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

December 15, 2016

Ms. Jamie Verrigni
Environmental Engineer
Remedial Bureau C, 11th Floor
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Re: Johnstown (N. Market St.)
Former Manufactured Gas Plant Site (MGP)
Site No. 5-18-020
Semi-Annual Groundwater Monitoring Report (October 2016)

Dear Ms. Verrigni:

Enclosed is the Semi-Annual Groundwater Monitoring Report for the Johnstown (N. Market St.) MGP Site located in Johnstown, New York. The report includes the October 25-26, 2016, groundwater monitoring results.

National Grid acknowledges the NYSDEC Fact sheet dated June 2016 approving the site's environmental remediation construction completion. Long-term OM&M activities will be conducted in accordance with the approved Site Management Plan (SMP) and the site's Environmental Easement.

Please contact me at (315) 428-5652 or Steven.Stucker@NationalGrid.com if you have any questions regarding the report.

Sincerely,

Devin Shay Digitally signed by Devin Shay
DN: cn=Devin Shay, o=GES, ou, email=dshay@gesonline.com, c=US
Date: 2016.12.14 13:41:51 -05'00' for SPS

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

Cc: Carolyn Rooney -National Grid
Nathan Freeman- NYSDOH
Devin T Shay - Groundwater & Environmental Services, Inc.

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Manufactured Gas Plant Site
North Market Street
Johnstown, NY

October 2016 Sampling Event

Prepared For:

nationalgrid

300 Erie Boulevard West
Syracuse, NY 13202

Prepared By:

Groundwater & Environmental Services, Inc.
5 Technology Place, Suite 4
East Syracuse, New York 13057

TABLE OF CONTENTS

Page

1.0 INTRODUCTION

This Semi-Annual Groundwater Monitoring Report (the Report) summarizes the results of the October 2016 groundwater sampling event at the Johnstown, New York (N. Market Street) Former Manufactured Gas Plant (MGP) Site (the Site). This Report was developed as part of the long-term groundwater monitoring program on behalf of National Grid.

National Grid has been addressing the Site environmental conditions under an Order on Consent (Index Number D0-0001-9210), dated April 1999, that was entered into by Niagara Mohawk and the New York State Department of Environmental Conservation (NYSDEC). That Order on Consent was for the investigation and remediation of 21 former MGP sites, including the Johnstown (N. Market Street) Site. It was superseded by a new Order on Consent (Index Number A4-0473-0000), dated November 7, 2003. A NYSDEC-approved Supplemental Remedial Investigation (RI) Work Plan was finalized during November 2007, and a Final Supplemental RI Report was submitted to the NYSDEC, dated December 2008. The RI results report and subsequent Feasibility Study were approved in February 2010.

A Record of Decision (ROD) was issued by the NYSDEC, dated March 2010, in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, 6 NYCRR Part 375. Based upon the results of the remedial investigation/feasibility study (RI/FS) for the Site, the interim remedial measures (IRMs) previously completed, and the ROD, the draft Final Engineering Report and Site Management Plan (SMP) were developed and submitted to the NYSDEC in June 2010. The Final Engineering Report, the Final SMP, and the Final Environmental Easement were approval by the NYSDEC in their June 2016 Fact Sheet.

The Final SMP includes:
1) Semi-annually (April & October) site inspection and groundwater level measurements at monitoring wells MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, RMW-1, and the creek surface gauging station (bridge);
2) Semi-annual groundwater sampling/analysis [Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Heavy Metals, and Natural Attenuation Parameters] for monitoring wells MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, and MW-16 (RMW-1 will not be sampled);
3) Semi-annual reporting (June & December) to NYSDEC.

1.1 PURPOSE AND OBJECTIVE

The purpose of this Report is to summarize the groundwater sampling activities and results of the latest event, and to compare the results to previous events. As described in the December 2008 Supplemental RI Report and the subsequent ROD, one of the primary goals is to evaluate whether or not the groundwater constituents of concern (COCs) concentrations decrease, and continue to assess the effectiveness of monitored natural attenuation.

1.2 REPORT ORGANIZATION

This Report is organized in to the following six sections. Section 1.0 presents the purpose and objectives of this program. Section 2.0 provides the history, environmental setting and location of the Site. Section 3.0 provides a description of the approach used to collect and analyze groundwater samples at the Site. Section 4.0 presents the physical and chemical analytical data collected, and Section 5.0 presents the conclusions and recommended approach for further monitoring at the Site. References for the Report are located in Section 6.0.

2.0 BACKGROUND

2.1 SITE DESCRIPTION

The Site is located in the City of Johnstown, County of Fulton, New York (Figure 1 presents the site location map) and is identified as Block 14 and Lot 7 on the Johnstown City Tax Map. The Site is an approximate 0.7-acre area bounded by the Cayadutta Creek to the north, the Colonial Cemetery to the south, Market Street to the east, and a wooded parcel of property to the west (Figure 2 presents the site plan). The Site is located in a mixed commercial, industrial, and residential area.

Currently, National Grid operates a natural gas regulator station at the Site with equipment contained in fenced enclosures along the Site's southern boundary. The rest of the Site is grass-covered, including the stream bank adjacent to Cayadutta Creek along the northern boundary of the Site. An embankment exists along the north end of the Site that slopes down to the Cayadutta Creek. A chain-link fence exists along the north and west sides of the Site, and a retaining wall runs along the south side of the Site. Access to the Site is from North Market Street to the east.

The Johnstown Hospital is located south of the Site within one mile, and numerous residences exist to the west and east of the Site. The Johnstown Senior High School and Warren Street Elementary School are located within one mile of the Site to the west.

2.2 SITE HISTORY

The Johnstown MGP Site was incorporated in March 1857 as the Johnstown Gas Light Company. The company operated a small coal gas plant with a 20,000 cubic foot (cu. ft.) holder (Holder #1), see Figure 2. In 1861, the plant was improved with the addition of a coal shed and a covering for the tank holder. In 1886, the Johnstown and Gloversville Gas Light Corporation was formed, and the company purchased the rights to the Lowe water gas process. The United Gas Improvement Company planned the construction of a water gas plant for the Johnstown and Gloversville franchises.

In 1887, the Site consisted of a tool shop, an office, a coal gasometer, a lime house, a purifier room, a retort house, and a coal shed. Between 1887 and 1918, Holder #2 was located in the central part of the Site (exact size unknown). In 1892, a steam generator was constructed adjacent to the coal shed for the Lowe water gas process, and Holder #1 was decommissioned in 1896. In 1898, a 72,000 cu. ft. gas holder (Holder #3) was constructed on the Site. Between 1912 and 1918, the western small gas holder (Holder #2) in the middle of the Site was removed. In 1929, a gas pipeline from a MGP in Troy, New York, reached Johnstown, and local gas production was only performed on a seasonal (winter) basis until local production of gas ceased in 1931. Niagara Hudson Power Company was the owner of the Site in 1930. By 1948, Holder #3 was decommissioned. In 1950, Niagara Hudson Power was consolidated under the name

Niagara Mohawk Power Company. By 1980, all Site buildings were removed. Currently, National Grid operates a natural gas regulator station at the Site.

Site Assessment and Investigations

An investigation of the Site began in 1997 with a Preliminary Site Assessment (PSA), which found that the Site was impacted with MGP wastes. A Supplemental PSA was then conducted at the Site in 1998, which was followed by a RI (January 2000) and subsequent remedial measures. Remedial measures are discussed separately below in this section.

A 2009 Supplemental RI was initiated to collect data to address potential residual MGP-related contaminants remaining in groundwater at the Site and to assess hydrogeologic conditions and groundwater quality on the Site. The results of the Supplemental RI were used to formulate potential remedial alternatives for groundwater and residual soil contamination. The Supplemental RI results were evaluated and presented in the 2010 FS Report.

Remedial Measures Completed

Several IRMs were performed to address the MGP impacts. In 2002 and 2003, the former holders and associated impacted soil were removed. During this IRM, former Holder #2 and the northern half of former Holder #3 were demolished and removed from the Site. Approximately 13,870 cubic yards of soil were excavated and disposed off site at a NYSDEC-approved facility. Permanent steel sheeting was left in place along the northeastern perimeter of the Site to avoid disturbance of the roadway and to provide containment of residual material left at depth.

Between 2005 and 2006, National Grid provided support to the City of Johnstown for subsurface work associated with the replacement of the North Market Street Bridge across Cayadutta Creek. Approximately 1,413 cubic yards of impacted soil were excavated from within the cofferdam area and disposed off-site at a NYSDEC-approved facility.

In August 2009, the rip-rap area along the bank of Cayadutta Creek that had been restored during the previous IRMs was enhanced to allow for establishment of stream-side vegetation. Post-IRM inspections of the restored Cayadutta Creek bank were conducted in September 2009 and May 2010.

2.3 ENVIRONMENTAL SETTING

The Johnstown (N. Market Street) Site slopes northward toward Cayadutta Creek with elevations ranging from 652 to 672 feet (ft.) above sea level. Currently, the Site topography gradually slopes from south to north, becoming increasingly steeper adjacent to the Creek, and is generally covered with either vegetation or stone. Surface drainage is primarily to the north into the creek. Access to the Site is from North Market Street to the east, and the Site is currently used to support the natural gas regulator station operations.

Site Geology

The main units of unconsolidated deposits identified at the Site can be characterized in descending order as fill and native glacial deposits to bedrock. The glacial deposits are of lacustrine origin with glacial tills to the top of shale bedrock (Utica Shale). Bedrock was reached beneath the till in two soil borings explored during the 1998 Supplemental PSA. These stratigraphic units are more specifically described below, based on information obtained from the previous investigations, and from the soil borings and monitoring well borings conducted during the 2007/ 2008 SRI.

Site geology includes a layer of disturbed soils (primarily fill) overlying glacial deposits. Based upon on-site soils and monitoring well borings, disturbed soils (including fills) range in thickness up to 13 ft. and are typically composed of sand, gravel, silt, clay, wood, coal, and anthropogenic materials including ash, cinders, clinkers, brick fragments, wire, and wood chips. Wood chips were identified in three borings (SB-09, SB-12, and MW-8) and are often associated with purifier waste.

A thin layer of peat underlies the disturbed soils in the northern portion of the Site, ranging in thickness from 0.5 ft. to 3 ft., and appears to thicken and dip to the north. Except where it is locally covered by sedimentary deposits such as silts, sands, and clays, the peat, where present, appears to have been the historical ground cover prior to development of the Site.

Underlying the peat, where present, the soils consist of lacustrine deposits composed of silts, sands, and clays. The surface of the lacustrine deposits appears to dip and thin out toward the north. A sand and gravel unit (an outwash deposit of stratified drift) underlies the lacustrine deposits across the Site area. This unit contains varying amounts of silt and clay. These deposits overlie a dense, low-permeability glacial till to bedrock (Shale).

Site Hydrogeology

Groundwater depths on site are typically in the 10- to 20-foot below ground surface (bgs) range, generally in the glacial deposits below the bottom of the fill material. Groundwater flow is consistently northward through the Site area toward Cayadutta Creek, with the steepest gradient from the center of the Site proximal to former gas holders #2 and #3 to the southern Creek bank (about 0.08 ft./ft.). In comparison, the average hydraulic gradient decreases to a value of approximately 0.04 ft./ft. on the east and west sides of the Site away from the former gas holders. The local groundwater flow is consistent with regional groundwater flow direction. The groundwater flow direction and hydraulic gradients calculated during this monitoring period are also generally consistent with historic data obtained prior to the issuance of the ROD.

3.0 MONITORING ACTIVITIES

The long-term semi-annual groundwater monitoring program currently consists of the following elements:

- Semi-Annual Site Inspection including the creek bank protection, vegetative cover, monitoring wells, and security fence.
- Semi-Annual Groundwater Well Gauging of the following: RW-1, MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15 and MW-16 (Figure 2 presents the well locations). The creek surface water level is also gauged at one location: SG-1.
- Semi-Annual Groundwater Sampling and Analysis of the following: MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15 and MW-16. Note that recovery well RW-1 is not sampled as part of the program but is inspected for the presence of non-aqueous phase liquids (NAPL). Monitoring well MW-11 was not sampled during the October 2016 sampling round due to concrete/metal and wood debris at this off-site well location.

3.1 WATER GAUGING AND GROUNDWATER SAMPLING PROCEDURES

Gauging

Long-term groundwater monitoring includes water gauging at 9 groundwater monitoring wells and 1 groundwater recovery well using an electronic oil/water interface probe. Depth to bottom of well (DTB), depth to product (DTP), and depth to water (DTW) are to be recorded at each well. Refer to Table 1 for a summary of the water level measurements from October 2016 as well as previous events. Appendix A also presents the field documentation from the October 2016 water gauging event.

No product was present in recovery well RW-1 or the other nine groundwater monitoring wells.

A creek surface water level measurement was collected from the Cayadutta Creek Bridge using a water level probe (from the surveyed gauging point at the bridge).

Sampling

Groundwater sampling was performed following low-flow sampling techniques [equivalent to United States Environmental Protection Agency (USEPA) low-flow procedures] using a pressure-driven peristaltic pump. During purging, measurements were collected for the following field parameters: pH, specific conductivity, turbidity, dissolved oxygen (DO), temperature, and oxidation-reduction potential (ORP). A Horiba U-22 was used to collect the field parameter data in a flow-through cell. The monitored field parameters are observed and recorded during low-flow sampling to determine when they have stabilized, and thus when the well has been adequately purged. Field parameter measurements were recorded at approximately 5-minute intervals. The monitoring wells were purged until stabilization of the field parameters (±0.1 Standard Unit (SU) for pH, ±3% for specific conductivity, ±10 millivolts

(mV) for ORP, and ±10% for DO) and turbidity was less than 50 Nephalometric Turbidity Units (NTU). Refer to Attachment A for the field data.

After stabilization of the field parameters, 8 groundwater samples were collected directly from the dedicated tubing into laboratory-supplied sample containers (pre-preserved as required per the analytical method). Quality Assurance/Quality Control (QA/QC) samples included the collection of one field duplicate sample, one matrix spike (MS) sample, one duplicate matrix spike (DMS) sample, and one trip blank sample (VOCs only). Samples were transported to the laboratory, accompanied by the appropriate chain-of-custody documentation. Analytical results were validated.

Natural Attenuation Parameters

The ORP of groundwater is an indicator of the relative tendency of the groundwater to accept or transfer electrons. ORP is dependent on and influences rates of biodegradation. Lower ORP readings indicate a greater tendency toward reducing conditions and anaerobic processes.

The pH of the groundwater affects the presence and activity of microorganisms in the groundwater. The microorganisms may produce either organic acids or carbon dioxide which, when dissolved in water, forms weak carbonic acid. Microorganisms capable of degrading petroleum hydrocarbons typically prefer pH values ranging from 6 to 8 SU.

Groundwater temperature affects the solubility of dissolved gases such as oxygen and carbon dioxide as well as the metabolic activity of microorganisms. Oxygen is less soluble in warm water, and groundwater temperatures below approximately 5 degrees Celsius tend to inhibit biodegradation.

DO is the most thermodynamically favored electron acceptor used by microorganisms during the degradation of both natural and anthropogenic organic carbon. An inverse relationship of high hydrocarbon concentrations and low DO concentrations can be used as a key indicator of biodegradation.

Nitrate, if available, may be used as an electron acceptor for anaerobic biodegradation after the depletion of DO [typically considered less than 0.5 milligrams per liter (mg/L)] and is used to biodegrade petroleum hydrocarbons. Lower nitrate concentrations in groundwater within a plume, with respect to higher concentrations in areas upgradient and outside a plume, may be expected.

Ferrous iron is a metabolic byproduct of hydrocarbon degradation. Reducing conditions in nitrogen- and oxygen-depleted groundwater creates an anaerobic environment that causes the reduction of ferric iron (Fe^{3+}) to ferrous iron (Fe^{2+}). Relatively low ferrous iron concentrations may be present in areas where natural attenuation is occurring if free ferrous iron is re-precipitating as sulfides or carbonates.

Sulfate may be used as an electron acceptor after the depletion or use limitation of DO, nitrate, and ferric iron. Lower sulfate concentrations in groundwater within a plume, with respect to higher concentrations in areas upgradient and outside a plume, may be expected.

The production of methane, termed methanogenesis, occurs only in strongly reducing conditions and generally after oxygen, nitrate, and sulfate have been depleted. The presence of methane in groundwater suggests Benzene, Toluene, Ethylbenzene, Xylene (BTEX) degradation via methanogenesis. Methane is not present in fuels, and therefore its presence at high concentrations relative to areas upgradient and outside a plume is indicative of the biodegradation of petroleum hydrocarbons.

The buffering capacity of groundwater is a function of alkalinity. Typically, alkalinity is primarily due to carbonate alkalinity. The organic acids or the carbon dioxide (which produces a weak carbonic acid when dissolved in water) produced by biodegradation solubilize carbonate from the soil. Alkalinity concentrations that are elevated with respect to areas upgradient and outside a plume may be an indication of microbial activity and thus natural attenuation.

Typically, the relationships between BTEX and electron acceptors/metabolic byproduct concentrations (geochemical indicators) indicate potential for biodegradation. The concentrations are dependent on the location (and groundwater conditions) within the plume or outside of the plume limits.

3.2 GROUNDWATER ANALYTICAL RESULTS

The groundwater samples were analyzed for BTEX, Polycyclic Aromatic Hydrocarbons (PAHs), lead, total cyanide, and monitored natural attenuation/water quality (MNA/WQ) parameters including alkalinity, chloride, ethane, ethene, ferrous iron, manganese, methane, nitrate, nitrogen, sulfate and sulfide. BTEX and PAHs are constituents commonly associated with former MGP sites. Cyanide is also a constituent commonly associated with former MGP sites. BTEX, PAHs, lead, and cyanide were the primary contaminants detected during previous investigation activities conducted at the Site. The MNA/WQ parameters, as well as field-measured ORP, pH, temperature, and DO, are relevant to establishing whether conditions are favorable for natural attenuation to occur at the Site.

- Refer to Table 2 for the analytical results summary.
- Refer to Appendix A for field data.
- Refer to Appendix B for the data usability summary report (DUSR).

Groundwater analytical results were compared with levels specified in the NYSDEC Division of Water Final Amendment to Water Quality Standards Regulations, effective February 16, 2008 [hereafter referred to as NYSDEC WQ Values]. For groundwater, Class GA values were applied. Class GA waters are defined as fresh groundwater, found in the saturated zone of unconsolidated deposits and consolidated rock or bedrock, which are used as a source of potable water supply.

Site Related Parameters

BTEX - Groundwater samples collected from monitoring wells MW-13, MW-15, and MW-16 contained concentrations of some or all individual BTEX constituents above their respective NYSDEC WQ Values [1 micrograms per liter (µg/L)] for benzene and 5 µg/L for other BTEX constituents). The highest concentrations were observed in the groundwater samples collected from monitoring wells MW-13, MW-15 and MW-16. Monitoring well MW-13 typically had the highest total BTEX concentrations. Monitoring well MW-15 is located generally downgradient of the former gas holders and monitoring well MW-13, while monitoring well MW-16 is located southwest of the former gas holders and generally upgradient of both monitoring wells MW-13 and MW-15.

PAHs – PAHs were detected in monitoring wells MW-4, MW-7, MW-10, MW-12, MW-13, MW-14, MW-15 and MW-16. Naphthalene has consistently exhibited the highest concentration of any PAH.

Lead - Lead exhibited excedances above its respective NYSDEC WQ Value (25 µg/l) in one well (MW-14).

Cyanide - Concentrations of cyanide were detected above its NYSDEC WQ Value (0.2 mg/L) in groundwater samples collected from monitoring wells MW-13, MW-14, MW-15, and MW16.

Monitored Natural Attenuation Parameters

Site-specific levels of the MNA/WQ parameters (geochemical indicators) were compared to known screening values to identify whether the site-specific values are within the ranges known to be suitable for biodegradation. The MNA/WQ analytical results for the individual monitoring wells are summarized in Table 2. Figure 4 presents the groundwater data for the key MNA data parameters at their respective locations to assist with the MNA evaluation. Indications of biodegradation of petroleum-related MGP constituents within the plume include low levels of DO, nitrate and sulfate, with generally higher levels of manganese, ferrous iron and methane.

Indicator concentrations detected at monitoring wells identified within source and downgradient areas of the Site were compared to levels detected at upgradient and side gradient monitoring wells exhibiting little or no MGP-related contamination. Generally indicator concentration levels at a distance from the center of the plume will be significantly lower than levels within the plume. A summary of the MNA/WQ results and associated field indicator parameters are provided below:

- DO and ORP values demonstrate depleted levels of DO and a transformation to more anaerobic or reducing conditions at the former source and downgradient areas relative to side gradient and upgradient areas of the Site. These values suggest that biodegradation activities at the source and at downgradient areas are occurring, consuming the available

oxygen and resulting in MGP petroleum-related compound degradation and the lowering of DO levels.

- The range of ORP levels observed at the source and downgradient area monitoring wells generally indicates aquifer conditions could be suitable for denitrification, ferric iron reduction, sulfate reduction, and methanogenesis.

- Nitrate concentrations are generally depleted at the former source and downgradient areas of the Site relative to upgradient (MW-4) and side gradient areas, indicating denitrification may be a noteworthy biodegradation process occurring at this time at the source and downgradient areas.

- Ferrous iron concentrations at the former source and downgradient area monitoring wells do not exhibit higher levels relative to side gradient and upgradient monitoring wells. In addition, sulfate concentrations at the former source and upgradient areas are not depleted relative to upgradient and side gradient areas. These observations indicate ferric iron reduction and sulfate reduction are not likely to be significant biodegradation processes at this time at the source and downgradient areas.

- Based on the presence of methane, low DO amounts, and the ORP levels, methanogenesis is likely an important factor for biodegradation capacity in some areas of the Site. However, plume elongation is limited with a similar footprint throughout the monitoring period indicating that biodegradation is continuing and methanogenic conditions have not taken over completely.

Natural Attenuation Trending

Previous groundwater sampling data collected since June 2010 was utilized to develop and evaluate the contaminant plume and concentration trends of specific constituents at the Site. Plume size and concentration data are indicative of biodegradation capacity (natural attenuation) at the Site and whether the capacity has reached a limit of effectiveness. In order to determine and evaluate natural attenuation effectiveness, the use of statistical testing has been utilized for groundwater data collected from monitoring wells at the Site. The Mann-Kendall test was utilized for trend analysis. Trend analysis data started June 2010. The resultant statistical trend analysis for individual monitoring wells suggests (with 80% and 90% confidence) that total BTEX compounds and naphthalene plume lifecycle have been stable (no trend) to decreasing throughout the monitoring period. The table below depicts general concentration trend analysis results (decreasing, no trend or increasing) at 80% confidence levels for each well and associated constituents during the monitoring period. No trend is indicative of plume stability at well locations with contaminant detections throughout the monitoring period.

Well ID	Benzene	Toluene	Ethylbenzene	Total xylenes	Naphthalene
MW-4	No trend	No trend	No trend	No trend	No trend
MW-7	No trend	No trend	No trend	No trend	No trend
MW-10[1]	Not trend	No trend	No trend	No trend	No trend
MW-11[1]	No trend	No trend	No trend	No trend	Decreasing trend
MW-12	No trend	No trend	No trend	No trend	No trend
MW-13[1]	No trend	Decreasing	Decreasing	Decreasing	No trend
MW-14[1]	Decreasing	No trend	No trend	No trend	No trend
MW-15[1]	Decreasing	No trend	No trend	No trend	No trend
MW-16[1]	No trend	No trend	No trend	No trend	Increasing

1 No trend is indicative of plume stability at well locations with contaminant detections throughout the monitoring period.

Isoconcentration contour maps were developed for total BTEX (Figure 5) and naphthalene (Figure 6) contamination. The figures present locations of the groundwater monitoring wells and plume contours for total BTEX (as compared to the benzene WQ value of 1 µg/L) and naphthalene exceeding the NYSDEC WQ values. Evaluation of the isoconcentration figures suggests that the contaminant plumes were relatively stable to decreasing (smaller footprint with time) within the Site boundary up until this latest sampling round of October 2016. BTEX constituent plume trends (concentrations above the benzene WQ at 1 µg/L) have consistently included monitoring wells MW-13, MW-15 and MW-16. While the naphthalene plume (concentrations above the WQ) has decreased to include only monitoring wells MW-13 and MW-15.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

Groundwater Levels

The groundwater elevation data indicates groundwater within the Site, south of the Creek, flows in a downgradient direction from the south to the north, toward Cayadutta Creek. The groundwater flow direction has been consistent during previous gauging events and with data obtained prior to the ROD. Figure 3 is a groundwater monitoring map verifying groundwater flow direction.

Flow on the north side of the Creek is to the south, towards the Creek. As such, Cayadutta Creek serves as the discharge location for the unconfined hydrostratigraphic unit, north and south of the Creek, and acts as a hydraulic boundary.

Site-Related Constituents

The highest concentrations of BTEX constituents and PAH compounds are within MW-13, MW-15, and MW-16. Site institutional controls continue to be effective and will continue to be monitored semi-annually.

There are minimal concentrations of lead in groundwater samples; however, Total Cyanide has been detected consistently in most wells.

Natural Attenuation

Plume stability at the Site is an indication that biodegradation capacity likely has not reached its limit of effectiveness. The use of statistical testing has identified the plume trends based on the constituent concentrations. Trend analysis data started with the June 2010 sampling event. Generally, the tests suggested that the plume and the related constituents were either stable or decreasing.

4.2 RECOMMENDATIONS

Based on the results of the October 2016 event and previous events, the following recommendations are made:

- ✓ Continue the long-term semi-annual site inspection and groundwater monitoring program. The next event will be April 2017.

5.0 REFERENCES

Borden, Robert C., et. al., "Geochemical Indicators of Intrinsic Bioremediation". Groundwater, Volume 33, Number 2, March/April 1995.

National Grid. "Site Management Plan for the Johnstown (N. Market Street) Former MGP Site, Johnstown, New York". National Grid, November 2011.

Niagara Mohawk Power Corporation. "Preliminary Historical Profile of the Johnstown (Market Street) MGP Site. Johnstown, New York". Niagara Mohawk Power Corporation, June 1993.

Niagara Mohawk Power Corporation. "Interim Remedial Measure (IRM) Summary Report for the Johnstown (N. Market Street) Site. Johnstown, Fulton County, New York. Site No. 5-18-020:. Tetra Tech FW, June 2007.

Niagara Mohawk Power Corporation. "IRM Summary Report for the Johnstown (N. Market Street) Site. Bridge Replacement Environmental Support Activities". Tetra Tech FW, October 2007.

Niagara Mohawk Power Corporation. "Record of Decision for the Johnstown (N. Market Street) Former MGP Site, Johnstown, New York". Niagara Mohawk Power Corporation, March 2010.

TABLES

Table 1
Groundwater Level Measurements
Johnstown MGP Site
Johnstown, NY

Well ID	ELEVATION REFERENCE POINT	6/30/2010		9/29/2010		1/5/2011		4/8/2011		6/16/2011	
		Depth to Water (ft tic)	Groundwater Elevation (ft msl)	Depth to Water (ft tic)	Groundwater Elevation (ft msl)	Depth to Water (ft tic)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)
MW-4	676.54	23.10	653.44	23.41	653.13	22.95	653.59	22.50	654.04	22.04	654.50
MW-7	659.08	14.25	644.83	13.18	645.90	13.88	645.20	12.87	646.21	13.80	645.28
MW-10	657.59	14.80	642.79	14.60	642.99	14.75	642.84	14.09	643.50	14.77	642.82
MW-11	657.29	NM	NM	13.57	643.72	13.59	643.70	12.51	644.78	13.38	643.91
MW-12	660.08	NM	NM	NM	NM	15.06	645.02	NM	NM	NM	NM
MW-13	664.89	14.65	650.24	15.22	649.67	14.95	649.94	11.18	653.71	13.99	650.90
MW-14	663.91	13.50	650.41	14.46	649.45	14.28	649.63	12.86	651.05	13.65	650.26
MW-15	661.85	16.90	644.95	17.24	644.61	17.68	644.17	15.07	646.78	16.63	645.22
MW-16	665.57	9.70	655.87	10.19	655.38	12.33	653.24	11.00	654.57	10.50	655.07
RW-1											
GAUGE1	659.97	15.07	644.90	20.20	639.77	16.30	643.67	15.75	644.22	16.75	643.22

ft msl - feet mean sea level
ft toc - feet from top of inner casing
NM - not measured

Table 1
Groundwater Level Measurements
Johnstown MGP Site
Johnstown, NY

Well ID	ELEVATION REFERENCE POINT	10/13/2011		12/15/2011		3/15/2012		10/9/2012		4/18/2013		10/7/2013	
		Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)
MW-4	676.54	21.41	655.13	22.78	653.76	22.81	653.73	NM	NM	23.97	652.57	23.12	653.42
MW-7	659.08	13.15	645.93	15.45	643.63	13.55	645.53	14.17	644.91	13.53	645.55	14.36	644.72
MW-10	657.59	14.11	643.48	14.22	643.37	14.18	643.41	15.05	642.54	14.27	643.32	14.44	643.15
MW-11	657.29	12.95	644.34	12.76	644.53	12.73	644.56	13.95	643.34	13.01	644.28	13.16	644.13
MW-12	660.08	13.61	646.47	14.54	645.54	14.26	645.82	16.36	643.72	14.06	646.02	14.99	645.09
MW-13	664.89	11.91	652.98	14.31	650.58	14.98	649.91	16.12	648.77	14.18	650.71	15.08	649.81
MW-14	663.91	13.26	650.65	13.65	650.26	15.49	648.42	16.98	646.93	13.14	650.77	14.74	649.17
MW-15	661.85	15.95	645.90	16.38	645.47	16.41	645.44	17.85	644.00	16.26	645.59	17.21	644.64
MW-16	665.57	9.79	655.78	9.91	655.66	11.56	654.01	10.51	655.06	9.98	655.59	9.85	655.72
RW-1								17.98		16.21	-	15.95	-
GAUGE1	659.97	16.05	643.92	15.62	644.35	15.69	644.28	NM	NM	19.10	640.87	18.85	641.12

ft msl - feet mean sea level
ft toc - feet from top of inner casing
NM - not measured

Table 1
Groundwater Level Measurements
Johnstown MGP Site
Johnstown, NY

Well ID	ELEVATION REFERENCE POINT	4/9/2014		10/13/2014		4/16/2015		10/13/2015		4/6/2016		10/25/2016	
		Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)
MW-4	676.54	23.28	653.26	23.28	653.26	22.91	653.63	23.48	653.06	23.51	653.03	24.03	652.51
MW-7	659.08	13.71	645.37	14.61	644.47	13.23	645.85	14.61	644.47	14.19	644.89	15.00	644.08
MW-10	657.59	14.13	643.46	14.98	642.61	14.15	643.44	14.95	642.64	14.77	624.82	15.18	642.41
MW-11	657.29	12.68	644.61	13.71	643.58	12.62	644.67	-	-	NM	-	NM	-
MW-12	660.08	14.41	645.67	15.65	644.43	14.25	645.83	15.62	644.46	14.95	645.13	15.82	644.26
MW-13	664.89	14.84	650.05	15.53	649.36	11.34	653.55	14.98	649.91	15.95	648.94	16.32	648.57
MW-14	663.91	15.70	648.21	15.02	648.89	13.06	650.85	13.63	650.28	16.81	647.1	16.8	647.11
MW-15	661.85	16.67	645.18	17.55	644.30	15.31	646.54	17.23	644.62	17.355	644.3	17.9	643.95
MW-16	665.57	9.45	656.12	10.24	655.33	10.48	655.09	9.61	655.96	10.79	654.78	11.11	654.46
RW-1		12.32	-	17.31	-	16.84	-	13.21	-	13.03	NRP	12.88	NRP
GAUGE1	659.97	18.85	641.12	20.01	639.96	18.91	641.06	19.91	640.06	19.76	640.21	18.40	641.57

ft msl - feet mean sea level
ft toc - feet from top of inner casing
NM - not measured

Table 2
Analytical Data Results (MW-4)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/25/16
BTEX Compounds																
Benzene	ug/l	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
PAHs																
Acenaphthene	ug/l	20	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Acenaphthylene	ug/l	NC	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Anthracene	ug/l	50	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Benzo(a)anthracene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Benzo(a)pyrene	ug/l	0.000	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Benzo(b)fluoranthene	ug/l	0.002	0.47 U	0.48 U	0.47 U	**0.26 J**	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Benzo(g,h,i)perylene	ug/l	NC	0.47 U	0.48 U	0.47 U	0.19 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Benzo(k)fluoranthene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Chrysene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Dibenzo(a,h)anthracene	ug/l	NC	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Fluoranthene	ug/l	50	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Fluorene	ug/l	50	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Naphthalene	ug/l	10	0.47 U	0.48 U	0.47 U	0.48 U	0.49 U	0.49 U	0.49 U	3.2	3.2	2.2	2.2	2.2	0.51U	0.29
Phenanthrene	ug/l	50	0.47 U	0.48 U	0.47 U	0.048 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Pyrene	ug/l	50	0.47 U	0.48 U	0.47 U	0.10 J	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.52 U	0.52 U	0.10U
Cyanide and Lead																
Lead	ug/l	25	5 U	3 U	3 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10U	5.0U
Cyanide	mg/l	0.2	0.01 U	0.01 U	0.01 U	0.01 UJ	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010U	0.010U

Notes:
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
J - Estimated.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-4)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/25/16
CONSTITUENT	**UNITS**														
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	405 J	431 J	R	405	354	442	398	400	384	412	394	414
Chloride	mg/l	265	385 B	288 J	R	228	222	275	411	304	329	295	365	304	421
Ethane	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.025 U
Ethene	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7U	0.035 U
Ferrous Iron	mg/l	R	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.013	0.1 U	0.1 U	0.1 U	0.1 U	0.14	0.11
Manganese	mg/l	0.64 J	0.45 J	3 U	3.4	3 U	0.0087	3 U	3 U	3 U	3 U	3 U	0.019	0.0031	0.0053
Methane	ug/l	1 U	1 U	1 U	1 U	1 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4U	0.32 J
Nitrate	mg/l	2.7	2.9	2.4	3	3.1	2.2	2.4	3.5	3.6	2.7	2.9	2.9	3.4	3.2
Nitrogen	mg/l	0.2 U	0.2 U	R	0.2 U	0.2 U	0.25	0.31	0.31	0.2 U	0.2 U	0.2 U	0.2 U	0.2U	1.0 U
Sulfate	mg/l	56.7	74.2 B	R	R	56 B	62.2	64.7	74.7	70.7	50.8	60	60	73.9	60.8
Sulfide	mg/l	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-7)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/26/16
BTEX Compounds																
Benzene	ug/l	1	1 U	0.72 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**1.3**	1U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.3	1U	1.0U
PAHs																
Acenaphthene	ug/l	20	0.50 U	0.48 U	0.48 U	0.55	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10
Acenaphthylene	ug/l	NC	0.50 U	0.48 U	0.48 U	0.20 J	0.13 J	0.13 J	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.20
Anthracene	ug/l	50	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Benzo(a)anthracene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Benzo(a)pyrene	ug/l	0.000	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Benzo(b)fluoranthene	ug/l	0.002	0.50 U	0.48 U	0.48 U	**0.15 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Benzo(g,h,i)perylene	ug/l	NC	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Benzo(k)fluoranthene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Chrysene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Dibenzo(a,h)anthracene	ug/l	NC	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Fluoranthene	ug/l	50	0.50 U	0.48 U	0.48 U	0.47 U	0.078 J	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Fluorene	ug/l	50	0.50 U	0.48 U	0.48 U	0.11 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.50 U	0.48 U	0.48 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Naphthalene	ug/l	10	0.50 U	0.48 U	0.48 U	0.47 U	1.1	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	5.2	0.49U	3.0
Phenanthrene	ug/l	50	0.50 U	0.48 U	0.48 U	0.097 J	0.12 J	0.48 U	0.49	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Pyrene	ug/l	50	0.50 U	0.48 U	0.48 U	0.35 J	0.098 J	0.48 U	0.48 U	0.48 U	0.48 U	0.46 U	0.46 U	0.49 U	0.49 U	0.10U
Cyanide and Lead																
Lead	ug/l	25	5 U	3 U	19	12	3.2 J	19	**33**	7.1	7.1	0.010 U	0.010 U	0.010 U	0.010 U	5.0 U
Cyanide	mg/l	0.2	R	**0.68 J**	**0.986**	R	**0.22**	**5.9**	**1.4**	**0.4**	**0.16**	0.13	0.18	0.18	0.18	0.15

Notes:
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
J - Estimated.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-7)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/26/16
CONSTITUENT	**UNITS**														
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	327 J	370 J	R	310	324	367	375	392	340	403	395	406
Chloride	mg/l	122	93.8 B	111 J	R	91.2	101	114	84	79	62.8	67.7	66.7	66.2	79.4
Ethane	ug/l	1.5 U	150 U	1.5 U	75 U	75 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.38 J
Ethene	ug/l	1.5 U	150 U	1.5 U	75 U	75 U	7.0U	7.0U	7.0U	7.0U	7.0U	7.0U	7.0U	7.0U	0.035 U
Ferrous Iron	mg/l	R	1.7 J	0.83 J	R	0.1 U	0.37	0.1 U	0.25	6.24	0.1 U	0.1 U	0.1 U	0.14	0.59
Manganese	mg/l	0.67	0.62	0.66	0.94	0.51	0.96	1.1	1.1	0.564	0.49	0.49	0.46	0.53	0.43
Methane	ug/l	190	210	190	300	210	240	40	23	150	82	35	96	17	160
Nitrate	mg/l	0.05 U	0.02 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.14	0.10 U
Nitrogen	mg/l	1.4	1.3	1.6	R	1.6	1.6	4.6	1.5	0.16	2	1.1	1.5	1.6	2.2
Sulfate	mg/l	745 B	611 B	R	R	674 B	509	654	518	540	457	442	533	384	476
Sulfide	mg/l	1 U	0.8 J	2.8	1 U	1 U	1.2	1.4	1.4	1.4	1	1 U	1 U	1U	1.0 U

Notes:

B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-10)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/26/16
BTEX Compounds																		
Benzene	ug/l	1	1 U	1 U	1 U	**7.1**	**1.3**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.3**	1U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1	1U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2	1U	1.0U
PAHs																		
Acenaphthene	ug/l	20	1.6	1.3	1.8 J	2.4	2.3	0.099 J	1.4	2	2.2	1.1	0.8	0.48 U	0.63	0.50 U	0.50 U	1.4
Acenaphthylene	ug/l	NC	0.43 J	0.32	0.24 J	0.42 J	0.74 J	0.13 J	0.14 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.18
Anthracene	ug/l	50	0.061 J	0.047 J	0.47 U	0.47 U	0.28 J	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Benzo(a)anthracene	ug/l	0.002	**0.13 J**	**0.057 J**	0.47 U	0.47 U	**1**	0.47 U	**0.49 B**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Benzo(a)pyrene	ug/l	0.002	**0.14 J**	**0.057 J**	0.47 U	0.47 U	**0.81**	0.47 U	**0.19 J**	0.48 U	**0.55**	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Benzo(b)fluoranthene	ug/l	0.002	**0.071 J**	**0.047 J**	0.47 U	0.47 U	**0.8**	0.47 U	**0.24 J**	0.48 U	**0.86**	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Benzo(g,h,i)perylene	ug/l	NC	0.051 J	0.19 U	0.47 U	0.47 U	0.37 J	0.47 U	0.08 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Benzo(k)fluoranthene	ug/l	0.002	**0.092 J**	**0.047 J**	0.47 U	0.47 U	**0.53**	0.47 U	**0.18 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Chrysene	ug/l	0.002	**0.12 J**	**0.047 J**	0.47 U	0.47 U	**0.91**	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Dibenzo(a,h)anthracene	ug/l	NC	0.20 U	0.19 U	0.47 U	0.47 U	0.11 J	0.47 U	0.48 U	0.48 U	**1.1**	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Fluoranthene	ug/l	50	0.24	0.11 J	0.085 J	0.47 U	1.5	0.47 U	0.34 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10
Fluorene	ug/l	50	0.13 J	0.14 J	0.47 U	0.47 U	0.49 U	0.47 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.051 J**	**0.19 U**	0.47 U	0.47 U	**0.34 J**	0.47 U	**0.076 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Naphthalene	ug/l	10	0.33	0.19 U	0.47 U	0.47 U	0.49 U	0.47 U	0.48 U	0.7	0.7	0.48 U	0.48 U	0.48 U	0.50 U	7.9	0.50U	0.23
Phenanthrene	ug/l	50	0.11 J	0.19 U	0.47 U	0.47 U	0.53	0.10 J	0.18 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.10U
Pyrene	ug/l	50	0.33 J	0.13 J	0.15 J	0.57 U	1.8	0.14 J	0.41 J	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50 U	0.50 U	0.50 U	0.15
Cyanide and Lead																		
Lead	ug/l	25	5 U	5 U	5 U	3 U	9.1	3.9 J	6.4	5 U	8.4	5 U	5 U	5 U	0.010 U	0.010 U	0.010U	5.0U
Cyanide	mg/l	0.2	0.139	0.124	R	0.17 J	0.156	R	0.078	0.14	0.1	0.11	0.081	0.10	0.098	0.010	0.085	0.081

Notes:
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
J - Estimated.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-10)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/6/11	6/14/11	10/11/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/13/15	4/6/16	10/26/16
CONSTITUENT	**UNITS**														
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	523 J	541 J	R	589	584	552	566	548	512	581	586	660
Chloride	mg/l	181 B	160 B	156 J	R	147	316	286	265	470	664	698	1060	893	784
Ethane	ug/l	1.5 U	7.5 U	1.5 U	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.16 J
Ethene	ug/l	1.5 U	7.5 U	1.5 U	1.5 U	1.5 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0U	0.035 U
Ferrous Iron	mg/l	R	0.34 J	0.47	0.1 U	R	0.10 U	0.10 U	0.12	6.06	0.10 U	0.10 U	0.10 U	0.11	1.0
Manganese	mg/l	1.2	0.95	0.88	0.58	0.83	1	1.2	0.75	1.07	1.3	1.3	1.6	1.2	1.2
Methane	ug/l	34	9.8	33	85	40	72	32	28	110	130	63	82	56	420
Nitrate	mg/l	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.11	0.05U	0.12
Nitrogen	mg/l	8.5	4.9	4.9	R	5.4	5.7	6.1	4.1	4.8	6.2	5.6	6.3	4	6.5
Sulfate	mg/l	306	296 B	R	R	238 B	175	174	171	153	89.7	167	53.9	44.4	56.6
Sulfide	mg/l	R	1 U J	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-11)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/25/16
BTEX Compounds																
Benzene	ug/l	1	**2.8**	**13**	**18**	**15**	**7.9**	**12**	**3.5**	**8.1**	**10**	**22**	**7.3**	NS	NS	NS
Ethylbenzene	ug/l	5	1.9	**6.9**	**6.1**	**5.5**	3.5	1 U	1.2	3.8	**5.1**	**7.8**	3	NS	NS	NS
m/p-Xylene	ug/l	5	2.2	**5.3**	2.4	2.1	1.4 J	2 U	2 U	2 U	2 U	2.1	2 U	NS	NS	NS
o-Xylene	ug/l	5	1.1	3.1	2.0	2.0	1.2	1 U	1 U	1.6	2.1	2.6	1.5	NS	NS	NS
Total Xylenes			3.3	8.4	2.4	2.1	1.2	0	0	1.6	2.1	4.7	1.5			
Toluene	ug/l	5	1 U	1.4	0.97 J	0.99 J	0.69 J	1 U	1 U	1 U	1.1	1.9	1 U	NS	NS	NS
PAHs																
Acenaphthene	ug/l	20	**150**	**110**	**120**	**130**	**100**	**140 E**	**97**	**110**	**120**	**110**	**59**	NS	NS	NS
Acenaphthylene	ug/l	NC	290	290	240 D	270 D	210	160 E	120	170	110	150	56	NS	NS	NS
Anthracene	ug/l	50	**88**	19 B	19	17	11	23	13	28	13	16	4.2	NS	NS	NS
Benzo(a)anthracene	ug/l	0.002	**35**	**6.2 B**	**2.7**	**3.0 B**	**5.2 B**	**3.8**	0.002U	**8.3**	**3.2**	4.8	**1.9**	NS	NS	NS
Benzo(a)pyrene	ug/l	0.002	**34**	**5.7 B**	**2.8**	**2.5 B**	**2.3 J**	**2.7**	**3.3**	**8.5**	**2.8**	4.7	**0.84**	NS	NS	NS
Benzo(b)fluoranthene	ug/l	0.002	**24**	**4.8 B**	**1.9**	**2.1**	**1.8 J**	**1.7**	0.002U	0.002U	0.002U	4.6	**0.68**	NS	NS	NS
Benzo(g,h,i)perylene	ug/l	NC	20	4.0 B	1.4	1.7	1.3 J	1	1	3.4	0.002U	1.8	0.002U	NS	NS	NS
Benzo(k)fluoranthene	ug/l	0.002	**12**	**2.5 B**	**1**	**0.78**	**1.2 J**	**1.6**	0.002U	0.002U	0.002U	2.1	0.002U	NS	NS	NS
Chrysene	ug/l	0.002	**43**	**8.1 B**	**3.3**	**3.5 B**	5.1 U	**3.4**	**4.4**	**10**	**5.4**	7.6	0.99	NS	NS	NS
Dibenzo(a,h)anthracene	ug/l	NC	3.2	2.4 U	0.30 J	0.59	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	0.47 U	0.47 U	NS	NS	NS
Fluoranthene	ug/l	50	**96**	22 B	20	16	12	24	14	28	12	16	5.4	NS	NS	NS
Fluorene	ug/l	50	**130**	**72**	**79**	**83**	**62**	**92**	**62**	**70**	31	44	16	NS	NS	NS
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**13**	**2.8 B**	**0.96**	**1.0 B**	**0.69 J**	**1.6**	0.002U	0.002U	0.002U	1.2	0.002U	NS	NS	NS
Naphthalene	ug/l	10	**300**	**480**	**310 D**	**230 D**	**140**	**110**	**50**	**87**	10U	51	2.3	NS	NS	NS
Phenanthrene	ug/l	50	**260**	**52 B**	**140 D**	**130**	**91**	**170**	**80**	**130**	5.8	62	1.5	NS	NS	NS
Pyrene	ug/l	50	**150**	28 B	21	21	16	28	18	34	17	20	4.2	NS	NS	NS
Cyanide and Lead																
Lead	ug/l	25	**40**	7.6	12	5 U	4.6 J	5 U	5 U	5.9	5U	0.014	5U	NS	NS	NS
Cyanide	mg/l	0.2	R	0.015 J	0.021	0.01 UJ	0.012	0.010 U	0.010 U	0.010 U	0.018	0.021	0.012	NS	NS	NS

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
NC - No Criteria.
NS - Not Sampled.
R - Rejected.
U - Not Detected.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
PAHs - Polycyclic Aromatic Hydrocarbons.
mg/l - Milligrams per liter.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-11)
Johnstown MGP Site
Johnstown, NY

Sample Date / CONSTITUENT	UNITS	4/7/11	6/15/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/25/16
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	518 J	536 J	R	623	507	573	465	457	428	NS	NS	NS
Chloride	mg/l	345	414 B	514 J	R	321	350	202	295	454	364	314	NS	NS	NS
Ethane	ug/l	1.5 U	1.5 U	1.5 U	15 U	15 U	380 U	380 U	380 U	380 U	7.5 U	7.5 U	NS	NS	NS
Ethene	ug/l	1.5 U	1.5 U	1.5 U	15 U	15 U	350 U	350 U	350 U	350 U	7.0 U	7.0 U	NS	NS	NS
Ferrous Iron	mg/l	R	9.4 J	0.9 J	R	0.1 U	0.5	0.18	0.22	0.29	0.1U	0.1U	NS	NS	NS
Manganese	mg/l	0.94	0.45	0.69	0.66	0.47	0.95	0.95	0.55	0.56	0.56	0.25	NS	NS	NS
Methane	ug/l	4.8	68	190	360	160	520	12	25	120	180	13	NS	NS	NS
Nitrate	mg/l	0.13	0.05 U	0.05 U	0.05 U	0.092	0.050 U	0.79	0.32	0.32	0.059	0.28	NS	NS	NS
Nitrogen	mg/l	1.3	0.59	1.3	R	1.3	1.4	0.58	0.64	0.57	1.2	0.26	NS	NS	NS
Sulfate	mg/l	126 B	65.1 B	R	R	8.5 B	16.9	112	94.1	58	44.3	82.9	NS	NS	NS
Sulfide	mg/l	0.8 J	0.8 J	1.6	1 U	1 U	1 U	1 U	1 U	1 U	1.8	1 U	NS	NS	NS

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
NS - Not Sampled.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-12)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/14/15	4/6/16	10/26/16
BTEX Compounds												
Benzene	ug/l	1	1 U	**2.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2.0U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.0U
PAHs												
Acenaphthene	ug/l	20	0.52 U	14	0.2 U	1.1	1.1	0.48 U	0.48 U	0.47 U	0.51U	0.11
Acenaphthylene	ug/l	NC	0.18 J	100	0.2 U	0.2 U	0.2 U	0.63	0.2 U	0.47 U	0.51U	4.4
Anthracene	ug/l	50	0.13 J	2.8	0.2 U	1.1	1.1	0.88	0.2 U	0.73	0.51U	1.4
Benzo(a)anthracene	ug/l	0.002	**0.57 B**	**1.5**	**0.83**	**3**	**0.66**	1.5	0.49 U	0.47 U	0.51U	**2.1**
Benzo(a)pyrene	ug/l	0.002	**0.35 J**	**1.5**	**1**	**3.6**	**0.92**	1.8	0.49 U	0.47 U	0.51U	**2.8**
Benzo(b)fluoranthene	ug/l	0.002	**0.27 J**	**1.3**	**0.91**	**3.4**	**0.71**	2.1	0.49 U	0.47 U	0.51U	**2.3**
Benzo(g,h,i)perylene	ug/l	NC	0.27 J	0.62	0.49 U	0.49 U	0.51	0.74	0.49 U	0.47 U	0.51U	1.6
Benzo(k)fluoranthene	ug/l	0.002	**0.38 J**	**0.58**	0.49 U	**0.83**	0.49 U	0.74	0.49 U	0.47 U	0.51U	**0.94**
Chrysene	ug/l	0.002	**0.60 B**	**1.1**	**1**	**3**	0.49 U	1.6	0.49 U	0.47 U	0.51U	**1.9**
Dibenzo(a,h)anthracene	ug/l	NC	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.48 U	0.49 U	0.47 U	0.51U	0.29
Fluoranthene	ug/l	50	0.41 J	3.4	1.4	4.3	0.87	2.00	0.49 U	0.47 U	0.52	3.9
Fluorene	ug/l	50	0.52 U	2.2	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U	0.47 U	0.51U	0.51
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.13 J**	**0.97**	0.49 U	**1.2**	0.49 U	0.51	0.49 U	0.47 U	0.51U	**1.2**
Naphthalene	ug/l	10	0.52 U	160 E	2.5	0.99	0.52 U	1.6	0.49 U	1.9	0.51U	0.96
Phenanthrene	ug/l	50	0.48 J	7.6	1.1	3.6	0.61	2	0.49 U	0.47 U	0.51U	3.5
Pyrene	ug/l	50	0.59	4.2	2.4	5.8	1.3	2.8	0.49 U	0.47 U	0.64	5.4
Cyanide and Lead												
Lead	ug/l	25	5 U	5 U	5 U	**29**	5 U	0.018	0.49 U	10 U	10U	5.0U
Cyanide	mg/l	0.2	0.0062 J	0.010 U	0.010 U	0.010 U	0.010 U	0.013	0.49 U	0.01 U	0.01U	0.010U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
NC - No Criteria.
U - Not Detected.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
PAHs - Polycyclic Aromatic Hydrocarbons.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-12)
Johnstown MGP Site
Johnstown, NY

Sample Date / CONSTITUENT	UNITS	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/14/15	4/6/16	10/26/16
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	478 J	R	434	391	415	329	414	368	401	415	436
Chloride	mg/l	R	129 B	468	123	662	150	493	139	591	276	556
Ethane	ug/l	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.47 J
Ethene	ug/l	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7 U	7U	0.035 U
Ferrous Iron	mg/l	0.1 U	0.1 U	0.44	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1U	0.11
Manganese	mg/l	0.16	0.12	0.52	0.19	2.1	0.36	1.2	0.16	0.039	0.062	0.202
Methane	ug/l	1.1	0.56 J	47	1 U	1 U	1 U	4 U	4 U	4 U	4U	1.95
Nitrate	mg/l	6.2	3.2	0.05 U	2.5	4.8	1.4	3.7	1.4	2.5	3.3	2.9
Nitrogen	mg/l	R	0.19 J	0.29	0.24	2.4	0.44	0.61	0.61	0.2 U	0.2U	1.0 U
Sulfate	mg/l	R	53.5 B	81.4	73.5	115	51.6	73.5	54.8	70.2	93.7	56.0
Sulfide	mg/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U

Notes:
B - Present in Associated Blank Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-13)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	9/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16
BTEX Compounds																		
Benzene	ug/l	1	**430**	**360**	**71**	**200**	**59**	**300**	**370**	**360**	**490**	**400**	**200**	**300**	**17**	**360**	**300**	**348**
Ethylbenzene	ug/l	5	**850**	**730**	**87**	**200**	**110**	**520**	**670**	**490**	**600**	**320**	**200**	**340**	**17**	**190**	**270**	**366**
m/p-Xylene	ug/l	5	**920**	**810**	**110**	**240**	**140**	**550**	**740**	**590**	**730**	**420**	**250**	**480**	**24**	**270**	**360**	**467**
o-Xylene	ug/l	5	**390**	**350**	**71**	**130**	**74**	**260**	**340**	**260**	**320**	**190**	**120**	**210**	**16**	**120**	**150**	**203**
Toluene	ug/l	5	**800**	**660**	**80**	**260**	**89**	**550**	**740**	**520 E**	**710**	**440**	**270**	**430**	**17**	**320**	**410**	**552**
PAHs																		
Acenaphthene	ug/l	20	**120**	**140**	17	**46**	**60**	**76**	**82 J**	**170**	**130**	**77**	**71**	**130**	4.9 U	65 E	**130**	**225**
Acenaphthylene	ug/l	NC	260 JD	320 D	51	170	220 J	230 D	210	570	430	350	22	450	4.9 U	77 E	220	267
Anthracene	ug/l	50	12	15	3.6	12 B	15	15	97 U	47 U	47 U	47 U	6.9	14	4.9 U	9.2 F1 F2	10	19.2
Benzo(a)anthracene	ug/l	0.002	**1.9 J**	**2 J**	**0.35 J**	**4.9 B**	**7.3 J**	**5.3 B**	97 U	47 U	47 U	47 U	47 U	**1.9**	0.001 U	0.59 F2	9.7U	**6.7**
Benzo(a)pyrene	ug/l	0.000	**1.9 J**	**1.4 J**	**0.13 J**	**4.1 B**	10 U	**5.3 B**	97 U	47 U	47 U	47 U	47 U	**1.6**	0.001 U	0.49 U	9.7U	**6.5**
Benzo(b)fluoranthene	ug/l	0.002	**0.75 J**	**0.78 J**	0.49 U	**3.5 B**	10 U	**3.8**	97 U	47 U	47 U	47 U	47 U	**2.8**	0.001 U	0.49 U	9.7U	**6.2**
Benzo(g,h,i)perylene	ug/l	NC	0.75 J	3.9 U	0.49 U	2.5 B	10 U	3.8	97 U	47 U	47 U	47 U	47 U	0.6	0.001 U	0.49 U	9.7U	3.3
Benzo(k)fluoranthene	ug/l	0.002	3.8 U	0.78 J	0.49 U	2.4 U	10 U	**2.6**	97 U	47 U	47 U	47 U	47 U	**0.53**	0.001 U	0.49 U	9.7U	**2.5**
Chrysene	ug/l	0.002	**1.7 J**	**1.4 J**	**0.26 J**	**3.6 B**	**5.5 J**	**4.9 B**	97 U	47 U	47 U	47 U	47 U	**1.8**	0.001 U	0.50 F1 F2	9.7U	**6.1**
Dibenzo(a,h)anthracene	ug/l	NC	3.8 U	3.9 U	0.49 U	2.4 U	10 U	0.79 B	97 U	47 U	47 U	47 U	47 U	0.47 U	0.001 U	0.49 U	9.7U	0.85
Fluoranthene	ug/l	50	7.7	8.4	2.6	12 B	16	14	97 U	47 U	47 U	47 U	6.1	8.2	4.9 U	5.5 F2	9.7U	17.8
Fluorene	ug/l	50	**73**	**84**	18	48	**52 J**	**53**	37 J	**110**	**93**	**68**	30	**94 J**	4.9 U	43 F1 F2	**55**	**74.8**
Indeno(1,2,3-cd)pyrene	ug/l	0.002	3.8 U	3.9 U	0.49 U	2.4 U	10 U	**2.3 B**	97 U	47 U	47 U	47 U	47 U	**0.48**	0.001 U	0.49 U	9.7U	**2.7**
Naphthalene	ug/l	10	**6000 D**	**5600 D**	**250 D**	**1600 D**	**2900 D**	**5000 D**	**4100**	**8200**	**7100**	**3700**	10U	**4200**	4.9 U	350 E	**170**	**5560**
Phenanthrene	ug/l	50	**58**	**68**	7.2	44 B	**60**	**55**	44 J	**76**	**73**	**61**	50U	**70**	4.9 U	31 F1	9.7U	**78.3**
Pyrene	ug/l	50	9.8 J	8.8	2.9	14 B	19	17	97 U	47 U	47 U	47 U	7.2	9.7	4.9 U	5.8 F2	9.7U	52.1U
Cyanide and Lead																		
Lead	ug/l	25	6.4	5 U	5 U	15 J	**27**	9.2	5.8	5 U	7.8	5 U	5 U	5 U	4.9 U	10 U	10U	5.0U
Cyanide	mg/l	0.2	**0.618**	**0.652**	R	**0.42 J**	**0.235**	R	**0.33**	**0.39**	**0.32**	**0.26**	0.17	**0.24**	0.11	0.22 F1	**0.29**	**0.23**

Notes:

B - Present in Associated Blank Sample.
D - From a Diluted Sample.
E - Result exceeded calibration range.
F1 - MS and/or MSD Recovery is outside acceptance limits.
F2 - MS/MSD RPD exceeds control limits.
J - Estimated Concentration.
NC - No Criteria.
R - Rejected.
U - Not Detected.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
PAHs - Polycyclic Aromatic Hydrocarbons.
mg/l - Milligrams per liter.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-13)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	10/13/15	4/6/16	10/25/16
CONSTITUENT	**UNITS**													
MNA/WQ Parameters														
Alkalinity (as CaCO3)	mg/l	R	R	455 J	165 J	R	158	218	187	176	255	283 F1	311	364
Chloride	mg/l	29.1	18.6 B	5.9 J	R	20.5	21.6	20.4	7.3	9.2	17.3	11.2	9.8	11.4
Ethane	ug/l	1.5 U	15 U	1.5 UJ	15 U	15 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	1.2
Ethene	ug/l	1.5 U	15 U	1.5 UJ	15 U	15 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.5U	3.3
Ferrous Iron	mg/l	R	0.1 UJ	3.1 J	0.08 J	0.1 U	0.12	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1U	0.18
Manganese	mg/l	0.12	0.077	0.83	0.16	0.096	0.092	0.11	0.088	0.14	0.031	0.064	7.5U	0.0938
Methane	ug/l	32	46	28 J	72	66	120	36	15	74	4.0 U	110	50	280
Nitrate	mg/l	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05	0.10 U
Nitrogen	mg/l	1.1	1.3	2 U	R	1.4	1.4	1.8	1.2	2.1	0.62	1.4	1.2	1.3
Sulfate	mg/l	5 U	3.3 JB	R	R	52.1 J	139	82.3	15.5	15.5	5.0 U	5.0 U	5U	18.3
Sulfide	mg/l	1 U	3.2 J	1.2	R	R	1.2	1 U	1 U	1 U	1 U	1 U	1	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
F1 - MS and/or MSD Recovery is outside acceptance limits.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-14)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16
BTEX Compounds																	
Benzene	ug/l	1	**17**	1 U	**2.5**	**11**	**2.5**	**2.9**	1 U	1 U	**1.3**	1 U	1 U	1 U	1 U	0.54U	1.0U
Ethylbenzene	ug/l	5	**3.3**	1 U	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.54U	1.0U
m/p-Xylene	ug/l	5	**3.1**	2 U	2 U	2 U	2 U	2.4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.54U	2.0U
o-Xylene	ug/l	5	**5.6**	1 U	1 U	1 U	1 U	2.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.54U	1.0U
Toluene	ug/l	5	0.88 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.54U	1.0U
PAHs																	
Acenaphthene	ug/l	20	4.9	0.47 U	0.47 U	1.2	0.82	5.1	1.4	0.48 U	2.2	0.5	2.00	0.47 U	0.52 U	0.54U	0.19
Acenaphthylene	ug/l	NC	11	0.47 U	0.47 U	3	1.3	9	1.9	0.48 U	2.5	0.48 U	2.9	0.47 U	0.52 U	0.54U	0.99
Anthracene	ug/l	50	0.98	0.47 U	0.47 U	0.50 U	0.18 J	0.5	0.48 U	0.48 U	0.48 U	0.48 U	0.5	0.47 U	0.52 U	0.54U	0.25
Benzo(a)anthracene	ug/l	0.002	**0.27 J**	0.47 U	0.47 U	**0.29 J**	**0.91 B**	0.50 U	0.48 U	0.48 U	**0.62**	**1**	**1.9**	0.47 U	0.52 U	0.54U	**0.28**
Benzo(a)pyrene	ug/l	0.002	**0.24 J**	0.47 U	0.47 U	**0.15 J**	**0.90 B**	**0.12 J**	0.48 U	0.48 U	**0.65**	**1.3**	**2.4**	0.47 U	0.52 U	0.54U	**0.32**
Benzo(b)fluoranthene	ug/l	0.002	**0.15 J**	0.47 U	0.47 U	0.50 U	**0.78**	0.50 U	0.48 U	0.48 U	**0.79**	**1.2**	**3.8**	0.47 U	0.52 U	0.54U	**0.55**
Benzo(g,h,i)perylene	ug/l	NC	0.18 J	0.47 U	0.47 U	0.50 U	0.70	0.09 J	0.48 U	0.48 U	0.48 U	0.95	1.3	0.47 U	0.52 U	0.54U	0.29
Benzo(k)fluoranthene	ug/l	0.002	**0.15 J**	0.47 U	0.47 U	0.50 U	**0.57**	**0.17 J**	0.48 U	0.48 U	0.48 U	**0.83**	**1.1**	0.47 U	0.52 U	0.54U	**0.47**
Chrysene	ug/l	0.002	**0.3 J**	0.47 U	0.47 U	**0.19 J**	**0.85**	0.50 U	0.48 U	0.48 U	**0.69**	**1.2**	**2.1**	0.47 U	0.52 U	0.54U	**0.27**
Dibenzo(a,h)anthracene	ug/l	NC	0.59 U	0.47 U	0.47 U	0.50 U	0.50 U	0.50 U	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U	0.47 U	0.52 U	0.54U	0.10U
Fluoranthene	ug/l	50	1.2	0.081 J	0.47 U	0.32 J	1.5	0.61	0.59	0.48 U	1.2	1.5	3.2	0.47 U	0.52 U	0.54U	0.45
Fluorene	ug/l	50	1.4	0.47 U	0.47 U	0.50 U	0.17 J	0.35 J	0.48 U	0.48 U	0.48 U	0.48 U	0.49 U	0.47 U	0.52 U	0.54U	0.14
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.59 U**	0.47 U	0.47 U	0.50 U	0.50 U	**0.054 J**	0.48 U	0.48 U	0.48 U	**0.63**	**0.95**	0.47 U	0.52 U	0.54U	**0.21**
Naphthalene	ug/l	10	2.8	0.47 U	0.47 U	1.3	0.50 U	1.2	0.48 U	1.7	0.48	0.48 U	1.1	0.47 U	0.52 U	0.54U	5.2
Phenanthrene	ug/l	50	2	0.47 U	0.47 U	0.25 J	0.66	1.1	0.48 U	0.48 U	0.67	0.63	1.4	0.47 U	0.52 U	0.54U	0.22
Pyrene	ug/l	50	1.2	0.098 J	0.52 U	0.39 J	2.2	0.7	0.76	0.48 U	1.5	2.4	5.0	0.47 U	0.52 U	0.54U	0.68
Cyanide and Lead																	
Lead	ug/l	25	5 U	5 U	4.2 J	4.8 J	9.1	5.7	21	5 U	15	5 U	0.031	0.01 U	0.01 U	10U	**33.3**
Cyanide	mg/l	0.2	**0.197**	R	0.11 J	0.114	R	**0.28**	**1.4**	0.1	**0.2**	**0.9**	0.2	0.091	0.120	**0.88**	**0.67**

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
NC - No Criteria.
R - Rejected.
U - Not Detected.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
PAHs - Polycyclic Aromatic Hydrocarbons.
mg/l - Milligrams per liter.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-14)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	10/13/14	4/6/16	10/25/16
CONSTITUENT	**UNITS**													
MNA/WQ Parameters														
Alkalinity (as CaCO3)	mg/l	R	R	410	453 J	R	494	417	456	483	372	445	507	520
Chloride	mg/l	6.1	9.7 B	5.1	R	12.8	40.4	2	7.6	28.5	3.9	10.7	27.4	18.0
Ethane	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5U	0.17 J
Ethene	ug/l	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 U	7.5U	0.035 U
Ferrous Iron	mg/l	R	0.11 J	0.1 U	R	0.1 U	0.17	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.11	0.55
Manganese	mg/l	0.054	0.17	0.2	0.28	0.51	2	0.008	0.25	1	0.019	0.011	7.5U	0.768
Methane	ug/l	1 U	6.2	46	15	70	140	1 U	8.6	140	4.0 U	4.0 U	31	140
Nitrate	mg/l	0.71	0.19	0.086	0.023 J	0.05 U	0.05 U	0.8	0.05 U	0.05 U	0.87	0.16	0.05U	0.10 U
Nitrogen	mg/l	0.85	0.32	0.36	R	0.86	2.5	0.54	0.68	1.5	0.22	0.72	1	1.2
Sulfate	mg/l	5 U	19.6 B	5.6 JB	R	173 B	639	5 U	5 U	363	5.0 U	5.0 U	324	153
Sulfide	mg/l	1 U	1 UJ	1 U	R	R	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-15)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	9/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16
BTEX Compounds																		
Benzene	ug/l	1	**1600 D**	**1200**	**940 D**	**1300 D**	**670**	**790 D**	**1500 D**	**1100 E**	**410**	**390**	**210**	**300**	**16**	**350 E**	**330**	**714**
Ethylbenzene	ug/l	5	**200**	**250**	**190 D**	**210 D**	**120**	**190 D**	**220**	**200**	**75**	**53**	**38**	**74**	1.9	**92**	**110**	**244**
m/p-Xylene	ug/l	5	**12**	**8.7**	**17**	**18**	**19 J**	**9**	**6.6 J**	**23**	**19**	5 U	5 U	**10 U**	3.2	**8.1**	8U	**13.7**
o-Xylene	ug/l	5	**39**	**39**	**44**	**48**	**37**	**38**	**27**	**23**	**19**	**16**	**8.5**	**28**	**7.5**	**23**	**21**	**31.7**
Toluene	ug/l	5	3.8 J	10 U	**6.1**	4.7	10 U	**6.3**	**6.2 J**	**5**	5 U	5 U	5 U	**5.8**	1 U	**7**	8U	**6.1**
PAHs																		
Acenaphthene	ug/l	20	**44 J**	**49**	**47**	**32**	**47**	**50**	**47**	**57**	**42**	**23**	**18**	**24**	6.7	16	**23**	**43.1**
Acenaphthylene	ug/l	NC	19 J	23	24	17	22	19	12	16	11	6.5	3	3.9	0.59	3.1	5.1U	2.4
Anthracene	ug/l	50	2.7 J	3.3	2.1	1.3 B	2.4	2	1.5 J	2.8	2.6	1.4	0.95	0.81	0.49 U	0.57	5.1U	1.9
Benzo(a)anthracene	ug/l	0.002	**1.8 J**	**0.85 J**	**0.38 J**	0.48 U	**0.21 J**	0.54 U	4.7 U	0.58 U	0.96	0.59	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	**0.14**
Benzo(a)pyrene	ug/l	0.000	**2.1 J**	**0.75 J**	**0.2 J**	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.96	0.59	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U
Benzo(b)fluoranthene	ug/l	0.002	**1.1 J**	**0.57 J**	**0.27 J**	0.48 U	0.49 U	**0.16 J**	4.7 U	0.58 U	0.85	0.62	0.58 U	**0.72**	0.49 U	0.47 U	5.1U	**0.11**
Benzo(g,h,i)perylene	ug/l	NC	1.2 J	0.38 J	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U
Benzo(k)fluoranthene	ug/l	0.002	**1.3 J**	**0.38 J**	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.72	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U
Chrysene	ug/l	0.002	**1.8 J**	**0.85 J**	**0.23 J**	0.48 U	**0.16 J**	0.54 U	4.7 U	0.58 U	1.2	0.59	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	**0.11**
Dibenzo(a,h)anthracene	ug/l	NC	0.9 J	1.9 U	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U
Fluoranthene	ug/l	50	4.1 J	2.7	1.8	1.2 B	1.7	1.7	1.3 J	2.6	3.3	1.7	1.1	0.93	0.49 U	0.61	5.1U	1.2
Fluorene	ug/l	50	12 J	13	13	8.7	14	13	10	17	13	6.1	4.3	5.2	1.2	4.1	5.9	11.8
Indeno(1,2,3-cd)pyrene	ug/l	0.002	**0.9 J**	**1.9 U**	0.49 U	0.48 U	0.49 U	0.54 U	4.7 U	0.58 U	0.58 U	0.58 U	0.58 U	0.48 U	0.49 U	0.47 U	5.1U	0.10U
Naphthalene	ug/l	10	**110 JD**	**89**	**560 D**	**450 D**	**570 D**	**140 D**	**51**	**27**	**94**	**13**	**29**	**210**	1.5	**48 E**	**110**	**363**
Phenanthrene	ug/l	50	8.3 J	11	8	6.7 B	13	11	8.8	12	10	5.1	3.4	3.7	0.49 U	2.8	5.1U	8.5
Pyrene	ug/l	50	5.9 J	2.9	2.2	1.2 B	1.6	1.8	1.5 J	2.9	3.7	2	1.5	1.1	0.49 U	0.69	5.1U	1.4
Cyanide and Lead																		
Lead	ug/l	25	8.2	5 U	5 U	7.8	5.1	5 U	5 U	5 U	10	5 U	5 U	0.010	0.010	0.010	10U	5.0U
Cyanide	mg/l	0.2	**0.843**	**0.816**	R	**0.61 J**	**0.427**	R	**0.91**	**1.2**	**0.5**	**0.5**	**0.48**	**0.58**	**0.29**	**1**	**1.1**	**1.1**

Notes:
B - Present in Associated Blank Sample.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
D - From a Diluted Sample.
E - Result exceeded calibration range.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-15)
Johnstown MGP Site
Johnstown, NY

Sample Date / CONSTITUENT	UNITS	4/7/11	6/15/11	10/12/11	12/14/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/13/15	4/6/16	10/25/16
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	502 J	547 J	R	629	527	585	482	557	480	600	601	676
Chloride	mg/l	22.8	43.3 B	28.5 J	R	68.2	70.6	39.4	42	44.5	44.2	14.2	49.3	55.7	65.4
Ethane	ug/l	2.9	300 U	300 U	300 U	300 U	380 U	380 U	380 U	380 U	380 U	380 U	380 U	75U	6.2
Ethene	ug/l	1.5 U	300 U	300 U	300 U	300 U	350 U	350 U	350 U	350 U	350 U	350 U	350 U	75U	0.038 J
Ferrous Iron	mg/l	R	0.51 J	0.47 J	0.13 J	R	0.1 U	0.15	0.18	0.1U	0.1U	0.1U	0.15 HF	0.1U	8.2
Manganese	mg/l	0.89	0.67	0.79	0.77	0.61	0.61	1	1.1	0.68	1	0.68	0.7	75U	0.609
Methane	ug/l	680	360	720	1,900	1,600	1,900	780	580	1,100	2,400	16	1600	720	3,400
Nitrate	mg/l	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.28	0.05 U	0.5U	0.10 U
Nitrogen	mg/l	1.9	3.1	2.1	R	4.6	5.4	3	3.1	3.2	2.9	0.81	3.9	3.4	4.7
Sulfate	mg/l	137 B	193 B	R	R	202 B	217	113	139	122	91.1	28.7	78.5	116	67.9
Sulfide	mg/l	1 U	1 UJ	2.4	1 U	R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
HF - Field parameter with a holding time of 15 minutes. Test performed by laboratory at clients request.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

Table 2
Analytical Data Results (MW-16)
Johnstown MGP Site
Johnstown, NY

CONSTITUENT	UNITS	NYSDEC WQ Values	09/29/10	1/4/11	4/6/11	6/14/11	10/11/11	12/13/11	3/14/12	10/9/12	4/18/13	10/8/13	4/9/14	10/20/14	4/16/15	10/13/15	4/6/16	10/25/16
BTEX Compounds																		
Benzene	ug/l	1	**140**	**170**	**150 D**	**100 D**	**17**	**140 D**	**150 D**	**180**	**200**	**150**	**8.7**	**59**	**91**	**40**	76	**149**
Ethylbenzene	ug/l	5	**70**	**110**	**92**	**51**	**5**	**78**	**66**	**100**	**150**	**92**	**6.2**	**41**	**68**	**26**	35	**134**
m/p-Xylene	ug/l	5	**31**	**55**	**47**	**27**	2.8	**29**	**26**	**14**	**41**	**23**	1U	10 U	1U	4.9	5	4.9
o-Xylene	ug/l	5	**34**	**54**	**41**	**27**	3.6	**36**	**37**	**14**	**56**	**35**	1U	**17**	**24**	**11**	20	**32.1**
Toluene	ug/l	5	**17**	**36**	**33**	**15**	2	**21**	**11**	10 U	**14**	**9**	1U	**17**	**1U**	1.4	2U	**2.9**
PAHs																		
Acenaphthene	ug/l	20	14 D	18	**21**	7	2.3	13	15	**30**	**30**	16	1U	**40**	**27**	14	31	**54.7**
Acenaphthylene	ug/l	NC	16 J	27 D	36	11	4.7	10	2.2	34	49	0.48 U	0.48 U	31	25	16	27	47.3
Anthracene	ug/l	50	1.7	3	2.3	0.97 B	0.20 J	1.4	1.2	1.6	2.8	0.48 U	0.48 U	2.8	1.8	1.2	2.5U	1.4
Benzo(a)anthracene	ug/l	0.002	0.19 U	0.14	0.47 U	**2.1 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	**0.10**
Benzo(a)pyrene	ug/l	0.000	0.19 U	0.57 U	0.47 U	**2.3 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Benzo(b)fluoranthene	ug/l	0.002	0.19 U	0.57 U	**0.11 J**	**2.8 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Benzo(g,h,i)perylene	ug/l	NC	0.19 U	0.57 U	0.47 U	1.8 B	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Benzo(k)fluoranthene	ug/l	0.002	0.19 U	0.57 U	0.47 U	**3.1 B**	0.50 U	0.47 U	**0.096 J**	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Chrysene	ug/l	0.002	0.19 U	11 J	0.47 U	**2.7 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Dibenzo(a,h)anthracene	ug/l	NC	0.19 U	0.57 U	0.47 U	1.4	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Fluoranthene	ug/l	50	1.2	1.4	1.7	1.5 B	0.21 J	1.1	0.94	1.5	2	0.48 U	0.48 U	2.7	1.6	1.1	2.5U	1.8
Fluorene	ug/l	50	10 D	11	16	4.7	1.3	8.8	13	17	21	9.1	0.48 U	22	14	7.1	15	22.2
Indeno(1,2,3-cd)pyrene	ug/l	0.002	0.19 U	0.57 U	0.47 U	**1.7 B**	0.50 U	0.47 U	0.49 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.50U	0.50U	2.5U	0.10U
Naphthalene	ug/l	10	0.19 U	110 D	**220 D**	0.47 U	**26**	0.47 U	0.49 U	2.4	230E	0.48 U	0.48 U	1.7	4.6	5.1	7.4	4.6
Phenanthrene	ug/l	50	5.6	9.6	13	4.8 B	1.1	6.7	6.3	11	15	0.48 U	0.48 U	18	11	6.7	10	15.9
Pyrene	ug/l	50	1.4 J	1.3	1.9	2.1 B	0.50 U	1.1	0.87	1.3	2	0.48 U	0.48 U	3	1.8	1.2	2.5U	2.0
Cyanide and Lead																		
Lead	ug/l	25	5 U	5 U	5 U	3 U	3 U	5 U	5 U	5 U	5 U	5 U	5 U	0.01U	0.01U	0.01U	10U	5.0U
Cyanide	mg/l	0.2	**0.353**	**0.342**	R	**0.25 J**	0.137	R	**0.34**	**0.41**	0.11	0.11	0.023	**0.25**	**0.24**	**0.24**	**0.25**	**0.26**

Notes:

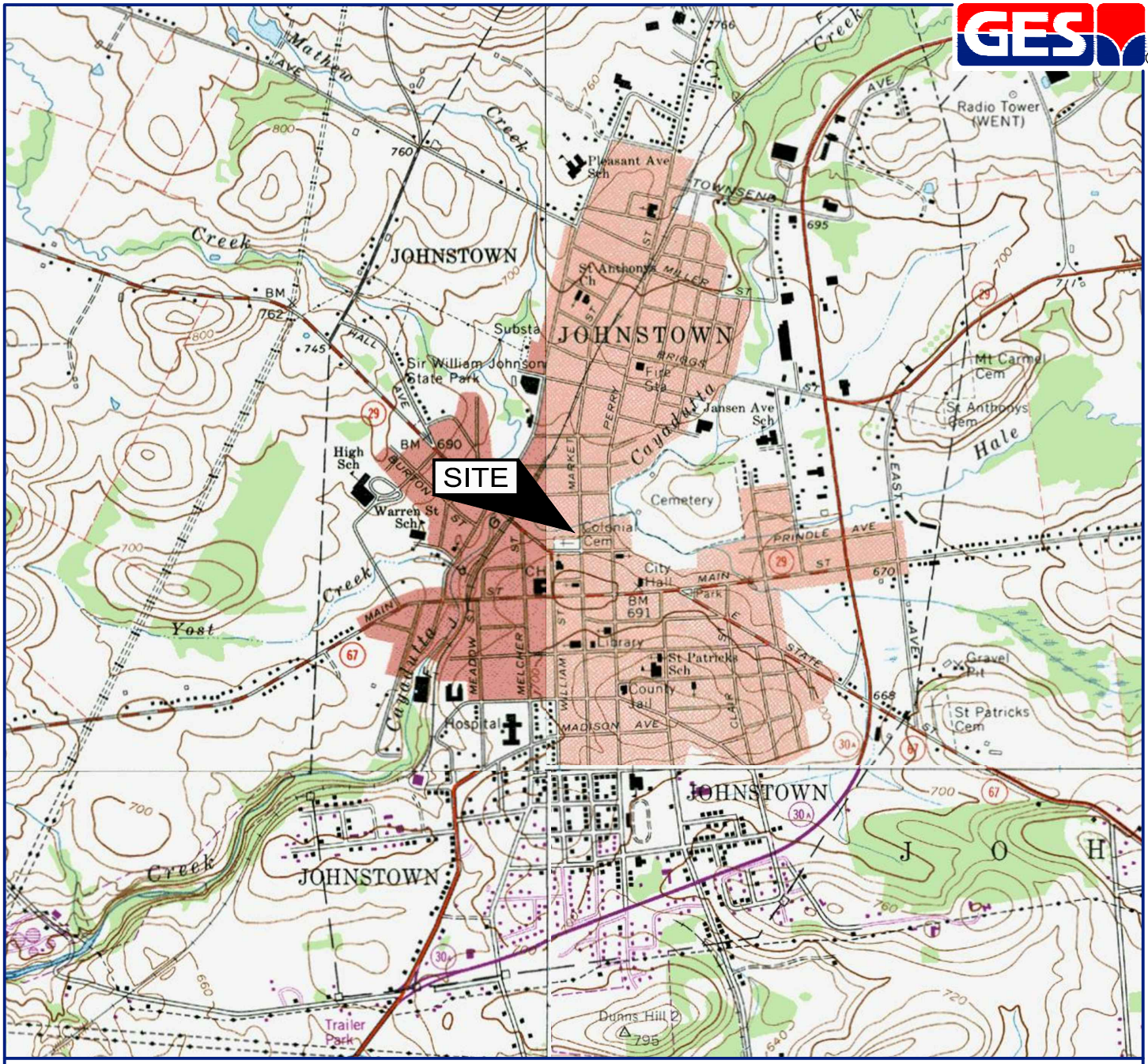
B - Present in Associated Blank Sample.
BTEX - Benzene, Ethylbenzene, Toluene and Xylene.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NC - No Criteria.
PAHs - Polycyclic Aromatic Hydrocarbons.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
Shaded cell represents New York State Department of Environmental Conservation (NYSDEC) Water Quality (WQ) exceedence.

Table 2
Monitored Natural Attenuation/Water Quality Data Results (MW-16)
Johnstown MGP Site
Johnstown, NY

Sample Date		4/7/11	6/15/11	10/12/11	12/13/11	3/13/12	10/9/12	4/18/13	10/8/13	4/9/14	10/15/14	4/16/15	10/13/15	4/6/16	10/25/16
CONSTITUENT	**UNITS**														
MNA/WQ Parameters															
Alkalinity (as CaCO3)	mg/l	R	R	586 J	600 J	R	436	530	585	454	595	532	638	615	636
Chloride	mg/l	9.4	6.1 B	3.4 J	R	12.7	12.8	5.5	5.4	5	6.5	5.8	4.9	5.7	6.8
Ethane	ug/l	30 U	30 U	1.5 U	1.5 U	0.57 J	750 U	750 U	750 U	750 U	750 U	75U	75U	75U	1.2
Ethene	ug/l	30 U	30 U	1.5 U	1.5 U	2.6	700 U	700 U	700 U	700 U	700 U	70U	70U	75U	0.24 J
Ferrous Iron	mg/l	R	0.33 J	R	0.08	0.1 U	0.12	0.1 U	0.13	0.1 U	0.1 U	0.1 U	0.1 U	0.1U	2.4
Manganese	mg/l	0.59	0.9	0.17	0.61	0.88	1.1	0.63	0.7	0.22	0.63	0.42	0.33	75U	0.601
Methane	ug/l	270	170	37	400 B	140	550	170	150	75	410	160	1100	110	900
Nitrate	mg/l	0.05 U	0.05 U	0.65	0.17	0.05 U	0.05 U	0.1	0.05 U	0.53	0.05 U	0.05 U	0.37	0.074	0.10 U
Nitrogen	mg/l	2.6	1.8	R	R	3.2	3.8	3.6	2.8	2.4	3.3	2.1	1.9	2.6	5.4
Sulfate	mg/l	312 B	243 B	R	R	351 B	487	140	86	1U	107	38.2	22.8	13.3	145
Sulfide	mg/l	1 U	1 UJ	0.8 J	1 U	R	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1U	1.0 U

Notes:
B - Present in Associated Blank Sample.
D - From a Diluted Sample.
J - Estimated Concentration.
mg/l - Milligrams per liter.
NA - Not analyzed.
R - Rejected.
U - Not Detected.
ug/l - Micrograms per liter.
MNA/WQ - Monitored Natural Attenuation/Water Quality.

FIGURES

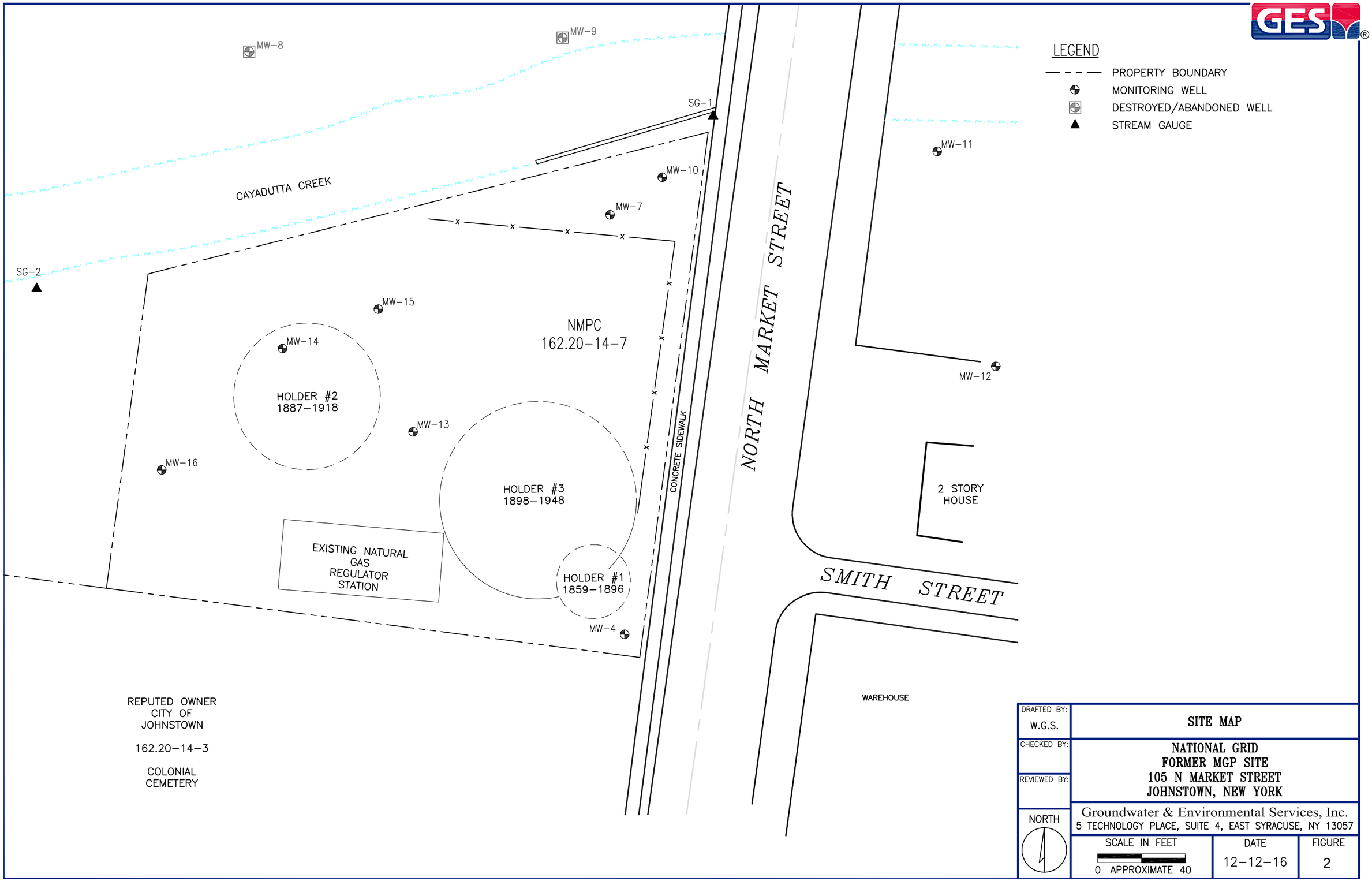


SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1970
GLOVERSVILLE, NEW YORK
CONTOUR INTERVAL = 20'

QUADRANGLE LOCATION

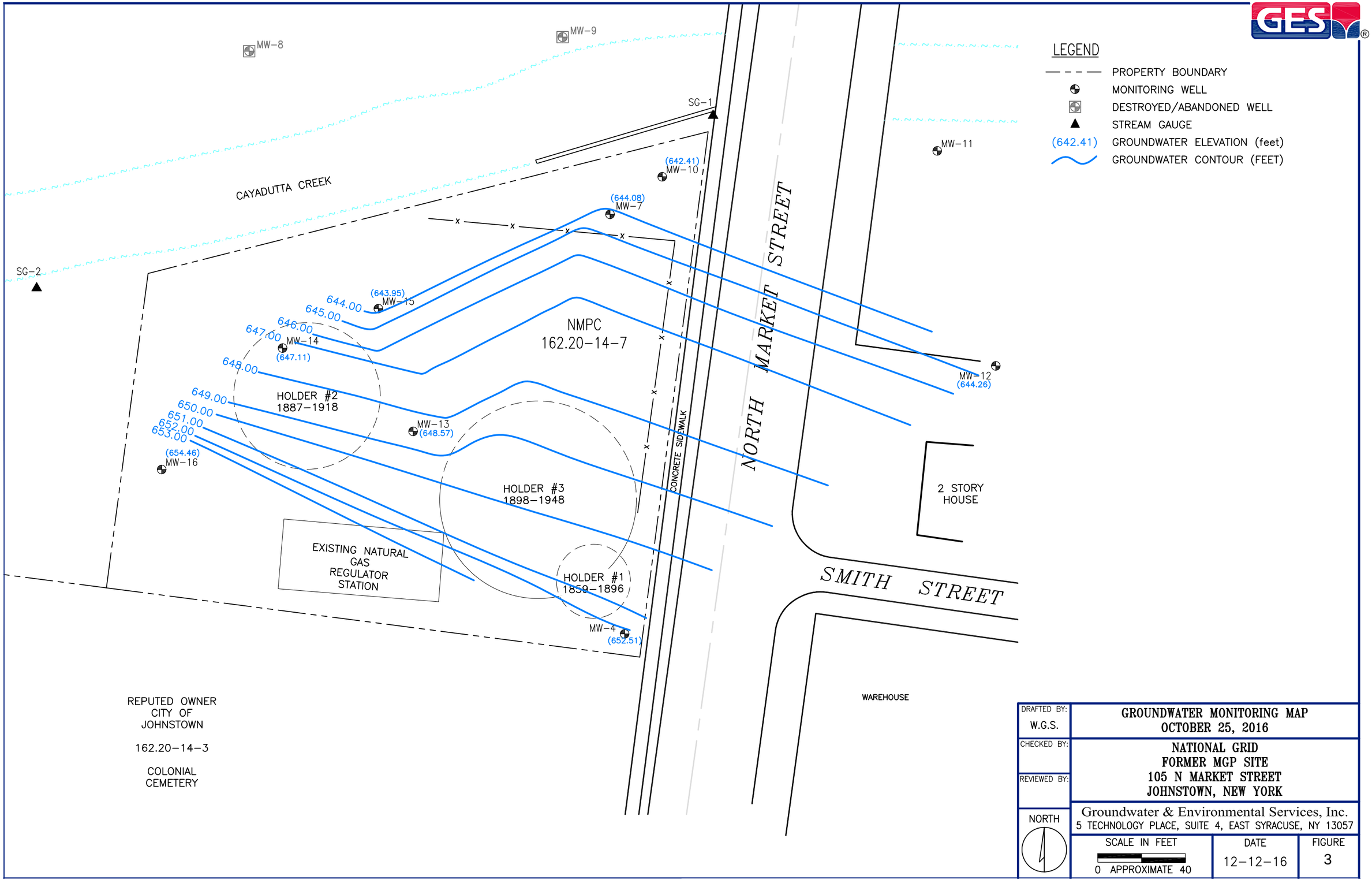
DRAFTED BY: W.G.S.	SITE LOCATION MAP
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 — 2000 / DATE: 12-12-16 / FIGURE: 1

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SLM.dwg, Layout1, WShea



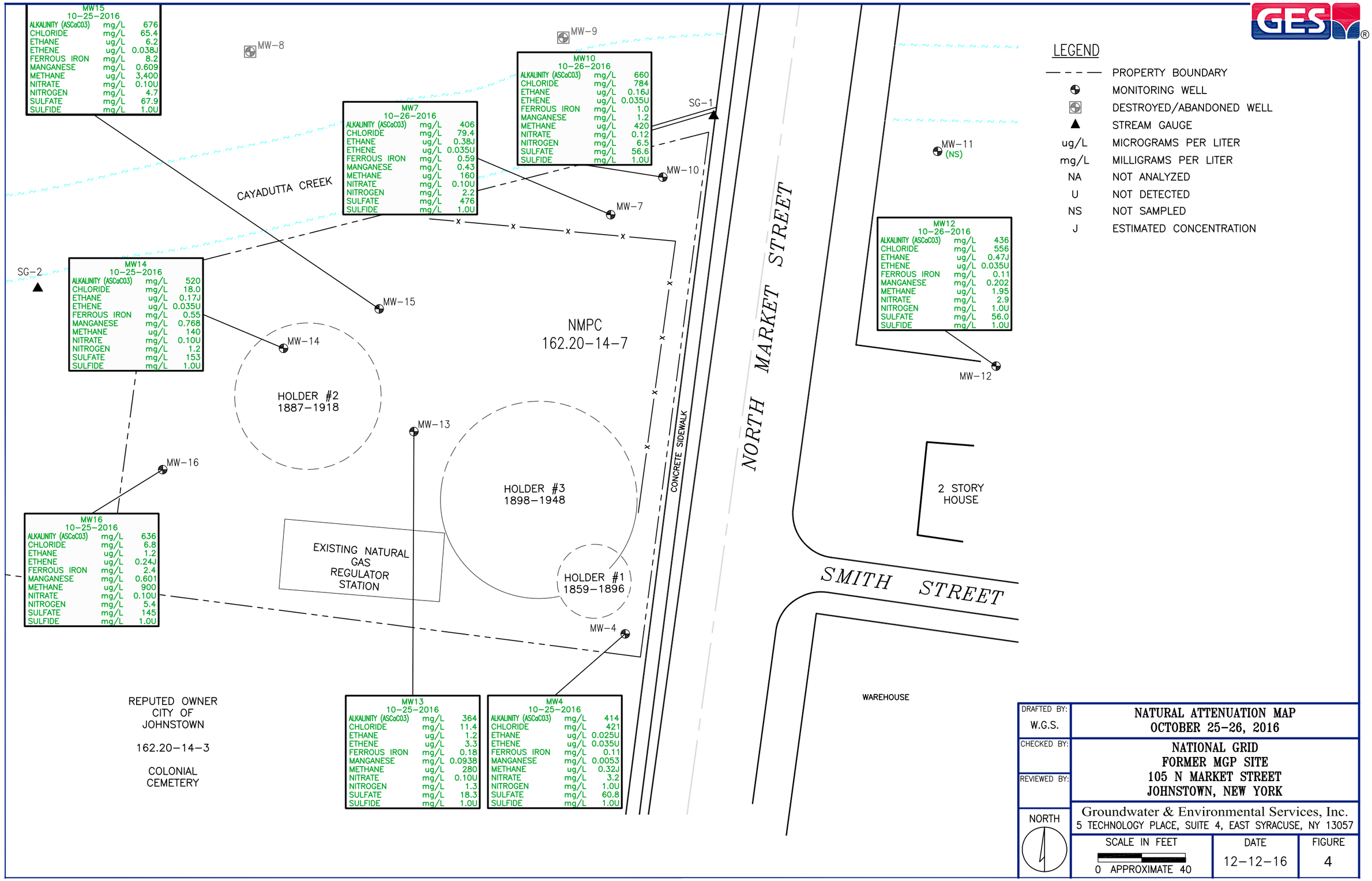
DRAFTED BY: W.G.S.	SITE MAP
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 12-12-16 / FIGURE: 2

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea

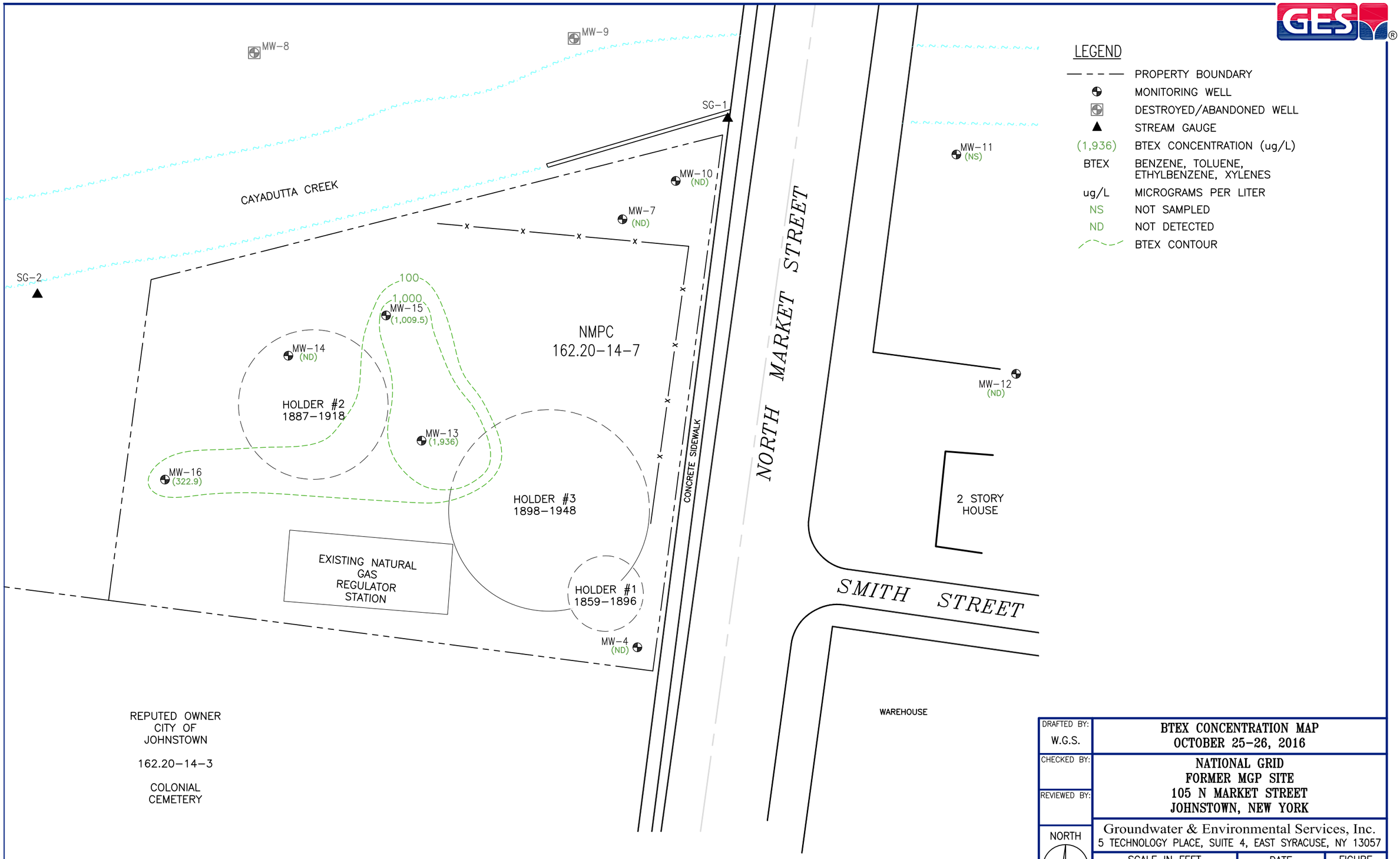


DRAFTED BY: W.G.S.	GROUNDWATER MONITORING MAP OCTOBER 25, 2016
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 12-12-16 / FIGURE: 3

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea

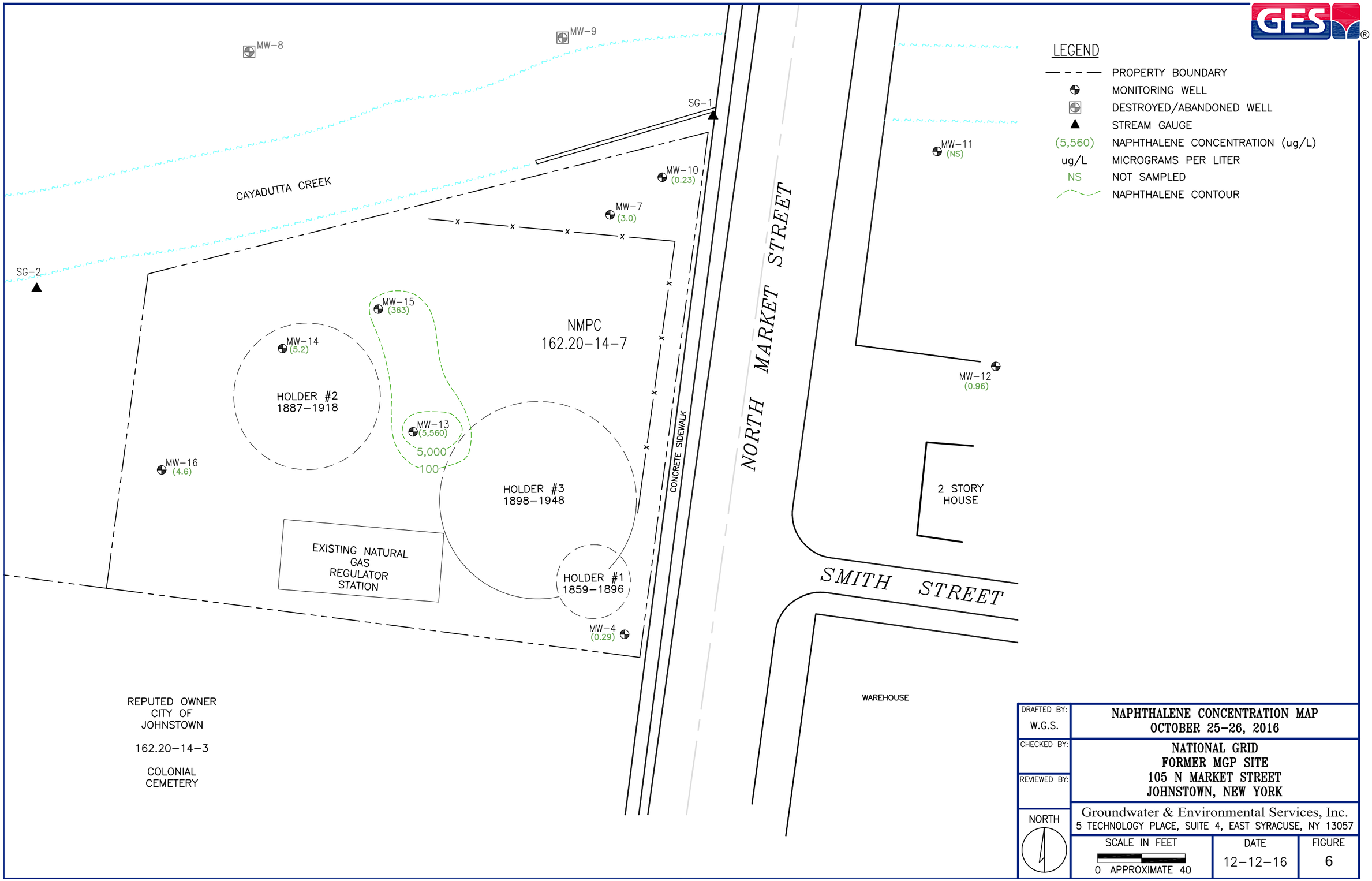


M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea



DRAFTED BY: W.G.S.	BTEX CONCENTRATION MAP OCTOBER 25-26, 2016
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057
NORTH	SCALE IN FEET: 0 APPROXIMATE 40 / DATE: 12-12-16 / FIGURE: 5

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea



DRAFTED BY: W.G.S.	NAPHTHALENE CONCENTRATION MAP OCTOBER 25-26, 2016	
CHECKED BY:	NATIONAL GRID FORMER MGP SITE 105 N MARKET STREET JOHNSTOWN, NEW YORK	
REVIEWED BY:	Groundwater & Environmental Services, Inc. 5 TECHNOLOGY PLACE, SUITE 4, EAST SYRACUSE, NY 13057	
NORTH	SCALE IN FEET 0 APPROXIMATE 40	DATE 12-12-16
		FIGURE 6

M:\Graphics\0600-Syracuse\Misc\National Grid\Johnstown\Johnstown SM.dwg, B-40, WShea

APPENDIX A

FIELD DATA

Date: 10/26/2016 Time:

Technician: Beaumont Weather:

Vegetation Cap				
Condition of Grass	GOOD	FAIR	POOR	COMMENTS:
Condition of Site Trees	GOOD	FAIR	POOR	COMMENTS:
Surface Erosion	NONE	MINOR	SIGNIFICANT	COMMENTS:
Has the site been maintained/mowed?	YES		NO	COMMENTS:

Sheet Pile Wall			
Has any construction occurred that may have impacted the sheet pile wall?	YES	NO	COMMENTS:

Site Wide			
Does the property continue to be used for commercial and/or industrial uses?	YES	NO	COMMENTS:
Does the use of groundwater for potable or process water continue to be restricted?	YES	NO	COMMENTS:
Are agricultural or vegetable gardens present on the property?	YES	NO	COMMENTS:
Do the Engineering Controls continue to perform as designed?	YES	NO	COMMENTS:
Do the Engineering Controls continue to be protective of human health and environment?	YES	NO	COMMENTS:
Are the requirements of the Site Management Plan being met?	YES	NO	COMMENTS:
Are the requirements of the Environmental Easement being met?	YES	NO	COMMENTS:
Since the last inspection has the groundwater been sampled in accordance with the SMP?	YES	NO	COMMENTS:
Since the last inspection have there been any changes to the remedial system?	YES	NO	COMMENTS:
Are there any needed changes?	YES	NO	COMMENTS:
Are the site records complete and up to date?	YES	NO	COMMENTS:

Miscellaneous				
Evidence of Trespassing	YES		NO	COMMENTS:
Litter	NONE	MINOR	SIGNIFICANT	COMMENTS:

General Comments:

Unable to access MW-11. Area is on adjacent property and was full of concrete/metal and wood debris.
4/6/2016-Knocked on door at Morrison residence no one home.
4/7/2016-Resident at Morrison residence said there loader is down and it would be awhile before the materials could be moved.
7/20/2016-Knocked on door at Morrison residence no one home.
10/26/2016- Labeled purge drum onsite by Gas regulator panels. Tree limb down along stone well- south side of property.

National Grid ***Fall Semi-Annual Event***
109 North Market Street, Former MGP Site ***October 25, 2016***
Johnstown, New York

Well ID	Sample?	Well Size?	DTW	DTP	DTB	Comments
RW-1	No	2"	12.88		21.50	
MW-4	Yes	2"	24.03		27.32	
MW-7	Yes	2"	15.00		22.10	
MW-10	Yes	2"	15.18		22.05	
MW-11	Yes	2"	n/a		22.90	inaccessable
MW-12	Yes	2"	15.82		22.24	
MW-13	Yes	2"	16.32		22.75	MS/DMS
MW-14	Yes	2"	16.80		23.55	Field Duplicate Sample
MW-15	Yes	2"	19.90		23.00	
MW-16	Yes	2"	11.11		19.45	
Gauge-1 (bridge)	No		18.40		19.76	

DTW *-depth to water*
DTP *-depth to product*
DTB *-depth to bottom*
All from top of casing

Unable to access MW-11. Area is on adjacent property and was full of concrete/metal and wood debris.
4/6/2016-Knocked on door at Morrison residence no one home.
4/7/2016-Resident at Morrison residence said there loader is down and it would be awhile before the materials could be moved.
CT Male was sampling wells at the adjacent property. Former gas station.

Pace Analytical
www.pacelabs.com

WO#:30200543

30200543

Page: 1 of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: GES - Syracuse	Report To: Robert N. Sickler (GES) rsickler@gesonline.com	Attention: Accounts Payable via email at: s-invoices@g[illegible]online.com
Address: 5 Technology Place, Suite 4		Company Name: Groundwater & Environmental Services, Inc.
East Syracuse, New York 13057		Address: 5 Technology Place, Suite 4, East Syracuse, NY 13057
Email To: rsickler@gesonline.com	Purchase Order No.:	Pace Quote Reference:
Phone: 800.220.3069 x4052 Fax: None	Project Name: National Grid - 109 North Market Street, Johnstown NY	Pace Project Manager: Rachel Christner
Requested Due Date/TAT: Standard	Project Number: 06-02882-120950-160-1106	Pace Profile #:

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER_____

SITE LOCATION: GA IL IN MI NC OH SC WI OTHER____

Filtered (Y/N)

Requested Analysis:

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
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED GRAB DATE	COLLECTED GRAB TIME	SAMPLE TEMP AT COLLECTION	#OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	NaOH and Zn Acetate	Benzylkonium Chloride	Methane/Ethane/Ethene/Carbon Dioxide by RSK-175	SVOC's PAH's by Method 8270	Total Kjeldahl Nitrogen by EPA Method 351.2 (Low Level)	Metals (Lead and Manganese) by EPA Method 6010	VOC's BTEX by Method 8260C	Ferrous Iron by SM 3500 Fe D. Chloride by SM 4500 Cl E	Total Alkalinity by EPA Method 310.2	Total Cyanide by EPA Method 9012B	Nitrate and Nitrite by EPA Method 353.2; Sulfide by EPA Method 376.1 and Sulfate by EPA Method 375.4	Pace Project Number Lab I.D.
1	MW-4-1016	WT	G			10/25/16	1400		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		001
2	~~MW-7-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
3	~~MW-10-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
4	~~MW-11-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
5	~~MW-12-1016~~ MW-13-1016	WT	G			10/25/16	1115		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		002
6	MW-14-1016	WT	G			10/25/16	1015		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		003
7	MW-15-1016	WT	G			10/25/16	1300		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		004
8	MW-16-1016	WT	G			10/25/16	900		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		005
9	MW-13-Matrix Spike- 1016	WT	G			10/25/16	1115		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		006
10	MW-13-Duplicate Matrix Spike - 1016	WT	G			10/25/16	1115		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		007
11	Field Duplicate - 1016	WT	G			10/25/16	—		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		008
12	Trip Blank	WT	Lab						3				3									3					

Additional Comments:

SAMPLES WILL ARRIVE IN # 3 COOLERS.

Please send reports to: rsickler@gesonline.com, Syracuselabs@gesonline.com, ges@equisonline.com

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

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
TRN GES	10/25/16	1440	[illegible] PACE	10/25/16	1440		Y/N	Y/N	Y/N
[illegible] PACE	10/25/16	1600	[illegible] PACE	10/25/16	1530		Y/N	Y/N	Y/N
[illegible] PACE	10/25/16	1600	[illegible]	10-26-16	1030	-1.4	Y/N	Y/N	Y/N
							Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: TIMOTHY BEAUMONT

SIGNATURE of SAMPLER: [signature] DATE Signed (MM / DD / YY): 10/20/16

Temp in °C | Received on Ice | Custody Sealed Cooler | Samples Intact

E-File,(ALLQ020rev.3 31Mar05), 13Jun2005

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request

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

WO# : 30200846

30200846

Page: 1 of 1

Section A
Required Client Information:

Company: GES - Syracuse	
Address: 5 Technology Place, Suite 4	
East Syracuse, New York 13057	
Email To: rsickler@gesonline.com	
Phone: 800.220.3069 x4052	Fax: None
Requested Due Date/TAT: Standard	

Section B
Required Project Information:

Report To: Robert N. Sickler (GES) rsickler@gesonline.com	
Purchase Order No.:	
Project Name: National Grid - 109 North Market Street, Johnstown NY	
Project Number: 06-02882-120950-160-1106	

Section C
Invoice Information:

Attention: Accounts Payable via email at: s-invoices@g online.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 #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER_____

SITE LOCATION: GA IL IN MI NC OH SC WI 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
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED GRAB DATE	COLLECTED GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	NaOH and Zn Acetate	Benzylkonium Chloride	Methanol/Ethanol/Ethene/Carbon Dioxide by RSK-175	SVOC's PAH's by Method 8270	Total Kjeldahl Nitrogen by EPA Method 351.2 (Low Level)	Metals (Lead and Mangense) by EPA Method 6010	VOC's BTEX by Method 8260C	Ferrous Iron by SM 3500 Fe D, Chloride by SM 4500 Cl E	Total Alkalinity by EPA Method 310.2	Total Cyanide by EPA Method 9012B	Nitrate and Nitrite by EPA Method 353.2, Sulfide by EPA Method 376.1, and Sulfate by EPA Method 375.4	Pace Project Number Lab I.D.
1	~~MW-4-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
2	MW-7-1016	WT	G			10/26/16	900		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		001
3	MW-10-1016	WT	G			10/26/16	1000		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		002
4	~~MW-11-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
5	MW-12-1016	WT	G			10/26/16	1100		12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		003
6	~~MW-14-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
7	~~MW-15-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
8	~~MW-16-1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
9	~~MW-13 Matrix Spike- 1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
10	~~MW-13 Duplicate Matrix Spike~~ - 1016	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
11	~~Field Duplicate - 1016~~	WT	G						12	3	1	1	3	1		1	2	2	2	1	1	3	1	1	1		
12	~~Trip Blank~~	WT	Lab						3				3									3					

Filtered (Y/N)

Requested Analysis:

Additional Comments:

SAMPLES WILL ARRIVE IN # 1 COOLERS.

Please send reports to: rsickler@gesonline.com,
Syracuselabs@gesonline.com, ges@equisonline.com

SPECIFIC EDD NAME:

NGJohnstown-labnumber.28351.EQEDD.zip

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[illegible]	10/26/16	15:30	[illegible] (PACE)	10/26/16	15:30
[illegible] (PACE)	10/27/16	10:50	[illegible] Pace	10/27/16	10:50

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
3.0 (IR)	Y/N	Y/N	Y/N
Scur	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Tim Besemer

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM / DD / YY): 10/26/16

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:		Date:	10/25/16
Job Number:	06-02882	Weather:	Sunny 37°
Well Id.	MW-4	Time In:	1330 Time Out: 1420

Well Information

		TOC	Other
Depth to Water:	(feet)	24.03	
Depth to Bottom:	(feet)	27.32	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	3.29	
Volume of Water in Well:	(gal)	1.57	
Three Well Volumes:	(gal)	1.57	

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

Purging Information

Purging Method:		Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒	
Tubing/Bailer Material:		Teflon ☐	Stainless St. ☐	Polyethylene ☒	other
Sampling Method:		Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒	
Average Pumping Rate:	(ml/min)	≈ 150			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	≈ 1.5			

Did well go dry? Yes ☐ No ☐

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

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

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1330	Inf pump	8.85	7.82	-102	1.61	43.3	9.12	1.04
1335		9.81	7.33	-41	2.17	37.2	4.80	1.39
1340		9.99	7.31	-37	2.17	24.7	4.67	1.39
1345		10.31	7.30	-33	2.18	23.6	4.59	1.40
1350		10.29	7.29	-29	2.19	21.7	4.49	1.41
1355		10.32	7.29	-28	2.19	22.3	4.41	1.41
1400	—	10.35	7.30	-25	2.20	22.6	4.35	1.42

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		
EPA SW-846 Method 8260	VOC's BTEX		
EPA Method 6010	LEAD		
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE		
EPA Method 310.2	TOTAL ALKALINITY		
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		
EPA Method 376.1	SULFIDE		
SM_3500_FE_D	FERROUS IRON		
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE		
EPA Method 375.4	SULFATE		
EPA Method 353.2	NITRATE		
SM_4500_Cl_E	CHLORIDE		

2 - 1L glass	Yes ☒	No ☐
3 - 40 ml vials HCl	Yes ☒	No ☐
2 - 250 ml plastic HNO3	Yes ☒	No ☐
1 - 250 ml plastic NaOH	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic H2SO4	Yes ☒	No ☐
1 - 250 ml plastic Zn Acitate and NaOH	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
2 - 40 ml vials BAK	Yes ☒	No ☐
1- 250 ml plastic	Yes ☒	No ☐
1- 250 ml platics H2SO4	Yes ☒	No ☐
1- 250ml plastic	Yes ☒	No ☐

Shipped: Drop-off Albany Service Center ☒

Sample ID: MW-4-1016
Sample Time: 1400

Duplicate? Yes ☐ No ☒
MS/DMS? Yes ☐ No ☒

Laboratory: Pace Analytical Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 06-02882
Well Id. **MW-7**

Date: 10/26/16
Weather: Sunny 34°
Time In: 830 Time Out: 915

Well Information

		TOC	Other
Depth to Water:	(feet)	15.00	
Depth to Bottom:	(feet)	22.10	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	7.10	
Volume of Water in Well:	(gal)	1.14	
Three Well Volumes:	(gal)	3.42	

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

Purging Information

Purging Method:		Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒
Tubing/Bailer Material:		Teflon ☐	Stainless St. ☐	Polyethylene ☒ other ☐
Sampling Method:		Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒
Average Pumping Rate:	(ml/min)	~ 250		
Duration of Pumping:	(min)	30		
Total Volume Removed:	(gal)	~ 2.0		

Did well go dry? Yes ☐ No ☒

YSI 6920 or Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

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

Time	DTW (feet)	Temp (°C)	pH (S.U)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
830	15.65	16.85	7.57	-118	1.46	106	3.87	.934
835	15.70	15.79	7.46	-168	1.48	89.2	2.34	.948
840	15.81	14.62	7.41	-174	1.50	67.3	1.09	.961
845	15.83	14.58	7.40	-174	1.51	53.2	1.01	.965
850	15.88	14.52	7.41	-173	1.52	41.6	.94	.969
855	15.92	14.97	7.41	-171	1.54	39.9	.89	.972
900	15.98	14.45	7.41	-171	1.54	40.0	.81	.975

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	☐
EPA SW-846 Method 8260	VOC's BTEX	☐
EPA Method 6010	LEAD	☐
	MANGANESE	☐
EPA Method 9012A	TOTAL CYANIDE	☐
EPA Method 310.2	TOTAL ALKALINITY	☐
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	☐
EPA Method 376.1	SULFIDE	☐
SM_3500_FE_D	FERROUS IRON	☐
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	☐
EPA Method 375.4	SULFATE	☐
EPA Method 353.2	NITRATE	☐
SM_4500_Cl_E	CHLORIDE	☐

2 - 1L glass	Yes ☒	No ☐
3 - 40 ml vials HCl	Yes ☒	No ☐
2 - 250 ml plastic HNO3	Yes ☒	No ☐
1 - 250 ml plastic NaOH	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic H2SO4	Yes ☒	No ☐
1 - 250 ml plastic Zn Acitate and NaOH	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
2 - 40 ml vials BAK	Yes ☒	No ☐
1- 250 ml plastic	Yes ☒	No ☐
1- 250 ml platics H2SO4	Yes ☒	No ☐
1- 250ml plastic	Yes ☒	No ☐

Shipped: Drop-off Albany Service Center ☒

Sample ID: **MW-7-1016**
Sample Time: 900

Duplicate? Yes ☐ No ☒
MS/DMS? Yes ☐ No ☒

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:	Date: 10/20/16
Job Number: 06-02882	Weather: Sunny 38°
Well Id. MW-10	Time In: 930 Time Out: 1020

Well Information

		TOC	Other
Depth to Water:	(feet)	15.18	
Depth to Bottom:	(feet)	22.05	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	6.87	
Volume of Water in Well:	(gal)	1.10	
Three Well Volumes:	(gal)	3.30	

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

Purging Information

Purging Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Tubing/Bailer Material:	Teflon ☐	Stainless St. ☐	Polyethylene ☒	other ☐	
Sampling Method:	Bailer ☐	Peristaltic ☐	Well Wizard Dedicated Pump ☒		
Average Pumping Rate:	(ml/min)	~250			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	~2.0			

Did well go dry? Yes ☐ No ☒

Ysi 6920 or Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.7	1.5
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
930	15.75	13.35	7.21	-161	3.76	75.3	2.22	2.41
935	16.00	13.07	7.32	-165	3.72	70.3	1.76	2.38
940	16.10	13.00	7.32	-163	3.64	61.2	1.67	2.34
945	16.27	12.97	7.31	-161	3.63	47.6	1.62	2.32
950	16.35	12.91	7.31	-159	3.63	32.1	1.59	2.30
955	16.43	12.87	7.30	-161	3.63	21.6	1.50	2.33
1000	16.50	12.85	7.29	-162	3.62	13.2	1.47	2.31

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	☐
EPA SW-846 Method 8260	VOC's BTEX	☐
EPA Method 6010	LEAD	☐
	MANGANESE	☐
EPA Method 9012A	TOTAL CYANIDE	☐
EPA Method 310.2	TOTAL ALKALINITY	☐
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	☐
EPA Method 376.1	SULFIDE	☐
SM_3500_FE_D	FERROUS IRON	☐
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	☐
EPA Method 375.4	SULFATE	☐
EPA Method 353.2	NITRATE	☐
SM_4500_Cl_E	CHLORIDE	☐

2 - 1L glass	Yes ☒	No ☐
3 - 40 ml vials HCl	Yes ☒	No ☐
2 - 250 ml plastic HNO3	Yes ☒	No ☐
1 - 250 ml plastic NaOH	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic H2SO4	Yes ☒	No ☐
1 - 250 ml plastic Zn Acitate and NaOH	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
2 - 40 ml vials BAK	Yes ☒	No ☐
1- 250 ml plastic	Yes ☒	No ☐
1- 250 ml platics H2SO4	Yes ☒	No ☐
1- 250ml plastic	Yes ☒	No ☐

Shipped: Drop-off Albany Service Center ☒

Sample ID: MW-10-1016
Sample Time: 1000

Duplicate? Yes ☐ No ☒
MS/DMS? Yes ☐ No ☒

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:		Date:	10/26/16
Job Number:	06-02882	Weather:	Sunny 28
Well Id.	MW-12	Time In:	1030 Time Out: 1130

Well Information

		TOC	Other
Depth to Water:	(feet)	15.82	
Depth to Bottom:	(feet)	22.24	
Depth to Product:	(feet)	-	
Length of Water Column:	(feet)	6.42	
Volume of Water in Well:	(gal)	1.03	
Three Well Volumes:	(gal)	3.09	

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 [ ]	Well Wizard Dedicated Pump [X]		
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]	
Sampling Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		

Average Pumping Rate:	(ml/min)	~250
Duration of Pumping:	(min)	30
Total Volume Removed:	(gal)	~2.0

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

YSI 6920 or Horiba U-52 Water Quality Meter Us 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 (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1030	16.00	10.86	7.39	-15	2.38	176	2.19	1.52
1035	16.02	10.84	7.41	-3	2.64	92.1	.79	1.69
1040	16.02	10.92	7.36	-2	2.65	73.2	.75	1.68
1045	16.02	10.91	7.40	4	2.63	52.3	.64	1.68
1050	16.02	10.90	7.39	9	2.63	36.1	.64	1.68
1055	16.02	10.84	7.41	13	2.62	23.2	.61	1.68
1150	16.02	10.92	7.40	17	2.65	12.6	.58	1.68

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		2 - 1L glass	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX		3 - 40 ml vials HCl	Yes [X] No [ ]
EPA Method 6010	LEAD	[ ]	2 - 250 ml plastic HNO3	Yes [X] No [ ]
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE		1 - 250 ml plastic NaOH	Yes [X] No [ ]
EPA Method 310.2	TOTAL ALKALINITY		1 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		1 - 250 ml plastic H2SO4	Yes [X] No [ ]
EPA Method 376.1	SULFIDE		1 - 250 ml plastic Zn Acitate and NaOH	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON		1 - 250 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE		2 - 40 ml vials BAK	Yes [X] No [ ]
EPA Method 375.4	SULFATE	[ ]	1- 250 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE		1- 250 ml platics H2SO4	Yes [X] No [ ]
SM_4500_Cl_E	CHLORIDE		1- 250ml plastic	Yes [X] No [ ]

Shipped: Drop-off Albany Service Center [X]

Sample ID: MW-12-1016
Sample Time: 1100

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

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:		Date:	10/25/16
Job Number:	06-02882	Weather:	P Cloudy 37°
Well Id.	MW-13	Time In:	1045 Time Out: 1200

Well Information

		TOC	Other
Depth to Water:	(feet)	16.37	
Depth to Bottom:	(feet)	22.75	
Depth to Product:	(feet)	-	
Length of Water Column:	(feet)	6.43	
Volume of Water in Well:	(gal)	1.02	
Three Well Volumes:	(gal)	3.06	

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 [ ]	Well Wizard Dedicated Pump [X]		
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]	
Sampling Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		

Average Pumping Rate:	(ml/min)	
Duration of Pumping:	(min)	
Total Volume Removed:	(gal)	

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

YSI 6920 or 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 (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1045	16.78	11.05	8.38	-166	.650	99.2	.75	.411
1050	16.83	11.59	8.37	-209	.577	46.0	.49	.368
1055	17.00	11.60	8.55	-229	.590	17.9	.46	.371
1100	17.14	11.61	8.61	-242	.600	12.0	.41	.387
1105	17.20	11.65	8.62	-245	.609	8.6	.40	.394
1110	17.23	11.67	8.63	-247	.615	6.1	.37	.399
1115	17.27	11.64	8.63	-251	.620	5.6	.35	.407

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 1L glass	Yes [X]	No [ ]	
3 - 40 ml vials HCl	Yes [X]	No [ ]	
2 - 250 ml plastic HNO3	Yes [X]	No [ ]	
1 - 250 ml plastic NaOH	Yes [X]	No [ ]	
1 - 125 ml plastic	Yes [X]	No [ ]	
1 - 250 ml plastic H2SO4	Yes [X]	No [ ]	
1 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]	
1 - 250 ml plastic	Yes [X]	No [ ]	
2 - 40 ml vials BAK	Yes [X]	No [ ]	
1- 250 ml plastic	Yes [X]	No [ ]	
1- 250 ml platics H2SO4	Yes [X]	No [ ]	
1- 250ml plastic	Yes [X]	No [ ]	

Shipped: Drop-off Albany Service Center [X]

"Matrix Spike-1016" "Duplicate Matrix Spike-1016"

Sample ID: MW-13-1016 Duplicate? Yes [ ] No [X]
Sample Time: 1115 MS/DMS? Yes [X] No [ ]

Laboratory: Pace Analytical Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:
Job Number: 06-02882
Well Id. **MW-14**

Date: 10/28/16
Weather: P. Cloudy 38°
Time In: 930 Time Out: 1040

Well Information

		TOC	Other
Depth to Water:	(feet)	1680	
Depth to Bottom:	(feet)	23.55	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	6.75	
Volume of Water in Well:	(gal)	1.08	
Three Well Volumes:	(gal)	3.24	

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 [ ]	Well Wizard Dedicated Pump [X]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]
Sampling Method:		Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Average Pumping Rate:	(ml/min)	~400			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	~6.0			

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

YSI 6920 or 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

Purge 1½ gal
Note orange well water prior to hook up

Time	DTW (feet)	Temp (°C)	pH (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
945	17.55	10.41	7.58	-143	1.40	236	.84	.898
950	17.58	10.63	7.48	-148	1.41	91.3	.66	.903
955	17.57	10.72	7.47	-152	1.42	60.2	.60	.910
1000	17.57	10.89	7.45	-156	1.43	41.3	.54	.913
1005	17.57	10.91	7.44	-162	1.45	26.2	.50	.924
1010	17.58	10.92	7.45	-165	1.45	15.7	.51	.981
1015	17.59	10.95	7.46	-166	1.45	9.6	.49	.937

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 1L glass	Yes [X]	No [ ]
3 - 40 ml vials HCl	Yes [X]	No [ ]
2 - 250 ml plastic HNO3	Yes [X]	No [ ]
1 - 250 ml plastic NaOH	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic H2SO4	Yes [X]	No [ ]
1 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
2 - 40 ml vials BAK	Yes [X]	No [ ]
1- 250 ml plastic	Yes [X]	No [ ]
1- 250 ml platics H2SO4	Yes [X]	No [ ]
1- 250ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [X]

"Field Duplicate-1016"

Sample ID: **MW-14-1016** Duplicate? Yes [X] No [ ]
Sample Time: 1015 MS/DMS? Yes [ ] No [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:		Date:	10/25/16
Job Number:	06-02882	Weather:	P Cloudy 38°
Well Id.	MW-15	Time In:	1225 Time Out: 1315

Well Information

		TOC	Other
Depth to Water:	(feet)	17.90	
Depth to Bottom:	(feet)	23.00	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	5.10	
Volume of Water in Well:	(gal)	.81	
Three Well Volumes:	(gal)	2.48	

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 [ ]	Well Wizard Dedicated Pump [X]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other [ ]
Sampling Method:		Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]	
Average Pumping Rate:	(ml/min)	~200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	~2.0			

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

YSI 6920 or 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 (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1230	17.95	11.40	7.57	-184	1.48	102	1.32	.952
1235	Start pump	11.60	7.42	-200	1.47	62.1	.52	.943
1240		11.73	7.40	-206	1.47	21.7	.40	.940
1245		11.72	7.38	-210	1.49	12.3	.37	.959
1250		11.70	7.40	-213	1.52	8.8	.35	.977
1255		11.71	7.40	-215	1.51	6.1	.31	.983
1300	—	11.72	7.41	-217	1.53	5.3	.27	.990

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 6010	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
EPA Method 310.2	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
EPA Method 376.1	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	
EPA Method 375.4	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 1L glass	Yes [X]	No [ ]	
3 - 40 ml vials HCl	Yes [X]	No [ ]	
2 - 250 ml plastic HNO3	Yes [X]	No [ ]	
1 - 250 ml plastic NaOH	Yes [X]	No [ ]	
1 - 125 ml plastic	Yes [X]	No [ ]	
1 - 250 ml plastic H2SO4	Yes [X]	No [ ]	
1 - 250 ml plastic Zn Acitate and NaOH	Yes [X]	No [ ]	
1 - 250 ml plastic	Yes [X]	No [ ]	
2 - 40 ml vials BAK	Yes [X]	No [ ]	
1- 250 ml plastic	Yes [X]	No [ ]	
1- 250 ml platics H2SO4	Yes [X]	No [ ]	
1- 250ml plastic	Yes [X]	No [ ]	

Shipped: Drop-off Albany Service Center [X]

Sample ID: MW-15-1016
Sample Time: 1300

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

Laboratory: Pace Analytical Greensburg, Pennsylvania

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel:	Date: 10/25/16
Job Numbe 06-02882	Weather: Sunny 37°
Well Id. **MW-16**	Time In: 930 Time Out: 925

Well Information

		TOC	Other
Depth to Water:	(feet)	11.11	
Depth to Bottom:	(feet)	19.45	
Depth to Product:	(feet)	-	
Length of Water Column:	(feet)	8.34	
Volume of Water in Well:	(gal)	1.31	
Three Well Volumes:	(gal)	3.95	

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 [ ]	Well Wizard Dedicated Pump [X]		
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	other	
Sampling Method:	Bailer [ ]	Peristaltic [ ]	Well Wizard Dedicated Pump [X]		
Average Pumping Rate: (ml/min)	1200				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	~2.0	Did well go dry?	Yes [ ]	No [Y]	

YSI 6920 or Horiba U-52 Water Quality Mel 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 (S.U.)	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
830	12.00	11.42	7.52	-199	1.28	4.3	1.96	.816
835	12.10	11.48	7.55	-204	1.27	4.4	1.21	.813
840	12.22	11.37	7.58	-212	1.28	1.7	1.00	.818
845	12.25	11.29	7.59	-220	1.28	.9	.86	.821
850	12.26	11.25	7.60	-221	1.29	1.1	.79	.829
855	12.30	11.21	7.61	-224	1.29	.7	.67	.836
900	12.32	11.20	7.61	-227	1.30	.9	.62	.842

Sampling Information

EPA SW-846 Method 8270	SVOC PAH's	2 - 1L glass ✓	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials HCl ✓	Yes [X] No [ ]
EPA Method 6010	LEAD	1 - 250 ml plastic HNO3 ✓	Yes [X] No [ ]
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic NaOH ✓	Yes [X] No [ ]
EPA Method 310.2	TOTAL ALKALINITY	~~1 - 125 ml plastic~~	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	500 mL 1 - ~~250~~ ml plastic H2SO4 ✓	Yes [X] No [ ]
EPA Method 376.1	SULFIDE	1 - 250 ml plastic Zn Acitate and NaOH	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON	~~1 - 250 ml plastic~~	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE/ CARBON DIOXIDE	2 - 40 ml vials BAK ✓	Yes [X] No [ ]
EPA Method 375.4	SULFATE	~~1 - 250 ml plastic~~	Yes [X] No [ ]
EPA Method 353.2	NITRATE	1- 250 ml platics H2SO4	Yes [X] No [ ]
SM_4500_Cl_E	CHLORIDE	~~1 - 250ml plastic~~	Yes [X] No [ ]

1 liter

Shipped: Drop-off Albany Service Center [X]

Sample ID: **MW-16-1016** Duplicate? Yes [ ] No [X]
Sample Tim 900 MS/DMS? Yes [ ] No [X]

Laboratory: Pace Analytical
Greensburg, Pennsylvania

APPENDIX B

DATA USABILITY SUMMARY REPORT

Groundwater
& Environmental Services, Inc.

1750 Kraft Drive, Suite 2700 • Blacksburg, Virginia 24060 • (866) 756 0788

December 13, 2016

Mark Boorady
Groundwater & Environmental Services
1599 Route 34, Suite 1
Wall Township, NJ 07727

RE: Data Usability Summary Report for National Grid: Johnstown, NY Site Data Package
Pace Analytical Job No. 30200543

Groundwater & Environmental Services, Inc. (GES) reviewed one data package (Laboratory Project Number 30200543) from Pace Analytical Services, Inc., for the analysis of groundwater samples collected on October 25 - 26, 2016 from monitoring wells located at the National Grid: Johnstown, NY Site. Eight aqueous samples and a field duplicate were analyzed for dissolved gases, PAHs, Nitrogen, Metals, Alkalinity, Chloride, Ferrous Iron, Cyanide, Sulfide and Sulfate. Methodologies utilized were those of EPA RSK-175, EPA 351.2, EPA 6010, SM4500, EPA 310.2, EPA 353.2, EPA 376.1, EPA 375.4, EPA 200.7, and the USEPA SW846 methods 8260B/8270C/9012, 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.

Table 1. Laboratory – Field Cross Reference

Lab ID	Sample ID	Date Collected	Date Received
30200543001	MW-4-2016	10/25/16 14:00	10/26/16 10:30
30200543002	MW-13-2016	10/25/16 11:15	10/26/16 10:30
30200543003	MW-14-2016	10/25/16 10:15	10/26/16 10:30
30200543004	MW-15-2016	10/25/16 13:00	10/26/16 10:30
30200543005	MW-16-2016	10/25/16 09:00	10/26/16 10:30
30200543006	MW-13-Matrix Spike-1016	10/25/16 11:15	10/26/16 10:30
30200543007	MW-13-Duplicate Matrix Spike-1	10/25/16 11:15	10/26/16 10:30
30200543008	Field Duplicate-1016	10/25/16 00:01	10/26/16 10:30
30200846001	MW-7-1016	10/26/16 09:00	10/28/16 10:50
30200846002	MW-10-1016	10/26/16 10:00	10/28/16 10:50
30200846003	MW-12-1016	10/26/16 11:00	10/28/16 10:50
30200663001	MW-4-1016	10/25/16 14:00	10/27/16 09:55
30200663002	MW-13-1016	10/25/16 11:15	10/27/16 09:55
30200663003	MW-14-1016	10/25/16 10:15	10/27/16 09:55
30200663004	MW-15-1016	10/25/16 13:00	10/27/16 09:55
30200663005	MW-16-1016	10/25/16 09:00	10/27/16 09:55
30200663006	MW-13Matrix Spike-1016	10/25/16 11:15	10/27/16 09:55
30200663007	MW-13-DuplicaMatrix Spike-1016	10/25/16 11:15	10/27/16 09:55
30200663008	Field Duplicate-1016	10/25/16 00:01	10/27/16 09:55
30200663009	Trip Blank	10/25/16 00:01	10/27/16 09:55

Table 2. Validation Qualifiers

Sample ID	Qualifier	Analyte	Reason for qualification
MW-13	J	All PAH analytes	RPD out of specification for MS/MSD Recoveries out of specification
MW-14	UJ-	Acenaphthylene, Benzo(k)fluoranthene, Pyrene	RPD out of specification for original/field duplicate
All Samples	J	Nitrogen as Nitrate/Nitrite	Sample was not preserved in the field. Laboratory preserved the sample.
All Samples	J	Fluoranthene	Analyte recovered outside QC limits in LCS
MW-13	J-	Alkalinity	MS/MSD recoveries low.
All Samples	J	Ferrous Iron	Samples were extracted outside laboratory established hold time.
MW-13	J-	Total Kjeldahl Nitrogen	MS/MSD recoveries low.
MW-13	J+	Chloride	MS/MSD recoveries high
MW-7	J-	Chloride	MS/MSD recoveries low
MW-13	J+	Cyanide	MS/MSD recoveries high
MW-13	J+	Sulfate	MS/MSD recoveries high
MW-4, MW-12	R	Methane	Positive blank detection

In summary, sample results were usable as reported, with exceptions due to poor precision or MS/MSD recoveries. Low level methane detections in two sample locations are unusable due to concurrent positive method blank methane concentrations. Qualifications are detailed in Table 2.

The laboratory case narratives and sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report. Also included with this narrative are sample results forms with the data qualifier applied in red.

Dissolved Gases by USEPA RSK-175/ NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. Surrogate and internal standard recoveries were within required limits. Calibrations standards show acceptable responses within analytical protocol and validation action limits. The method blank reported a low positive detection of methane above the reporting limit. Most of the samples reported methane at concentrations where the positive blank had no impact. However, for samples MW-4 and MW-12, the methane was <5X the concentration found in the blank and therefore the reported concentrations cannot be ascribed to location conditions. In these two samples the concentrations are qualified as unusable and the data is rejected “R”.

BTEX and TCL Volatiles by EPA 8260C/NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. Surrogate and internal standard recoveries were within required limits. Calibrations standards show acceptable responses within analytical protocol and validation action limits. The blind field duplicate correlations of MW-14-2016 fall within guidance limits. The MS/MSD showed out of compliance recoveries, however, the initial concentration was more than 4X the spike, therefore the recoveries do not indicate an issue with the method efficiency. Surrogate recovery was within bounds, and LCS recoveries were used to determine method efficacy.

PAHs by EPA8270D/NYSDEC ASP

Holding times were met with the exception of the field duplicate. RPD values between the original and duplicate sample showed that variance was within specification, and data was not impacted due to hold time exceedance. Instrumental tune fragmentations were within acceptance ranges. Surrogate recoveries were within analytical and validation guidelines. Blanks show no contamination. Calibration standards, both initial and continuing, show acceptable responses within analytical method protocols and validation guidelines. The blind field duplicate correlations of MW-14-2016 fall within guidance limits with the exceptions noted in Table 2.

Fluoranthene recovery was slightly low in one LCS sample (64%, minimum required 65%). The analyte recovered within specification for other LCS, and no qualifications were necessary.

SDG 30200543 reports an MS/MSD utilizing MW-13 where all PAH analytes had extremely low results and recoveries as well as extreme out-of-specification RPD values. As MS/MSD recoveries are used to determine sample matrix issues which systematically impact the data for the sample used, the recoveries and variability seems to indicate that MW-13 has matrix issues which impact the ability of the method to quantify the PAHs.

However, samples MW-13-Matrix Spike-1016 and MW-13-Duplicate Matrix Spike-1016 are field replicates of sample MW-13. The PAH concentrations reported in these samples confirm the values reported in the original MW-13 sample, and not those of the MS/MSD. Because of the consistency of the triplicate results, the MS/MSD results must be considered anomalous. In this case, the MS/MSD recoveries indicate an issue with the laboratory preparation and/or quantification of the QC samples. Because there is a laboratory issue, the PAH analytes for MW-13 are qualified as estimated, but still usable. Qualifications are detailed in Table 2.

MW-13-1016, MW-15-1016, and MW-16-1016 were processed at dilution due to concentrations of target analytes. Reporting limits for those samples are therefore elevated.

Lead and Manganese by EPA 6010/NYDESC ASP

The matrix spikes of MW-13-2016 show acceptable accuracy and precision. The blind field duplicate correlations of MW-14-2016 fall within guidance limits. Instrument performance is compliant, and blanks show no contamination above the reporting limit.

The ICP Serial Dilution evaluations were within specification for samples with detections of the target elements above the action limit.

Wet Chemistry Tests and 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 following exceptions in the MS/MSDs:

Alkalinity: MW-13, recovery MS/MSD high; data is estimated with a possible low bias
Chloride: MW-13, recovery MS high; data is estimated with a possible high bias
Chloride: MW-7, recovery MS/MSD low; data is estimated with a possible low bias
Cyanide: MW-13, recovery MS/MSD high; data is estimated with a possible low bias
Sulfate: MW-13, recovery MS/MSD high; data is estimated with a possible low bias

Calibration standard responses were compliant. Blanks show no detections above the reporting limits.

The matrix spikes and/or laboratory duplicates of total cyanide show acceptable recoveries and/or correlations.

Ferrous Iron by S<3500-FeD-00/ NYSDEC ASP

Review was conducted for method compliance, holding times, transcription, calculations, standard and blank acceptability, and accuracy and precision. All were found acceptable for the validated samples with the exception of holding time. All the samples were analyzed outside of the laboratory set holding time. However, there is no EPA set holding time for Ferrous Iron, with a with the recommendation that the analysis be performed as soon as possible, preferably within 72 hours of collection. As the data was analyzed outside of laboratory hold time, but within the EPA suggested 72 hours, the data is qualified as estimated, but usable.

Calibration standard responses were compliant. Blanks show no detections above the reporting limits.

Total Kjeldahl Nitrogen, Nitrogen as Nitrate/Nitrite by EPA 351.2 & 353.2/NYDESC 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. Calibration standard responses were compliant. Blanks show no detections above the reporting limits.

Nitrogen/ Nitrate Nitrite was pulled from unpreserved bottles in the laboratory due to insufficient preservation in the field. The Nitrogen/ Nitrate Nitrite is therefore qualified as estimated in all samples.

The Total Kjeldahl Nitrogen MS/MSD based on MW-13 recovered low, so the data is qualified estimated with a possible low bias.

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.
Project Chemist
1750 Kraft Drive, Suite 2700
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-Johnstown, NY
Pace Project No.: 30200543

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30200543001	**MW-4-2016**	Water	10/25/16 14:00	10/26/16 10:30
30200543002	**MW-13-2016**	Water	10/25/16 11:15	10/26/16 10:30
30200543003	**MW-14-2016**	Water	10/25/16 10:15	10/26/16 10:30
30200543004	**MW-15-2016**	Water	10/25/16 13:00	10/26/16 10:30
30200543005	**MW-16-2016**	Water	10/25/16 09:00	10/26/16 10:30
30200543006	**MW-13-Matrix Spike-1016**	Water	10/25/16 11:15	10/26/16 10:30
30200543007	**MW-13-Duplicate Matrix Spike-1**	Water	10/25/16 11:15	10/26/16 10:30
30200543008	**Field Duplicate-1016**	Water	10/25/16 00:01	10/26/16 10:30
30200846001	**MW-7-1016**	Water	10/26/16 09:00	10/28/16 10:50
30200846002	**MW-10-1016**	Water	10/26/16 10:00	10/28/16 10:50
30200846003	**MW-12-1016**	Water	10/26/16 11:00	10/28/16 10:50
30200663001	**MW-4-1016**	Water	10/25/16 14:00	10/27/16 09:55
30200663002	**MW-13-1016**	Water	10/25/16 11:15	10/27/16 09:55
30200663003	**MW-14-1016**	Water	10/25/16 10:15	10/27/16 09:55
30200663004	**MW-15-1016**	Water	10/25/16 13:00	10/27/16 09:55
30200663005	**MW-16-1016**	Water	10/25/16 09:00	10/27/16 09:55
30200663006	**MW-13Matrix Spike-1016**	Water	10/25/16 11:15	10/27/16 09:55
30200663007	**MW-13-DuplicaMatrix Spike-1016**	Water	10/25/16 11:15	10/27/16 09:55
30200663008	**Field Duplicate-1016**	Water	10/25/16 00:01	10/27/16 09:55
30200663009	**Trip Blank**	Water	10/25/16 00:01	10/27/16 09:55

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Date: November 17, 2016

MW-13-1016 (Lab ID: 30200663002)

- 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

MW-15-1016 (Lab ID: 30200663004)

- 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

MW-16-1016 (Lab ID: 30200663005)

- 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

MW-13Matrix Spike-1016 (Lab ID: 30200663006)

- 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

MW-13-DuplicaMatrix Spike-1016 (Lab ID: 30200663007)

- 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 6010C**
Description: 6010C MET ICP
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for EPA 6010C. 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 3005A 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.

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.

Duplicate Sample:
All duplicate sample results were within method 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-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 8270D by SIM**
Description: 8270D MSSV PAH by SIM
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for EPA 8270D by SIM. 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.

H2: Extraction or preparation conducted outside EPA method holding time.
- Field Duplicate-1016 (Lab ID: 30200663008)

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.

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.

QC Batch: 239199

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
- LCS (Lab ID: 1175424)
  - Fluoranthene

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

QC Batch: 238685

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MS (Lab ID: 1173012)
  - 2-Methylnaphthalene

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 8270D by SIM**
Description: 8270D MSSV PAH by SIM
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

QC Batch: 238685

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene

• MSD (Lab ID: 1173013)

- 2-Methylnaphthalene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Phenanthrene
- Pyrene

R1: RPD value was outside control limits.

• MSD (Lab ID: 1173013)

- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Chrysene
- Fluoranthene
- Fluorene

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 8270D by SIM**
Description: 8270D MSSV PAH by SIM
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

QC Batch: 238685

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

R1: RPD value was outside control limits.

- Naphthalene
- Phenanthrene
- Pyrene

QC Batch: 239199

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

Analyte Comments:

QC Batch: 239199

2c: A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

- Field Duplicate-1016 (Lab ID: 30200663008)
  - 2-Methylnaphthalene
  - Acenaphthene
  - Acenaphthylene
  - Anthracene
  - Benzo(k)fluoranthene
  - Benzo(g,h,i)perylene
  - Benzo(a)anthracene
  - Benzo(b)fluoranthene
  - Benzo(a)pyrene
  - Chrysene
  - Dibenz(a,h)anthracene
  - Fluorene
  - Fluoranthene
  - Indeno(1,2,3-cd)pyrene
  - Naphthalene
  - Phenanthrene
  - Pyrene

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 8260C**
Description: 8260C MSV
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
12 samples were analyzed for EPA 8260C. 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.

QC Batch: 238706

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1173107)
  - Ethylbenzene
  - Toluene
- MSD (Lab ID: 1173108)
  - Ethylbenzene
  - Toluene
  - m&p-Xylene
  - o-Xylene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM2320B-97**
Description: 2320B Alkalinity
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for SM2320B-97. 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.

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: 238772

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1173394)
  - Alkalinity, Total as CaCO3
- MSD (Lab ID: 1173395)
  - Alkalinity, Total as CaCO3

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM3500-FeD-00**
Description: Iron, Ferrous
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for SM3500-FeD-00. 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.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- Field Duplicate-1016 (Lab ID: 30200663008)
- MW-10-1016 (Lab ID: 30200846002)
- MW-12-1016 (Lab ID: 30200846003)
- MW-13-1016 (Lab ID: 30200663002)
- MW-13-DuplicaMatrix Spike-1016 (Lab ID: 30200663007)
- MW-13Matrix Spike-1016 (Lab ID: 30200663006)
- MW-14-1016 (Lab ID: 30200663003)
- MW-15-1016 (Lab ID: 30200663004)
- MW-16-1016 (Lab ID: 30200663005)
- MW-4-1016 (Lab ID: 30200663001)
- MW-7-1016 (Lab ID: 30200846001)

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- Field Duplicate-1016 (Lab ID: 30200663008)
- MW-10-1016 (Lab ID: 30200846002)
- MW-12-1016 (Lab ID: 30200846003)
- MW-13-1016 (Lab ID: 30200663002)
- MW-13-DuplicaMatrix Spike-1016 (Lab ID: 30200663007)
- MW-13Matrix Spike-1016 (Lab ID: 30200663006)
- MW-14-1016 (Lab ID: 30200663003)
- MW-15-1016 (Lab ID: 30200663004)
- MW-16-1016 (Lab ID: 30200663005)
- MW-4-1016 (Lab ID: 30200663001)
- MW-7-1016 (Lab ID: 30200846001)

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.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM3500-FeD-00**
Description: Iron, Ferrous
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

QC Batch: 238291

D6: The precision between the sample and sample duplicate exceeded laboratory control limits.

- DUP (Lab ID: 1171074)
  - Iron, Ferrous

D8: The sample and duplicate results for this parameter are less than 5 times the reporting limit, the RPD may not be statistically valid.

- DUP (Lab ID: 1171074)
  - Iron, Ferrous

Additional Comments:

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM4500S2F-00**
Description: 4500S2F Sulfide, Iodometric
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for SM4500S2F-00. 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.

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-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 351.2**
Description: 351.2 Total Kjeldahl Nitrogen
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for EPA 351.2. 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.

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: 239191

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002,30201370004

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1175384)
  - Nitrogen, Kjeldahl, Total
- MS (Lab ID: 1175386)
  - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1175387)
  - Nitrogen, Kjeldahl, Total

Additional Comments:

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM4500ClE-97**
Description: 4500 Chloride
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for SM4500ClE-97. 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.

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: 238841

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1173696)
  - Chloride

QC Batch: 238843

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200846001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1173701)
  - Chloride
- MSD (Lab ID: 1173702)
  - Chloride

Additional Comments:

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM4500NO3F-00**
Description: SM4500NO3-F, NO3-NO2
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
19 samples were analyzed for SM4500NO3F-00. 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.

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:

Batch Comments:

30200543 SAMPLES HAD TO BE PULLED FROM UNPRESERVED BOTTLES AND USED FOR ANALYSIS
- QC Batch: 238698

Analyte Comments:

QC Batch: 238698

1c: 30200543 SAMPLES HAD TO BE PULLED FROM UNPRESERVED BOTTLES AND USED FOR ANALYSIS
- BLANK (Lab ID: 1173075)
  - Nitrogen, NO2 plus NO3
- Field Duplicate-1016 (Lab ID: 30200543008)
  - Nitrogen, NO2 plus NO3
- LCS (Lab ID: 1173076)
  - Nitrogen, NO2 plus NO3
- MS (Lab ID: 1173077)
  - Nitrogen, NO2 plus NO3
- MSD (Lab ID: 1173078)
  - Nitrogen, NO2 plus NO3
- MW-10-1016 (Lab ID: 30200846002)
  - Nitrogen, NO2 plus NO3
- MW-12-1016 (Lab ID: 30200846003)
  - Nitrogen, NO2 plus NO3
- MW-13-2016 (Lab ID: 30200543002)
  - Nitrogen, NO2 plus NO3
- MW-13-Duplicate Matrix Spike-1 (Lab ID: 30200543007)
  - Nitrogen, NO2 plus NO3
- MW-13-Matrix Spike-1016 (Lab ID: 30200543006)
  - Nitrogen, NO2 plus NO3

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **SM4500NO3F-00**
Description: SM4500NO3-F, NO3-NO2
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

Analyte Comments:

QC Batch: 238698

1c: 30200543 SAMPLES HAD TO BE PULLED FROM UNPRESERVED BOTTLES AND USED FOR ANALYSIS

- MW-14-2016 (Lab ID: 30200543003)
  - Nitrogen, NO2 plus NO3
- MW-15-2016 (Lab ID: 30200543004)
  - Nitrogen, NO2 plus NO3
- MW-16-2016 (Lab ID: 30200543005)
  - Nitrogen, NO2 plus NO3
- MW-4-2016 (Lab ID: 30200543001)
  - Nitrogen, NO2 plus NO3
- MW-7-1016 (Lab ID: 30200846001)
  - Nitrogen, NO2 plus NO3

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **EPA 9012B**
Description: 9012B Cyanide, Total
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
11 samples were analyzed for EPA 9012B. 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.

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: 238777

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1173457)
  - Cyanide
- MSD (Lab ID: 1173458)
  - Cyanide

Additional Comments:

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

PROJECT NARRATIVE

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Method: **ASTM D516-11**
Description: ASTM D516 Sulfate Water
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: November 17, 2016

General Information:
10 samples were analyzed for ASTM D516-11. 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.

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: 239725

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30200663002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 1177895)
  - Sulfate
- MSD (Lab ID: 1177896)
  - Sulfate

Additional Comments:

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

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-4-2016 **Lab ID: 30200543001** Collected: 10/25/16 14:00 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**3.3** J	mg/L	0.10	0.023	1		11/01/16 11:58		1c

Sample: MW-13-2016 **Lab ID: 30200543002** Collected: 10/25/16 11:15 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND J	mg/L	0.10	0.023	1		11/01/16 12:02		1c

Sample: MW-14-2016 **Lab ID: 30200543003** Collected: 10/25/16 10:15 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND J	mg/L	0.10	0.023	1		11/01/16 12:06		1c

Sample: MW-15-2016 **Lab ID: 30200543004** Collected: 10/25/16 13:00 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND J	mg/L	0.10	0.023	1		11/01/16 12:07		1c

Sample: MW-16-2016 **Lab ID: 30200543005** Collected: 10/25/16 09:00 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND J	mg/L	0.10	0.023	1		11/01/16 12:09		1c

Sample: MW-13-Matrix Spike-1016 **Lab ID: 30200543006** Collected: 10/25/16 11:15 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**4.9** J	mg/L	0.10	0.023	1		11/01/16 11:43		1c

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-13-Duplicate Matrix Spike-1 **Lab ID: 30200543007** Collected: 10/25/16 11:15 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**4.9** J	mg/L	0.10	0.023	1		11/01/16 11:43		1c

Sample: Field Duplicate-1016 **Lab ID: 30200543008** Collected: 10/25/16 00:01 Received: 10/26/16 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND J	mg/L	0.10	0.023	1		11/01/16 12:10		1c

Sample: MW-7-1016 **Lab ID: 30200846001** Collected: 10/26/16 09:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:35	7439-92-1	
Manganese	**430**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:35	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**0.10**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 23:58	83-32-9	
Acenaphthylene	**0.20**	ug/L	0.10	0.014	1	11/01/16 08:40	11/01/16 23:58	208-96-8	
Anthracene	ND	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 23:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 23:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.0072	1	11/01/16 08:40	11/01/16 23:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 23:58	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 23:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	0.012	1	11/01/16 08:40	11/01/16 23:58	207-08-9	ip
Chrysene	ND	ug/L	0.10	0.0077	1	11/01/16 08:40	11/01/16 23:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	0.029	1	11/01/16 08:40	11/01/16 23:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 23:58	206-44-0	
Fluorene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 23:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 23:58	193-39-5	
2-Methylnaphthalene	**0.21**	ug/L	0.10	0.021	1	11/01/16 08:40	11/01/16 23:58	91-57-6	
Naphthalene	**3.0**	ug/L	0.10	0.018	1	11/01/16 08:40	11/01/16 23:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 23:58	85-01-8	
Pyrene	ND	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 23:58	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	79	%	19-123		1	11/01/16 08:40	11/01/16 23:58	321-60-8	
Terphenyl-d14 (S)	89	%	58-130		1	11/01/16 08:40	11/01/16 23:58	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 15:44	71-43-2	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-7-1016 **Lab ID: 30200846001** Collected: 10/26/16 09:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C								
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 15:44	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 15:44	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 15:44	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 15:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 15:44	95-47-6	
Surrogates									
Toluene-d8 (S)	100	%	84-115		1		11/01/16 15:44	2037-26-5	
4-Bromofluorobenzene (S)	99	%	81-119		1		11/01/16 15:44	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	77-126		1		11/01/16 15:44	17060-07-0	
Dibromofluoromethane (S)	101	%	70-130		1		11/01/16 15:44	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**406**	mg/L	10.0	1.1	1		11/01/16 19:30		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.59** J	mg/L	0.10	0.012	1		10/31/16 18:26		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**2.2**	mg/L	1.0	0.26	1		11/04/16 13:07	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**79.4** J	mg/L	3.0	0.41	1		11/02/16 14:40	16887-00-6	M1
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.023	1		11/01/16 12:11		1c
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.15**	mg/L	0.010	0.0018	1		11/01/16 21:57	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**476**	mg/L	200	9.7	20		11/09/16 16:21	14808-79-8	B

Sample: MW-10-1016 **Lab ID: 30200846002** Collected: 10/26/16 10:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:42	7439-92-1	
Manganese	**1200**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:42	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-10-1016 **Lab ID: 30200846002** Collected: 10/26/16 10:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**1.4**	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:16	83-32-9	
Acenaphthylene	**0.18**	ug/L	0.10	0.014	1	11/01/16 08:40	11/02/16 00:16	208-96-8	
Anthracene	ND	ug/L	0.10	0.013	1	11/01/16 08:40	11/02/16 00:16	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	0.015	1	11/01/16 08:40	11/02/16 00:16	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.0072	1	11/01/16 08:40	11/02/16 00:16	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:16	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	0.019	1	11/01/16 08:40	11/02/16 00:16	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	0.011	1	11/01/16 08:40	11/02/16 00:16	207-08-9	
Chrysene	ND	ug/L	0.10	0.0076	1	11/01/16 08:40	11/02/16 00:16	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/02/16 00:16	53-70-3	
Fluoranthene	**0.10** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/02/16 00:16	206-44-0	
Fluorene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:16	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/02/16 00:16	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	0.021	1	11/01/16 08:40	11/02/16 00:16	91-57-6	
Naphthalene	**0.23**	ug/L	0.10	0.018	1	11/01/16 08:40	11/02/16 00:16	91-20-3	
Phenanthrene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:16	85-01-8	
Pyrene	**0.15**	ug/L	0.10	0.013	1	11/01/16 08:40	11/02/16 00:16	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	75	%	19-123		1	11/01/16 08:40	11/02/16 00:16	321-60-8	
Terphenyl-d14 (S)	90	%	58-130		1	11/01/16 08:40	11/02/16 00:16	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 16:09	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 16:09	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 16:09	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 16:09	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 16:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 16:09	95-47-6	
Surrogates									
Toluene-d8 (S)	98	%	84-115		1		11/01/16 16:09	2037-26-5	
4-Bromofluorobenzene (S)	99	%	81-119		1		11/01/16 16:09	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-126		1		11/01/16 16:09	17060-07-0	
Dibromofluoromethane (S)	103	%	70-130		1		11/01/16 16:09	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**660**	mg/L	10.0	1.1	1		11/01/16 19:30		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**1.0** J	mg/L	0.10	0.012	1		10/31/16 18:26		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**6.5**	mg/L	1.0	0.26	1		11/04/16 13:08	7727-37-9	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-10-1016 **Lab ID: 30200846002** Collected: 10/26/16 10:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**784**	mg/L	30.0	4.1	10		11/02/16 15:11	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**0.12**	mg/L	0.10	0.023	1		11/01/16 12:13		1c
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.081**	mg/L	0.010	0.0018	1		11/01/16 21:58	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**56.6**	mg/L	10.0	0.48	1		11/09/16 16:21	14808-79-8	

Sample: MW-12-1016 **Lab ID: 30200846003** Collected: 10/26/16 11:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:44	7439-92-1	
Manganese	**202**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:44	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**0.11**	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:33	83-32-9	
Acenaphthylene	**4.4**	ug/L	0.10	0.014	1	11/01/16 08:40	11/02/16 00:33	208-96-8	
Anthracene	**1.4**	ug/L	0.10	0.013	1	11/01/16 08:40	11/02/16 00:33	120-12-7	
Benzo(a)anthracene	**2.1**	ug/L	0.10	0.015	1	11/01/16 08:40	11/02/16 00:33	56-55-3	
Benzo(a)pyrene	**2.8**	ug/L	0.10	0.0072	1	11/01/16 08:40	11/02/16 00:33	50-32-8	
Benzo(b)fluoranthene	**2.3**	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:33	205-99-2	
Benzo(g,h,i)perylene	**1.6**	ug/L	0.10	0.019	1	11/01/16 08:40	11/02/16 00:33	191-24-2	
Benzo(k)fluoranthene	**0.94**	ug/L	0.10	0.012	1	11/01/16 08:40	11/02/16 00:33	207-08-9	
Chrysene	**1.9**	ug/L	0.10	0.0077	1	11/01/16 08:40	11/02/16 00:33	218-01-9	
Dibenz(a,h)anthracene	**0.29**	ug/L	0.10	0.029	1	11/01/16 08:40	11/02/16 00:33	53-70-3	
Fluoranthene	**3.9**J	ug/L	0.10	0.011	1	11/01/16 08:40	11/02/16 00:33	206-44-0	
Fluorene	**0.51**	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:33	86-73-7	
Indeno(1,2,3-cd)pyrene	**1.2**	ug/L	0.10	0.028	1	11/01/16 08:40	11/02/16 00:33	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	0.021	1	11/01/16 08:40	11/02/16 00:33	91-57-6	
Naphthalene	**0.96**	ug/L	0.10	0.018	1	11/01/16 08:40	11/02/16 00:33	91-20-3	
Phenanthrene	**3.5**	ug/L	0.10	0.016	1	11/01/16 08:40	11/02/16 00:33	85-01-8	
Pyrene	**5.4**	ug/L	0.10	0.013	1	11/01/16 08:40	11/02/16 00:33	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	76	%	19-123		1	11/01/16 08:40	11/02/16 00:33	321-60-8	
Terphenyl-d14 (S)	95	%	58-130		1	11/01/16 08:40	11/02/16 00:33	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 16:35	71-43-2	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-12-1016 **Lab ID: 30200846003** Collected: 10/26/16 11:00 Received: 10/28/16 10:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C								
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 16:35	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 16:35	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 16:35	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 16:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 16:35	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	84-115		1		11/01/16 16:35	2037-26-5	
4-Bromofluorobenzene (S)	100	%	81-119		1		11/01/16 16:35	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-126		1		11/01/16 16:35	17060-07-0	
Dibromofluoromethane (S)	104	%	70-130		1		11/01/16 16:35	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**436**	mg/L	10.0	1.1	1		11/01/16 19:30		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.11** J	mg/L	0.10	0.012	1		10/31/16 18:26		B,D8, H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.26	1		11/04/16 13:09	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**556**	mg/L	30.0	4.1	10		11/02/16 15:12	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**2.9**	mg/L	0.10	0.023	1		11/01/16 12:14		1c
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	ND	mg/L	0.010	0.0018	1		11/01/16 21:59	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**56.0**	mg/L	10.0	0.48	1		11/09/16 16:23	14808-79-8	

Sample: MW-4-1016 **Lab ID: 30200663001** Collected: 10/25/16 14:00 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:16	7439-92-1	
Manganese	**5.3**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:16	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-4-1016 **Lab ID: 30200663001** Collected: 10/25/16 14:00 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 21:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	0.014	1	11/01/16 08:40	11/01/16 21:40	208-96-8	
Anthracene	ND	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 21:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 21:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.0072	1	11/01/16 08:40	11/01/16 21:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 21:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 21:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 21:40	207-08-9	
Chrysene	ND	ug/L	0.10	0.0076	1	11/01/16 08:40	11/01/16 21:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 21:40	53-70-3	
Fluoranthene	ND J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 21:40	206-44-0	
Fluorene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 21:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 21:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	0.021	1	11/01/16 08:40	11/01/16 21:40	91-57-6	
Naphthalene	**0.29**	ug/L	0.10	0.018	1	11/01/16 08:40	11/01/16 21:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 21:40	85-01-8	
Pyrene	ND	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 21:40	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	78	%	19-123		1	11/01/16 08:40	11/01/16 21:40	321-60-8	
Terphenyl-d14 (S)	95	%	58-130		1	11/01/16 08:40	11/01/16 21:40	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 14:02	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 14:02	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 14:02	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 14:02	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 14:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 14:02	95-47-6	
Surrogates									
Toluene-d8 (S)	96	%	84-115		1		11/01/16 14:02	2037-26-5	
4-Bromofluorobenzene (S)	96	%	81-119		1		11/01/16 14:02	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	77-126		1		11/01/16 14:02	17060-07-0	
Dibromofluoromethane (S)	103	%	70-130		1		11/01/16 14:02	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**414**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.11** J	mg/L	0.10	0.012	1		10/27/16 18:45		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	ND	mg/L	1.0	0.26	1		11/04/16 13:00	7727-37-9	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-4-1016 **Lab ID: 30200663001** Collected: 10/25/16 14:00 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**421**	mg/L	30.0	4.1	10		11/02/16 14:28	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**3.2**	mg/L	0.10	0.023	1		11/01/16 12:20		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	ND	mg/L	0.010	0.0018	1		11/01/16 21:49	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**60.8**	mg/L	10.0	0.48	1		11/09/16 15:58	14808-79-8	

Sample: MW-13-1016 **Lab ID: 30200663002** Collected: 10/25/16 11:15 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:02	7439-92-1	
Manganese	**93.8**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:02	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**225** J	ug/L	52.1	8.2	500	11/01/16 08:40	11/03/16 19:34	83-32-9	M1,M6,R1
Acenaphthylene	**267** J	ug/L	52.1	7.4	500	11/01/16 08:40	11/03/16 19:34	208-96-8	M1,R1
Anthracene	**19.2** J	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 21:57	120-12-7	M1,R1
Benzo(a)anthracene	**6.7** J	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 21:57	56-55-3	M1,R1
Benzo(a)pyrene	**6.5** J	ug/L	0.10	0.0074	1	11/01/16 08:40	11/01/16 21:57	50-32-8	M1
Benzo(b)fluoranthene	**6.2** J	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 21:57	205-99-2	M1,R1
Benzo(g,h,i)perylene	**3.3** J	ug/L	0.10	0.020	1	11/01/16 08:40	11/01/16 21:57	191-24-2	M1
Benzo(k)fluoranthene	**2.5** J	ug/L	0.10	0.012	1	11/01/16 08:40	11/01/16 21:57	207-08-9	M1
Chrysene	**6.1** J	ug/L	0.10	0.0078	1	11/01/16 08:40	11/01/16 21:57	218-01-9	M1,R1
Dibenz(a,h)anthracene	**0.85** J	ug/L	0.10	0.029	1	11/01/16 08:40	11/01/16 21:57	53-70-3	M1
Fluoranthene	**17.8** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 21:57	206-44-0	M1,R1
Fluorene	**74.8** J	ug/L	52.1	8.3	500	11/01/16 08:40	11/03/16 19:34	86-73-7	M1,R1
Indeno(1,2,3-cd)pyrene	**2.7** J	ug/L	0.10	0.029	1	11/01/16 08:40	11/01/16 21:57	193-39-5	M1
2-Methylnaphthalene	**558** J	ug/L	52.1	10.7	500	11/01/16 08:40	11/03/16 19:34	91-57-6	M1,R1
Naphthalene	**5560** J	ug/L	52.1	9.2	500	11/01/16 08:40	11/03/16 19:34	91-20-3	M1,M6,R1
Phenanthrene	**78.3** J	ug/L	52.1	8.0	500	11/01/16 08:40	11/03/16 19:34	85-01-8	M1,R1
Pyrene	ND J	ug/L	52.1	6.5	500	11/01/16 08:40	11/03/16 19:34	129-00-0	M1,R1
Surrogates									
2-Fluorobiphenyl (S)	73	%	19-123		1	11/01/16 08:40	11/01/16 21:57	321-60-8	
Terphenyl-d14 (S)	90	%	58-130		1	11/01/16 08:40	11/01/16 21:57	1718-51-0	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-13-1016 **Lab ID: 30200663002** Collected: 10/25/16 11:15 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**348**	ug/L	1.0	0.16	1		11/01/16 17:25	71-43-2	
Ethylbenzene	**366**	ug/L	1.0	0.23	1		11/01/16 17:25	100-41-4	M1
Toluene	**552**	ug/L	5.0	0.63	5		11/02/16 13:05	108-88-3	M1
Xylene (Total)	**669**	ug/L	3.0	0.55	1		11/01/16 17:25	1330-20-7	MS
m&p-Xylene	**467**	ug/L	2.0	0.32	1		11/01/16 17:25	179601-23-1	M1
o-Xylene	**203**	ug/L	1.0	0.22	1		11/01/16 17:25	95-47-6	M1
Surrogates									
Toluene-d8 (S)	93	%	84-115		1		11/01/16 17:25	2037-26-5	
4-Bromofluorobenzene (S)	93	%	81-119		1		11/01/16 17:25	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-126		1		11/01/16 17:25	17060-07-0	
Dibromofluoromethane (S)	101	%	70-130		1		11/01/16 17:25	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**364**	mg/L	10.0	1.1	1		11/01/16 18:00		M1
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.18** J	mg/L	0.10	0.012	1		10/27/16 18:45		D6,D8, H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.3** J	mg/L	1.0	0.26	1		11/04/16 13:00	7727-37-9	M1
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**11.4** J	mg/L	3.0	0.41	1		11/02/16 14:28	16887-00-6	M1
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND J	mg/L	0.10	0.023	1		11/01/16 12:21		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.23** J	mg/L	0.010	0.0018	1		11/01/16 21:44	57-12-5	M1
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**18.3** J	mg/L	10.0	0.48	1		11/09/16 16:00	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-14-1016 **Lab ID: 30200663003** Collected: 10/25/16 10:15 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	**33.3**	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:18	7439-92-1	
Manganese	**768**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:18	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**0.19**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:14	83-32-9	
Acenaphthylene	**0.99** J	ug/L	0.10	0.014	1	11/01/16 08:40	11/01/16 22:14	208-96-8	
Anthracene	**0.25**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 22:14	120-12-7	
Benzo(a)anthracene	**0.28**	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 22:14	56-55-3	
Benzo(a)pyrene	**0.32**	ug/L	0.10	0.0072	1	11/01/16 08:40	11/01/16 22:14	50-32-8	
Benzo(b)fluoranthene	**0.55**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:14	205-99-2	ip
Benzo(g,h,i)perylene	**0.29**	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 22:14	191-24-2	
Benzo(k)fluoranthene	**0.47** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 22:14	207-08-9	ip
Chrysene	**0.27**	ug/L	0.10	0.0076	1	11/01/16 08:40	11/01/16 22:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 22:14	53-70-3	
Fluoranthene	**0.45** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 22:14	206-44-0	
Fluorene	**0.14**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	**0.21**	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 22:14	193-39-5	
2-Methylnaphthalene	**0.45**	ug/L	0.10	0.021	1	11/01/16 08:40	11/01/16 22:14	91-57-6	
Naphthalene	**5.2**	ug/L	0.10	0.018	1	11/01/16 08:40	11/01/16 22:14	91-20-3	
Phenanthrene	**0.22**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:14	85-01-8	
Pyrene	**0.68** J	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 22:14	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	80	%	19-123		1	11/01/16 08:40	11/01/16 22:14	321-60-8	
Terphenyl-d14 (S)	87	%	58-130		1	11/01/16 08:40	11/01/16 22:14	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 14:28	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 14:28	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 14:28	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 14:28	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 14:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 14:28	95-47-6	
Surrogates									
Toluene-d8 (S)	101	%	84-115		1		11/01/16 14:28	2037-26-5	
4-Bromofluorobenzene (S)	96	%	81-119		1		11/01/16 14:28	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	77-126		1		11/01/16 14:28	17060-07-0	
Dibromofluoromethane (S)	104	%	70-130		1		11/01/16 14:28	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**520**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.55** J	mg/L	0.10	0.012	1		10/27/16 18:45		H3,H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-14-1016 **Lab ID: 30200663003** Collected: 10/25/16 10:15 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.2**	mg/L	1.0	0.26	1		11/04/16 13:03	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**18.0**	mg/L	3.0	0.41	1		11/02/16 14:33	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.023	1		11/01/16 12:25		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.67**	mg/L	0.10	0.018	10		11/01/16 22:02	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**153**	mg/L	50.0	2.4	5		11/09/16 16:02	14808-79-8	B

Sample: MW-15-1016 **Lab ID: 30200663004** Collected: 10/25/16 13:00 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:27	7439-92-1	
Manganese	**609**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:27	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**43.1**	ug/L	10.1	1.6	100	11/01/16 08:40	11/03/16 19:52	83-32-9	
Acenaphthylene	**2.4**	ug/L	0.10	0.014	1	11/01/16 08:40	11/01/16 22:32	208-96-8	
Anthracene	**1.9**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 22:32	120-12-7	
Benzo(a)anthracene	**0.14**	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 22:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.0072	1	11/01/16 08:40	11/01/16 22:32	50-32-8	
Benzo(b)fluoranthene	**0.11**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 22:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 22:32	207-08-9	
Chrysene	**0.11**	ug/L	0.10	0.0076	1	11/01/16 08:40	11/01/16 22:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 22:32	53-70-3	
Fluoranthene	**1.2** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 22:32	206-44-0	
Fluorene	**11.8**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 22:32	193-39-5	
2-Methylnaphthalene	**4.4**	ug/L	0.10	0.021	1	11/01/16 08:40	11/01/16 22:32	91-57-6	
Naphthalene	**363**	ug/L	10.1	1.8	100	11/01/16 08:40	11/03/16 19:52	91-20-3	
Phenanthrene	**8.5**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:32	85-01-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-15-1016 **Lab ID: 30200663004** Collected: 10/25/16 13:00 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Pyrene	**1.4**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 22:32	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	88	%	19-123		1	11/01/16 08:40	11/01/16 22:32	321-60-8	
Terphenyl-d14 (S)	95	%	58-130		1	11/01/16 08:40	11/01/16 22:32	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**714**	ug/L	10.0	1.6	10		11/02/16 12:39	71-43-2	
Ethylbenzene	**244**	ug/L	1.0	0.23	1		11/01/16 14:53	100-41-4	
Toluene	**6.1**	ug/L	1.0	0.13	1		11/01/16 14:53	108-88-3	
Xylene (Total)	**45.4**	ug/L	3.0	0.55	1		11/01/16 14:53	1330-20-7	
m&p-Xylene	**13.7**	ug/L	2.0	0.32	1		11/01/16 14:53	179601-23-1	
o-Xylene	**31.7**	ug/L	1.0	0.22	1		11/01/16 14:53	95-47-6	
Surrogates									
Toluene-d8 (S)	96	%	84-115		1		11/01/16 14:53	2037-26-5	
4-Bromofluorobenzene (S)	96	%	81-119		1		11/01/16 14:53	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-126		1		11/01/16 14:53	17060-07-0	
Dibromofluoromethane (S)	105	%	70-130		1		11/01/16 14:53	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**676**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**8.2** J	mg/L	1.0	0.12	10		10/27/16 18:45		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**4.7**	mg/L	1.0	0.26	1		11/04/16 13:05	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**65.4**	mg/L	15.0	2.0	5		11/02/16 14:33	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.023	1		11/01/16 12:26		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**1.1**	mg/L	0.10	0.018	10		11/01/16 22:03	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**67.9**	mg/L	10.0	0.48	1		11/09/16 16:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-16-1016 **Lab ID: 30200663005** Collected: 10/25/16 09:00 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	ND	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:30	7439-92-1	
Manganese	**601**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:30	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**54.7**	ug/L	2.0	0.32	20	11/01/16 08:40	11/03/16 20:09	83-32-9	
Acenaphthylene	**47.3**	ug/L	2.0	0.29	20	11/01/16 08:40	11/03/16 20:09	208-96-8	
Anthracene	**1.4**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 22:49	120-12-7	
Benzo(a)anthracene	**0.10**	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 22:49	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	0.0072	1	11/01/16 08:40	11/01/16 22:49	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:49	205-99-2	ip
Benzo(g,h,i)perylene	ND	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 22:49	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 22:49	207-08-9	ip
Chrysene	ND	ug/L	0.10	0.0076	1	11/01/16 08:40	11/01/16 22:49	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 22:49	53-70-3	
Fluoranthene	**1.8** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 22:49	206-44-0	
Fluorene	**22.2**	ug/L	2.0	0.32	20	11/01/16 08:40	11/03/16 20:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 22:49	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	0.021	1	11/01/16 08:40	11/01/16 22:49	91-57-6	
Naphthalene	**4.6**	ug/L	0.10	0.018	1	11/01/16 08:40	11/01/16 22:49	91-20-3	
Phenanthrene	**15.9**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 22:49	85-01-8	
Pyrene	**2.0**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 22:49	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	65	%	19-123		1	11/01/16 08:40	11/01/16 22:49	321-60-8	
Terphenyl-d14 (S)	70	%	58-130		1	11/01/16 08:40	11/01/16 22:49	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**149**	ug/L	1.0	0.16	1		11/01/16 17:00	71-43-2	
Ethylbenzene	**134**	ug/L	1.0	0.23	1		11/01/16 17:00	100-41-4	
Toluene	**2.9**	ug/L	1.0	0.13	1		11/01/16 17:00	108-88-3	
Xylene (Total)	**37.0**	ug/L	3.0	0.55	1		11/01/16 17:00	1330-20-7	
m&p-Xylene	**4.9**	ug/L	2.0	0.32	1		11/01/16 17:00	179601-23-1	
o-Xylene	**32.1**	ug/L	1.0	0.22	1		11/01/16 17:00	95-47-6	
Surrogates									
Toluene-d8 (S)	98	%	84-115		1		11/01/16 17:00	2037-26-5	
4-Bromofluorobenzene (S)	97	%	81-119		1		11/01/16 17:00	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	77-126		1		11/01/16 17:00	17060-07-0	
Dibromofluoromethane (S)	104	%	70-130		1		11/01/16 17:00	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**636**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**2.4** J	mg/L	0.10	0.012	1		10/27/16 18:45		H3,H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-16-1016 **Lab ID: 30200663005** Collected: 10/25/16 09:00 Received: 10/27/16 09:55 Matrix: Water
Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5.4**	mg/L	1.0	0.26	1		11/04/16 13:05	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**6.8**	mg/L	3.0	0.41	1		11/02/16 14:34	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.023	1		11/01/16 12:28		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.26**	mg/L	0.010	0.0018	1		11/01/16 21:52	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**145**	mg/L	50.0	2.4	5		11/09/16 16:04	14808-79-8	B

Sample: MW-13Matrix Spike-1016 **Lab ID: 30200663006** Collected: 10/25/16 11:15 Received: 10/27/16 09:55 Matrix: Water
Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	**496**	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:11	7439-92-1	
Manganese	**579**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:11	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**180**	ug/L	10.1	1.6	100	11/01/16 08:40	11/03/16 20:27	83-32-9	
Acenaphthylene	**241**	ug/L	10.1	1.4	100	11/01/16 08:40	11/03/16 20:27	208-96-8	
Anthracene	**18.1**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 23:06	120-12-7	
Benzo(a)anthracene	**6.5**	ug/L	0.10	0.014	1	11/01/16 08:40	11/01/16 23:06	56-55-3	
Benzo(a)pyrene	**6.3**	ug/L	0.10	0.0071	1	11/01/16 08:40	11/01/16 23:06	50-32-8	
Benzo(b)fluoranthene	**5.6**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 23:06	205-99-2	
Benzo(g,h,i)perylene	**3.9**	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 23:06	191-24-2	
Benzo(k)fluoranthene	**3.5**	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 23:06	207-08-9	
Chrysene	**5.9**	ug/L	0.10	0.0075	1	11/01/16 08:40	11/01/16 23:06	218-01-9	
Dibenz(a,h)anthracene	**2.1**	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 23:06	53-70-3	
Fluoranthene	**15.1** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 23:06	206-44-0	
Fluorene	**60.4**	ug/L	10.1	1.6	100	11/01/16 08:40	11/03/16 20:27	86-73-7	
Indeno(1,2,3-cd)pyrene	**3.5**	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 23:06	193-39-5	
2-Methylnaphthalene	**492**	ug/L	10.1	2.1	100	11/01/16 08:40	11/03/16 20:27	91-57-6	
Naphthalene	**6460**	ug/L	101	17.8	1000	11/01/16 08:40	11/03/16 20:44	91-20-3	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-13Matrix Spike-1016 **Lab ID: 30200663006** Collected: 10/25/16 11:15 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	**54.1**	ug/L	10.1	1.5	100	11/01/16 08:40	11/03/16 20:27	85-01-8	
Pyrene	**17.6**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 23:06	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	73	%	19-123		1	11/01/16 08:40	11/01/16 23:06	321-60-8	
Terphenyl-d14 (S)	83	%	58-130		1	11/01/16 08:40	11/01/16 23:06	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**372**	ug/L	1.0	0.16	1		11/01/16 20:22	71-43-2	
Ethylbenzene	**392**	ug/L	1.0	0.23	1		11/01/16 20:22	100-41-4	
Toluene	**604**	ug/L	5.0	0.63	5		11/02/16 13:30	108-88-3	
Xylene (Total)	**736**	ug/L	3.0	0.55	1		11/01/16 20:22	1330-20-7	
m&p-Xylene	**513**	ug/L	2.0	0.32	1		11/01/16 20:22	179601-23-1	
o-Xylene	**223**	ug/L	1.0	0.22	1		11/01/16 20:22	95-47-6	
Surrogates									
Toluene-d8 (S)	94	%	84-115		1		11/01/16 20:22	2037-26-5	
4-Bromofluorobenzene (S)	92	%	81-119		1		11/01/16 20:22	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	77-126		1		11/01/16 20:22	17060-07-0	
Dibromofluoromethane (S)	100	%	70-130		1		11/01/16 20:22	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**370**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.17**J	mg/L	0.10	0.012	1		10/27/16 18:45		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	**5.8**	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**4.6**	mg/L	1.0	0.26	1		11/04/16 13:01	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**34.6**	mg/L	3.0	0.41	1		11/02/16 14:21	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**5.0**	mg/L	0.10	0.023	1		11/01/16 12:22		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.24**	mg/L	0.010	0.0018	1		11/01/16 21:53	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**33.0**	mg/L	10.0	0.48	1		11/09/16 16:07	14808-79-8	B

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-13-DuplicaMatrix Spike-1016 **Lab ID: 30200663007** Collected: 10/25/16 11:15 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	**517**	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:13	7439-92-1	
Manganese	**591**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:13	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	**198**	ug/L	10.2	1.6	100	11/01/16 08:40	11/03/16 21:01	83-32-9	
Acenaphthylene	**274**	ug/L	10.2	1.4	100	11/01/16 08:40	11/03/16 21:01	208-96-8	
Anthracene	**18.6**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 23:24	120-12-7	
Benzo(a)anthracene	**7.6**	ug/L	0.10	0.015	1	11/01/16 08:40	11/01/16 23:24	56-55-3	
Benzo(a)pyrene	**7.5**	ug/L	0.10	0.0072	1	11/01/16 08:40	11/01/16 23:24	50-32-8	
Benzo(b)fluoranthene	**7.2**	ug/L	0.10	0.016	1	11/01/16 08:40	11/01/16 23:24	205-99-2	
Benzo(g,h,i)perylene	**4.5**	ug/L	0.10	0.019	1	11/01/16 08:40	11/01/16 23:24	191-24-2	
Benzo(k)fluoranthene	**3.9**	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 23:24	207-08-9	
Chrysene	**6.8**	ug/L	0.10	0.0076	1	11/01/16 08:40	11/01/16 23:24	218-01-9	
Dibenz(a,h)anthracene	**2.4**	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 23:24	53-70-3	
Fluoranthene	**16.9** J	ug/L	0.10	0.011	1	11/01/16 08:40	11/01/16 23:24	206-44-0	
Fluorene	**66.8**	ug/L	10.2	1.6	100	11/01/16 08:40	11/03/16 21:01	86-73-7	
Indeno(1,2,3-cd)pyrene	**4.1**	ug/L	0.10	0.028	1	11/01/16 08:40	11/01/16 23:24	193-39-5	
2-Methylnaphthalene	**556**	ug/L	10.2	2.1	100	11/01/16 08:40	11/03/16 21:01	91-57-6	
Naphthalene	**4600**	ug/L	102	18.0	1000	11/01/16 08:40	11/03/16 21:19	91-20-3	
Phenanthrene	**61.9**	ug/L	10.2	1.6	100	11/01/16 08:40	11/03/16 21:01	85-01-8	
Pyrene	**19.8**	ug/L	0.10	0.013	1	11/01/16 08:40	11/01/16 23:24	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	75	%	19-123		1	11/01/16 08:40	11/01/16 23:24	321-60-8	
Terphenyl-d14 (S)	84	%	58-130		1	11/01/16 08:40	11/01/16 23:24	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	**364**	ug/L	1.0	0.16	1		11/01/16 20:48	71-43-2	
Ethylbenzene	**352**	ug/L	1.0	0.23	1		11/01/16 20:48	100-41-4	
Toluene	**509**	ug/L	5.0	0.63	5		11/02/16 13:55	108-88-3	
Xylene (Total)	**658**	ug/L	3.0	0.55	1		11/01/16 20:48	1330-20-7	
m&p-Xylene	**459**	ug/L	2.0	0.32	1		11/01/16 20:48	179601-23-1	
o-Xylene	**199**	ug/L	1.0	0.22	1		11/01/16 20:48	95-47-6	
Surrogates									
Toluene-d8 (S)	87	%	84-115		1		11/01/16 20:48	2037-26-5	
4-Bromofluorobenzene (S)	90	%	81-119		1		11/01/16 20:48	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	77-126		1		11/01/16 20:48	17060-07-0	
Dibromofluoromethane (S)	101	%	70-130		1		11/01/16 20:48	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**328**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	ND J	mg/L	0.10	0.012	1		10/27/16 18:45		H3,H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: MW-13-DuplicaMatrix Spike-1016 **Lab ID: 30200663007** Collected: 10/25/16 11:15 Received: 10/27/16 09:55 Matrix: Water

Comments: • 8270 DWPAH: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	**6.0**	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**5.2**	mg/L	1.0	0.26	1		11/04/16 13:01	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**32.6**	mg/L	3.0	0.41	1		11/02/16 14:21	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	**4.9**	mg/L	0.10	0.023	1		11/01/16 12:22		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.22**	mg/L	0.010	0.0018	1		11/01/16 21:54	57-12-5	
ASTM D516 Sulfate Water	Analytical Method: ASTM D516-11								
Sulfate	**33.9**	mg/L	10.0	0.48	1		11/09/16 16:09	14808-79-8	

Sample: Field Duplicate-1016 **Lab ID: 30200663008** Collected: 10/25/16 00:01 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A								
Lead	**49.8**	ug/L	5.0	4.0	1	11/07/16 15:33	11/10/16 15:32	7439-92-1	
Manganese	**829**	ug/L	5.0	0.71	1	11/07/16 15:33	11/10/16 15:32	7439-96-5	
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Acenaphthene	ND	ug/L	0.11	0.017	1	11/04/16 12:21	11/07/16 10:56	83-32-9	2c,H2
Acenaphthylene	**0.60**	ug/L	0.11	0.015	1	11/04/16 12:21	11/07/16 10:56	208-96-8	2c,H2
Anthracene	**0.15**	ug/L	0.11	0.013	1	11/04/16 12:21	11/07/16 10:56	120-12-7	2c,H2
Benzo(a)anthracene	**0.24**	ug/L	0.11	0.015	1	11/04/16 12:21	11/07/16 10:56	56-55-3	2c,H2
Benzo(a)pyrene	**0.25**	ug/L	0.11	0.0075	1	11/04/16 12:21	11/07/16 10:56	50-32-8	2c,H2
Benzo(b)fluoranthene	**0.45**	ug/L	0.11	0.017	1	11/04/16 12:21	11/07/16 10:56	205-99-2	2c,H2,ip
Benzo(g,h,i)perylene	**0.24**	ug/L	0.11	0.020	1	11/04/16 12:21	11/07/16 10:56	191-24-2	2c,H2
Benzo(k)fluoranthene	**0.35**	ug/L	0.11	0.012	1	11/04/16 12:21	11/07/16 10:56	207-08-9	2c,H2,ip
Chrysene	**0.24**	ug/L	0.11	0.0079	1	11/04/16 12:21	11/07/16 10:56	218-01-9	2c,H2
Dibenz(a,h)anthracene	ND	ug/L	0.11	0.029	1	11/04/16 12:21	11/07/16 10:56	53-70-3	2c,H2
Fluoranthene	**0.36** J	ug/L	0.11	0.011	1	11/04/16 12:21	11/07/16 10:56	206-44-0	2c,H2, L2
Fluorene	ND	ug/L	0.11	0.017	1	11/04/16 12:21	11/07/16 10:56	86-73-7	2c,H2
Indeno(1,2,3-cd)pyrene	**0.17**	ug/L	0.11	0.029	1	11/04/16 12:21	11/07/16 10:56	193-39-5	2c,H2
2-Methylnaphthalene	ND	ug/L	0.11	0.022	1	11/04/16 12:21	11/07/16 10:56	91-57-6	2c,H2
Naphthalene	ND	ug/L	0.11	0.019	1	11/04/16 12:21	11/07/16 10:56	91-20-3	2c,H2

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: Field Duplicate-1016 **Lab ID: 30200663008** Collected: 10/25/16 00:01 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV PAH by SIM	Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3510C								
Phenanthrene	**0.14**	ug/L	0.11	0.016	1	11/04/16 12:21	11/07/16 10:56	85-01-8	2c,H2
Pyrene	**0.56**	ug/L	0.11	0.013	1	11/04/16 12:21	11/07/16 10:56	129-00-0	2c,H2
Surrogates									
2-Fluorobiphenyl (S)	65	%	19-123		1	11/04/16 12:21	11/07/16 10:56	321-60-8	
Terphenyl-d14 (S)	68	%	58-130		1	11/04/16 12:21	11/07/16 10:56	1718-51-0	
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 15:19	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 15:19	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 15:19	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 15:19	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 15:19	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 15:19	95-47-6	
Surrogates									
Toluene-d8 (S)	98	%	84-115		1		11/01/16 15:19	2037-26-5	
4-Bromofluorobenzene (S)	100	%	81-119		1		11/01/16 15:19	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	77-126		1		11/01/16 15:19	17060-07-0	
Dibromofluoromethane (S)	103	%	70-130		1		11/01/16 15:19	1868-53-7	
2320B Alkalinity	Analytical Method: SM2320B-97								
Alkalinity, Total as CaCO3	**506**	mg/L	10.0	1.1	1		11/01/16 18:00		
Iron, Ferrous	Analytical Method: SM3500-FeD-00								
Iron, Ferrous	**0.58** J	mg/L	0.10	0.012	1		10/27/16 18:45		H3,H6
4500S2F Sulfide, Iodometric	Analytical Method: SM4500S2F-00								
Sulfide	ND	mg/L	1.0	0.31	1		11/01/16 16:30	18496-25-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.4**	mg/L	1.0	0.26	1		11/04/16 13:06	7727-37-9	
4500 Chloride	Analytical Method: SM4500ClE-97								
Chloride	**16.4**	mg/L	3.0	0.41	1		11/02/16 14:35	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM4500NO3F-00								
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.023	1		11/01/16 12:29		
9012B Cyanide, Total	Analytical Method: EPA 9012B								
Cyanide	**0.62**	mg/L	0.10	0.018	10		11/01/16 22:04	57-12-5	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: National Grid-Johnstown, NY
Pace Project No.: 30200543

Sample: Trip Blank **Lab ID: 30200663009** Collected: 10/25/16 00:01 Received: 10/27/16 09:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260C MSV	Analytical Method: EPA 8260C								
Benzene	ND	ug/L	1.0	0.16	1		11/01/16 12:21	71-43-2	
Ethylbenzene	ND	ug/L	1.0	0.23	1		11/01/16 12:21	100-41-4	
Toluene	ND	ug/L	1.0	0.13	1		11/01/16 12:21	108-88-3	
Xylene (Total)	ND	ug/L	3.0	0.55	1		11/01/16 12:21	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	0.32	1		11/01/16 12:21	179601-23-1	
o-Xylene	ND	ug/L	1.0	0.22	1		11/01/16 12:21	95-47-6	
Surrogates									
Toluene-d8 (S)	98	%	84-115		1		11/01/16 12:21	2037-26-5	
4-Bromofluorobenzene (S)	99	%	81-119		1		11/01/16 12:21	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	77-126		1		11/01/16 12:21	17060-07-0	
Dibromofluoromethane (S)	102	%	70-130		1		11/01/16 12:21	1868-53-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20853 30200663

Lab ID	Sample ID	Matrix	Date Collected	Date Received
208530001	30200663 001	Water	10/25/2016 14:00	11/1/2016 15:00
208530002	30200663 002	Water	10/25/2016 11:15	11/1/2016 15:00
208530003	30200663 003	Water	10/25/2016 10:15	11/1/2016 15:00
208530004	30200663 004	Water	10/25/2016 13:00	11/1/2016 15:00
208530005	30200663 005	Water	10/25/2016 09:00	11/1/2016 15:00
208530006	30200663 006	Water	10/25/2016 11:15	11/1/2016 15:00
208530007	30200663 007	Water	10/25/2016 11:15	11/1/2016 15:00
208530008	30200663 008	Water	10/25/2016 00:01	11/1/2016 15:00

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20855 30200846

Lab ID	Sample ID	Matrix	Date Collected	Date Received
208550001	30200846 001	Water	10/26/2016 09:00	11/1/2016 15:00
208550002	30200846 002	Water	10/26/2016 10:00	11/1/2016 15:00
208550003	30200846 003	Water	10/26/2016 11:00	11/1/2016 15:00

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 20853 30200663

Workorder Comments

The samples 20853 (0001-0008) were collected in an alternate container type, than that assigned to PAES method RSK175. Containers were BAK preserved.

Only one vial was provided for analysis of method RSK175; samples 20853 (0001-0008). In order to assure accurate reporting of all analytes, the equilibrated headspace was transferred to a headspace vial. Results reported at dilution.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530001** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 001** Date Collected: 10/25/2016 14:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**45**	mg/l	5.0	0.45	1	11/8/2016 13:22	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**0.32J**	ug/l	2.5	0.095	5	11/4/2016 08:47	AK	d,B
Ethane	**0.025U**	ug/l	1.0	0.025	5	11/4/2016 08:47	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	11/4/2016 08:47	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530002** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 002** Date Collected: 10/25/2016 11:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**4.3J**	mg/l	5.0	0.45	1	11/8/2016 13:34	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**280**	ug/l	2.5	0.095	5	11/4/2016 08:57	AK	d,B
Ethane	**1.2**	ug/l	1.0	0.025	5	11/4/2016 08:57	AK	d
Ethene	**3.3**	ug/l	1.0	0.035	5	11/4/2016 08:57	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530003** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 003** Date Collected: 10/25/2016 10:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**44**	mg/l	5.0	0.45	1	11/8/2016 13:45	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**140**	ug/l	2.5	0.095	5	11/4/2016 09:07	AK	d,B
Ethane	**0.17J**	ug/l	1.0	0.025	5	11/4/2016 09:07	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	11/4/2016 09:07	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530004** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 004** Date Collected: 10/25/2016 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**70**	mg/l	5.0	0.45	1	11/8/2016 13:56	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**3400**	ug/l	10	0.38	20	11/4/2016 13:11	AK	d,B
Ethane	**6.2**	ug/l	1.0	0.025	5	11/4/2016 09:21	AK	d
Ethene	**0.038J**	ug/l	1.0	0.035	5	11/4/2016 09:21	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530005** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 005** Date Collected: 10/25/2016 09:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**42**	mg/l	5.0	0.45	1	11/8/2016 14:10	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**900**	ug/l	2.5	0.095	5	11/4/2016 09:31	AK	d,B
Ethane	**1.2**	ug/l	1.0	0.025	5	11/4/2016 09:31	AK	d
Ethene	**0.24J**	ug/l	1.0	0.035	5	11/4/2016 09:31	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530006** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 006** Date Collected: 10/25/2016 11:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**3.7J**	mg/l	5.0	0.45	1	11/8/2016 14:22	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**290**	ug/l	2.5	0.095	5	11/4/2016 09:42	AK	d,B
Ethane	**1.2**	ug/l	1.0	0.025	5	11/4/2016 09:42	AK	d
Ethene	**3.3**	ug/l	1.0	0.035	5	11/4/2016 09:42	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530007** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 007** Date Collected: 10/25/2016 11:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**4.4J**	mg/l	5.0	0.45	1	11/8/2016 14:32	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**270**	ug/l	2.5	0.095	5	11/4/2016 09:52	AK	d,B
Ethane	**1.2**	ug/l	1.0	0.025	5	11/4/2016 09:52	AK	d
Ethene	**3.2**	ug/l	1.0	0.035	5	11/4/2016 09:52	AK	d

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20853 30200663

Lab ID: **208530008** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200663 008** Date Collected: 10/25/2016 00:01

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**44**	mg/l	5.0	0.45	1	11/8/2016 14:42	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**140**	ug/l	2.5	0.095	5	11/4/2016 10:03	AK	d,B
Ethane	**0.17J**	ug/l	1.0	0.025	5	11/4/2016 10:03	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	11/4/2016 10:03	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 20853 30200663

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20855 30200846

Lab ID	Sample ID	Matrix	Date Collected	Date Received
208550001	30200846 001	Water	10/26/2016 09:00	11/1/2016 15:00
208550002	30200846 002	Water	10/26/2016 10:00	11/1/2016 15:00
208550003	30200846 003	Water	10/26/2016 11:00	11/1/2016 15:00

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 20855 30200846

Workorder Comments

The samples 20855 (0001-0003) were collected in an alternate container type, than that assigned to PAES method RSK175. Containers were BAK preserved.

Only one vial was provided for analysis of method RSK175; samples 20855 (0001-0003). In order to assure accurate reporting of all analytes, the equilibrated headspace was transferred to a headspace vial. Results reported at dilution.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20855 30200846

Lab ID: **208550001** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200846 001** Date Collected: 10/26/2016 09:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**45**	mg/l	5.0	0.45	1	11/9/2016 16:43	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**160**	ug/l	2.5	0.095	5	11/4/2016 10:13	AK	d,B
Ethane	**0.38J**	ug/l	1.0	0.025	5	11/4/2016 10:13	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	11/4/2016 10:13	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20855 30200846

Lab ID: **208550002** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200846 002** Date Collected: 10/26/2016 10:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	**85**	mg/l	5.0	0.45	1	11/9/2016 16:53	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**420**	ug/l	2.5	0.095	5	11/4/2016 10:24	AK	d,B
Ethane	**0.16J**	ug/l	1.0	0.025	5	11/4/2016 10:24	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	11/4/2016 10:24	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20855 30200846

Lab ID: **208550003** Date Received: 11/1/2016 15:00 Matrix: Water

Sample ID: **30200846 003** Date Collected: 10/26/2016 11:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Carbon Dioxide	38	mg/l	5.0	0.45	1	11/9/2016 17:02	BW	n
Analysis Desc: EPA RSK175			Analytical Method: EPA RSK175					
Methane	**1.9J**	ug/l	2.5	0.095	5	11/4/2016 10:57	AK	d,B
Ethane	**0.47J**	ug/l	1.0	0.025	5	11/4/2016 10:57	AK	d
Ethene	**0.035U**	ug/l	1.0	0.035	5	11/4/2016 10:57	AK	d

CERTIFICATE OF ANALYSIS

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 20855 30200846

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
B	The analyte was detected in the associated blank.
d	The analyte concentration was determined from a dilution.