Fourth Quarter 2011
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

February 2012

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175 East Old Country Road
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Section 1

Introduction

Brown and Caldwell Associates (BC) is pleased to submit this report containing the data deliverables related to the Fourth Quarter 2011 groundwater monitoring event conducted at the Patchogue Former Manufactured Gas Plant (MGP) Site (hereinafter referred to as the "Site"). The groundwater monitoring event 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 in monitoring wells for the presence of non-aqueous phase liquids (NAPL) (Table 1);
- Table summarizing the analytical results of groundwater samples including a comparison to applicable groundwater quality criteria (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 map depicting generalized direction of groundwater flow based on groundwater elevation data from wells and surface water elevation data from staff gauges in the Patchogue River (Figure 1);
- 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

A total of ten groundwater monitoring events have been conducted at the Site since March 2008. These ten events include: two monitoring events conducted as part of the Remedial Investigation (RI) in March 2008 and July 2008; four semi-annual monitoring events conducted between March 2009 and September 2010; and four quarterly monitoring events in January 2011, April 2011, August 2011 and November 2011. The November 2011 event is 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 November 2011 monitoring event, described herein, is the fourth quarterly monitoring event.

Section 2

Scope of Work

Field activities for the groundwater monitoring event were conducted by BC on November 16 and 17, 2011. On November 16, 2011, prior to conducting groundwater sampling, depth-to-water measurements and NAPL gauging were conducted on the 14 monitoring wells associated with the Site. The level of the Patchogue River was also measured at the two staff gauges. Locations of the 14 monitoring wells and staff gauges are depicted on Figure 1.

Groundwater samples were collected from 12 monitoring wells on November 16 and 17, 2011. Wells MW-5 and MW-6 were not sampled this quarter due to presence of NAPL in these wells as observed during the 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 USEPA (July 1996, Revised January 2010) protocol. Samples were submitted to an analytical laboratory (Lancaster Laboratories, Inc.) and analyzed for: BTEX 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 samples were submitted for the above-described laboratory analyses 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 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 from the November 16, 2011 measurements. Figure 1 illustrates the elevation contours of the water table based on these data. The contours were developed using water level data only from the shallow wells 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. The groundwater elevation (hydraulic head) values for the wells screened in deeper intervals are posted on Figure 1, however, only the values from the shallow wells and staff gauges were used in developing the contour lines because these values more representative of water table elevations. 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. A comparison of the groundwater levels in the site monitoring wells to river elevations, as measured at the staff gauge locations, shows that groundwater elevations are higher than the river level indicating that the groundwater discharges to the river. The upward vertical hydraulic gradient measured at a well cluster adjacent to the river, MW-4S and D, further supports this conclusion (Note that typically, groundwater elevation data from well cluster MW-9S and D also show an upward gradient. However, at the time of the water level measurements, there was an obstruction in MW-9D which prevented water level measurements at the time. The obstruction was later removed prior to groundwater sampling). The general configuration of the water table contours (as shown on Figure 1), developed using the November 16, 2011 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 November 2011 quarterly groundwater sampling event. NAPL was identified in the following wells during the gauging activities:

- **MW-5:** Brown-black DNAPL on last 0.1 ft of threaded rod, moderate tar-like odor.
- **MW-6:** Black NAPL blebs on bottom 0.1 ft of threaded rod, slight tar-like odor.

NAPL had been observed in these two wells on occasion during previous NAPL 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 2011 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. Tables that compare total BTEX and total PAH concentrations from this sampling event to previous sampling events are provided as Tables 3 and 4, respectively.

As described above, during water level monitoring and gauging activities, NAPL was identified in two of the 14 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. Therefore, these two wells were not sampled. Groundwater samples were collected from the remaining 12 monitoring wells and submitted for analysis. BTEX compounds were not detected in groundwater samples from any of these wells. MTBE was detected only at MW-8S, at an estimated concentration below the quantitation limit of the analysis and below the Class GA groundwater quality criteria. 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 wells MW-2D, MW-3, MW-9S, and MW-9D, 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 during the Fourth Quarter 2011 (August 2011) event. These results are similar to those from the previous monitoring event conducted in August 2011. In general, the PAH concentrations measured at these locations are not dissimilar from data from previous quarters. Of note, however, is that the method detection limits achieved by the laboratory for the analyzed constituents during this quarter and the previous quarter (August 2011) were substantially less than during the first two quarterly sampling events of 2011 (January and April 2011) and thus, the low-level concentrations that were measured this quarter, if present during the previous quarters, would not have been previously detected. The six PAH compounds that were identified at concentrations above the Class GA groundwater quality criteria--benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene and indeno(1,2,3-cd)pyrene--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, while the criteria for the sixth PAH, benzo(a)pyrene, is a Part 703 standard. The standard for benzo(a)pyrene was exceeded in samples from three wells, MW-3, MW-9S, and MW-9D, all at concentrations below the method quantitation limit. The guidance value for the six PAHs, 0.002 µg/L, is nearly two orders of magnitude below the method detection limit, and 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 quarterly groundwater monitoring.

Section 4

Summary and Conclusions

NAPL was identified in two of the 14 monitoring wells, MW-5 and MW-6 during the Fourth Quarter 2011 (November 2011), as in previous monitoring events. Both MW-5 and MW-6 are located in the center of the Site in the area of former MGP operations. No BTEX compounds were detected during the analysis of groundwater samples collected from the twelve other monitoring wells during this monitoring event. MTBE was detected in the sample from one well, MW-8S, with an estimated concentration below the quantitation limit and below the Class GA groundwater quality criteria. At eight of the twelve wells, PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria. However, in samples collected from wells MW-2D, MW-3, MW-9S, and MW-9D, 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. Of the locations with a criteria exceedance, three locations have an exceedance of a Part 703 Standard; the other exceedances identified are exceedances of unpromulgated guidance values. The criteria for these compounds are extremely low, approximately two orders of magnitude below the laboratory method detection limit. These findings are consistent with those of the previous monitoring event (August 2011). The detection of these constituents during this event and the previous event may be a result of the decrease in the method detection limits achieved by the laboratory relative to previous monitoring periods in January and April 2011. 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. This will be further evaluated through subsequent quarterly monitoring events.

During the fourth quarter 2011, and the previous three quarters (first, second and third quarter 2011), the concentrations of BTEX and PAHs in the shallow groundwater and the areal distribution of these concentrations are similar to those from monitoring events which occurred prior to March 2010. This indicates that concentrations of chemical constituents 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. Quarterly monitoring will continue in order to confirm these conditions.

References

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.

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
NOVEMBER 2011
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Well ID	Top of Casing Elevation (ft., NAVD)	11/16/2011 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	5.50	5.73	ND	16.2	
MW-2S	8.97	4.11	4.86	ND	14.05	
MW-2D	8.23	3.47	4.76	ND	26.2	
MW-3	5.39	1.86	3.53	ND	10.48	
MW-4S	7.74	4.45	3.29	ND	12.1	
MW-4D	7.57	4.24	3.33	ND	26.5	
MW-5	7.93	3.67	4.26	16.55	16.65	Sheen on top of water column. Brown-black DNAPL on last 0.1ft of threaded rod, moderate tar-like odor.
MW-6	8.08	3.37	4.71	21.7	21.8	Black NAPL blebs on bottom 0.1ft of threaded rod, slight tar-like odor.
MW-7S	8.21	4.08	4.13	ND	12.4	
MW-7D	8.09	3.94	4.15	ND	27.9	
MW-8S	4.86	0.41	4.45	ND	9.8	
MW-8D	4.77	0.35	4.42	ND	25.1	
MW-9S	4.47	0.62	3.85	ND	10.23	
MW-9D	4.66	NM	NA	ND	23.15	Obstruction in well at time of measurement. Obstruction removed prior to sampling.
SG-1	5.23	2.53	2.70	--	NA	
SG-2	5.16	2.19	2.97	--	NA	

Notes:
NAVD - North American Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-aqueous phase liquid
NA - Not applicable
NM - Not measured

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	MW-1	MW-2S	MW-2D	MW-3	MW-3 DUP	MW-4S	MW-4D
				Date	11/16/2011	11/17/2011	11/17/2011	11/16/2011	11/16/2011	11/17/2011	11/17/2011
Volatile Organic Compounds											
BTEX											
Benzene	NE	1	µg/L		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	NE	5	µg/L		0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	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	0.8 U
m&p-Xylenes	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
o-Xylene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Xylenes, Total	NE	NE	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Total BTEX	NE	NE	µg/L		ND	ND	ND	ND	ND	ND	ND
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	0.5 U
Semi-Volatile Organic Compounds (SVOCs)											
Polycyclic Aromatic Hydrocarbons (PAHs)											
Acenaphthene	20	NE	µg/L		0.1 U	0.1 U	0.1 U	0.9	1	0.1 U	0.1 U
Acenaphthylene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	0.7	0.9	0.2 J	0.1 U
Anthracene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.2 J	0.3 J	0.1 U	0.1 U
Benzo(a)anthracene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	**0.1 J**	**0.1 J**	0.1 U	0.1 U
Benzo(a)pyrene	NE	0	µg/L		0.1 U	0.1 U	0.1 U	**0.2 J**	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 J**	**0.2 J**	0.1 U	0.1 U	0.1 U
Benzo(g,h,i)perylene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	1	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**	0.1 U	0.1 U	0.1 U
Chrysene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	**0.2 J**	**0.1 J**	0.1 U	0.1 U
Dibenzo(a,h)anthracene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	0.2 J	0.1 U	0.1 U	0.1 U
Fluoranthene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	3	3	0.1 U	0.1 U
Fluorene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 J	0.1 U	0.1 U
Indeno(1,2,3-cd)pyrene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	**0.5 J**	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-2S	MW-2D	MW-3	MW-3 DUP	MW-4S	MW-4D
Constituent	Guidance	Standard	Units	Date	11/16/2011	11/17/2011	11/17/2011	11/16/2011	11/16/2011	11/17/2011	11/17/2011
Naphthalene	10	NE	µg/L		0.1 U	0.1 U	0.1 J	0.1 U	0.1 U	0.1 J	0.1 U
Phenanthrene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pyrene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	3	3	0.1 J	0.1 U
Total PAHs	NE	NE	µg/L		ND	ND	0.2	10	8.5	0.4	ND

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-7S 11/17/2011	MW-7D 11/17/2011	MW-8S 11/16/2011	MW-8D 11/16/2011	MW-9S 11/17/2011	MW-9D 11/17/2011
Volatile Organic Compounds										
BTEX										
Benzene	NE	1	µg/L		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	NE	5	µg/L		0.7 U	0.7 U	0.7 U	0.7 U	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	0.8 U	0.8 U	0.8 U
o-Xylene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Xylenes, Total	NE	NE	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Total BTEX	NE	NE	µg/L		ND	ND	ND	ND	ND	ND
Other VOCs										
Methyl Tertiary Butyl Ether	10	NE	µg/L		0.5 U	0.5 U	0.5 J	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	0.1 U	0.5 J	0.1 U	3	0.1 U
Acenaphthylene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.9	0.1 J
Anthracene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 J	0.2 J
Benzo(a)anthracene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	**0.3 J**	**0.2 J**
Benzo(a)pyrene	NE	0	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	**0.2 J**	**0.2 J**
Benzo(b)fluoranthene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	**0.3 J**	**0.3 J**
Benzo(g,h,i)perylene	NE	NE	µg/L		0.1 U	0.1 U	0.1 U	0.2 J	0.2 J	0.2 J
Benzo(k)fluoranthene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.2 J**
Chrysene	0.002	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	**0.3 J**	**0.3 J**
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	0.1 U	0.1 U	0.1 U	0.7	0.4 J
Fluorene	50	NE	µg/L		0.1 U	0.1 U	0.1 J	0.1 U	0.3 J	0.2 J
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 J**

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-7S	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D
Constituent	Guidance	Standard	Units	Date	11/17/2011	11/17/2011	11/16/2011	11/16/2011	11/17/2011	11/17/2011
Naphthalene	10	NE	µg/L		0.1 U	0.1 U	0.2 J	0.1 U	0.1 U	0.1 U
Phenanthrene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	0.2 J	0.4 J
Pyrene	50	NE	µg/L		0.1 U	0.1 U	0.1 U	0.1 U	1	0.6
Total PAHs	NE	NE	µg/L		ND	ND	0.8	0.2	8	3.4

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.

Boxed concentrations are above New York State Class GA Groundwater Standards or Guidance values.

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

		Total BTEX Concentrations (µg/L)												
		Sampling Date												
	Total Depth	2008		2009		2010		2011						
Well ID	(ft., bgs)	March	July	March	September	March	September	January	April	August	November	Min	Max	Mean
MW-1	16.2	0	NS	0	0	0	0	1.7	0	0	0	0	1.7	0.19
MW-2S	14.05	0	0	0	0	0	0	0	0	0	0	0	0	0
MW-2D	26.2	0	0	0	0	0	0	0	0	0	0	0	0	0
MW-3	10.48	0	0	0	0	0	0	0	0	0	0	0	0	0
MW-4S	12.1	3.4	0	0	0	0	0	0	0	0	0	0	3.4	0.34
MW-4D	26.5	0	0	0	0	0	0	0	0	0	0	0	0	0
MW-5	16.65	1016	678	975	1257	637	NS	NS	NS	NS	NS	637	1257	913
MW-6	21.8	57	0	0	1	2	0	NS	NS	NS	NS	0	57	10
MW-7S	12.4	NS	0	0	0	0	0	0	0	0	0	0	0	0
MW-7D	27.9	NS	0	1	0	9	0	0	0	0	0	0	9	1.1
MW-8S	9.8	NS	0	0	0	0	0	0	0	0	0	0	0	0
MW-8D	25.1	NS	0	0	0	0	0	0	0	0	0	0	0	0
MW-9S	10.23	NS	0	0	0	0	27	1	0	0	0	0	27	3.1
MW-9D	23.15	NS	0	0	0	0	0	0	0	0	0	0	0	0

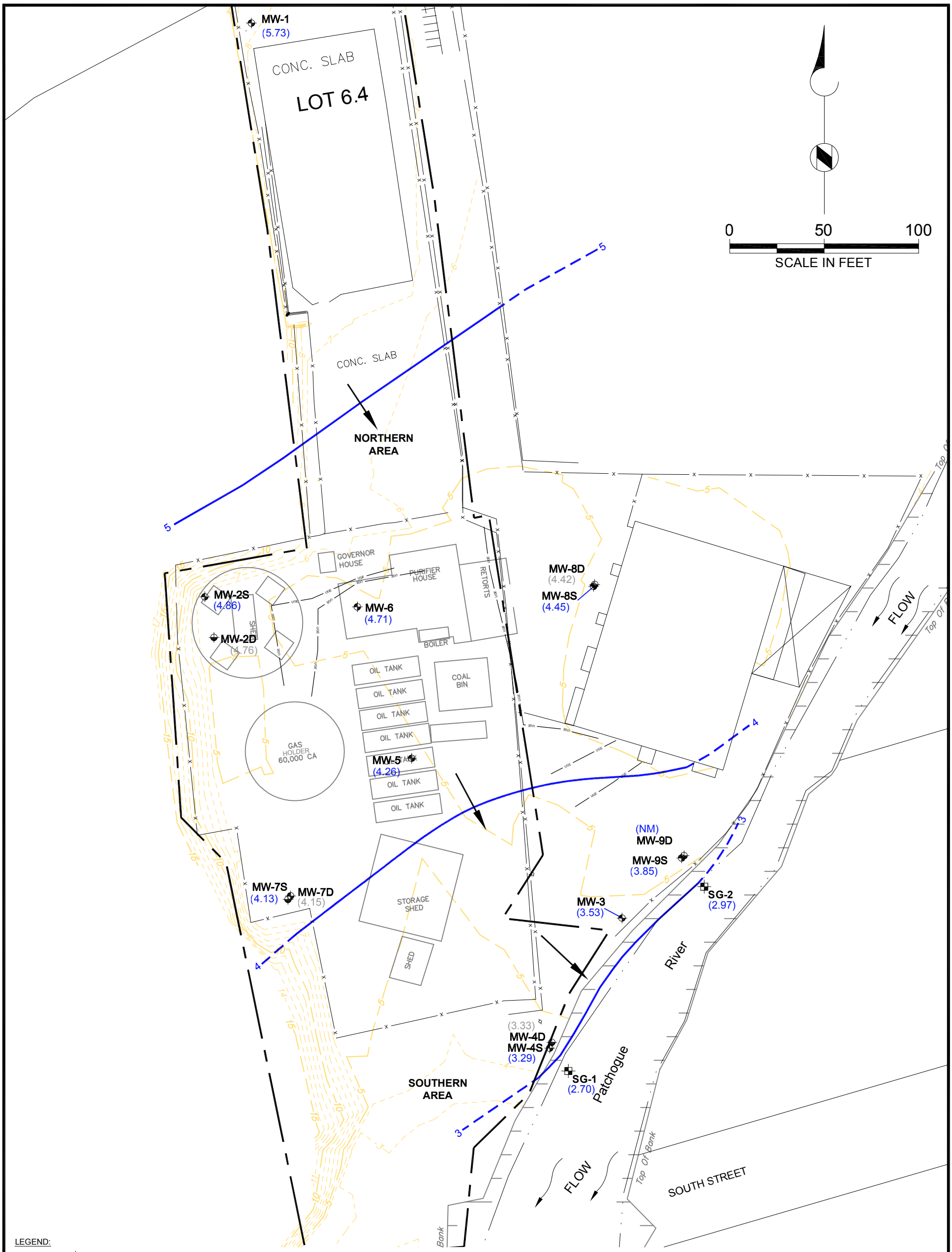
Notes:
BTEX - Benzene, toluene, ethylbenzene and xylene isomers
µg/L - micrograms per liter
NS - Not sampled.

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

		Total PAH Concentrations (µg/L)												
		Sampling Date												
	Total Depth	2008		2009		2010		2011						
Well ID	(ft., bgs)	March	July	March	September	March	September	January	April	August	November	Min	Max	Mean
MW-1	16.2	0	NS	0	0	0	0	22	0	0	0	0	22	2.4
MW-2S	14.05	0	0.7	0	0	0	0	0	0	0	0	0	0.7	0.07
MW-2D	26.2	0	0	0	0	0	0	0	0	0.1	0.2	0	0.2	0.03
MW-3	10.48	0.76	0	0	0	0	128	17	6	14	10	0	128	17.6
MW-4S	12.1	0.6	8.0	0	0	0	0	0	0	0.1	0.4	0	8.0	0.91
MW-4D	26.5	4.3	0	0	0	39	6	12	20	0	0	0	39	8.1
MW-5	16.65	1774	1799	2730	3373	2390	NS	NS	NS	NS	NS	1774	3373	2413
MW-6	21.8	214	154	0	1	17	14	NS	NS	NS	NS	0	214	67
MW-7S	12.4	NS	0	0	0	0	0	0	0	0	0	0	0	0
MW-7D	27.9	NS	0.47	0	0	0	0	0	0	0	0	0	0.5	0.05
MW-8S	9.8	NS	0	0	0	22	11	6	0	0.4	0.8	0	22	4.5
MW-8D	25.1	NS	0	0	0	0	0	0	0	0	0.2	0	0.2	0.02
MW-9S	10.23	NS	12.0	0	0	2	396	42	9	16	8	0	396	54
MW-9D	23.15	NS	0	0	0	0	0	5	0	1.2	3.4	0	5	1.1

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

Figures



LEGEND:

- SHALLOW MONITORING WELL LOCATION
- DEEP MONITORING WELL LOCATION
- STAFF GAUGE
- PROPERTY LINE
- FENCE
- TOPOGRAPHIC CONTOUR (FT., NAVD)
- UNDERGROUND ELECTRIC LINE
- WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- (4.47) WATER ELEVATION (FT., NAVD) FOR SHALLOW MONITORING WELL OR STAFF GAUGE
- (3.76) GROUNDWATER HEAD ELEVATION (FT., NAVD) FOR WELLS SCREENED BELOW WATER TABLE (FROM DEEP MONITORING WELL)
- (NM) NOT MEASURED

FIGURE 1

WATER TABLE CONTOUR MAP
NOVEMBER 16, 2011

NATIONAL GRID
PATCHOGUE FORMER MGP SITE
VILLAGE OF PATCHOGUE, NEW YORK

DATE: 2/12

PROJECT NUMBER: 138893.316

Brown and Caldwell
ASSOCIATES
ALLENDALE, NEW JERSEY

P:\DRAFTING\NATIONAL_GRID\PATCHOGUE\QUARTERLY-GW-CONTOUR-MAP\NOVEMBER-16-2011\FIGURE 1.DWG 02/14/2012 08:34:57AM By:rjames XREFS: Rev_Basemap_1-12-11 Layout: Layout1

Appendix A: Field Sampling Sheets

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

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

Project: Patchogue
Personnel: BAS CRM

Date: 11/16/11 Time: 10 49
Weather: cloudy Air Temp.: 50's

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 5.50 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: N/A To be purged: N/A

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 ml/min Elapsed Time: 30 min 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: 6.08 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 17.14 Spec. Cond.: 1.42 Meter Model: _____ Meter S/N: _____
ORP: -10 DO: 1.16 Turbidity: 0.0
DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☐ No ☑ Yes Name: MW-1 (MS/MSD)
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: _____

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BAS CRM
Purge/Sample Depth: 12 ft

Project Number:
Well ID: MW-1
Sample ID:

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
10:48	5.77	16.29	184	1.34	7.99	11.5	5.50	250	
10:51	5.91	16.56	69	1.40	3.62	61.7	5.52		
10:54	5.98	16.71	29	1.41	2.35	0.0			
10:57	6.00	16.91	19	1.40	2.15	0.0			
11:00	6.02	16.96	10	1.41	1.84	0.0			
11:03	6.04	17.01	4	1.41	1.61	0.0			
11:06	6.05	17.03	-0	1.41	1.50	0.0	5.57		
11:09	6.08	17.07	-4	1.41	1.33	0.0			
11:12	6.08	17.13	-6	1.41	1.26	0.0			
11:15	6.09	17.12	-8	1.42	1.20	0.0			
11:18	6.08	17.14	-10	1.42	1.16	0.0			
11:25	sample	collected							

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: MW-25 (if different from well no.)

Project: Patchogue
Personnel: BAS CRM

Date: 12/16 Time: 12:16
Weather: Cloudy Air Temp.: 50s

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.01 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: N/A To be purged: N/A

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 mL/min Elapsed Time: 30 min 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: 5.79 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 14.05 Spec. Cond.: .553 Meter Model: _____ Meter S/N: _____
ORP: 243 DO: 3.87 Turbidity: 0.0
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: _____

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BAS CRM
Purge/Sample Depth: 8ft.
Project Number:
Well ID: MW-25
Sample ID:

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
12:16	5.76	13.43	229	.612	6.14	66.8	4.01	250	
12:19	5.73	13.85	227	.592	5.17	0.0			
12:22	5.73	13.90	226	.590	4.97	0.0			
12:25	5.73	13.96	227	.581	4.72	0.0			
12:28	5.74	13.92	228	.576	4.49	0.0	4.06		
12:31	5.74	14.10	231	.567	4.28	0.0			
12:34	5.74	13.94	233	.564	4.17	0.0			
12:37	5.75	13.94	235	.564	4.10	0.0			
12:40	5.75	14.09	237	.556	3.95	0.0	4.08		
12:43	5.75	13.91	241	.554	3.97	0.0			
12:46	5.74	14.05	243	.553	3.87	0.0			
12:50	sample	collected							

BAS 12/17/14

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: MW-20 (if different from well no.)

Project: Perchase Natural Gas
Personnel: CRM BTS

Date: 11/17/11 Time: 12:12
Weather: Cloudy Air Temp.: 49

WELL DATA:

Casing Diameter: _____ ☐ Stainless Steel ☐ Steel ☒ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: _____ ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 3.50 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: 150 Elapsed Time: _____ Volume Pumped: _____
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: 5.03 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 13.7 Spec. Cond.: 0.70 Meter Model: Horiba U-22 Meter S/N: _____
ORP: 300 DO: 7.78 Turbidity: 11
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: 11/17/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue Orchard Grad
Personnel: CRF BAS
Purge/Sample Depth: 22 ft
Project Number:
Well ID: MW-2D
Sample ID: MW-2D

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
12:12	6.76	12.8	190	0.48	12.08	4	3.60		
12:15	6.11	13.9	235	0.48	10.88	2			
12:18	5.56	13.7	260	0.49	9.82	5			
12:21	5.30	13.8	281	0.54	9.10	9	3.52		
12:24	5.18	13.8	285	0.60	8.82	12			
12:27	5.11	13.7	290	0.63	8.52	16			
12:30	5.09	13.7	293	0.65	8.33	13			
12:33	5.07	13.7	296	0.66	8.18	12			
12:36	5.05	13.7	297	0.68	7.99	9			
12:39	5.03	13.8	298	0.69	7.84	9			
12:42	5.03	13.9	300	0.70	7.78	11			

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: Patchogue
Personnel: CRM BAS

Date: 11/16/11 Time: 13:20
Weather: Rainy Air Temp.: 57°F

WELL DATA:

Casing Diameter: 2 ☐ Stainless Steel ☐ Steel ☒ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2 ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 1.80 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 mL/min Elapsed Time: 30 min Volume Pumped: 1.5 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: 6.01 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 14.76 Spec. Cond.: 0.947 Meter Model: Horiba U-22 Meter S/N: _____
ORP: 26 DO: 1.46 Turbidity: 0.0
DUP : ☐ No ☒ Yes Name: DUP-111611
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: 11/16/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PdHouse
Personnel: CRM ~~DAS~~
Purge/Sample Depth: 6 ft
Project Number:
Well ID: MW-3
Sample ID: MW-3

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
12:45	6.09	14.03	91	0.775	5.00	0.0	1.80	200 mL/min	
12:48	6.06	14.06	68	0.87	4.41	0.0			
12:51	6.04	14.11	64	0.900	3.47	0.0			
12:54	6.03	14.13	46	0.905	3.29	0.0			
12:57	6.02	14.17	39	0.900	3.10	0.0	1.80	200 mL/min	
13:00	6.02	14.21	34	0.872	2.94	0.0			
13:03	6.01	14.21	31	0.872	2.32	0.0			
13:06	6.00	14.21	29	0.900	2.16	0.0			
13:09	6.01	14.25	27	0.910	1.99	0.0			
13:12	6.01	14.26	26	0.913	1.97	0.0			
13:15	6.01	14.28	26	0.917	1.96	0.0			
		Sampled at 13:20							

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

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

Project: Patchogue
Personnel: BAS CRM

Date: 11/17/11 Time: 8 46
Weather: cloudy Air Temp.: 50's

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.45 ft Bottom of Well: 9 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: N/A To be purged: N/A

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 mL/min Elapsed Time: 30 min 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: 5.61 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 14.88 Spec. Cond.: .621 Meter Model: _____ Meter S/N: _____
ORP: 121 DO: 3.81 Turbidity: 0.0
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: _____

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BAS CRM
Purge/Sample Depth: 7 ft

Project Number:
Well ID: MW-45
Sample ID:

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (ms/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
8 46	5 99	12.92	79	.569	9.21	79.6	4.45	250	
8 49	5 85	13.18	84	.694	5.98	879			
8 52	5 83	14.14	94	.633	5.17	804			
8 55	5 82	14.48	107	.616	6.47	0.0			
8 58	5.82	14.55	111	.622	5.59	0.0	4.54		
9 01	5 82	14.64	114	.616	4.66	0.0			
9 04	5.83	14.76	118	.615	3.89	0.0			
9 07	5.83	14.77	118	.627	4.11	0.0			
9 10	5.82	14.83	119	.631	3.86	0.0			
9 13	5.81	14.79	120	.630	3.83	0.0			
9 16	5.81	14.86	121	.621	3.81	0.0			
9 20	sample	collected							

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

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

Project: National Grid - Patchogue
Personnel: CRM BAS

Date: 11/17/11 Time: 9:04
Weather: Cloudy Air Temp.: 50

WELL DATA:

Casing Diameter: 2 ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2 ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 9.20 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: _____ Elapsed Time: _____ Volume Pumped: _____
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: _____ Meter Model: Horiba U-22 Meter S/N: _____
Temperature: _____ Spec. Cond.: _____ Meter Model: Horiba U-22 Meter S/N: _____
ORP: _____ DO: _____ Turbidity: _____
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: 11/17/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue National Grid　　Project Number: 138893
Personnel: CRM BHS　　Well ID: MW-4D
Purge/Sample Depth: ~22 ft　　Sample ID: MW-4D

Actual Time	pH	Temp (ºC)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
9:04	5.62	14.5	236	0.68	5.26	42	4.20		
9:15	5.53	14.5	243	0.68	4.34	6	4.23		
9:40	5.65	14.4	240	0.68	3.96	24	4.24		
		3 well	Volume		Purge	Complete			
		9:46	Sample		with	Bailer			

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-75
Sample I.D.: (If different from well no.)

Project: Patchogue
Personnel: MAS CRA

Date: 11/17/11 Time: 10 33
Weather: Cloudy Air Temp.: 49

WELL DATA:

Casing Diameter: 2 ☐ Stainless Steel ☐ Steel ☒ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2 ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.16 ft Bottom of Well: 9 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 mL/min 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: 6.68 Meter Model: Hanna U-22 Meter S/N: _____
Temperature: 13.6 Spec. Cond.: 0.71 Meter Model: Hanna U-22 Meter S/N: _____
ORP: -141 DO: 2.97 Turbidity: IX
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: 11/17/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue National Grid | Project Number:
Personnel: CRM BAS | Well ID:
Purge/Sample Depth: 7ft | Sample ID: MW-7S

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
10:33	6.02	~~14.0~~ 12.3	-87	0.73	6.85	140	4.16		
10:36	6.20	13.1	-112	0.72	3.96	89			
10:39	6.15	13.2	-112	0.72	3.58	78	4.16		
10:42	6.16	13.2	-114	0.72	3.39	69			
10:45	6.22	13.4	-116	0.72	3.32	66			
10:48	6.31	13.4	-121	0.72	3.24	47			
10:51	6.44	13.5	-129	0.72	3.14	30			
10:54	6.52	13.6	-133	0.71	3.10	25			
10:57	6.59	13.5	-137	0.71	3.05	25			
11:00	6.59	13.6	-138	0.71	3.03	22			
11:03	6.68	13.6	-141	0.71	2.97	18			

Sample at 11:10

[illegible signature] 11/15/11

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
Personnel: BAS CRM

Date: 11/17/11 Time: 10:35
Weather: cloudy Air Temp.: 50's

WELL DATA:

Casing Diameter: 6 ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 3.88 ft Bottom of Well: 25 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: N/A To be purged: N/A

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: 150 mL/min Elapsed Time: 30 min Volume Pumped: 1.5 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: 5.61 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 14.40 Spec. Cond.: .612 Meter Model: _____ Meter S/N: _____
ORP: 170 DO: 2.46 Turbidity: 0.0
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: _____

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BAS CRM
Purge/Sample Depth: 22 ft
Project Number:
Well ID: MW-7D
Sample ID:

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
10:35	6.16	12.54	195	.463	6.78	105	3.88	150	
10:38	5.65	13.32	187	.521	5.01	138			
10:41	5.63	13.92	175	.575	3.80	0.0			
10:44	5.64	14.01	170	.600	3.38	0.0			
10:47	5.64	14.13	164	.619	2.96	0.0			
10:50	5.64	14.22	162	.628	2.73	0.0			
10:53	5.64	14.26	161	.632	2.58	0.0	3.89		
10:56	5.64	14.28	161	.636	2.47	0.0			
10:59	5.63	14.26	163	.628	2.50	0.0			
11:02	5.62	14.33	165	.619	2.47	0.0			
11:05	5.62	14.37	167	.614	2.46	0.0			
11:08	5.61	14.40	170	.612	2.46	0.0			
11:15	sample	collected							

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: MW-9S (If different from well no.)

Project: Patchogue
Personnel: BAS CRM

Date: 11/16/11 Time: 14:23
Weather: rainy Air Temp.: 50's

WELL DATA:

Casing Diameter: 4 ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 6.41 ft Bottom of Well: 9 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: N/A To be purged: N/A

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: 300 mL/min Elapsed Time: 39 min Volume Pumped: 4 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: 6.31 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 16.0 Spec. Cond.: .88 Meter Model: _____ Meter S/N: _____
ORP: -90 DO: 3.90 Turbidity: 110
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: _____

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BAS CRM
Purge/Sample Depth: 7 ft.
Project Number:
Well ID: MW-8S
Sample ID:

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
14:23	6.08	15.8	-27	.85	6.68	+990	.41		
14:26	5.98	15.9	-36	.86	5.48	+990			
14:29	6.01	15.9	-48	.87	4.88	+990			
14:32	6.05	16.0	-54	.87	4.73	+990			
14:35	6.13	16.0	-63	.88	4.49	700			
14:38	6.20	16.0	-71	.88	4.31	460			
14:41	6.24	16.0	-73	.88	4.24	400			
14:44	6.26	16.0	-80	.88	4.12	290			
14:47	6.28	16.0	-81	.88	4.06	220			
14:50	6.30	16.0	-84	.88	4.02	210			
14:53	6.31	16.0	-85	.88	3.99	180			
14:56	6.30	16.1	-87	.88	3.95	146			
14:59	6.31	16.0	-87	.88	3.92	120			
15:02	6.31	16.0	-90	.88	3.90	110			
15:05	sample	collected							

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

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

Project: Parchague
Personnel: CRM BAS

Date: 11/16/11 Time: 14:20
Weather: Rain Air Temp.: 52°F

WELL DATA:

Casing Diameter: 2 ☐ Stainless Steel ☐ Steel ☒ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2 ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 0.35 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: 150 Elapsed Time: 30min Volume Pumped: 1 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: 5.65 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 16.60 Spec. Cond.: 0.680 Meter Model: Horiba U-22 Meter S/N: _____
ORP: 147 DO: 1.15 Turbidity: 0.0
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: 11/16/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: CRM DAS
Purge/Sample Depth: 22 Ft
Project Number:
Well ID: MW-8D
Sample ID: MW-8D

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
14:20	5.61	15.71	137	0.434	1.96	0.0	0.35	160	
14:23	5.54	15.70	139	0.482	1.86	0.0			
14:26	5.57	15.67	137	0.548	1.71	0.0			
14:29	5.57	15.65	138	0.578	1.58	0.0			
14:32	5.57	15.63	140	0.599	1.49	0.0			
14:35	5.56	15.62	141	0.610	1.41	0.0	0.37		
14:38	5.55	15.63	143	0.620	1.34	0.0			
14:41	5.55	15.63	144	0.607	1.27	0.0			
14:44	5.55	15.61	145	0.574	1.23	0.0			
14:47	5.56	15.68	146	0.573	1.18	0.0			
14:50	5.55	15.66	147	0.580	1.15	0.0	0.38		
		Sample	cl	14:55					

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: MW-95 (if different from well no.)

Project: Patchogue
Personnel: BAS CRM

Date: 11/17/11 Time: 7:15
Weather: cloudy Air Temp.: 50's

WELL DATA:

Casing Diameter: 6" ☐ 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: N/A To be purged: N/A

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: _____ mL/min Elapsed Time: _____ min Volume Pumped: _____ 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: 6.07 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 14.86 Spec. Cond.: 0.527 Meter Model: Horiba U-22 Meter S/N: _____
ORP: -39 DO: 4.77 Turbidity: 0.0
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: 11/17/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Personnel: BAS CRM
Purge/Sample Depth: 7 ft
Project Number:
Well ID: MW-95
Sample ID:

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
7:17	5.86	13.26	156	.097	8.59	417	.82	250	
7:20	5.86	13.84	113	.128	7.41	287			
7:23	5.86	14.10	55	.157	6.57	132			
7:26	5.87	14.17	42	.222	5.84	0.0	.90		
7:29	5.91	14.51	7	.351	4.30	0.0			
7:32	5.98	14.69	-14	.426	3.65	0.0			
7:35	6.02	14.79	-26	.460	3.15	0.0			
7:38	6.04	14.82	-30	.477	2.89	0.0			
7:41	6.05	14.85	-35	.495	2.64	0.0			
7:44	6.06	14.84	-37	.514	4.68	0.0			
7:47	6.07	14.86	-39	.527	4.77	0.0			
7:50	sample	collected							
			Sampled @			7:50			

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: MW-9S (if different from well no.)

Project: National Grid Patchogue
Personnel: CRM BAS

Date: 11/17/11 Time: 7.14
Weather: Cloudy Air Temp.: 50

WELL DATA:

Casing Diameter: 2 ☐ Stainless Steel ☐ Steel ☒ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2 ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 0.86 ft Bottom of Well: 9 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: 160 ml/min Elapsed Time: 30 min Volume Pumped: 1.5
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: 6.10 Meter Model: Horiba U-22 Meter S/N: _____
Temperature: 14.1 Spec. Cond.: 0.30 Meter Model: Horiba U-22 Meter S/N: _____
ORP: 107 DO: 7.28 Turbidity: 160
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: 11/17/11

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: _____ Project Number: _____
Personnel: CRM BAS Well ID: MW-9D
Purge/Sample Depth: 22 ft Sample ID: MW-9D

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (S/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
7:14	7.00	13.6	54	0.11	11.93	160	0.86		
7:17	6.93	13.9	57	0.10	11.74	140			
7:20	6.85	14.1	62	0.10	11.32	130			
7:23	6.72	14.3	60	0.12	10.74	180			
7:26	6.68	14.2	61	0.15	9.84	220	0.87		
7:29	6.56	14.1	70	0.16	9.53	230			
7:32	6.42	14.1	83	0.18	9.13	220			
7:35	6.27	14.1	94	0.22	8.46	200	0.89		
7:38	6.20	14.1	99	0.29	7.96	180			
7:41	6.14	14.1	104	0.29	7.54	170			
7:44	6.10	14.1	107	0.30	7.26	160			
	Sampled at			7:55					

Appendix B: Laboratory Reports (CD-ROM)

Appendix C: Data Usability Summary Report

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
PATCHOGUE, NEY YORK

Client: Brown and Caldwell, Allendale, New Jersey
SDG: PCH09
Laboratory: Lancaster Laboratories, Lancaster, Pennsylvania
Site: Patchogue, New York
Date: January 12, 2012

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-1	6477561	Water
1MS	MW-1MS	6477562MS	Water
1MSD	MW-1MSD	6477563MSD	Water
2	MW-3	6477564	Water
3	MW-8D	6477565	Water
4	MW-8S	6477566	Water
5	DUP-111611	6477567	Water
6	MW-9S	6477568	Water
7	MW-9D	6477569	Water
8	MW-4S	6477570	Water
9	MW-4D	6477571	Water
10	FB-111711	6477572	Water
11	MW-7S	6477573	Water
12	MW-7D	6477574	Water
13	MW-2D	6477575	Water
14	MW-2S	6477576	Water
15	TRIPBLANK	6477577	Water

A Data Usability Summary Review was performed on the analytical data for thirteen water samples, one aqueous field blank sample, and one aqueous trip blank sample collected November 16-17, 2011 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.

Organics

The following items/criteria were reviewed:

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Duplicate (LCS/LCSD) 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. Data were not qualified.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

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
FB-111711	None- ND	-	-	-	-
TRIPBLANK	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 ug/L	DUP111611 ug/L	RPD	Qualifier
None	-	-	-	-

Semivolatile Organics Compounds (PAH)

Holding Times

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

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 Blanks

- The following table summarizes field blank contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB111711	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. For a high RPD >50% for water samples, results are considered estimated and qualified (J). A high %RPD may indicate a potential bias due to poor laboratory instrument precision.

PAH				
Compound	MW-3 ug/L	DUP111611 ug/L	RPD	Qualifier
Acenaphthene	0.9	1.0	11%	None
Acenaphthylene	0.7	0.9	25%	None
Anthracene	0.2	0.3	67%*	None
Benzo(a)anthracene	0.1	0.1	0%	None
Benzo(a)pyrene	0.2	ND	NC	-
Benzo(b)fluoranthene	0.2	ND	NC	-
Benzo(g,h,i)perylene	1.0	ND	NC	-
Benzo(k)fluoranthene	0.1	ND	NC	-
Chrysene	0.2	0.1	67%*	None
Dibenz(a,h)anthracene	0.2	ND	NC	-
Fluoranthene	3.0	3.0	0%	None
Fluorene	ND	0.1	NC	-
Indeno(1,2,3-cd)pyrene	0.5	ND	NC	-
Pyrene	3.0	3.0	0%	None

* - Since concentrations are so close to detection limit, no action was required

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

Signed: Nancy Weaver Dated: 1/16/12

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.

Analysis Report

Lancaster Laboratories

Sample Description: MW-1 Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477561
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/16/2011 11:25 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT01 SDG#: PCH09-01BKG

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	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	Y113322AA	11/28/2011 22:52	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/28/2011 22:52	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 12:52	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0018

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

llw
1/12/12

Analysis Report

Lancaster Laboratories

2

Sample Description: MW-3 Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477564
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/16/2011 13:20 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT03 SDG#: PCH09-02

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	**0.9**		0.1	1
07805	**Acenaphthylene**	208-96-8	**0.7**		0.1	1
07805	**Anthracene**	120-12-7	**0.2**	J	0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	J	0.1	1
07805	**Benzo(a)pyrene**	50-32-8	**0.2**	J	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	**1**		0.1	1
07805	**Benzo(k)fluoranthene**	207-08-9	**0.1**	J	0.1	1
07805	**Chrysene**	218-01-9	**0.2**	J	0.1	1
07805	**Dibenz(a,h)anthracene**	53-70-3	**0.2**	J	0.1	1
07805	**Fluoranthene**	206-44-0	**3**		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	**Indeno(1,2,3-cd)pyrene**	193-39-5	**0.5**	J	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	**3**		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	Y113322AA	11/28/2011 23:54	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/28/2011 23:54	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 14:04	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0013

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

NW
1/12/12

Analysis Report

Lancaster Laboratories

3

Sample Description: MW-8D Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477565
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/16/2011 14:55 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT8D SDG#: PCH09-03

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	**0.2**	**J**	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	Y113322AA	11/29/2011 00:15	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 00:15	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 14:28	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0814

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MW
1/12/12

Analysis Report

Lancaster Laboratories

4

Sample Description: MW-8S Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477566
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/16/2011 15:05 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT8S SDG#: PCH09-04

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	N.D.		0.5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	1
10903	**Methyl Tertiary Butyl Ether**	1634-04-4	**0.5**	**J**	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**	**J**	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	**0.1**	**J**	0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	**Naphthalene**	91-20-3	**0.2**	**J**	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	Y113322AA	11/29/2011 00:36	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 00:36	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 14:52	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0815

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717-656-2300 Fax: 717-656-2681

MW
1/12/12

Analysis Report

Lancaster Laboratories

5

Sample Description: DUP-111611 Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477567
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/16/2011 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PATFD SDG#: PCH09-05FD

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	**1**		0.1	1
07805	**Acenaphthylene**	208-96-8	**0.9**		0.1	1
07805	**Anthracene**	120-12-7	**0.3**	**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	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	**0.1**	**J**	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**3**		0.1	1
07805	**Fluorene**	86-73-7	**0.1**	**J**	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	**3**		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	Y113322AA	11/29/2011 00:56	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 00:56	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 15:16	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0816

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Analysis Report

Lancaster Laboratories

6

Sample Description: MW-9S Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477568
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 07:50 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT9S SDG#: PCH09-06

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	**3**		0.1	1
07805	**Acenaphthylene**	208-96-8	**0.9**		0.1	1
07805	**Anthracene**	120-12-7	**0.1**	**J**	0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.3**	**J**	0.1	1
07805	**Benzo(a)pyrene**	50-32-8	**0.2**	**J**	0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.3**	**J**	0.1	1
07805	**Benzo(g,h,i)perylene**	191-24-2	**0.2**	**J**	0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	**Chrysene**	218-01-9	**0.3**	**J**	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.7**		0.1	1
07805	**Fluorene**	86-73-7	**0.3**	**J**	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	**1**		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	Y113322AA	11/29/2011 01:17	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 01:17	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 15:40	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 6617

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Analysis Report

Lancaster Laboratories

7

Sample Description: MW-9D Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477569
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 07:55 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT9D SDG#: PCH09-07

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	N.D.		0.1	1
07805	**Acenaphthylene**	208-96-8	**0.1**	**J**	0.1	1
07805	**Anthracene**	120-12-7	**0.2**	**J**	0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.2**	**J**	0.1	1
07805	**Benzo(a)pyrene**	50-32-8	**0.2**	**J**	0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.3**	**J**	0.1	1
07805	**Benzo(g,h,i)perylene**	191-24-2	**0.2**	**J**	0.1	1
07805	**Benzo(k)fluoranthene**	207-08-9	**0.2**	**J**	0.1	1
07805	**Chrysene**	218-01-9	**0.3**	**J**	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.4**	**J**	0.1	1
07805	**Fluorene**	86-73-7	**0.2**	**J**	0.1	1
07805	**Indeno(1,2,3-cd)pyrene**	193-39-5	**0.1**	**J**	0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	**Phenanthrene**	85-01-8	**0.4**	**J**	0.1	1
07805	**Pyrene**	129-00-0	**0.6**		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	Y113322AA	11/29/2011 01:37	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 01:37	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 16:04	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 2818

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MW
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Analysis Report

Lancaster Laboratories

8

Sample Description: MW-4S Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477570
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 09:20 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT4S SDG#: PCH09-08

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	**0.2**	**J**	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	**0.1**	**J**	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	Y113322AA	11/29/2011 01:58	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 01:58	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 16:29	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 8015

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MW
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Analysis Report

Lancaster Laboratories

9

Sample Description: MW-4D Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477571
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 09:45 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT4D SDG#: PCH09-09

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	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	Y113322AA	11/29/2011 02:19	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 02:19	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 16:53	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0828

Lancaster Laboratories, Inc.
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lw
1/12/12

Analysis Report

Lancaster Laboratories

10

Sample Description: FB-111711 Grab Water
COC: 271730
Patchogue, NY

LLI Sample # WW 6477572
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 10:00 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PATFB SDG#: PCH09-10FB

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	Y113322AA	11/29/2011 02:39	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 02:39	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 17:16	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 8821

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MW
11/12/12

Analysis Report

Lancaster Laboratories

11

Sample Description: MW-7S Grab Water
COC: 192824
Patchogue, NY

LLI Sample # WW 6477573
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 11:10 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT7S SDG#: PCH09-11

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	Y113322AA	11/29/2011 03:00	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 03:00	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 17:41	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0822

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MJ
1/12/12

Analysis Report

Lancaster Laboratories

12

Sample Description: MW-7D Grab Water
COC: 192824
Patchogue, NY

LLI Sample # WW 6477574
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 11:15 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PAT7D SDG#: PCH09-12

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	Y113322AA	11/29/2011 03:20	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 03:20	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 18:04	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH07 8023

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WW
1/12/12

Analysis Report

Lancaster Laboratories

13

Sample Description: MW-2D Grab Water
COC: 192824
Patchogue, NY

LLI Sample # WW 6477575
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 12:45 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

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Allendale NJ 07401

PAT2D SDG#: PCH09-13

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	**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	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	**0.1**	**J**	0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	Pyrene	129-00-0	N.D.		0.1	1

Benzo(b)fluoranthene and benzo(k)fluoranthene were not resolved under the sample analysis conditions. The result reported for benzo(b)fluoranthene represents the combined total of both isomers.

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	Y113322AA	11/29/2011 03:41	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 03:41	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 18:28	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 0024

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MW
1/12/12

Analysis Report

Lancaster Laboratories

14

Sample Description: MW-2S Grab Water
COC: 192824
Patchogue, NY

LLI Sample # WW 6477576
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/17/2011 12:50 by CM

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

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110 Commerce Drive
Allendale NJ 07401

PAT2S SDG#: PCH09-14

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	Y113322AA	11/29/2011 04:02	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 04:02	Frank A Valla, Jr	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	11325WAK026	12/05/2011 18:52	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	11325WAK026	11/22/2011 09:30	Kerrie A Freeburn	1

PCH09 8825

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MW
1/12/12

Analysis Report

Lancaster Laboratories

15

Sample Description: Trip Blank Water
COC: 192824
Patchogue, NY

LLI Sample # WW 6477577
LLI Group # 1277546
Account # 09286

Project Name: Patchogue, NY

Collected: 11/16/2011

Submitted: 11/19/2011 09:50
Reported: 12/08/2011 11:57

Brown & Caldwell
110 Commerce Drive
Allendale NJ 07401

PATTB SDG#: PCH09-15TB*

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	Y113322AA	11/29/2011 04:22	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y113322AA	11/29/2011 04:22	Frank A Valla, Jr	1

PCH09 0026

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WW
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Appendix D: Electronic Data Deliverable (CD-ROM)