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Subject:
2016 Annual Groundwater Monitoring Report
NYSEG Cortland-Homer Former MGP Site
Homer, New York
NYSDEC Site #7-12-005

ENVIRONMENT

Date:
February 24, 2017

Contact:
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Email:
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Our ref:
B0013123.0015 #11

Dear Ms. Saucier:

On behalf of New York State Electric & Gas Corporation (NYSEG), this report summarizes the results of the October 2016 groundwater monitoring event completed at the Cortland-Homer former manufactured gas plant (MGP) site in Homer, New York (the Site). The October 2016 monitoring event was the first of two additional post-remediation annual groundwater monitoring events requested by the New York State Department of Environmental Conservation (NYSDEC) in a December 18, 2015 letter to NYSEG. Pre-remediation baseline groundwater monitoring was conducted in June 2012, and post-remediation groundwater monitoring was conducted in November 2013 and September 2015.

The 2016 groundwater monitoring event was conducted by Arcadis of New York, Inc. (Arcadis) in accordance with protocols presented in the NYSDEC-approved Site Management Plan (SMP; Arcadis, March 2016). The wells included in the 2016 groundwater monitoring event were those identified in a November 6, 2015 letter from Arcadis to the NYSDEC (the “2015 Annual Groundwater Monitoring Report”), plus two additional wells as requested in the NYSDEC’s December 18, 2015 letter.

As summarized herein, the monitoring data indicate that the area of groundwater impacted by the former MGP is relatively small, the exceedances of groundwater quality standards/guidance values continue to be relatively minor, and concentrations are lower than those identified during the baseline (pre-remediation) monitoring event.

Relevant background information is presented below, followed by a summary of the groundwater monitoring activities and results.

I. BACKGROUND

Remedial activities at the Site were substantially completed between July 2012 and February 2013, and final site restoration was performed in May/June 2013. The remedial activities involved in-situ soil solidification (ISS) of approximately 55,000 cubic yards of soil in two separate operable units on opposite sides of US Route 11 (i.e., Operable Units OU-1 and OU-2 located on the west and east sides of the roadway, respectively). The OU-1 and OU-2 locations and ISS remedial limits are shown on Figure 1. ISS treatment columns extended vertically into an underlying silt/clay layer up to 50 feet below ground surface. ISS was performed to encapsulate coal tar dense non-aqueous phase liquid (DNAPL) and site-related chemical constituents in soil to reduce or eliminate: (1) the release of constituents from soil to groundwater; and (2) migration of coal tar DNAPL beyond site boundaries. The ISS monoliths in OU-1 and OU-2 were connected by two vertical barrier walls (sealed steel sheet pile walls driven into the confining layer) extending beneath Route 11 to divert groundwater around potentially-impacted soils below the roadway.

As indicated above, groundwater monitoring was performed in June 2012 (approximately one month prior to the start of remedial construction) to evaluate baseline conditions. Post-remediation groundwater monitoring was performed in November 2013 and September 2015 to assess groundwater flow patterns and water quality following remediation. In addition, an investigation was performed from October 2013 to December 2013 to assess the nature, extent, and recoverability of an area of petroleum-based light non-aqueous phase liquid (LNAPL) encountered during remediation in the southeastern corner of OU-1, around monitoring well MW-11. As part of the LNAPL investigation, three new monitoring wells (MW-31A, MW-32A, and MW-33, as shown on Figure 1) were installed and developed for gauging. The three new wells and five existing nearby wells were gauged for LNAPL weekly throughout November and December 2013. The investigation findings indicated that recoverable LNAPL was limited to the immediate vicinity of MW-11. Because MW-11 was not ideally constructed to recover LNAPL, an additional monitoring well (MW-36) was subsequently constructed adjacent to MW-11 in April 2014 with NYSDEC's approval. MW-36 is screened from 3.9 to 13.6 feet below ground surface (bgs), while MW-11 is screened from 7 to 12 feet bgs. The water table in this area has sometimes been above the top of the MW-11 screen. Additional LNAPL gauging was performed weekly in April and May 2014, and then monthly from June 2014 through January 2015. As indicated by the LNAPL gauging results (presented in January 30, 2015 e-mail correspondence from Arcadis to the NYSDEC), no recoverable NAPL was encountered during the gauging period except for 0.7 gallons removed from MW-11 (mixture of LNAPL and water).

II. GROUNDWATER MONITORING ACTIVITIES

The 2016 annual groundwater monitoring event involved: (1) collecting a synoptic round of water-level measurements; (2) checking each well for LNAPL and DNAPL) with a dual-interface probe; and (3) sampling groundwater from wells in the monitoring well network (refer to Figure 1 for the well locations). Arcadis measured water levels and performed NAPL gauging on October 18, 2016. Arcadis collected groundwater samples on October 18 and 19, 2016. The fieldwork was performed in accordance with the protocols presented in Section 3.3.1 of the SMP.

Before beginning sampling, Arcadis measured water levels from the following 14 monitoring wells:

- One well west of the railroad tracks (MW-1).
- Six wells between the railroad tracks and US Route 11 (MW-12, MW-30S, MW-31A, MW-32A, MW-33, and MW-36).
- Seven wells between US Route 11 and the Tioughnioga River (MW-6, MW-13, MW-14R, MW-17, MW-18, MW-28S, and MW-28D).

Arcadis did not obtain a water-level measurement or perform NAPL gauging at monitoring well MW-11 because the well was inaccessible. Specifically, the well was found to be covered by a concrete patch that could not be removed with reasonable force using steel hand tools). Arcadis obtained depth-to-bottom measurements from each of the above-identified accessible wells. Some LNAPL was encountered in three wells near MW-11 (i.e., approximately 0.01 feet in MW-32A, 0.09 feet in MW-36, and 0.30 feet in MW-31A) and was removed by bailing. Traces of LNAPL (blebs/films) had previously been observed in each of these three wells. The LNAPL/water mixture from these wells (approximately one gallon total) was placed in a pail (which was overpacked in a 55-gallon drum) and transported offsite by Clean Harbors on November 14, 2016 for treatment/disposal. The water-level measurements and calculated groundwater elevations are presented in Table 1. The groundwater elevations were used to prepare a map of the water table (Figure 1). Similar to previous observations, groundwater near the site continues to flow toward the east/southeast. Locally, groundwater is directed around the ISS monoliths and vertical barrier walls.

Groundwater samples were collected from 10 monitoring wells (wells MW-1, MW-6, MW-12, MW-13, MW-14R, MW-17, MW-18, MW-28S, MW-28D, and MW-30S). The groundwater samples were collected using the low-flow method described in Section 3.3.1.1 of the SMP. Field-parameter measurements obtained during well purging prior to sampling are presented on the groundwater sampling logs included as Attachment A to this letter.

The groundwater samples were submitted to Accutest Laboratories of Marlborough, Massachusetts where they were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), and total cyanide. One set of quality assurance/quality control samples, consisting of a field duplicate, matrix spike, matrix spike duplicate, and a trip blank, was also collected and analyzed.

III. GROUNDWATER MONITORING RESULTS

Arcadis validated the groundwater analytical results, and found the results to be useable as intended. The data validation report and full laboratory analytical data report (NYSDEC Analytical Services Protocol Category B data deliverables package) are provided on the attached CD. The electronic data deliverables (EDDs) are being e-mailed to the NYSDEC separately for upload to the NYSDEC's EQuIS database.

The validated groundwater analytical results are presented in Table 2. This table also provides the corresponding ambient water quality standards and guidance values for each analyte as presented in the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", last

updated June 2004. Results that exceed these criteria are shaded in the table. Groundwater analytical results for constituents exceeding the water quality standards/guidance values are shown on Figure 2.

The groundwater analytical results are summarized as follows:

- BTEX were not identified at concentrations exceeding the groundwater quality standards in 9 of the 10 wells that were sampled. BTEX were only identified at MW-17 (just east of a former filling station within OU-2) at concentrations greater than the groundwater quality standards. The BTEX concentrations in the October 2016 sample from MW-17 were generally similar to or slightly higher than those identified in previous post-remediation samples from this well, but one to two orders of magnitude lower than those identified in the pre-remediation baseline sample. The benzene, ethylbenzene, and xylenes concentrations identified in the October 2016 groundwater sample from MW-17 were 38 parts per billion (ppb), 14 ppb, and 6.6 ppb, respectively, vs. the groundwater quality standards of 1 ppb (benzene) and 5 ppb (ethylbenzene and xylenes).

- PAHs were not identified at concentrations exceeding the groundwater quality standards in 9 of the 10 wells that were sampled. Acenaphthene was identified at MW-17 at a concentration of 33 ppb vs. the 20 ppb groundwater quality guidance value. The acenaphthene concentration at MW-17 is slightly higher than the concentrations observed in previous post-remediation groundwater monitoring events (22.5 ppb and 22.1 ppb), but an order of magnitude lower than the 168 ppb concentration identified in this well before remediation.

- Total cyanide was not identified at concentrations exceeding the 200 ppb groundwater quality standard in 7 of the 10 wells that were sampled. Cyanide was identified at MW-12 (estimated 7,300 ppb), MW-14R (estimated 880 ppb), and MW-30S (estimated 220 ppb). Cyanide was not identified above the laboratory detection limit of 10 ppb in the duplicate sample collected from MW-30S. The cyanide results have been qualified as estimated based on the discrepancy between the duplicate and parent sample results. Cyanide was identified in each previous groundwater sample from these three wells, but the concentrations identified in the October 2016 samples were the highest identified to date in these wells. The higher reported cyanide concentrations do not appear to be related to sample turbidities. The 0.0 nephelometric unit (NTU) turbidity in the October 2016 sample from MW-12 was the lowest recorded at that well, while the 15.4 NTU turbidity in the October 2016 sample from MW-14R was the highest recorded at that well. The 191 NTU turbidity in the October 2016 sample from MW-30S was between previous turbidity readings of 145 NTU and >500 NTU. From a review of historical water level measurements, the October 2016 water levels across the site were the lowest observed since the June 2012 baseline monitoring event. The effect of water level (if any) on cyanide concentrations is unknown.

IV. CONCLUSIONS AND RECOMMENDATIONS

Overall, the BTEX and PAH groundwater analytical results for October 2016 are approximately the same or slightly higher than those from the previous post-remediation monitoring events (November 2013 and September 2015), but less than those from the baseline groundwater monitoring event (June 2012). BTEX and PAH exceedances of groundwater quality standards were only identified at one location in

2016 (MW-17). The observation of LNAPL in wells MW-31A and MW-32A (north and south of MW-11) in October 2016 is consistent with previous observations during the weekly or monthly gauging in 2013 and 2014. The data continue to indicate that the LNAPL is limited to the southeast corner of OU-1. The apparent increase in total cyanide concentrations may be related to a lower water table. Additional annual groundwater monitoring will be performed in September/October 2017 to further evaluate conditions. Based on the results of the 2017 annual groundwater monitoring, NYSEG may propose to continue the monitoring program unchanged or with modifications, as appropriate.

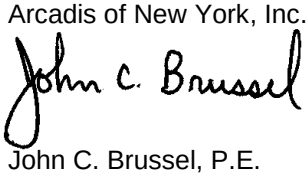
Decommissioning of 10 monitoring wells that are not needed for the groundwater monitoring program (monitoring wells MW-22, MW-23, MW-25, MW-26, MW-27S, MW-29S/D, MW-30D, MW-31, and MW-32) is scheduled to be performed in April/May 2017. The decommissioning will be performed as proposed in the 2015 Annual Groundwater Monitoring Report and approved by the NYSDEC on December 18, 2015. While onsite for the monitoring well decommissioning activities, Arcadis will re-check monitoring wells MW-31A, MW-32A, and MW-36 for LNAPL. If measurable LNAPL is present in these wells, Arcadis will remove the LNAPL and transfer it into an appropriate container for offsite treatment/disposal by NYSEG. Arcadis will also attempt to remove the concrete mass from over MW-11 using tooling available onsite for well decommissioning work (and will check MW-11 for LNAPL if the well can be made accessible).

Considering the relatively small area of impacted groundwater, the relatively minor exceedances of groundwater quality standards/guidance values, the lack of groundwater use at and near the Site, and existing groundwater use laws codified in 10 NYCRR 5-1.31(b) that prohibit the installation of private wells where public supply is available (unless approval is expressly granted by the public water authority), the potential for human exposure to constituents in groundwater at this Site continues to be limited.

Please feel free to contact Tracy Blazicek (NYSEG) at 607.764.8839 or me at 315.671.9441 if you have any comments/questions or need additional information.

Sincerely,

Arcadis of New York, Inc.



John C. Brussel, P.E.
Principal Engineer

Copies:
Mr. Tracy L. Blazicek, CHMM, NYSEG (via e-mail & US Mail)
Mr. Keith A. White, CPG, Arcadis (via e-mail)

Enclosures:

Tables

1 Summary of NAPL and Water Level Gauging Data
2 Groundwater Analytical Results

Figures

1 Water-Table Map – October 18, 2016
2 Groundwater Analytical Results

Attachment

A Groundwater Sampling Logs

TABLES

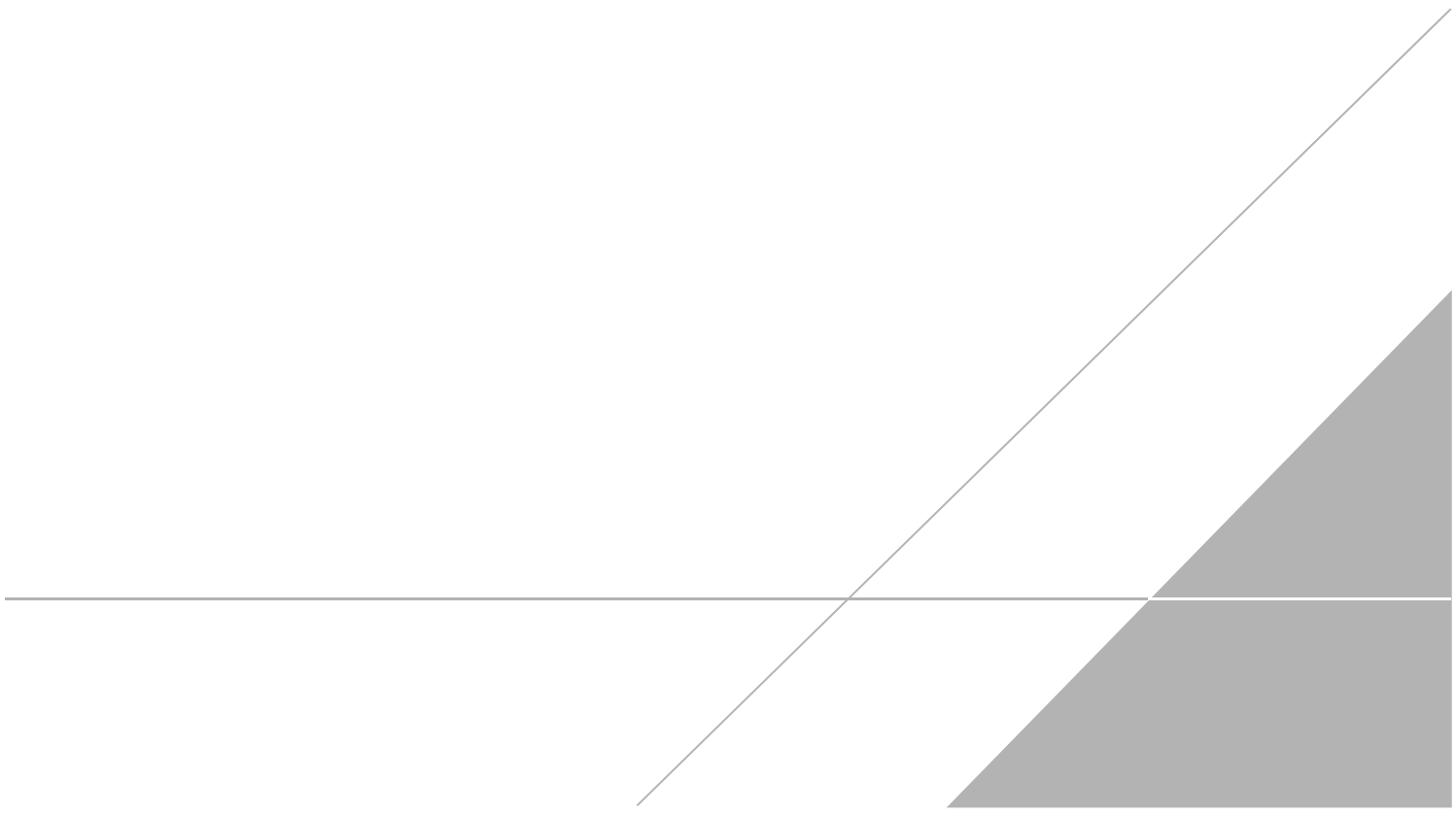


Table 1
Summary of NAPL and Water Level Gauging Data

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Monitoring Well ID	Top of Inner Casing (TIC) Elevation (feet AMSL)	Depth to Water (feet below TIC)				Depth to Bottom (feet below TIC)				Approximate LNAPL Thickness* (feet)				Groundwater Elevation (feet amsl)			
		6/25/12	11/5/13	9/14/15	10/18/16	6/25/12	11/5/13	9/14/15	10/18/16	6/25/12	11/5/13	9/14/15	10/18/16	6/25/12	11/5/13	9/14/15	10/18/16
MW-1	1116.25	-	5.79	6.98	7.80	-	23.6	23.8	23.9	0.00	0.00	0.00	0.00	-	1110.46	1109.27	1108.45
MW-6	1113.07	4.67	4.20	5.04	5.22	20.1	25.4	26.1	26.4	0.00	0.00	0.00	0.00	1108.40	1108.87	1108.03	1107.85
MW-11	1114.97	6.68	6.05	7.31	buried***	11.2	-	11.5	buried***	0.22	0.30	0.00	0.00	1108.29	1109.19**	1107.66	buried***
MW-12	1115.23	6.46	5.61	6.51	6.65	11.4	11.6	11.6	11.5	0.00	0.00	0.00	0.00	1108.77	1109.62	1108.72	1108.58
MW-13	1113.47	5.09	4.55	5.51	5.70	31.5	31.7	31.8	31.6	0.00	0.00	0.00	0.00	1108.38	1108.92	1107.96	1107.77
MW-14R	1112.78	-	4.09	4.88	4.88	-	13.1	13.0	12.5	0.00	0.00	0.00	0.00	-	1108.69	1107.90	1107.90
MW-17	1114.75	6.68	6.12	6.86	7.11	10.5	10.5	10.6	10.6	0.00	0.00	0.00	0.00	1108.07	1108.63	1107.89	1107.64
MW-18	1114.81	6.57	6.01	6.76	6.93	30.0	30.1	30.1	30.1	0.00	0.00	0.00	0.00	1108.24	1108.80	1108.05	1107.88
MW-28S	1111.68	3.34	2.77	3.58	3.67	13.1	13.2	13.3	13.2	0.00	0.00	0.00	0.00	1108.34	1108.91	1108.10	1108.01
MW-28D	1111.50	3.22	2.65	6.43	3.55	21.6	26.8	26.8	26.8	0.00	0.00	0.00	0.00	1108.28	1108.85	1105.07	1107.95
MW-30S	1115.08	5.89	5.46	6.15	6.58	9.9	12.1	12.1	11.8	0.00	0.00	0.00	0.00	1109.19	1109.62	1108.93	1108.50
MW-31A	1115.30	-	6.42	7.31	8.10	-	14.0	14.0	-	0.00	0.00	Trace	0.30	-	1108.88	1107.99	1107.20
MW-32A	1115.78	-	6.75	7.77	8.21	-	14.4	-	-	0.00	0.00	0.06	0.01	-	1109.03	1108.01	1107.57
MW-33	1116.17	-	7.10	8.02	8.56	-	13.6	13.5	13.6	0.00	0.00	0.00	0.00	-	1109.07	1108.15	1107.61
MW-36	1114.96	-	-	7.16	7.78	-	-	13.4	13.5	0.00	0.00	0.00	0.09	-	-	1107.80	1107.18

Notes:
1. Elevations are shown in feet above mean sea level (AMSL) relative to the North Americal Vertical Datum of 1988 (NAVD88).
2. - = not available; NAPL = Non-Aqueous Phase Liquid; LNAPL= Light Non-Aqueous Phase Liquid; DNAPL = Dense Non-Aqueous Phase Liquid.
3. TIC = Top of Inner Casing.
4. * = No DNAPL has been identified in any of the monitoring wells during the groundwater monitoring events.
5. ** The groundwater elevation at MW-11 has been corrected for the presence of LNAPL, using an estimated LNAPL density of 0.9.
6. *** = MW-11 was buried under concrete during the October 2016 sampling event and could not be accessed.

Table 2
Groundwater Analytical Results (ppb)

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater	MW-1		MW-6				MW-11	MW-12			
Screen Interval (feet bgs):	Standards/	15.5 - 20.5		26 - 31				7 - 13	8 - 13			
Date Collected:	*Guidance Values*	11/06/13	10/19/16	06/26/12	11/05/13	09/14/15	10/19/16	09/16/15	06/27/12	11/06/13	09/16/15	10/19/16
Volatile Organics												
Benzene	1	<0.500	<1.00	<0.500	<0.500 J	<0.500 J [<0.500 J]	<1.00	0.820 J	<0.500	<0.500	<0.500 J	<1.00
Ethylbenzene	5	<1.00	<1.00	<1.00	<1.00	<1.00 J [<1.00 J]	<1.00	<1.00 J	<1.00	<1.00	<1.00 J	<1.00
Toluene	5	<1.00	<1.00	<1.00	<1.00	<1.00 J [<1.00 J]	<1.00	0.290 J	<1.00	<1.00	<1.00 J	<1.00
Xylenes (total)	5	<1.00	<2.00	<1.00	<1.00	<1.00 J [<1.00 J]	<2.00	0.330 J	<1.00	<1.00	<1.00 J	<2.00
Polycyclic Aromatic Hydrocarbons												
2-Methylnaphthalene	- -	<2.40	<24.0	<2.20	<2.50	<2.00 [0.0440 J]	<24.0	<2.00	<2.30	<2.50	<2.00 B	<5.10
Acenaphthene	20	<2.40	<24.0	<2.20	<2.50	0.0370 J [0.0380 J]	<24.0	4.60	<2.30	<2.50	<0.100	<5.10
Acenaphthylene	- -	<2.40	<24.0	<2.20	<2.50	0.130 [0.120]	<24.0	0.260	<2.30	<2.50	<0.100	<5.10
Anthracene	*50*	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	0.110	<2.30	<2.50	<0.100	<5.10
Benzo(a)anthracene	*0.002*	<2.40	<24.0	<2.20	<2.50	<0.0510 [<0.0500]	<24.0	<0.0510	<2.30	<2.50	<0.0510	<5.10
Benzo(a)pyrene	ND	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	<0.100	<2.30	<2.50	<0.100	<5.10
Benzo(b)fluoranthene	*0.002*	<2.40	<24.0	<2.20	<2.50	<0.0510 J [<0.0500 J]	<24.0	<0.0510 J	<2.30	<2.50	<0.0510 J	<5.10
Benzo(g,h,i)perylene	- -	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	<0.100	<2.30	<2.50	<0.100	<5.10
Benzo(k)fluoranthene	*0.002*	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	<0.100	<2.30	<2.50	<0.100	<5.10
Chrysene	*0.002*	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	**0.0160 J**	<2.30	<2.50	<0.100	<5.10
Dibenzo(a,h)anthracene	- -	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	<0.100	<2.30	<2.50	<0.100	<5.10
Fluoranthene	*50*	<2.40	<24.0	<2.20	<2.50	0.0450 J [0.0510 J]	<24.0	0.0460 J	<2.30	<2.50	<0.100	<5.10
Fluorene	*50*	<2.40	<24.0	<2.20	<2.50	<0.100 [0.0200 J]	<24.0	1.10	<2.30	<2.50	<0.100	<5.10
Indeno(1,2,3-cd)pyrene	*0.002*	<2.40	<24.0	<2.20	<2.50	<0.100 [<0.100]	<24.0	<0.100	<2.30	<2.50	<0.100	<5.10
Naphthalene	*10*	<2.40	<24.0	<2.20 B	<2.50	0.0230 J [0.0270 J]	<24.0	0.250 J	<2.30	<2.50	<2.00 B	<5.10
Phenanthrene	*50*	<2.40	<24.0	<2.20	<2.50	<0.0510 [0.0300 J]	<24.0	0.0380 J	<2.30	<2.50	<0.0510	<5.10
Pyrene	*50*	<2.40	<24.0	<2.20	<2.50	0.0580 J [0.0650 J]	<24.0	0.150	<2.30	<2.50	<0.100	<5.10
Cyanide												
Total Cyanide	200	<10.0	<10.0 J	<10.0	<10.0	<10.0 J [<10.0 J]	<10.0	**370**	**2,600**	**3,000**	**6,500**	**7,300 J**

See Notes on Page 6

Table 2
Groundwater Analytical Results (ppb)

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater Standards/	MW-13				MW-14	MW-14R			MW-17			
Screen Interval (feet bgs):		35.5 - 40.5				6.5 - 11.5	2.8 - 12.8			6 - 11			
Date Collected:	*Guidance Values*	06/27/12	11/06/13	09/16/15	10/19/16	06/26/12	11/05/13	09/14/15	10/19/16	06/25/12	11/05/13	09/14/15	10/18/16
Volatile Organics													
Benzene	1	<0.500	<0.500	<0.500 J	<1.00	**14.5**	**17.0 J**	<0.500 J	<1.00	**291 [304]**	**14.1 J**	**5.30 J**	**38.0**
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00 J	<1.00	**258 [257]**	**17.5**	0.790 J	**14.0**
Toluene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00 J	<1.00	**16.0 [17.1]**	1.10	<1.00 J	0.900 J
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<2.00	<1.00	<1.00	<1.00 J	<2.00	**157 J [144]**	1.70	0.240 J	**6.60**
Polycyclic Aromatic Hydrocarbons													
2-Methylnaphthalene	- -	<2.20	<2.40	<2.00	<5.00	<2.10	<2.40	<2.00	<4.70	<2.20 [<2.20]	26.8	<2.10	<25.0
Acenaphthene	20	<2.20	<2.40	<0.100	<5.00	3.00	13.6	<0.100	<4.70	**168 [146]**	**22.5**	**22.1**	**33.0**
Acenaphthylene	- -	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	1.50	<25.0
Anthracene	*50*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	2.90 [2.80]	0.730 J	1.10	<25.0
Benzo(a)anthracene	*0.002*	<2.20	<2.40	<0.0510	<5.00	<2.10	<2.40	<0.0510	<4.70	<2.20 [<2.20]	<2.60	<0.0520	<25.0
Benzo(a)pyrene	ND	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	<0.100	<25.0
Benzo(b)fluoranthene	*0.002*	<2.20	<2.40	<0.0510 J	<5.00	<2.10	<2.40	<0.0510 J	<4.70	<2.20 [<2.20]	<2.60	<0.0520 J	<25.0
Benzo(g,h,i)perylene	- -	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	<0.100	<25.0
Benzo(k)fluoranthene	*0.002*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	<0.100	<25.0
Chrysene	*0.002*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	<0.100	<25.0
Dibenzo(a,h)anthracene	- -	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	<0.100	<25.0
Fluoranthene	*50*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	1.50 J [1.50 J]	<2.60	0.520	<25.0
Fluorene	*50*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	39.0 [35.2]	6.70	9.10	8.00 J
Indeno(1,2,3-cd)pyrene	*0.002*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	<2.20 [<2.20]	<2.60	<0.100	<25.0
Naphthalene	*10*	<2.20	<2.40	<2.00	<5.00	<2.10 B	<2.40	0.0160 J	<4.70	**1,870 D [<1,740 BD]**	0.730 J	0.340 J	8.20 J
Phenanthrene	*50*	<2.20	<2.40	<0.0510	<5.00	<2.10	<2.40	<0.0510	<4.70	33.9 [32.5]	7.40	0.770	2.40 J
Pyrene	*50*	<2.20	<2.40	<0.100	<5.00	<2.10	<2.40	<0.100	<4.70	1.10 J [1.10 J]	<2.60	0.460	<25.0
Cyanide													
Total Cyanide	200	<10.0	<10.0	<10.0	<10.0 J	100	130	81.0 J	**880 J**	**310 [330]**	30.0	<10.0 J	150 J

See Notes on Page 6

Table 2
Groundwater Analytical Results (ppb)

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater Standards/ *Guidance Values*	MW-18				MW-21		MW-25		MW-26	MW-27D	
Screen Interval (feet bgs):		24.6 - 29.6				32 - 37	32 - 37	4 - 14		50 - 60	24 - 34	
Date Collected:		06/25/12	11/05/13	09/14/15	10/18/16	06/27/12	11/06/13	06/27/12	11/06/13	11/06/13	06/26/12	11/05/13
Volatile Organics												
Benzene	1	0.650	<0.500 J	<0.500 J	<1.00	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500 J
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Toluene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<2.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Polycyclic Aromatic Hydrocarbons												
2-Methylnaphthalene	- -	<2.20	<2.40	0.0170 J	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Acenaphthene	20	<2.20	0.580 J	4.10	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Acenaphthylene	- -	<2.20	<2.40	1.20	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Anthracene	*50*	<2.20	<2.40	0.0440 J	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(a)anthracene	*0.002*	<2.20	<2.40	<0.0520	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(a)pyrene	ND	<2.20	<2.40	<0.100	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(b)fluoranthene	*0.002*	<2.20	<2.40	<0.0520 J	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(g,h,i)perylene	- -	<2.20	<2.40	<0.100	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Benzo(k)fluoranthene	*0.002*	<2.20	<2.40	<0.100	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Chrysene	*0.002*	<2.20	<2.40	<0.100	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Dibenzo(a,h)anthracene	- -	<2.20	<2.40	<0.100	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Fluoranthene	*50*	<2.20	<2.40	0.170	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Fluorene	*50*	<2.20	<2.40	0.270	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Indeno(1,2,3-cd)pyrene	*0.002*	<2.20	<2.40	<0.100	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Naphthalene	*10*	<2.20 B	<2.40	0.0320 J	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50 J
Phenanthrene	*50*	<2.20	<2.40	0.0510 J	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Pyrene	*50*	<2.20	<2.40	0.170	<5.40	<2.20	<2.30	<2.20	<2.60	<2.40	<2.20	<2.50
Cyanide												
Total Cyanide	200	<10.0	<10.0	<10.0 J	<10.0 J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0

See Notes on Page 6

Table 2
Groundwater Analytical Results (ppb)

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater Standards/	MW-27S			MW-28D				MW-28S			
Screen Interval (feet bgs):		5 - 15			18 - 28				4 - 14			
Date Collected:	*Guidance Values*	06/26/12	11/05/13	09/16/15	06/25/12	11/05/13	09/15/15	10/18/16	06/25/12	11/05/13	09/15/15	10/18/16
Volatile Organics												
Benzene	1	<0.500	<0.500 J [<0.500 J]	<0.500 J	<0.500	<0.500 J	<0.500 J	<1.00	<0.500	<0.500 J	<0.500 J	<1.00
Ethylbenzene	5	<1.00	<1.00 [<1.00]	<1.00 J	<1.00	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00 J	<1.00
Toluene	5	<1.00	<1.00 [<1.00]	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Xylenes (total)	5	<1.00	<1.00 [<1.00]	<1.00 J	<1.00	<1.00	<1.00 J	<2.00	<1.00	<1.00	<1.00 J	0.780 J
Polycyclic Aromatic Hydrocarbons												
2-Methylnaphthalene	- -	<2.40	<2.50 [<2.40]	<2.30 B	<2.00	<2.20	<2.00 B	<4.80	<2.40	<2.50	<2.00 B	<4.70
Acenaphthene	20	<2.40	<2.50 J [16.4 J]	<0.110	3.80	<2.20	4.30	4.90	9.90	4.50	5.10	5.90
Acenaphthylene	- -	<2.40	<2.50 [0.930 J]	<0.110	0.870 J	<2.20	1.40	1.10 J	3.10	1.00 J	1.50	1.40 J
Anthracene	*50*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	0.0150 J	<4.70
Benzo(a)anthracene	*0.002*	<2.40	<2.50 [<2.40]	<0.0570	<2.00	<2.20	<0.0510	<4.80	<2.40	<2.50	<0.0510	<4.70
Benzo(a)pyrene	ND	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70 J
Benzo(b)fluoranthene	*0.002*	<2.40	<2.50 [<2.40]	<0.0570 J	<2.00	<2.20	<0.0510 J	<4.80	<2.40	<2.50	<0.0510 J	<4.70
Benzo(g,h,i)perylene	- -	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70 J
Benzo(k)fluoranthene	*0.002*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70
Chrysene	*0.002*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70 J
Dibenzo(a,h)anthracene	- -	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70 J
Fluoranthene	*50*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70
Fluorene	*50*	<2.40	<2.50 [5.10]	<0.110	<2.00	<2.20	0.150	<4.80	<2.40	<2.50	<0.100	<4.70
Indeno(1,2,3-cd)pyrene	*0.002*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70 J
Naphthalene	*10*	<5.40 B	<2.50 [<2.40]	<2.30 B	<2.00 B	<2.20	<2.00 B	<4.80	<2.40	<2.50	<2.00 B	<4.70
Phenanthrene	*50*	<2.40	<2.50 [5.70]	<0.0570	<2.00	<2.20	0.0300 J	<4.80	<2.40	<2.50	0.0270 J	<4.70
Pyrene	*50*	<2.40	<2.50 [<2.40]	<0.110	<2.00	<2.20	<0.100	<4.80	<2.40	<2.50	<0.100	<4.70
Cyanide												
Total Cyanide	200	<10.0	<10.0 [<10.0]	<10.0	<10.0	<10.0	2.40 B	<10.0 J	**240**	200	**270**	200 J

See Notes on Page 6

Table 2
Groundwater Analytical Results (ppb)

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Location ID:	NYSDEC Groundwater Standards/	MW-29D			MW-29S		MW-30D		MW-30S		
Screen Interval (feet bgs):		35 - 45			5 - 15		24 - 34		5 - 15		
Date Collected:	*Guidance Values*	06/26/12	11/06/13	09/15/15	11/06/13	09/15/15	06/26/12	11/06/13	06/27/12	11/06/13	10/18/16
Volatile Organics											
Benzene	1	<0.500	<0.500	<0.500 J	<0.500	<0.500 J	<0.500	<0.500	<0.500	<0.500	<1.00 [<1.00]
Ethylbenzene	5	<1.00	<1.00	<1.00 J	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00 [<1.00]
Toluene	5	<1.00	<1.00	<1.00	<1.00	<1.00	1.20	<1.00	<1.00	<1.00	<1.00 [<1.00]
Xylenes (total)	5	<1.00	<1.00	<1.00 J	<1.00	<1.00 J	<1.00	<1.00	<1.00	<1.00	<2.00 [<2.00]
Polycyclic Aromatic Hydrocarbons											
2-Methylnaphthalene	- -	<2.20	<2.40	<2.40 B	<2.40	<2.00 B	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Acenaphthene	20	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Acenaphthylene	- -	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Anthracene	*50*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Benzo(a)anthracene	*0.002*	<2.20	<2.40	<0.0590	<2.40	<0.0500	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Benzo(a)pyrene	ND	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Benzo(b)fluoranthene	*0.002*	<2.20	<2.40	<0.0590 J	<2.40	<0.0500 J	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Benzo(g,h,i)perylene	- -	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Benzo(k)fluoranthene	*0.002*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Chrysene	*0.002*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Dibenzo(a,h)anthracene	- -	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Fluoranthene	*50*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Fluorene	*50*	<2.20	<2.40	0.0180 J	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Indeno(1,2,3-cd)pyrene	*0.002*	<2.20	<2.40	<0.120	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Naphthalene	*10*	<2.20	<2.40	<2.40 B	<2.40	<2.00 B	<2.20 B	<2.50	<2.40	<2.50	<110 [<100]
Phenanthrene	*50*	<2.20	<2.40	0.0270 J	<2.40	<0.0500	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Pyrene	*50*	<2.20	<2.40	0.0200 J	<2.40	<0.100	<2.20	<2.50	<2.40	<2.50	<110 [<100]
Cyanide											
Total Cyanide	200	<10.0	<10.0	<10.0	110	7.60 B	<10.0	<10.0	16.0	14.0	**220 J [<10.0 J]**

See Notes on Page 6

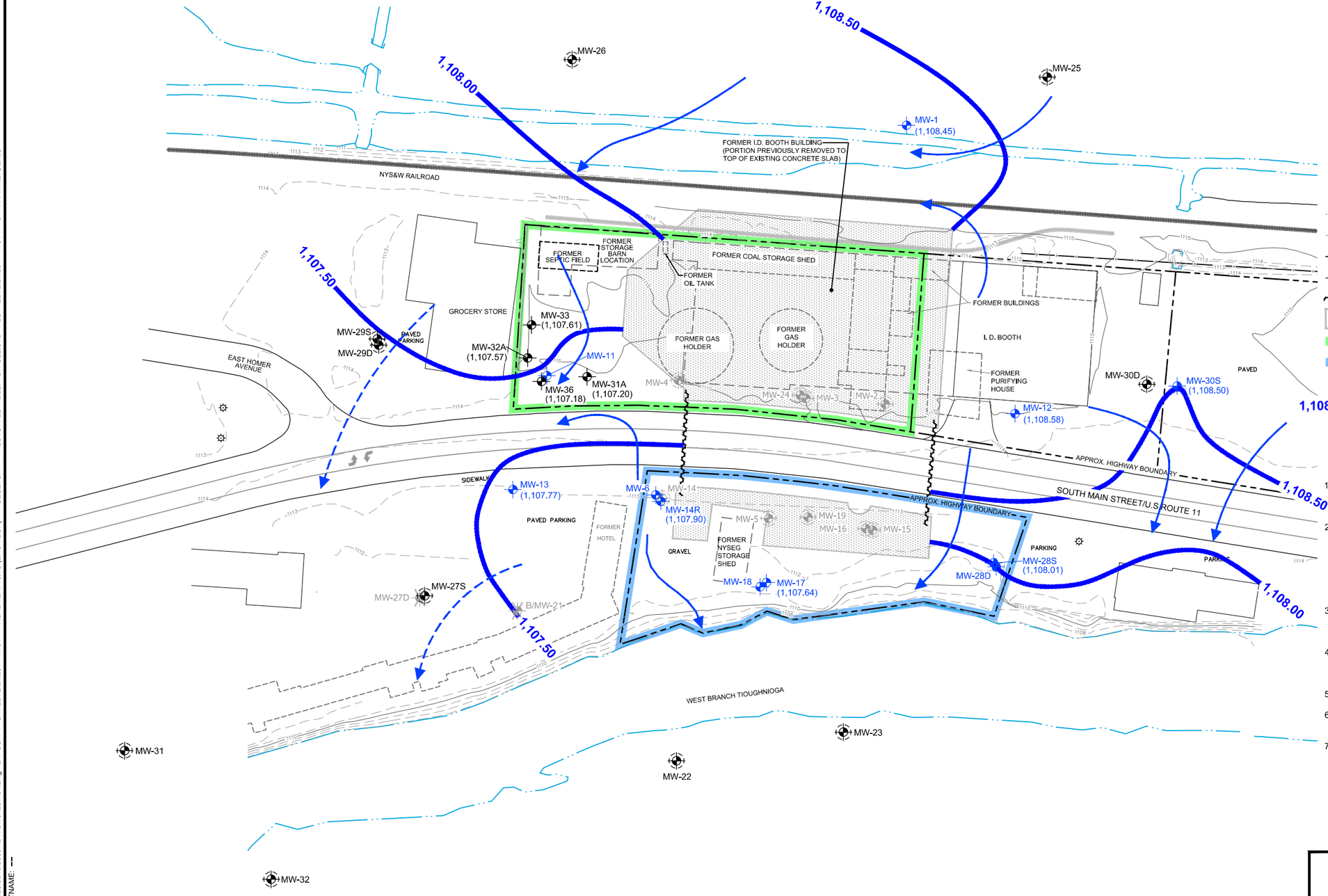
Table 2
Groundwater Analytical Results (ppb)

2016 Annual Groundwater Monitoring Report
Cortland-Homer Former MGP Site - Homer, New York

Notes:

1. Baseline samples collected by Arcadis of New York, Inc. from June 25-27, 2012, and post-in-situ soil solidification (ISS) samples collected by Arcadis from November 5-6, 2013, September 14-16, 2015, and October 18-19, 2016.
2. Laboratory analysis was performed by Accutest Laboratories of Marlborough, Massachusetts (each event except the 2016 monitoring event) or TestAmerica of Amherst, New York (2016 monitoring event) for:
   - BTEX (benzene, toluene, ethylbenzene, xylenes) using United States Environmental Protection Agency (USEPA) SW-846 Method 8260B.
   - Polycyclic aromatic hydrocarbons (PAHs) using USEPA SW-846 Method 8270C.
   - Total cyanide using USEPA SW-846 Method 9012.
3. Concentrations reported in micrograms per liter (ug/L), which is equivalent to parts per billion (ppb).
4. Data qualifiers are defined as follows:
   J - Indicates an estimated value.
   < - Indicates that the compound was analyzed for but not detected. The associated value is the compound quantitation limit
   B - Indicates that the analyte was also detected in the associated method blank.
   D - Indicates that the analyte was quantified using a second dilution.
5. NYSDEC groundwater standards/guidance values are from the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1) dated June 1998, revised April 2000 and June 2004.
6. Shading indicates that the results exceeds the water quality standard/guidance value.
7. -- Indicates that no water quality standard or guidance value is available for this compound.
8. [ ] Results shown in brackets represent field duplicates.
9. ND = non-detect.
10. bgs = below ground surface.
11. Results have been validated in accordance with USEPA National Functional Guidelines of October 1999, USEPA Region II Standard Operating Procedures, and the NYSDEC Analytical Services Protocol.

FIGURES



LEGEND:

- EXISTING MONITORING WELL IN GAUGING AND SAMPLING NETWORK
- EXISTING MONITORING WELL IN GAUGING NETWORK
- EXISTING MONITORING WELL TO BE DECOMMISSIONED
- DECOMMISSIONED MONITORING WELL
- WELLS DESTROYED DURING BUILDING DEMOLITION
- REMOVED/FORMER BUILDINGS
- FORMER MGP STRUCTURE
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE HIGHWAY BOUNDARY
- VERTICAL BARRIER WALL (VBW)
- ISS MONOLITH
- OPERABLE UNIT 1
- OPERABLE UNIT 2
- (1,108.45) GROUNDWATER ELEVATION (FT AMSL)
- 1,108.50 GROUNDWATER ELEVATION CONTOUR (FT AMSL)
- GROUNDWATER FLOW DIRECTION (DASHED WHERE INFERRED)

NOTES:

1. BASEMAP SUPPLIED BY AECOM OF LATHAM, NEW YORK DRAWING NUMBER 3 AT A SCALE OF 1"=60', ENTITLED "NYSEG - REMEDIAL DESIGN FOR FORMER CORTLAND-HOMER MGP SITE" DATED APRIL 16, 2012.
2. BASE MAPPING COMPILED FROM VARIOUS SOURCES INCLUDING NEW YOUR STATE ELECTRIC & GAS (NYSEG) EXISTING PLANIMETRIC AND UTILITY INFORMATION, DIGITIZED INFORMATION FROM NYSDOT RECORD PLANS TITLED RECONSTRUCTION OF ROUTE 11 IN THE TOWN OF CORTLANDVILLE AND VILLAGE OF HOMER - DATED 5-17-02, DIGITIZED AERIAL IMAGERY FROM THE NEW YORK STATE GIS CLEARINGHOUSE, AND A FIELD SURVEY PERFORMED BY AECOM - DATED MAY 13, 2011.
3. FORMER SEPTIC SYSTEM AND OIL TANK TAKEN FROM A PLAN ENTITLED "INVESTIGATION OF FORMER COAL GASIFICATION SITES", DATED 1987 BY E.C. JORDAN CO.
4. THE LOCATION OF MONITORING WELLS MW-6, -11, -14R, -17, -18, -31, -32 AND -33 WERE SURVEYED ON NOVEMBER 21, 2013 BY J. OLMSTEAD & S. HOPE. ALL OTHER MONITORING WELL LOCATIONS ARE APPROXIMATE.
5. ISS = IN-SITU STABILIZATION.
6. VBW = CONSISTS OF STEEL SHEET PILES DRIVEN INTO CONFINING LAYER.
7. MW-11 WAS NOT FOUND DURING THE OCTOBER 2016 MONITORING EVENT AND APPEARED TO HAVE BEEN BURIED BENEATH A CONCRETE PATCH THAT COULD NOT BE REMOVED.

0 80' 160'

GRAPHIC SCALE

NYSEG
CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK

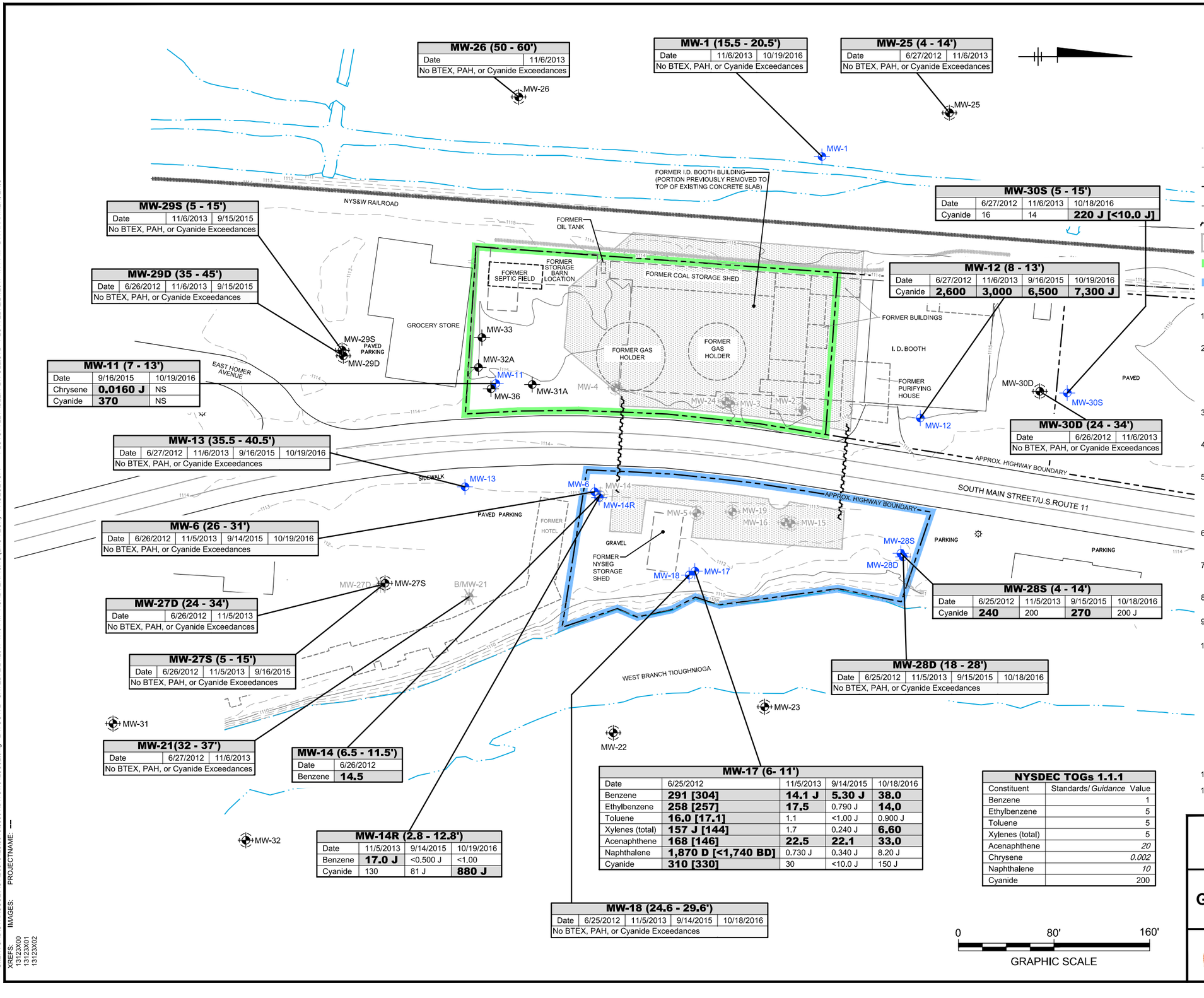
2016 ANNUAL GROUNDWATER MONITORING REPORT

WATER-TABLE MAP - OCTOBER 18, 2016

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY:SYRACUSE NY DIV/GROUP:ENVCAD DB: A. SCHILLING, , E. KRAHMER, R. ALLEN PM: J. BRUSSEL TM: J. BRUSSEL TR: C. HEALY LD: C. HEALY LYR:ON=*;OFF=*REF*
G:\ENV\CAD\SYRACUSE\ACTB0013123\0013\00001\DWG\13123W01.dwg LAYOUT: 1 SAVED: 2/21/2017 4:15 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 2/21/2017 4:15 PM BY: KRAHMER, ERIC
XREFS:
13123X00
13123X01
13123X02
IMAGES:
PROJECTNAME: ---



LEGEND:

- EXISTING MONITORING WELL IN GAUGING AND SAMPLING NETWORK
- EXISTING MONITORING WELL IN GAUGING NETWORK
- EXISTING MONITORING WELL TO BE DECOMMISSIONED
- DECOMMISSIONED MONITORING WELL
- WELLS DESTROYED DURING BUILDING DEMOLITION
- REMOVED/FORMER BUILDINGS
- FORMER MGP STRUCTURE
- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE HIGHWAY BOUNDARY
- VERTICAL BARRIER WALL (VBW)
- ISS MONOLITH
- OPERABLE UNIT 1
- OPERABLE UNIT 2

NOTES:

1. BASEMAP SUPPLIED BY AECOM OF LATHAM, NEW YORK DRAWING NUMBER 3 AT A SCALE OF 1"=60', ENTITLED "NYSEG - REMEDIAL DESIGN FOR FORMER CORTLAND-HOMER MGP SITE" DATED APRIL 16, 2012.
2. BASE MAPPING COMPILED FROM VARIOUS SOURCES INCLUDING NEW YOUR STATE ELECTRIC & GAS (NYSEG) EXISTING PLANIMETRIC AND UTILITY INFORMATION, DIGITIZED INFORMATION FROM NYSDOT RECORD PLANS TITLED RECONSTRUCTION OF ROUTE 11 IN THE TOWN OF CORTLANDVILLE AND VILLAGE OF HOMER - DATED 5-17-02, DIGITIZED AERIAL IMAGERY FROM THE NEW YORK STATE GIS CLEARINGHOUSE, AND A FIELD SURVEY PERFORMED BY AECOM - DATED MAY 13, 2011.
3. FORMER SEPTIC SYSTEM AND OIL TANK TAKEN FROM A PLAN ENTITLED "INVESTIGATION OF FORMER COAL GASIFICATION SITES", DATED 1987 BY E.C. JORDAN CO.
4. THE LOCATION OF MONITORING WELLS MW-6, -11, -14R, -17, -18, -31, -32 AND -33 WERE SURVEYED ON NOVEMBER 21, 2013 BY J. OLMSTEAD & S. HOPE. ALL OTHER MONITORING WELL LOCATIONS ARE APPROXIMATE.
5. GROUNDWATER STANDARDS AND GUIDANCE VALUES ARE OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION DOCUMENT ENTITLED "DIVISION OF WATER, TECHNICAL AND OPERATIONAL GUIDANCE VALUES AND GROUNDWATER EFFLUENT LIMITATIONS" (ISSUED JUNE 1998 AND REVISED IN APRIL 2000 AND JUNE 2004).
6. SCREEN INTERVAL DEPTH FOR EACH WELL IS SHOWN IN PARENTHESIS AFTER WELL IDs. DEPTHS ARE REPORTED IN FEET BELOW GROUND SURFACE.
7. FIGURE ONLY SHOWS RESULTS FOR BTEX, PAHs, AND CYANIDE EXCEEDING THE STANDARDS AND GUIDANCE VALUES PRESENTED IN TOGS 1.1.1.
8. SHADED VALUE INDICATES THAT THE CONSTITUENT CONCENTRATION EXCEEDS TOGs 1.1.1.
9. ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L) WHICH IS EQUIVALENT TO PARTS PER BILLION (ppb).
10. ABBREVIATIONS AND SYMBOLS:
    - B - INDICATES THAT THE ANALYTE WAS ALSO DETECTED IN THE ASSOCIATED METHOD BLANK.
    - BTEX - BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES.
    - D - INDICATES THAT THE ANALYTE WAS QUANTIFIED USING A SECOND DILUTION.
    - NS - NOT SAMPLED.
    - PAHs - POLYCYCLIC AROMATIC HYDROCARBONS.
    - ISS - IN-SITU STABILIZATION.
    - J - INDICATES AN ESTIMATED VALUE.
    - VBW - CONSISTS OF SEALED STEEL SHEET PILES DRIVEN INTO CONFINING LAYER.
    - < - CONSTITUENT NOT DETECTED AT A CONCENTRATION ABOVE THE LABORATORY REPORTED DETECTION LIMIT.
    - [ ] - DUPLICATE SAMPLE RESULTS.
11. DATA HAVE BEEN VALIDATED.
12. MW-11 WAS NOT FOUND DURING THE OCTOBER 2016 MONITORING EVENT AND APPEARED TO HAVE BEEN BURIED BENEATH A CONCRETE PATCH THAT COULD NOT BE REMOVED.

NYSEG
CORTLAND-HOMER FORMER MGP SITE
HOMER, NEW YORK
2016 ANNUAL GROUNDWATER MONITORING REPORT

GROUNDWATER ANALYTICAL RESULTS

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

ATTACHMENT A

Groundwater Sampling Logs

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. HENKEL R. MOTT **Well ID:** MW - 1
Client / Job Number: Nyseg **Date:** 10/19/16
Weather: 60°F, SUNNY **Time In:** 0800 **Time Out:** 915

Well Information

Depth to Water (feet):	7.80 (from MP)	Well Type: Flushmount	Stick-Up
Total Depth (feet):	23.80 (from MP)	Well Material:	Stainless Steel / PVC
Length of Water Column (feet):	16	Well Locked:	Yes / No
Volume of Water in Well (gal):	2.61	Measuring Point Marked:	Yes / No
Intake depth for tubing (feet)	~ 19	Well Diameter:	1" / 2" / Other:

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:

Pump Start Time 0817
Pump Stop Time 910
Water-Quality Meter Type: Horiba
Total Volume Removed: 1.5 (gal) Did well go dry: Yes / No

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9	
Time	0820	0825	0830	0835	0840	0845	0850	0855	0900	0905
Volume Purged (mL)									~1.5	
Rate (mL/min)	150	200	150	100	100	100	150	150	150	150
Depth to Water (ft.)	7.85	7.83	7.85	7.83	7.83	7.82	7.84	7.83	7.83	7.84
pH	7.93	7.35	7.08	7.12	6.93	6.91	6.76	6.76	6.77	6.75
Temp. (C)	14.43	13.38	13.20	13.24	13.24	13.19	13.11	13.05	12.97	12.91
Conductivity (mS/cm)	0.817	0.749	0.751	0.752	0.755	0.757	0.756	0.762	0.764	0.765
Dissolved Oxygen (mg/L)	5.79	2.17	1.62	1.23	1.02	0.93	1.71	0.85	0.79	0.75
ORP (mV)	192	187	148	91	58	41	34	38.7	29	27
Turbidity (NTU)	141	124	91.0	73.6	61.3	57.5	52.2	38.1	24	19.2
Notes:										

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:	Clear	
Odor:	None	
Appearance:		
Sample ID: MW-1	Sample Time: 0910	
MS/MSD:	Yes / No	
Duplicate:	Yes / No	
Duplicate ID —	Dup. Time: —	

PID =

Problems/Observation

- Lock cut & replaced
- Missing J-Plug

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Henkel & F. Mott **Well ID:** MW-10
Client / Job Number: NYSEG **Date:** 10/19
Weather: 60°F, SUNNY **Time In:** 1152 **Time Out:** 1300

Well Information

Depth to Water (feet): 5.22 (from MP)
Total Depth (feet): 26.39 (from MP)
Length of Water Column (feet): 21.17
Volume of Water in Well (gal): 3.45
Intake depth for tubing (feet) ~20

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	(Teflon)	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1200
Pump Stop Time 1240
Water-Quality Meter Type: Horiba
Total Volume Removed: ~2 (gal) Did well go dry: Yes (No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337				

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1210	1215	1220	1225	1230	1235	1240	1245	
Volume Purged (mL)							~2	S	
Rate (mL/min)	150	150	100	100	100	100	100	A	
Depth to Water (ft.)	5.34	5.40	5.30	5.30	5.30	5.30	5.30	M	
pH	7.54	7.85	7.89	7.92	7.96	7.86	7.97	P	
Temp. (C)	16.83	16.58	16.69	16.51	16.43	16.37	16.38	L	
Conductivity (mS/cm)	0.6033	0.624	0.621	0.622	0.622	0.621	0.620	E	
Dissolved Oxygen (mg/L)	8.01	2.87	2.57	2.33	2.16	1.95	2.15		
ORP (mV)	193	183	181	173	172	174	170		
Turbidity (NTU)	5.0	2.8	3.6	2.8	1.8	2.7	3.7		
Notes:									

Sampling Information **Problems/Observation**

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: None		
Odor: None		
Appearance: Clear		
Sample ID: MW-10	Sample Time: 1245	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID —	Dup. Time: —	

PID =

NYSEG - Cortland Homer — 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Heidel & EMOT — **Well ID:** MW-12
Client / Job Number: NySeg — **Date:** 10/19/16
Weather: 60°F, SUNNY — **Time In:** 1545 **Time Out:**

Well Information

Depth to Water (feet): 6.65 (from MP)
Total Depth (feet): 11.51 (from MP)
Length of Water Column (feet): 4.86
Volume of Water in Well (gal): 0.79
Intake depth for tubing (feet) ~ 8

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	(Teflon)	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time @ 1600
Pump Stop Time 1625
Water-Quality Meter Type: Hellibox
Total Volume Removed: 1.5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469

1 gal = 3.785 L = 3875 ml = 0.1337

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1605	1610	1615	1620	1625	1630	1635		
Volume Purged (mL)					~2125				
Rate (mL/min)	80	80	80	80	80	S			
Depth to Water (ft.)	7.39	8.28	7.40	7.40	7.40	A			
pH	7.5	7.49	7.46	7.45	7.45	M			
Temp. (C)	17.40	17.29	17.11	17.03	16.94	P			
Conductivity (mS/cm)	0.755	0.7165	0.752	0.748	0.740	L			
Dissolved Oxygen (mg/L)	0.33	1.05	0.29	0.09	0.13	E			
ORP (mV)	273	262	246	240	238				
Turbidity (NTU)	0	0	0	0	0				
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: Clear		
Odor: None		
Appearance: Clear		
Sample ID: MW-12	Sample Time: 1635	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID —	Dup. Time: —	

PID =

Problems/Observation

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K. Henzel & E. Moff **Well ID:** MW-13
Client / Job Number: **Date:** 10/19/16
Weather: 60°F SUNNY **Time In:** 1320 **Time Out:** 1415

Well Information

Depth to Water (feet):	5.70 (from MP)	Well Type: (Flushmount)	Stick-Up
Total Depth (feet):	31.60 (from MP)	Well Material:	Stainless Steel (PVC)
Length of Water Column (feet):	25.9	Well Locked: (Yes)	No
Volume of Water in Well (gal):	4.22	Measuring Point Marked: (Yes)	No
Intake depth for tubing (feet)	~25	Well Diameter: 1" (2")	Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	(Teflon)	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1325
Pump Stop Time 1350
Water-Quality Meter Type: Hellba

Total Volume Removed: 2.5 (gal) Did well go dry: Yes (No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337				

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1330	1335	1340	1345	1350	1355			
Volume Purged (mL)					~2.5	S			
Rate (mL/min)	150	150	150	150	150	A			
Depth to Water (ft.)	5.68	5.62	5.60	5.60	5.60	M			
pH	7.45	7.23	7.13	7.05	7.02	P			
Temp. (C)	18.10	17.92	17.48	17.53	17.54	L			
Conductivity (mS/cm)	0.755	0.756	0.759	0.756	0.755	E			
Dissolved Oxygen (mg/L)	4.18	3.02	2.78	2.39	2.39				
ORP (mV)	170	167	166	166	162				
Turbidity (NTU)	1.1	1.0	0.1	0.0	0.0				
Notes:									

Sampling Information **Problems/Observation**

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: None		
Odor: None		
Appearance: Clear		
Sample ID: MW-13	Sample Time: 1355	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID —	Dup. Time: —	

PID =

NYSEG - Cortland Homer

2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K. Hengel & K. Matt
Well ID: MW-14R
Client / Job Number:
Date: 10/19/2016
Weather: 100°F, SUNNY
Time In: 1100 **Time Out:** 1200

Well Information

Depth to Water (feet): 4.88 (from MP)
Total Depth (feet): 12.50 (from MP)
Length of Water Column (feet): 7.62
Volume of Water in Well (gal): 1.2
Intake depth for tubing (feet) ~8

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	(Teflon)	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1112
Pump Stop Time 1140
Water-Quality Meter Type: Horiba
Total Volume Removed: 1.5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1115	1120	1125	1130	1135	1140	1145		
Volume Purged (mL)						21.5	S		
Rate (mL/min)	100	100	100	100	100	100	A		
Depth to Water (ft.)	5.10	5.05	5.05	5.03	5.03	5.05	M		
pH	7.25	7.18	7.08	7.03	7.01	6.95	P		
Temp. (C)	16.167	16.167	16.169	16.168	16.168	16.169	L		
Conductivity (mS/cm)	0.769	0.772	0.774	0.776	0.777	0.777	E		
Dissolved Oxygen (mg/L)	5.91	4.04	3.47	3.08	3.06	3.12	|		
ORP (mV)	204	212	219	223	225	225	|		
Turbidity (NTU)	38	21.8	9.7	8.2	6.2	19.4	|		
Notes:							|		

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: None		
Odor: None		
Appearance: Clear		
Sample ID: MW-14R	Sample Time: 1145	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID —	Dup. Time: —	

PID =

Problems/Observation

- well lid cracked, missing 1 bolt

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: K. HENSEL E. MOTT **Well ID:** MW-17
Client / Job Number: **Date:** 10/8/2016
Weather: 70°F SUNNY **Time In:** 1130 **Time Out:** 1230

Well Information

Depth to Water (feet): 6.99 (from MP)
Total Depth (feet): 10.47 (from MP)
Length of Water Column (feet): 3.48
Volume of Water in Well (gal): .56
Intake depth for tubing (feet) ~ 8

Well Type: Flushmount (Stick-Up)
Well Material: (Stainless Steel) PVC
Well Locked: (Yes) No
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	(Teflon)	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1140
Pump Stop Time 1225
Water-Quality Meter Type: Horiba

Total Volume Removed: ~ (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1145	1150	1155	1200	1205	1210	1215	1220	
Volume Purged (mL)									
Rate (mL/min)	100	100	150	150	150	150		SAMPLE	
Depth to Water (ft.)	7.02	7.02	7.02	7.02	7.02	7.02			
pH	7.29	6.90	6.100	6.61	6.61	6.104			
Temp. (C)	19.84	19.598	19.600	19.601	19.50	19.601			
Conductivity (mS/cm)	0.570	0.582	0.598	0.1624	0.667	0.686			
Dissolved Oxygen (mg/L)	3.68	2.89	1.92	1.38	0.98	1.10			
ORP (mV)	-92	-134	-139	-143	-149	-153			
Turbidity (NTU)	52.1	9.7	1.9	1.1	0.1	0			
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: Clear		
Odor: None		
Appearance:		
Sample ID: MW-17	Sample Time: 1220	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID ~	Dup. Time: ~	

PID =

Problems/Observation

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Hensel **Well ID:** MW-18
Client / Job Number: Nyseg **Date:** 10/18
Weather: 70s Sunny **Time In:** 1140 **Time Out:** 1230

Well Information

Depth to Water (feet):	10.93 (from MP)	Well Type: Flushmount	(Stick-Up)
Total Depth (feet):	30.14 (from MP)	Well Material: Stainless Steel	(PVC)
Length of Water Column (feet):	23.21	Well Locked: (Yes)	No
Volume of Water in Well (gal):	3.78	Measuring Point Marked: (Yes)	No
Intake depth for tubing (feet)	~25	Well Diameter: 1" (2")	Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1145
Pump Stop Time
Water-Quality Meter Type: Horiba 033113
Total Volume Removed: ~2 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1150	1155	1200	1205	1210	1215			
Volume Purged (mL)									
Rate (mL/min)	200	200	200	200	200	S			
Depth to Water (ft.)	6.92	6.91	6.91	6.91	6.91	A			
pH	8.78	8.74	8.75	8.77	8.75	M			
Temp. (C)	20.69	20.34	20.20	20.09	20.04	P			
Conductivity (mS/cm)	.445	0.440	0.439	0.438	0.437	L			
Dissolved Oxygen (mg/L)	0.23	0.0	0.0	0.0	6.0	E			
ORP (mV)	-57.	-54	-51	-47	-44				
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.6				
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:	Clear	
Odor:	None	
Appearance:		
Sample ID: MW-18	Sample Time: 1215	
MS/MSD: Yes	(No)	
Duplicate: Yes	(No)	
Duplicate ID —	Dup. Time: —	

PID =

Problems/Observation

* None

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Herriset & K. Mott **Well ID:** MW-28S
Client / Job Number: NySeg e **Date:** 10/18/16
Weather: 70°F, SUNNY **Time In:** 1340 **Time Out:**

Well Information

Depth to Water (feet):	3.67 (from MP)	Well Type: (Flushmount)	Stick-Up
Total Depth (feet):	13.24 (from MP)	Well Material:	Stainless Steel (PVC)
Length of Water Column (feet):	9.57	Well Locked: Yes	(No)
Volume of Water in Well (gal):	1.56	Measuring Point Marked: (Yes)	No
Intake depth for tubing (feet)	~ 8	Well Diameter: 1"	(2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	Polyethylene	(Teflon)	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1345
Pump Stop Time 1420
Water-Quality Meter Type: Horiba
Total Volume Removed: 2.5 (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337

Unit Stability

pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1345	1350	1355	1400	1405	1410	1415	1430	
Volume Purged (mL)							~2.5	S	
Rate (mL/min)	~~250~~	250	140	140	140	140	140	A	
Depth to Water (ft.)	3.61	3.60	3.60	3.60	3.60	3.60	3.60	m	
pH	6.77	6.85	6.88	6.88	6.89	6.91	6.92	P	
Temp. (C)	18.09	18.15	18.03	17.92	17.81	17.92	17.98	L	
Conductivity (mS/cm)	2.22	2.22	2.21	2.17	2.14	2.10	2.08	E	
Dissolved Oxygen (mg/L)	2.10	1.36	1.12	1.01	0.89	0.81	0.77		
ORP (mV)	-151	-155	-158	-161	-162	-165	-166		
Turbidity (NTU)	95.9	38.7	26.1	19.0	18.2	15.8	14.1		
Notes:									

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color:	Clear	
Odor:	None	
Appearance:		
Sample ID:	MW-28S	Sample Time: 1430
MS/MSD:	(Yes)	No
Duplicate:	Yes	(No)
Duplicate ID	—	Dup. Time: —

PID =

Problems/Observation

- Collected MS/MSD

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Hensel . K Mott **Well ID:** MW-28D
Client / Job Number: Nyseg **Date:** 10/18/16
Weather: Sunny **Time In:** 1340 **Time Out:**

Well Information

Depth to Water (feet): 3.55 (from MP)
Total Depth (feet): 26.78 (from MP)
Length of Water Column (feet): 23.23
Volume of Water in Well (gal): 3.78
Intake depth for tubing (feet) ~ 20

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: (Yes) No
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 1345
Pump Stop Time 1445
Water-Quality Meter Type: Horiba

Total Volume Removed: 2.5 (gal) Did well go dry: Yes (No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	####	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337				

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9
Time	1350	1355	1400	1405	1410	1415	1430	1435	1440
Volume Purged (mL)								~2.5	S
Rate (mL/min)	150	150	150	150	150	150	150	150	A
Depth to Water (ft.)	3.52	3.55	3.52	3.51	3.54	3.54	3.54	3.54	M
pH	7.80	7.53	7.51	7.52	7.52	7.53	7.54	7.54	P
Temp. (C)	20.82	19.13	18.28	18.06	18.27	18.05	18.00	17.96	I
Conductivity (mS/cm)	0.682	0.707	0.716	0.713	0.710	.713	0.710	.706	C
Dissolved Oxygen (mg/L)	2.82	0	0.0	0.0	0.0	0.0	0.0	00	
ORP (mV)	-102	-114	-146	-150	-151	-152	-152	-152	
Turbidity (NTU)	21.0	2.2	0.0	0.0	0.0	0.0	00	00	
Notes:						*	*		

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America
Color: Clear		
Odor: None		
Appearance: None		
Sample ID: MW-28D	Sample Time: 1440	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID —	Dup. Time: —	

PID =

Problems/Observation

Horiba Died Needed to Replace Batteries.

NYSEG - Cortland Homer 2016 Groundwater Sampling Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: R. Hensel, K Moth **Well ID:** MW-305
Client / Job Number: **Date:** 10/18/16
Weather: 70s Sunny. **Time In:** 0958 **Time Out:**

Well Information

Depth to Water (feet): 6.58 (from MP)
Total Depth (feet): 11.80 (from MP)
Length of Water Column (feet): 5.22
Volume of Water in Well (gal): approx. 0.85
Intake depth for tubing (feet) ~ 8

Well Type: (Flushmount) Stick-Up
Well Material: Stainless Steel (PVC)
Well Locked: Yes (No)
Measuring Point Marked: Yes (No)
Well Diameter: 1" (2") Other:

Purging Information

Purging Method:	Bailer	(Peristaltic)	Grundfos	Other:
Tubing/Bailer	St. Steel	(Polyethylene)	Teflon	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:

Pump Start Time 950
Pump Stop Time 1110
Water-Quality Meter Type: Horiba 24749

Total Volume Removed: (gal) Did well go dry: Yes (No)

Conversion Factors

gal / ft. of	1" ID	2" ID	4" ID	6" ID
water	####	0.163	0.653	1.469

1 gal = 3.785 L = 3875 ml = 0.1337

Unit Stability			
pH	DO	Cond.	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

Parameter:	1	2	3	4	5	6	7	8	9	10
Time	1015	1020	1025	1030	1035	1040	1045	1050	1055	1100
Volume Purged (mL)							~1.5			
Rate (mL/min)	150	100	100	100	75	75	60	60	60	60
Depth to Water (ft.)	7.54	7.80	7.60	7.64	7.72	7.78	7.65	7.66	7.50	7.68
pH	6.13	6.15	6.18	6.22	6.30	6.36	6.43	6.46	6.46	6.46
Temp. (C)	19.70	19.71	19.71	19.78	19.91	20.05	20.33	20.48	20.58	20.34
Conductivity (mS/cm)	80.098	0.927	0.928	0.609	1.03	1.05	1.07	1.08	1.08	1.17
Dissolved Oxygen (mg/L)	1.32	1.25	1.22	1.14	1.27	1.11	1.08	1.08	1.08	1.12
ORP (mV)	-110	-72	-72	-100	-119	-119	-121	-118	-115	-109
Turbidity (NTU)	1000	302	70	279	252	251	236	204	195	191
Notes:										

Sampling Information

Analyses	#	Laboratory
BTEX	3	Test America
TCN	1	Test America
PAH	2	Test America

Color: Brown Murky
Odor: None.
Appearance:
Sample ID: MW-305 Sample Time: 1105
MS/MSD: Yes (No)
Duplicate: (Yes) No
Duplicate ID Dup Dup. Time: 1105
PID = 0.0

Problems/Observation

* Well in Need of Repair.
- Pump died during sample collection - had to increase flow rate which stirred up sediment (↑ turbidity)
- Collected Dup
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