Steven P. Stucker, C.P.G.
Lead Environmental Engineer

January 25, 2021

Mr. Scott Deyette
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, BURC
625 Broadway
Albany, New York 12233-7014

RE: National Grid Former Manufactured Gas Plant Site
Anthony Street, Watertown, New York
Annual Groundwater Monitoring Report

Dear Mr. Deyette:

Enclosed for your review is the Annual Groundwater Monitoring Report for the NG Watertown Former MGP Site, for calendar year 2020.

Groundwater and Environmental Service, Inc., (GES) OM&M contractor for National Grid, conducts all long-term OM&M activities at the site. Site inspections were conducted in August and December of 2020. The site is generally in good shape and in compliance. There were detections of BTEX and/or PAH in all seven monitoring wells sampled.

If you have any questions, then please feel free to contact me at 315.428.5652.

Very truly yours,

for SPS

Steven P. Stucker, C.P.G.
Lead Environmental Engineer
National Grid

Cc: Devin T. Shay – Groundwater and Environmental Services, Inc.

National Grid

Annual Groundwater Monitoring Report

National Grid Watertown (Anthony Street) Former MGP Site
Anthony Street, Watertown NY13601

January 2021

Version 1

Annual Groundwater Monitoring Report

National Grid Watertown (Anthony St.)
Former MGP Site
Anthony Street
Watertown, NY 13601

Prepared for:
National Grid
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Syracuse, NY 13202

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5 Technology Place, Suite 4
East Syracuse, NY 13057
TEL: 800-220-3069
www.gesonline.com

GES Project:
0603200.136010.221

Date:
January 25, 2021

Devin T. Shay, PG
Program Manager / Principal Hydrogeologist

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1 Introduction

This Annual Groundwater Monitoring Report presents results from the activities conducted at the Watertown (Anthony Street) former non-owned manufactured gas plant (MGP) site, located in Watertown, New York (the Site). A site location map is presented on Figure 1, a site map is presented as Figure 2. The annual monitoring activities summarized herein are performed in accordance with the Site Management Plan for the site, prepared by Arcadis, and approved by the New York State Department of Environmental Conservation (NYSDEC) on March 17, 2017.

A detailed discussion of the annual monitoring activities and results is presented below.

2 Annual Groundwater Monitoring

2.1 Objectives

The objectives of the August 2020 groundwater monitoring activities were to:

- Obtain groundwater elevation data from monitoring wells in the vicinity of the site to evaluate groundwater flow direction, and compare the results with historical groundwater flow conditions.
- Obtain analytical data to assess potential changes in groundwater quality at the site and compare the results to the Class GA groundwater standards and guidance values presented in the NYSDEC document entitled, "Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1), reissued June 1998 and amended April 2000 and June 2004.

2.2 Groundwater Well Gauging

The August 11, 2020 groundwater monitoring field activities were conducted by GES. Prior to collecting groundwater samples, static fluid level measurements were collected from MW-1, MW-2, MW-3, MW-3R, MW-4E, MW-5R, MW-6R and MW-7R. Water levels were measured to the nearest 0.01 foot using an electronic oil-water interface probe to determine the depth from a surveyed mark on the top of the inner polyvinyl chloride (PVC) well casing to the groundwater within the well.

The fluid level measurements obtained from each monitoring well were converted to groundwater elevations using the surveyed well elevations. The calculated groundwater elevations for each monitoring well are listed in Table 1, and are depicted on Figure 3. Table 1 also includes groundwater elevation measurements obtained during previous groundwater monitoring events.

Groundwater generally flows to the north-northwest from the Site toward the Black River. Groundwater elevations ranged from 422.20 feet above sea level (asl; well MW-7R) to 438.92 feet asl (well MW-2). Field data from the gauging event is presented in Appendix B.

2.3 Groundwater Well Sampling and Analytical Results

Groundwater samples were collected by GES from seven (7) monitoring wells on August 11, 2020 (including MW-1, MW-2, MW-3R, MW-4E, MW-5R, MW-6R and MW-7R). Low-flow sampling techniques were used to purge groundwater from each monitoring well prior to collecting groundwater samples. Field parameters (consisting of turbidity, temperature, pH, conductivity, oxidation reduction potential [ORP], and dissolved oxygen) were measured approximately every 5 to 10 minutes during well purging, and the depth to water was monitored throughout the pumping process to minimize drawdown within the well. Well purging activities continued at each well until the field parameters stabilized and the turbidity of the water in the wells was reduced to less than 50 nephelometric turbidity units (NTUs). Groundwater field data is presented in Appendix B.

Following purging, groundwater samples were collected. The groundwater samples were bottled and shipped to Pace Analytical for laboratory analysis for Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX; EPA Method 8260C), Semi-Volatile Polycyclic Aromatic Hydrocarbons (PAHs; EPA Method 8270D), as well as total cyanide (EPA Method 9012B). Quality assurance/quality control (QA/QC) samples, including a field duplicate, matrix spike, and duplicate matrix spike were also submitted for laboratory analysis. The laboratory analytical results for the groundwater samples were reported using NYSDEC Analytical Services Protocol (ASP) Category B data deliverable packages to facilitate data validation.

Purge water generated during the sampling activities was collected in 5-gallon buckets and transferred into 55-gallon steel drums for characterization prior to offsite treatment/disposal in accordance with applicable regulations.

Analytical results from the laboratory analysis report are summarized in Table 2 and compared to the Class GA groundwater standards and guidance values presented in TOGS 1.1.1. VOC exceedances are bolded on Table 2 and further shown on Figure 4. The Data Usability Summary Report (DUSR) is included in Appendix C.

There were BTEX and/or PAH detections in all the monitoring wells sampled. BTEX, acenaphthene, benzo(b)fluoranthene, chrysene, and naphthalene were detected above the regulatory criteria in one or more samples. Cyanide was detected in monitoring wells MW-1, MW-2, MW-4R, and MW-5R.

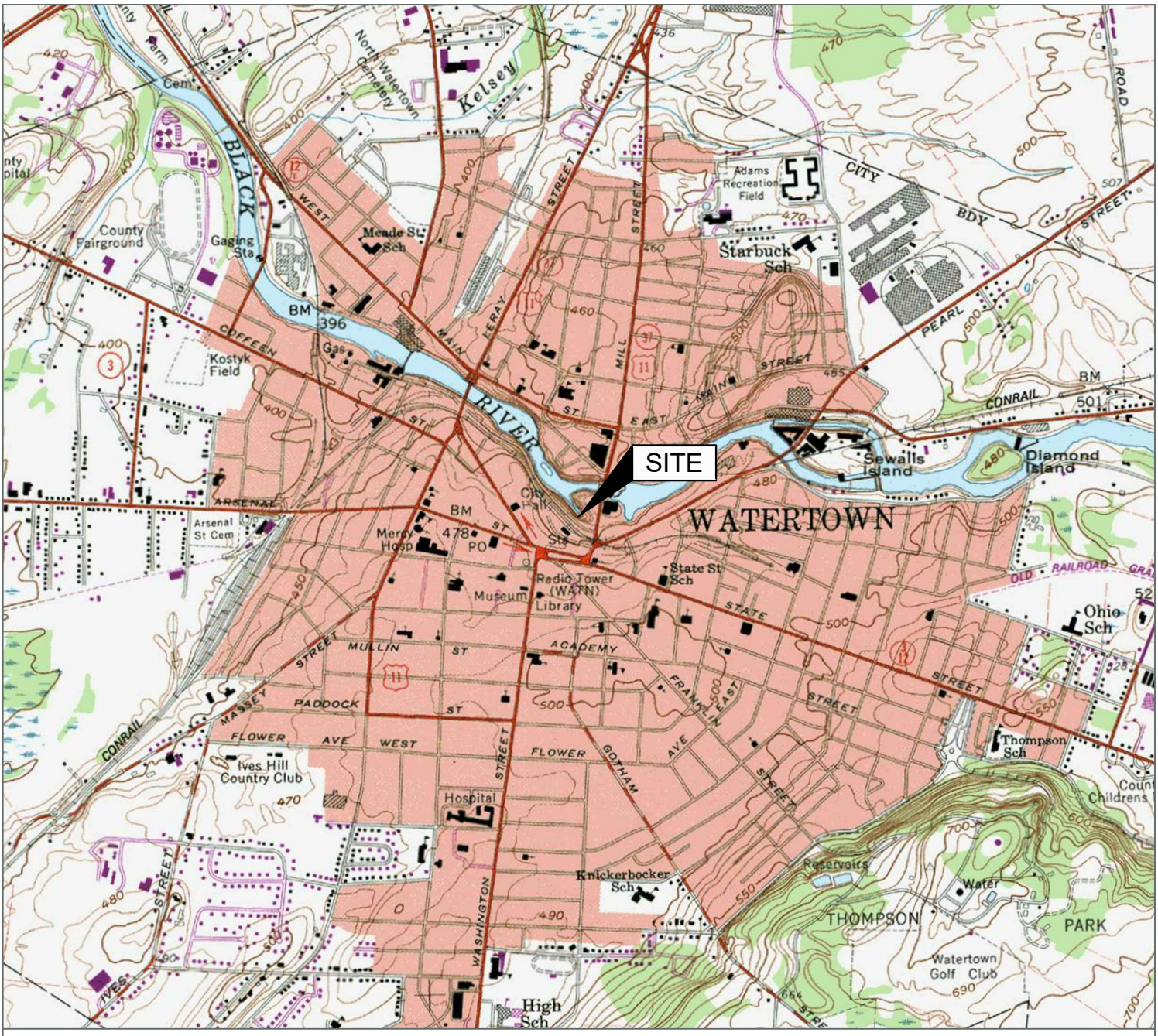
3 Quarterly Site-Wide Inspections

The quarterly site-wide inspections were started on August 11, 2020. A site inspection was also completed on December 10, 2020. The Site Inspection Forms are presented in Appendix A. In general, the Site is in compliance.

4 Recommendations

At this time, National Grid recommends continuing the annual monitoring activities. The next annual groundwater sampling event would be in the Summer 2021. Annual site-wide inspections are required; however, for internal security purposes, National Grid will continue to conduct quarterly site-wide inspections.

Figures



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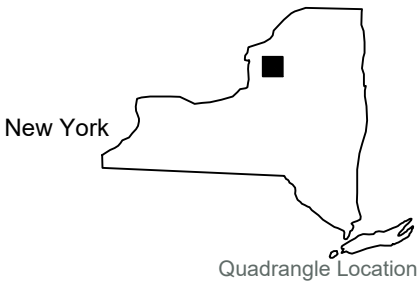
USGS 7.5 Minute Series
Topographic Quadrangle, 1982
Watertown, New York
Contour Interval = 10'



Site Location Map

National Grid
Anthony Street
Watertown, New York

Drawn
W.G.S.
Designed

Approved

Date
8/19/20
Figure
1

Scale In Feet
0 2000

Groundwater & Environmental Services, Inc.

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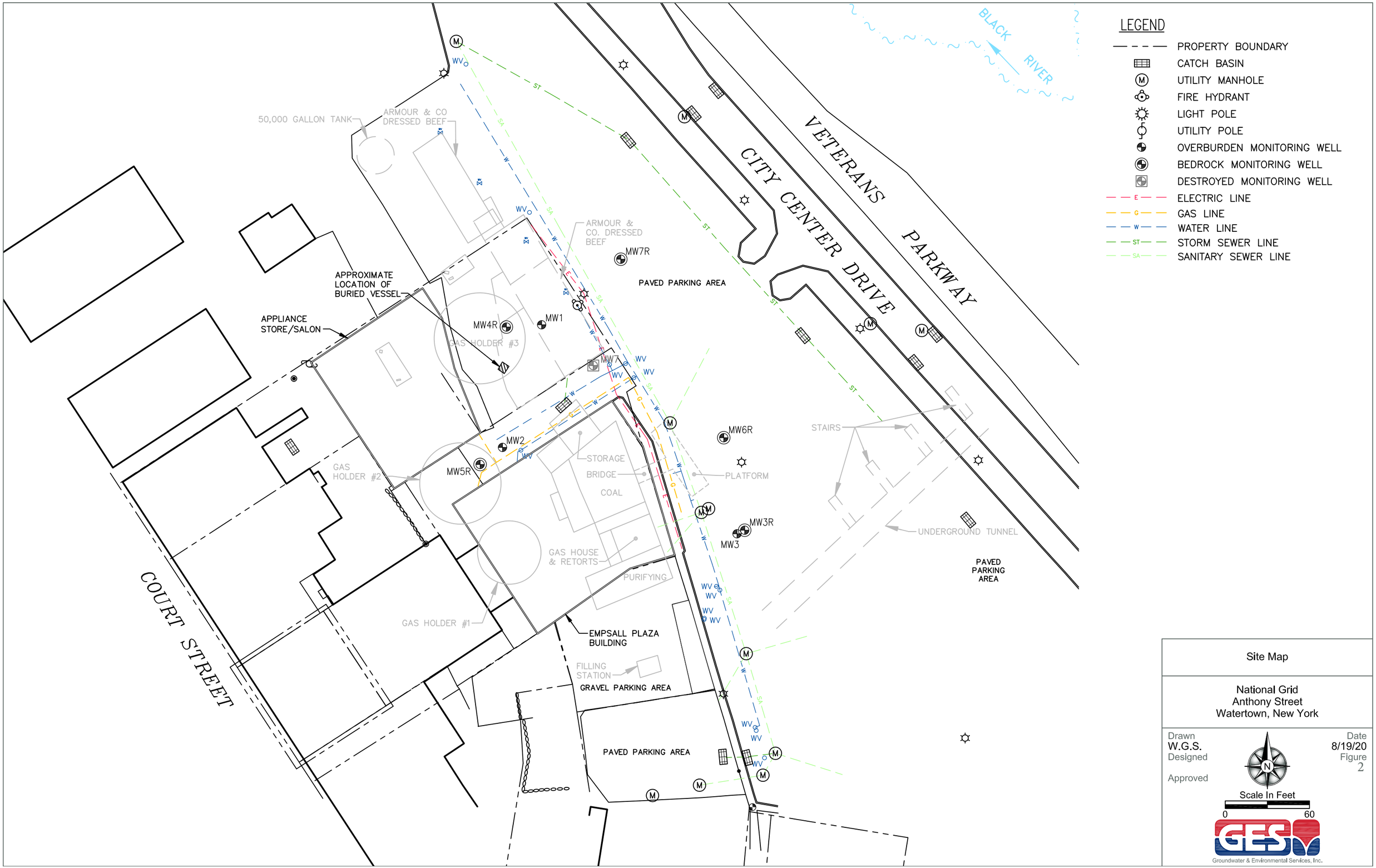

Site Map

National Grid
Anthony Street
Watertown, New York

Drawn W.G.S.
Designed
Approved

Date 8/19/20
Figure 2

Scale In Feet
0 60

Groundwater & Environmental Services, Inc.

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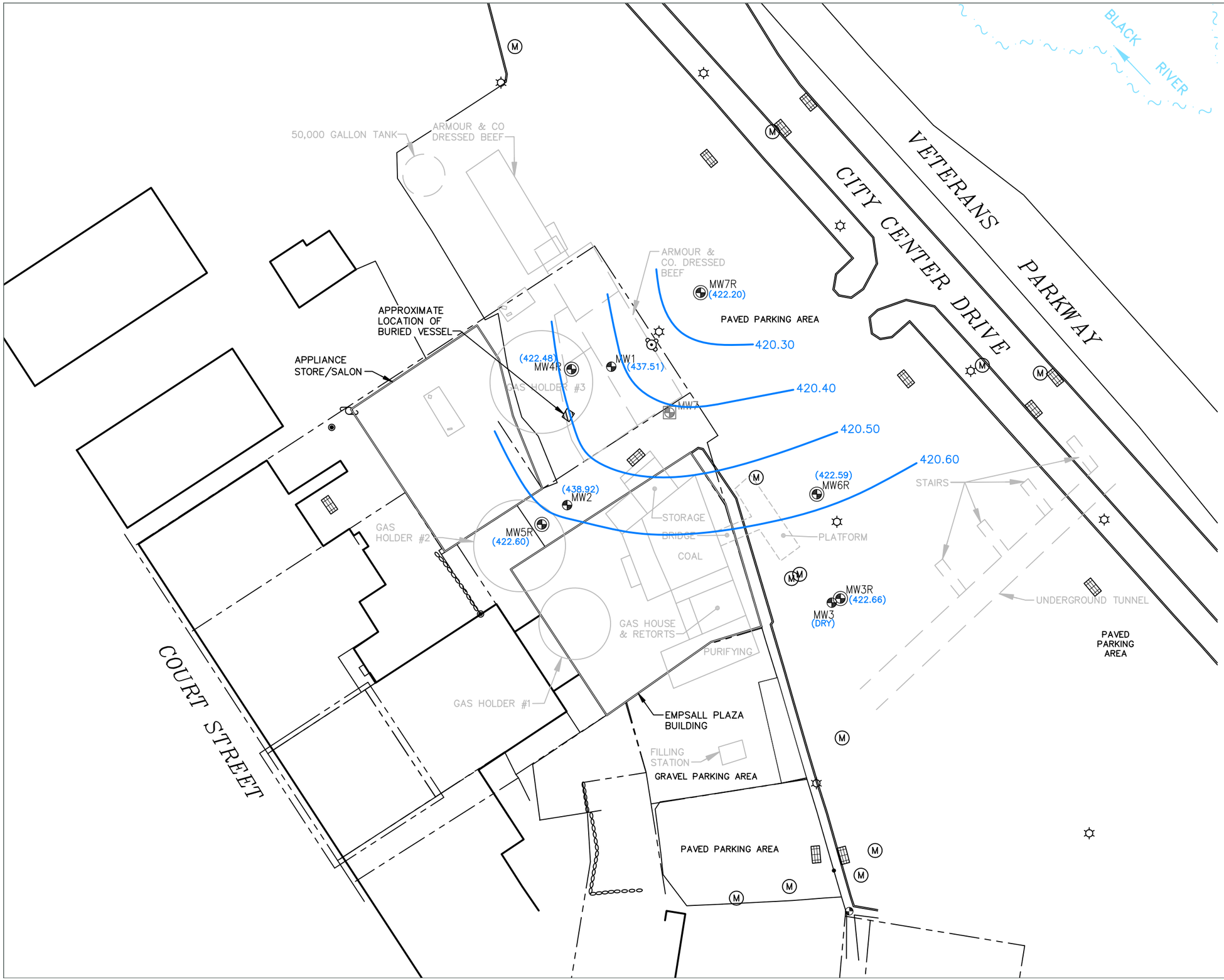

NOTE:

MW1 AND MW2 WERE NOT USED TO GENERATE GROUNDWATER CONTOURS.

Groundwater Contour Map
August 11, 2020

National Grid
Anthony Street
Watertown, New York

Drawn W.G.S.
Designed
Approved

Date 11/20/20
Figure 3

Scale In Feet
0 60

Groundwater & Environmental Services, Inc.

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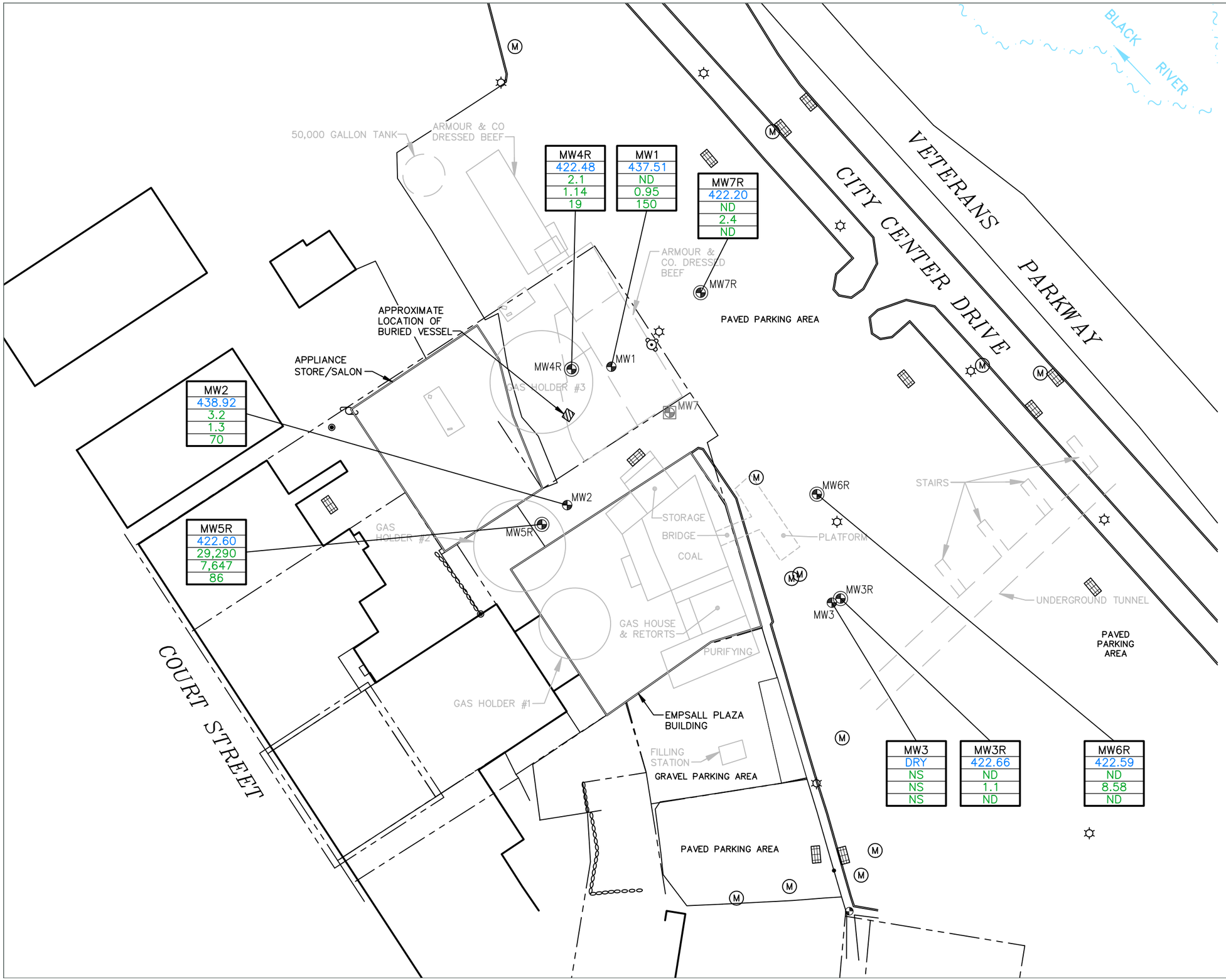

LEGEND

- PROPERTY BOUNDARY
- CATCH BASIN
- UTILITY MANHOLE
- FIRE HYDRANT
- LIGHT POLE
- UTILITY POLE
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL
- DESTROYED MONITORING WELL

MW1	WELL IDENTIFICATION
437.51	GROUNDWATER ELEVATION (feet)
ND	BTEX CONCENTRATION (ug/L)
0.95	PAHs CONCENTRATION (ug/L)
150	CYANIDE CONCENTRATION (ug/L)

- ug/L — MICROGRAMS PER LITER
- BTEX — BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
- PAHs — POLYCYCLIC AROMATIC HYDROCARBONS
- ND — NOT DETECTED

Groundwater Monitoring Map
August 11, 2020

National Grid
Anthony Street
Watertown, New York

Drawn W.G.S.
Designed
Approved

Date 9/15/20
Figure 4

Scale In Feet
0 60

Groundwater & Environmental Services, Inc.

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Tables

Table 1

Groundwater Monitoring Well Gauging Data

Well ID	Well Type & Diameter	Top of Inner Casing Elevation	Depth To Well Bottom	Well Bottom Elevation	Screen Elevation	Depth To Water (12/14/15	Groundwater Elevation (12/14/15)	Depth To Water (08/11/20)	Groundwater Elevation (08/11/20)
MW-1	Flushmount; PVC; 2-inch	444.62	8.50	436.12	3.00 - 8.00	7.47	436.92	7.11	437.51
MW-2	Flushmount; PVC; 2-inch	444.60	8.50	436.10	3.00 - 8.00	6.00	438.35	5.68	438.92
MW-3	Flushmount; PVC; 2-inch	445.39	8.70	436.69	3.20 - 8.20	7.25	438.40	DRY	-
MW-3R	Flushmount; PVC; 2-inch	445.48	24.40	421.08	14.40 - 24.00	22.81	422.52	22.82	422.66
MW-4R	Flushmount; PVC; 2-inch	444.76	50.00	394.76	20.00 - 40.00	23.11	421.22	22.28	422.48
MW-5R	Flushmount; PVC; 2-inch	444.60	50.00	394.60	20.00 - 40.00	22.02	422.04	22.00	422.60
MW-6R	Flushmount; PVC; 2-inch	445.16	50.00	395.16	18.00 - 40.00	22.56	421.69	22.57	422.59
MW-7R	Flushmount; PVC; 2-inch	443.60	45.00	398.60	18.00 - 40.00	21.45	421.67	21.40	422.20

Table 2

Groundwater Analytical Data

MW-1

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/27/05	09/08/10	06/25/13	12/15/15	08/11/20
BTEX			ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND
Ethylbenzene	5	µg/L	ND	ND	ND	ND	ND
Toluene	5	µg/L	ND	ND	ND	ND	ND
Total Xylenes	5	µg/L	ND	ND	ND	ND	ND
SVOCs			ND	ND	6.8 J	ND	0.95
Acenaphthene	20	µg/L	ND	ND	ND	ND	ND
Acenaphthylene	- -	µg/L	ND	ND	ND	ND	ND
Anthracene	50	µg/L	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.002	µg/L	ND	ND	**0.86 J**	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	0.79 J	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	**1.1 J**	ND	ND
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	**0.78 J**	ND	ND
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	ND	ND	ND	ND
Fluorene	50	µg/L	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	ND	ND	ND
Naphthalene	10	µg/L	ND	ND	ND	ND	0.95
Phenanthrene	50	µg/L	ND	ND	0.77 J	ND	ND
Pyrene	50	µg/L	ND	ND	1.2 J	ND	ND
Inorganics							
Cyanide, Total	200	µg/L	**744**	**596**	**210**	31	150

Notes:

Results are presented in units of micrograms per liter (µg/L).

E = Results exceeded calibration range

D = Compound quantitated using a secondary dilution

J = Analyte was detected at a concentration less than the laboratory reporting limit

ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical Data

MW-2

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/27/05	10/15/08	09/08/10	06/25/13	12/14/15	08/11/20
BTEX			4.0 J	5.5 J	4.2	2.8	1.4	3.2
Benzene	1	µg/L	**4.0 J**	**4.3**	**2.4**	**2.8**	**1.4**	**3.2**
Ethylbenzene	5	µg/L	ND	0.90 J	ND	ND	ND	ND
Toluene	5	µg/L	ND	ND	1.8	ND	ND	ND
Total Xylenes	5	µg/L	ND	0.30 J	ND	ND	ND	ND
SVOCs			ND	4.3 J	2.4 J	ND	ND	1.3
Acenaphthene	20	µg/L	ND	ND	ND	ND	ND	ND
Acenaphthylene	- -	µg/L	ND	ND	ND	ND	ND	ND
Anthracene	50	µg/L	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.002	µg/L	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	ND	ND	ND	ND	ND
Fluorene	50	µg/L	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	ND	ND	ND	ND
Naphthalene	10	µg/L	ND	4.3 J	2.4 J	ND	ND	1.3
Phenanthrene	50	µg/L	ND	ND	ND	ND	ND	ND
Pyrene	50	µg/L	ND	ND	ND	ND	ND	ND
Inorganics								
Cyanide, Total	200	µg/L	98	90	127 J	61	50	70

Notes:

Results are presented in units of micrograms per liter (µg/L).

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ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical Data

MW-3R

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/15/08	09/08/10	06/23/13	12/14/15	08/11/20
BTEX			ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND
Ethylbenzene	5	µg/L	ND	ND	ND	ND	ND
Toluene	5	µg/L	ND	ND	ND	ND	ND
Total Xylenes	5	µg/L	ND	ND	ND	ND	ND
SVOCs			ND	ND	ND	ND	1.1
Acenaphthene	20	µg/L	ND	ND	ND	ND	ND
Acenaphthylene	- -	µg/L	ND	ND	ND	ND	ND
Anthracene	50	µg/L	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	ND	ND	ND	ND
Fluorene	50	µg/L	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	ND	ND	ND
Naphthalene	10	µg/L	ND	ND	ND	ND	1.1
Phenanthrene	50	µg/L	ND	ND	ND	ND	ND
Pyrene	50	µg/L	ND	ND	ND	ND	ND
Inorganics							
Cyanide, Total	200	µg/L	2.5 J	ND	5.2 J	5.5 J	ND

Notes:

Results are presented in units of micrograms per liter (µg/L).

E = Results exceeded calibration range

D = Compound quantitated using a secondary dilution

J = Analyte was detected at a concentration less than the laboratory reporting limit

ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical Data

MW-4R

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/16/08	09/07/10	06/26/13	12/14/15	08/11/20
BTEX			2,239	769	23.8	7.2 J	2.1
Benzene	1	µg/L	**1,200**	**670 D**	**22**	**7.2 J**	**2.1**
Ethylbenzene	5	µg/L	**510**	**51**	1.8	ND	ND
Toluene	5	µg/L	**49**	**6.6**	ND	ND	ND
Total Xylenes	5	µg/L	**480**	**41**	ND	ND	ND
SVOCs			443 J	16.89 J	ND	ND	1.14
Acenaphthene	20	µg/L	4.3 J	ND	ND	ND	ND
Acenaphthylene	- -	µg/L	ND	ND	ND	ND	ND
Anthracene	50	µg/L	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	ND	ND	ND	ND
Fluorene	50	µg/L	1.3 J	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	ND	ND	ND
Naphthalene	10	µg/L	**430**	**16**	ND	ND	1.0
Phenanthrene	50	µg/L	6.9 J	0.89 J	ND	ND	0.14
Pyrene	50	µg/L	ND	ND	ND	ND	ND
Inorganics							
Cyanide, Total	200	µg/L	ND	ND	11	13	19

Notes:

Results are presented in units of micrograms per liter (µg/L).

E = Results exceeded calibration range

D = Compound quantitated using a secondary dilution

J = Analyte was detected at a concentration less than the laboratory reporting limit

ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical Data

MW-5R

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/15/08	09/08/10	06/23/13	12/15/15	08/11/20
BTEX			20,300	12,800	27,100	8,340	29,290
Benzene	1	µg/L	**3,800**	**4,200 D**	**6,600 D**	**3900**	**4,370**
Ethylbenzene	5	µg/L	**2,000**	**2,100 D**	**3,500 D**	**740**	**4,350**
Toluene	5	µg/L	**9,700**	**3,600 D**	**11,000 D**	**2600**	**13,200**
Total Xylenes	5	µg/L	**4,800**	**2,900 D**	**6,000 D**	**1100**	**7,370**
SVOCs			1,927 J	2,461 J	3,598 J	2,231 J	7,647
Acenaphthene	20	µg/L	**70 J**	**74**	**74 J**	**62 DJ**	**78.1**
Acenaphthylene	- -	µg/L	69 J	26	56 J	17 J	46.3
Anthracene	50	µg/L	11 J	4.7	5.5 J	ND	4.4
Benzo(a)anthracene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	1.0 J	ND	0.66 J	0.92
Fluorene	50	µg/L	41 J	29	32 J	21 J	29.1
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	**ND**	ND	ND
Naphthalene	10	µg/L	**1,700**	**2,300 D**	**3,400 D**	**2,200 D**	**7,460**
Phenanthrene	50	µg/L	36 J	26	30 J	20 J	27.8
Pyrene	50	µg/L	ND	0.71 J	ND	0.56 J	0.74
Inorganics							
Cyanide, Total	200	µg/L	98	ND	180	89	86

Notes:

Results are presented in units of micrograms per liter (µg/L).

E = Results exceeded calibration range

D = Compound quantitated using a secondary dilution

J = Analyte was detected at a concentration less than the laboratory reporting limit

ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical Data

MW-6R

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/16/08	09/08/10	06/25/13	12/15/15	08/11/20
BTEX			ND	ND	0.52 J	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND
Ethylbenzene	5	µg/L	ND	ND	ND	ND	ND
Toluene	5	µg/L	ND	ND	0.52 J	ND	ND
Total Xylenes	5	µg/L	ND	ND	ND	ND	ND
SVOCs			ND	ND	ND	ND	8.58
Acenaphthene	20	µg/L	ND	ND	ND	ND	0.20
Acenaphthylene	- -	µg/L	ND	ND	ND	ND	0.12
Anthracene	50	µg/L	ND	ND	ND	ND	0.28
Benzo(a)anthracene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	ND	ND	**0.14**
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	ND	ND	**0.19**
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	ND	ND	ND	0.38
Fluorene	50	µg/L	ND	ND	ND	ND	0.59
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	ND	ND	ND
Naphthalene	10	µg/L	ND	ND	ND	ND	3.7
Phenanthrene	50	µg/L	ND	ND	ND	ND	2.4
Pyrene	50	µg/L	ND	ND	ND	ND	0.58
Inorganics							
Cyanide, Total	200	µg/L	ND	ND	ND	ND	ND

Notes:

Results are presented in units of micrograms per liter (µg/L).

E = Results exceeded calibration range

D = Compound quantitated using a secondary dilution

J = Analyte was detected at a concentration less than the laboratory reporting limit

ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical Data

MW-7R

	NYSDEC TOGS 1.1.1 Guidance Values	Units	10/16/08	09/07/10	06/25/13	12/15/15	08/11/20
BTEX			ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	ND	ND	ND
Ethylbenzene	5	µg/L	ND	ND	ND	ND	ND
Toluene	5	µg/L	ND	ND	ND	ND	ND
Total Xylenes	5	µg/L	ND	ND	ND	ND	ND
SVOCs			ND	ND	ND	ND	2.4
Acenaphthene	20	µg/L	ND	ND	ND	ND	ND
Acenaphthylene	- -	µg/L	ND	ND	ND	ND	ND
Anthracene	50	µg/L	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(a)pyrene	ND	µg/L	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	- -	µg/L	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	0.002	µg/L	ND	ND	ND	ND	ND
Chrysene	0.002	µg/L	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	- -	µg/L	ND	ND	ND	ND	ND
Fluoranthene	50	µg/L	ND	ND	ND	ND	ND
Fluorene	50	µg/L	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.002	µg/L	ND	ND	ND	ND	ND
Naphthalene	10	µg/L	ND	ND	ND	ND	2.4
Phenanthrene	50	µg/L	ND	ND	ND	ND	ND
Pyrene	50	µg/L	ND	ND	ND	ND	ND
Inorganics							
Cyanide, Total	200	µg/L	3.1 J	ND	ND	30	ND

Notes:

Results are presented in units of micrograms per liter (µg/L).

E = Results exceeded calibration range

D = Compound quantitated using a secondary dilution

J = Analyte was detected at a concentration less than the laboratory reporting limit

ND (<#) = Not detected above laboratory reporting limit. # represents the laboratory reporting limit.

Bolded = values indicate exceedance of the NYSDEC AWQS

Appendix A – Field Inspection Reports

Site Management Plan Inspection Form
Anthony Street
Former MGP Site
Watertown, New York

Date: 12/10/2020 Time: 9:30

Technician: KL Weather: Cloudy 38

General Site Wide Conditions

Any signs of ground-intrusive activities?	YES	NO		COMMENTS:
Any soil disturbance regardless of quantity/extent?	YES	NO		COMMENTS:
Any surface erosion?	YES	NO		COMMENTS:
Any settlement?	YES	NO		COMMENTS:
Bare or sparsely-vegetated areas?	YES	NO		COMMENTS:
Excessive cracking or missing pavement?	YES	NO		COMMENTS:
Any other conditions affecting the thickness or the integrity of the soil cover system?	YES	NO		COMMENTS:
Any repairs, maintenace or corrective actions since the last inspection?	YES	NO		COMMENTS:
Have the front lawns been mowed?	YES	NO		COMMENTS:
Conditon of the asphalt pavement	GOOD	FAIR	POOR	COMMENTS:
Conditon of the front sidewalks?	GOOD	FAIR	POOR	COMMENTS:
Conditon of the building foundations?	GOOD	FAIR	POOR	COMMENTS:
Are the requirements of the SMP being met?	YES	NO		COMMENTS:
Are there any needed changes?	YES	NO		COMMENTS:
Are the site records complete and up to date?	YES	NO		COMMENTS:

Site Monitoring Wells

Well ID.	*Location Secure*	
MW-1	YES	NO
MW-2	YES	NO
MW-3	YES	NO
MW-3R	YES	NO
MW-4R	YES	NO
MW-5R	YES	NO
MW-6R	YES	NO
MW-7R	YES	NO

General Comments:

Site Management Plan Inspection Form
Anthony Street
Former MGP Site
Watertown, New York

Date: 8/11/2020 Time: 12:45

Technician: KL/BH Weather: Sunny 85

General Site Wide Conditions

Any signs of ground-intrusive activities?	YES		NO	COMMENTS:
Any soil disturbance regardless of quantity/extent?	YES		NO	COMMENTS:
Any surface erosion?	YES		NO	COMMENTS:
Any settlement?	YES		NO	COMMENTS:
Bare or sparsely-vegetated areas?	YES		NO	COMMENTS:
Excessive cracking or missing pavement?	YES		NO	COMMENTS: Near MW-1
Any other conditions affecting the thickness or the integrity of the soil cover system?	YES		NO	COMMENTS:
Any repairs, maintenace or corrective actions since the last inspection?	YES		NO	COMMENTS:
Have the front lawns been mowed?	YES		NO	COMMENTS:
Conditon of the asphalt pavement	GOOD	FAIR	POOR	COMMENTS:
Conditon of the front sidewalks?	GOOD	FAIR	POOR	COMMENTS:
Conditon of the building foundations?	GOOD	FAIR	POOR	COMMENTS:
Are the requirements of the SMP being met?	YES		NO	COMMENTS:
Are there any needed changes?	YES		NO	COMMENTS:
Are the site records complete and up to date?	YES		NO	COMMENTS:

Site Monitoring Wells

Well ID.	*Location Secure*	
MW-1	YES	NO
MW-2	YES	NO
MW-3	YES	NO
MW-3R	YES	NO
MW-4R	YES	NO
MW-5R	YES	NO
MW-6R	YES	NO
MW-7R	YES	NO

General Comments:

All well bolts partially or fully stripped. Recommend replace all.

Appendix B – Well Sampling Field Data

National Grid
Anthony Street, Watertown New York

Sampling Personnel: K
Job Number: 0603200-136010-221
Well Id. **MW-1**

Date: 8/11/17
Weather: Sunny 85
Time In: 12:00 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	7.11	
Depth to Bottom:	(feet)	7.85	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	.74	
Volume of Water in Well:	(gal)		
Three Well Volumes:	(gal)		

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)				
Duration of Pumping:	(min)				
Total Volume Removed:	(gal)				

Did well go dry? Yes [ ] No [ ]
Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
	7.29	26.04						
12:10	~~7.33~~	~~7.00~~	7.80	-62	0.937	116	1.29	0.591
12:15	7.30	24.74	7.76	-58	0.797	64.0	1.12	0.503
12:20	7.46	23.92	7.76	-48	0.709	38.9	0.88	0.450
12:25	7.45	23.73	7.75	-40	0.690	22.2	0.76	0.43
12:30								
12:35								
12:40								

Sampling Information:

EPA SW-846 Method 8270 SVOC PAH's
EPA SW-846 Method 8260 VOC's BTEX
EPA SW-846 Method 9012 Total Cyanide

6 - 1 liter ambers Yes [X] No [ ]
9 - 40 ml vials Yes [X] No [ ]
3 - 250 ml plastic Yes [X] No [ ]

MW-1-MS-0820 **MW-1-MSD-0820**
Sample ID: **MW-1-0820** Duplicate? Yes [ ] No [X]
Sample Time: 12:40 MS/MSD? Yes [X] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

National Grid
Anthony Street, Watertown New York

Sampling Personnel: [illegible]
Job Number: 0603200-136010-221
Well Id. **MW-2**

Date: 6/9/20
Weather: Sunny 80
Time In: 10:05 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	5.68	
Depth to Bottom:	(feet)	7.30	
Depth to Product:	(feet)	NP	
Length of Water Column:	(feet)	1.62	
Volume of Water in Well:	(gal)	.259	
Three Well Volumes:	(gal)	.777	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	37			
Total Volume Removed:	(gal)	2			

Did well go dry? Yes [ ] No [X]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
10:05	6.05	17.92	8.25	-355	0.443	127	1.70	0.291
10:10	6.20	19.26	8.04	-323	0.464	86.0	2.12	0.303
10:15	6.29	19.37	8.02	-309	0.484	9.8	1.71	0.315
10:20	6.32	19.35	8.02	-294	0.470	1200	1.52	0.306
10:25	6.32	19.32	8.04	-277	0.450	19.9	1.42	0.295
10:30	6.32	19.29	8.05	-259	0.444	6.98	1.43	0.288
10:35	6.32	19.29	8.02	-250	0.443	10.3	1.49	0.288

Sampling Information:

EPA SW-846 Method 8270 SVOC PAH's
EPA SW-846 Method 8260 VOC's BTEX
EPA SW-846 Method 9012 Total Cyanide

4 - 1 liter ambers Yes [X] No [ ]
6 - 40 ml vials Yes [X] No [ ]
2 - 250 ml plastic Yes [X] No [ ]

Field Duplicate-0820
Sample ID: **MW-2-0820**
Sample Time: 10:35

Duplicate? Yes [X] No [X] ND
MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

National Grid
Anthony Street, Watertown New York

Sampling Personnel: BA
Job Number: 0603200-136010-221
Well Id. **MW-3**

Date: 08/11/20
Weather: 80°F, sunny
Time In: 0905 Time Out: 0910

Well Information

		TOC	Other
Depth to Water:	(feet)	Dry	
Depth to Bottom:	(feet)	5.95	
Depth to Product:	(feet)		
Length of Water Column:	(feet)		
Volume of Water in Well:	(gal)		
Three Well Volumes:	(gal)		

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)				
Duration of Pumping:	(min)				
Total Volume Removed:	(gal)				

Did well go dry? Yes [ ] No [ ]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)

Sampling Information:

EPA SW-846 Method 8270 SVOC PAH's
EPA SW-846 Method 8260 VOC's BTEX
EPA SW-846 Method 9012 Total Cyanide

2 - 1 liter ambers Yes [X] No [ ]
3 - 40 ml vials Yes [X] No [ ]
1 - 250 ml plastic Yes [X] No [ ]

Sample ID: **MW-3-0820**
Sample Time:
Duplicate? Yes [ ] No [X]
MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

National Grid
Anthony Street, Watertown New York

Sampling Personnel: BA
Job Number: 0603200-136010-221
Well Id. **MW-3R**

Date: 08/11/20
Weather: 80°F, Sunny
Time In: 0910 Time Out: 1005

Well Information

		TOC	Other
Depth to Water:	(feet)	22.82	
Depth to Bottom:	(feet)	23.30	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	0.48	
Volume of Water in Well:	(gal)	0.08	
Three Well Volumes:	(gal)	0.24	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	160 (ml/min)				
Duration of Pumping:	30 (min)				
Total Volume Removed:	1.5 (gal)				

Did well go dry? Yes [ ] No [X]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
0930	22.84	29.47	6.86	143	1.61	0.0	6.60	1.03
0935	22.84	27.22	6.77	182	1.58	0.0	5.48	1.01
0940	22.85	25.51	6.76	202	1.60	1000	5.49	1.03
0945	22.84	23.19	6.75	212	1.63	620	5.74	1.04
0950	22.84	23.23	6.73	216	1.61	315	5.56	1.05
0955	22.84	23.99	6.75	221	1.59	161	5.19	1.02
1000	22.85	25.39	6.75	220	1.54	170	4.81	0.984

Sampling Information:

EPA SW-846 Method 8270 SVOC PAH's
EPA SW-846 Method 8260 VOC's BTEX
EPA SW-846 Method 9012 Total Cyanide

2 - 1 liter ambers Yes [X] No [ ]
3 - 40 ml vials Yes [X] No [ ]
1 - 250 ml plastic Yes [X] No [ ]

Sample ID: **MW-3R-0820**
Sample Time: 1000
Duplicate? Yes [ ] No [X]
MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

National Grid
Anthony Street, Watertown New York

Sampling Personnel: K
Date: 8/11/20
Job Number: 0603200-136010-221
Weather: Sunny 87
Well Id. **MW-4R**
Time In: 10:50 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	22.28	
Depth to Bottom:	(feet)	44.80	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	22.52	
Volume of Water in Well:	(gal)	3.60	
Three Well Volumes:	(gal)	10.80	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	2			

Did well go dry? Yes [ ] No [X]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
10:55	22.48	20.93	8.09	-247	2.04	26.9	1.84	1.42
11:00	22.83	22.49	8.31	-252	2.33	14.7	3.17	1.41
11:05	22.97	19.44	8.57	-257	2.96	2.99	4.16	1.93
11:10	23.16	15.87	8.38	-277	3.26	13.7	1.15	2.08
11:15	24.98	15.87	8.33	-278	3.26	11.4	0.87	2.09
11:20	25.38	15.94	8.27	-276	3.20	11.4	0.78	2.04
11:25	26.52	15.97	8.05	-263	2.56	16.9	0.59	1.63
11:30								

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 1 liter ambers	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes [X] No [ ]
EPA SW-846 Method 9012	Total Cyanide	1 - 250 ml plastic	Yes [X] No [ ]

Sample ID: **MW-4R-0820** Duplicate? Yes [ ] No [X]
Sample Time: 11:25 MS/MSD? Yes [X] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Comments/Notes:

Laboratory: Pace Analytical
Greensburg, PA

National Grid
Anthony Street, Watertown New York

Sampling Personnel: KC
Job Number: 0603200-136010-221
Well Id. **MW-5R**

Date: 9/11/20
Weather: Sunny 80's
Time In: 09:10 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	22.40	
Depth to Bottom:	(feet)	44.45	
Depth to Product:	(feet)	NP	
Length of Water Column:	(feet)	22.45	
Volume of Water in Well:	(gal)	3.59	
Three Well Volumes:	(gal)	10.77	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)	200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	2			

Did well go dry? Yes [ ] No [X]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
09:25	22.46	22.25	7.47	-256	0.633	9.3	2.40	0.407
09:30	22.97	16.29	7.13	-204	0.675	6.3	2.29	0.435
09:35	23.11	15.30	7.95	-261	0.622	4.5	2.22	0.396
09:40	23.16	14.94	8.16	-300	0.460	3.0	2.32	0.297
09:45	23.21	14.78	7.41	-289	0.421	3.3	2.07	0.274
09:50	23.21	14.61	7.48	-309	0.412	3.0	1.85	0.268
09:55	23.24	14.58	7.59	-323	0.412	2.8	1.89	0.268

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 1 liter ambers	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes [X] No [ ]
EPA SW-846 Method 9012	Total Cyanide	1 - 250 ml plastic	Yes [X] No [ ]

Sample ID: **MW-5R-0820**
Sample Time: 09:55
Duplicate? Yes [X] No [ ]
MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes: 09:55

National Grid
Anthony Street, Watertown New York

Sampling Personnel: BK
Job Number: 0603200-136010-221
Well Id. **MW-6R**

Date: 05/11/20
Weather: 50°F, sunny
Time In: 1010 Time Out: 1055

Well Information

		TOC	Other
Depth to Water:	(feet)	22.57	
Depth to Bottom:	(feet)	45.0	
Depth to Product:	(feet)	NP	
Length of Water Column:	(feet)	22.43	
Volume of Water in Well:	(gal)	3.6	
Three Well Volumes:	(gal)	10.8	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method: Bailer [ ] Peristaltic [X] Grundfos Pump [ ]
Tubing/Bailer Material: Teflon [ ] Stainless St. [ ] Polyethylene [X]
Sampling Method: Bailer [ ] Peristaltic [X] Grundfos Pump [ ]
Average Pumping Rate: 200 (ml/min)
Duration of Pumping: 30 (min)
Total Volume Removed: 2 (gal)
Did well go dry? Yes [ ] No [X]
Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1020	22.58	27.70	7.03	-168	3.02	679	5.01	1.95
1025	22.59	20.80	7.05	-43	3.46	349	1.45	2.23
1030	22.60	21.48	7.03	-13	3.58	230	0.85	2.29
1035	22.60	20.74	7.04	-14	3.64	154	0.68	2.33
1040	22.60	20.16	7.08	-18	3.68	104	0.59	2.35
1045	22.60	20.15	7.12	-12	3.65	82.4	0.59	2.33
1050	22.60	19.81	7.14	-3	3.63	67.9	0.65	2.33

Sampling Information:

EPA SW-846 Method 8270 SVOC PAH's
EPA SW-846 Method 8260 VOC's BTEX
EPA SW-846 Method 9012 Total Cyanide

2 - 1 liter ambers Yes [X] No [ ]
3 - 40 ml vials Yes [X] No [ ]
1 - 250 ml plastic Yes [X] No [ ]

Sample ID: **MW-6R-0820**
Sample Time: 1050
Duplicate? Yes [ ] No [X]
MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

National Grid
Anthony Street, Watertown New York

Sampling Personnel: BH
Job Number: 0603200-136010-221
Well Id. **MW-7R**

Date: 08/11/20
Weather: 80°F, sunny
Time In: 1110 Time Out: 1200

Well Information

		TOC	Other
Depth to Water:	(feet)	21.48	
Depth to Bottom:	(feet)	45.05	
Depth to Product:	(feet)	NP	
Length of Water Column:	(feet)	23.57	
Volume of Water in Well:	(gal)	3.8	
Three Well Volumes:	(gal)	10.4	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	200 (ml/min)				
Duration of Pumping:	30 (min)				
Total Volume Removed:	2 (gal)				

Did well go dry? Yes [ ] No [Y]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1125	21.52	29.95	7.72	103	3.40	154	3.67	2.20
1130	21.51	27.17	7.65	100	3.56	128	1.11	2.27
1135	21.51	25.62	7.58	90	3.73	97.2	0.88	2.39
1140	21.51	25.34	7.58	79	3.76	87.1	0.72	2.41
1145	21.51	25.10	7.59	69	3.80	78.3	0.67	2.43
1150	21.51	24.91	7.60	62	3.81	73.5	0.61	2.43
1155	21.51	24.88	7.60	58	3.82	72.1	0.57	2.44

Sampling Information:

EPA SW-846 Method 8270 SVOC PAH's
EPA SW-846 Method 8260 VOC's BTEX
EPA SW-846 Method 9012 Total Cyanide

2 - 1 liter ambers Yes [X] No [ ]
3 - 40 ml vials Yes [X] No [ ]
1 - 250 ml plastic Yes [X] No [ ]

Sample ID: **MW-7R-0820**
Sample Time: 1155

Duplicate? Yes [ ] No [X]
MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:
Company: GES - Syracuse
Address: 5 Technology Place, Suite 4
East Syracuse, New York 13057
Email To: dshay@gesonline.com
Phone: 800.220.3069 4051 | Fax: None
Requested Due Date/TAT: Standard

Section B — Required Project Information:
Report To: Devin Shay (GES) dshay@gesonline.com
Report To: Tim Beaumont (GES) tbeaumont@gesonline.com
Purchase Order No.:
Project Name: National Grid - Watertown Anthony St, Watertown NY
Project Number: 0603200-136010-221-1106

Section C — Invoice Information:
Attention: Accounts Payable via email at ges-invoices@gesonline.com
Company Name: Groundwater & Environmental Services, Inc.
Address: 5 Technology Place, Suite 4, East Syracuse, NY 13057
Pace Quote Reference:
Pace Project Manager: Rachel Christner
Pace Profile #: Annual GWS

REGULATORY AGENCY: NPDES / GROUND WATER / DRINKING WATER / UST / RCRA / OTHER
SITE LOCATION: STATE / OH / NC / OTHER

Section D — Required Client Information
SAMPLE ID: One Character per box. (A-Z, 0-9 / ,-) Samples IDs MUST BE UNIQUE
Valid Matrix Codes: MATRIX CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; TISSUE TS; OTHER OT
SAMPLE TYPE: G=GRAB, C=COMP

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED DATE	COLLECTED TIME	DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Requested Analysis:	Pace Project Number / Lab I.D.
1	MW-1-0820	WT	G	8/11/20	12:40				6	2			3	1					3 2 1	
2	MW-1-MS-0820	WT	G		11:25				6	2			3	1					3 2 1	
3	MW-1-MSD-0820	WT	G		10:35				6	2			3	1					3 2 1	
4	MW-2-0820	WT	G						6	2			3	1					3 2 1	
5	MW-3-0820	WT	G		10:40				6	2			3	1					3 2 1	
6	MW-3R-0820	WT	G		11:25				6	2			3	1					3 2 1	
7	MW-4R-0820	WT	G		09:55				6	2			3	1					3 2 1	
8	MW-5R-0820	WT	G		10:50				6	2			3	1					3 2 1	
9	MW-6R-0820	WT	G		11:55				6	2			3	1					3 2 1	
10	MW-7R-0820	WT	G						6	2			3	1					3 2 1	
11	FD-0820	WT	G						6	2			3	1					3 2 1	
12	Trip Blanks	WT	G		12:25				2				3						3	
13		WT	G																	
14		WT	G																	

Additional Comments:

SAMPLES WILL ARRIVE IN [1] COOLERS.

Please send reports to: dshay@gesonline.com, tbeaumont@gesonline.com
NERegion@gesonline.com, ges@equisonline.com

SPECIFIC EDD NAME:
NGWatertown-labnumber.28351.EQEDD.zip

SAMPLE CONDITIONS				
Temp in °C	Y/N	Y/N	Y/N	Y/N
Received on Ice	Y/N	Y/N	Y/N	Y/N
Custody Sealed Cooler	Y/N	Y/N	Y/N	Y/N
Samples Intact	Y/N	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: KEVIN LEW
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 8/11/20

Appendix C – Data Usability Summary Report

Groundwater & Environmental Services, Inc.

708 North Main Street, Suite 201
Blacksburg, VA 24060

T. 800.662.5067

November 4, 2020

Devin Shay
Groundwater & Environmental Services, Syracuse
5 Technology Place, Suite 4
East Syracuse, NY 13057

RE: Data Usability Summary Report for National Grid: Watertown, NY Site Data Package Pace Analytical Job No. 30377041

Groundwater & Environmental Services, Inc. (GES) reviewed one data package (Laboratory Project Number 30377041) from Pace Analytical Services, LLC in Greensburg, PA., for the analysis of groundwater samples collected on August 11, 2020 from monitoring wells located at the National Grid: Watertown, NY Site. Seven aqueous samples and a field duplicate were analyzed for volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), and Cyanide. Methodologies utilized were those of the USEPA SW846 methods 8260C/8270D/9012B, with additional QC requirements of the NYSDEC ASP.

The data were reported as part of a complete full deliverable type B data validation. This usability report is generated from review of the following:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate: (MS/MSD) Correlations
- Field Duplicate Correlations
- Laboratory Control Sample (LCS)
- Preparation/Calibration Blanks
- Calibration/Low Level Standard Responses
- Instrumental Tunes
- Instrument MDLs
- Sample Quantitation and Identification

The items listed above which show deficiencies were discussed within the text of this narrative.

All of the other items were determined to be acceptable for the DUSR level review.

The data validation was performed according to the guidelines in the USEPA National Functional Guidelines for Organic Superfund Methods Data Review, National Functional Guidelines for Inorganic Superfund Methods Data Review and the NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation, dated December 2010. In addition, method and QC criteria specified in the NYSDEC ASP were implemented. All data are considered valid and acceptable except those analytes that have been qualified as unusable "R" (unreliable).

Table 1. Validation Qualifiers

Sample ID	Qualifier	Analyte	Reason for qualification
MW-1	UJ	Benzo(a)anthracene Benzo(a)pyrene Benzo(k)fluoranthene Dibenz(a,h)anthracene Indeno(1,2,3-cd)pyrene Naphthalene	RPD exceeds maximum
	J-	Cyanide	Low MS Recovery
MW-3R MW-4R MW-7R	UJ- (non-detects) J- (detects)	All PAHs	Low Surrogate Recovery
MW-1 MW-3R MW-4R	R	Naphthalene	Concentrations are < 2x positive blank concentration
MW-5R	J	Phenanthrene	RPD exceeds criteria

In summary, sample results were usable as reported, with exceptions listed in Table 1.

The laboratory case narratives and sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report.

BTEX Volatiles by EPA 8260C/NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. There were no positive detections in the blanks. Surrogate and internal standard recoveries were within required limits.

Calibrations standards show acceptable responses within analytical protocol and validation action limits.

MS/MSD recoveries and relative percent differences (RPD) were within laboratory and EPA criteria.

The blind field duplicate correlations MW-5R, where applicable, fall within guidance limits, with the exception of phenanthrene, whose RPD at 34.1% exceeds the EPA recommended 30% for aqueous duplicate samples. Phenanthrene is qualified as an estimated detect.

PAHs by EPA8270D/NYSDEC ASP

Holding times were met. Instrumental tune fragmentations were within acceptance ranges. Surrogate recoveries were within analytical and validation criteria with the exception of Terphynyl-d14 in the following samples:

- MW-3R
- MW-4R
- MW-7R

All samples were re-extracted and re-analyzed with corroborating results. Data from the initial analyses is reported.

The method blank (1983197) also reported Terphynyl-d14 below criteria. The only detection reported in the method blank is naphthalene, and associated samples have been qualified per EPA guidance. All other PAHs were non-detect in the method blank, and the low level

Blanks show no contamination. Calibrations standards show acceptable responses within analytical protocol and validation action limits.

LCS recoveries and RPDs were reported within acceptable ranges.

Multiple MS/MSD RPDs associated with MW-1 were outside laboratory specifications. None of the compounds was reported above RL in the sample, and is qualified as estimated non-detect.

The blind field duplicate correlations MW-5R, where applicable, fall within guidance limits.

Total Cyanide by 9012B/ NYSDEC ASP

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, accuracy and precision, etc., as applicable to each procedure. All were found acceptable for the validated samples, with the flowing exceptions:

- Low recovery of cyanide in the MSD prepared from the sample MW-1. Low recoveries indicate a possible low bias.

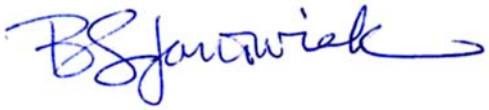
Calibration standard responses were compliant. Blanks show no detections above the reporting limits. The laboratory spikes and duplicates of total cyanide show acceptable recoveries and/or correlations.

The blind field duplicate correlations MW-5R, where applicable, fall within guidance limits.

Data Package Completeness

Complete NYSDEC Category B deliverables were included in the laboratory data package, all information required for validation of the data is present.

Please do not hesitate to contact me if you have comments or questions regarding this report.



Bonnie Janowiak, Ph.D.
Senior Project Chemist
701 N Main St
Blacksburg, VA 24060

VALIDATION DATA QUALIFIER DEFINITIONS

U	The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
J-	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.
J+	The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.
UJ	The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.
NJ	The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.

Sample Summaries
and
Laboratory Case Narratives

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: National Grid - Watertown, NY
Pace Project No.: 30377041

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30377041001	**MW-1-0820**	Water	08/11/20 12:40	08/12/20 10:10
30377041002	**MW-1-MS-0820**	Water	08/11/20 11:25	08/12/20 10:10
30377041003	**MW-1-MSD-0820**	Water	08/11/20 11:25	08/12/20 10:10
30377041004	**MW-2-0820**	Water	08/11/20 10:35	08/12/20 10:10
30377041005	**MW-3R-0820**	Water	08/11/20 10:10	08/12/20 10:10
30377041006	**MW-4R-0820**	Water	08/11/20 11:25	08/12/20 10:10
30377041007	**MW-5R-0820**	Water	08/11/20 09:55	08/12/20 10:10
30377041008	**MW-6R-0820**	Water	08/11/20 10:50	08/12/20 10:10
30377041009	**MW-7R-0820**	Water	08/11/20 11:55	08/12/20 10:10
30377041010	**FD-0820**	Water	08/11/20 00:01	08/12/20 10:10
30377041011	**TRIP BLANK**	Water	08/11/20 12:25	08/12/20 10:10

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid - Watertown, NY
Pace Project No.: 30377041

Method: **EPA 8270D by SIM**
Description: 8270D PAH SIM Reduced Volume
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: August 25, 2020

General Information:
10 samples were analyzed for EPA 8270D by SIM by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 409808

S0: Surrogate recovery outside laboratory control limits.

- BLANK (Lab ID: 1983197)
  - Terphenyl-d14 (S)

SR: Surrogate recovery was below laboratory control limits. Results may be biased low.

- MW-3R-0820 (Lab ID: 30377041005)
  - Terphenyl-d14 (S)
- MW-4R-0820 (Lab ID: 30377041006)
  - Terphenyl-d14 (S)
- MW-7R-0820 (Lab ID: 30377041009)
  - Terphenyl-d14 (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 409808

B: Analyte was detected in the associated method blank.

- BLANK for HBN 409808 [OEXT/418 (Lab ID: 1983197)
  - Naphthalene

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid - Watertown, NY
Pace Project No.: 30377041

Method: **EPA 8270D by SIM**
Description: 8270D PAH SIM Reduced Volume
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: August 25, 2020

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 409808

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30377041001

R1: RPD value was outside control limits.

- MSD (Lab ID: 1983200)
  - Benzo(a)anthracene
  - Benzo(a)pyrene
  - Benzo(k)fluoranthene
  - Dibenz(a,h)anthracene
  - Indeno(1,2,3-cd)pyrene
  - Naphthalene

Additional Comments:

Analyte Comments:

QC Batch: 409808

1c: This sample was re-extracted past the method required holding time. Surrogate recovery in the re-extract was acceptable and the re-extract results were comparable to the original results. The original, in hold, results are reported.

- MW-3R-0820 (Lab ID: 30377041005)
  - Terphenyl-d14 (S)
- MW-4R-0820 (Lab ID: 30377041006)
  - Terphenyl-d14 (S)
- MW-7R-0820 (Lab ID: 30377041009)
  - Terphenyl-d14 (S)

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid - Watertown, NY
Pace Project No.: 30377041

Method: **EPA 8260C**
Description: 8260C MSV
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: August 25, 2020

General Information:
11 samples were analyzed for EPA 8260C by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid - Watertown, NY
Pace Project No.: 30377041

Method: **EPA 9012B**
Description: 9012B Cyanide, Total
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: August 25, 2020

General Information:
10 samples were analyzed for EPA 9012B by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9012B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 409779

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30377041001,30377179013

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1983109)
  - Cyanide
- MSD (Lab ID: 1983110)
  - Cyanide

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.