



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

August 8, 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 #1
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.

If you have any questions, please feel free to call 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 – June 24, 2013 through August 2, 2013

DuPont Pompton Lakes Works
Pompton Lakes, New Jersey

This monthly report summarizes the activities 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 (June 24, 2013 to August 2, 2013)

Pilot study activities completed during the reporting period included system operation and sampling.

Recirculation System Operation/Maintenance

- Initial testing of the EISB system was completed and included limited groundwater recirculation to test the mechanical and control systems. All leak detection switches and pressure alarms were tested and confirmed operational.
- Recirculation of groundwater for the EISB system was officially started on June 24, 2013. The regulatory agencies were notified via e-mail as per the PBR requirements.
- Groundwater is extracted from EW01 at a rate of approximately 3 gallons per minute (GPM). After the first month of operation, the flow rate has been fluctuating between 2.0 and 3.0 GPM. The extraction pump flow rate is controlled by a globe valve and this creates pressure/head differences which then reduce flow. When the operator checks the system the flow rates are adjusted as needed.
- Potassium bromide has been continuously amended to the re-injected groundwater since June 24, 2013. The target injection concentration for bromide is 100 mg/L. Bromide addition was originally planned for up to 4 weeks, but has been extended for another week to ensure there is sufficient bromide in the study area for evaluation.
- Sodium lactate additions began on July 12, 2013. Sodium lactate is amended to the re-injected groundwater once per day for a duration of one hour. The target time weighted average of lactate is 165 milligrams per liter (mg/L).
- To ensure sufficient dechlorinating microorganisms are present in the EISB study area 20 liters of KB-1[®], a commercially available chlorinated ethene dechlorinating consortium was amended to IW02 on August 2, 2013.
- Routine system maintenance (e.g., particulate filter change outs, flow rate adjustments) was conducted during the reporting period.
- The EW and IW vaults were visually inspected on a weekly basis to confirm integrity of system components.

- System interlocks shut the system down as designed due to the presence of water (leak detection sensor alarm conditions) in the vault or due to high line pressure. The leak detection alarm was in the extraction well vault and occurred after a heavy rain event on June 28th, 2013. Efforts to make the vault more water tight have been completed. The high pressure alarms occur due to clogging of the in line particulate filter or due to excessive extraction well line pressures. Changing the in line filter and adjusting the globe valve are the corrective measures for the high pressure alarms. All alarms were cleared and EISB operations were resumed.

Results to Date

Groundwater Pumping

From system start-up (June 24, 2013) to August 2, 2013, the total recirculated groundwater was 124,921 gallons.

Water Level Monitoring

Manual water level measurements were collected at least twice per week 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 11 feet and mounding at IW02 is 2.5 feet. The effect of injecting groundwater, was observed at IW01 and IW03, and is approximately 3.5 and 2.5 inches, at each injection well respectively.

Estimations of the gradient under pumping conditions are approximately 0.2 feet/foot (ft/ft). This estimate was obtained by using water level measurements from multiple time points from the lower zone of both the injection well (IW02) and extraction well (EW01) under pumping conditions.

Water Quality Monitoring

Groundwater samples for volatile organic compound (VOC), dissolved hydrocarbon gases (DHG), and dehalococoides (Dhc) analysis were collected during the reporting period from the wells in the 128 area as outlined in the *Implementation Work Plan for Application of EISB to Intermediate Groundwater Near Well 128* dated January 31, 2012. The water quality field parameter data recorded during well purging and prior to sampling are provided in Table 2. A summary of the VOC, DHG, and Dhc data for the baseline and first bi-weekly sampling event is presented in Table 3. 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.

Results to date for the field analysis of bromide indicate that re-injected groundwater is entering the target intermediate zone (nominally from 40-65 ft bgs). At early time it seems that the shallowest multi-level monitoring location in ML02 was hydraulically connected/receiving reinjected groundwater, but concentrations recently decreased. ML04 is farther downgradient but bromide is also starting to be detected at this location. Bromide has been detected at IW03 (the closest injection well) at low concentrations (less than 15 mg/L). Bromide has also reached the extraction well. Given the modest concentrations of bromide at the extraction well after one month of tracer addition it was decided to continue to add bromide for up to two more weeks to ensure there was sufficient bromide in the system for the remainder of the recirculation period.

Bromide monitoring will continue as outlined in the *Technical Memorandum – Response to Comments* dated March 30, 2012.

Summary

Overall the results to date for the EISB pilot study are as expected. Groundwater recirculation, electron donor amendment and tracer amendment will continue during the month. 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 (August 3~31, 2013)

Activities to be completed during August 2013 include:

- Continued operation of the pilot-scale EISB system,
- 2nd bi-weekly monitoring event (week of August 12th), and
- 2nd monthly monitoring event (week of August 26th).

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

Attachments

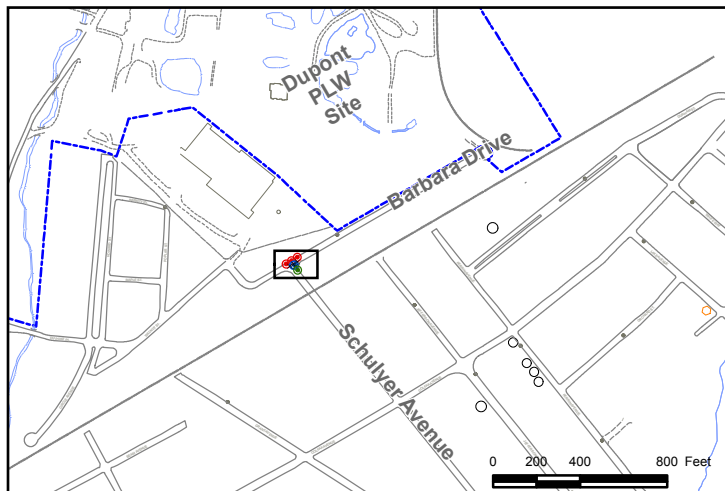
Table 1: Depth to Groundwater

Table 2: Field Parameter Results

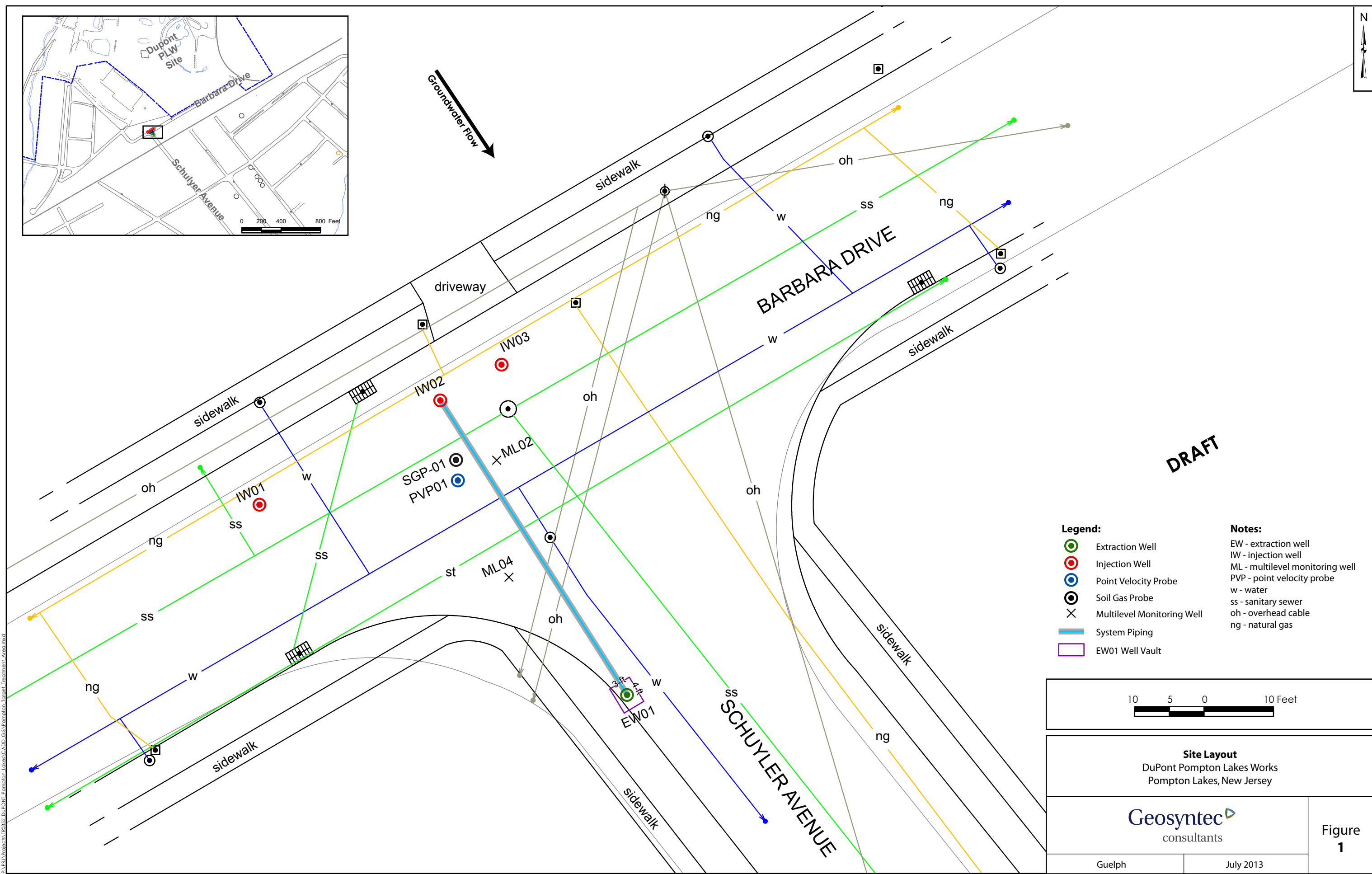
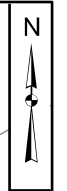
Table 3: Select Target Compound Results

Figure 1: Site Layout

Figure 2: Field Measured Bromide Concentrations



Groundwater Flow



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



Site Layout
DuPont Pompton Lakes Works
Pompton Lakes, New Jersey

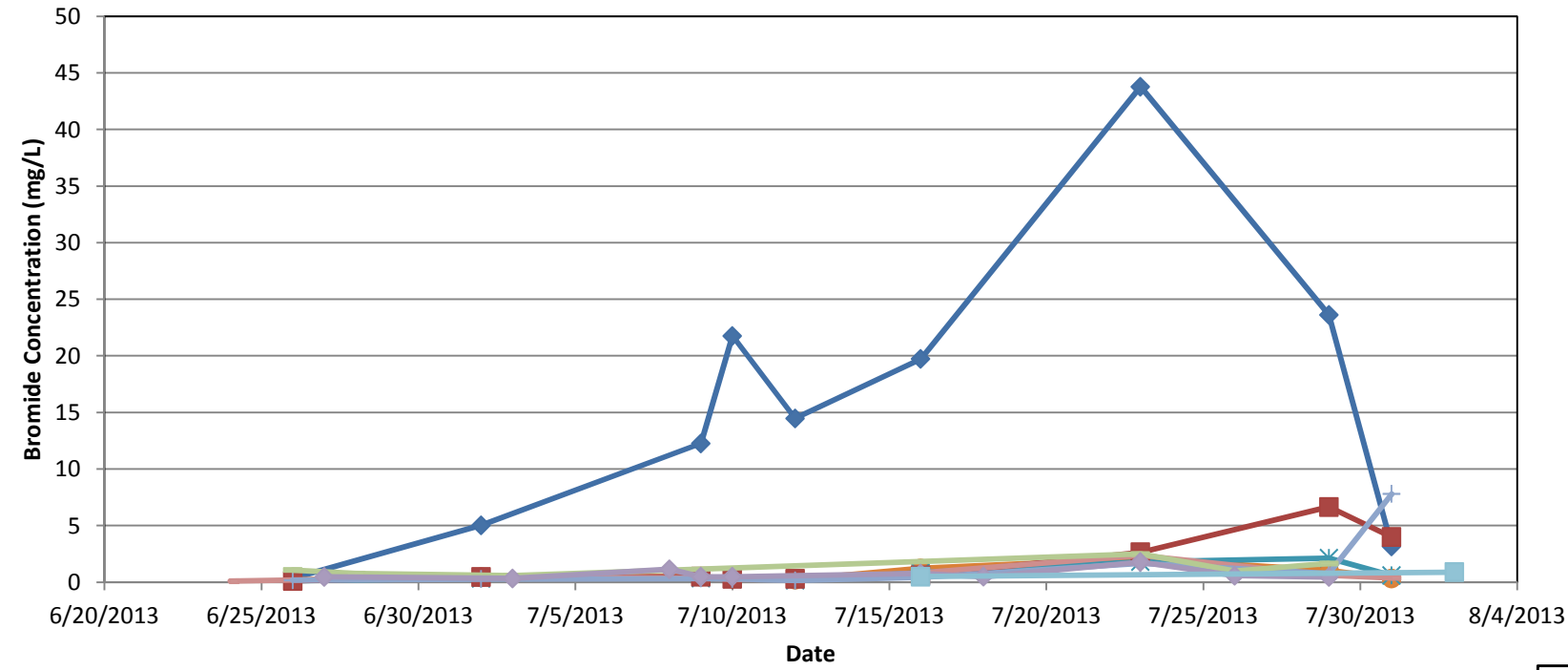
Geosyntec
consultants

Figure 1

Guelph	July 2013
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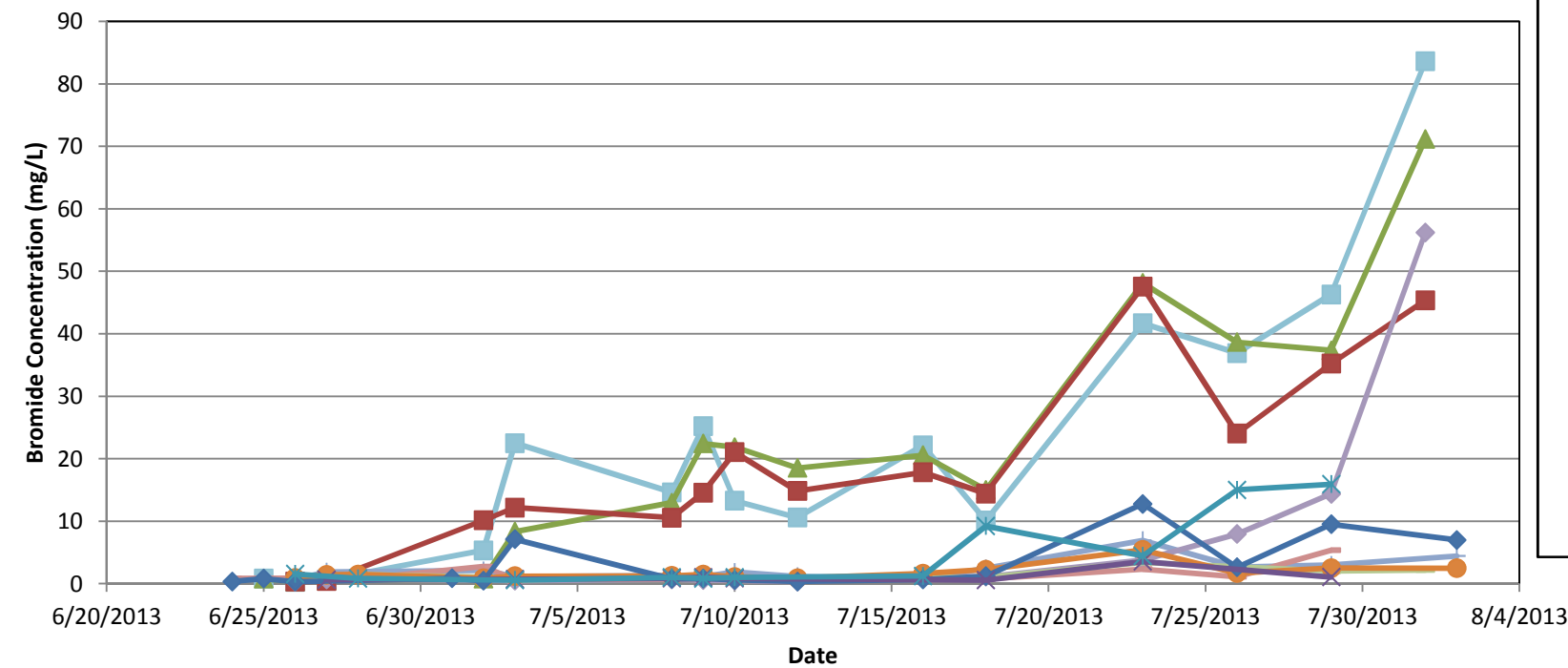
I:\Projects\138359 - Dupont PLW - Pompton Lakes\CADD - GIS\Permitting - Legal - Treatment - Areas.mxd
 Proposed In-Situ Pilot Study Layout.dwg

Upper Aquifer



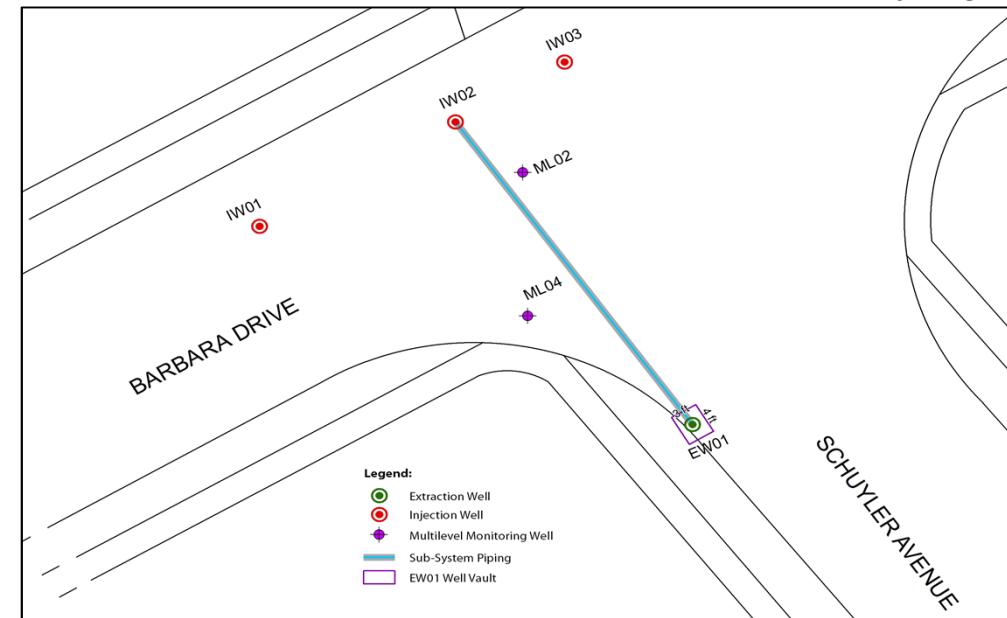
- ML02-01 (14.42 ft bgs)
- ML02-06 (24.39 ft bgs)
- ML02-05 (34.36 ft bgs)
- ML04-01 (14.62 ft bgs)
- ML04-06 (24.69 ft bgs)
- ML04-05 (34.59 ft bgs)
- IW03 Upper
- IW01 Upper
- EW01 Upper

Intermediate Aquifer

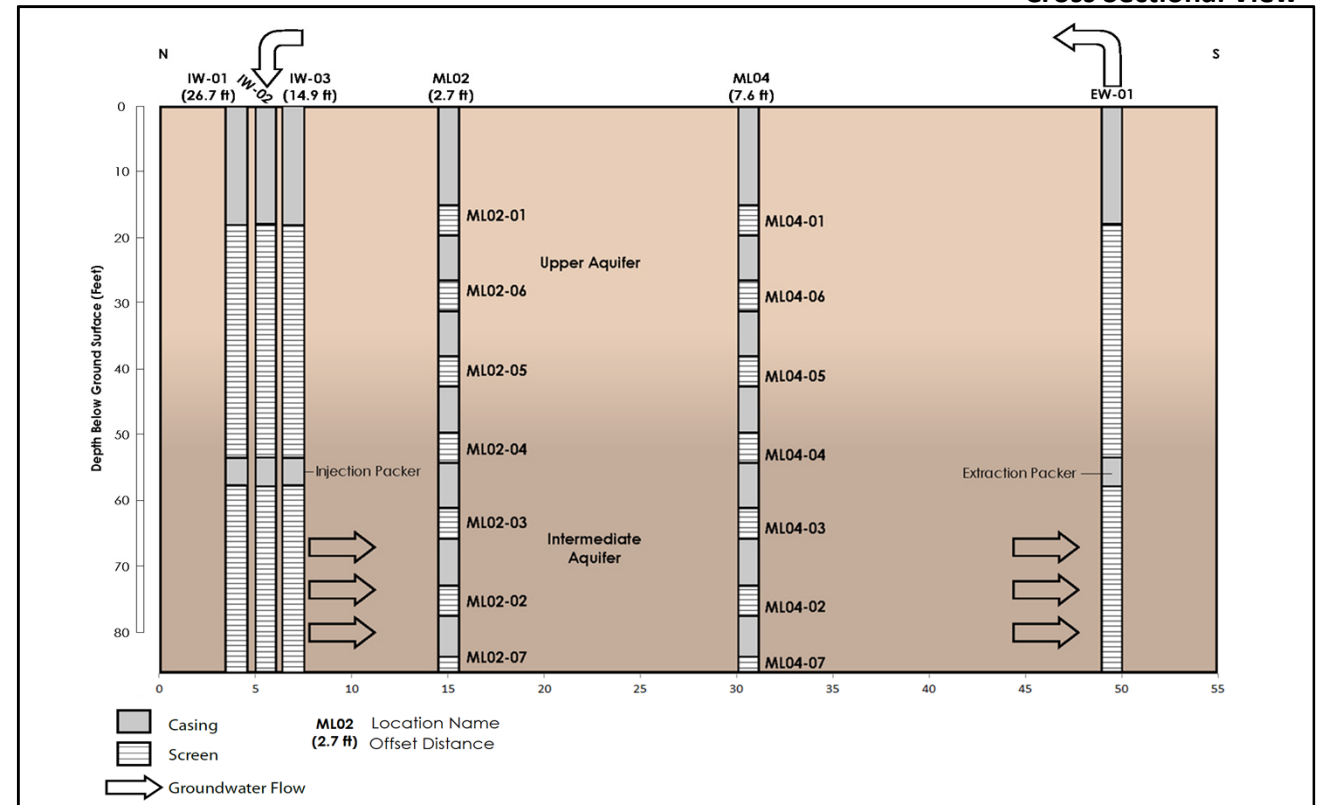


- ML02-04 (44.39 ft bgs)
- ML02-03 (54.38 ft bgs)
- ML02-02 (64.40 ft bgs)
- ML02-07 (74.45 ft bgs)
- ML04-04 (44.32 ft bgs)
- ML04-03 (54.62 ft bgs)
- ML04-02 (64.66 ft bgs)
- ML04-07 (74.75 ft bgs)
- EW01 Lower
- IW01 Lower
- IW03 Lower

Plan View



Cross Sectional View



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



Figure

Guelph

August-2013

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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	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
128I	218.79	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
EW01-Upper	218.71	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
IW01-Upper	217.65	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
		07/26/13	12:20	8.78	208.87
IW01-Lower	217.65	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
IW02-Upper	217.59	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
IW03-Upper	217.58	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		

**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-Lower	217.58	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
ML02-1	217.80	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
ML02-2	217.80	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
ML02-3	217.80	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
ML02-4	217.80	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

**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	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
ML02-6	217.80	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
ML02-7	217.8	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
ML04-1	217.71	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
ML04-2	217.71	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

**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)
ML04-3	217.71	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
ML04-4	217.71	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
ML04-5	217.71	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
ML04-6	217.71	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

**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)
ML04-7	217.71	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

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	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-S	01-May-13	14:02	200	13.2	6.61	0.86	213	6.9	4.0	9.92	Slightly turbid
128-D	02-May-13	15:35	140	16.3	8.85	0.30	-246	0.8	3.5	12.54	Sulfur/degradation odor
128-1	02-May-13	11:45	150	14.9	9.29	0.93	-108	0.7	5.0	10.20	Slightly tan-brown/clear
ML02-1	14-May-13	10:00	200	15.0	6.85	0.31	109	1.5	2.5	9.70	Clear, No Odor
ML02-2	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
ML02-3	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
ML02-4	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
ML02-5	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
ML02-6	14-May-13	11:28	200	15.7	7.77	0.40	-5	0.8	4.0	9.69	Light brown/turbid
ML02-7	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
ML04-1	16-May-13	11:00	200	15.6	6.77	0.35	112	1.0	2.5	9.19	Slightly turbid, Gray/brown
ML04-2	17-May-13	10:25	200	15.3	8.47	1.06	-138	0.6	2.5	9.18	Gray/turbid
ML04-3	16-May-13	16:05	200	19.8	9.13	0.80	-130	0.6	2.5	9.19	Gray/turbid
ML04-4	11-May-13	14:45	160	18.9	8.80	0.47	-165	0.4	3.5	9.20	Silty, gray-black, no odor
ML04-5	16-May-13	12:55	200	18.3	8.21	0.41	-118	0.5	2.5	9.20	Clear, No Odor
ML04-6	16-May-13	12:00	200	16.7	7.49	0.38	-105	0.7	2.5	9.18	Clear, No Odor
ML04-7	17-May-13	11:50	200	15.6	8.91	1.60	-157	0.3	2.5	9.22	Turbid, brown
IW-01-Upper	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	14-May-13	16:31	360	15.1	8.57	0.81	8	0.7	--	9.73	Clear, No Odor
IW-02-Upper	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	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	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	16-May-13	12:22	370	16.3	9.03	0.98	-55	0.8	12.5	9.62	Slight tan/yellow
EW-01-Upper	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
EW-01-Lower	17-Jul-13	10:08	2.5	19.7	8.97	0.92	239	1.6	6.0	--	Clear, No 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	Sample Event	Sampling Date	VOCs										DHGs			Other	
			1,1,1 TCA	1,1-DCA	1,1-DCE	1,2-DCA	CT	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Ethane	Ethene	Methane	Bromide	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
128-I	Baseline - May/June 2013	21-May-13	<1.0	5.4	5.9	2.5 J	<1.0	890	<1.0	200	1.7 J	79	5.4	3.7 J	1100	<2.0	-
128-D	Baseline - May/June 2013	21-May-13	<0.1	<0.1	<0.1	4.7	<0.1	6.6	<0.1	7	0.4 J	2.8	<1.0	1.1 J	190	<2.0	-
EW01-LOWER	Baseline - May/June 2013	14-Jun-13	<0.5	2.5	4.6	<0.5	<0.5	630	0.9 J	260 J	43	97	2.3 J	3.7 J	910	<2.0	17.4
EW01-UPPER	Baseline - May/June 2013	17-May-13	0.2 J	0.2 J	0.3 J	<0.1	<0.1	29	16	17	20	4.3	<1.0	<1.0	26	<0.15	5.7 J
IW01-UPPER	Baseline - May/June 2013	14-May-13	0.1 J	<0.1	0.2 J	<0.1	<0.1	24	21	16	25	0.9	<1.0	<1.0	<3.0	<2.0	2
IW01-LOWER	Baseline - May/June 2013	14-May-13	<0.5	2.2 J	3.7	<0.5	<0.5	440	0.6 J	150	22	79	3.4 J	3.6 J	880	<2.0	5.7
IW02-UPPER	Baseline - May/June 2013	4-Jun-13	0.2 J	<0.1	0.1 J	<0.1	<0.1	14	19	7.2	19	0.4 J	<1.0	<1.0	<3.0	<2.0	1
IW02-LOWER	Baseline - May/June 2013	15-May-13	<1.0	2.0 J	3.5 J	<1.0	<1.0	440	<1.0	150	23	70	2.6 J	2.4 J	650	<2.0	-
IW03-UPPER	Baseline - May/June 2013	15-May-13	0.4 J	0.2 J	0.2 J	<0.1	<0.1	22	19	10	17	2.2	<1.0	<1.0	22	<2.0	<0.50
IW03-LOWER	Baseline - May/June 2013	17-May-13	<1.0	1.3 J	2.8 J	<1.0	<1.0	380	<1.0	140	28	56	1.7 J	3.0 J	840	<0.075	7.2
ML02-1	Baseline - May/June 2013	14-May-13	0.4 J	0.2 J	0.1 J	<0.1	<0.1	41	23	9.9	14	5.4	<1.0	<1.0	10 J	<2.0	-
ML02-2	Baseline - May/June 2013	15-May-13	<1.0	4.3 J	5.3	<1.0	<1.0	830	1.4 J	310	10	140	6.4	4.7 J	730	<2.0	-
ML02-3	Baseline - May/June 2013	14-May-13	<0.1	2.7	2.4	<0.1	<0.1	280	7.7	81	52	46	2.5 J	<1.0	140	<2.0	-
ML02-4	Baseline - May/June 2013	14-May-13	0.5	0.4 J	1.4	<0.1	<0.1	89	46	36	85	6	<1.0	<1.0	22	<2.0	-
ML02-5	Baseline - May/June 2013	14-May-13	0.2 J	0.2 J	0.5	<0.1	<0.1	45	24	25	40	1.8	<1.0	<1.0	5.8	<2.0	-
ML02-6	Baseline - May/June 2013	14-May-13	<0.1	<0.1	0.3 J	<0.1	<0.1	22	19	16	22	1.2	<1.0	<1.0	3.3 J	<2.0	-
ML02-7	Baseline - May/June 2013	15-May-13	<0.5	1.3 J	1.0 J	<0.5	<0.5	190	1.9 J	57	14	55	4.7 J	13	1900	<2.0	-
ML04-1	Baseline - May/June 2013	16-May-13	0.3 J	<0.1	<0.1	<0.1	<0.1	12	20	2.3	14	<0.1	<1.0	<1.0	<3.0	<2.0	-
ML04-2	Baseline - May/June 2013	17-May-13	<0.2	1.5	1.9	<0.2	<0.2	200	3.8	62	24	45	20	31	4100	<2.0	-
ML04-3	Baseline - May/June 2013	16-May-13	<0.1	0.3 J	0.6	<0.1	<0.1	64	1.7	23	17	7.7	<1.0	<1.0	110	<2.0	-
ML04-4	Baseline - May/June 2013	16-May-13	0.4 J	0.4 J	1.1 J	<0.3	<0.3	75	39	38	70	4.2	<1.0	<1.0	7.4	<2.0	-
ML04-5	Baseline - May/June 2013	16-May-13	<0.2	<0.2	0.5 J	<0.2	<0.2	44	7.8	23	32	1.3	<1.0	<1.0	3.4 J	<2.0	-
ML04-6	Baseline - May/June 2013	16-May-13	<0.1	0.1 J	0.3 J	<0.1	<0.1	30	22	16	26	1	<1.0	<1.0	<3.0	<2.0	-
ML04-7	Baseline - May/June 2013	17-May-13	<0.5	1.7 J	1.2 J	<0.5	<0.5	220	<0.5	35	4.6	150	5.4	11	2700	<2.0	-

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).

Definitions

- 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