Second Half 2012
Semi-Annual Groundwater Monitoring Report
Patchogue Former MGP Site
NYSDEC Site No. 1-52-182
Village of Patchogue, Suffolk County, New York

Prepared for

National Grid USA, Hicksville,
New York

April 2013

Second Half 2012
Semi-Annual Groundwater Monitoring Report
Patchogue Former MGP Site
NYSDEC Site No. 1-52-182
Village of Patchogue, Suffolk County, New York

Prepared for
National Grid USA
175 East Old Country Road
Hicksville, New York 11801

April 2013

Project Number: 142128.410.004

Brown and Caldwell Associates
2 Park Way, Suite 2A
Upper Saddle River, New Jersey 07458

Table of Contents

Appendices

List of Tables

List of Figures

Section 1

Introduction

Brown and Caldwell Associates (BC) is pleased to submit this Semi-Annual Groundwater Monitoring Report to document the implementation and results of the groundwater monitoring activities conducted during the second half of 2012 (third and fourth quarters) at the Patchogue Former Manufactured Gas Plant (MGP) Site (hereinafter referred to as the "Site"). The groundwater monitoring events and the preparation of this deliverable are part of the routine groundwater monitoring program being conducted at the Site. This report has been prepared for submittal to the New York State Department of Environmental Conservation (NYSDEC) and includes the following:

- Description of the scope of the field activities, methods and procedures;
- Table summarizing results of the water level measurements and the gauging of the monitoring wells and piezometers for the presence of non aqueous phase liquids (NAPLs). The results of the water level monitoring and NAPL gauging are summarized in Table 1;
- Table summarizing the analytical results for groundwater samples obtained during the fourth quarter monitoring event including a comparison to the applicable groundwater quality criteria. The results of this comparison are summarized in Table 2;
- Comparison of data from this monitoring period to data from previous periods (Tables 3 and 4);
- Discussion of the results and findings from the groundwater monitoring data;
- Potentiometric surface maps depicting generalized direction of groundwater flow based on groundwater elevation data from wells and piezometers, and surface water elevation data from staff gauges installed in the Patchogue River (Figures 1 and 2);
- Field Sampling Data Sheets (Appendix A);
- Laboratory Data Report (Appendix B);
- Data Usability Summary Report (Appendix C); and
- Electronic Data Deliverable (Appendix D).

1.1 Background

Groundwater monitoring events have been conducted at the Site since March 2008, including the two monitoring events conducted as part of the Remedial Investigation (RI) in March 2008 and July 2008. The July 2012 and November 2012 (third and fourth quarter 2012) groundwater monitoring events are the subject of this report. Up until the March 2010 monitoring event, the concentrations and areal distribution of constituents in groundwater had been fairly consistent. Site related dissolved phase constituents [e.g., benzene, toluene, ethylbenzene, xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAH) were detected at concentrations above the Class GA groundwater quality criteria (i.e., standards from the 6 NYCRR Part 703 Standards and guidance values from the Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1) in a limited area near the center of the Site. These elevated concentrations did not extend downgradient to the wells closer to the Patchogue River. However, during the March 2010 and September 2010 monitoring events, detections of BTEX and PAH compounds were more widely distributed than during previous events. It was surmised that this change was the result of a temporary dewatering operation at a construction project at the wastewater treatment facility (WWTF) across the river from the Site. Based on the understanding of Site conditions, it was anticipated that

when the dewatering operations had ceased, concentrations in groundwater would re-equilibrate with steady-state (i.e., pre-dewatering) groundwater flow conditions, and eventually return to levels similar to those prior to dewatering. To confirm this, National Grid increased the frequency of the groundwater monitoring from semi-annually to quarterly. The subsequent six quarterly monitoring events did document the return of groundwater flow and groundwater quality to conditions consistent with those prior to the dewatering operations.

Based on this finding, in a May 24, 2012 email, National Grid proposed to NYSDEC that the frequency of groundwater sampling and analysis return to a semi-annual schedule with the schedule for water level monitoring and NAPL gauging remaining on a quarterly basis. NYSDEC agreed with this proposal in a May 24, 2012 email. This report is the first semi-annual monitoring report submitted under this revised schedule. The report presents the results of the water level and NAPL gauging conducted during the third and fourth quarters of 2012 as well as the analytical results for the groundwater samples collected during the fourth quarter of 2012.

Section 2

Scope of Work

Field activities for the third and fourth quarter 2012 were conducted by BC on July 18, 2012 (third quarter) and November 13 through November 14, 2012 (fourth quarter). These activities conducted during these monitoring events are described below. Locations of the monitoring wells, piezometers and staff gauges referenced below are depicted on Figure 1 and 2.

As described in Section 1, monitoring activities conducted during the July 2012 (third quarter) event consisted solely of NAPL gauging and water level measurements; no groundwater samples were collected. The NAPL gauging and water level measurements were conducted on accessible monitoring well and piezometers. Access to monitoring wells MW-9S and MW-9D, located on an adjacent property, was blocked by a roll-off dumpster placed by the property owner. The roll-off could not be moved at that time. The level of the Patchogue River was also measured at the two staff gauge locations. The piezometers were installed in March and May of 2012 as part of the remedial design investigation activities pursuant to the "Remedial Design Work Plan, Patchogue Former Manufactured Gas Plant Site (Brown and Caldwell Associates, February 2012). Since the prior monitoring event, monitoring wells MW-2S and MW-2D were decommissioned (June 4, 2012) as part of the utility corridor construction activities. The wells were decommissioned in accordance with "CP-43: Groundwater Monitoring Well Decommissioning Policy" (NYSDEC, November 2009) by grouting in place. Additional details about the decommissioning are presented in the "Construction Completion Report, Utility Corridor Work Plan Implementation, Patchogue Former Manufactured Gas Plant Site (Brown and Caldwell Associates, December 2012).

Activities conducted during the fourth quarter 2012 event began on November 13, 2012 with the performance of water level measurements and NAPL gauging were conducted on the piezometers and monitoring wells associated with the Site prior to groundwater sampling. As described above for the previous quarter, access to monitoring wells MW-9S and MW-9D was blocked during this event by a roll-off dumpster placed by the property owner. The level of the Patchogue River was also measured at the two staff gauges. Water level measurements were made using an electronic oil/water interface probe, and measured to the nearest 0.01 foot. If NAPL was detected using the oil/water interface probe, a two foot long threaded rod attached to a nylon mason line was lowered into the monitoring well or piezometer to confirm the presence of the NAPL. The threaded rod was lowered to the water-NAPL interface to get an approximate thickness of the NAPL accumulation (NAPL will often adhere to grooves in the threaded rod).

After the water level and NAPL gauging activities were conducted, groundwater samples were collected from eight monitoring wells on November 13 through November 14, 2012. Monitoring wells MW-5 and MW-6 were not sampled during this monitoring period due to the presence of NAPL in these wells. The presence of NAPL in these wells is consistent with observations during previous quarterly NAPL gauging activities. The standard protocol is that if NAPL is observed in a well during gauging or sampling, groundwater samples are not submitted for laboratory analyses. Groundwater sampling was conducted using low flow purging and sampling techniques in accordance with the United States Environmental Protection Agency (USEPA, July 1996, Revised January 2010) protocol. Samples were submitted to a to Lancaster Laboratories, Inc. (Lancaster) located in Lancaster, Pennsylvania. Lancaster is certified (Certification No. 10670) through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP). The samples were analyzed for: BTEX compounds and methyl

tertiary butyl ether (MTBE) using USEPA SW-846 Method 8260B; and PAHs using USEPA SW-846 Method 8270C. The groundwater samples were also analyzed in the field for pH, specific conductivity, temperature, turbidity, oxidation-reduction potential (ORP), and dissolved oxygen (see Appendix A for field data sheets).

The laboratory report from Lancaster is provided as Appendix B. The laboratory analytical data were provided to BC in electronic form by Lancaster and have been incorporated into an environmental database for the Site.

In addition to the samples described above, quality assurance/quality control (QA/QC) samples were also collected. The QA/QC samples included: trip blanks (one per cooler containing samples for BTEX and MTBE analysis), a field duplicate, and an equipment blank. Also, extra sample volume was collected from one location to provide for matrix spike/matrix spike duplicate (MS/MSD) analysis. The trip blanks were analyzed for BTEX and MTBE only. The other QA/QC samples were analyzed for BTEX, MTBE and PAHs.

Laboratory results for the groundwater sample analyses were forwarded to a data validator, Environmental Data Services, Inc. of Williamsburg, Virginia, for review and preparation of a Data Usability Summary Report (DUSR). The DUSR presents a summary of data usability including a discussion of qualified data. The DUSR is provided as Appendix C. As described in the DUSR, the data were considered by the validator to be valid and usable. An Electronic Data Deliverable (EDD) of the validated analytical data is provided in Appendix D.

Section 3

Results and Findings

3.1 Water Level Data

Table 1 provides the water level data and calculated water elevations from the July 18 and November 13, 2012 measurements. Figure 1 and 2 illustrate the elevation contours of the water table based on these data. The contours were developed using water level data from the shallow wells and piezometers at the Site (i.e., those with screens that straddle, or are just below, the water table), and the surface water staff gauges in the Patchogue River. These values are more representative of water table elevations than data from the deeper wells and piezometers. However, the groundwater elevation (hydraulic head) values for the wells and piezometers screened in deeper intervals are also posted on Figures 1 and 2. The water table is relatively shallow and is typically positioned in the fill that overlies the alluvial deposits and outwash deposits. The water table contours indicate that lateral groundwater flow is from northwest to southeast across the Site toward the Patchogue River. Comparisons of the groundwater elevations in the Site monitoring wells to the river elevations, as measured at the staff gauge locations, demonstrate that groundwater elevations are higher than the river level indicating that groundwater is discharging to the Patchogue River. The upward vertical hydraulic gradient measured at a well cluster adjacent to the river (MW-4S and D) provides further support to the conclusion that groundwater is discharging to the Patchogue River. The general configuration of the water table contours (as shown on Figure 1 and 2), developed using the July 18 and November 13, 2012 data, and the interpreted groundwater flow patterns, are consistent with those from previous rounds of water level measurements with one exception. The exception occurred during the March 2010 sampling event when the large-scale dewatering activities were being conducted on the WWTF site located east of the Site on the opposite side of the river (see discussion in Section 1.1). Operation of this dewatering system altered groundwater flow patterns and levels at the Site (see "Groundwater Monitoring Report, Second Semiannual 2010 Sampling Event" [GEI, November 2010]).

3.2 NAPL Gauging

Table 1 presents the results of the NAPL gauging conducted during the July and November 2012 quarterly groundwater monitoring events. NAPL was identified in the following wells during the gauging activities:

MW-5

- July 2012: Brown-black dense NAPL (DNAPL) blebs on last 0.75 feet of threaded rod, strong tar-like odor. November 2012: Brown-black DNAPL blebs on last 0.2 feet of threaded rod, strong tar-like odor.

MW-6

- July 2012: Black NAPL blebs on bottom 0.5 ft. of threaded rod, strong tar-like odor.
- November 2012: Black tacky NAPL on bottom 0.1 ft. of threaded rod, strong tar-like odor.

NAPL had been observed in these two wells on occasion during previous gauging events.

3.3 Groundwater Quality Data

Table 2 provides the results of the laboratory analyses of the groundwater samples collected during the fourth quarter 2012 monitoring event and a comparison of the data to the New York State Class GA groundwater quality criteria, i.e., standards from the 6 NYCRR Part 703 Standards and guidance values from the Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. Comparisons of total BTEX and total PAH concentrations from this sampling event to previous sampling events are provided as Tables 3 and 4, respectively. As mentioned above, no groundwater samples were collected for laboratory analysis during the July (third quarter) 2012 groundwater monitoring event.

As previously stated, NAPL was identified in two of the 10 monitoring wells, MW-5 and MW-6. These two wells are located in the central part of the Site in the area of former MGP operations (refer to Figures 1 and 2). Therefore, groundwater samples were not collected from these two wells. Groundwater samples were also not collected from MW-9S and 9D (located on an adjacent property) as access to these wells was impeded by the presence of a roll-off container. Groundwater samples were collected from the remaining eight monitoring wells and submitted for analysis.

In general, the constituent concentrations in groundwater were consistent with those measured during previous monitoring events. In samples from most wells, no BTEX compounds were detected. However, benzene and o-xylene were detected in the groundwater sample collected at MW-4S at concentrations greater than the Class GA groundwater quality criteria. Benzene was also detected at a concentration equivalent to the Class GA groundwater quality criterion in MW-7S. MW-4S is located adjacent to the Patchogue River and south of the area of the former MGP operations (See Figures 1 and 2). No MGP-related structures or NAPL have been identified in the area hydraulically-upgradient of MW-4S.

Monitoring well MW-7S is positioned upgradient of MW-4S on the upgradient side of the Site. Additionally, none of the low molecular weight PAHs that have usually been associated with MGP-related dissolved phase impacts at this site (e.g., naphthalene, acenaphthene, acenaphthylene, and fluorene) were detected. Thus, the benzene and o-xylene detected at MW-4S are not likely associated with MGP-related impacts. The concentration of these constituents will be further evaluated through continued groundwater monitoring.

At most locations, PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria. However, in samples collected from monitoring wells MW-7S, MW-7D and MW-8D, one or more PAH compounds were detected at low concentrations (i.e., slightly above the laboratory method detection limit) but above the Class GA groundwater quality criteria. The PAH compounds that were identified in the groundwater samples from these monitoring wells at concentrations above the Class GA groundwater quality criteria are: benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; chrysene; and indeno(1,2,3-cd)pyrene. These constituents have very low aqueous solubilities, are not readily mobile in groundwater, and are unlikely to have migrated from the on-site source area. The criteria that were exceeded for five of these six PAHs are unpromulgated guidance values rather than Part 703 standards. The criteria for the sixth PAH, benzo(a)pyrene, is a Part 703 standard. The standard for benzo(a)pyrene was exceeded at concentrations below the method quantitation limit. The guidance value for the five PAHs, 0.002 µg/L, is nearly two orders of magnitude below the method detection limit. The standard for benzo(a)pyrene is "non-detect". Therefore, any detection of these compounds in groundwater will result in an exceedance. The concentrations of these constituents will be further evaluated through continued groundwater monitoring.

Section 4

Summary and Conclusions

As noted in previous monitoring events, NAPL was identified in two of the monitoring wells, MW-5 and MW-6 during the third quarter (July) and fourth quarter (November) 2012. Both MW-5 and MW-6 are located in the center of the Site in the area of former MGP operations. BTEX compounds were not detected, consistent with previous monitoring periods, in most of the Site monitoring wells. However, benzene and o-xylene were detected in samples from MW-4S and benzene was detected in upgradient well MW-7S. MW-4S is located adjacent to the Patchogue River and south of the area of the former MGP operations. No MGP-related structures or NAPL have been identified in the area hydraulically-upgradient of MW-4S. MW-7S is positioned upgradient of MW-4S on the upgradient side of the Site. Additionally, none of the low molecular weight PAHs that have usually been associated with MGP-related dissolved phase impacts at this site (e.g., naphthalene, acenaphthene, acenaphthylene, and fluorene) were detected. Thus, the benzene and o-xylene detections are not considered to be associated with MGP-related impacts. The concentrations of these constituents will be further evaluated through continued groundwater monitoring.

At seven of the eight wells, PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria. However, in samples collected from monitoring wells, MW-7S, MW-7D and MW-8D, one or more PAH compounds were detected at low concentrations (i.e., slightly above the method detection limit) but above the Class GA groundwater quality criteria. The criteria for these compounds are extremely low, approximately two orders of magnitude below the laboratory method detection limit. The six PAH compounds that were identified at concentrations above the Class GA groundwater quality criteria have very low aqueous solubilities, are not readily mobile in groundwater, and are unlikely to have migrated from the on-site source area. The detections of low level concentrations of these low solubility PAHs has occurred in previous monitoring events at various wells locations at the Site. This will continue to be evaluated through continued groundwater monitoring.

In the monitoring events since the September 2010 event, the concentrations of BTEX and PAHs in the shallow groundwater and the areal distribution of these concentrations are generally similar to those from monitoring events which occurred prior to March 2010. This indicates that constituent concentrations in groundwater have decreased and have generally re equilibrated with the steady state groundwater flow conditions that existed prior to the operation of the large scale temporary construction dewatering system (see Section 1.1) that affected the results of the March and September 2010 monitoring events, as anticipated. No dissolved phase impacts are identified in groundwater downgradient of the MGP-impacts identified in the soil in the area of former MGP operations. Monitoring will continue in order to confirm these conditions.

Section 5

References

Brown and Caldwell Associates, December 2012, Construction Completion Report Utility Corridor Work Plan Implementation, Patchogue Former MGP Site, Village of Patchogue, Suffolk County, New York, Site ID No. 1-52-182.

Brown and Caldwell Associates, February 2012. Remedial Design Work Plan, Patchogue Former MGP Site, Village of Patchogue, Suffolk County, New York, Site ID No. 1-52-182.

GEI, November 2010. Groundwater Monitoring Report, Second Semiannual 2010 Sampling Event, Patchogue Former MGP Site, Town of Brookhaven, Suffolk County, Long Island, New York, Site ID No. 1-52-182.

NYSDEC, November 2009. CP-43: Groundwater Monitoring Wells Decommissioning Policy.

USEPA, July 1996; Revised January 2010. Low-Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells.

Tables

TABLE 1
WATER ELEVATIONS AND NAPL MONITORING DATA
SECOND HALF 2012
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

	7/18/2012					
Well ID	Top of Casing Elevation (ft., NAVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NAVD)	Depth to NAPL (ft., BTOC)	Total Depth of Well (ft., BGS)	Remarks
MW-1	11.23	5.85	5.38	ND	16.2	
MW-3	5.39	2.50	2.89	ND	10.48	
MW-4S	7.74	5.08	2.66	ND	12.1	
MW-4D	7.57	4.85	2.72	ND	26.5	
MW-5	7.93	4.16	3.77	16.7	16.65	Brown-black NAPL Blebs on threaded rod
MW-6	5.01	0.05	4.96	18.43	21.8	Black NAPL blebs on threaded rod
MW-7S [(a)]	8.45	4.54	3.91	ND	12.4	
MW-7D [(a)]	8.31	4.36	3.95	ND	27.9	
MW-8S	4.86	0.94	3.92	ND	9.8	
MW-8D	4.77	0.80	3.97	ND	25.1	
MW-9S	4.47	NS	NS	ND	10.23	
MW-9D	4.66	NS	NS	ND	23.15	
SG-1	5.23	4.03	1.20	--	NA	
SG-2	5.16	3.83	1.33	--	NA	
PZ-1A	8.05	3.72	4.33	ND	9,75	
PZ-1B	8.91	4.6	4.31	ND	22.28	
PZ-2A	8.77	4.5	4.27	ND	7.82	
PZ-2B	8.29	3.98	4.31	ND	17.9	
PZ-3A	8.78	5.07	3.71	ND	8.97	
PZ-3B	8.90	5.22	3.68	ND	21.05	
PZ-4B	4.79	1.77	3.02	ND	4.67	

Notes:
NAVD - North American Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-aqueous phase liquid
NA - Not applicable
ND - Not Detected
(a) - Monitoring well resurveyed on 7/3/12 following utility corridor construction activities. See "Construction Completion Report, Utility Corridor Work Plan Implementation (Brown and Caldwell, December 2012)".

TABLE 1
WATER ELEVATIONS AND NAPL MONITORING DATA
SECOND HALF 2012
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Well ID	Top of Casing Elevation (ft., NAVD)	11/13/2012 Depth to Water (ft., BTOC)	11/13/2012 Water Elevation (ft., NAVD)	11/13/2012 Depth to NAPL (ft., BTOC)	Total Depth of Well (ft., BGS)	Remarks
MW-1	11.23	5.76	5.47	ND	16.2	
MW-3	5.39	2.26	3.13	ND	10.48	
MW-4S	7.74	4.88	2.86	ND	12.1	
MW-4D	7.57	4.66	2.91	ND	26.5	
MW-5	7.93	4.39	3.54	16.7	16.65	Brown-black NAPL blebs on bottom 3" of threaded rod; well casing severly damaged
MW-6	5.01	0.38	4.63	18.43	21.8	Black NAPL blebs on threaded rod
MW-7S [(a)]	8.45	4.38	4.07	ND	12.4	
MW-7D [(a)]	8.31	4.22	4.09	ND	27.9	
MW-8S	4.86	0.81	4.05	ND	9.8	
MW-8D	4.77	0.65	4.12	ND	25.1	
MW-9S	4.47	NS	NS	ND	10.23	
MW-9D	4.66	NS	NS	ND	23.15	
SG-1	5.23	3.54	1.69	--	NA	
SG-2	5.16	3.73	1.43	--	NA	
PZ-1A	8.05	5.16	2.89	ND	9,75	Measured from top of steel casing
PZ-1B	8.91	4.46	4.45	ND	22.28	
PZ-2A	8.77	4.3	4.47	ND	7.82	
PZ-2B	8.29	3.81	4.48	ND	17.9	
PZ-3A	8.78	4.83	3.95	ND	8.97	
PZ-3B	8.90	5.06	3.84	ND	21.05	
PZ-4B	4.79	1.54	3.25	ND	4.67	

Notes:
NAVD - North American Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-aqueous phase liquid
NA - Not applicable
ND - Not Detected
(a) - Monitoring well resurveyed on 7/3/12 following utility corridor construction activities. See "Construction Completion Report, Utility Corridor Work Plan Implementation (Brown and Caldwell, December 2012)".

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Constituent	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	NYS Part 703 Standard	Units	Loc ID / Date	MW-1 11/13/2012	MW-3 11/14/2012	MW-3 DUP 11/14/2012	MW-4S 11/14/2012	MW-4D 11/14/2012	MW-7S 11/14/2012
Volatile Organic Compounds										
BTEX										
Benzene	NE	1	µg/L		0.5 U	0.5 U	0.5 U	**3 J**	0.5 U	**1 J**
Toluene	NE	5	µg/L		0.7 U	0.7 U	0.7 U	2 J	0.7 U	0.7 U
Ethylbenzene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
m&p-Xylenes	NE	5	µg/L		0.8 U	0.8 U	0.8 U	2 J	0.8 U	0.8 U
o-Xylene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	**5**	0.8 U	0.8 U
Xylenes, Total	NE	NE	µg/L		0.8 U	0.8 U	0.8 U	7	0.8 U	0.8 U
Total BTEX	NE	NE	µg/L		ND	ND	ND	12	ND	1
Other VOCs										
Methyl Tertiary Butyl Ether	10	NE	µg/L		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Semi-Volatile Organic Compounds (SVOCs)										
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene	20	NE	µg/L		0.1 U	0.8	0.8	0.1 U	0.6	0.1 U
Acenaphthylene	NE	NE	µg/L		0.1 U	0.5	0.6	0.1 U	6	0.1 U
Anthracene	50	NE	µg/L		0.1 U	0.2 J	0.2 J	0.3 J	0.2 J	0.4 J
Benzo(a)anthracene	0.002	NE	µg/L		0.1 U	0.1 U	**0.1 J**	0.1 U	0.1 U	**0.1 J**
Benzo(a)pyrene	NE	0	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(b)fluoranthene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.2 J**
Benzo(g,h,i)perylene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Benzo(k)fluoranthene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chrysene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Dibenzo(a,h)anthracene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Fluoranthene	50	NE	µg/L		0.1 U	2	2	0.1 U	0.1 U	0.3 J
Fluorene	50	NE	µg/L		0.1 U	0.1 J	0.1 J	0.1 U	2	0.1 U
Indeno(1,2,3-cd)pyrene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

	Class GA Groundwater Criteria									
	TOGS 1.1.1	NYS Part 703		Loc ID	MW-1	MW-3	MW-3 DUP	MW-4S	MW-4D	MW-7S
Constituent	Guidance	Standard	Units	Date	11/13/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Naphthalene	10	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.9	0.9
Phenanthrene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	2	0.3 J
Pyrene	50	NE	µg/L		0.1 J	2	2	0.1 J	0.1 U	0.3 J
Total PAHs	NE	NE	µg/L		0.1	5.6	5.8	0.4	11.7	2.5

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Constituent	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	NYS Part 703 Standard	Units	Loc ID Date	MW-7D 11/14/2012	MW-8S 11/14/2012	MW-8D 11/14/2012	MW-9S 11/14/2012	MW-9D 11/14/2012
Volatile Organic Compounds									
BTEX									
Benzene	NE	1	µg/L		0.5 U	0.5 U	0.5 U	NS	NS
Toluene	NE	5	µg/L		0.7 U	0.7 U	0.7 U	NS	NS
Ethylbenzene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	NS	NS
m&p-Xylenes	NE	5	µg/L		0.8 U	0.8 U	0.8 U	NS	NS
o-Xylene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	NS	NS
Xylenes, Total	NE	NE	µg/L		0.8 U	0.8 U	0.8 U	NS	NS
Total BTEX	NE	NE	µg/L		ND	ND	ND	NS	NS
Other VOCs									
Methyl Tertiary Butyl Ether	10	NE	µg/L		0.5 U	0.5 U	0.5 U	NS	NS
Semi-Volatile Organic Compounds (SVOCs)									
Polycyclic Aromatic Hydrocarbons (PAHs)									
Acenaphthene	20	NE	µg/L		0.1 J	0.5	0.1 U	NS	NS
Acenaphthylene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	NS	NS
Anthracene	50	NE	µg/L		0.2 J	0.1 U	0.1 U	NS	NS
Benzo(a)anthracene	0.002	NE	µg/L		**0.2 J**	0.1 U	**0.1 J**	NS	NS
Benzo(a)pyrene	NE	0	µg/L		**0.2 J**	0.1 U	**0.1 J**	NS	NS
Benzo(b)fluoranthene	0.002	NE	µg/L		**0.2 J**	0.1 U	**0.1 J**	NS	NS
Benzo(g,h,i)perylene	NE	NE	µg/L		0.1 J	0.1 U	0.1 U	NS	NS
Benzo(k)fluoranthene	0.002	NE	µg/L		**0.1 J**	0.1 U	0.1 U	NS	NS
Chrysene	0.002	NE	µg/L		**0.2 J**	0.1 U	**0.2 J**	NS	NS
Dibenzo(a,h)anthracene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	NS	NS
Fluoranthene	50	NE	µg/L		0.3 J	0.1 J	0.2 J	NS	NS
Fluorene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	NS	NS
Indeno(1,2,3-cd)pyrene	0.002	NE	µg/L		**0.1 J**	0.1 U	0.1 U	NS	NS

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

	Class GA Groundwater Criteria								
	TOGS 1.1.1	NYS Part 703		Loc ID	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D
Constituent	Guidance	Standard	Units	Date	11/14/2012	11/14/2012	11/14/2012	11/14/2012	11/14/2012
Naphthalene	10	NE	µg/L		0.1 J	0.1 U	0.1 U	NS	NS
Phenanthrene	50	NE	µg/L		0.4 J	0.1 J	0.2 J	NS	NS
Pyrene	50	NE	µg/L		0.4 J	0.1 J	0.3 J	NS	NS
Total PAHs	NE	NE	µg/L		2.6	0.8	1.2	NS	NS

Notes:
J - Estimated concentration. The result is below the practical quantitation limit but above the method detection limit.
U - The analyte was analyzed for, but was not detected.
µg/L - micrograms per liter
ND - Not detected.
NE - Not established.
NS- Not sampled
Boxed concentrations are above New York State Class GA Groundwater Quality Standards or Guidance values.

TABLE 3
SUMMARY OF HISTORICAL BTEX CONCENTRATIONS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Sampling Date	Total BTEX Concentrations (µg/L)													
	Monitoring Well													
	MW-1	MW-2S	MW-2D	MW-3	MW-4S	MW-4D	MW-5	MW-6	MW-7S	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D
Mar-08	0	0	0	0	3.4	0	1016	57	NS	NS	NS	NS	NS	NS
Jul-08	NS	0	0	0	0	0	678	0	0	0	0	0	0	0
Mar-09	0	0	0	0	0	0	975	0	0	1	0	0	0	0
Sep-09	0	0	0	0	0	0	1257	1	0	0	0	0	0	0
Mar-10	0	0	0	0	0	0	637	2	0	9	0	0	0	0
Sep-10	0	0	0	0	0	0	NS	0	0	0	0	0	27	0
Jan-11	1.7	0	0	0	0	0	NS	NS	0	0	0	0	1	0
Apr-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Aug-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Nov-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Feb-12	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
May-12	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Nov-12	0			0	12	0	NS	NS	1	0	0	0	NS	NS
Min	0	0	0	0	0	0	637	0	0	0	0	0	0	0
Max	1.7	0	0	0	12	0	1257	57	1	9	0	0	27	0
Mean	0.1	0	0	0	1.2	0	913	10	0	0.8	0	0	2.5	0

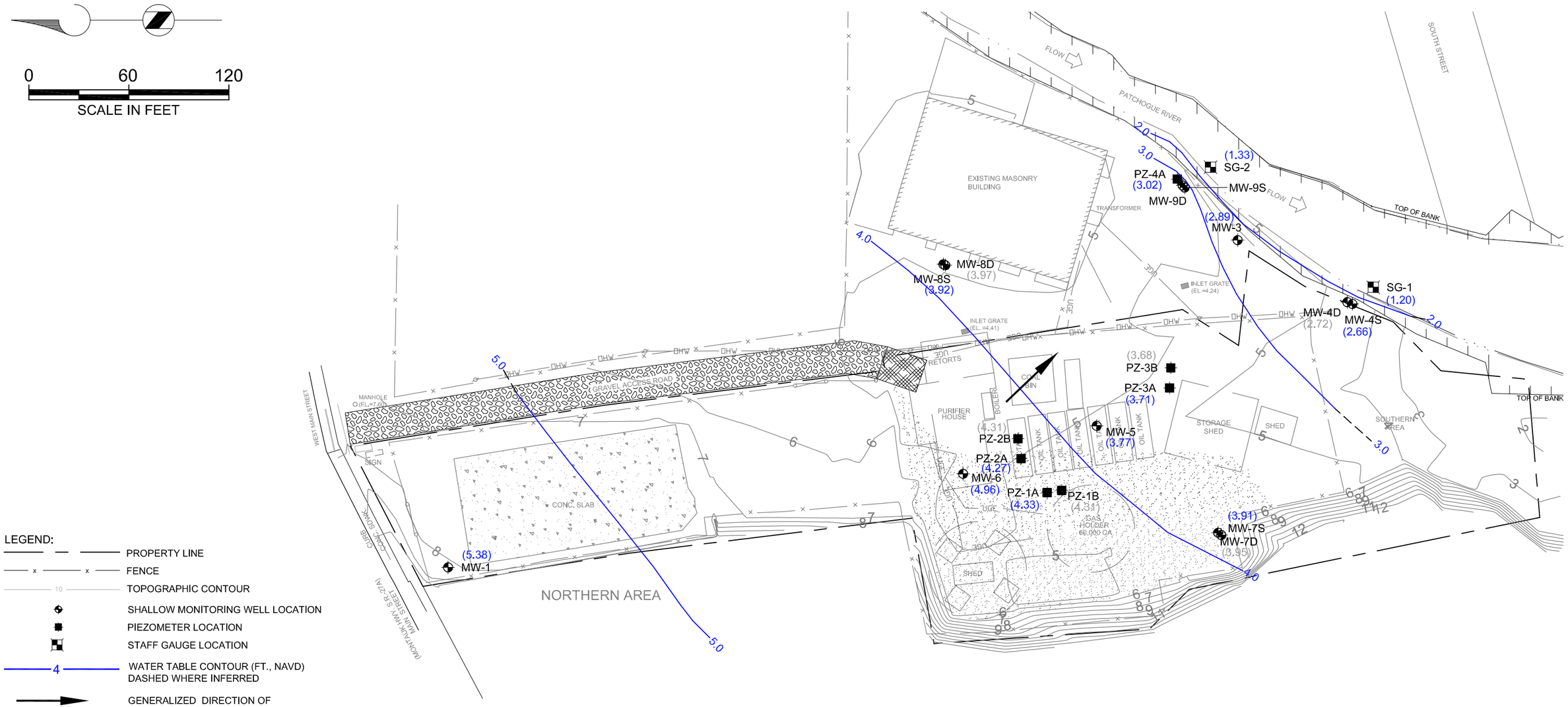
Notes:
BTEX - Benzene, toluene, ethylbenzene and xylene isomers
µg/L - micrograms per liter
NS - Not sampled.

TABLE 4
SUMMARY OF HISTORICAL PAH CONCENTRATIONS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Sampling Date	Total PAH Concentrations (µg/L)													
	Monitoring Well													
	MW-1	MW-2S	MW-2D	MW-3	MW-4S	MW-4D	MW-5	MW-6	MW-7S	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D
Mar-08	0	0	0	0.76	0.6	4.3	1774	214	NS	NS	NS	NS	NS	NS
Jul-08	NS	0.7	0	0	8.0	0	1799	154	0	0.47	0	0	12.0	0
Mar-09	0	0	0	0	0	0	2730	0	0	0	0	0	0	0
Sep-09	0	0	0	0	0	0	3373	1	0	0	0	0	0	0
Mar-10	0	0	0	0	0	39	2390	17	0	0	22	0	2	0
Sep-10	0	0	0	128	0	6	NS	14	0	0	11	0	396	0
Jan-11	22	0	0	17	0	12	NS	NS	0	0	6	0	42	5
Apr-11	0	0	0	6	0	20	NS	NS	0	0	0	0	9	0
Aug-11	0	0	0.1	14	0.1	0	NS	NS	0	0	0.4	0	16	1.2
Nov-11	0	0	0.2	10	0.4	0	NS	NS	0	0	0.8	0.2	8	3.4
Feb-12	0.2	0	0	6	0.6	4	NS	NS	0.1	0	0.6	0	5	2.9
May-12	0.4	0.1	0.6	5	0	5.8	NS	NS	0.1	0.3	1	0	6	2.8
Nov-12	0.1			5.6	0.4	11.7	NS	NS	2.5	2.6	0.8	1.2	NS	NS
Min	0	0	0	0	0	0	1774	0	0	0	0	0	0	0
Max	22	0.7	0.6	128	8.0	39	3373	214	2.5	2.6	22	1.2	396	5
Mean	1.9	0.1	0	15	0.8	7.9	2413	67	0	0	3.6	0	45	1.4

Notes:
PAH - Polycyclic aromatic hydrocarbons
µg/L - micrograms per liter
NS - Not sampled.

Figures



LEGEND:

- PROPERTY LINE
- FENCE
- TOPOGRAPHIC CONTOUR
- SHALLOW MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- 4 — WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- (4.33) — WATER ELEVATION (FT., NAVD) FOR SHALLOW MONITORING WELL, PIEZOMETER OR STAFF GAUGE
- (3.73) — GROUNDWATER HEAD ELEVATION (FT., NAVD) FOR WELLS OR PIEZOMETERS SCREENED BELOW WATER TABLE (FROM DEEP MONITORING WELL OR PIEZOMETER)

NOTES:

1. BASE MAP INFORMATION OBTAINED FROM TETRA TECH EC, INC. DRAWING ENTITLED "CONCEPTUAL SITE MODEL", DATED DECEMBER 17, 2008.

Brown AND Caldwell

DATE: March 11, 2013

WATER TABLE CONTOUR MAP
JULY 18, 2012

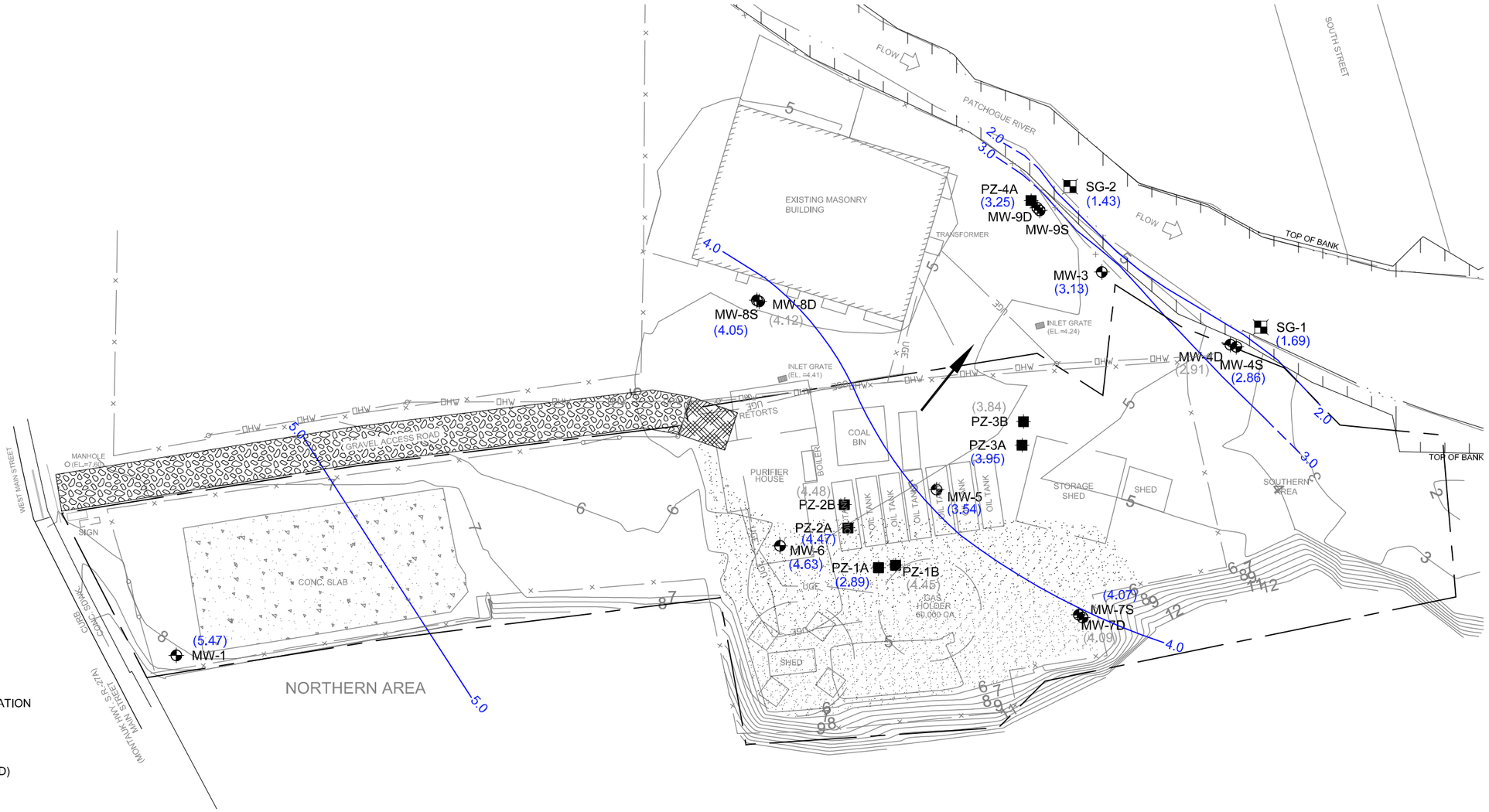
FIGURE

1

Path: P:\DRAFTING\NATIONAL_GRID\Patchogue\Quarterly-GW-Contour-Map\November-13-2012 File Name: FIG-1 Plot Date: March 11, 2013 10:20 AM Cadd User: James, Richard

0 60 120

SCALE IN FEET



LEGEND:

- PROPERTY LINE
- FENCE
- TOPOGRAPHIC CONTOUR
- SHALLOW MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- 4 — WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- (4.47) — WATER ELEVATION (FT., NAVD) FOR SHALLOW MONITORING WELL, PIEZOMETER OR STAFF GAUGE
- (3.76) — GROUNDWATER HEAD ELEVATION (FT., NAVD) FOR WELLS OR PIEZOMETERS SCREENED BELOW WATER TABLE (FROM DEEP MONITORING WELL OR PIEZOMETER)

NOTES:

1. BASE MAP INFORMATION OBTAINED FROM TETRA TECH EC, INC. DRAWING ENTITLED "CONCEPTUAL SITE MODEL", DATED DECEMBER 17, 2008.

Brown AND Caldwell

DATE: March 11, 2013

WATER TABLE CONTOUR MAP
NOVEMBER 13, 2012

FIGURE

2

Appendix A: Field Sampling Data Sheets

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP Project Number: ______
Personnel: NB+FM Well ID: MW-4S
Purge/Sample Depth: ______ Sample ID: ______

Actual Time	pH	Temp (ºC)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
13:41	6.56	13.21	55	.665	6.27	118	4.85	200	
13:44	6.47	14.16	78	.669	1.61	353			
13:47	6.45	14.33	74	.664	.79	459			
13:50	6.44	14.46	75	.665	.87	285			
13:53	6.43	14.60	82	.662	.75	160			
13:56	6.42	14.61	84	.661	.72	115			
13:59	6.42	14.69	87	.660	.64	868	5.01	200	
14:02	6.41	14.78	90	.659	.64	72.3			
14:05	6.41	14.81	92	.658	.60	55.1			
14:08	6.41	14.81	93	.659	.59	47.1			
14:11	6.41	14.89	95	.657	.55	42.1			
14:11	— s	a	m	p	l	— c	o	l l e c t	ed —

[signature] 11/14/12

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-45
Sample I.D.: (if different from well no.)

Project: Paterson MGP
Personnel: NB/EM

Date: 11/4/12 Time: 13:41
Weather: Sunny Air Temp.: ____

WELL DATA:

Casing Diameter: ____ ☐ Stainless Steel ☐ Steel ☐ PVC ☐ Teflon® ☐ Other: ____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.85 ft Bottom of Well: ____ ft
DATUM: ☐ Top of Protective Casing ☐ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☒ Yes ☐ No Is well clean to bottom? ☐ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☒ Yes ☐ No
Does Weep Hole adequately drain well head? ☒ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☐ Yes ☐ No
Is Padlock Functional? ☒ Yes ☐ No ☐ NA Is Inner Casing Intact? ☒ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☒ Yes ☐ No
VOLUME OF WATER: Standing in well: ____ To be purged: ____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☒ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ____

MATERIALS: Pump/Bailer: ☐ Teflon® ☒ Stainless Steel ☐ PVC ☐ Other: ____
Tubing/Rope: ☐ Teflon® ☒ Polyethylene ☐ Polypropylene ☐ Other: ____

Pumping Rate: 200 Elapsed Time: 30mn Volume Pumped: 2 gal
Was well Evacuated? ☐ Yes ☐ No Number of Well Volumes Removed: ____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☒ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ____

MATERIALS: Pump/Bailer: ☐ Teflon® ☒ Stainless Steel
Tubing/Rope: ☐ Teflon® ☒ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned
Metals samples field filtered? ☐ Yes ☒ No Method: ____
APPEARANCE: ☒ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.41 Meter Model: Horiba U-52 Meter S/N: ____
Temperature: 14.89 Spec. Cond.: 0.657 Meter Model: " Meter S/N: ____
ORP: 95 DO: 0.55 Turbidity: 92.1
DUP : ☒ No ☐ Yes Name: ____
MS/MSD: ☒ No ☐ Yes Name: ____
Field Lab Results: ☐ N/A pH: ____ DO: ____ Temperature: ____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: ____ Date: 11/4

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BNB+FM
Purge/Sample Depth: _____
Project Number: _____
Well ID: MW-1
Sample ID: _____

Actual Time	pH	Temp (°C)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
16:00	6.72	14.05	-44	~~.770~~	2.13	31.5		200	
16:03	6.75	15.21	-74	.731	1.15	77.1			
16:06	6.70	15.70	-81	.754	.99	153			
16:09	6.75	16.00	-83	.752	.76	145			
16:12	6.74	16.13	-84	.756	.77	129			
16:15	~~6.74~~	—	—	—	—	—			
16:18	—	—	—	—	—	—		200	
16:21	~~6.74~~	16.40	-88	~~.758~~	.96	69.2			
16:24	6.71	16.42	-91	.753	.71	54.8			
16:27	6.71	16.46	-90	.754	.61	36.5			
16:30	6.77	16.51	-90	.754	.55	29.9			
16:33	6.74	16.57	-92	.752	.58	27.7			
16:33	— S	a m	p	les	c	o ll	ec	ted	—

11/13/12

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-1
Sample I.D.: (if different from well no.)

Project: Ratchague
Personnel: NB + FM

Date: 11/13/12 Time: _____
Weather: _____ Air Temp.: _____

WELL DATA:

Casing Diameter: _____ ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2 in ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 5.76 ft Bottom of Well: ~16 ft
DATUM: ☐ Top of Protective Casing ☐ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☐ No Is well clean to bottom? ☐ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☐ Yes ☐ No
Does Weep Hole adequately drain well head? ☐ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☐ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☐ NA Is Inner Casing Intact? ☐ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☐ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 200 Elapsed Time: 30mn Volume Pumped: 2gal
Was well Evacuated? ☐ Yes ☐ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☑ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.74 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 14.59 Spec. Cond.: 0.752 Meter Model: _____ Meter S/N: _____
ORP: -92 DO: 0.58 Turbidity: 27.7
DUP : ☑ No ☐ Yes Name: _____
MS/MSD: ☑ No ☐ Yes Name: _____
Field Lab Results: ☐N/A pH: _____ DO: _____ Temperature: _____
I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 11/13

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Petersburg MGP
Personnel: FB+NB
Purge/Sample Depth: _____

Project Number: _____
Well ID: ~~MW-28D~~ MW-8D
Sample ID: _____

Actual Time	pH	Temp (°C)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1116	7.07	13.71	2	0.315	5.12	148	0.64	200	
1119	6.66	14.26	59	0.296	2.06	156		↓	
1122	6.45	14.63	95	0.290	1.14	142	0.92	↓	
1125	6.38	14.76	108	0.287	0.93	140		↓	
1128	6.36	14.76	~~115~~ 115	0.286	0.95	150		200	
1131	6.32	14.57	122	0.287	0.92	145		↓	
1134	6.33	14.17	125	0.283	0.90	122		↓	
1137	6.31	14.06	127	0.281	0.90	105		↓	
1140	6.30	13.98	129	0.280	0.93	101		↓	
1143	6.30	13.86	131	0.279	0.93	98		↓	
1146	6.29	13.84	132	0.280	~~9.88~~ 7.88	93			
1149	Sample Collected								

NPM

11/14/12

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-8D
Sample I.D.: (if different from well no.)

Project: Patterson
Personnel: NDB EH

Date: 11/14/12 Time: 1126
Weather: 50 Sunny Air Temp.: 45

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: _____ ☐ Stainless Steel ☐ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: _____ ft Bottom of Well: _____ ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☑ Yes ☐ No ☐ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☐ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 200 Elapsed Time: 30 min Volume Pumped: 2 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☐ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.29 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: ~~13.84~~ Spec. Cond.: 0.280 Meter Model: " " Meter S/N: _____
ORP: 132 13.84 DO: 0.98 Turbidity: 93
DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☑ No ☐ Yes Name: _____
Field Lab Results: ☐ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 11/14/12

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: FM HB
Purge/Sample Depth: _____

Project Number: _____
Well ID: MW-3
Sample ID: _____

Actual Time	pH	Temp (°C)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
0756	6.81 ~~10.92~~	10.92	14	0.639	1.35	14.0	2.37	250	
0759	6.80	11.81	-7	0.640	1.01	19.5		↓	
0802	6.80	12.53	-10	0.631	0.82	25.1	2.40		
0805	6.84	12.80	-43	0.612	0.74	20.6		↓	
0808	6.85	12.88	-42	0.607	0.63	18.8		250	
~~0811~~ 0811	6.83	12.88	-38	0.602	0.58	14.6			
0814	6.83	12.93	-34	0.596	0.59	9.7		↓	
0817	6.84	13.00	-30	0.592	0.54	7.0	2.40		
0820	6.85	13.15	-28	0.589	0.56	4.8			
0823	6.84	13.11	-28	0.588	0.52	3.1			
0826	6.85	13.19	-30	0.588	0.49	2.8		↓	
0826	Sample Collected								

NRM
11/14/20

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-3
Sample I.D.: (if different from well no.)

Project: Parsippany MGP
Personnel: NB HFM

Date: 11/14/12 Time: 0758
Weather: partly sunny Air Temp.: 40

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: _____ ☐ Stainless Steel ☐ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 2.37 ft Bottom of Well: _____ ft
DATUM: ☐ Top of Protective Casing ☐ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☐ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☐ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No

flush mount destroyed!

VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 250 Elapsed Time: 30min Volume Pumped: 2.5 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.85 Meter Model: Horiba - U52 Meter S/N: _____
Temperature: 13.19 Spec. Cond.: 0.588 Meter Model: " " Meter S/N: _____
ORP: ~~-30~~ -30 DO: 0.49 Turbidity: 2.5
DUP : ☑ No ☐ Yes Name: DUP 111412
MS/MSD : ☑ No ☐ Yes Name: _____
Field Lab Results: ☐ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 11/14/12

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patheon
Personnel: NDS tm
Purge/Sample Depth: _____
Project Number: _____
Well ID: MW-75
Sample ID: _____

Actual Time	pH	Temp (°C)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
0933	7.16	12.57	-143	0.918	4.08	103	4.37	200	
0936	7.17	12.72	-145	0.919	1.56	104		↓	
0939	7.18	12.81	-147	0.920	0.99	108			
0942	7.16	12.91	-147	0.925	0.62	113			
0945	7.19	13.00	-157	0.927	0.51	92.6	4.38	↓	
0948	7.18	13.08	-152	0.927	0.47	67.3		200	
0951	7.19	13.15	-154	0.929	0.43	51.4			
0954	7.18	13.16	-154	0.930	0.41	47.9		↓	
0957	7.20	13.26	-155	0.931	0.40	39.2			
1000	7.19	13.33	-155	0.933	0.36	30.6			
1003	7.21	13.35	-155	0.934	0.35	25.7		↓	
1006	Sample	Collected							

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-7S
Sample I.D.: (if different from well no.)

Project: Patchogue MGP
Personnel: NB FM

Date: 11/14/12 Time: 0933
Weather: partly cloudy Air Temp.: 40

WELL DATA:

Casing Diameter: 2" ❑ Stainless Steel ❑ Steel ☑ PVC ❑ Teflon® ❑ Other: ______
Intake Diameter: ______ ❑ Stainless Steel ❑ Galv. Steel ❑ PVC ❑ Teflon® ❑ Open rock
DEPTH TO: Static Water Level: 4.37 ft Bottom of Well: _____ ft
DATUM: ❑ Top of Protective Casing ☑ Top of Well Casing ❑ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ❑ No Is well clean to bottom? ☑ Yes ❑ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ❑ Yes ❑ No
Does Weep Hole adequately drain well head? ☑ Yes ❑ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ❑ No
Is Padlock Functional? ☑ Yes ❑ No ❑ NA Is Inner Casing Intact? ☑ Yes ❑ No
Is Inner Casing Properly Capped and Vented? ❑ Yes ❑ No
VOLUME OF WATER: Standing in well: ______ To be purged: ______

PURGE DATA:

METHOD: ❑ Bailer, Size: ____ ❑ Bladder Pump ☑ 2" Submersible Pump ❑ 4" Submersible Pump
❑ Centrifugal Pump ❑ Peristaltic Pump ❑ Inertial Lift Pump ❑ Other: ______

MATERIALS: Pump/Bailer: ❑ Teflon® ☑ Stainless Steel ❑ PVC ❑ Other: ______
Tubing/Rope: ❑ Teflon® ☑ Polyethylene ❑ Polypropylene ❑ Other: ______

Pumping Rate: 200 Elapsed Time: 30min Volume Pumped: 2 gal
Was well Evacuated? ❑ Yes ☑ No Number of Well Volumes Removed: ______
PURGING EQUIPMENT: ❑ Dedicated ❑ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ❑ Bailer, Size: ____ ☑ Bladder Pump ❑ 2" Submersible Pump ❑ 4" Submersible Pump
❑ Syringe Sampler ❑ Peristaltic Pump ❑ Inertial Lift Pump ❑ Other: ______

MATERIALS: Pump/Bailer: ❑ Teflon® ☑ Stainless Steel
Tubing/Rope: ❑ Teflon® ☑ Polyethylene
SAMPLING EQUIPMENT: ❑ Dedicated ❑ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ❑ Yes ☑ No Method: ______
APPEARANCE: ☑ Clear ❑ Turbid ❑ Color: ______ ❑ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 7.21 Meter Model: Horiba U-22 Meter S/N: ______
Temperature: 13.35 Spec. Cond.: 0.934 Meter Model: " Meter S/N: ______
ORP: -155 DO: 0.35 Turbidity: 25.7
DUP: ☑ No ❑ Yes Name: ______
MS/MSD: ☑ No ❑ Yes Name: ______
Field Lab Results: ☑ N/A pH: ______ DO: ______ Temperature: ______

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: [signature] Date: 11/14/12

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue Project Number:
Personnel: NFB Sv Well ID: MW-4D
Purge/Sample Depth: Sample ID:

Actual Time	pH	Temp (ºC)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1337	6.00	11.58	230	0.621	5.70	4.8	4.75	200	
1340	5.91	11.70	238	0.625	3.27	5.1			
1343	5.89	11.86	243	0.623	1.74	8.1			
1346	5.88	12.20	255	0.623	0.69	5.7			
1349	5.88	12.28	258	0.625	0.59	4.0		200	
1352	5.87	12.38	261	0.633	0.60	2.0			
1355	5.87	12.45	264	0.635	0.55	1.0	4.77		
1358	5.86	12.54	266	0.639	0.46	0.7			
1401	5.86	12.57	267	0.641	0.47	0.3			
1404	5.87	12.62	268	0.643	0.44	0.2			
1407	5.86	12.67	269	0.645	0.42	0.7			
1407	Sample Collected								

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: MW-4D (if different from well no.)

Project: Pathwayne
Personnel: NMB fm

Date: 11/14/12 Time: 1337
Weather: Sun Air Temp.: 45

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☒ Steel ◯PVC ☐ Teflon® ☐ Other: ______

Intake Diameter: ______ ☐ Stainless Steel ☐ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock

DEPTH TO : Static Water Level: 4.75 ft Bottom of Well: ____ ft

DATUM: ☐ Top of Protective Casing ☒ Top of Well Casing ☐ Other:

CONDITION: Is Well clearly labeled? ☒ Yes ☐ No Is well clean to bottom? ☒ Yes ☐ No

Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☒ Yes ☐ No

Does Weep Hole adequately drain well head? ☒ Yes ☐ No

Is Concrete Pad Intact? (not cracked or frost heaved) ☐ Yes ☐ No

Is Padlock Functional? ☒ Yes ☐ No ☐ NA Is Inner Casing Intact? ☒ Yes ☐ No

Is Inner Casing Properly Capped and Vented? ☒ Yes ☐ No

VOLUME OF WATER: Standing in well: ______ To be purged: ______

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☒ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ______

MATERIALS: ◯Pump/Bailer: ☐ Teflon® ☐ Stainless Steel ☐ PVC ☐ Other: Peri / Silicon

◯Tubing/Rope: ☐ Teflon® ☒ Polyethylene ☐ Polypropylene ☐ Other: ______

Pumping Rate: 200 Elapsed Time: 30 min Volume Pumped: 2 gal

Was well Evacuated? ☐ Yes ☒ No Number of Well Volumes Removed: ______

PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned

SAMPLING DATA:

METHOD: ☒ Bailer, Size: 1" ☐ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ______

MATERIALS: Pump/◯Bailer: ☐ Teflon® ☐ Stainless Steel Poly

Tubing/◯Rope: ☐ Teflon® ☐ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned

Metals samples field filtered? ☐ Yes ☐ No Method: ______

APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: ______ ☐ Contains Immiscible Liquid

FIELD DETERMINATIONS: pH: 5.86 Meter Model: Horiba U 52 Meter S/N: ______

Temperature: 12.67 Spec. Cond.: 0.645 Meter Model: " " Meter S/N: ______

ORP: 269 DO: 0.42 Turbidity: 0.7

DUP : ☒ No ☐ Yes Name: ______

MS/MSD: ☒ No ☐ Yes Name: ______

Field Lab Results: ☒ N/A pH: ______ DO: ______ Temperature: ______

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: [signature] Date: 11/14/12

P:*Office*Field_Lab\Field_Data_Sheets\Well_Info_Sheet.doc

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: FM + NB
Purge/Sample Depth: _____
Project Number: _____
Well ID: MW-65
Sample ID: _____

Actual Time	pH	Temp (°C)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
11:16	6.44	13.75	56	.673	2.47	476	.81	200	
11:19	6.49	14.85	14	.688	1.10	747			
11:22	6.54	15.58	-15	.688	.76	995			
11:25	6.56	15.69	-27	.682	.66	435			
11:28	6.56	15.81	-33	.676	.63	243			
11:31	6.57	15.76	-41	.669	.59	111			
11:34	6.58	15.95	-49	.667	.56	53.7		200	
11:37	6.58	15.97	-51	.665	.55	43.3			
11:40	6.58	16.04	-55	.666	.52	30.7			
11:43	6.59	16.17	-59	.664	.52	28.6			
11:46	6.59	16.12	-62	.665	.50	21.9			
11:46	- samples collected								

4/14/12

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-8S
Sample I.D.: (if different from well no.)

Project: Interchange MGP
Personnel: #1 FM + NB

Date: 11/14/12 Time: 11:16
Weather: SUNNY Air Temp.: 45

WELL DATA:

Casing Diameter: _____ ☐ Stainless Steel ☐ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: _____ ft Bottom of Well: _____ ft
DATUM: ☑ Top of Protective Casing ☐ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☐ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 200 Elapsed Time: 3 hr Volume Pumped: 2 gal
Was well Evacuated? ☐ Yes ☐ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color; _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.59 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 16.12 Spec. Cond.: 0.065 Meter Model: _____ Meter S/N: _____
ORP: -62 DO: 0.52 Turbidity: 21.1
DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☑ No ☐ Yes Name: _____
Field Lab Results: ☐ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 11/14

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: FM + NB
Purge/Sample Depth: _____
Project Number: _____
Well ID: MW-7D
Sample ID: _____

Actual Time	pH	Temp (°C)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
9:38	6.13	13.42	227	.452	4.56	118	4.27		
9:41	6.31	14.11	192	.437	3.62	118		200 mL/min	
9:44	6.32	14.35	177	.424	3.03	145			
9:47	6.29	14.46	171	.417	2.63	157			
9:50	6.24	14.57	167	.409	2.25	158			
9:53	6.21	14.55	164	.405	2.11	163			
9:56	6.19	14.54	164	.401	1.94	170			
9:59	6.17	14.59	162	.400	1.84	176		200 mL/min	
10:02	—	—	—	—	—	—			Empty Hornbo
10:05	6.14	15.02	161	.394	1.89	224			
10:08	6.13	15.00	156	.391	2.14	261			
10:11	6.12	15.01	151	.391	1.43	268		150 mL/min	
10:14	6.12	14.85	150	.393	1.37	252			
10:17	6.11	14.70	154	.394	1.23	250			
10:20	6.12	14.77	154	.390	1.38	250			Turbidity stable but not decreasing
10:20	— sample collected —								

4/4/12

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-7D
Sample I.D.: (if different from well no.)

Project: Patchogue MGP
Personnel: FM + NB

Date: 11/14/12 Time: 0958
Weather: _____ Air Temp.: _____

WELL DATA:

Casing Diameter: _____ ☐ Stainless Steel ☐ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2in ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.27 ft Bottom of Well: _____ ft
DATUM: ☐ Top of Protective Casing ☒ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☒ Yes ☐ No Is well clean to bottom? ☐ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☒ Yes ☐ No
Does Weep Hole adequately drain well head? ☒ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☐ Yes ☐ No
Is Padlock Functional? ☒ Yes ☐ No ☐ NA Is Inner Casing Intact? ☐ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☒ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☒ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☒ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☒ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 200 Elapsed Time: 15 42min Volume Pumped: 3gal
Was well Evacuated? ☐ Yes ☐ No Number of Well Volumes Removed: 3gal
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☒ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☒ Stainless Steel
Tubing/Rope: ☐ Teflon® ☒ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned
Metals samples field filtered? ☐ Yes ☒ No Method: _____
APPEARANCE: ☒ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.12 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 14.77 Spec. Cond.: 0.590 Meter Model: " Meter S/N: _____
ORP: 154 DO: 1.38 Turbidity: 250
DUP : ☒ No ☐ Yes Name: _____
MS/MSD : ☒ No ☐ Yes Name: _____
Field Lab Results: ☒ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 11/14

Appendix B: Laboratory Reports (CD-ROM)

Appendix C: Data Usability Summary Report (DUSR)

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
PATCHOGUE, NEW YORK

Client: Brown and Caldwell, Upper Saddle River, New Jersey
SDG: PCH12
Laboratory: Lancaster Laboratories, Lancaster, Pennsylvania
Site: Patchogue, New York
Date: February 5, 2013

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-1 GRAB GROUNDWATER	6864123	Water
1MS	MW-1 GRAB GROUNDWATERMS	6864123MS	Water
1MSD	MW-1 GRAB GROUNDWATERMSD	6864123MSD	Water
2	MW-3 GRAB GROUNDWATER	6864124	Water
3	DUP111412 GRAB GROUNDWATER	6864125	Water
4	MW-7S GRAB GROUNDWATER	6864126	Water
5	MW-7D GRAB GROUNDWATER	6864127	Water
6	FB111412 GRAB GROUNDWATER	6864128	Water
7	MW-8S GRAB GROUNDWATER	6864129	Water
8	MW-8D GRAB GROUNDWATER	6864130	Water
9	MW-4D GRAB GROUNDWATER	6864131	Water
10	MW-4S GRAB GROUNDWATER	6864132	Water
11*	TRIPBLANK WATER	6864133	Water

* - VOC only

A Data Usability Summary Review was performed on the analytical data for nine water samples, one aqueous field blank sample, and one aqueous trip blank sample collected November 13 and 14, 2012 by Brown and Caldwell at the Patchogue, New York Site. The samples were analyzed under Environmental Protection Agency (USEPA) *"Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions"*.

Specific method references are as follows:

Analysis	*Method References*
VOC (BTEX and MTBE)	USEPA SW-846 Method 8260B
SVOC (PAH)	USEPA SW-846 Method 8270C

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-24, Revision 2, August 2008: Validating Volatile Organic Compounds by SW-846 Method 8260B;
- SOP Number HW-22, Revision 4, August 2008: Validating Semivolatile Organic Compounds by SW-846 Method 8270D;

- and the reviewer's professional judgment.

The following items/criteria were reviewed:

Organics

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample (LCS) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Field Duplicate sample precision

Overall Usability Issues:

There were no rejections of data.

Overall the data is acceptable for the intended purposes. There were no qualifications.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Volatile Organic Compounds (BTEX and MTBE)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable percent recoveries (%R) and/or relative percent differences (RPD).

Laboratory Control Samples

- The LCS sample exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- The following table summarizes field blank contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB111412 GRAB GROUNDWATER	None- ND	-	-	-	-
TRIP BLANK WATER	None- ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and average RRF criteria were met.

Continuing Calibration

- All %D and RRF criteria were met.

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

VOC				
Compound	MW-3 GRAB GROUNDWATER ug/L	DUP111412 GRAB GROUNDWATER ug/L	RPD	Qualifier
None	ND	ND	-	-

Semivolatile Organics Compounds (PAH)

Holding Times

- All samples were extracted within 7 days for water samples and analyzed within 40 days.

Surrogate Spike Recoveries

- The following table presents surrogate percent recoveries (%R) outside the QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Note: The sample was reanalyzed with compliant surrogates although only the first analysis was reported.

Sample ID	Surrogate	%R	Qualifier
3	S2=2-Fluorobiphenyl	115%	None for Only 1 Out per Fraction

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable percent recoveries (%R) and/or relative percent differences (RPD).

Laboratory Control Samples

- The LCS sample exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blanks

- The following table summarizes field blank contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB111412 GRAB GROUNDWATER	ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and average RRF criteria were met.

Continuing Calibration

- All %D and RRF criteria were met.

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

PAH				
Compound	MW-3 GRAB GROUNDWATER ug/L	DUP111412 GRAB GROUNDWATER ug/L	RPD	Qualifier
Acenaphthene	0.8	0.8	0%	None
Acenaphthylene	0.5	0.6	18%	
Anthracene	0.2	0.2	0%	
Benzo(a)anthracene	NC	0.1	NC	
Fluoranthene	2	2	0%	
Fluorene	0.1	0.1	0%	
Pyrene	2	2	0%	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 2/7/13

Nancy Weaver
Senior Chemist

Data Qualifiers

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the sample reporting limit.

R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

eurofins | Lancaster Laboratories

Analysis Report

Sample Description: MW-1 Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864123
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/13/2012 16:33 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT1 SDG#: PCH12-01BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	Fluoranthene	206-44-0	N.D.		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	**Pyrene**	129-00-0	**0.1**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 00:59	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 00:59	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/20/2012 01:46	Holly Berry	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

Eurofins Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

2

Sample Description: MW-3 Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864126
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 08:26 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT2 SDG#: PCH12-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	**Acenaphthene**	83-32-9	**0.8**		0.09	1
07805	**Acenaphthylene**	208-96-8	**0.5**		0.09	1
07805	**Anthracene**	120-12-7	**0.2**	J	0.09	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.09	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.09	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.09	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.09	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.09	1
07805	Chrysene	218-01-9	N.D.		0.09	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.09	1
07805	**Fluoranthene**	206-44-0	**2**		0.09	1
07805	**Fluorene**	86-73-7	**0.1**	J	0.09	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.09	1
07805	Naphthalene	91-20-3	N.D.		0.09	1
07805	Phenanthrene	85-01-8	N.D.		0.09	1
07805	**Pyrene**	129-00-0	**2**		0.09	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 02:08	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 02:08	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/20/2012 03:16	Holly Berry	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

3

Sample Description: DUP111412 Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864127
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT3 SDG#: PCH12-03FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	**Acenaphthene**	83-32-9	**0.8**		0.09	1
07805	**Acenaphthylene**	208-96-8	**0.6**		0.09	1
07805	**Anthracene**	120-12-7	**0.2**	J	0.09	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	J	0.09	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.09	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.09	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.09	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.09	1
07805	Chrysene	218-01-9	N.D.		0.09	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.09	1
07805	**Fluoranthene**	206-44-0	**2**		0.09	1
07805	**Fluorene**	86-73-7	**0.1**	J	0.09	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.09	1
07805	Naphthalene	91-20-3	N.D.		0.09	1
07805	Phenanthrene	85-01-8	N.D.		0.09	1
07805	**Pyrene**	129-00-0	**2**		0.09	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 02:31	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 02:31	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/20/2012 03:39	Holly Berry	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

Eurofins Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

4

Sample Description: MW-7S Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864128
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 10:06 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT4 SDG#: PCH12-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10903	**Benzene**	71-43-2	**1**	**J**	0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	**Anthracene**	120-12-7	**0.4**	**J**	0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	**J**	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.2**	**J**	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.3**	**J**	0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	**Naphthalene**	91-20-3	**0.9**		0.1	1
07805	**Phenanthrene**	85-01-8	**0.3**	**J**	0.1	1
07805	**Pyrene**	129-00-0	**0.3**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 02:54	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 02:54	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/20/2012 04:01	Holly Berry	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

5

Sample Description: MW-7D Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864129
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 10:20 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT5 SDG#: PCH12-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	**Acenaphthene**	83-32-9	**0.1**	**J**	0.09	1
07805	Acenaphthylene	208-96-8	N.D.		0.09	1
07805	**Anthracene**	120-12-7	**0.2**	**J**	0.09	1
07805	**Benzo(a)anthracene**	56-55-3	**0.2**	**J**	0.09	1
07805	**Benzo(a)pyrene**	50-32-8	**0.2**	**J**	0.09	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.2**	**J**	0.09	1
07805	**Benzo(g,h,i)perylene**	191-24-2	**0.1**	**J**	0.09	1
07805	**Benzo(k)fluoranthene**	207-08-9	**0.1**	**J**	0.09	1
07805	**Chrysene**	218-01-9	**0.2**	**J**	0.09	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.09	1
07805	**Fluoranthene**	206-44-0	**0.3**	**J**	0.09	1
07805	Fluorene	86-73-7	N.D.		0.09	1
07805	**Indeno(1,2,3-cd)pyrene**	193-39-5	**0.1**	**J**	0.09	1
07805	**Naphthalene**	91-20-3	**0.1**	**J**	0.09	1
07805	**Phenanthrene**	85-01-8	**0.4**	**J**	0.09	1
07805	**Pyrene**	129-00-0	**0.4**	**J**	0.09	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 03:17	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 03:17	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/21/2012 11:22	Joseph M Gambler	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

Eurofins Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

NW 2/5/13

Sample Description: FB111412 Grab Water
COC: 303287
Patchogue, NY

LLI Sample # WW 6864130
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 10:30 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT6 SDG#: PCH12-06FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10903	Benzene	71-43-2	N.D.	0.5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10903	Toluene	108-88-3	N.D.	0.7	1
10903	m+p-Xylene	179601-23-1	N.D.	0.8	1
10903	o-Xylene	95-47-6	N.D.	0.8	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	
07805	Acenaphthene	83-32-9	N.D.	0.1	1
07805	Acenaphthylene	208-96-8	N.D.	0.1	1
07805	Anthracene	120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	1
07805	Chrysene	218-01-9	N.D.	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	1
07805	Fluoranthene	206-44-0	N.D.	0.1	1
07805	Fluorene	86-73-7	N.D.	0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
07805	Naphthalene	91-20-3	N.D.	0.1	1
07805	Phenanthrene	85-01-8	N.D.	0.1	1
07805	Pyrene	129-00-0	N.D.	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 03:39	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 03:39	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/21/2012 11:44	Joseph M Gambler	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

7

Sample Description: MW-8S Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864131
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 11:46 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT7 SDG#: PCH12-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	**Acenaphthene**	83-32-9	**0.5**		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.1**	J	0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	**Phenanthrene**	85-01-8	**0.1**	J	0.1	1
07805	**Pyrene**	129-00-0	**0.1**	J	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 04:02	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 04:02	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/21/2012 12:07	Joseph M Gambler	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

8

Sample Description: MW-8D Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864132
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 11:49 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT8 SDG#: PCH12-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	**J**	0.1	1
07805	**Benzo(a)pyrene**	50-32-8	**0.1**	**J**	0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.1**	**J**	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	**Chrysene**	218-01-9	**0.2**	**J**	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.2**	**J**	0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	**Phenanthrene**	85-01-8	**0.2**	**J**	0.1	1
07805	**Pyrene**	129-00-0	**0.3**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 04:25	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 04:25	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/21/2012 12:29	Joseph M Gambler	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

9

Sample Description: MW-4D Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864133
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 14:07 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHT9 SDG#: PCH12-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10903	Benzene	71-43-2	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	Toluene	108-88-3	N.D.		0.7	1
10903	m+p-Xylene	179601-23-1	N.D.		0.8	1
10903	o-Xylene	95-47-6	N.D.		0.8	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	**Acenaphthene**	83-32-9	**0.6**		0.09	1
07805	**Acenaphthylene**	208-96-8	**6**		0.09	1
07805	**Anthracene**	120-12-7	**0.2**	**J**	0.09	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.09	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.09	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.09	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.09	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.09	1
07805	Chrysene	218-01-9	N.D.		0.09	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.09	1
07805	Fluoranthene	206-44-0	N.D.		0.09	1
07805	**Fluorene**	86-73-7	**2**		0.09	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.09	1
07805	**Naphthalene**	91-20-3	**0.9**		0.09	1
07805	**Phenanthrene**	85-01-8	**2**		0.09	1
07805	Pyrene	129-00-0	N.D.		0.09	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 04:48	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 04:48	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/21/2012 12:52	Joseph M Gambler	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

Eurofins Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

10

Sample Description: MW-4S Grab Groundwater
COC: 303287
Patchogue, NY

LLI Sample # WW 6864134
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/14/2012 14:11 by NPB

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH10 SDG#: PCH12-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10903	**Benzene**	71-43-2	**3**	**J**	0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10903	**Toluene**	108-88-3	**2**	**J**	0.7	1
10903	**m+p-Xylene**	179601-23-1	**2**	**J**	0.8	1
10903	**o-Xylene**	95-47-6	**5**		0.8	1
10903	**Xylene (Total)**	1330-20-7	**7**		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	**Anthracene**	120-12-7	**0.3**	**J**	0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	Fluoranthene	206-44-0	N.D.		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	**Pyrene**	129-00-0	**0.1**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/22/2012 05:11	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/22/2012 05:11	Brett W Kenyon	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	12322WAE026	11/21/2012 13:14	Joseph M Gambler	1
07807	BNA Water Extraction	SW-846 3510C	1	12322WAE026	11/18/2012 22:15	Roman Kuropatkin	1

NW 2/5/13

eurofins | Lancaster Laboratories

Analysis Report

11

Sample Description: Trip Blank Water
COC: 303288
Patchogue, NY

LLI Sample # WW 6864135
LLI Group # 1349934
Account # 09286

Project Name: Patchogue, NY

Collected: 11/13/2012

Submitted: 11/16/2012 18:05
Reported: 11/29/2012 18:11

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH11 SDG#: PCH12-11TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	
10903	Benzene	71-43-2	N.D.	0.5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	1
10903	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10903	Toluene	108-88-3	N.D.	0.7	1
10903	m+p-Xylene	179601-23-1	N.D.	0.8	1
10903	o-Xylene	95-47-6	N.D.	0.8	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	UST VOCs 8260 (Water)	SW-846 8260B	1	N123262AA	11/21/2012 23:28	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N123262AA	11/21/2012 23:28	Brett W Kenyon	1

NW 2/5/13

Appendix D: Electronic Data Deliverable (CD-ROM)