209.21
		6/21/2013	16:53	7.24	210.35
		6/24/2013	15:34	7.22	210.37
		6/28/2013	13:16	7.32	210.27
		07/19/13	10:02	7.80	209.79
		07/23/13	12:11	7.96	209.63
		07/26/13	12:59	8.05	209.54
		07/29/13	14:55	8.14	209.45
		08/06/13	15:07	8.36	209.23
		08/08/13	13:05	8.43	209.16
		08/20/13	13:50	8.28	209.31
		08/22/13	8:50	8.73	208.86
		10/16/13	10:01	10.21	207.38

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
IW03-Upper	217.58	5/15/2013	11:30	9.62	207.96
		6/21/2013	17:02	7.98	209.60
		6/24/2013	11:26	7.95	209.63
		6/28/2013	12:10	8.01	209.57
		07/04/13	10:34	8.13	209.45
		07/09/13	10:49	8.48	209.10
		07/10/13	9:40	8.26	209.32
		07/19/13	10:22	8.55	209.03
		07/23/13	11:17	8.67	208.91
		07/26/13	11:27	8.78	208.80
		07/29/13	12:35	8.87	208.71
		08/06/13	14:12	9.13	208.45
		08/08/13	11:25	9.18	208.40
		08/16/13	10:28	9.32	208.26
		08/20/13	12:30	9.46	208.12
		08/22/13	8:36	9.48	208.10
		08/28/13	14:41	9.65	207.93
		09/05/13	12:07	9.87	207.71
		09/13/13	13:48	10.09	207.49
09/19/13	11:42	10.27	207.31		
09/25/13	11:55	10.50	207.08		
10/02/13	12:27	10.57	207.01		
10/16/13	9:33	10.93	206.65		
IW03-Lower	217.58	5/16/2013	10:25	9.62	207.96
		6/21/2013	17:03	8.03	209.55
		6/24/2013	11:27	8.08	209.50
		6/28/2013	12:11	8.15	209.43
		07/03/13	10:27	8.25	209.33
		07/09/13	10:49	8.50	209.08
		07/10/13	9:40	8.20	209.38
		07/19/13	10:22	8.58	209.00
		07/23/13	11:16	8.55	209.03
		07/26/13	11:26	8.81	208.77
		07/29/13	12:36	8.92	208.66
		08/06/13	14:13	9.11	208.47
		08/08/13	11:25	9.17	208.41
		08/16/13	10:28	9.36	208.22
		08/20/13	12:30	9.48	208.10
		08/22/13	8:35	9.51	208.07
		08/28/13	14:40	9.70	207.88
		09/05/13	12:06	9.93	207.65
		09/13/13	13:48	10.21	207.37
09/19/13	11:41	10.37	207.21		
09/25/13	12:00	10.40	207.18		
10/02/13	12:26	10.69	206.89		
10/16/13	9:33	11.06	206.52		

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
ML02-1	217.80	5/14/2013	8:50	9.70	208.10
		6/24/2013	11:53	7.75	210.05
		07/02/13	14:30	7.91	209.89
		07/09/13	9:59	8.21	209.59
		07/10/13	13:12	8.00	209.80
		07/12/13	10:20	8.07	209.73
		07/19/13	10:15	8.64	209.16
		07/23/13	10:27	8.79	209.01
		07/26/13	10:30	8.89	208.91
		07/29/13	11:32	8.98	208.82
		07/31/13	10:45	9.02	208.78
		08/06/13	11:28	9.21	208.59
		08/08/13	10:31	9.27	208.53
		08/14/13	NR	9.51	208.29
		08/16/13	10:15	9.42	208.38
		08/20/13	10:24	9.52	208.28
		08/27/13	9:15	9.37	208.43
		09/05/13	10:40	10.05	207.75
		09/12/13	8:48	10.11	207.69
		09/19/13	10:43	10.37	207.43
09/24/13	9:14	10.15	207.65		
10/02/13	10:54	10.68	207.12		
10/16/13	9:20	11.02	206.78		
ML02-2	217.80	5/15/2013	10:25	9.69	208.11
		6/24/2013	11:54	7.73	210.07
		07/02/13	14:31	7.91	209.89
		07/09/13	9:59	8.21	209.59
		07/10/13	13:12	7.98	209.82
		07/12/13	10:20	8.05	209.75
		07/19/13	10:16	8.63	209.17
		07/23/13	10:27	8.79	209.01
		07/26/13	10:31	8.89	208.91
		07/29/13	11:33	8.96	208.84
		07/31/13	10:45	9.00	208.80
		08/06/13	11:29	9.16	208.64
		08/08/13	10:31	9.19	208.61
		08/14/13	NR	9.04	208.76
		08/16/13	10:15	9.39	208.41
		08/20/13	10:24	9.48	208.32
		08/27/13	9:15	9.33	208.47
		09/05/13	10:41	9.93	207.87
		09/12/13	8:49	10.11	207.69
		09/19/13	10:44	10.33	207.47
09/24/13	9:15	10.10	207.70		
10/02/13	10:55	10.59	207.21		
10/16/13	9:20	11.00	206.80		

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
ML02-3	217.80	5/14/2013	15:10	9.69	208.11
		6/24/2013	11:54	7.78	210.02
		07/02/13	14:31	7.92	209.88
		07/09/13	9:59	7.97	209.83
		07/10/13	13:13	7.68	210.12
		07/12/13	10:21	8.05	209.75
		07/19/13	10:16	8.38	209.42
		07/23/13	10:26	8.81	208.99
		07/26/13	10:31	8.61	209.19
		07/29/13	11:33	8.70	209.10
		07/31/13	10:46	8.76	209.04
		08/06/13	11:30	8.89	208.91
		08/08/13	10:32	8.98	208.82
		08/14/13	NR	8.79	209.01
		08/16/13	10:16	9.12	208.68
		08/20/13	10:25	9.23	208.57
		08/27/13	9:16	9.03	208.77
		09/05/13	10:42	9.66	208.14
		09/12/13	8:49	9.99	207.81
		09/19/13	10:45	10.16	207.64
09/24/13	9:16	9.98	207.82		
10/02/13	10:55	10.49	207.31		
10/16/13	9:21	10.99	206.81		
ML02-4	217.80	5/14/2013	13:35	9.69	208.11
		6/24/2013	11:55	7.67	210.13
		07/02/13	14:32	7.93	209.87
		07/09/13	10:00	8.15	209.65
		07/10/13	13:13	7.90	209.90
		07/12/13	10:21	8.05	209.75
		07/19/13	10:17	8.57	209.23
		07/23/13	10:26	8.82	208.98
		07/26/13	10:31	8.78	209.02
		07/29/13	11:34	8.89	208.91
		07/31/13	10:47	8.96	208.84
		08/06/13	11:30	9.11	208.69
		08/08/13	10:33	9.16	208.64
		08/14/13	NR	8.98	208.82
		08/16/13	10:16	9.34	208.46
		08/20/13	10:25	9.44	208.36
		08/27/13	9:16	9.29	208.51
		09/05/13	10:43	9.89	207.91
		09/12/13	8:50	10.12	207.68
		09/19/13	10:45	10.30	207.50
09/24/13	9:17	10.08	207.72		
10/02/13	10:56	10.60	207.20		
10/16/13	9:21	10.99	206.81		

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
ML02-5	217.80	5/14/2013	11:35	9.71	208.09
		6/24/2013	11:56	7.71	210.09
		07/02/13	14:33	7.92	209.88
		07/09/13	10:00	8.20	209.60
		07/10/13	13:14	7.99	209.81
		07/12/13	10:21	8.04	209.76
		07/19/13	10:17	8.64	209.16
		07/23/13	10:25	8.78	209.02
		07/26/13	10:32	8.84	208.96
		07/29/13	11:34	8.94	208.86
		07/31/13	10:47	9.02	208.78
		08/06/13	11:31	9.17	208.63
		08/08/13	10:33	9.22	208.58
		08/14/13	NR	9.05	208.75
		08/16/13	10:24	9.40	208.40
		08/20/13	10:26	9.51	208.29
		08/27/13	9:16	9.35	208.45
		09/05/13	10:44	9.95	207.85
		09/12/13	8:51	10.12	207.68
		09/19/13	10:46	10.33	207.47
09/24/13	9:18	10.12	207.68		
10/02/13	10:57	10.64	207.16		
10/16/13	9:22	10.99	206.81		
ML02-6	217.80	5/14/2013	10:07	9.69	208.11
		6/24/2013	11:56	7.71	210.09
		07/02/13	14:33	7.92	209.88
		07/09/13	10:00	8.20	209.60
		07/10/13	13:14	7.98	209.82
		07/12/13	10:21	8.04	209.76
		07/19/13	10:18	8.63	209.17
		07/23/13	10:25	8.76	209.04
		07/26/13	10:32	8.84	208.96
		07/29/13	11:35	8.94	208.86
		07/31/13	10:48	9.02	208.78
		08/06/13	11:31	9.18	208.62
		08/08/13	10:33	9.25	208.55
		08/14/13	NR	9.05	208.75
		08/16/13	10:24	9.40	208.40
		08/20/13	10:26	9.53	208.27
		08/27/13	9:17	9.35	208.45
		09/05/13	10:45	9.95	207.85
		09/12/13	8:51	10.12	207.68
		09/19/13	10:47	10.34	207.46
09/24/13	9:19	10.12	207.68		
10/02/13	10:57	10.65	207.15		
10/16/13	9:23	10.99	206.81		

**TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
ML02-7	217.8	5/15/2013	12:20	9.71	208.09
		6/24/2013	11:57	7.77	210.03
		07/02/13	14:34	7.98	209.82
		07/09/13	10:01	8.34	209.46
		07/10/13	13:15	8.01	209.79
		07/12/13	10:27	8.03	209.77
		07/19/13	10:18	8.77	209.03
		07/23/13	10:24	8.70	209.10
		07/26/13	10:33	8.98	208.82
		07/29/13	11:35	9.08	208.72
		07/31/13	10:48	9.14	208.66
		08/06/13	11:32	9.21	208.59
		08/08/13	10:34	9.26	208.54
		08/14/13	NR	9.18	208.62
		08/16/13	10:25	9.49	208.31
		08/20/13	10:26	9.63	208.17
		08/27/13	9:17	9.47	208.33
		09/05/13	10:45	10.02	207.78
		09/12/13	8:52	10.26	207.54
		09/19/13	10:47	10.47	207.33
09/24/13	9:20	10.25	207.55		
10/02/13	10:58	10.79	207.01		
10/16/13	9:24	11.14	206.66		
ML04-1	217.71	5/16/2013	10:00	9.19	208.52
		6/24/2013	12:03	7.75	209.96
		6/28/2013	11:14	7.99	209.72
		07/02/13	11:48	8.13	209.58
		07/09/13	9:19	8.05	209.66
		07/10/13	9:04	7.83	209.88
		07/12/13	8:56	7.91	209.80
		07/19/13	8:35	8.52	209.19
		07/23/13	9:37	8.62	209.09
		07/26/13	9:22	8.75	208.96
		07/29/13	10:17	8.83	208.88
		07/31/13	8:59	9.10	208.61
		08/06/13	9:43	9.09	208.62
		08/08/13	9:35	9.16	208.55
		08/15/13	9:20	9.34	208.37
		08/16/13	10:08	9.30	208.41
		08/20/13	9:27	9.45	208.26
		08/27/13	9:20	9.18	208.53
		09/05/13	9:01	9.86	207.85
		09/12/13	8:54	10.10	207.61
09/13/13	11:49	10.11	207.60		
09/19/13	9:16	10.32	207.39		
09/24/13	9:25	9.96	207.75		
10/02/13	8:32	10.54	207.17		
10/16/13	9:07	10.93	206.78		

TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey

Well ID	Top of Casing Elevation (ft amsl)	Date (mm/dd/yyyy)	Time (hh:mm)	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)
ML04-2	217.71	5/17/2013	9:25	9.18	208.53
		6/24/2013	12:04	7.76	209.95
		6/28/2013	11:14	8.33	209.38
		07/02/13	11:49	8.39	209.32
		07/09/13	9:20	8.45	209.26
		07/10/13	9:04	8.20	209.51
		07/12/13	8:56	8.13	209.58
		07/19/13	8:35	8.90	208.81
		07/23/13	9:36	9.01	208.70
		07/26/13	9:23	9.19	208.52
		07/29/13	10:18	9.26	208.45
		07/31/13	9:00	9.27	208.44
		08/06/13	9:44	9.37	208.34
		08/08/13	9:36	9.43	208.28
		08/15/13	9:21	9.58	208.13
		08/16/13	10:08	9.65	208.06
		08/20/13	9:28	9.72	207.99
		08/27/13	9:20	9.70	208.01
		09/05/13	9:03	10.29	207.42
		09/12/13	8:55	10.38	207.33
09/13/13	11:52	10.42	207.29		
09/19/13	9:17	10.64	207.07		
09/24/13	9:26	10.30	207.41		
10/02/13	8:33	10.83	206.88		
10/16/13	9:08	10.88	206.83		
ML04-3	217.71	5/16/2013	15:05	9.19	208.52
		6/24/2013	12:05	7.58	210.13
		6/28/2013	11:15	8.03	209.68
		07/02/13	11:49	8.15	209.56
		07/09/13	9:20	8.07	209.64
		07/10/13	9:04	7.82	209.89
		07/12/13	8:57	7.90	209.81
		07/19/13	8:35	8.52	209.19
		07/23/13	9:35	8.67	209.04
		07/26/13	9:25	8.80	208.91
		07/29/13	10:19	8.86	208.85
		07/31/13	9:01	8.93	208.78
		08/06/13	9:44	9.09	208.62
		08/08/13	9:36	9.14	208.57
		08/15/13	9:21	9.31	208.40
		08/16/13	10:09	9.31	208.40
		08/20/13	9:29	9.36	208.35
		08/27/13	9:21	9.16	208.55
		09/05/13	9:04	9.81	207.90
		09/12/13	8:55	10.00	207.71
09/13/13	11:53	10.02	207.69		
09/19/13	9:18	10.24	207.47		
09/24/13	9:27	9.90	207.81		
10/02/13	8:34	10.50	207.21		
10/16/13	9:08	10.89	206.82		

TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey

Well ID	Top of Casing Elevation	Date	Time	Depth to Water	Groundwater Elevation
	(ft amsl)				
ML04-4	217.71	5/16/2013	13:15	9.20	208.51
		6/24/2013	12:06	7.57	210.14
		6/28/2013	11:15	8.04	209.67
		07/02/13	11:49	8.16	209.55
		07/09/13	9:20	8.06	209.65
		07/10/13	9:05	7.82	209.89
		07/12/13	8:57	7.90	209.81
		07/19/13	8:35	8.51	209.20
		07/23/13	9:33	8.67	209.04
		07/26/13	9:25	8.81	208.90
		07/29/13	10:19	8.87	208.84
		07/31/13	9:02	8.94	208.77
		08/06/13	9:45	9.09	208.62
		08/08/13	9:37	9.16	208.55
		08/15/13	9:22	9.30	208.41
		08/16/13	10:09	9.32	208.39
		08/20/13	9:29	9.40	208.31
		08/27/13	9:21	9.16	208.55
		09/05/13	9:05	9.85	207.86
		09/12/13	8:56	10.01	207.70
09/13/13	11:54	10.06	207.65		
09/19/13	9:19	10.26	207.45		
09/24/13	9:28	9.97	207.74		
10/02/13	8:34	10.52	207.19		
10/16/13	9:09	10.90	206.81		
ML04-5	217.71	5/16/2013	12:15	9.20	208.51
		6/24/2013	12:07	7.57	210.14
		6/28/2013	11:16	8.05	209.66
		07/02/13	11:50	8.16	209.55
		07/09/13	9:21	8.06	209.65
		07/10/13	9:05	7.83	209.88
		07/12/13	8:57	7.89	209.82
		07/19/13	8:35	8.53	209.18
		07/23/13	9:32	8.65	209.06
		07/26/13	9:25	8.80	208.91
		07/29/13	10:20	8.87	208.84
		07/31/13	9:04	8.97	208.74
		08/06/13	9:47	9.13	208.58
		08/08/13	9:37	9.19	208.52
		08/15/13	9:23	9.32	208.39
		08/16/13	10:09	9.34	208.37
		08/20/13	9:30	9.44	208.27
		08/27/13	9:21	9.20	208.51
		09/05/13	9:05	9.87	207.84
		09/12/13	8:57	10.09	207.62
09/13/13	11:55	10.09	207.62		
09/19/13	9:20	10.28	207.43		
09/24/13	9:28	9.98	207.73		
10/02/13	8:35	10.57	207.14		
10/16/13	9:09	10.92	206.79		

TABLE 1
DEPTH TO GROUNDWATER
Pompton Lakes Works
Pompton Lakes, New Jersey

Well ID	Top of Casing Elevation	Date	Time	Depth to Water	Groundwater Elevation
	(ft amsl)				(ft amsl)
ML04-6	217.71	5/16/2013	11:20	9.18	208.53
		6/24/2013	12:08	7.56	210.15
		6/28/2013	11:16	8.03	209.68
		07/02/13	11:50	8.15	209.56
		07/09/13	9:21	8.06	209.65
		07/10/13	9:05	7.81	209.90
		07/12/13	8:58	7.89	209.82
		07/19/13	8:35	8.48	209.23
		07/23/13	9:31	8.64	209.07
		07/26/13	9:26	8.76	208.95
		07/29/13	10:20	8.86	208.85
		07/31/13	9:05	8.93	208.78
		08/06/13	9:48	9.11	208.60
		08/08/13	9:38	9.18	208.53
		08/15/13	9:24	9.31	208.40
		08/16/13	10:10	9.34	208.37
		08/20/13	9:30	9.43	208.28
		08/27/13	9:22	9.20	208.51
		09/05/13	9:06	9.89	207.82
		09/12/13	8:57	10.08	207.63
09/13/13	11:56	10.08	207.63		
09/19/13	9:21	10.26	207.45		
09/24/13	9:25	9.96	207.75		
10/02/13	8:35	10.54	207.17		
10/16/13	9:10	10.92	206.79		
ML04-7	217.71	5/17/2013	10:45	9.22	208.49
		6/24/2013	12:09	7.70	210.01
		6/28/2013	11:17	8.13	209.58
		07/02/13	11:50	8.25	209.46
		07/09/13	9:21	8.23	209.48
		07/10/13	9:05	7.95	209.76
		07/12/13	8:58	7.89	209.82
		07/19/13	8:35	8.79	208.92
		07/23/13	9:30	8.82	208.89
		07/26/13	9:26	9.14	208.57
		07/29/13	10:20	9.05	208.66
		07/31/13	9:06	9.24	208.47
		08/06/13	9:49	9.19	208.52
		08/08/13	9:38	9.32	208.39
		08/15/13	9:25	9.41	208.30
		08/16/13	10:10	9.40	208.31
		08/20/13	9:31	9.46	208.25
		08/27/13	9:22	9.31	208.40
		09/05/13	9:06	9.99	207.72
		09/12/13	8:58	10.20	207.51
09/13/13	11:57	10.17	207.54		
09/19/13	9:22	10.41	207.30		
09/24/13	9:28	10.09	207.62		
10/02/13	8:36	10.71	207.00		
10/16/13	9:11	11.06	206.65		

Notes:

hh:mm - hour:minute

ft amsl - feet above mean sea level

ft btoc - feet below top of casing

mm/dd/yyyy - month/day/year

TABLE 2
FIELD PARAMETER RESULTS
Pompton Lakes Works
Pompton Lakes, New Jersey

Well Identifier	Well Screen Interval (ft bgs)	Date Sampled	Time	Flow Rate (ml/m)	Temperature (°C)	pH	Conductivity (µs)	ORP (mV)	Dissolved Oxygen (mg/L)	Volume Purged (gal)	Water Level (ft btoc)	Comments
128	6.24-26.24	01-May-13	14:02	200	13.2	6.61	0.86	213	6.9	4.0	9.92	Slightly turbid
128-1	61.36-71.36	02-May-13	11:45	150	14.9	9.29	0.93	-108	0.7	5.0	10.20	Slightly tan-brown/clear
128-D	125.2-145.2	02-May-13	15:35	140	16.3	8.85	0.30	-246	0.8	3.5	12.54	Sulfur/degradation odor
EW-01-Upper	21.60 - 45.92	16-May-13	16:09	375	15.3	7.65	0.45	-92	0.8	7.0	9.50	Clear, No Odor
		17-Jul-13	15:00	200	19.6	7.57	0.39	200	0.4	--	--	Clear, No Odor
		02-Aug-13	10:25	200	17.3	7.33	0.42	-2	1.6	3.0	7.33	Clear, No Odor
		15-Aug-13	11:15	250	17.4	7.58	0.44	40	0.5	3.0	9.25	Clear, No Odor
		28-Aug-13	10:30	200	18.6	7.39	0.42	50	0.9	2.5	--	Clear, No Odor
		13-Sep-13	11:05	200	17.1	7.56	0.45	-8	0.8	3.5	--	Clear, No Odor
		25-Sep-13	10:20	200	16.0	8.15	0.42	3	0.5	3.5	--	Clear, No Odor
EW-01-Lower	50.69 - 75.00	17-Jul-13	10:08	375	19.7	8.97	0.92	239	1.6	1.6	--	Clear, No Odor
		01-Aug-13	16:30	200	17.2	9.00	0.77	-118	0.9	2.0	--	
		15-Aug-13	9:50	300	15.9	8.98	0.84	-61	0.4	3.0	--	Clear, No Odor
		28-Aug-13	11:40	300	16.8	8.82	0.82	-173	0.3	5.0	--	Clear, No Odor
		13-Sep-13	9:30	250	15.8	8.84	0.93	-141	1.2	3.0	--	Goldish brown, No Odor
25-Sep-13	12:05	200	14.5	9.38	0.90	-49	0.4	3.8	--			
IW-01-Upper	19.90-44.90	14-May-13	12:30	275	15.4	7.94	0.45	73	0.7	7.0	9.64	Clear, No Odor
IW-01-Lower	49.70-74.20	14-May-13	16:31	360	15.1	8.57	0.81	8	0.7	--	9.73	Clear, No Odor
IW-02-Upper	21.60-45.92	04-Jun-13	12:33	360	16.7	7.60	0.35	-81	1.5	5.7	8.38	Clear, No Odor
IW-02-Lower	50.69-75.00	15-May-13	15:00	200	16.0	8.87	0.91	-118	0.9	2.5	9.22	Slightly turbid/gray
IW-03-Upper	21.10-45.42	15-May-13	12:20	350	15.1	7.29	0.53	117	1.2	6.0	9.62	Clear, No Odor
IW-03-Lower	50.19-75.50	16-May-13	12:22	370	16.3	9.03	0.98	-55	0.8	12.5	9.62	Slight tan/yellow
ML02-1	14.42-14.92	14-May-13	10:00	200	15.0	6.85	0.31	109	1.5	2.5	9.70	Clear, No Odor
		31-Jul-13	12:10	240	17.8	8.93	0.42	-133	1.0	4.0	--	Clear, No Odor
		27-Aug-13	10:10	190	18.1	6.94	0.39	-151	0.7	2.1	--	Clear, very slight sulfur odor
ML02-6	24.39-24.89	14-May-13	11:28	200	15.7	7.77	0.40	-5	0.8	4.0	9.69	Light brown/turbid
		31-Jul-13	13:35	180	17.3	9.63	0.38	-97	0.7	3.0	--	Very clear, no odor.
		27-Aug-13	11:10	175	17.1	7.71	0.39	-82	0.5	2.2	--	Clear, no odor.
		24-Sep-13	10:35	200	15.5	9.00	0.38	-31	0.6	2.5	--	Clear, no odor.
ML02-5	34.36-34.86	14-May-13	12:45	200	16.3	8.35	0.37	-106	0.7	2.5	9.71	Slightly brown, Slightly turbid
		17-Jul-13	11:00	200	17.3	8.28	0.35	-107	0.3	3.0	8.23	Slightly turbid, gray
		31-Jul-13	15:25	180	18.2	10.02	0.36	-170	0.6	2.4	--	Clear, No Odor
		14-Aug-13	10:25	190	17.1	8.10	0.36	-72	0.7	3.0	--	Clear, very slight sulfur degradation odor
		27-Aug-13	12:25	200	17.3	8.04	0.37	-166	0.5	2.4	--	Clear, No Odor
		12-Sep-13	9:35	160	20.7	7.35	0.71	-160	1.1	1.4	--	Clear, No Odor
		24-Sep-13	11:15	200	15.3	7.98	1.10	-143	0.6	2.5	--	Slight pale yellow, no odor

**TABLE 2
FIELD PARAMETER RESULTS
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well Identifier	Well Screen Interval (ft bgs)	Date Sampled	Time	Flow Rate (ml/m)	Temperature (°C)	pH	Conductivity (µs)	ORP (mV)	Dissolved Oxygen (mg/L)	Volume Purged (gal)	Water Level (ft btoc)	Comments
ML02-4	44.39-44.89	14-May-13	15:00	200	16.5	8.80	0.47	-97	1.0	--	9.69	Clear, No Odor
		17-Jul-13	11:40	200	18.0	8.57	0.95	-46	0.4	2.5	8.18	Slightly turbid, Gray
		01-Aug-13	10:45	180	18.2	7.83	1.04	-310	0.9	3.0	--	Slightly yellow, sulfur degradation odor
		14-Aug-13	11:35	180	17.0	7.94	0.91	-173	0.6	3.0	--	Clear, very slight yellow brown, sulfur degradation odor
		27-Aug-13	13:55	180	17.1	7.80	0.82	-230	0.4	2.7	--	Clear, very slight yellow brown, sulfur degradation odor
		12-Sep-13	10:40	145	20.3	7.47	0.99	-203	1.1	1.8	--	Clear, No Odor
ML02-3	54.38-54.88	24-Sep-13	12:00	200	15.1	7.78	0.99	-205	0.4	2.0	--	Slight pale yellow, no odor
		14-May-13	16:00	200	15.9	9.55	0.77	-119	0.9	--	9.69	Clear, No Odor
		17-Jul-13	12:30	300	17.4	9.17	1.14	-271	0.1	2.5	8.03	Clear, No Odor
		01-Aug-13	12:05	190	17.3	8.97	1.12	-320	0.7	3.0	--	Clear, slight yellow, sulfur degradation odor
		14-Aug-13	13:00	160	17.4	8.94	0.97	-217	0.5	2.5	--	Clear, very slight yellow, sulfur degradation odor
		28-Aug-13	10:10	200	19.3	8.66	0.88	-210	0.4	2.5	--	Slight pale yellow, no odor
ML02-2	64.40-64.90	12-Sep-13	12:00	170	21.0	8.00	1.15	-194	1.0	1.7	--	Clear, No Odor
		24-Sep-13	12:45	200	16.2	9.46	0.98	-179	0.3	2.5	--	Pale amber color, organic odor
		15-May-13	11:10	200	15.1	8.50	0.80	16	1.3	2.5	9.69	Slightly turbid, gray
		17-Jul-13	13:25	300	17.3	9.10	0.93	-144	0.2	2.5	8.25	Clear, No Odor
		01-Aug-13	15:05	170	17.4	8.69	0.93	-219	1.1	3.5	--	Slight yellow, sulfur degradation odor
		14-Aug-13	14:55	185	18.1	8.84	0.86	-293	0.3	4.0	--	Clear, sulfur degradation odor
ML02-7	74.45-74.95	28-Aug-13	11:15	200	18.6	8.52	0.78	-240	0.7	3.0	--	Slight pale yellow, No odor
		12-Sep-13	14:50	180	19.2	8.26	0.91	-204	1.0	2.9	--	Clear, No Odor
		24-Sep-13	13:35	200	16.1	9.82	0.98	-215	0.5	2.5	--	Slight amber color, slight organic odor
		15-May-13	13:20	200	16.8	8.83	1.82	-108	0.9	2.5	9.71	Slightly turbid/gray
		17-Jul-13	14:15	300	16.6	8.97	1.80	-135	0.1	2.5	8.38	Clear, No Odor
		02-Aug-13	10:05	190	18.2	8.38	1.80	-143	0.9	3.5	--	Medium brown to gold, No Odor
ML04-1	14.62-15.12	14-Aug-13	16:10	195	18.0	8.89	1.79	-169	0.3	3.5	--	Yellow-gold, sulfur degradation odor
		28-Aug-13	12:10	200	19.3	8.77	1.92	-139	0.4	3.0	--	Amber colored, mineral odor
		12-Sep-13	16:00	155	19.0	8.75	1.84	-132	0.7	2.4	--	Brown, no odor
		14-Sep-13	14:30	200	16.6	10.07	1.92	-138	0.3	2.5	--	amber, organic odor
ML04-6	24.69-25.19	16-May-13	12:00	200	16.7	7.49	0.38	-105	0.7	2.5	9.18	Clear, No Odor
		31-Jul-13	13:25	170	18.3	8.29	0.38	-137	0.9	3.0	--	Clear, No Odor
		27-Aug-13	11:10	200	18.3	8.23	0.39	-127	0.4	3.0	--	Clear, No Odor
		24-Sep-13	12:05	195	15.8	8.33	0.42	-113	0.7	3.0	--	Clear, No Odor

**TABLE 2
FIELD PARAMETER RESULTS
Pompton Lakes Works
Pompton Lakes, New Jersey**

Well Identifier	Well Screen Interval (ft bgs)	Date Sampled	Time	Flow Rate (ml/m)	Temperature (°C)	pH	Conductivity (µs)	ORP (mV)	Dissolved Oxygen (mg/L)	Volume Purged (gal)	Water Level (ft btoc)	Comments
ML04-5	34.59-35.09	16-May-13	12:55	200	18.3	8.21	0.41	-118	0.5	2.5	9.20	Clear, No Odor
		31-Jul-13	15:15	170	20.7	8.22	0.42	-156	0.7	2.0	--	Clear, No Odor
		27-Aug-13	12:05	200	18.7	8.01	0.49	-156	0.3	3.0	--	Clear, No Odor
		24-Sep-13	13:45	210	17.0	8.06	0.56	-148	0.5	3.3	--	Clear, No Odor
ML04-4	44.32-44.82	11-May-13	14:45	160	18.9	8.80	0.47	-165	0.4	3.5	9.20	Silty, gray-black, no odor
		01-Aug-13	10:25	150	16.4	8.26	0.86	-103	1.2	3.0	--	Clear, No Odor
		27-Aug-13	12:55	200	18.3	8.22	1.06	-126	0.4	3.0	--	Slight pale yellow, no odor
		24-Sep-13	14:50	165	17.6	8.34	1.00	-113	0.6	2.4	--	Slight gold-brown, no odor
ML04-3	54.62-55.12	16-May-13	16:05	200	19.8	9.13	0.80	-130	0.6	2.5	9.19	Gray/turbid
		01-Aug-13	11:50	150	15.7	8.89	0.92	-148	1.0	3.0	--	Slight pale yellow, no odor
		27-Aug-13	13:55	200	19.1	8.97	1.15	-140	0.4	2.5	--	Slight pale yellow, no odor
		24-Sep-13	15:45	200	17.0	8.98	1.03	-152	0.4	2.4	--	
ML04-2	64.66-65.16	17-May-13	10:25	200	15.3	8.47	1.06	-138	0.6	2.5	9.18	Gray/turbid
		01-Aug-13	14:20	150	16.7	8.59	1.00	-70	0.9	6.0	--	Slight pale yellow, no odor
		27-Aug-13	14:40	200	18.4	8.91	0.90	-87	0.8	3.0	--	Slight pale yellow, no odor
		25-Sep-13	9:30	200	15.2	8.90	1.04	-172	1.6	3.0	--	Clear, No Odor
ML04-7	74.75-75.25	17-May-13	11:50	200	15.6	8.91	1.60	-157	0.3	2.5	9.22	Turbid, brown
		01-Aug-13	15:35	150	15.9	8.77	1.58	-198	0.9	3.0	--	Clear, slight sulfur degradation odor
		27-Aug-13	15:30	200	19.1	9.11	1.50	-161	0.3	2.5	--	Slight pale brown, mineral odor
		25-Sep-13	10:35	200	15.7	9.18	1.57	-150	2.3	2.6	--	Slight pale brown, mineral odor

Notes:
 -- - not available
 °C - degrees Celsius
 ft btoc - feet below top of casing
 GMW - groundwater monitoring well
 µmhos/cm - micromhos per centimeter
 mg/L - milligrams per liter
 mL - milliliters
 ml/m - milliliter per minute
 mV - millivolts
 NTU - Nephelometric Turbidity Units
 ORP - oxidation reduction potential
 TDS - total dissolved solids

**TABLE 3
SELECT TARGET COMPOUND RESULTS - EISB PILOT STUDY
Pompton Lakes Works
Pompton Lakes, New Jersey**

Location	Screen Interval (ft bgs)	Sample Event	Sampling Date	VOCs										DHGs			Other					
				1,1,1 TCA	1,1-DCA	1,1-DCE	1,2-DCA	CT	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	Ethane	Ethene	Methane	Bromide	Chloride	Sulfate	Sulfide	TOC	
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L
128	6.24-26.24	Baseline - May/June 2013	1-May-13	--	--	--	--	--	--	--	--	--	--	--	<1.0	<1.0	<3.0	<2.0	202	17.9	--	--
		Baseline - May/June 2013	21-May-13	<0.1	<0.1	<0.1	<0.1	<0.1	2.6	4.4	2.6	1.3	<0.1	--	--	--	--	--	--	--	--	--
128-I	61.36-71.36	Baseline - May/June 2013	2-May-13	--	--	--	--	--	--	--	--	--	--	5.4	3.7 J	1100	<2.0	84.8	36.2	--	--	
		Baseline - May/June 2013	21-May-13	<1.0	5.4	5.9	2.5 J	<1.0	<1.0	1.7 J	890	200	79	--	--	--	--	--	--	--	--	--
128-D	125.2-145.2	Baseline - May/June 2013	2-May-13	--	--	--	--	--	--	--	--	--	--	<1.0	1.1 J	190	<2.0	11.8	12.6	--	--	
		Baseline - May/June 2013	21-May-13	<0.1	<0.1	<0.1	4.7	<0.1	<0.1	0.4 J	6.6	7	2.8	--	--	--	--	--	--	--	--	--
EW01-UPPER	21.60 - 45.92	Baseline - May/June 2013	16-May-13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.7 J
		Baseline - May/June 2013	17-May-13	0.2 J	0.2 J	0.3 J	<0.1	<0.1	16	20	29	17	4.3	<1.0	<1.0	26	<0.15	47.9	34.3	<0.054	<0.50	
		Biweekly - Mid July 2013	17-Jul-13	<0.1	<0.1	0.2 J	<0.1	<0.1	21	22	17	9.8	0.6	<1.0	<1.0	<3.0	--	--	--	--	--	--
		Monthly - July/Aug 2013	2-Aug-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	21	21	20	13	0.8	<1.0	<1.0	<3.0	--	--	--	--	--	<0.50
		Biweekly - Mid Aug 2013	15-Aug-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	21	20	20	12	0.8	<1.0	<1.0	<3.0	--	--	--	--	--	--
		Monthly - Aug 2013	28-Aug-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	21	20	19	12	0.7	<1.0	<1.0	<3.0	--	--	--	--	--	<0.50
		Biweekly - Mid Sept 2013	13-Sep-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	22	22	20	13	0.7	<1.0	<1.0	<3.0	--	--	--	--	--	--
		Monthly - Sept 2013	25-Sep-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	21	22	20	13	0.7	<1.0	<1.0	<3.0	--	--	--	--	--	<0.50
EW01-LOWER	50.69 - 75.00	Baseline - May/June 2013	14-Jun-13	<0.5	2.5	4.6	<0.5	<0.5	0.9 J	43	630	260 J	97	2.3 J	3.7 J	910	<2.0	54.1	43.9	<0.054	17.4	
		Biweekly - Mid July 2013	17-Jul-13	<1.0	3.1 J	3.9 J	<1.0	<1.0	22	49	530	200	120	4.8 J	4.9 J	900	--	--	--	--	--	
		Monthly - July/Aug 2013	1-Aug-13	<0.5	3.1	3.7	<0.5	<0.5	21	51	550	200	120	6.2	6.5	1000	--	--	--	--	5.4	
		Biweekly - Mid Aug 2013	15-Aug-13	<1.0	3.2 J	3.6 J	<1.0	<1.0	25	52	520	200	120	6	6.5	860	--	--	--	--	--	
		Monthly - Aug 2013	28-Aug-13	<0.5	3.5	4.1	<0.5	<0.5	16	49	600	220	130	7.4	8.7	910	--	--	--	--	7.1	
		Biweekly - Mid Sept 2013	13-Sep-13	<0.5	4	5.3	<0.5	<0.5	8.9	51	750	300	160	8.5	10	1300	--	--	--	--	--	
Monthly - Sept 2013	25-Sep-13	<0.5	3.6	5	<0.5	<0.5	5	48	720	290	150	7	8.1	1100	--	--	--	--	7.7			
IW01-UPPER	19.90-44.90	Baseline - May/June 2013	14-May-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	21	25	24	16	0.9	<1.0	<1.0	<3.0	<2.0	60.1	25.8	<0.054 R	2	
IW01-LOWER	49.70-74.20	Baseline - May/June 2013	14-May-13	<0.5	2.2 J	3.7	<0.5	<0.5	0.6 J	22	440	150	79	3.6 J	3.4 J	880	<2.0	--	--	--	5.7	
IW02-UPPER	21.60-45.92	Baseline - May/June 2013	4-Jun-13	0.2 J	<0.1	0.1 J	<0.1	<0.1	19	19	14	7.2	0.4 J	<1.0	<1.0	<3.0	<2.0	26.5	37.1	--	1	
IW02-LOWER	50.69-75.00	Baseline - May/June 2013	15-May-13	<1.0	2.0 J	3.5 J	<1.0	<1.0	<1.0	23	440	150	70	2.6 J	2.4 J	650	<2.0	50.4	41	--	--	
IW03-UPPER	21.10-45.42	Baseline - May/June 2013	15-May-13	0.4 J	0.2 J	0.2 J	<0.1	<0.1	19	17	22	10	2.2	<1.0	<1.0	22	<2.0	77.2	24.4	--	<0.50	
IW03-LOWER	50.19-75.50	Baseline - May/June 2013	17-May-13	<1.0	1.3 J	2.8 J	<1.0	<1.0	<1.0	28	380	140	56	1.7 J	3.0 J	840	<0.075	48.3	42.5	--	7.2	
ML02-1	14.42-14.92	Baseline - May/June 2013	14-May-13	0.4 J	0.2 J	0.1 J	<0.1	<0.1	23	14	41	9.9	5.4	<1.0	<1.0	10 J	<2.0	35	23.2	<0.054 R	--	
		Monthly - July/Aug 2013	31-Jul-13	0.3 J	0.3 J	0.4 J	<0.1	<0.1	23	15	35	17	8.1	--	--	--	--	--	--	--	2.7	
		Monthly - Aug 2013	27-Aug-13	0.3 J	<0.1	0.2 J	<0.1	<0.1	20	15	15	6.9	1.2	--	--	--	--	--	--	--	--	<0.50
ML02-6	24.39-24.89	Baseline - May/June 2013	14-May-13	<0.1	<0.1	0.3 J	<0.1	<0.1	19	22	22	16	1.2	<1.0	<1.0	3.3 J	<2.0	34.6	39.8	<0.054 R	--	
		Monthly - July/Aug 2013	31-Jul-13	<0.1	<0.1	0.3 J	<0.1	<0.1	23	22	22	15	0.9	--	--	--	--	--	--	--	0.51 J	
		Monthly - Aug 2013	27-Aug-13	<0.1	<0.1	0.3 J	<0.1	<0.1	24	22	22	15	0.9	--	--	--	--	--	--	--	0.53 J	
		Monthly - Sept 2013	24-Sep-13	<0.1	<0.1	0.3 J	<0.1	<0.1	24	23	23	16	0.8 J	--	--	--	--	--	--	--	0.91 J	
ML02-5	34.36-34.86	Baseline - May/June 2013	14-May-13	0.2 J	0.2 J	0.5	<0.1	<0.1	24	40	45	25	1.8	<1.0	<1.0	5.8	<2.0	13	28.6	0.16 J	--	
		Biweekly - Mid July 2013	17-Jul-13	0.2 J	0.2 J	0.5	<0.1	<0.1	12	30	53	24	5.4	--	--	--	--	--	--	--	--	
		Monthly - July/Aug 2013	31-Jul-13	0.2 J	0.2 J	0.5	<0.1	<0.1	34	44	43	19	1.7	--	--	--	--	--	--	--	1.5	
		Biweekly - Mid Aug 2013	14-Aug-13	0.3 J	0.2 J	0.6	<0.1	<0.1	36	43	43	25	1.5	--	--	--	--	--	--	--	--	
		Monthly - Aug 2013	27-Aug-13	0.4 J	0.2 J	0.6	<0.1	<0.1	41	49	48	19	2.1	--	--	--	--	--	--	--	0.70 J	
		Biweekly - Mid Sept 2013	12-Sep-13	0.1 J	1.9	2.4	<0.1	<0.1	26	56	240	76	52	--	--	--	--	--	--	--	--	--
Monthly - Sept 2013	24-Sep-13	<0.1	3.6	4.4	<0.1	<0.1	18	45	500	140	120 J	--	--	--	--	--	--	--	--	63.8		
ML02-4	44.39-44.89	Baseline - May/June 2013	14-May-13	0.5	0.4 J	1.4	<0.1	<0.1	46	85	89	36	6	<1.0	<1.0	22	<2.0	20.6	43.8	0.14 J	--	
		Biweekly - Mid July 2013	17-Jul-13	<1.0	2.9 J	3.2 J	<1.0	<1.0	6.1 J	44 J	510 J	81 J	61 J	4.6 J	5	840	--	--	--	--	--	
		Monthly - July/Aug 2013	1-Aug-13	<0.5	3	3.7	<0.5	<0.5	24	53	530	200	120	5.5	6.5	720	--	--	--	--	24.6	
		Biweekly - Mid Aug 2013	14-Aug-13	0.2 J	3.5	4.6	<0.1	<0.1	23	50	510	180	110	5.3	6.4	680	--	--	--	--	--	
		Monthly - Aug 2013	27-Aug-13	<1.0	3.2 J	3.9 J	<1.0	<1.0	21	50	500	190	120	6.2	8.1	770	--	--	--	--	12.5	
		Biweekly - Mid Sept 2013	12-Sep-13	<1.0	3.6 J	4.3 J	<1.0	<1.0	9.8	30	670	220	130	6.4	9.3	920	--	--	--	--	--	
Monthly - Sept 2013	24-Sep-13	<0.1	4.2	5.6	<0.1	<0.1	4.9	13	710	240	140 J	7.6	12	1100	--	--	--	--	--	34.3		

**TABLE 3
SELECT TARGET COMPOUND RESULTS - EISB PILOT STUDY
Pompton Lakes Works
Pompton Lakes, New Jersey**

Location	Screen Interval (ft bgs)	Sample Event	Sampling Date	VOCs										DHGs			Other				
				1,1,1 TCA	1,1-DCA	1,1-DCE	1,2-DCA	CT	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	Ethane	Ethene	Methane	Bromide	Chloride	Sulfate	Sulfide	TOC
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
ML02-3	54.38-54.88	Baseline - May/June 2013	14-May-13	<0.1	2.7	2.4	<0.1	<0.1	7.7	52	280	81	46	2.5 J	<1.0	140	<2.0	48.3	39.6	0.59 J	--
		Biweekly - Mid July 2013	17-Jul-13	<0.5	2.7	2.8	<0.5	<0.5	6.3	33	470	160	99	3.0 J	3.6 J	460	--	--	--	--	--
		Monthly - July/Aug 2013	1-Aug-13	<0.5	3	3.6	<0.5	<0.5	17	49	520	190	120	5.9	6.7	800	--	--	--	--	47.1
		Biweekly - Mid Aug 2013	14-Aug-13	0.1 J	3.6	4.6	<0.1	<0.1	25	48	510	180	110	4.8 J	6.1	630	--	--	--	--	--
		Monthly - Aug 2013	28-Aug-13	<0.5	3.3	3.8	<0.5	<0.5	16	46	580	210	120	6.2	8.3	740	--	--	--	--	14.4
		Biweekly - Mid Sept 2013	12-Sep-13	<0.5	3.5	4.4	<0.5	<0.5	5.4	23	660	240	130	6.5	9.1	840	--	--	--	--	--
		Monthly - Sept 2013	24-Sep-13	<0.5	3.8	4.6	<0.5	<0.5	2.1 J	11	770	280	140 J	6.9	9.2	860	--	--	--	--	44.6
ML02-2	64.40-64.90	Baseline - May/June 2013	15-May-13	<1.0	4.3 J	5.3	<1.0	<1.0	1.4 J	10	830	310	140	6.4	4.7 J	730	<2.0	59.2	33.2	<0.054	--
		Biweekly - Mid July 2013	17-Jul-13	<0.5	1.0 J	1.2 J	<0.5	<0.5	7.3	16	190	65	33	1.1 J	1.1 J	120	--	--	--	--	--
		Monthly - July/Aug 2013	1-Aug-13	<0.2	2.2	2.9	<0.2	<0.2	14	36	370	140	80	4.0 J	4.5 J	420	--	--	--	--	48.7
		Biweekly - Mid Aug 2013	14-Aug-13	0.2 J	2.9	3.8	<0.1	<0.1	18	36	410	150	82	4.1 J	4.6 J	460	--	--	--	--	--
		Monthly - Aug 2013	28-Aug-13	<0.2	2.3	2.7	<0.2	<0.2	14	38	370	130	75	4.3 J	5.2	520	--	--	--	--	11.9
		Biweekly - Mid Sept 2013	12-Sep-13	<0.2	2.6	3.5	<0.2	<0.2	9.7	32	460	170	87	4.7 J	5.9	690	--	--	--	--	--
		Monthly - Sept 2013	24-Sep-13	<1.0	3.3 J	3.9 J	<1.0	<1.0	5.4	24	660	220	110 J	6.3	8.2	790	--	--	--	--	41.9
ML02-7	74.45-74.95	Baseline - May/June 2013	15-May-13	<0.5	1.3 J	1.0 J	<0.5	<0.5	1.9 J	14	190	57	55	4.7 J	13	1900	<2.0	62.4	29.2	<0.054	--
		Biweekly - Mid July 2013	17-Jul-13	<0.2	1.4	1	<0.2	<0.2	1.1	8.8	150	45	70	2.5 J	6.5	960	--	--	--	--	--
		Monthly - July/Aug 2013	2-Aug-13	<0.5	1.1 J	<0.5	<0.5	<0.5	<0.5	72	3.1	120	4.8 J	18	2500	--	--	--	--	26	
		Biweekly - Mid Aug 2013	14-Aug-13	<0.1	1.3	0.5	<0.1	<0.1	0.2 J	68	3.7	110	4.4 J	17	2600	--	--	--	--	--	
		Monthly - Aug 2013	28-Aug-13	<0.2	1	0.4 J	<0.2	<0.2	0.2 J	55	2.9	100	3.7 J	17	2300	--	--	--	--	27.5	
		Biweekly - Mid Sept 2013	12-Sep-13	<0.2	1.1	0.4 J	<0.2	<0.2	0.4 J	68	5	100	4.9 J	22	2900	--	--	--	--	--	
		Monthly - Sept 2013	24-Sep-13	<0.1	1.2	0.5	<0.1	<0.1	0.3 J	64	4.3	100 J	3.6 J	15	4300	--	--	--	--	29.6	
ML04-1	14.62-15.12	Baseline - May/June 2013	16-May-13	0.3 J	<0.1	<0.1	<0.1	<0.1	20	14	12	2.3	<0.1	<1.0	<1.0	<3.0	<2.0	40.7	23.3	--	--
		Monthly - July/Aug 2013	31-Jul-13	0.3 J	0.3 J	0.4 J	<0.1	<0.1	21	20	43	19	8.9	--	--	--	--	--	--	--	<0.50
		Monthly - Aug 2013	27-Aug-13	0.2 J	0.7	0.8	<0.1	<0.1	19	24	90	29	18	--	--	--	--	--	--	--	<0.50
		Monthly - Sept 2013	24-Sep-13	0.3 J	0.1 J	0.2 J	<0.1	<0.1	22	17	21	8.4	1.0 J	--	--	--	--	--	--	--	<0.50
ML04-6	24.69-25.19	Baseline - May/June 2013	16-May-13	<0.1	0.1 J	0.3 J	<0.1	<0.1	22	26	30	16	1	<1.0	<1.0	<3.0	<2.0	19.7	42.3	--	--
		Monthly - July/Aug 2013	31-Jul-13	<0.1	0.1 J	0.4 J	<0.1	<0.1	24	23	31	18	1.3	--	--	--	--	--	--	--	1.5
		Monthly - Aug 2013	27-Aug-13	<0.1	0.1 J	0.4 J	<0.1	<0.1	24	25	30	20	1.2	--	--	--	--	--	--	--	1.5
		Monthly - Sept 2013	24-Sep-13	<0.1	0.1 J	0.5	<0.1	<0.1	24	25	35	20	1.1 J	--	--	--	--	--	--	--	1.5
ML04-5	34.59-35.09	Baseline - May/June 2013	16-May-13	<0.2	<0.2	0.5 J	<0.2	<0.2	7.8	32	44	23	1.3	<1.0	<1.0	3.4 J	<2.0	30.5	25.9	--	--
		Monthly - July/Aug 2013	31-Jul-13	<0.1	0.4 J	0.7	<0.1	<0.1	17	32	61	22	12	--	--	--	--	--	--	--	2.3
		Monthly - Aug 2013	27-Aug-13	<0.1	0.6	1.1	<0.1	<0.1	21	38	110	36	21	--	--	--	--	--	--	--	2.5
		Monthly - Sept 2013	24-Sep-13	<0.2	0.9 J	1.3	<0.2	<0.2	23	47	150	55	28 J	--	--	--	--	--	--	--	2.2
ML04-4	44.32-44.82	Baseline - May/June 2013	16-May-13	0.4 J	0.4 J	1.1 J	<0.3	<0.3	39	70	75	38	4.2	<1.0	<1.0	7.4	<2.0	28.9	37.5	--	--
		Monthly - July/Aug 2013	1-Aug-13	<0.5	2.4 J	2.7	<0.5	<0.5	36	91	350	85	95	4.6 J	5.1	680	--	--	--	--	3.8
		Monthly - Aug 2013	27-Aug-13	<0.5	2.9	3.3	<0.5	<0.5	29	73	450	150	110	5.5	7.8	740	--	--	--	--	4.1
		Monthly - Sept 2013	24-Sep-13	<0.2	3.4	4.1	<0.2	<0.2	27	61	500	170	110 J	6.7	8.8	870	--	--	--	--	4.4
ML04-3	54.62-55.12	Baseline - May/June 2013	16-May-13	<0.1	0.3 J	0.6	<0.1	<0.1	1.7	17	64	23	7.7	<1.0	<1.0	110	<2.0	45.3	44.7	--	--
		Monthly - July/Aug 2013	1-Aug-13	<0.5	2.5	3.2	<0.5	<0.5	3.4	72	400	140	88	3.9 J	3.8 J	460	--	--	--	--	4.6
		Monthly - Aug 2013	27-Aug-13	<0.5	2.5	3.1	<0.5	<0.5	6.8	60	410	140	88	4.6 J	5.9	540	--	--	--	--	6.5
		Monthly - Sept 2013	24-Sep-13	<0.1	3.5	4.6	<0.1	<0.1	13	43	480	170	95 J	6.7	8.8	790	--	--	--	--	7

**TABLE 3
SELECT TARGET COMPOUND RESULTS - EISB PILOT STUDY
Pompton Lakes Works
Pompton Lakes, New Jersey**

Location	Screen Interval (ft bgs)	Sample Event	Sampling Date	VOCs										DHGs			Other				
				1,1,1 TCA	1,1-DCA	1,1-DCE	1,2-DCA	CT	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	Ethane	Ethene	Methane	Bromide	Chloride	Sulfate	Sulfide	TOC
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ML04-2	64.66-65.16	Baseline - May/June 2013	17-May-13	<0.2	1.5	1.9	<0.2	<0.2	3.8	24	200	62	45	20	31	4100	<2.0	118	31.9	--	--
		Monthly - July/Aug 2013	1-Aug-13	<1.0	7	7.7	<1.0	<1.0	<1.0	33	1300	430	280	11	16	1700	--	--	--	--	7.9
		Monthly - Aug 2013	27-Aug-13	<1.0	4.7 J	6.4	<1.0	<1.0	<1.0	33	1100	380	170	8	10	880	--	--	--	--	12.8
		Monthly - Sept 2013	25-Sep-13	<1.0	3.3 J	4.9 J	<1.0	<1.0	<1.0	23	600	220	110	6.1	7.5	710	--	--	--	--	19.9
ML04-7	74.75-75.25	Baseline - May/June 2013	17-May-13	<0.5	1.7 J	1.2 J	<0.5	<0.5	<0.5	4.6	220	35	150	5.4	11	2700	<2.0	64.9	34.5	--	--
		Monthly - July/Aug 2013	1-Aug-13	<0.2	1.7	0.7 J	<0.2	<0.2	<0.2	0.4 J	100	6.3	170	5.7	12	2400	--	--	--	--	16.1
		Monthly - Aug 2013	27-Aug-13	<0.2	1.7	0.7 J	<0.2	<0.2	<0.2	0.4 J	79	6.3	120	5.3	14	1800	--	--	--	--	16.3
		Monthly - Sept 2013	25-Sep-13	<0.5	1.7 J	0.7 J	<0.5	<0.5	<0.5	<0.5	120	7	180	6.6	15	2200	--	--	--	--	16.8

Notes:

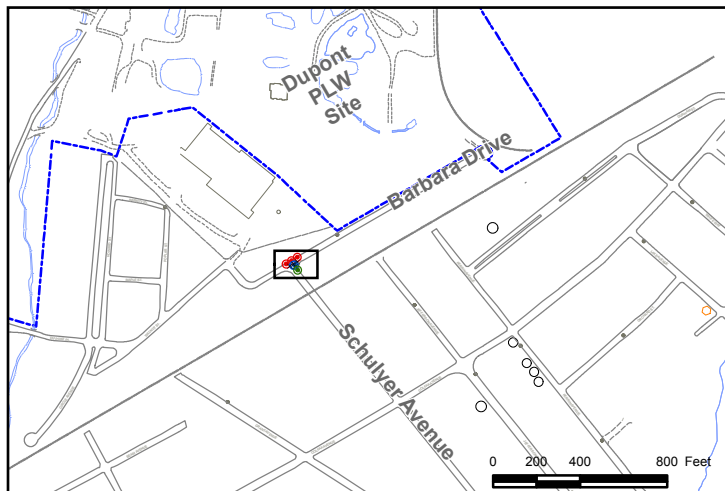
- < Less than the laboratory reporting limit shown
- Analyte not measured

Laboratory-Assigned Qualifiers

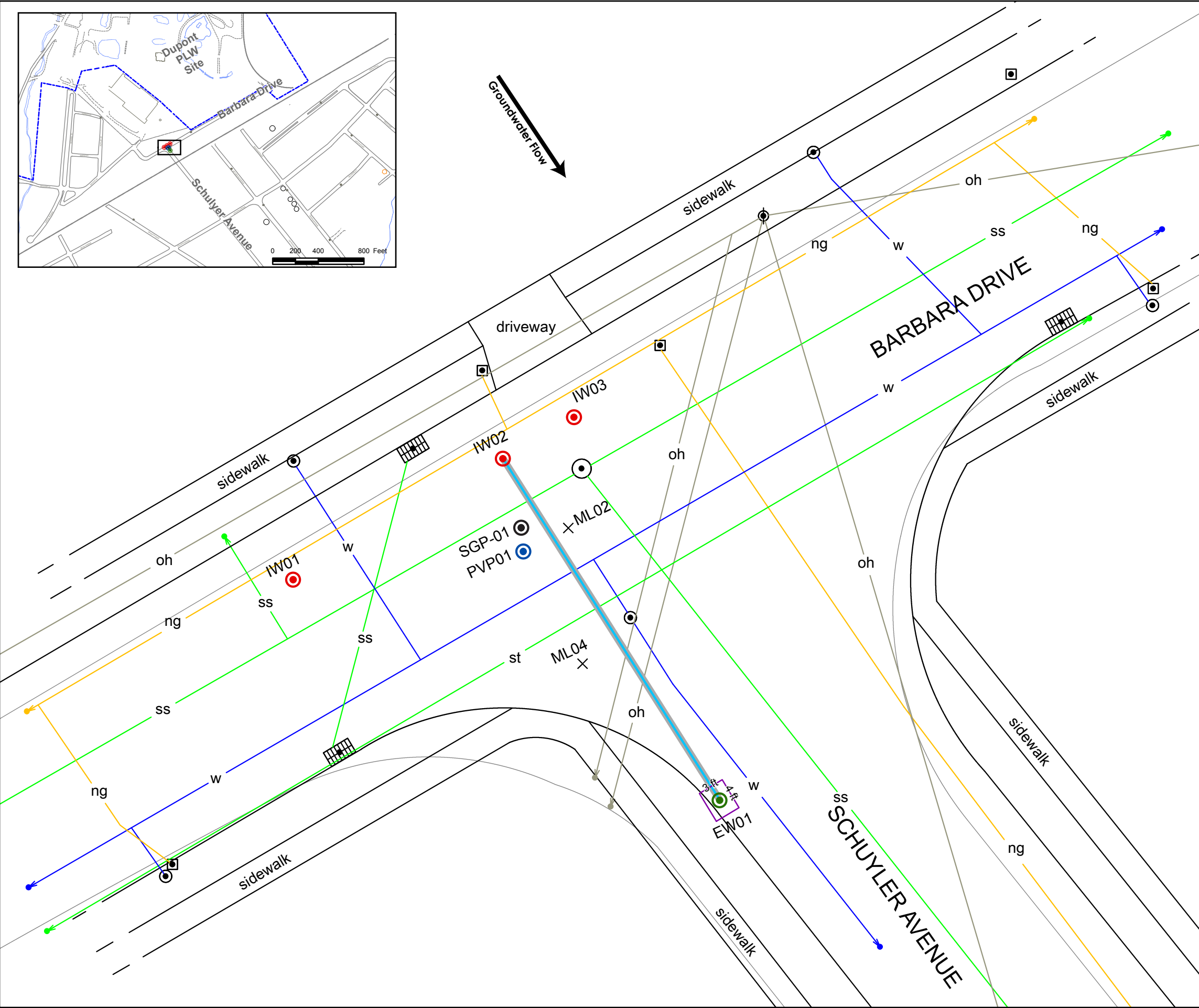
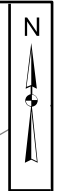
- J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL).
- R Associated MS and/or MSD analysis had relative percent recovery values less than the data rejection level. The reported non-detect result is unusable.

Definitions

- ft bgs feet below ground surface
- CT carbon tetrachloride
- cis-1,2-DCE cis-1,2-dichloroethene
- 1,1-DCA 1,1-dichloroethane
- 1,2-DCA 1,2-dichloroethane
- 1,1-DCE 1,1-dichloroethene
- DHG dissolved hydrocarbon gases
- mg/L milligrams per liter
- µg/L micrograms per liter
- PCE tetrachloroethene
- trans-1,2-DCE trans-1,2-dichloroethene
- 1,1,1-TCA 1,1,1-trichloroethane
- TCE trichloroethene
- TOC total organic carbon
- VC vinyl chloride
- VOC volatile organic compounds



Groundwater Flow



Legend:		Notes:	
	Extraction Well	EW - extraction well	
	Injection Well	IW - injection well	
	Point Velocity Probe	ML - multilevel monitoring well	
	Soil Gas Probe	PVP - point velocity probe	
	Multilevel Monitoring Well	w - water	
	System Piping	ss - sanitary sewer	
	EW01 Well Vault	oh - overhead cable	
		ng - natural gas	



Site Layout
DuPont Pompton Lakes Works
Pompton Lakes, New Jersey

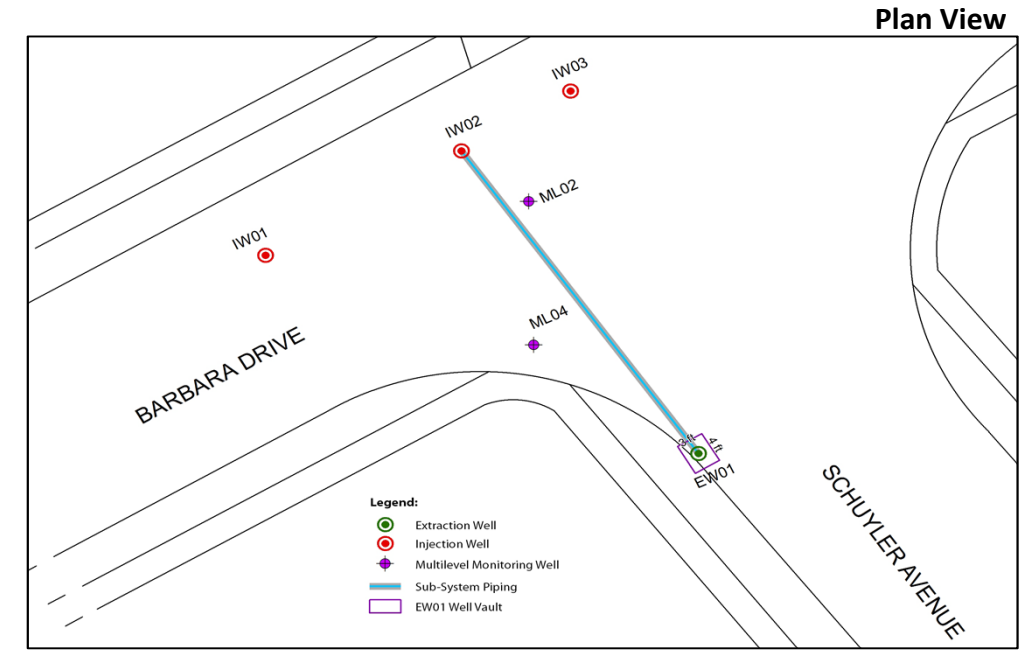
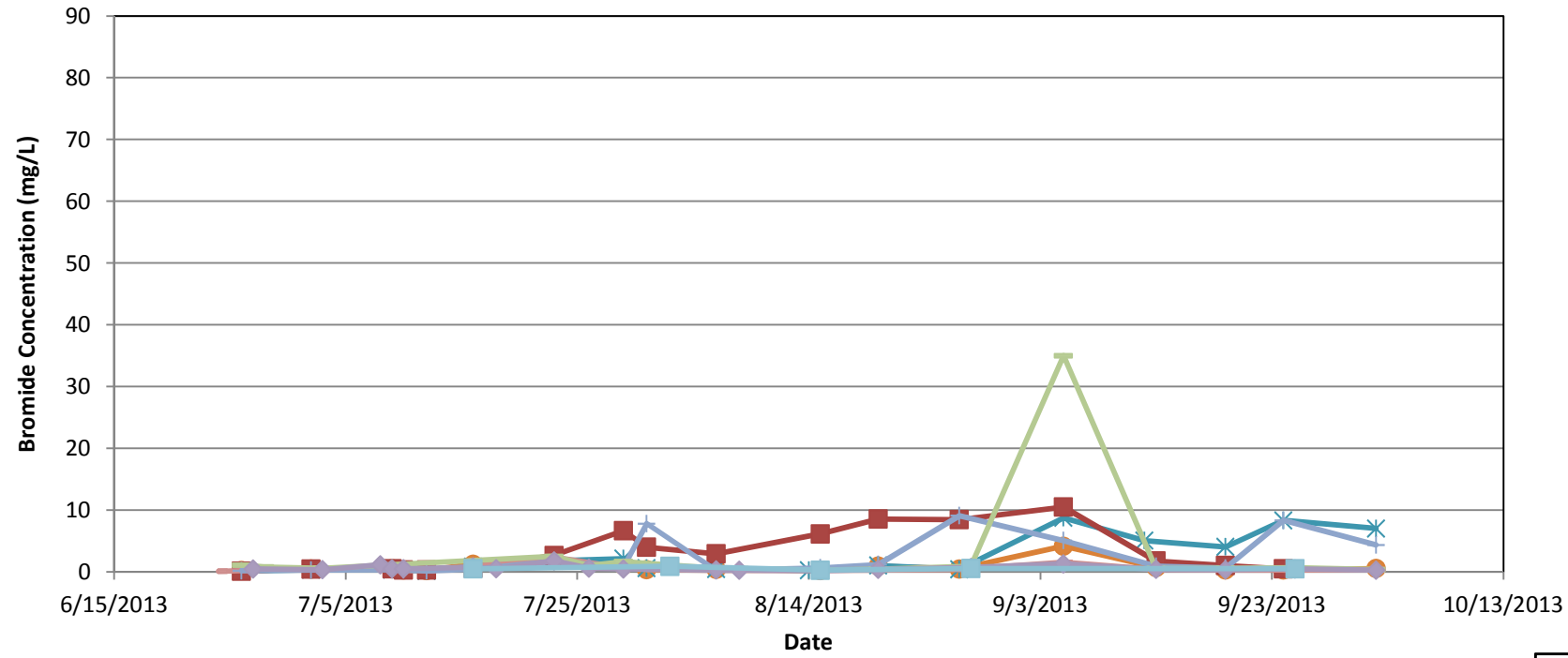
Geosyntec
consultants

Figure 1

Guelph November 2013

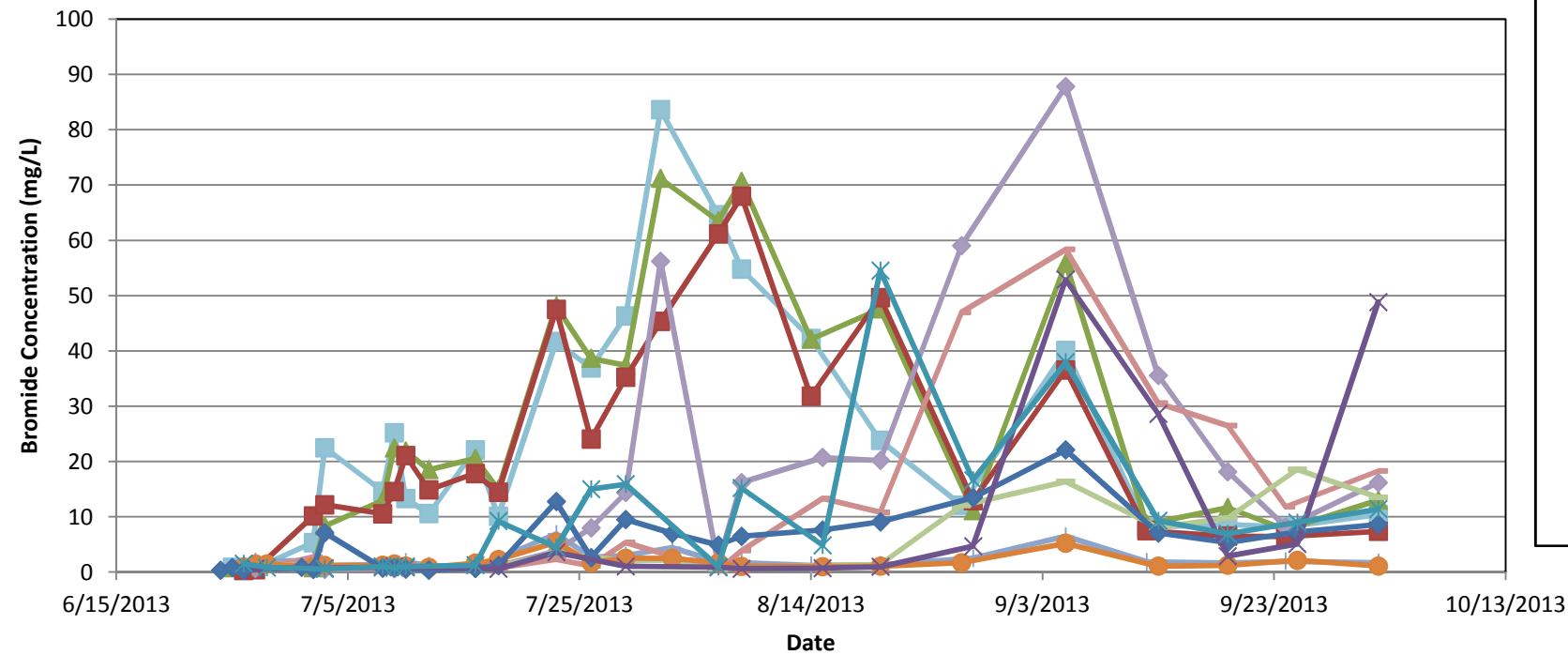
P:\Projects\138359 - DuPont - Pompton Lakes\CADD - GIS\Pompton Lakes - Treatment Areas.mxd
 Proposed In-Situ Pilot Study Layout.dwg

Upper Aquifer



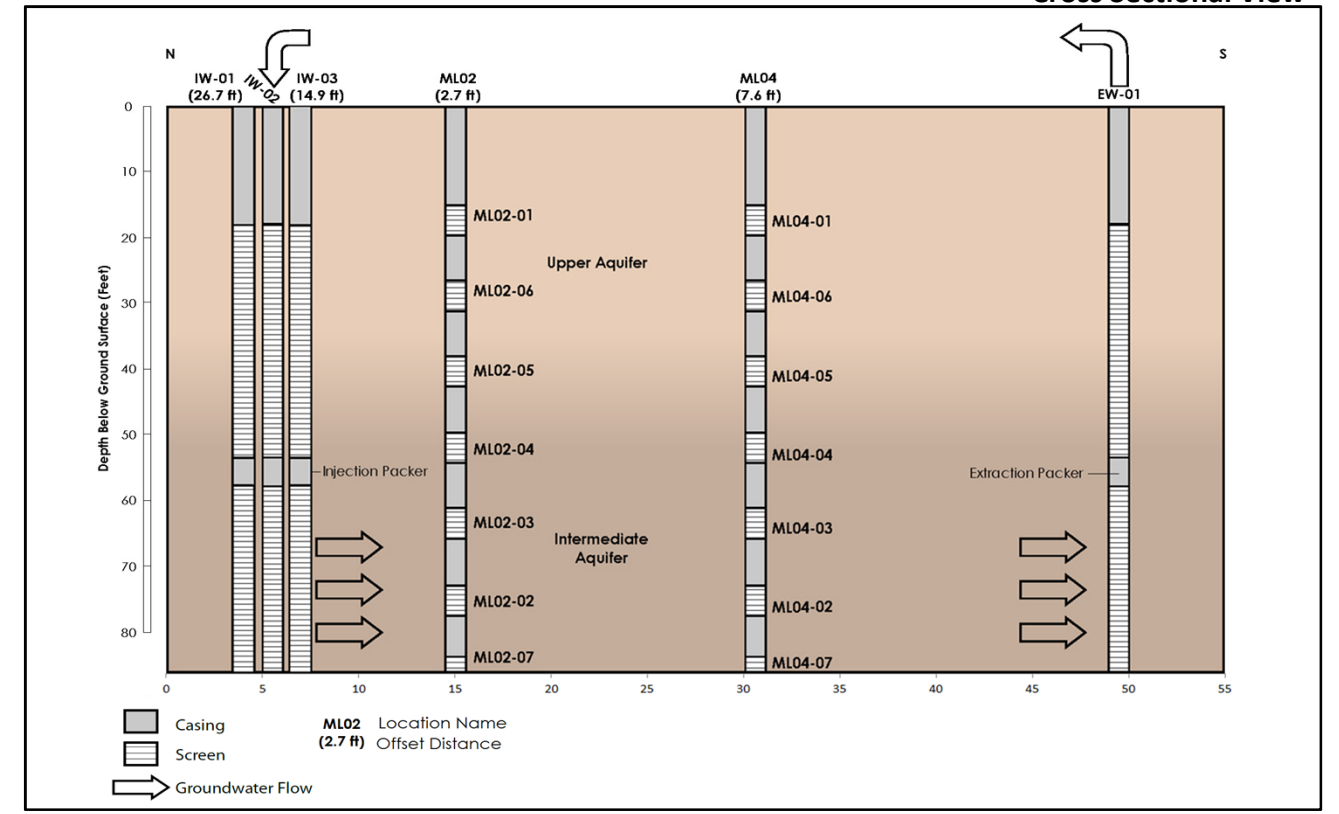
- ML02-06 (24.39 ft bgs)
- ML02-05 (34.36 ft bgs)
- ML04-01 (14.62 ft bgs)
- ML04-06 (24.69 ft bgs)
- ML04-05 (34.59 ft bgs)
- IW03 Upper
- IW01 Upper
- EW01 Upper

Intermediate Aquifer



- ML02-04 (44.39 ft bgs)
- ML02-03 (54.38 ft bgs)
- ML02-02 (64.40 ft bgs)
- ML02-07 (74.45 ft bgs)
- ML04-04 (44.32 ft bgs)
- ML04-03 (54.62 ft bgs)
- ML04-02 (64.66 ft bgs)
- ML04-07 (74.75 ft bgs)
- EW01 Lower
- IW01 Lower
- IW03 Lower

Cross Sectional View



Field Measured Bromide Concentrations, Pilot Test
Pompton Lakes Works, Pompton Lakes, New Jersey



Guelph November-2013

Figure
2

P:\P10\Projects\180852_Durham\Pompton_Lakes\128181M\Phase2 - ESB\Operation\Bromide\Tracer Test Br Data 2013\09_30.xlsx Bromide-Alt