



April 28, 2017

Michael D. MacCabe, P.E.
Senior Environmental Engineer
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, NY 12233-7016

**Re: Site Status Update Report
Former Mobil Station #17-EMW
304 Columbia Street
Brooklyn, New York
NYSDEC Spill #89-04339**

Dear Mr. MacCabe:

Please find the enclosed *Site Status Update Report* for work performed between January through March 2017 for the Former Mobil Station #17-EMW (“the Site”) located at 304 Columbia Street in Brooklyn, New York. During this monitoring period, the following work was performed:

Quarterly Groundwater Monitoring

The 1st quarter groundwater monitoring event was conducted on March 16, 2017. Ten (10) monitoring wells were gauged and sampled (MW-2, MW-7A, MW-11 through MW-16, MW-19, and MW-20). Samples collected were analyzed for BTEX and MTBE via EPA Method 8260. Monitoring well MW-3 could not be located and therefore was not gauged or sampled. Monitoring wells MW-1, MW-5, MW-8A, MW-9, MW-10, MW-17, and MW-18 were inaccessible due to snow and/or parked cars and therefore were not gauged or sampled. LPH was detected in monitoring wells MW-2 (0.35 feet) and MW-13 (0.01 feet) during the 1st quarter 2017 groundwater monitoring event.

Dissolved BTEX concentrations ranged from non-detect at two (2) wells (MW-7A and MW-20) to 2,214 µg/L (MW-16). Dissolved MTBE concentrations ranged from non-detect at seven (7) wells (MW-7A, MW-11 through MW-14, MW-16, and MW-19) to 4.17 µg/L (MW-15).

The next groundwater monitoring event will be conducted in June 2017 and the 2nd Quarter 2017 Site Status Update Report will be submitted in July 2017.

*Site Status Update Report
Former Mobil Station #17-EMW
Brooklyn, New York*



Should you have any questions or comments regarding the information provided herein, please contact Dennis G. Shin at (800) 360-9405, extension 4333.

Respectfully Submitted,
Groundwater & Environmental Services, Inc.

D. J. Se for
Jessica M. Thomas
Associate Remediation Specialist

D. J. Se
Dennis G. Shin, P.E.
Senior Project Manager

Enclosure

cc: Elaine Lamm-Exxon Mobil Environmental Services Company



**EXXONMOBIL ENVIRONMENTAL SERVICES COMPANY
SITE STATUS UPDATE REPORT**

Site ID:	Former Mobil Station #17-EMW	Regulatory Agency:	NYSDEC - Region 2
Site Address:	304 Columbia Street Brooklyn, New York	Regulatory Contact:	Michael MacCabe, P.E.
ExxonMobil Contact:	Elaine Lamm	NYSDEC Spill #(s):	89-04339
Consultant:	Groundwater & Environmental Services, Inc. (GES)	GES Project Manager:	Dennis G. Shin, P.E.

Report Date: April 28, 2017

Monitoring Period: January through March 2017

Current Site Status: The Site is currently an automobile repair facility.

Work Performed:

- March 16, 2017 - Conducted quarterly groundwater monitoring activities which included the gauging and sampling of ten (10) monitoring wells (MW-2, MW-7A, MW-11 through MW-16, MW-19, and MW-20). Monitoring well MW-3 could not be located and therefore was not gauged or sampled. Monitoring wells MW-1, MW-5, MW-8A, MW-9, MW-10, MW-17, and MW-18 were inaccessible due to snow and/or parked cars and therefore were not gauged or sampled.

Groundwater Monitoring:

Number of Wells:	Total = 18 <u>On-Site Wells:</u> MWs (14): MW-1 through MW-3, MW-5, MW-7A, MW-11 through MW-14 and MW-16 through MW-20 <u>Off-Site Wells:</u> MWs (4): MW-8A, MW-9, MW-10 and MW-15
Gauging Frequency:	Quarterly
LPH:	0.35 feet (MW-2), 0.01 feet (MW-13).
Groundwater Depth:	8.87 feet (MW-11) to 10.01 (MW-7A) feet below TOC
Groundwater Flow:	Radially outward from the southern portion of the site
Sampling Frequency:	Quarterly
Groundwater Analytical Results:	<u>BTEX</u> : ND at two (2) wells (MW-7A and MW-20) to 2,214 µg/L (MW-16). <u>MTBE</u> : ND at seven (7) wells (MW-7A, MW-11 through MW-14, MW-16, and MW-19) to 4.17 µg/L (MW-15).



Proposed Plans:

- Conduct quarterly groundwater sampling in June 2017.
- Prepare a Site Status Update Report in July 2017 documenting quarterly Site activities.

Attachments:

Table 1 – Historical Groundwater Monitoring Summary

Figure 1 – Groundwater Monitoring Map – March 16, 2017

Attachment A – List of Acronyms

Attachment B – Site History

Attachment C – Laboratory Analytical Results – Groundwater

TABLES

Table 1



HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	NYSDEC TOGS 1.1.1 WQS				Total BTEX (µg/L)	MTBE (µg/L)	Comments
							Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)			
							1	5	5	5	NS	10	
MW-1	2/28/2005	100.00	8.48	8.47	0.01	91.53	-	-	-	-	-	-	
	6/6/2005		8.41	8.40	0.01	91.60	-	-	-	-	-	-	
	9/8/2005		9.10	9.02	0.08	90.96	-	-	-	-	-	-	
	12/29/2005		7.95	7.94	0.01	92.06	-	-	-	-	-	-	
	3/20/2006		8.69	8.60	0.09	91.38	-	-	-	-	-	-	
	6/7/2006		7.65	-	-	92.35	-	-	-	-	-	-	
	9/14/2006		7.70	7.51	0.19	92.44	-	-	-	-	-	-	
	12/7/2006		7.88	7.62	0.26	92.32	-	-	-	-	-	-	
	3/29/2007		8.44	8.28	0.16	91.68	-	-	-	-	-	-	
	6/13/2007		-	-	-	-	-	-	-	-	-	-	NM
	9/19/2007		9.03	8.68	0.35	91.23	-	-	-	-	-	-	
	12/11/2007		9.10	9.08	0.02	90.92	-	-	-	-	-	-	
	3/13/2008		8.46	-	-	91.54	220	79.8	830	414	1,543.8	14.9	
	6/6/2008		8.61	-	-	91.39	271	89.1	817	481	1,658.1	17.3	
	12/30/2008		8.24	-	-	91.76	216	67.8	539	336	1,158.8	13.2	
	3/16/2009		9.41	-	-	90.59	215	78.8	761	474	1,528.8	9	
	6/8/2009		8.23	-	-	91.77	24	88.4	551	692	1,355.4	ND < 5	
	7/20/2009		8.48	8.20	0.28	91.73	-	-	-	-	-	-	
	9/24/2009		9.12	8.98	0.14	90.99	-	-	-	-	-	-	
	12/3/2009		8.96	8.86	0.10	91.12	-	-	-	-	-	-	
	3/3/2010		7.98	-	-	92.02	109	75.2	948	293	1,425.2	3.6	
	6/7/2010		8.31	8.27	0.04	91.72	-	-	-	-	-	-	
	9/1/2010		9.36	-	-	90.64	89.3	86.5	1,010	405	1,590.8	ND < 20	
	12/3/2010		9.13	9.10	0.03	90.89	-	-	-	-	-	-	
	3/29/2011		8.01	7.84	0.17	92.12	-	-	-	-	-	-	
	6/16/2011		5.53	5.13	0.40	94.77	-	-	-	-	-	-	
	8/8/2011		9.06	8.88	0.18	91.08	-	-	-	-	-	-	
	9/19/2011		7.75	7.37	0.38	92.54	-	-	-	-	-	-	
	12/5/2011		8.24	8.12	0.12	91.85	-	-	-	-	-	-	
	3/16/2012		9.32	9.29	0.03	90.70	-	-	-	-	-	-	
	6/8/2012		8.44	-	-	91.56	33.0	29.2	199	147	408.2	ND < 1.00	
	9/7/2012		8.81	-	-	91.19	33.5	20.5	270	119	443	ND < 1.00	
12/18/2012		8.93	-	-	91.07	33.5	25.4	363	203	624.9	ND < 1.00		
3/14/2013		8.71	-	-	91.29	42.8	38.0	378	227	685.8	ND < 1.00		
6/24/2013		7.59	-	-	92.41	37.5	36.0	464	224	761.5	ND < 1.00		
9/6/2013		8.93	8.85	0.08	91.13	-	-	-	-	-	-		
9/26/2013		9.14	8.98	0.16	90.98	-	-	-	-	-	-		
10/23/2013		9.41	9.37	0.04	90.62	-	-	-	-	-	-		
11/11/2013		9.74	-	-	90.26	-	-	-	-	-	-		
12/10/2013		9.88	-	-	90.12	16.7	28.7	315	211	571.4	ND < 1.00		
1/21/2014		9.09	9.05	0.04	90.94	-	-	-	-	-	-		
3/10/2014		-	-	-	-	25.1	25.1	286	208	544.2	1.43		
6/3/2014		8.10	-	-	91.90	20.0	ND < 20.0	371	200	591	ND < 20.0		
10/2/2014		9.59	9.47	0.12	90.50	33.6	42.7	484	321	881.3	ND < 1.00		
12/3/2014		8.73	-	-	91.27	42.9	39.6	472	336	890.5	ND < 5.00	SHEEN	
3/11/2015		8.41	-	-	91.59	17.1	11.7	93.1	135	256.9	ND < 1.00		
6/18/2015		8.65	8.58	0.07	91.40	-	-	-	-	-	-		
9/9/2015		7.98	7.90	0.08	92.08	38.5	21.8	277	167	504.3	ND < 1.00		
12/10/2015		9.57	9.33	0.24	90.61	-	-	-	-	-	-		
3/16/2016		8.63	8.37	0.26	91.57	-	-	-	-	-	-		
6/15/2016		8.95	8.77	0.18	91.19	-	-	-	-	-	-		
9/19/2016		9.50	9.35	0.15	90.61	-	-	-	-	-	-		
12/8/2016		8.90	8.70	0.20	91.25	-	-	-	-	-	-		
3/16/2017		-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
MW-2	2/28/2005	100.16	8.78	8.77	0.01	91.39	-	-	-	-	-	-	
	6/6/2005		8.66	8.65	0.01	91.51	-	-	-	-	-	-	
	9/8/2005		9.87	9.62	0.25	90.48	-	-	-	-	-	-	
	12/29/2005		8.26	8.25	0.01	91.91	-	-	-	-	-	-	
	3/20/2006		8.96	8.88	0.08	91.26	-	-	-	-	-	-	
	6/7/2006		7.73	-	-	92.43	-	-	-	-	-	-	
	9/14/2006		7.90	7.58	0.32	92.50	-	-	-	-	-	-	
	12/7/2006		8.20	7.80	0.40	92.26	-	-	-	-	-	-	
	3/29/2007		8.81	8.72	0.09	91.42	-	-	-	-	-	-	
	6/13/2007		8.15	7.72	0.43	92.33	-	-	-	-	-	-	
	9/19/2007		9.18	8.68	0.50	91.36	-	-	-	-	-	-	
	12/11/2007		9.35	9.28	0.07	90.86	-	-	-	-	-	-	
	3/13/2008		8.77	-	-	91.39	204	18	130	109	461	ND < 2	
	6/6/2008		9.10	-	-	91.06	378	25	137	93.3	633.3	71	
12/30/2008		8.56	-	-	91.60	305	27	50	84.4	466.4	37		
3/16/2009		9.71	-	-	90.45	246	18	23	53.4	340.4	67		
6/8/2009		8.61	8.53	0.08	91.61	-	-	-	-	-	-		

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Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	NYSDEC TOGS 1.1.1 WQS			Total BTEX (µg/L)	MTBE (µg/L)	Comments	
							Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)				
							1	5	5	5	NS	10	
MW-2 (cont)	7/20/2009	100.16	9.47	8.35	1.12	91.53	-	-	-	-	-	-	
	9/24/2009		9.06	9.01	0.05	91.14	-	-	-	-	-	-	
	12/3/2009		9.75	9.05	0.70	90.94	-	-	-	-	-	-	
	3/3/2010		8.30	8.27	0.03	91.88	-	-	-	-	-	-	
	6/7/2010		9.07	8.36	0.71	91.62	-	-	-	-	-	-	
	9/1/2010		9.94	-	-	90.22	530	22	202	105	859	155	
	12/3/2010		9.37	-	-	90.79	500	52.4	336	232	1,120.4	120	
	3/29/2011		8.74	8.08	0.66	91.92	-	-	-	-	-	-	
	6/16/2011		9.80	8.30	1.50	91.49	-	-	-	-	-	-	
	8/8/2011		9.43	9.06	0.37	91.01	-	-	-	-	-	-	
	9/19/2011		7.81	7.50	0.31	92.58	-	-	-	-	-	-	
	12/5/2011		9.10	8.42	0.68	91.57	-	-	-	-	-	-	
	3/16/2012		10.10	9.58	0.52	90.45	-	-	-	-	-	-	
	6/8/2012		8.75	8.72	0.03	91.43	-	-	-	-	-	-	
	9/7/2012		8.95	8.91	0.04	91.24	-	-	-	-	-	-	
	12/18/2012		10.02	9.89	0.13	90.24	-	-	-	-	-	-	
	3/14/2013		9.65	9.60	0.05	90.55	-	-	-	-	-	-	
	6/24/2013		8.30	7.95	0.35	92.12	-	-	-	-	-	-	
	9/6/2013		9.07	9.02	0.05	91.13	-	-	-	-	-	-	
	10/7/2013		9.34	-	-	90.82	-	-	-	-	-	-	
	10/23/2013		9.70	9.67	0.03	90.48	-	-	-	-	-	-	
	11/11/2013		10.05	-	-	90.11	-	-	-	-	-	-	
	12/10/2013		10.08	-	-	90.08	258	18.5	204	109	589.5	39.1	
1/21/2014		9.33	-	-	90.83	-	-	-	-	-	-		
3/10/2014		-	-	-	-	-	-	-	-	-	-		
6/3/2014		8.34	8.28	0.06	91.87	-	-	-	-	-	-		
10/2/2014		9.76	9.64	0.12	90.49	487	23.7	201	162	873.7	2.63		
12/3/2014		8.96	-	-	91.20	754	34.5	353	177	1,318.5	ND < 5.00		
3/11/2015		-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
6/18/2015		9.12	8.86	0.26	91.24	-	-	-	-	-	-		
9/9/2015		9.67	9.12	0.55	90.90	373	15.3	249	394	1,031.3	1.51		
12/10/2015		9.95	9.55	0.40	90.51	-	-	-	-	-	-		
3/16/2016		9.11	8.67	0.44	91.38	-	-	-	-	-	-		
6/15/2016		9.35	9.00	0.35	91.07	-	-	-	-	-	-		
9/19/2016		10.12	9.67	0.45	90.38	-	-	-	-	-	-		
12/8/2016		9.12	9.00	0.12	91.13	-	-	-	-	-	-		
3/16/2017		9.55	9.20	0.35	90.87	493	32.7	213	227	965.7	1.17		
MW-3	2/28/2005	100.43	9.32	-	-	91.11	120	38.5	167	151	476.5	13.1	
	6/6/2005		9.21	-	-	91.22	37.6	22.5	135	113	308.1	3.5	
	9/8/2005		9.67	-	-	90.76	86	23.5	47.9	139	296.4	7.8	
	12/29/2005		8.50	-	-	91.93	11.3	0.88	28.9	15.3	56.38	0.88	
	3/20/2006		9.98	-	-	90.45	218	12.1	94.6	61.9	386.6	24.7	
	6/7/2006		7.51	-	-	92.92	9.9	2.6	27.2	12.1	51.8	ND < 1	
	9/14/2006		7.57	-	-	92.86	17.8	ND < 1	20.8	3.9	42.5	ND < 1	
	12/7/2006		7.90	-	-	92.53	10.4	ND < 1	15.7	2	28.1	0.51	
	3/29/2007		8.69	-	-	91.74	0.94	ND < 1	5.1	1	7.04	ND < 1	
	6/13/2007		7.95	-	-	92.48	3.6	ND < 1	6.8	0.52	10.92	ND < 1	
	9/19/2007		9.45	-	-	90.98	61.8	1.70	63.2	7.8	134.5	9.5	
	12/11/2007		9.75	-	-	90.68	71.3	12.8	101	24.8	209.9	7.4	
	3/13/2008		8.56	-	-	91.87	10.8	ND < 1	3	0.72	14.52	ND < 1	
	6/6/2008		9.46	-	-	90.97	76.1	9.5	46.5	17.9	150	15	
	12/30/2008		8.49	-	-	91.94	5.8	0.44	0.28	ND < 1	6.52	0.53	
	3/16/2009		10.02	-	-	90.41	113	13.5	6	20.8	153.3	20.2	
	6/8/2009		8.33	-	-	92.10	1.7	ND < 1	1.4	ND < 1	3.1	ND < 1	
	7/20/2009		9.39	-	-	91.04	92	4	10.6	13.4	120	13.2	
	9/24/2009		9.57	-	-	90.86	153	12.1	79.5	97.3	341.9	ND < 1	
	12/3/2009		9.60	-	-	90.83	92.7	8.4	90.4	79.1	270.6	3.1	
	3/3/2010		8.18	-	-	92.25	0.27	ND < 1	1.7	1.6	3.57	ND < 1	
	6/7/2010		9.18	-	-	91.25	3	0.50	6.8	3.2	13.5	1.2	
	9/1/2010		10.66	-	-	89.77	49.3	28.8	164	170	412.1	25.8	
	12/3/2010		9.58	-	-	90.85	3.9	2.7	30.9	26.5	64	ND < 1	
	3/29/2011		8.25	-	-	92.18	ND < 1	ND < 1	0.36	0.33	0.69	ND < 1	
	6/16/2011		8.90	-	-	91.53	2.8	2.1	49.5	31.2	85.6	ND < 5	
	8/8/2011		9.51	-	-	90.92	23.1	17.4	157	114	311.5	ND < 1	
	3/16/2012		9.97	-	-	90.46	25	43	867	386	1,321	ND < 1	
	6/8/2012		9.27	-	-	91.16	14.9	27.0	389	208	638.9	ND < 1.00	
	9/7/2012		9.41	-	-	91.02	3.67	7.33	110	83.2	204.2	ND < 1.00	
	12/18/2012		9.51	-	-	90.92	19.2	31.6	378	278	706.8	ND < 1.00	
	3/14/2013		9.47	-	-	90.96	15.7	36.7	319	277	648.4	1.42	
	6/24/2013		8.07	-	-	92.36	ND < 1.00	3.05	63.9	68.2	135.15	ND < 1.00	
9/4/2013		9.72	-	-	90.71	7.74	14.1	127	113	261.84	6.86		

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	NYSDEC TOGS 1.1.1 WQS				Total BTEX (µg/L)	MTBE (µg/L)	Comments
							Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)			
							1	5	5	5	NS	10	
MW-3 (cont)	9/6/2013	100.43	9.76	-	-	90.67	7.74	14.1	127	113	261.84	6.86	
	11/11/2013		10.85	-	-	89.58	-	-	-	-	-	-	
	12/10/2013		10.55	-	-	89.88	4.18	18.5	222	211	455.68	ND < 1.00	
	1/21/2014		9.78	-	-	90.65	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	1.60	5.32	75.7	118	200.62	1.26	
	6/3/2014		8.56	-	-	91.87	ND < 1.00	1.26	28.3	43.2	72.76	ND < 1.00	
	10/2/2014		10.29	-	-	90.14	3.21	4.44	12.2	118	137.85	ND < 1.00	
	12/3/2014		9.50	-	-	90.93	1.08	2.15	20.8	61.7	85.73	ND < 1.00	
	3/11/2015		8.19	-	-	92.24	ND < 1.00	ND < 1.00	1.63	2.95	4.58	ND < 1.00	
	6/18/2015		9.52	-	-	90.91	ND < 1.00	1.12	5.18	26.4	32.7	ND < 1.00	
	9/9/2015		-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
	12/10/2015		-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
	3/16/2016		9.19	-	-	91.24	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	9/19/2016		8.45	-	-	91.98	ND < 1.00*	ND < 1.00*	8.66	11.6	20.26	ND < 1.00	
12/8/2016		9.26	-	-	91.17	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
3/16/2017		-	-	-	-	-	-	-	-	-	-	CNL	
MW-4	2/28/2005	100.05	9.02	-	-	91.03	50	2.6	11	25	88.6	ND < 1	
	6/6/2005		9.18	-	-	90.87	4.6	ND < 1	0.49	ND < 1	5.09	ND < 1	
	12/29/2005		8.54	-	-	91.51	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	3/20/2006		9.16	-	-	90.89	9.1	ND < 1	0.62	0.59	10.31	ND < 1	
	6/7/2006		8.00	-	-	92.05	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	9/14/2006	NSD	-	-	-	-	-	-	-	-	-	-	WELL DESTROYED
MW-5	2/28/2005	101.15	8.47	-	-	92.68	0.86	ND < 1	1.6	8.1	10.56	3.1	
	6/6/2005		8.73	-	-	92.42	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	9/8/2005		-	-	-	-	ND < 1	ND < 1	4.7	7.3	12	ND < 1	NM
	12/29/2005		7.95	-	-	93.20	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	3/20/2006		8.63	-	-	92.52	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	6/7/2006		8.12	-	-	93.03	ND < 1	ND < 1	ND < 1	ND < 1	0.65	0.65	ND < 1
	12/7/2006		7.97	-	-	93.18	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	3/29/2007		8.10	-	-	93.05	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	6/13/2007		7.68	-	-	93.47	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	9/19/2007		8.96	-	-	92.19	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	12/11/2007		9.20	-	-	91.95	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	3/13/2008		8.56	-	-	92.59	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	6/6/2008		8.85	-	-	92.30	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	12/30/2008		8.09	-	-	93.06	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	3/16/2009		9.41	-	-	91.74	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	6/8/2009		8.40	-	-	92.75	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	7/20/2009		8.63	-	-	92.52	-	-	-	-	-	-	
	9/24/2009		9.29	-	-	91.86	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	12/3/2009		9.00	-	-	92.15	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	3/3/2010		7.74	-	-	93.41	ND < 1	ND < 1	ND < 1	ND < 1	0.35	0.35	ND < 1
	6/7/2010		8.73	-	-	92.42	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	9/1/2010		9.61	-	-	91.54	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	12/3/2010		9.40	-	-	91.75	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	0.35	
	3/29/2011		7.91	-	-	93.24	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	6/16/2011		8.60	-	-	92.55	ND < 1	ND < 1	ND < 1	0.25	0.25	ND < 1	
	8/8/2011		9.17	-	-	91.98	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	1.3	
	9/19/2011		7.64	-	-	93.51	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1	
	12/5/2011		8.40	-	-	92.75	ND < 0.22	ND < 0.15	ND < 0.21	ND < 0.17	ND < 0.75	ND < 0.18	
	3/16/2012		9.37	-	-	91.78	ND < 1	ND < 1	ND < 1	ND < 3	ND < 6	ND < 1	
	6/8/2012		8.60	-	-	92.55	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	9/7/2012		9.19	-	-	91.96	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	12/18/2012		9.01	-	-	92.14	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	3/14/2013		8.42	-	-	92.73	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	6/24/2013		8.16	-	-	92.99	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	9/4/2013		9.21	-	-	91.94	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00	
	9/6/2013		9.22	-	-	91.93	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00	
	12/10/2013		9.68	-	-	91.47	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	1/21/2014		-	-	-	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00	
	6/3/2014		8.52	-	-	92.63	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00	
10/2/2014		10.11	-	-	91.04	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00		
12/3/2014		9.20	-	-	91.95	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00		
3/11/2015		8.65	-	-	92.50	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00		
6/18/2015		8.60	-	-	92.55	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
9/9/2015		8.98	-	-	92.17	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
12/10/2015		9.74	-	-	91.41	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
3/16/2016		8.44	-	-	92.71	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
6/15/2016		8.93	-	-	92.22	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
9/19/2016		10.31	-	-	90.84	ND < 1.00*	ND < 1.00*	ND < 1.00*	ND < 3.00*	ND < 6	ND < 1.00		

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments	
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10		
MW-5 (cont)	12/8/2016	101.15	9.06	-	-	92.09	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
	3/16/2017		-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
MW-6A	2/28/2005	101.17	8.29	-	-	92.88	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	6/6/2005	NSD	-	-	-	-	-	-	-	-	-	-	WELL DESTROYED	
MW-7A	2/28/2005	101.24	9.67	-	-	91.57	151	3.8	3	8.8	166.6	2.5		
	6/6/2005		9.59	-	-	91.65	13	ND < 1	ND < 1	ND < 1	13	ND < 1		
	12/29/2005		9.27	-	-	91.97	105	1	5.2	4	115.2	3.2		
	3/20/2006		9.57	-	-	91.67	9.4	ND < 1	ND < 1	0.46	9.86	0.51		
	6/7/2006		8.72	-	-	92.52	328	9.2	20	49	406.2	1.8		
	9/14/2006		8.52	-	-	92.72	4.7	ND < 1	0.35	ND < 1	5.05	ND < 1		
	12/7/2006		8.75	-	-	92.49	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	3/29/2007		9.48	-	-	91.76	291	6	8.2	17	322.2	ND < 1		
	6/13/2007		8.56	-	-	92.68	448	18	28	53	547	2.4		
	9/19/2007		9.55	-	-	91.69	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	12/11/2007		10.27	-	-	90.97	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	2.3		
	3/13/2008		9.56	-	-	91.68	202	3.7	8.4	10	224.1	ND < 2.0		
	6/6/2008		9.74	-	-	91.50	4.5	ND < 1	ND < 1	ND < 1	4.5	0.31		
	12/30/2008		9.53	-	-	91.71	335	4.6	3.4	21	364	1.9		
	3/16/2009		10.58	-	-	90.66	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	6/8/2009		9.52	-	-	91.72	30	ND < 1	ND < 1	ND < 1	30	ND < 1		
	7/20/2009		8.98	-	-	92.26	1	ND < 1	ND < 1	ND < 1	1	0.48		
	9/24/2009		10.07	-	-	91.17	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	12/3/2009		10.11	-	-	91.13	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	0.52		
	3/3/2010		9.41	-	-	91.83	145	2.9	5.5	5.6	159	1.2		
	6/7/2010		9.36	-	-	91.88	0.36	ND < 1	ND < 1	ND < 1	0.36	ND < 1		
	9/1/2010		10.50	-	-	90.74	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	12/3/2010		10.31	-	-	90.93	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	ND < 1		
	3/29/2011		8.87	-	-	92.37	1.7	ND < 1	ND < 1	ND < 1	1.7	ND < 1		
	6/16/2011		9.55	9.30	0.25	91.88	-	-	-	-	-	-		
	8/8/2011		9.99	9.98	0.01	91.26	-	-	-	-	-	-		
	9/19/2011		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
	3/16/2012		10.48	-	-	90.76	107	1.31	3.55	ND < 3	111.86	1.09		
	6/8/2012		9.76	-	-	91.48	143	4.03	25.3	7.23	179.56	1.12		
	9/7/2012		10.02	-	-	91.22	14.4	ND < 1.00	ND < 1.00	ND < 3.00	14.4	ND < 1.00		
	12/18/2012		10.13	-	-	91.11	12.9	ND < 1.00	ND < 1.00	ND < 3.00	12.9	ND < 1.00		
	3/14/2013		9.85	-	-	91.39	88.8	1.84	12.4	8.73	111.77	ND < 1.00		
	6/24/2013		8.76	-	-	92.48	45.8	ND < 1.00	3.81	ND < 3.00	49.61	ND < 1.00		
	9/4/2013		9.96	9.91	0.05	91.32	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00		
	9/6/2013		10.05	9.99	0.06	91.24	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	ND < 1.00		
	12/10/2013		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
1/21/2014		-	-	-	-	-	-	-	-	-	-	-		
3/10/2014		-	-	-	-	9.00	ND < 1.00	ND < 1.00	ND < 3.00	9	ND < 1.00			
6/3/2014		9.21	-	-	92.03	2.07	ND < 1.00	ND < 1.00	ND < 2.00	2.07	ND < 1.00			
10/2/2014		10.60	-	-	90.64	3.16	ND < 1.00	ND < 1.00	ND < 2.00	3.16	ND < 1.00			
12/3/2014		9.77	-	-	91.47	6.83	ND < 1.00	ND < 1.00	ND < 2.00	6.83	ND < 1.00			
3/11/2015		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
6/18/2015		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
9/9/2015		10.14	-	-	91.10	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00			
12/10/2015		10.48	-	-	90.76	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00			
3/16/2016		9.48	-	-	91.76	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00			
6/15/2016		9.98	-	-	91.26	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00			
9/19/2016		10.02	-	-	91.22	ND < 1.00*	ND < 1.00*	ND < 1.00*	ND < 3.00*	ND < 6	ND < 1.00			
12/8/2016		9.83	-	-	91.41	6.27	ND < 1.00	ND < 1.00	ND < 3.00	6.27	ND < 1.00			
3/16/2017		10.01	-	-	91.23	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00			
MW-8A	2/28/2005	100.59	10.02	-	-	90.57	1,430	369	1,020	3,180	5,999	4,720		
	6/6/2005		9.48	-	-	91.11	1,660	391	1,150	3,960	7,161	3,980		
	9/8/2005		10.02	-	-	90.57	2,030	447	1,200	3,880	7,557	3,640		
	12/29/2005		9.18	-	-	91.41	434	49.3	216	675	1,374.3	250		
	3/20/2006		9.87	-	-	90.72	2,060	467	1,220	4,040	7,787	4,730		
	9/14/2006		8.74	-	-	91.85	2,170	510	1,380	4,320	8,380	2,370		
	12/7/2006		8.62	-	-	91.97	1,660	430	1,350	4,570	8,010	1,980		
	3/29/2007		9.52	-	-	91.07	1,420	341	908	2,370	5,039	2,960		
	6/13/2007		8.55	-	-	92.04	444	155	694	1,770	3,063	380		
	9/19/2007		9.36	-	-	91.23	1,090	267	915	2,570	4,842	1,160		
	12/11/2007		10.13	-	-	90.46	1,530	305	1,090	3,420	6,345	1,570		
	3/13/2008		9.69	-	-	90.90	1,580	315	1,140	3,430	6,465	1,850		
	6/6/2008		9.35	-	-	91.24	1,230	280	1,070	2,610	5,190	806		
	12/30/2008		9.17	-	-	91.42	82.5	21.3	131	237	471.8	22.6		
	6/8/2009		9.18	-	-	91.41	292	64.9	348	616	1,320.9	129		
7/20/2009		9.10	-	-	91.49	292	72.8	324	525	1,213.8	149			
9/24/2009		10.79	-	-	89.80	984	223	909	2,320	4,436	542			

Table 1



HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments	
NYSDEC TOGS 1.1.1 WQS							1	5	5	5	NS	10		
MW-8A (cont)	12/3/2009	100.59	9.75	-	-	90.84	1,030	235	1,060	2,240	4,565	452		
	3/3/2010		9.25	-	-	91.34	691	177	762	2,070	3,700	185		
	6/7/2010		9.17	-	-	91.42	1,020	213	869	2,060	4,162	766		
	9/1/2010		10.18	-	-	90.41	1,520	291	1,070	3,030	5,911	939		
	12/3/2010		10.00	-	-	90.59	942	253	745	1,900	3,840	555		
	3/29/2011		9.46	-	-	91.13	1,070	227	831	1,860	3,988	418		
	9/19/2011		8.26	-	-	92.33	779	157	533	1,060	2,529	298		
	12/5/2011		9.20	-	-	91.39	1,540	222	682	1,530	3,974	637		
	3/16/2012		10.07	-	-	90.52	2,220	386	1,410	5,250	9,266	1,100		
	6/8/2012		9.84	-	-	90.75	808	111	434	1,200	2,553	983		
	9/7/2012		10.00	-	-	90.59	985	154	341	953	2,433	376		
	12/18/2012		10.78	-	-	89.81	1,300	231	496	2,200	4,227	336		
	3/14/2013		11.08	-	-	89.51	1,160	188	551	2,360	4,259	330		
	6/24/2013		9.31	-	-	91.28	991	155	482	1,930	3,558	157		
	9/6/2013		10.82	-	-	89.77	1,670	306	1,250	3,790	7,016	337		
	12/10/2013		11.44	-	-	89.15	1,370	226	742	3,210	5,548	333		
	1/21/2014		-	-	-	-	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	1,860	299	989	3,320	6,468	390		
	6/3/2014		10.68	-	-	89.91	1,400	251	361	909	2,921	278		
	10/2/2014		11.05	-	-	89.54	1,500	286	1,120	3,720	6,626	367		
12/3/2014		10.01	-	-	90.58	2,200	303	1,700	4,730	8,933	347			
3/11/2015		10.30	-	-	90.29	1,480	326	1,670	6,450	9,926	429			
6/18/2015		9.81	-	-	90.78	1,900	303	1,690	5,850	9,743	323			
9/9/2015		10.00	-	-	90.59	1,640	282	1,150	3,530	6,602	194			
12/10/2015		10.33	-	-	90.26	1,400	225	1,300	3,890	6,815	104			
3/16/2016		10.02	-	-	90.57	341	198	1,400	3,890	5,829	140			
6/15/2016		9.86	-	-	90.73	1,620	325	1,560	4,950	8,455	130			
9/19/2016		10.39	-	-	90.20	1,490	281	1,490	4,830	8,091	109			
12/8/2016		9.92	-	-	90.67	1,420	280	1,400	4,560	7,660	121			
3/16/2017		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
MW-9	2/28/2005	100.10	9.45	-	-	90.65	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	1.8		
	6/6/2005		9.38	-	-	90.72	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	1.1		
	9/8/2005		10.01	-	-	90.09	ND < 1	ND < 1	0.73	2	2.73	7.3		
	12/29/2005		8.88	-	-	91.22	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	16.7		
	3/20/2006		9.65	-	-	90.45	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	9.8		
	9/14/2006		8.93	-	-	91.17	0.93	ND < 1	0.43	1.1	2.46	20.8		
	12/7/2006		8.72	-	-	91.38	0.88	0.72	ND < 1	3.6	5.2	45		
	3/29/2007		9.09	-	-	91.01	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	46.8		
	6/13/2007		8.64	-	-	91.46	4.9	1.7	ND < 1	6.4	13	60		
	9/19/2007		9.39	-	-	90.71	0.35	ND < 1	ND < 1	0.97	1.32	19.2		
	12/11/2007		9.80	-	-	90.30	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	15.7		
	3/13/2008		8.98	-	-	91.12	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	6.5		
	6/6/2008		9.19	-	-	90.91	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	6.2		
	12/30/2008		8.75	-	-	91.35	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	2.6		
	7/20/2009		9.10	-	-	91.00	-	-	-	-	-	-		
	9/24/2009		9.71	-	-	90.39	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	2.6		
	12/3/2009		9.62	-	-	90.48	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	4.6		
	3/3/2010		8.47	-	-	91.63	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	0.32		
	6/7/2010		9.24	-	-	90.86	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	2.9		
	9/1/2010		10.11	-	-	89.99	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	6.7		
	12/3/2010		9.90	-	-	90.20	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	6.7		
	3/29/2011		9.04	-	-	91.06	ND < 1	ND < 1	ND < 1	ND < 1	ND < 4	1.5		
	12/5/2011		9.20	-	-	90.90	ND < 0.22	ND < 0.15	ND < 0.21	ND < 0.17	ND < 0.75	10.1		
	3/16/2012		10.33	-	-	89.77	ND < 1	ND < 1	ND < 1	ND < 3	ND < 6	9.21		
	6/8/2012		9.44	-	-	90.66	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	12.6		
	9/7/2012		9.79	-	-	90.31	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	11.0		
	12/18/2012		-	-	-	-	-	-	-	-	-	-	-	CNL
	3/14/2013		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
	6/24/2013		-	-	-	-	-	-	-	-	-	-	-	CNL
	9/6/2013		-	-	-	-	-	-	-	-	-	-	-	CNL
	12/10/2013		-	-	-	-	-	-	-	-	-	-	-	CNL
	1/21/2014		-	-	-	-	-	-	-	-	-	-	-	CNL
3/10/2014		-	-	-	-	-	-	-	-	-	-	-	CNL	
6/3/2014		-	-	-	-	-	-	-	-	-	-	-	CNL	
10/2/2014		-	-	-	-	-	-	-	-	-	-	-	CNL	
12/3/2014		-	-	-	-	-	-	-	-	-	-	-	CNL	
3/11/2015		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
6/18/2015		-	-	-	-	-	-	-	-	-	-	-	CNL	
9/9/2015		-	-	-	-	-	-	-	-	-	-	-	CNL	
12/10/2015		-	-	-	-	-	-	-	-	-	-	-	CNL	
3/16/2016		-	-	-	-	-	-	-	-	-	-	-	CNL	
3/16/2017		-	-	-	-	-	-	-	-	-	-	-	CNL	

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10	
MW-10	2/28/2005	100.50	9.94	-	-	90.56	5,040	763	1,520	7,160	14,483	10,300	
	6/6/2005		9.03	-	-	91.47	823	97.6	298	1,390	2,608.6	1,560	
	9/8/2005		9.90	-	-	90.60	2,780	331	1,000	3,840	7,951	5,030	
	12/29/2005		8.90	-	-	91.60	754	192	942	1,900	3,788	833	
	3/20/2006		9.54	-	-	90.96	6,220	803	1,640	6,970	15,633	10,500	
	6/7/2006		9.01	-	-	91.49	4,580	459	1,150	4,290	10,479	6,210	
	9/14/2006		8.58	-	-	91.92	4,900	625	1,520	5,930	12,975	6,740	
	12/7/2006		8.52	-	-	91.98	3,070	504	2,030	7,360	12,964	1,410	
	3/29/2007		9.40	-	-	91.10	7,050	1,180	3,550	11,900	23,680	6,820	
	6/13/2007		8.42	-	-	92.08	1,450	231	909	2,980	5,570	466	
	9/19/2007		9.22	-	-	91.28	3,380	445	1,400	4,500	9,725	1,310	
	12/11/2007		11.03	-	-	89.47	3,030	411	1,360	4,010	8,811	1,750	
	3/13/2008		9.56	-	-	90.94	4,270	530	1,520	5,160	11,480	2,470	
	6/6/2008		9.25	-	-	91.25	3,080	414	1,510	4,450	9,454	1,260	
	12/30/2008		9.05	-	-	91.45	903	115	649	1,500	3,167	213	
	6/8/2009		8.97	-	-	91.53	1,110	143	658	1,440	3,351	166	
	7/20/2009		8.98	-	-	91.52	1,050	157	593	1,250	3,050	97.1	
	9/24/2009		9.59	-	-	90.91	2,390	374	1,490	3,210	7,464	315	
	12/3/2009		9.55	-	-	90.95	3,380	673	3,900	3,990	11,943	698	
	3/3/2010		9.25	-	-	91.25	3,450	440	1,400	3,440	8,730	1,810	
	6/7/2010		9.02	-	-	91.48	3,210	403	1,260	2,760	7,633	1,380	
	9/1/2010		10.00	-	-	90.50	4,870	485	1,830	4,040	11,225	1,580	
	12/3/2010		9.80	-	-	90.70	3,950	496	1,510	3,180	9,136	ND < 10	
	3/29/2011		9.35	-	-	91.15	5,450	594	1,550	3,700	11,294	1,640	
	6/16/2011		8.80	-	-	91.70	5,410	555	1,450	3,580	10,995	1,160	
	8/8/2011		9.72	-	-	90.78	6,180	645	1,450	3,460	11,735	1,030	
	9/19/2011		8.19	-	-	92.31	1,810	162	497	957	3,426	191	
	12/5/2011		9.00	-	-	91.50	3,790	443	1,910	3,860	10,003	610	
	3/16/2012		10.51	-	-	89.99	5,350	744	2,220	5,690	14,004	1,210	
	6/8/2012		9.47	-	-	91.03	3,780	343	859	1,720	6,702	860	
	9/7/2012		10.04	-	-	90.46	3,930	334	738	2,290	7,292	777	
	12/18/2012		10.83	-	-	89.67	5,460	623	1,170	3,340	10,593	708	
	3/14/2013		10.99	-	-	89.51	5,030	469	1,280	3,010	9,789	712	
6/24/2013		8.51	-	-	91.99	2,680	330	927	2,900	6,837	137		
9/6/2013		10.66	-	-	89.84	5,290	524	1,360	3,150	10,324	383		
12/10/2013		11.36	-	-	89.14	6,080	560	1,410	4,520	12,570	464		
1/21/2014		-	-	-	-	-	-	-	-	-	-	-	
3/10/2014		-	-	-	-	6,990	680	1,770	5,550	14,990	657		
6/3/2014		9.71	-	-	90.79	3,400	455	1,250	3,700	8,805	476		
10/2/2014		10.90	-	-	89.60	5,540	636	2,200	5,670	14,046	601	SHEEN	
12/3/2014		9.91	-	-	90.59	5,250	664	2,050	5,380	13,344	612		
3/11/2015		10.24	-	-	90.26	5,880	766	2,300	7,140	16,086	309		
6/18/2015		9.69	-	-	90.81	5,580	631	1,780	5,480	13,471	202		
9/9/2015		9.89	-	-	90.61	4,350	522	1,550	5,030	11,452	136		
12/10/2015		10.23	-	-	90.27	3,850	371	1,610	1,370	7,201	75.0		
3/16/2016		9.96	-	-	90.54	4,120	650	1,740	4,930	11,440	143		
6/15/2016		9.74	-	-	90.76	4,110	518	1,550	4,780	10,958	146		
9/19/2016		10.38	-	-	90.12	4,990	591	1,680	5,020	12,281	114		
12/8/2016		9.85	-	-	90.65	4,790	742	1,830	5,750	13,112	126		
3/16/2017		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
MW-11	2/28/2005	99.62	8.14	-	-	91.48	619	576	1,050	4,270	6,515	77	
	6/6/2005		8.07	-	-	91.55	616	410	1,070	5,050	7,146	71	
	9/8/2005		8.81	8.78	0.03	90.83	-	-	-	-	-	-	
	12/29/2005		11.63	-	-	87.99	697	249	1,170	3,630	5,746	57	
	3/20/2006		8.13	-	-	91.49	625	294	1,070	4,130	6,119	39	
	6/7/2006		7.45	-	-	92.17	-	-	-	-	-	-	
	9/14/2006		7.13	7.11	0.02	92.51	-	-	-	-	-	-	
	12/7/2006		7.30	7.28	0.02	92.34	-	-	-	-	-	-	
	3/29/2007		7.94	-	-	91.68	531	199	1,030	1,580	3,340	ND < 10	
	6/13/2007		7.18	-	-	92.44	438	125	738	935	2,236	32	
	9/19/2007		8.11	-	-	91.51	718	231	1,050	1,800	3,799	36	
	12/11/2007		8.70	8.68	0.02	90.94	-	-	-	-	-	-	
	3/13/2008		8.20	-	-	91.42	336	153	860	1,530	2,879	ND < 5	
	6/6/2008		8.17	-	-	91.45	617	194	954	1,410	3,175	37	
	12/30/2008		7.91	-	-	91.71	473	185	990	1,730	3,378	23.9	
	3/16/2009		9.06	-	-	90.56	423	192	770	1,610	2,995	20.9	
	6/8/2009		7.87	-	-	91.75	575	209	1,110	2,330	4,224	27.4	
7/20/2009		7.93	7.85	0.08	91.75	-	-	-	-	-	-		
9/24/2009		8.59	8.54	0.05	91.07	-	-	-	-	-	-		
12/3/2009		8.51	-	-	91.11	797	142	1,280	1,020	3,239	46.9		
3/3/2010		7.66	-	-	91.96	518	110	1,060	1,010	2,698	23.4		

Table 1



HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments	
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10		
MW-11 (cont)	6/7/2010	99.62	7.94	-	-	91.68	382	33.1	901	498	1,814.1	23.1		
	9/1/2010		8.98	-	-	90.64	510	131	1,300	1,620	3,561	ND < 100		
	12/3/2010		8.71	-	-	90.91	513	206	911	1,560	3,190	11.3		
	3/29/2011		7.45	-	-	92.17	68.3	7.60	199	234	508.9	3.20		
	6/16/2011		7.71	-	-	91.91	148	23.3	293	315	779.3	2.80		
	8/8/2011		8.54	-	-	91.08	308	48.5	380	385	1,121.5	7.90		
	9/19/2011		6.98	-	-	92.64	57	12.3	162	171	402.3	1.40		
	12/5/2011		7.81	-	-	91.81	144	52	304	455	955	4		
	3/16/2012		8.98	-	-	90.64	637	149	794	1,580	3,160	12		
	6/8/2012		8.14	-	-	91.48	492	161	611	1,090	2,354	9.70		
	9/7/2012		8.18	-	-	91.44	604	164	699	1,240	2,707	7.61		
	12/18/2012		8.61	-	-	91.01	587	184	702	1,320	2,793	7.11		
	3/14/2013		8.40	-	-	91.22	487	150	608	934	2,179	7.78		
	6/24/2013		7.27	-	-	92.35	403	113	495	447	1,458	3.98		
	9/4/2013		8.50	-	-	91.12	513	147	947	1,230	2,837	3.54		
	9/6/2013		8.56	-	-	91.06	513	147	947	1,230	2,837	3.54		
	10/7/2013		8.76	-	-	90.86	-	-	-	-	-	-	-	
	10/23/2013		9.03	-	-	90.59	-	-	-	-	-	-	-	
	11/11/2013		9.42	-	-	90.20	-	-	-	-	-	-	-	
	12/10/2013		9.92	-	-	89.70	490	107	561	869	2,027	2.93		
	1/21/2014		8.65	-	-	90.97	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	435	86.0	521	801	1,843	3.54		
	6/3/2014		7.71	-	-	91.91	218	70.6	287	468	1,043.6	3.16		
	10/2/2014		9.00	-	-	90.62	309	74.9	407	475	1,265.9	ND < 10.0		
	12/3/2014		8.28	-	-	91.34	241	61.8	325	354	981.8	4.82		
	3/11/2015		8.32	-	-	91.30	193	62.5	497	567	1,319.5	ND < 1.00		
	6/18/2015		8.47	-	-	91.15	246	63.3	540	551	1,400.3	4.43		
	9/9/2015		7.82	-	-	91.80	307	76.2	509	687	1,579.2	ND < 1.00		
12/10/2015		9.21	-	-	90.41	224	31.8	546	438	1,239.8	ND < 1.00			
3/16/2016		8.31	-	-	91.31	178	56.9	507	561	1,302.9	ND < 1.00			
6/15/2016		8.66	-	-	90.96	314	70.4	559	668	1,611.4	ND < 5.00			
9/19/2016		9.41	-	-	90.21	359	95.9	603	825	1,882.9	ND < 5.00			
12/8/2016		8.54	-	-	91.08	160	47.3	426	497	1,130.3	ND < 5.00			
3/16/2017		8.87	-	-	90.75	129	23.7	316	270	738.7	ND < 5.00			
MW-12	2/28/2005	100.85	9.38	-	-	91.47	127	6.6	50	57	240.6	24.8		
	6/6/2005		9.17	-	-	91.68	250	8.2	29.2	51.4	338.8	129		
	3/20/2006		9.17	-	-	91.68	229	9	35.5	50.2	323.7	26.6		
	6/7/2006		8.68	-	-	92.17	470	17.4	81.1	86.8	655.3	96.7		
	9/14/2006		8.13	-	-	92.72	476	14	42.9	63.2	596.1	55		
	12/7/2006		8.37	-	-	92.48	225	7.3	5.1	22.5	259.9	29.4		
	3/29/2007		9.16	-	-	91.69	193	3.7	4	12.5	213.2	44.3		
	6/13/2007		8.28	-	-	92.57	274	8.3	5.8	24.7	312.8	86.5		
	9/19/2007		9.16	-	-	91.69	285	6.2	4.2	20.5	315.9	33		
	12/11/2007		9.90	-	-	90.95	249	5	4.2	17.6	275.8	31.6		
	3/13/2008		9.21	-	-	91.64	172	3.6	11	14.4	201	ND < 1		
	6/6/2008		9.33	-	-	91.52	134	4.4	8.5	15.8	162.7	20.6		
	12/30/2008		9.22	-	-	91.63	603	12.3	115	53.9	784.2	41		
	3/16/2009		10.21	-	-	90.64	144	3.2	32.2	17.7	197.1	12.9		
	6/8/2009		9.16	-	-	91.69	474	8.6	69.2	33.5	585.3	147		
	7/20/2009		9.38	-	-	91.47	14.5	0.56	15.2	2.4	32.66	41.9		
	9/24/2009		9.71	-	-	91.14	54.8	3.1	37.8	21.4	117.1	113		
	12/3/2009		9.75	-	-	91.10	120	3.9	52.7	28.5	205.1	88.4		
	3/3/2010		9.15	-	-	91.70	148	3.6	23.1	16.1	190.8	41.4		
	6/7/2010		8.97	-	-	91.88	22.9	1.1	8.4	7.2	39.6	8.6		
	9/1/2010		10.22	-	-	90.63	111	2.4	10.7	11.6	135.7	23		
	12/3/2010		10.00	-	-	90.85	87	1.6	7.5	7	103.1	20.3		
	3/29/2011		8.53	-	-	92.32	2.1	ND < 1	0.34	0.32	2.76	6.7		
	6/16/2011		8.90	-	-	91.95	3.5	0.36	0.72	1.3	5.88	8.9		
	8/8/2011		9.70	-	-	91.15	24	1.4	3.5	6.6	35.5	32.5		
	9/19/2011		8.39	-	-	92.46	2.8	0.35	2.4	3.2	8.75	ND < 1		
	3/16/2012		10.17	-	-	90.68	27	1.05	8.41	4.22	40.68	24		
	6/8/2012		9.42	-	-	91.43	30.2	ND < 1.00	4.87	ND < 3.00	35.07	24.3		
	9/7/2012		9.66	-	-	91.19	38.2	ND < 1.00	4.92	ND < 3.00	43.12	ND < 1.00		
	12/18/2012		9.98	-	-	90.87	50.5	1.02	5.07	ND < 3.00	56.59	13.4		
	3/14/2013		9.58	-	-	91.27	35.3	ND < 1.00	5.36	ND < 3.00	40.66	13.5		
	6/24/2013		8.36	-	-	92.49	2.76	ND < 1.00	ND < 1.00	ND < 3.00	2.76	2.48		
9/4/2013		9.58	-	-	91.27	15.5	ND < 1.00	3.19	ND < 2.00	18.69	7.88			
9/6/2013		9.65	-	-	91.20	15.5	ND < 1.00	3.19	ND < 2.00	18.69	7.88			
10/7/2013		9.98	-	-	90.87	-	-	-	-	-	-	-		
12/10/2013		10.67	-	-	90.18	34.4	ND < 1.00	1.45	ND < 3.00	35.85	12.1			
1/21/2014		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10	
MW-12 (cont)	3/10/2014	100.85	-	-	-	-	5.71	ND < 1.00	ND < 1.00	ND < 3.00	5.71	ND < 1.00	
	6/3/2014		8.81	-	-	92.04	2.19	ND < 1.00	ND < 1.00	ND < 2.00	2.19	1.59	
	10/2/2014		10.25	-	-	90.60	10.2	ND < 1.00	ND < 1.00	ND < 2.00	10.2	5.21	
	12/3/2014		9.55	-	-	91.30	19.9	ND < 1.00	ND < 1.00	ND < 2.00	19.9	8.41	
	3/11/2015		9.34	-	-	91.51	10.7	ND < 1.00	ND < 1.00	ND < 2.00	10.7	ND < 1.00	
	6/18/2015		9.44	-	-	91.41	1.56	ND < 1.00	ND < 1.00	ND < 3.00	1.56	3.48	
	9/9/2015		9.76	-	-	91.09	8.05	ND < 1.00	ND < 1.00	ND < 3.00	8.05	ND < 1.00	
	12/10/2015		10.16	-	-	90.69	6.74	ND < 1.00	ND < 1.00	ND < 3.00	6.74	2.28	
	3/16/2016		9.10	-	-	91.75	3.76	ND < 1.00	ND < 1.00	ND < 3.00	3.76	ND < 1.00	
	6/15/2016		9.49	-	-	91.36	9.33	ND < 1.00	ND < 1.00	ND < 3.00	9.33	5.40	
9/19/2016		10.35	-	-	90.50	9.06	ND < 1.00*	ND < 1.00*	ND < 3.00*	9.06	1.84		
12/8/2016		9.80	-	-	91.05	14.8	ND < 1.00	ND < 1.00	ND < 3.00	14.8	9.59		
3/16/2017		9.65	-	-	91.20	1.75	ND < 1.00	ND < 1.00	ND < 3.00	1.75	ND < 1.00		
MW-13	2/28/2005	100.04	8.83	6.66	2.17	92.84	-	-	-	-	-	-	
	6/6/2005		8.54	8.53	0.01	91.51	-	-	-	-	-	-	
	9/8/2005		9.37	9.16	0.21	90.83	-	-	-	-	-	-	
	12/29/2005		8.65	8.64	0.01	91.40	-	-	-	-	-	-	
	3/20/2006		6.67	6.66	0.01	93.38	-	-	-	-	-	-	
	6/7/2006		7.61	-	-	92.43	-	-	-	-	-	-	
	9/14/2006		7.34	7.32	0.02	92.72	-	-	-	-	-	-	
	12/7/2006		7.71	7.56	0.15	92.44	-	-	-	-	-	-	
	3/29/2007		8.53	-	-	91.51	76.5	ND < 5	ND < 5	ND < 5	76.5	9.3	
	6/13/2007		7.55	-	-	92.49	56.1	2.6	172	56.9	287.6	11	
	9/19/2007		8.53	8.51	0.02	91.53	-	-	-	-	-	-	
	12/11/2007		9.30	9.28	0.02	90.76	-	-	-	-	-	-	
	3/13/2008		8.58	-	-	91.46	179	6.1	303	74.7	562.8	13.3	
	6/6/2008		8.70	-	-	91.34	245	10.2	354	95.8	705	20.8	
	12/30/2008		8.37	-	-	91.67	226	20.3	394	136	776.3	12.3	
	3/16/2009		9.76	-	-	90.28	270	22.8	423	135	850.8	11.9	
	6/8/2009		8.24	-	-	91.80	68.6	6.2	129	36.8	240.6	11.7	
	7/20/2009		8.31	-	-	91.73	39	7.9	300	88.6	435.5	15.9	
	9/24/2009		9.01	-	-	91.03	115	4.1	295	44.1	458.2	10.8	
	12/3/2009		8.96	-	-	91.08	219	7	295	53	574	13.6	
	3/3/2010		7.90	-	-	92.14	31.8	2.3	109	18.5	161.6	4.8	
	6/7/2010		8.33	-	-	91.71	21.2	1.7	149	19.9	191.8	18.6	
	9/1/2010		9.44	-	-	90.60	541	120	884	1,490	3,035	16.9	
	12/3/2010		9.13	-	-	90.91	321	114	685	1,240	2,360	ND < 5	
	3/29/2011		7.90	-	-	92.14	6	ND < 1	8.7	5.2	19.9	3	
	6/16/2011		5.30	-	-	94.74	31.5	2	62	34.4	129.9	10.5	
	8/8/2011		9.04	-	-	91.00	212	40.6	260	284	796.6	3.1	
	9/19/2011		7.36	-	-	92.68	12.3	2	174	57.5	245.8	1.3	
	12/5/2011		8.25	-	-	91.79	20	1.8	110	44	175.8	3.4	
	3/16/2012		9.44	-	-	90.60	194	56	505	294	1,049	1.71	
	6/8/2012		8.62	-	-	91.42	135	38.6	331	235	739.6	2.74	
	9/7/2012		8.92	-	-	91.12	178	39.2	421	237	875.2	ND < 1.00	
	12/18/2012		9.09	-	-	90.95	308	84.5	663	452	1,507.5	2.82	
	3/14/2013		8.92	-	-	91.12	586	114	590	948	2,238	6.10	
	6/24/2013		7.74	-	-	92.30	117	38.6	544	399	1,098.6	2.43	
	9/4/2013		8.94	8.91	0.03	91.12	-	-	-	-	-	-	
	9/6/2013		9.06	8.89	0.17	91.11	-	-	-	-	-	-	
	9/26/2013		9.16	9.15	0.01	90.89	395	77.9	515	458	1,445.9	3.87	
	10/7/2013		9.21	-	-	90.83	-	-	-	-	-	-	
	10/23/2013		9.45	-	-	90.59	-	-	-	-	-	-	
11/11/2013		9.86	-	-	90.18	-	-	-	-	-	-		
12/10/2013		10.02	-	-	90.02	767	126	744	1,240	2,877	13.7		
1/21/2014		9.19	-	-	90.85	-	-	-	-	-	-		
3/10/2014		-	-	-	-	250	53.8	294	461	1,058.8	2.51		
6/3/2014		8.26	-	-	91.78	92.1	29.0	235	383	739.1	1.52		
10/2/2014		9.48	-	-	90.56	434	119	744	1,290	2,587	1.21		
12/3/2014		8.84	-	-	91.20	395	118	755	1,000	2,268	ND < 1.00		
3/11/2015		8.30	-	-	91.74	129	69.7	804	1,040	2,042.7	2.82		
6/18/2015		8.67	8.62	0.05	91.41	-	-	-	-	-	-		
9/9/2015		9.05	-	-	90.99	619	117	762	715	2,213	ND < 1.00		
12/10/2015		9.45	9.30	0.15	90.70	-	-	-	-	-	-		
3/16/2016		8.54	8.46	0.08	91.56	252	92.6	820	620	1,784.6	ND < 1.00		
6/15/2016		8.85	8.80	0.05	91.23	810	114	870	939	2,733	ND < 5.00		
9/19/2016		9.51	9.49	0.02	90.55	971	165	985	1,500	3,621	ND < 5.00		
12/8/2016		8.86	8.79	0.07	91.23	731	69.4	677	705	2,182.4	ND < 5.00		
3/16/2017		8.99	8.98	0.01	91.06	491	84.7	659	576	1,810.7	ND < 10.0		
MW-14	2/28/2005	100.04	12.87	-	-	87.17	4.2	0.61	1.7	6.7	13.21	2.5	
	6/6/2005		13.02	-	-	87.02	12.6	1	2.4	9.3	25.3	ND < 1	

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	NYSDEC TOGS 1.1.1 WQS			Total BTEX (µg/L)	MTBE (µg/L)	Comments	
							Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)				
							1	5	5	5	NS	10	
MW-14 (cont)	3/20/2006	100.04	13.03	12.53	0.50	87.39	-	-	-	-	-	-	
	6/7/2006		8.19	8.12	0.07	91.90	-	-	-	-	-	-	
	12/7/2006		13.30	8.55	4.75	90.30	-	-	-	-	-	-	
	3/29/2007		10.52	-	-	89.52	118	4.8	1.4	11.3	135.5	ND < 1	
	6/13/2007		8.38	-	-	91.66	125	5.6	5.4	41.1	177.1	ND < 1	
	9/19/2007		10.08	-	-	89.96	121	5	4.1	31.3	161.4	ND < 1	
	12/11/2007		10.95	10.90	0.05	89.13	-	-	-	-	-	-	
	3/13/2008		9.73	-	-	90.31	66.7	2.7	0.76	4.6	74.76	ND < 1	
	6/6/2008		10.05	-	-	89.99	95.5	3.6	1.3	5.8	106.2	ND < 1	
	12/30/2008		9.59	-	-	90.45	85.3	2.5	0.51	2.1	90.41	ND < 1	
	3/16/2009		10.44	-	-	89.60	101	4.1	0.77	4.3	110.17	ND < 1	
	6/8/2009		9.46	-	-	90.58	54.8	2.3	1.2	4.2	62.5	ND < 1	
	7/20/2009		9.30	-	-	90.74	51.6	1.3	0.58	2.3	55.78	ND < 1	
	9/24/2009		10.00	-	-	90.04	102	3.8	0.90	5.9	112.6	ND < 1	
	12/3/2009		9.81	-	-	90.23	147	4.3	1.1	4.6	157	ND < 1	
	3/3/2010		8.90	-	-	91.14	13.5	ND < 1	ND < 1	ND < 1	13.5	ND < 1	
	6/7/2010		9.31	-	-	90.73	50.3	0.95	0.32	1.2	52.77	ND < 1	
	9/1/2010		10.36	-	-	89.68	139	3.4	1.2	3.7	147.3	ND < 1	
	12/3/2010		10.11	-	-	89.93	114	4	0.86	3.2	122.06	ND < 1	
	3/29/2011		8.60	-	-	91.44	12.7	ND < 1	ND < 1	ND < 1	12.7	ND < 1	
	6/16/2011		9.20	-	-	90.84	41.4	0.55	0.27	0.53	42.75	ND < 1	
	8/8/2011		9.87	-	-	90.17	84.1	0.77	ND < 1	ND < 1	84.87	ND < 1	
	9/19/2011		8.22	-	-	91.82	3.8	ND < 1	ND < 1	ND < 1	3.8	ND < 1	
	12/5/2011		9.19	-	-	90.85	64	0.39	0.22	0.60	65.21	ND < 1.08	
	3/16/2012		10.36	-	-	89.68	91	1.28	ND < 1	ND < 3	92.28	ND < 1	
	6/8/2012		9.62	-	-	90.42	74.8	ND < 1.00	ND < 1.00	ND < 3.00	74.8	ND < 1.00	
	9/7/2012		9.82	-	-	90.22	117	1.96	ND < 1.00	ND < 3.00	118.96	ND < 1.00	
	12/18/2012		9.84	-	-	90.20	70.8	1.60	ND < 1.00	ND < 3.00	72.4	ND < 1.00	
	3/14/2013		10.43	-	-	89.61	20.2	ND < 1.00	ND < 1.00	ND < 3.00	20.2	ND < 1.00	
	6/24/2013		8.50	-	-	91.54	7.68	ND < 1.00	ND < 1.00	ND < 3.00	7.68	ND < 1.00	
	9/4/2013		9.77	-	-	90.27	44.2	ND < 1.00	ND < 1.00	ND < 2.00	44.2	ND < 1.00	
9/6/2013		9.85	-	-	90.19	44.2	ND < 1.00	ND < 1.00	ND < 2.00	44.2	ND < 1.00		
12/10/2013		10.56	-	-	89.48	51.9	ND < 1.00	ND < 1.00	ND < 3.00	51.9	ND < 1.00		
1/21/2014		-	-	-	-	-	-	-	-	-	-		
3/10/2014		-	-	-	-	8.32	ND < 1.00	ND < 1.00	ND < 3.00	8.32	ND < 1.00		
6/3/2014		8.92	-	-	91.12	4.91	ND < 1.00	ND < 1.00	ND < 2.00	4.91	ND < 1.00		
10/2/2014		10.49	-	-	89.55	42.8	ND < 1.00	ND < 1.00	ND < 2.00	42.8	ND < 1.00		
12/3/2014		9.59	-	-	90.45	20.2	ND < 1.00	ND < 1.00	ND < 2.00	20.2	ND < 1.00		
3/11/2015		9.34	-	-	90.70	8.69	ND < 1.00	ND < 1.00	ND < 2.00	8.69	ND < 1.00		
6/18/2015		9.44	-	-	90.60	34.2	ND < 1.00	ND < 1.00	ND < 3.00	34.2	ND < 1.00		
9/9/2015		9.97	-	-	90.07	46.4	ND < 1.00	ND < 1.00	ND < 3.00	46.4	ND < 1.00		
12/10/2015		10.24	-	-	89.80	38.3	ND < 1.00	ND < 1.00	ND < 3.00	38.3	ND < 1.00		
3/16/2016		9.28	-	-	90.76	6.99	ND < 1.00	ND < 1.00	ND < 3.00	6.99	ND < 1.00		
6/15/2016		9.86	-	-	90.18	37.1	ND < 1.00	ND < 1.00	ND < 3.00	37.1	ND < 1.00		
9/19/2016		10.52	-	-	89.52	24.8	ND < 10.0*	ND < 10.0	ND < 30.0	24.8	ND < 10.0		
12/8/2016		9.52	-	-	90.52	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	ND < 1.00		
3/16/2017		9.91	-	-	90.13	4.96	ND < 1.00	ND < 1.00	ND < 3.00	4.96	ND < 1.00		
MW-15	9/27/2006	100.47	10.72	-	-	89.75	616	21.1	21.7	64.4	723.2	425	
	12/7/2006		9.29	-	-	91.18	522	16.6	8.2	54.5	601.3	114	
	3/29/2007		9.81	-	-	90.66	389	14	5.9	30.7	439.6	59.5	
	6/13/2007		8.99	-	-	91.48	924	26.7	6	56.8	1,013.5	191	
	9/19/2007		9.72	-	-	90.75	747	16.6	3.5	34.1	801.2	104	
	12/11/2007		10.29	-	-	90.18	800	15.1	2.8	40	857.9	119	
	3/13/2008		9.85	-	-	90.62	662	6.4	2.9	15.2	686.5	83.4	
	6/6/2008		9.63	-	-	90.84	509	5.6	1.2	12.7	528.5	81.1	
	12/30/2008		9.50	-	-	90.97	164	1.9	0.58	4.6	171.08	16.8	
	3/16/2009		10.69	-	-	89.78	540	5.8	1.2	9.5	556.5	57.2	
	6/8/2009		9.45	-	-	91.02	141	ND < 1	ND < 1	1	142	14.8	
	7/20/2009		9.33	-	-	91.14	80.7	1.2	0.93	3.7	86.53	19.1	
	9/24/2009		9.91	-	-	90.56	162	3.9	7.3	8.6	181.8	74.5	
	12/3/2009		9.98	-	-	90.49	432	8.6	7.3	17.4	465.3	52.2	
	3/3/2010		9.41	-	-	91.06	606	6.4	8.1	18.5	639	99.2	
	6/7/2010		9.42	-	-	91.05	200	3.6	6.2	6.3	216.1	24.7	
	9/1/2010		10.06	-	-	90.41	194	3.6	2.8	5.3	205.7	101	
	12/3/2010		12.20	-	-	88.27	405	7.6	6.9	13.7	433.2	93.3	
	3/29/2011		9.52	-	-	90.95	119	0.86	ND < 1	0.89	120.75	26.8	
	6/16/2011		9.34	-	-	91.13	8	ND < 1	ND < 1	ND < 1	8	3.4	
8/8/2011		9.93	-	-	90.54	81.1	2.3	0.85	4.2	88.45	45.1		
9/19/2011		8.49	-	-	91.98	43.2	1.5	0.94	4.6	50.24	25.8		
12/5/2011		9.40	-	-	91.07	5	ND < 0.15	ND < 0.21	0.51	5.51	5.4		
3/16/2012		10.57	-	-	89.90	31	ND < 1	ND < 1	ND < 3	31	58		

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10	
MW-15 (cont)	6/8/2012	100.47	9.67	-	-	90.80	3.89	ND < 1.00	ND < 1.00	ND < 3.00	3.89	8.11	
	9/7/2012		9.83	-	-	90.64	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	10.2	
	12/18/2012		9.99	-	-	90.48	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	11.3	
	3/14/2013		10.23	-	-	90.24	6.60	ND < 1.00	ND < 1.00	ND < 3.00	6.6	30.5	
	6/24/2013		8.98	-	-	91.49	2.91	ND < 1.00	ND < 1.00	ND < 3.00	2.91	2.21	
	9/6/2013		10.09	-	-	90.38	1.77	ND < 1.00	ND < 1.00	ND < 2.00	1.77	13.0	
	12/10/2013		10.31	-	-	90.16	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	18.0	
	1/21/2014		-	-	-	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	13.0	
	6/3/2014		9.70	-	-	90.77	1.06	ND < 1.00	ND < 1.00	ND < 2.00	1.06	3.54	
	10/2/2014		10.62	-	-	89.85	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	8.18	
	12/3/2014		10.21	-	-	90.26	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	4.11	
	3/11/2015		10.33	-	-	90.14	ND < 1.00	ND < 1.00	ND < 1.00	ND < 2.00	ND < 5	9.97	
	6/18/2015		10.02	-	-	90.45	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	6.61	
	9/9/2015		10.25	-	-	90.22	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	6.55	
	12/10/2015		10.50	-	-	89.97	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	6.69	
	3/16/2016		10.12	-	-	90.35	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	3.18	
6/15/2016		10.26	-	-	90.21	2.49	ND < 1.00	ND < 1.00	ND < 3.00	2.49	4.76		
9/19/2016		10.59	-	-	89.88	ND < 1.00*	ND < 1.00*	ND < 1.00*	ND < 3.00*	ND < 6	8.42		
12/8/2016		9.77	-	-	90.70	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	2.96		
3/16/2017		9.90	-	-	90.57	1.23	ND < 1.00	ND < 1.00	ND < 3.00	1.23	4.17		
MW-16	9/27/2006	100.42	11.90	-	-	88.52	1,600	159	1,220	2,520	5,499	2.3	
	12/7/2006		18.97	10.25	8.72	87.99	-	-	-	-	-	-	
	3/29/2007		11.36	-	-	89.06	2,320	87.1	430	1,110	3,947.1	ND < 20	
	6/13/2007		10.82	10.68	0.14	89.71	-	-	-	-	-	-	
	9/19/2007		10.98	10.76	0.22	89.61	-	-	-	-	-	-	
	12/11/2007		9.80	9.77	0.03	90.64	-	-	-	-	-	-	
	3/13/2008		10.89	-	-	89.53	1,200	34.1	146	303	1,683.1	ND < 10	
	6/6/2008		10.06	-	-	90.36	1,350	49.6	225	394	2,018.6	16.1	
	12/30/2008		9.66	-	-	90.76	958	59.8	393	662	2,072.8	7.7	
	3/16/2009		10.70	-	-	89.72	1,320	44	141	222	1,727	3.7	
	6/8/2009		9.64	-	-	90.78	2,830	158	667	1,010	4,665	ND < 20	
	7/20/2009		9.56	9.47	0.09	90.93	-	-	-	-	-	-	
	9/24/2009		9.96	9.80	0.16	90.58	-	-	-	-	-	-	
	12/3/2009		9.85	9.76	0.09	90.64	-	-	-	-	-	-	
	3/3/2010		8.90	-	-	91.52	940	104	1,070	2,020	4,134	3.5	
	6/7/2010		9.28	9.00	0.28	91.35	-	-	-	-	-	-	
	9/1/2010		10.21	-	-	90.21	2,590	131	492	828	4,041	ND < 20	
	12/3/2010		9.67	9.66	0.01	90.76	-	-	-	-	-	-	
	3/29/2011		8.45	-	-	91.97	312	26.3	284	319	941.3	ND < 2.5	
	6/16/2011		8.75	-	-	91.67	1,490	76.6	433	634	2,633.6	ND < 10	
	8/8/2011		9.44	9.41	0.03	91.00	-	-	-	-	-	-	
	9/19/2011		7.89	-	-	92.53	68.3	4.1	59.9	77.1	209.4	ND < 1	
	12/5/2011		8.77	-	-	91.65	655	26	237	246	1,164	ND < 0.37	
	3/16/2012		9.96	-	-	90.46	1,400	59	157	342	1,958	ND < 1	
	6/8/2012		9.22	-	-	91.20	1,310	49.2	157	229	1,745.2	ND < 1.00	
	9/7/2012		9.36	-	-	91.06	2,060	81.1	303	380	2,824.1	ND < 1.00	
	12/18/2012		9.56	-	-	90.86	1,130	63.4	423	329	1,945.4	ND < 1.00	
	3/14/2013		9.39	-	-	91.03	1,140	59.3	159	261	1,619.3	ND < 1.00	
	6/24/2013		8.23	-	-	92.19	509	46.1	177	303	1,035.1	ND < 1.00	
	9/4/2013		9.32	9.28	0.04	91.13	-	-	-	-	-	-	
	9/6/2013		9.57	9.36	0.21	91.01	-	-	-	-	-	-	
	9/26/2013		10.83	10.60	0.23	89.76	-	-	-	-	-	-	
	10/23/2013		10.08	9.83	0.25	90.53	-	-	-	-	-	-	
	11/11/2013		10.34	-	-	90.08	-	-	-	-	-	-	
	12/10/2013		10.75	-	-	89.67	1,060	57.8	99.1	200	1,416.9	1.30	
	1/21/2014		9.68	9.56	0.12	90.83	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	-	-	-	-	-	-	
6/3/2014		8.72	8.64	0.08	91.76	-	-	-	-	-	-		
10/2/2014		9.85	-	-	90.57	1,060	68.5	495	1,020	2,643.5	ND < 10.0	SHEEN	
12/3/2014		9.25	-	-	91.17	1,380	86.9	337	1,390	3,193.9	ND < 1.00		
3/11/2015		8.99	-	-	91.43	524	80.5	590	1,190	2,384.5	ND < 1.00		
6/18/2015		9.08	-	-	91.34	1,330	128	586	1,180	3,224	ND < 1.00		
9/9/2015		9.52	-	-	90.90	1,040	106	522	1,130	2,798	ND < 1.00		
12/10/2015		9.84	-	-	90.58	1,090	85.6	347	678	2,200.6	ND < 1.00		
3/16/2016		9.05	-	-	91.37	333	108	621	1,150	2,212	ND < 1.00		
6/15/2016		9.62	-	-	90.80	923	101	481	918	2,423	ND < 5.00		
9/19/2016		10.03	-	-	90.39	978	108	534	1,010	2,630	ND < 5.00		
12/8/2016		9.33	-	-	91.09	926	85.4	502	1,010	2,523.4	ND < 5.00		
3/16/2017		9.50	-	-	90.92	906	89.0	433	786	2,214	ND < 10.0		

Table 1



HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene	Toluene	Ethylbenzene	Xylenes, Total	Total BTEX	MTBE	Comments	
							(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10		
MW-17	9/28/2006	100.05	10.59	-	-	89.46	4.8	64.2	378	1,420	1,867	202		
	12/7/2006		10.90	-	-	89.15	19.9	97.6	335	1,090	1,542.5	29.8		
	3/29/2007		10.18	-	-	89.87	15.4	145	432	1,300	1,892.4	19.4		
	6/13/2007		9.55	-	-	90.50	11.1	76.9	228	695	1,011	21.3		
	9/19/2007		9.71	-	-	90.34	11.4	69.3	252	665	997.7	13.6		
	12/11/2007		10.17	-	-	89.88	4.8	32.9	148	386	571.7	4.3		
	3/13/2008		9.17	-	-	90.88	20.4	143	695	2,160	3,018.4	8.2		
	6/6/2008		9.03	-	-	91.02	2.6	14.2	63.7	178	258.5	3.4		
	12/30/2008		8.51	-	-	91.54	18.1	60.3	421	418	917.4	2.3		
	3/16/2009		9.42	-	-	90.63	3.8	20.4	134	184	342.2	2.1		
	6/8/2009		8.19	-	-	91.86	244	80.1	773	439	1,536.1	7.7		
	7/20/2009		8.23	-	-	91.82	27.4	145	726	1,100	1,998.4	1.7		
	9/24/2009		8.93	-	-	91.12	10.6	47.7	324	369	751.3	ND < 1		
	12/3/2009		8.91	-	-	91.14	32.7	161	854	1,170	2,217.7	1.7		
	3/3/2010		8.02	-	-	92.03	7.5	37.7	225	289	559.2	1.4		
	6/7/2010		8.33	-	-	91.72	7.6	35	259	274	575.6	0.83		
	9/1/2010		9.01	-	-	91.04	16.3	91.3	716	675	1,498.6	ND < 2		
	12/3/2010		8.80	-	-	91.25	19.8	103	757	881	1,760.8	ND < 1		
	3/29/2011		7.83	-	-	92.22	6.3	14.7	166	90.9	277.9	1.2		
	6/16/2011		7.96	7.90	0.06	92.14	-	-	-	-	-	-	-	
	8/8/2011		8.62	8.58	0.04	91.46	-	-	-	-	-	-	-	
	9/19/2011		7.12	7.11	0.01	92.94	-	-	-	-	-	-	-	
	12/5/2011		7.86	-	-	92.19	9.3	43	230	209	491.3	1		
	3/16/2012		9.40	9.33	0.07	90.70	-	-	-	-	-	-	-	
	6/8/2012		8.49	-	-	91.56	23.7	78.4	402	239	743.1	ND < 1.00		
	9/7/2012		8.49	-	-	91.56	24.6	89.0	279	304	696.6	ND < 1.00		
	12/18/2012		8.62	-	-	91.43	18.8	72.5	275	332	698.3	ND < 1.00		
	3/14/2013		8.37	-	-	91.68	3.85	21.2	80.2	69.1	174.35	1.40		
	6/24/2013		7.41	-	-	92.64	6.01	31.1	112	101	250.11	1.02		
	9/4/2013		8.75	8.70	0.05	91.34	-	-	-	-	-	-	-	
	9/6/2013		9.74	9.70	0.04	90.34	-	-	-	-	-	-	-	
	9/26/2013		7.94	7.90	0.04	92.14	4.58	21.3	84.9	63.5	174.28	ND < 1.00		
	10/7/2013		7.93	-	-	92.12	-	-	-	-	-	-	-	
10/23/2013		9.06	-	-	90.99	-	-	-	-	-	-	-		
11/11/2013		9.52	-	-	90.53	-	-	-	-	-	-	-		
12/10/2013		9.45	-	-	90.60	10.2	80.4	562	719	1,371.6	ND < 1.00			
1/21/2014		8.75	-	-	91.30	-	-	-	-	-	-	-		
3/10/2014		-	-	-	-	-	-	-	-	-	-	-		
6/3/2014		7.86	7.85	0.01	92.20	16.1	98.6	288	412	814.7	ND < 1.00			
10/2/2014		8.92	-	-	91.13	32.5	232	1,230	1,500	2,994.5	ND < 1.00			
12/3/2014		8.21	-	-	91.84	27.6	151	1,030	1,220	2,428.6	ND < 1.00			
3/11/2015		7.81	-	-	92.24	10.2	77.4	757	796	1,640.6	ND < 1.00			
6/18/2015		8.09	-	-	91.96	25.2	167	1,080	1,240	2,512.2	ND < 1.00			
9/9/2015		8.39	-	-	91.66	18.8	120	832	1,050	2,020.8	ND < 1.00			
12/10/2015		8.88	-	-	91.17	18.8	133	1,220	797	2,168.8	ND < 1.00			
3/16/2016		7.95	-	-	92.10	15.6	95.5	708	757	1,576.1	ND < 1.00			
6/15/2016		8.31	-	-	91.74	19.1	129	828	1,030	2,006.1	ND < 5.00			
9/19/2016		9.06	-	-	90.99	37.7	159	1,060	1,190	2,446.7	ND < 5.00			
12/8/2016		8.26	-	-	91.79	24.5	125	923	1,130	2,202.5	ND < 5.00			
3/16/2017		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE	
MW-18	9/28/2006	101.41	12.54	-	-	88.87	1,470	137	499	1,160	3,266	5.8		
	12/7/2006		12.76	-	-	88.65	2,490	210	518	1,820	5,038	ND < 10		
	3/29/2007		12.33	-	-	89.08	2,190	170	510	1,100	3,970	ND < 20		
	6/13/2007		11.10	-	-	90.31	2,400	296	1,040	3,360	7,096	ND < 10		
	9/19/2007		12.02	-	-	89.39	1,820	114	397	951	3,282	ND < 2.5		
	12/11/2007		13.40	-	-	88.01	1,670	63.6	241	439	2,413.6	ND < 5		
	3/13/2008		13.12	-	-	88.29	1,770	94.2	399	649	2,912.2	ND < 10		
	6/6/2008		13.24	-	-	88.17	2,410	156	746	1,220	4,532	ND < 10		
	12/30/2008		12.58	-	-	88.83	1,970	80.4	319	620	2,989.4	ND < 5		
	3/16/2009		12.85	-	-	88.56	1,850	79.7	254	417	2,600.7	ND < 5		
	6/8/2009		12.51	-	-	88.90	1,680	79.8	302	480	2,541.8	ND < 10		
	7/20/2009		12.65	-	-	88.76	1,570	83.7	301	537	2,491.7	ND < 10		
	9/24/2009		12.96	-	-	88.45	1,010	48.8	131	363	1,552.8	ND < 1		
	12/3/2009		12.76	-	-	88.65	1,380	57.2	355	720	2,512.2	ND < 5		
	3/3/2010		11.90	-	-	89.51	1,790	80.6	400	548	2,818.6	ND < 10		
	6/7/2010		12.47	-	-	88.94	1,630	103	502	548	2,783	ND < 5		
	9/1/2010		12.83	-	-	88.58	2,580	102	347	637	3,666	ND < 20		
	12/3/2010		12.87	-	-	88.54	1,020	39.4	119	175	1,353.4	ND < 10		
	3/29/2011		10.46	-	-	90.95	746	34.7	137	163	1,080.7	ND < 5		
	6/16/2011		11.00	-	-	90.41	2,180	123	548	738	3,589	ND < 10		
8/8/2011		10.71	-	-	90.70	2,440	104	261	374	3,179	ND < 10			

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments
NYSDEC TOGS I.1.1 WQS							1	5	5	5	NS	10	
MW-18 (cont)	9/19/2011	101.41	10.34	-	-	91.07	1,200	64.8	318	425	2,007.8	ND < 5	
	12/5/2011		9.90	-	-	91.51	1,620	65	287	345	2,317	ND < 0.92	
	3/16/2012		10.66	-	-	90.75	1,740	101	1,310	1,510	4,661	ND < 1	
	6/8/2012		9.83	-	-	91.58	153	11.9	109	137	410.9	ND < 1.00	
	9/7/2012		10.05	-	-	91.36	1,070	53.8	451	337	1,911.8	ND < 1.00	
	12/18/2012		10.18	-	-	91.23	944	52.9	160	315	1,471.9	ND < 1.00	
	3/14/2013		9.95	-	-	91.46	780	31.3	89.2	137	1,037.5	ND < 1.00	
	6/24/2013		8.85	-	-	92.56	382	26.5	97.3	188	693.8	ND < 1.00	
	9/4/2013		10.13	-	-	91.28	1,150	87.8	371	522	2,130.8	ND < 1.00	
	9/6/2013		10.66	-	-	90.75	1,150	87.8	371	522	2,130.8	ND < 1.00	
	12/10/2013		11.01	-	-	90.40	820	55.1	122	176	1,173.1	ND < 1.00	
	1/21/2014		-	-	-	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	897	70.6	230	216	1,413.6	ND < 1.00	
	6/3/2014		9.45	-	-	91.96	282	48.4	209	248	787.4	ND < 1.00	
	10/2/2014		10.62	-	-	90.79	858	65.1	175	175	1,273.1	ND < 10.0	SHEEN
	12/3/2014		10.06	-	-	91.35	1,300	102	330	404	2,136	ND < 1.00	SHEEN
	3/11/2015		9.63	-	-	91.78	1,220	104	520	376	2,220	ND < 1.00	
	6/18/2015		9.76	-	-	91.65	774	74.8	268	427	1,543.8	ND < 1.00	
	9/9/2015		10.17	-	-	91.24	1,340	89.4	237	370	2,036.4	ND < 1.00	
	12/10/2015		10.86	-	-	90.55	1,090	85.3	250	432	1,857.3	ND < 1.00	
3/16/2016		9.71	-	-	91.70	302	77.2	170	596	1,145.2	ND < 1.00		
6/15/2016		10.22	-	-	91.19	933	99.6	211	521	1,764.6	ND < 5.00		
9/19/2016		11.13	-	-	90.28	1,110	130	255	716	2,211	ND < 5.00		
12/8/2016		10.08	-	-	91.33	971	82.8	145	467	1,665.8	ND < 5.00		
3/16/2017		-	-	-	-	-	-	-	-	-	-	-	INACCESSIBLE
MW-19	9/6/2013	NSD	9.41	-	-	-	39.3	15.8	171	58.3	284.4	ND < 1.00	NSD
	10/7/2013		9.58	-	-	-	-	-	-	-	-	-	NSD
	10/23/2013		9.89	-	-	-	-	-	-	-	-	-	NSD
	11/11/2013		10.42	-	-	-	-	-	-	-	-	-	NSD
	12/10/2013		10.29	-	-	-	57.5	18.1	148	56.2	279.8	4.75	NSD
	1/21/2014		9.49	-	-	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	67.1	8.28	245	58.0	378.38	2.75	
	6/3/2014		8.58	-	-	-	35.7	4.06	126	36.2	201.96	ND < 1.00	
	10/2/2014		9.92	-	-	-	68.9	12.9	183	40.5	305.3	ND < 10.0	
	12/3/2014		9.15	-	-	-	57.7	11.3	168	46.4	283.4	ND < 1.00	
	3/11/2015		8.95	-	-	-	28.8	6.76	102	32.0	169.56	ND < 1.00	
	6/18/2015		9.08	-	-	-	63.6	9.92	72.6	34.5	180.62	2.40	
	9/9/2015		9.46	-	-	-	52.3	13.7	89.3	47.9	203.2	ND < 1.00	
	12/10/2015		9.82	-	-	-	38.3	13.9	105	58.5	215.7	ND < 1.00	
	3/16/2016		8.93	-	-	-	40.5	12.8	123	52.8	229.1	ND < 1.00	NSD
	6/15/2016		9.31	-	-	-	43.0	10.3	87.6	57.2	198.1	ND < 1.00	NSD
9/19/2016		10.03	-	-	-	50.9	19.1	72.0	68.2	210.2	ND < 1.00	NSD	
12/8/2016		9.20	-	-	-	39.8	11.0	49.5	50.3	150.6	ND < 1.00		
3/16/2017		9.47	-	-	-	45.7	12.4	46.5	46.9	151.5	ND < 1.00		
MW-20	9/6/2013	NSD	9.34	-	-	-	44.5	3.65	44.6	15.4	108.15	29.2	NSD
	10/7/2013		9.58	-	-	-	-	-	-	-	-	-	NSD
	10/23/2013		9.82	-	-	-	-	-	-	-	-	-	NSD
	11/11/2013		10.20	-	-	-	-	-	-	-	-	-	NSD
	12/10/2013		10.24	-	-	-	145	2.62	89.1	21.1	257.82	47.4	NSD
	1/21/2014		9.35	-	-	-	-	-	-	-	-	-	
	3/10/2014		-	-	-	-	19.8	ND < 1.00	2.63	ND < 3.00	22.43	10.5	
	6/3/2014		8.38	-	-	-	3.99	ND < 1.00	ND < 1.00	ND < 2.00	3.99	2.97	
	10/2/2014		9.83	-	-	-	5.98	ND < 1.00	2.57	ND < 2.00	8.55	8.10	
	12/3/2014		9.11	-	-	-	10.9	ND < 1.00	7.94	4.12	22.96	6.57	
	3/11/2015		8.89	-	-	-	50.1	1.34	5.24	3.19	59.87	14.5	
	6/18/2015		9.04	-	-	-	4.01	ND < 1.00	ND < 1.00	ND < 3.00	4.01	3.64	
	9/9/2015		9.44	-	-	-	4.15	ND < 1.00	ND < 1.00	ND < 3.00	4.15	7.68	
	12/10/2015		9.74	-	-	-	5.91	ND < 1.00	ND < 1.00	ND < 3.00	5.91	5.26	
	3/16/2016		8.72	-	-	-	1.65	ND < 1.00	ND < 1.00	ND < 3.00	1.65	1.64	NSD
	6/15/2016		9.22	-	-	-	3.71	ND < 1.00	ND < 1.00	ND < 3.00	3.71	4.22	NSD
	9/19/2016		9.94	-	-	-	8.53	ND < 1.00*	ND < 1.00*	ND < 3.00*	8.53	6.90	NSD
	12/8/2016		9.17	-	-	-	3.22	ND < 1.00	ND < 1.00	ND < 3.00	3.22	5.14	
3/16/2017		9.30	-	-	-	ND < 1.00	ND < 1.00	ND < 1.00	ND < 3.00	ND < 6	1.82		

HISTORICAL GROUNDWATER MONITORING SUMMARY

Former Mobil Station # 17-EMW

304 Columbia Street

Brooklyn, New York

Well	Date	Casing Elevation (ft)	Depth to Water (ft)	Depth to Product (ft)	Product Thickness (ft)	Adjusted Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes, Total (µg/L)	Total BTEX (µg/L)	MTBE (µg/L)	Comments
NYSDEC TOGS 1.1.1 WQS							1	5	5	5	NS	10	

NOTES:

TOGS 1.1.1 WQS = Ambient Water Quality Standards Guidance Values and Groundwater Effluent Limitations, amended April 2000

- = Not analyzed or measured

BOLD = Value exceeds regulatory limits

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

CNL = Could Not Locate

DRY = Insufficient water for sampling

ft = Feet

J = Estimated value

mg/L = Milligrams/Liter

MTBE = Methyl tertiary butyl ether

ND < # = Not detected. Where an analyte is not detected, a reporting limit is given.

NS = No Standard

NSD = No Survey Data

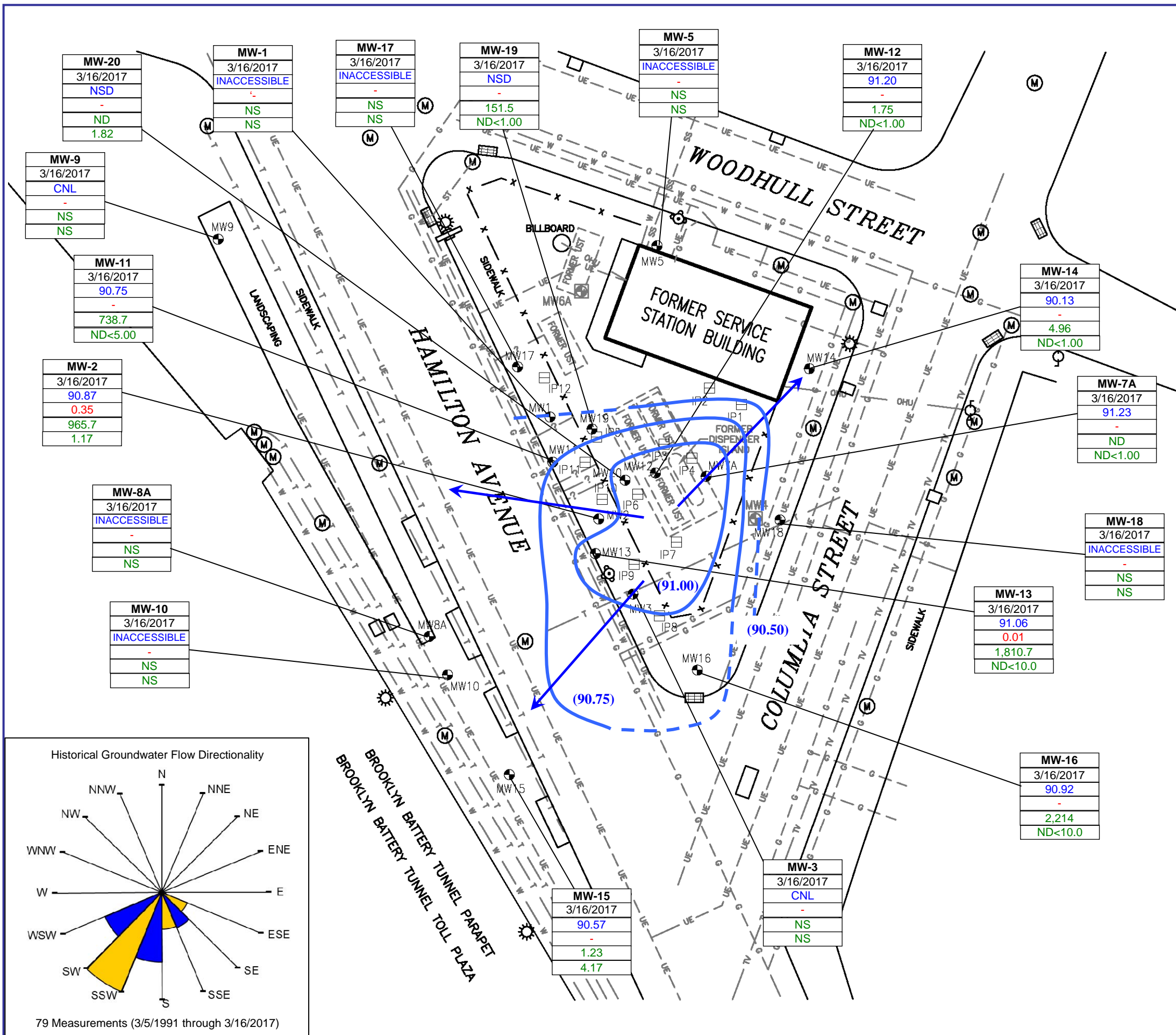
NYSDEC = New York State Department of Environmental Conservation

µg/L = Micrograms per liter

NA = Not Analyzed

NM = Field Data Not Measured

FIGURE



LEGEND

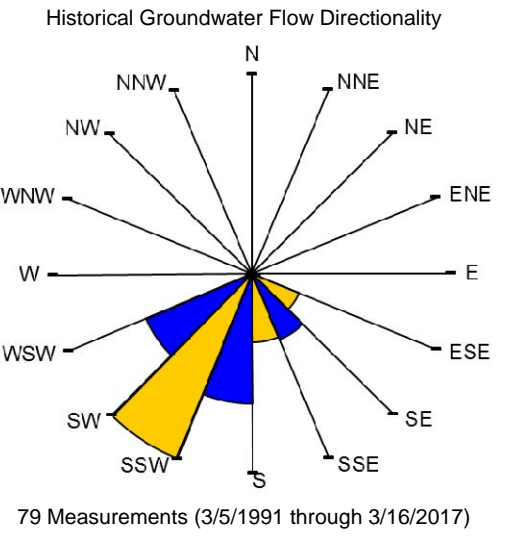
- x — FENCE
- ▣ CATCH BASIN
- ⊙(M) UTILITY MANHOLE
- ⊙(P) UTILITY POLE
- ⊙(L) LIGHT POLE
- ⊙(H) FIRE HYDRANT
- ⊙(M) MONITORING WELL
- ⊙(M) ABANDONED/DESTROYED MONITORING WELL
- INJECTION POINT
- SS — UNDERGROUND SANITARY SEWER LINE
- TV — UNDERGROUND TELEVISION LINE
- T — UNDERGROUND TELEPHONE LINE
- UE — UNDERGROUND ELECTRIC LINE
- W — UNDERGROUND WATER LINE
- G — UNDERGROUND GAS LINE

MW-16	WELL IDENTIFICATION
3/16/2017	SAMPLE DATE
90.92	GROUNDWATER ELEVATION (feet)
-	LPH THICKNESS (feet)
2,214	TOTAL BTEX CONCENTRATION (µg/L)
ND<10.0	MTBE CONCENTRATION (µg/L)

- LPH LIQUID PHASE HYDROCARBONS
- µg/L MICROGRAMS PER LITER
- CNL COULD NOT LOCATE
- NSD NO SURVEY DATA
- BTEX BENZENE, TOLUENE, ETHYLBENZENE AND TOTAL XYLENES
- MTBE METHYL *tert*- BUTYL ETHER
- ND < # WHERE AN ANALYTE IS NOT DETECTED, A METHOD DETECTION LIMIT IS GIVEN.
- NS NOT SAMPLED
- (91.00) GROUNDWATER ELEVATION (feet)
- — GROUNDWATER CONTOUR (feet)
- — INFERRED GROUNDWATER CONTOUR (feet)
- GROUNDWATER FLOW DIRECTION

Notes:

DRAFTED BY: JMT (NY-E)	GROUNDWATER MONITORING MAP March 16, 2017		
CHECKED BY: GFB (NY-E)	Former Mobil Station #17-EMW 304 Columbia Street Brooklyn, New York		
REVIEWED BY: DGS (NY-E)	Groundwater & Environmental Services, Inc. 89 CABOT COURT, SUITE A, HAUPPAUGE, NEW YORK 11788		
NORTH 	SCALE IN FEET 	DATE 4/13/2017	FIGURE 1



ATTACHMENT A



LIST OF ACRONYMS

AS :	Air Sparge
BTEX :	Benzene, Toluene, Ethylbenzene and Total Xylenes
Cat-Ox :	Catalytic Oxidizer
COC :	Chemical of Concern
CP-51 SCG :	Soil quality standards as defined by the NYSDEC <i>Commissioner Policy 51/ Soil Cleanup Guidance</i> , amended October 21, 2010 (updated soil cleanup levels to TAGM 4046)
DO :	Dissolved Oxygen
DTW :	Depth to Water
EPA :	Environmental Protection Agency
ESA :	Environmental Site Assessment
eV :	Electron Volt
F&T :	Fate and Transport
ft bgs :	Feet Below Ground Surface
GES :	Groundwater & Environmental Services, Inc.
GPR :	Ground Penetrating Radar
HIT :	High Intensity Targeted
HVE :	High Vacuum Extraction
IP :	Injection Point
IRM :	Interim Remedial Measure
ISCO :	In-situ Chemical Oxidation
lbs/hr :	Pounds Per Hour
LNAPL :	Light Non-Aqueous Phase Liquids
LPH :	Liquid Phase Hydrocarbons
mg/L :	Milligrams per liter
MNA :	Monitored Natural Attenuation
MPE :	Multi-Phase Extraction
MTBE :	Methyl Tertiary Butyl Ether
mV :	Millivolts
MW :	Monitoring Well
ND :	Not Detected
NYCDEP :	New York City Department of Environmental Protection
NYSDEC :	New York State Department of Environmental Conservation
O&M :	Operations and Maintenance
ORP :	Oxidation-Reduction Potential
PID :	Photo-Ionization Detector
ppm _v :	Parts Per Million by Volume
P&T :	Pump and Treat
RAP :	Remedial Action Plan
RSCOs :	Recommended Soil Cleanup Objectives as defined by TAGM 4046
SRS :	Sensitive Receptor Survey
STARS :	<i>Spills Technology and Remediation Series #1</i> , amended August 1992
STIP :	Stipulation Agreement.
SVE :	Soil Vapor Extraction
SVOCs :	Semi Volatile Organic Compounds
TAGM :	<i>Technical and Administrative Guidance Memorandum (#4046): Determination of Soil Cleanup Objectives</i> , amended January 24, 1994
TOC :	Top of Casing



µg/kg :	Micrograms per kilogram
µg/L :	Micrograms per liter
UST :	Underground Storage Tank
VGAC :	Vapor-Phase Granulated Activated Carbon
VEGE :	Vacuum Enhanced Groundwater Extraction
VOCs :	Volatile Organic Compounds
WQS :	Groundwater quality standards as defined by the June 1998 <i>Technical and Operation Guidance Series 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations</i> and the April 2000 <i>Addendum</i> .

ATTACHMENT B



SITE HISTORY

Former Mobil Station #17-EMW
304 Columbia Street
Brooklyn, New York

The site is currently an automobile repair facility. There are currently three (3) closed New York State Department of Environmental Conservation (NYSDEC) Spills associated with the site:

- NYSDEC Spill #93-12498 was opened on January 24, 1994 in response to a tank test failure. The spill was closed on May 14, 2003.
- NYSDEC Spill #05-02047 was opened on May 19, 2005 in response to a used oil spill. The spill was closed on April 26, 2010.
- NYSDEC Spill #06-10200 was opened on December 7, 2006 in response to an unknown spill event. The spill was closed on April 26, 2010.

There is one (1) active NYSDEC Spill associated with the site:

- NYSDEC Spill #89-04339 was opened on August 1, 1989 during UST removal activities. The spill remains open.

Information pertaining to the active spill, along with historical investigation and remedial activities conducted at the site, has been summarized below.

- July 1989 – A tank removal and replacement event was conducted on behalf of Mobil Oil Corporation. Fifteen (15) underground storage tanks (USTs) were removed from the site and four new USTs were installed. Petroleum-impacted soil and liquid phase hydrocarbons (LPH) were discovered during tank removal activities. Approximately 650 tons of petroleum-impacted soil was excavated and disposed at a state-certified landfill.
- August 1, 1989 – Spill #89-04339 was assigned to the site by the NYSDEC.
- July 25, 1990 – A site assessment was conducted at the site. Five (5) monitoring wells were installed (W-1 through W-5). LPH was present in wells W-2 and W-3.
- December 1996 – A subsurface investigation was conducted prior to site divestment, and included the installation of three (3) direct-push soil borings.
- April 22 through 25, 1997 – Site divestment activities were conducted and included the removal of one (1) 1,000-gallon waste oil UST, one (1) 4,000-gallon abandoned single-walled steel gasoline tank, two (2) 4,000-gallon double-walled gasoline fiberglass tanks, one (1) 4,000-gallon abandoned double-walled fiberglass gasoline tank, one (1) pump island, all associated piping, and three (3) hydraulic lifts. Approximately 235.06 tons of petroleum-contaminated soil was excavated and disposed at a state-certified landfill. Seven (7) on-site monitoring wells were destroyed during tank closure activities and site renovations.



- March 25 and April 6, 1998 – A subsurface investigation was conducted which included the installation of four (4) groundwater monitoring wells (MW-1 through MW-3 and MW-5).
- October 11, 1999 – An Environmental Site Assessment was conducted and included the installation of five (5) soil borings (B-1 through B-5) to varying depths between 8 and 34 feet below ground surface (bgs).
- May 10 and 15, 2002 – A *Site Investigation Work Plan* was submitted for proposed delineation and included the installation of ten (10) on-site soil borings and four (4) off-site soil borings (along the north side of Hamilton Avenue) using a direct-push drill rig to 16 feet bgs with groundwater sampling.
- June 24, 2002 – The NYSDEC approved the *Site Investigation Work Plan* and proposed schedules submitted on May 10 and 15, 2002. The NYSDEC requested four (4) additional soil borings along Columbia Street and two additional soil borings along Woodhull Street. The NYSDEC also requested a Sensitive Receptor Survey (SRS) and UST investigation of the former tank field to evaluate the existence and/or proper abandonment of 1,000-gallon USTs from 1997.
- July 22 through 26, 2002 – A subsurface investigation was conducted and included the installation of six (6) on-site soil borings (SB-1, SB-2, SB-4, SB-7, SB-8, and SB-9) and ten (10) off-site soil borings (SB-11 through SB-20).
- December 2, 2002 – A *Subsurface Investigation Report (SIR)* was submitted to the NYSDEC for fieldwork completed in July 2002. Recommendations were made for additional off-site borings/monitoring wells along Hamilton Avenue.
- February 10, 2003 – NYSDEC and ExxonMobil visited the site to discuss proposed monitoring well locations.
- February 21, 2003 – A revised proposed monitoring well/soil boring location map was submitted to the NYSDEC via email in accordance with site discussions on February 10, 2003.
- March 20, 2003 – A letter was received from the NYSDEC to ExxonMobil approving the on- and off-site boring and monitoring well locations submitted on the February 21, 2003 revised map.
- May 12, 2003 – A subsurface investigation was conducted which included the installation of five (5) monitoring wells (MW-6A, MW-7A, MW-8A, MW-9 and MW-10).
- September 16, 2003 – A *Corrective Action Plan (CAP)* was submitted which included a proposed pilot test and future remedial plan.
- September 25, 2003 – The NYSDEC requested the CAP be expanded to include details of the pilot test and the possible installation of additional wells.



- November 18, 2003 – Letter from the NYSDEC approving the amended CAP.
- February 9, 2004 – A subsurface investigation was conducted which included the installation of three (3) soil borings which were completed as monitoring wells (MW-11 through MW-13).
- February 27, 2004 – A high vacuum dual-phase extraction (HVDPE)/enhanced fluid recovery (EFR) event was conducted. During the event, preliminary data was collected to conduct an HVDPE/EFR pilot test.
- November 4, 2004 – A supplemental subsurface investigation was conducted in which one (1) soil boring was installed and completed as a monitoring well (MW-14).
- January 2005 through March 2006 – Enhanced fluid recovery events (EFR) were conducted on a monthly basis. A passive bailer was installed in monitoring well (MW-14) on September 23, 2005. Monitoring wells MW-6, MW-7, and MW-8 were destroyed during construction activities and MW-6A was destroyed in March 2005 during construction for a billboard sign.
- June 2008 – Subsurface investigation was conducted to further evaluate current soil and groundwater hydrocarbon concentrations for additional on- and off-site delineation.
- June 15 through 16, 2009 – Chemical oxidation injections were performed where approximately 1,800 gallons of sodium persulfate and 2,700 gallons of ISOTEC's patented catalyst were injected into twelve injection points located on site (IP-1 through IP-12).
- June 22 and 23, 2010 - Approximately 1,680 gallons of a diluted EnviroClean surfactant solution was injected at MW-1, MW-2, MW-3, MW-13, and MW-16 in order to address LPH observed at the site prior to continuation of chemical injections. On June 24, 25, and 28, 2010, approximately 710 gallons of fluids were recovered during EFR events from the five injection wells.
- July 26 through 28 and August 2 through 4, 2010 – Surfactant injection and recovery events were performed. A diluted EnviroClean surfactant solution was injected at MW-1 through MW-3, MW-13, and MW-16. Approximately 836 gallons of fluids were recovered during EFR events from the five injection wells.
- December 6 through 9, 2010 –An In-Situ Chemical Oxidation (ISCO) pilot test was conducted targeting off-site areas within the eastern sidewalk along Hamilton Avenue and onsite areas within the former gasoline UST area. Twelve injection points were installed. A total of 7,200 gallons of sodium persulfate (at approximately 10.0% concentration) activated with chelated iron catalyst (ASP), including 2,400 gallons of catalyst and 4,800 gallons of oxidizer, were injected.
- August 15 and August 18, 2011 – An ISCO event was conducted targeting off-site areas within the eastern sidewalk along Hamilton Avenue and on-site areas within the former gasoline underground storage tank (UST) area. A total of 7,200 gallons of Activated



Sodium Persulfate (ASP), including 2,400 gallons of catalyst and 4,800 gallons of oxidizer, were injected.

- July 9 through 11, 2012 – A Limited Off-Site Investigation was conducted within the eastern sidewalk along Hamilton Avenue to delineate soil impacts. Vertical Delineation: Soil analytical data results reported concentrations of STARS list compounds above CP-51 soil cleanup levels ranging from 8 to 20 feet below ground surface. Groundwater was encountered between 7 and 10 feet below ground surface within the recently advanced boring locations. This is evidence of a saturated smear zone that exists below the eastern sidewalk of Hamilton Avenue. Horizontal Delineation: Soil analytical data results reported concentrations of STARS list compounds above CP-51 soil cleanup levels within soil borings SB103 through SB107. Soil borings could not be completed south of SB107 due to underground utility obstructions. MW-17, located north of SB103, has contained measurable LPH within the last year. Horizontal delineation of soil impacts extend from SB101 south to MW-16 where increases of BTEX and MTBE have been reported in groundwater within the last year.
- December 18, 2012 – A Site Conceptual Model (SCM) and Remedial Alternatives Analysis (RAA) Report was submitted to NYSDEC.
- July 25, 2013 – A *Surfactant Injection and Well Installation Work Plan* was submitted to the NYSDEC detailing a proposed plan to conduct on-site surfactant injection/extraction activities to reduce the presence of liquid-phase hydrocarbons (LPH) in the vicinity of the western property boundary.
- July 29, 2013 – GES received approval of the July 2013 *Surfactant Injection and Well Installation Work Plan*.
- August 2, 2013 – An Underground Injection Control (UIC) Notification letter was submitted to the U.S. Environmental Protection Agency (EPA) requesting permission to conduct remedial activities at the Site involving the injection of surfactant solution into the subsurface. A copy of the letter was forwarded to the NYSDEC.
- August 29 and September 4, 2013 – Well installation activities were conducted which included the installation of two (2) monitoring wells (MW-19 and MW-20) on the west-central portion of the Site. The wells were installed in accordance with the July 2013 *Surfactant Injection and Well Installation Work Plan*.
- October 7 through 11, 2013 – A surfactant injection and extraction event was conducted at the Site to reduce the presence of LPH along the western property boundary. On October 7, 2013, 750 gallons of surfactant solution were injected into monitoring wells MW-1, MW-2, MW-11, MW-17, MW-19 and MW-20. Between October 8 and 11 of 2013, a total of 1,022 gallons of fluids were extracted from the same monitoring wells.
- October 15, 2013 – A *Monitoring Well Installation Report* was submitted to the NYSDEC detailing the August and September 2013 well installation activities.



- November 11 through 14, 2013 – A surfactant injection and extraction event was conducted at the Site. On November 11, 2013, a total of 500 gallons of surfactant solution was injected into monitoring wells MW-1, MW-2, MW-13 and MW-16. Between November 12 and 14 of 2013, a total of 1,008 gallons of fluids were extracted from the same monitoring wells.
- January 21, 2014 – Conducted post-surfactant injection groundwater monitoring activities which included the gauging of nine (9) monitoring wells (MW-1 through MW-3, MW-11, MW-13, MW-16, MW-17, MW-19 and MW-20). Monitoring well MW-12 was not gauged as it was inaccessible. LPH was detected in two (2) monitoring wells (MW-1 and MW-16).
- September 8 through 12, 2014 - Conducted a Surfactant Enhanced Groundwater Extraction Event which included the injection of approximately 500 gallons of surfactant into monitoring wells MW-1, MW-2, MW-11, MW-13, MW-16 and MW-17 on September 8, 2014 and the extraction of approximately 1,059 gallons of surfactant/groundwater mixture from these wells between September 9 through 12, 2014.
- December 8 through 12, 2014 – Conducted a Surfactant Enhanced Groundwater Extraction Event which included the injection of approximately 500 gallons of surfactant into monitoring wells MW-1, MW-2, MW-11, MW-13, MW-16 and MW-17 on December 8, 2014 and the extraction of approximately 1,450 gallons of surfactant/groundwater mixture from these wells between December 9 through 12, 2014.
- October 31, 2016 – GES submitted an Exposure Assessment Report to the NYSDEC which concluded that impacted soils and groundwater at the Site have been actively targeted by aggressive remediation techniques, the remaining on-Site and off-Site impacts are stable or decreasing and it has been demonstrated that there is no risk of exposure to residual soil and groundwater impacts for the residential properties up-gradient from the Site.

ATTACHMENT C

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-124325-1
TestAmerica SDG: 304 Columbia St, Brooklyn, NY
Client Project/Site: EM 17-EMW

For:
Groundwater & Environmental Services Inc
89A Cabot Court
Hauppauge, New York 11788

Attn: GES, Inc.



Authorized for release by:
3/31/2017 9:32:22 AM
Leah Klingensmith, Senior Project Manager
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Designee for
Jennifer Huckaba, Project Manager II
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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
SDG: 304 Columbia St, Brooklyn, NY

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-124325-1	MW-2	Ground Water	03/16/17 09:30	03/21/17 09:39
490-124325-2	MW-7A	Ground Water	03/16/17 10:00	03/21/17 09:39
490-124325-3	MW-11	Ground Water	03/16/17 10:30	03/21/17 09:39
490-124325-4	MW-12	Ground Water	03/16/17 11:00	03/21/17 09:39
490-124325-5	MW-13	Ground Water	03/16/17 11:30	03/21/17 09:39
490-124325-6	MW-14	Ground Water	03/16/17 12:00	03/21/17 09:39
490-124325-7	MW-16	Ground Water	03/16/17 12:30	03/21/17 09:39
490-124325-8	MW-19	Ground Water	03/16/17 13:00	03/21/17 09:39
490-124325-9	MW-20	Ground Water	03/16/17 13:30	03/21/17 09:39
490-124325-10	MW-15	Ground Water	03/16/17 14:00	03/21/17 09:39



Case Narrative

Client: Groundwater & Environmental Services Inc
Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
SDG: 304 Columbia St, Brooklyn, NY

Job ID: 490-124325-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-124325-1

Comments

No additional comments.

Receipt

The samples were received on 3/21/2017 9:39 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

GC/MS VOA

Method(s) 8260C: The following samples was diluted due to the nature of the sample matrix: MW-11 (490-124325-3), MW-13 (490-124325-5) and MW-16 (490-124325-7). Elevated reporting limits (RLs) are provided. High concentration of target analytes detected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
SDG: 304 Columbia St, Brooklyn, NY

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-2
Date Collected: 03/16/17 09:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-1
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	493		5.00		ug/L			03/28/17 15:11	5
Toluene	32.7		1.00		ug/L			03/28/17 02:50	1
Ethylbenzene	213		1.00		ug/L			03/28/17 02:50	1
Xylenes, Total	227		3.00		ug/L			03/28/17 02:50	1
Methyl tert-butyl ether	1.17		1.00		ug/L			03/28/17 02:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 130		03/28/17 02:50	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		03/28/17 15:11	5
4-Bromofluorobenzene (Surr)	83		70 - 130		03/28/17 02:50	1
4-Bromofluorobenzene (Surr)	86		70 - 130		03/28/17 15:11	5
Dibromofluoromethane (Surr)	91		70 - 130		03/28/17 02:50	1
Dibromofluoromethane (Surr)	98		70 - 130		03/28/17 15:11	5
Toluene-d8 (Surr)	90		70 - 130		03/28/17 02:50	1
Toluene-d8 (Surr)	92		70 - 130		03/28/17 15:11	5

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-7A
Date Collected: 03/16/17 10:00
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-2
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00		ug/L			03/28/17 02:22	1
Toluene	ND		1.00		ug/L			03/28/17 02:22	1
Ethylbenzene	ND		1.00		ug/L			03/28/17 02:22	1
Xylenes, Total	ND		3.00		ug/L			03/28/17 02:22	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/28/17 02:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		03/28/17 02:22	1
4-Bromofluorobenzene (Surr)	84		70 - 130		03/28/17 02:22	1
Dibromofluoromethane (Surr)	98		70 - 130		03/28/17 02:22	1
Toluene-d8 (Surr)	92		70 - 130		03/28/17 02:22	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-11

Date Collected: 03/16/17 10:30

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-3

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	129		5.00		ug/L			03/24/17 18:29	5
Toluene	23.7		5.00		ug/L			03/24/17 18:29	5
Ethylbenzene	316		5.00		ug/L			03/24/17 18:29	5
Xylenes, Total	270		15.0		ug/L			03/24/17 18:29	5
Methyl tert-butyl ether	ND		5.00		ug/L			03/24/17 18:29	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 130		03/24/17 18:29	5
4-Bromofluorobenzene (Surr)	101		70 - 130		03/24/17 18:29	5
Dibromofluoromethane (Surr)	93		70 - 130		03/24/17 18:29	5
Toluene-d8 (Surr)	98		70 - 130		03/24/17 18:29	5

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-12

Date Collected: 03/16/17 11:00

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-4

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.75		1.00		ug/L			03/24/17 18:55	1
Toluene	ND		1.00		ug/L			03/24/17 18:55	1
Ethylbenzene	ND		1.00		ug/L			03/24/17 18:55	1
Xylenes, Total	ND		3.00		ug/L			03/24/17 18:55	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/24/17 18:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 130		03/24/17 18:55	1
4-Bromofluorobenzene (Surr)	109		70 - 130		03/24/17 18:55	1
Dibromofluoromethane (Surr)	97		70 - 130		03/24/17 18:55	1
Toluene-d8 (Surr)	100		70 - 130		03/24/17 18:55	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-13
Date Collected: 03/16/17 11:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-5
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	491		10.0		ug/L			03/24/17 19:20	10
Toluene	84.7		10.0		ug/L			03/24/17 19:20	10
Ethylbenzene	659		10.0		ug/L			03/24/17 19:20	10
Xylenes, Total	576		30.0		ug/L			03/24/17 19:20	10
Methyl tert-butyl ether	ND		10.0		ug/L			03/24/17 19:20	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 130		03/24/17 19:20	10
4-Bromofluorobenzene (Surr)	104		70 - 130		03/24/17 19:20	10
Dibromofluoromethane (Surr)	98		70 - 130		03/24/17 19:20	10
Toluene-d8 (Surr)	98		70 - 130		03/24/17 19:20	10

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-14

Date Collected: 03/16/17 12:00

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-6

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.96		1.00		ug/L			03/24/17 19:46	1
Toluene	ND		1.00		ug/L			03/24/17 19:46	1
Ethylbenzene	ND		1.00		ug/L			03/24/17 19:46	1
Xylenes, Total	ND		3.00		ug/L			03/24/17 19:46	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/24/17 19:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		70 - 130		03/24/17 19:46	1
4-Bromofluorobenzene (Surr)	106		70 - 130		03/24/17 19:46	1
Dibromofluoromethane (Surr)	102		70 - 130		03/24/17 19:46	1
Toluene-d8 (Surr)	99		70 - 130		03/24/17 19:46	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-16
Date Collected: 03/16/17 12:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-7
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	906		10.0		ug/L			03/24/17 20:12	10
Toluene	89.0		10.0		ug/L			03/24/17 20:12	10
Ethylbenzene	433		10.0		ug/L			03/24/17 20:12	10
Xylenes, Total	786		30.0		ug/L			03/24/17 20:12	10
Methyl tert-butyl ether	ND		10.0		ug/L			03/24/17 20:12	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 130		03/24/17 20:12	10
4-Bromofluorobenzene (Surr)	103		70 - 130		03/24/17 20:12	10
Dibromofluoromethane (Surr)	95		70 - 130		03/24/17 20:12	10
Toluene-d8 (Surr)	99		70 - 130		03/24/17 20:12	10

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-19

Date Collected: 03/16/17 13:00

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-8

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	45.7		1.00		ug/L			03/28/17 01:55	1
Toluene	12.4		1.00		ug/L			03/28/17 01:55	1
Ethylbenzene	46.5		1.00		ug/L			03/28/17 01:55	1
Xylenes, Total	46.9		3.00		ug/L			03/28/17 01:55	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/28/17 01:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 130		03/28/17 01:55	1
4-Bromofluorobenzene (Surr)	78		70 - 130		03/28/17 01:55	1
Dibromofluoromethane (Surr)	92		70 - 130		03/28/17 01:55	1
Toluene-d8 (Surr)	89		70 - 130		03/28/17 01:55	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-20
Date Collected: 03/16/17 13:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-9
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00		ug/L			03/28/17 01:28	1
Toluene	ND		1.00		ug/L			03/28/17 01:28	1
Ethylbenzene	ND		1.00		ug/L			03/28/17 01:28	1
Xylenes, Total	ND		3.00		ug/L			03/28/17 01:28	1
Methyl tert-butyl ether	1.82		1.00		ug/L			03/28/17 01:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		70 - 130		03/28/17 01:28	1
4-Bromofluorobenzene (Surr)	83		70 - 130		03/28/17 01:28	1
Dibromofluoromethane (Surr)	98		70 - 130		03/28/17 01:28	1
Toluene-d8 (Surr)	91		70 - 130		03/28/17 01:28	1

Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-15
Date Collected: 03/16/17 14:00
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-10
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.23		1.00		ug/L			03/28/17 01:00	1
Toluene	ND		1.00		ug/L			03/28/17 01:00	1
Ethylbenzene	ND		1.00		ug/L			03/28/17 01:00	1
Xylenes, Total	ND		3.00		ug/L			03/28/17 01:00	1
Methyl tert-butyl ether	4.17		1.00		ug/L			03/28/17 01:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		03/28/17 01:00	1
4-Bromofluorobenzene (Surr)	83		70 - 130		03/28/17 01:00	1
Dibromofluoromethane (Surr)	98		70 - 130		03/28/17 01:00	1
Toluene-d8 (Surr)	93		70 - 130		03/28/17 01:00	1

QC Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 490-416968/10

Matrix: Water

Analysis Batch: 416968

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00		ug/L			03/24/17 18:03	1
Toluene	ND		1.00		ug/L			03/24/17 18:03	1
Ethylbenzene	ND		1.00		ug/L			03/24/17 18:03	1
Xylenes, Total	ND		3.00		ug/L			03/24/17 18:03	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/24/17 18:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 130		03/24/17 18:03	1
4-Bromofluorobenzene (Surr)	108		70 - 130		03/24/17 18:03	1
Dibromofluoromethane (Surr)	104		70 - 130		03/24/17 18:03	1
Toluene-d8 (Surr)	99		70 - 130		03/24/17 18:03	1

Lab Sample ID: LCS 490-416968/4

Matrix: Water

Analysis Batch: 416968

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.71		ug/L		99	80 - 121
Toluene	20.0	19.68		ug/L		98	80 - 126
Ethylbenzene	20.0	19.81		ug/L		99	80 - 130
Xylenes, Total	40.0	39.40		ug/L		99	80 - 132
Methyl tert-butyl ether	20.0	19.81		ug/L		99	72 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: LCSD 490-416968/5

Matrix: Water

Analysis Batch: 416968

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	18.92		ug/L		95	80 - 121	4	12
Toluene	20.0	18.68		ug/L		93	80 - 126	5	13
Ethylbenzene	20.0	18.47		ug/L		92	80 - 130	7	12
Xylenes, Total	40.0	35.58		ug/L		89	80 - 132	10	11
Methyl tert-butyl ether	20.0	18.06		ug/L		90	72 - 133	9	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	89		70 - 130
4-Bromofluorobenzene (Surr)	103		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
Toluene-d8 (Surr)	99		70 - 130

QC Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 490-124325-7 MS

Matrix: Ground Water

Analysis Batch: 416968

Client Sample ID: MW-16

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				
Benzene	906		200	982.4	4	ug/L		38	55 - 147
Toluene	89.0		200	275.1		ug/L		93	64 - 136
Ethylbenzene	433		200	576.9		ug/L		72	65 - 139
Xylenes, Total	786		400	1108		ug/L		80	69 - 132
Methyl tert-butyl ether	ND		200	177.3		ug/L		89	55 - 141

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		70 - 130
4-Bromofluorobenzene (Surr)	102		70 - 130
Dibromofluoromethane (Surr)	94		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: 490-124325-7 MSD

Matrix: Ground Water

Analysis Batch: 416968

Client Sample ID: MW-16

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	%Rec.	RPD	RPD	Limit
	Result	Qualifier		Result	Qualifier							
Benzene	906		200	1006	E 4	ug/L		50	55 - 147	2	17	
Toluene	89.0		200	283.3		ug/L		97	64 - 136	3	15	
Ethylbenzene	433		200	587.9		ug/L		78	65 - 139	2	15	
Xylenes, Total	786		400	1130		ug/L		86	69 - 132	2	15	
Methyl tert-butyl ether	ND		200	178.0		ug/L		89	55 - 141	0	16	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	87		70 - 130
4-Bromofluorobenzene (Surr)	105		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: MB 490-417566/7

Matrix: Water

Analysis Batch: 417566

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		1.00		ug/L			03/28/17 00:06	1
Toluene	ND		1.00		ug/L			03/28/17 00:06	1
Ethylbenzene	ND		1.00		ug/L			03/28/17 00:06	1
Xylenes, Total	ND		3.00		ug/L			03/28/17 00:06	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/28/17 00:06	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	89		70 - 130		03/28/17 00:06	1
4-Bromofluorobenzene (Surr)	85		70 - 130		03/28/17 00:06	1
Dibromofluoromethane (Surr)	97		70 - 130		03/28/17 00:06	1
Toluene-d8 (Surr)	92		70 - 130		03/28/17 00:06	1

TestAmerica Nashville

QC Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 490-417566/3

Matrix: Water

Analysis Batch: 417566

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.65		ug/L		97	80 - 121
Toluene	50.0	51.77		ug/L		104	80 - 126
Ethylbenzene	50.0	53.71		ug/L		107	80 - 130
Xylenes, Total	150	154.7		ug/L		103	80 - 132
Methyl tert-butyl ether	50.0	47.43		ug/L		95	72 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	84		70 - 130
Dibromofluoromethane (Surr)	92		70 - 130
Toluene-d8 (Surr)	91		70 - 130

Lab Sample ID: LCSD 490-417566/4

Matrix: Water

Analysis Batch: 417566

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	46.48		ug/L		93	80 - 121	5	12
Toluene	50.0	49.50		ug/L		99	80 - 126	4	13
Ethylbenzene	50.0	51.75		ug/L		103	80 - 130	4	12
Xylenes, Total	150	148.4		ug/L		99	80 - 132	4	11
Methyl tert-butyl ether	50.0	45.61		ug/L		91	72 - 133	4	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	85		70 - 130
Dibromofluoromethane (Surr)	94		70 - 130
Toluene-d8 (Surr)	92		70 - 130

Lab Sample ID: MB 490-417741/7

Matrix: Water

Analysis Batch: 417741

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00		ug/L			03/28/17 14:16	1
Toluene	ND		1.00		ug/L			03/28/17 14:16	1
Ethylbenzene	ND		1.00		ug/L			03/28/17 14:16	1
Xylenes, Total	ND		3.00		ug/L			03/28/17 14:16	1
Methyl tert-butyl ether	ND		1.00		ug/L			03/28/17 14:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 130		03/28/17 14:16	1
4-Bromofluorobenzene (Surr)	84		70 - 130		03/28/17 14:16	1
Dibromofluoromethane (Surr)	97		70 - 130		03/28/17 14:16	1
Toluene-d8 (Surr)	92		70 - 130		03/28/17 14:16	1

TestAmerica Nashville

QC Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 490-417741/3

Matrix: Water

Analysis Batch: 417741

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	51.81		ug/L		104	80 - 121
Toluene	50.0	53.13		ug/L		106	80 - 126
Ethylbenzene	50.0	54.59		ug/L		109	80 - 130
Xylenes, Total	150	158.4		ug/L		106	80 - 132
Methyl tert-butyl ether	50.0	52.97		ug/L		106	72 - 133

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
4-Bromofluorobenzene (Surr)	87		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
Toluene-d8 (Surr)	91		70 - 130

Lab Sample ID: LCSD 490-417741/4

Matrix: Water

Analysis Batch: 417741

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	51.28		ug/L		103	80 - 121	1	12
Toluene	50.0	52.75		ug/L		105	80 - 126	1	13
Ethylbenzene	50.0	54.00		ug/L		108	80 - 130	1	12
Xylenes, Total	150	156.8		ug/L		105	80 - 132	1	11
Methyl tert-butyl ether	50.0	53.83		ug/L		108	72 - 133	2	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 130
4-Bromofluorobenzene (Surr)	85		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
Toluene-d8 (Surr)	91		70 - 130

Lab Sample ID: 490-124472-E-3 MS

Matrix: Water

Analysis Batch: 417741

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		500	512.2		ug/L		101	55 - 147
Toluene	ND		500	538.3		ug/L		108	64 - 136
Ethylbenzene	434		500	861.4		ug/L		86	65 - 139
Xylenes, Total	1730		1500	2822		ug/L		73	69 - 132
Methyl tert-butyl ether	ND		500	510.9		ug/L		102	55 - 141

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		70 - 130
4-Bromofluorobenzene (Surr)	83		70 - 130
Dibromofluoromethane (Surr)	92		70 - 130
Toluene-d8 (Surr)	88		70 - 130

QC Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 490-124472-E-3 MSD
Matrix: Water
Analysis Batch: 417741

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Benzene	ND		500	511.6		ug/L		101	55 - 147	0	17
Toluene	ND		500	533.6		ug/L		107	64 - 136	1	15
Ethylbenzene	434		500	855.2		ug/L		84	65 - 139	1	15
Xylenes, Total	1730		1500	2789		ug/L		71	69 - 132	1	15
Methyl tert-butyl ether	ND		500	520.5		ug/L		104	55 - 141	2	16
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	96		70 - 130								
4-Bromofluorobenzene (Surr)	83		70 - 130								
Dibromofluoromethane (Surr)	94		70 - 130								
Toluene-d8 (Surr)	90		70 - 130								

QC Association Summary

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

GC/MS VOA

Analysis Batch: 416968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-124325-3	MW-11	Total/NA	Ground Water	8260C	
490-124325-4	MW-12	Total/NA	Ground Water	8260C	
490-124325-5	MW-13	Total/NA	Ground Water	8260C	
490-124325-6	MW-14	Total/NA	Ground Water	8260C	
490-124325-7	MW-16	Total/NA	Ground Water	8260C	
MB 490-416968/10	Method Blank	Total/NA	Water	8260C	
LCS 490-416968/4	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-416968/5	Lab Control Sample Dup	Total/NA	Water	8260C	
490-124325-7 MS	MW-16	Total/NA	Ground Water	8260C	
490-124325-7 MSD	MW-16	Total/NA	Ground Water	8260C	

Analysis Batch: 417566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-124325-1	MW-2	Total/NA	Ground Water	8260C	
490-124325-2	MW-7A	Total/NA	Ground Water	8260C	
490-124325-8	MW-19	Total/NA	Ground Water	8260C	
490-124325-9	MW-20	Total/NA	Ground Water	8260C	
490-124325-10	MW-15	Total/NA	Ground Water	8260C	
MB 490-417566/7	Method Blank	Total/NA	Water	8260C	
LCS 490-417566/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-417566/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 417741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-124325-1	MW-2	Total/NA	Ground Water	8260C	
MB 490-417741/7	Method Blank	Total/NA	Water	8260C	
LCS 490-417741/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 490-417741/4	Lab Control Sample Dup	Total/NA	Water	8260C	
490-124472-E-3 MS	Matrix Spike	Total/NA	Water	8260C	
490-124472-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-2
Date Collected: 03/16/17 09:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	417566	03/28/17 02:50	AK1	TAL NSH
Total/NA	Analysis	8260C		5	5 mL	5 mL	417741	03/28/17 15:11	AK1	TAL NSH

Client Sample ID: MW-7A
Date Collected: 03/16/17 10:00
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	417566	03/28/17 02:22	AK1	TAL NSH

Client Sample ID: MW-11
Date Collected: 03/16/17 10:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		5	10 mL	10 mL	416968	03/24/17 18:29	NC	TAL NSH

Client Sample ID: MW-12
Date Collected: 03/16/17 11:00
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-4
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	416968	03/24/17 18:55	NC	TAL NSH

Client Sample ID: MW-13
Date Collected: 03/16/17 11:30
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	10 mL	10 mL	416968	03/24/17 19:20	NC	TAL NSH

Client Sample ID: MW-14
Date Collected: 03/16/17 12:00
Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	10 mL	10 mL	416968	03/24/17 19:46	NC	TAL NSH

Lab Chronicle

Client: Groundwater & Environmental Services Inc
 Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
 SDG: 304 Columbia St, Brooklyn, NY

Client Sample ID: MW-16

Date Collected: 03/16/17 12:30

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	10 mL	10 mL	416968	03/24/17 20:12	NC	TAL NSH

Client Sample ID: MW-19

Date Collected: 03/16/17 13:00

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	417566	03/28/17 01:55	AK1	TAL NSH

Client Sample ID: MW-20

Date Collected: 03/16/17 13:30

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	417566	03/28/17 01:28	AK1	TAL NSH

Client Sample ID: MW-15

Date Collected: 03/16/17 14:00

Date Received: 03/21/17 09:39

Lab Sample ID: 490-124325-10

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	417566	03/28/17 01:00	AK1	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
SDG: 304 Columbia St, Brooklyn, NY

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL NSH

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177



Certification Summary

Client: Groundwater & Environmental Services Inc
Project/Site: EM 17-EMW

TestAmerica Job ID: 490-124325-1
SDG: 304 Columbia St, Brooklyn, NY

Laboratory: TestAmerica Nashville

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	11342	03-31-17

1

2

3

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COOLER RECEIPT FORM



490-124325 Chain of Custody

Cooler Received/Opened On 3/21/2017 @ 0939

Time Samples Removed From Cooler _____ Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 4073 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 97310166 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 21 Degrees Celsius

3. If Item #2 temperatures is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) sh

7. Were custody seals on containers: YES NO and intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) DA

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) DA

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) DA

I certify that I attached a label with the unique LIMS number to each container (initial) DA

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 490-124325-1
SDG Number: 304 Columbia St, Brooklyn, NY

Login Number: 124325

List Number: 1

Creator: Armstrong, Daniel

List Source: TestAmerica Nashville

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.1C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

