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June 15, 2015

Ms. Jamie Verrigni
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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 (April 2015)

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 April 16-17, 2015 groundwater monitoring results.

Please contact me at (315) 428-5652 or steven.stucker@us.ngrid.com if you have any questions regarding the report.

Sincerely,

Matthew D. Millias for SPS

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SEMI-ANNUAL GROUNDWATER MONITORING REPORT

April 2015 Sampling Event

Prepared For:

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1.0 INTRODUCTION

This Semi-Annual Groundwater Monitoring Report summarizes the results of April 2015 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 It was superseded by a new Order on Consent (Index Number A4-0473-0000), dated November 7, 2003.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 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 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 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 approval by NYSDEC is predicated on the pending filing of an environmental easement by National Grid. The SMP was approved by NYSDEC on 12/2/11 and included a Groundwater Monitoring Program.

SMP modifications were approved by NYSDEC in their 7/5/12 letter to National Grid which included:
1) The groundwater monitoring frequency has been reduced from quarterly to semi-annually (May & October);
2) MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16 will continue to be sampled. MW – 8 and MW-9 will be decommissioned in accordance with the Dept.'s CP-43 policy; and
3) RMW-1 will be monitored semi-annually and documented in the semi-annual report.

1.1 PURPOSE AND OBJECTIVE

The purpose of this Report is to summarize the 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 (MNA).

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 approximately 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 goes 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). In 1861, the plant was improved with the addition of a coal shed and 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 interim remedial measures (IRMs) were performed to address the MGP impacts. In 2002 and 2003, the former holders and associated impacts 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 ground surface gradually slopes from south to north, becoming increasingly steep 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 underneath 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. on the Site 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) ranges, 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 gas holders. The groundwater flow is consistent with regional groundwater flow direction. This groundwater flow direction and hydraulic gradients calculated during this monitoring period are also generally consistent with 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 locations: SG-1 (bridge). The second surface water gauging point (SG-2 – along creek) is not accessible and not monitored.
- 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 NAPL.

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 April 2015 as well as previous events. Appendix A also presents the field documentation from the April 2015 water gauging event.

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

A surface water level measurement was collected from the Cayadutta Creek using a water level probe (at the bridge; Gauging Point #1).

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, 9 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 matrix spike duplicate (MSD) 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.

Dissolved oxygen 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 dissolved oxygen (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 dissolved oxygen, 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 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, PAHs, lead, total cyanide, and 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 favorable to natural attenuation 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 DUSR

Groundwater analytical results were compared with levels specified in 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-10, MW-11, MW-13, MW-14, 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 MW-13, MW-15 and MW-16. MW-13 typically had the highest total BTEX concentrations. MW-15 is located generally downgradient of the former gas holders and of MW-13, while MW-16 is located southwest of the former gas holders and generally upgradient of both MW-13 and MW-15.

PAHs – No PAHs were detected in MW-4 or MW-7. PAH compounds were detected in groundwater samples collected from the other sampled monitoring wells. Naphthalene has consistently exhibited the highest concentration of any PAH.

Lead - Lead exhibited exceedances above its respective NYSDEC WQ Value (25 µg/l) in three wells (MW-7, MW-10, and MW-13) since June 2010.

Cyanide - Concentrations of cyanide were detected above its NYSDEC WQ Value (0.2 mg/L) in groundwater samples collected from MW-7, MW-13, MW-14, MW-15, and MW16 since June 2010.

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 all 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 dissolved oxygen 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 dissolved oxygen 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 during the 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]	No trend	No trend	No trend	No trend	No trend
MW-11[1]	Decreasing	Decreasing	Decreasing	Decreasing	No trend
MW-12	No trend	No trend	No trend	No trend	No trend

MW-13[1]	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing
MW-14[1]	No trend	Decreasing	No trend	Decreasing	Decreasing
MW-15[1]	No trend	Increasing	No trend	Decreasing	No trend
MW-16[1]	Decreasing	Decreasing	Decreasing	Decreasing	No trend

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

Isoconcentration 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. The sampling rounds depicted include June 2010, January 2011 and March 2012; which represent seasonality and a snapshot of time trends through that monitoring period. Evaluation of the isoconcentration figures suggests that the contaminant plumes are relatively stable to decreasing (smaller footprint with time) within the Site boundary. BTEX constituent plume trends (concentrations above the benzene WQ at 1 µg/L) have consistently included MW-13, MW-15 and MW-16, while the naphthalene plume (concentrations above the WQ) has decreased to include only 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 hydraulically down gradient direction from the south to the north, toward Cayadutta Creek. The groundwater flow direction and hydraulic gradients have been consistent during previous gauging events and with data obtained prior to the ROD.

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 (no site groundwater migrates north of Cayadutta Creek).

Site-Related Constituents

Concentrations of BTEX, PAHs, lead, and cyanide in groundwater samples have been detected at consistent well locations on the Site. The overall concentrations continue to show a slight decreasing trend as compared to historic levels. Based on historic sampling results (as depicted on Table 1 – Groundwater from the ROD), benzene and naphthalene were exhibited in groundwater at concentrations up to 2,600 µg/L and 7,300 µg/L pre-ROD, respectively; with the highest occurrences in the central portion of the Site. These levels are higher than concentrations exhibited during this monitoring period.

The concentrations of BTEX constituents and PAH compounds (and specifically naphthalene) appear to be relatively stable or decreasing as indicated by groundwater concentration trend analysis from on-site monitoring wells. Site institutional controls continue to be effective and will continue to be monitored semi-annually.

Concentrations of benzene are significantly higher than the concentrations of toluene, ethylbenzene, and xylenes at source area monitoring wells MW-13, MW-15 and MW-16. Higher concentrations of benzene relative to the other BTEX compounds may indicate the amount of DO in the subsurface may not be sufficient to completely biodegrade BTEX (Borden, et. al., 1995).

Natural Attenuation

Plume stability at the Site is in 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. Based on (1) trend analysis for BTEX and naphthalene and (2) MNA parameter

assessment, it is evident that attenuation at the Site is likely geochemically dependent, the source is being removed, and the plume is not migrating or increasing.

4.2 RECOMMENDATIONS

Based on the results of the April 2015 event and previous events, the following recommendations are made:

1. Continue the long-term semi-annual groundwater monitoring program. The next event will be October 2015.

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	3/15/2012		10/9/2012		4/18/2013		10/7/2013		4/9/2014		10/13/2014		4/16/2015	
		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)	Depth to Water (ft toc)	Groundwater Elevation (ft msl)
MW-4	676.54	22.81	653.73	NM	NM	23.97	652.57	23.12	653.42	23.28	653.26	23.28	653.26	22.91	653.63
MW-7	659.08	13.55	645.53	14.17	644.91	13.53	645.55	14.36	644.72	13.71	645.37	14.61	644.47	13.23	645.85
MW-10	657.59	14.18	643.41	15.05	642.54	14.27	643.32	14.44	643.15	14.13	643.46	14.98	642.61	14.15	643.44
MW-11	657.29	12.73	644.56	13.95	643.34	13.01	644.28	13.16	644.13	12.68	644.61	13.71	643.58	12.62	644.67
MW-12	660.08	14.26	645.82	16.36	643.72	14.06	646.02	14.99	645.09	14.41	645.67	15.65	644.43	14.25	645.83
MW-13	664.89	14.98	649.91	16.12	648.77	14.18	650.71	15.08	649.81	14.84	650.05	15.53	649.36	11.34	653.55
MW-14	663.91	15.49	648.42	16.98	646.93	13.14	650.77	14.74	649.17	15.70	648.21	15.02	648.89	13.06	650.85
MW-15	661.85	16.41	645.44	17.85	644.00	16.26	645.59	17.21	644.64	16.67	645.18	17.55	644.30	15.31	646.54
MW-16	665.57	11.56	654.01	10.51	655.06	9.98	655.59	9.85	655.72	9.45	656.12	10.24	655.33	10.48	655.09
RW-1				17.98		16.21		15.95		12.32		17.31		16.84	
GAUGE1	659.97	15.69	644.28	NM	NM	19.10	640.87	18.85	641.12	18.85	641.12	20.01	639.96	18.91	641.06

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	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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

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

Sample Date / CONSTITUENT	UNITS	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	R	R	405 J	431 J	R	405	354	442	398	400	384
Chloride	mg/l	265	385 B	288 J	R	228	222	275	411	304	329	295
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
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
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
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
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
Nitrate	mg/l	2.7	2.9	2.4	3	3.1	2.2	2.4	3.5	3.6	2.7	2.9
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
Sulfate	mg/l	56.7	74.2 B	R	R	56 B	62.2	64.7	74.7	70.7	50.8	60
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

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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Notes:
BTEX - Benzene, Ethylbenzene, Toluene and Xylene
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

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

Sample Date		04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
CONSTITUENT	**UNITS**											
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	R	R	327 J	370 J	R	310	324	367	375	392	340
Chloride	mg/l	122	93.8 B	111 J	R	91.2	101	114	84	79	62.8	67.7
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
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
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
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
Methane	ug/l	190	210	190	300	210	240	40	23	150	82	35
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
Nitrogen	mg/l	1.4	1.3	1.6	R	1.6	1.6	4.6	1.5	0.16	2	1.1
Sulfate	mg/l	745 B	611 B	R	R	674 B	509	654	518	540	457	442
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

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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds													
Benzene	ug/l	1	1 U	**7.1**	**1.3**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
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
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
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
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
PAHs													
Acenaphthene	ug/l	20	1.8 J	2.4	2.3	0.099 J	1.4	2	2.2	1.1	0.8	0.48 U	0.63
Acenaphthylene	ug/l	NC	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
Anthracene	ug/l	50	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
Benzo(a)anthracene	ug/l	0.002	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
Benzo(a)pyrene	ug/l	0.002	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
Benzo(b)fluoranthene	ug/l	0.002	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
Benzo(g,h,i)perylene	ug/l	NC	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
Benzo(k)fluoranthene	ug/l	0.002	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
Chrysene	ug/l	0.002	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
Dibenzo(a,h)anthracene	ug/l	NC	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
Fluoranthene	ug/l	50	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
Fluorene	ug/l	50	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
Indeno(1,2,3-cd)pyrene	ug/l	0.002	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
Naphthalene	ug/l	10	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
Phenanthrene	ug/l	50	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
Pyrene	ug/l	50	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
Cyanide and Lead													
Lead	mg/l	25	5 U	3 U	9.1	3.9 J	6.4	5 U	8.4	5 U	5 U	5 U	0.010 U
Cyanide	mg/l	0.2	R	0.17 J	0.156	R	0.078	0.14	0.1	0.11	0.081	0.10	0.098

Notes:
B - Present in Associated Blank Sample
BTEX - Benzene, Ethylbenzene, Toluene and Xylene
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

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

Sample Date / CONSTITUENT	UNITS	04/06/11	06/14/11	10/11/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	R	R	523 J	541 J	R	589	584	552	566	548	512
Chloride	mg/l	181 B	160 B	156 J	R	147	316	286	265	470	664	698
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
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
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
Manganese	mg/l	1.2	0.95	0.88	0.58	0.83	1	1.2	0.75	1.07	1.3	1.3
Methane	ug/l	34	9.8	33	85	40	72	32	28	110	130	63
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
Nitrogen	mg/l	8.5	4.9	4.9	R	5.4	5.7	6.1	4.1	4.8	6.2	5.6
Sulfate	mg/l	306	296 B	R	R	238 B	175	174	171	153	89.7	167
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

Notes:

B - Present in Associated Blank Sample
mg/l - Milligrams per liter
NA - Not analyzed
R - Rejected
U - Not Detected
ug/l - Micrograms per liter

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds													
Benzene	ug/l	1	**2.8**	**13**	**18**	**15**	**7.9**	**12**	**3.5**	**8.1**	**10**	**22**	**7.3**
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
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
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
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
PAHs													
Acenaphthene	ug/l	20	**150**	**110**	**120**	**130**	**100**	**140 E**	**97**	**110**	**120**	**110**	**59**
Acenaphthylene	ug/l	NC	290	290	240 D	270 D	210	160 E	120	170	110	150	56
Anthracene	ug/l	50	**88**	19 B	19	17	11	23	13	28	13	16	4.2
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**
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**
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**
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
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
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
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
Fluoranthene	ug/l	50	**96**	22 B	20	16	12	24	14	28	12	16	5.4
Fluorene	ug/l	50	**130**	**72**	**79**	**83**	**62**	**92**	**62**	**70**	31	44	16
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
Naphthalene	ug/l	10	**300**	**480**	**310 D**	**230 D**	**140**	**110**	**50**	**87**	10U	51	2.3
Phenanthrene	ug/l	50	**260**	**52 B**	**140 D**	**130**	**91**	**170**	**80**	**130**	5.8	62	1.5
Pyrene	ug/l	50	**150**	28 B	21	21	16	28	18	34	17	20	4.2
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
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

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

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

Sample Date / CONSTITUENT	UNITS	04/07/11	06/15/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	R	R	518 J	536 J	R	623	507	573	465	457	428
Chloride	mg/l	345	414 B	514 J	R	321	350	202	295	454	364	314
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
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
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
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
Methane	ug/l	4.8	68	190	360	160	520	12	25	120	180	13
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
Nitrogen	mg/l	1.3	0.59	1.3	R	1.3	1.4	0.58	0.64	0.57	1.2	0.26
Sulfate	mg/l	126 B	65.1 B	R	R	8.5 B	16.9	112	94.1	58	44.3	82.9
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

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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds									
Benzene	ug/l	1	1 U	**2.1**	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	ug/l	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
PAHs									
Acenaphthene	ug/l	20	0.52 U	14	0.2 U	1.1	1.1	0.48 U	0.48 U
Acenaphthylene	ug/l	NC	0.18 J	100	0.2 U	0.2 U	0.2 U	0.63	0.2 U
Anthracene	ug/l	50	0.13 J	2.8	0.2 U	1.1	1.1	0.88	0.2 U
Benzo(a)anthracene	ug/l	0.002	**0.57 B**	**1.5**	**0.83**	**3**	**0.66**	1.5	0.49 U
Benzo(a)pyrene	ug/l	0.002	**0.35 J**	**1.5**	**1**	**3.6**	**0.92**	1.8	0.49 U
Benzo(b)fluoranthene	ug/l	0.002	**0.27 J**	**1.3**	**0.91**	**3.4**	**0.71**	2.1	0.49 U
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
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
Chrysene	ug/l	0.002	**0.60 B**	**1.1**	**1**	**3**	0.49 U	1.6	0.49 U
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
Fluoranthene	ug/l	50	0.41 J	3.4	1.4	4.3	0.87	2.00	0.49 U
Fluorene	ug/l	50	0.52 U	2.2	0.49 U	0.49 U	0.49 U	0.48 U	0.49 U
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
Naphthalene	ug/l	10	0.52 U	160 E	2.5	0.99	0.52 U	1.6	0.49 U
Phenanthrene	ug/l	50	0.48 J	7.6	1.1	3.6	0.61	2	0.49 U
Pyrene	ug/l	50	0.59	4.2	2.4	5.8	1.3	2.8	0.49 U
Cyanide and Lead									
Lead	ug/l	25	5 U	5 U	5 U	**29**	5 U	0.018	0.49 U
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

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

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

Sample Date		12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
CONSTITUENT	**UNITS**								
MNA/WQ Parameters									
Alkalinity (as CaCO3)	mg/l	478 J	R	434	391	415	329	414	368
Chloride	mg/l	R	129 B	468	123	662	150	493	139
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
Ethene	ug/l	1.5 U	1.5 U	7 U	7 U	7 U	7 U	7 U	7 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
Manganese	mg/l	0.16	0.12	0.52	0.19	2.1	0.36	1.2	0.16
Methane	ug/l	1.1	0.56 J	47	1 U	1 U	1 U	4 U	4 U
Nitrate	mg/l	6.2	3.2	0.05 U	2.5	4.8	1.4	3.7	1.4
Nitrogen	mg/l	R	0.19 J	0.29	0.24	2.4	0.44	0.61	0.61
Sulfate	mg/l	R	53.5 B	81.4	73.5	115	51.6	73.5	54.8
Sulfide	mg/l	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds													
Benzene	ug/l	1	**71**	**200**	**59**	**300**	**370**	**360**	**490**	**400**	**200**	**300**	**17**
Ethylbenzene	ug/l	5	**87**	**200**	**110**	**520**	**670**	**490**	**600**	**320**	**200**	**340**	**17**
m/p-Xylene	ug/l	5	**110**	**240**	**140**	**550**	**740**	**590**	**730**	**420**	**250**	**480**	**24**
o-Xylene	ug/l	5	**71**	**130**	**74**	**260**	**340**	**260**	**320**	**190**	**120**	**210**	**16**
Toluene	ug/l	5	**80**	**260**	**89**	**550**	**740**	**520 E**	**710**	**440**	**270**	**430**	**17**
PAHs													
Acenaphthene	ug/l	20	17	**46**	**60**	**76**	**82 J**	**170**	**130**	**77**	**71**	**130**	4.9 U
Acenaphthylene	ug/l	NC	51	170	220 J	230 D	210	570	430	350	22	450	4.9 U
Anthracene	ug/l	50	3.6	12 B	15	15	97 U	47 U	47 U	47 U	6.9	14	4.9 U
Benzo(a)anthracene	ug/l	0.002	**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
Benzo(a)pyrene	ug/l	0.000	**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
Benzo(b)fluoranthene	ug/l	0.002	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
Benzo(g,h,i)perylene	ug/l	NC	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
Benzo(k)fluoranthene	ug/l	0.002	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
Chrysene	ug/l	0.002	**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
Dibenzo(a,h)anthracene	ug/l	NC	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
Fluoranthene	ug/l	50	2.6	12 B	16	14	97 U	47 U	47 U	47 U	6.1	8.2	4.9 U
Fluorene	ug/l	50	18	48	**52 J**	**53**	37 J	**110**	**93**	**68**	30	**94 J**	4.9 U
Indeno(1,2,3-cd)pyrene	ug/l	0.002	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
Naphthalene	ug/l	10	**250 D**	**1600 D**	**2900 D**	**5000 D**	**4100**	**8200**	**7100**	**3700**	10U	**4200**	4.9 U
Phenanthrene	ug/l	50	7.2	44 B	**60**	**55**	44 J	**76**	**73**	**61**	50U	**70**	4.9 U
Pyrene	ug/l	50	2.9	14 B	19	17	97 U	47 U	47 U	47 U	7.2	9.7	4.9 U
Cyanide and Lead													
Lead	ug/l	25	5 U	15 J	**27**	9.2	5.8	5 U	7.8	5 U	5 U	5 U	4.9 U
Cyanide	mg/l	0.2	R	**0.42 J**	**0.235**	R	**0.33**	**0.39**	**0.32**	**0.26**	0.17	**0.24**	0.11

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

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

Sample Date		04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
CONSTITUENT	**UNITS**										
MNA/WQ Parameters											
Alkalinity (as CaCO3)	mg/l	R	R	455 J	165 J	R	158	218	187	176	255
Chloride	mg/l	29.1	18.6 B	5.9 J	R	20.5	21.6	20.4	7.3	9.2	17.3
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
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
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
Manganese	mg/l	0.12	0.077	0.83	0.16	0.096	0.092	0.11	0.088	0.14	0.031
Methane	ug/l	32	46	28 J	72	66	120	36	15	74	4.0 U
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
Nitrogen	mg/l	1.1	1.3	2 U	R	1.4	1.4	1.8	1.2	2.1	0.62
Sulfate	mg/l	5 U	3.3 JB	R	R	52.1 J	139	82.3	15.5	15.5	5.0 U
Sulfide	mg/l	1 U	3.2 J	1.2	R	R	1.2	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds													
Benzene	ug/l	1	1 U	**2.5**	**11**	**2.5**	**2.9**	1 U	1 U	**1.3**	1 U	1 U	1 U
Ethylbenzene	ug/l	5	1 U	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U
m/p-Xylene	ug/l	5	2 U	2 U	2 U	2 U	2.4	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	ug/l	5	1 U	1 U	1 U	1 U	2.2	1 U	1 U	1 U	1 U	1 U	1 U
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
PAHs													
Acenaphthene	ug/l	20	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
Acenaphthylene	ug/l	NC	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
Anthracene	ug/l	50	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
Benzo(a)anthracene	ug/l	0.002	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
Benzo(a)pyrene	ug/l	0.002	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
Benzo(b)fluoranthene	ug/l	0.002	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
Benzo(g,h,i)perylene	ug/l	NC	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
Benzo(k)fluoranthene	ug/l	0.002	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
Chrysene	ug/l	0.002	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
Dibenzo(a,h)anthracene	ug/l	NC	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
Fluoranthene	ug/l	50	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
Fluorene	ug/l	50	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
Indeno(1,2,3-cd)pyrene	ug/l	0.002	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
Naphthalene	ug/l	10	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
Phenanthrene	ug/l	50	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
Pyrene	ug/l	50	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
Cyanide and Lead													
Lead	ug/l	25	5 U	4.2 J	4.8 J	9.1	5.7	21	5 U	15	5 U	0.031	0.01 U
Cyanide	mg/l	0.2	R	0.11 J	0.114	R	**0.28**	**1.4**	0.1	**0.2**	**0.9**	0.2	0.091

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

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

Sample Date / CONSTITUENT	UNITS	04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014
MNA/WQ Parameters											
Alkalinity (as CaCO3)	mg/l	R	R	410	453 J	R	494	417	456	483	372
Chloride	mg/l	6.1	9.7 B	5.1	R	12.8	40.4	2	7.6	28.5	3.9
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
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
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
Manganese	mg/l	0.054	0.17	0.2	0.28	0.51	2	0.008	0.25	1	0.019
Methane	ug/l	1 U	6.2	46	15	70	140	1 U	8.6	140	4.0 U
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
Nitrogen	mg/l	0.85	0.32	0.36	R	0.86	2.5	0.54	0.68	1.5	0.22
Sulfate	mg/l	5 U	19.6 B	5.6 JB	R	173 B	639	5 U	5 U	363	5.0 U
Sulfide	mg/l	1 U	1 UJ	1 U	R	R	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds													
Benzene	ug/l	1	**940 D**	**1300 D**	**670**	**790 D**	**1500 D**	**1100 E**	**410**	**390**	**210**	**300**	**16**
Ethylbenzene	ug/l	5	**190 D**	**210 D**	**120**	**190 D**	**220**	**200**	**75**	**53**	**38**	**74**	1.9
m/p-Xylene	ug/l	5	**17**	**18**	**19 J**	**9**	**6.6 J**	**23**	**19**	5 U	5 U	**10 U**	3.2
o-Xylene	ug/l	5	**44**	**48**	**37**	**38**	**27**	**23**	**19**	**16**	**8.5**	**28**	**7.5**
Toluene	ug/l	5	**6.1**	4.7	10 U	**6.3**	**6.2 J**	**5**	5 U	5 U	5 U	**5.8**	1 U
PAHs													
Acenaphthene	ug/l	20	**47**	**32**	**47**	**50**	**47**	**57**	**42**	**23**	**18**	**24**	6.7
Acenaphthylene	ug/l	NC	24	17	22	19	12	16	11	6.5	3	3.9	0.59
Anthracene	ug/l	50	2.1	1.3 B	2.4	2	1.5 J	2.8	2.6	1.4	0.95	0.81	0.49 U
Benzo(a)anthracene	ug/l	0.002	**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
Benzo(a)pyrene	ug/l	0.000	**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
Benzo(b)fluoranthene	ug/l	0.002	**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
Benzo(g,h,i)perylene	ug/l	NC	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
Benzo(k)fluoranthene	ug/l	0.002	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
Chrysene	ug/l	0.002	**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
Dibenzo(a,h)anthracene	ug/l	NC	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
Fluoranthene	ug/l	50	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
Fluorene	ug/l	50	13	8.7	14	13	10	17	13	6.1	4.3	5.2	1.2
Indeno(1,2,3-cd)pyrene	ug/l	0.002	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
Naphthalene	ug/l	10	**560 D**	**450 D**	**570 D**	**140 D**	**51**	**27**	**94**	**13**	**29**	**210**	1.5
Phenanthrene	ug/l	50	8	6.7 B	13	11	8.8	12	10	5.1	3.4	3.7	0.49 U
Pyrene	ug/l	50	2.2	1.2 B	1.6	1.8	1.5 J	2.9	3.7	2	1.5	1.1	0.49 U
Cyanide and Lead													
Lead	ug/l	25	5 U	7.8	5.1	5 U	5 U	5 U	10	5 U	5 U	0.010	0.010
Cyanide	mg/l	0.2	R	**0.61 J**	**0.427**	R	**0.91**	**1.2**	**0.5**	**0.5**	**0.48**	**0.58**	**0.29**

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

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

Sample Date / CONSTITUENT	UNITS	04/07/11	06/15/11	10/12/11	12/14/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	R	R	502 J	547 J	R	629	527	585	482	557	480
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
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
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
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
Manganese	mg/l	0.89	0.67	0.79	0.77	0.61	0.61	1	1.1	0.68	1	0.68
Methane	ug/l	680	360	720	1900	1600	1900	780	580	1100	2400	16
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
Nitrogen	mg/l	1.9	3.1	2.1	R	4.6	5.4	3	3.1	3.2	2.9	0.81
Sulfate	mg/l	137 B	193 B	R	R	202 B	217	113	139	122	91.1	28.7
Sulfide	mg/l	1 U	1 UJ	2.4	1 U	R	1 U	1 U	1 U	1 U	1 U	1 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

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

CONSTITUENT	UNITS	NYSDEC WQ Values	04/06/11	06/14/11	10/11/11	12/13/11	03/14/12	10/09/12	04/18/13	10/08/13	04/09/14	10/20/2014	4/16/2015
BTEX Compounds													
Benzene	ug/l	1	**150 D**	**100 D**	**17**	**140 D**	**150 D**	**180**	**200**	**150**	**8.7**	**59**	**91**
Ethylbenzene	ug/l	5	**92**	**51**	**5**	**78**	**66**	**100**	**150**	**92**	**6.2**	**41**	**68**
m/p-Xylene	ug/l	5	**47**	**27**	2.8	**29**	**26**	**14**	**41**	**23**	1U	10 U	1U
o-Xylene	ug/l	5	**41**	**27**	3.6	**36**	**37**	**14**	**56**	**35**	1U	**17**	**24**
Toluene	ug/l	5	**33**	**15**	2	**21**	**11**	10 U	**14**	**9**	1U	**17**	**1U**
PAHs													
Acenaphthene	ug/l	20	**21**	7	2.3	13	15	**30**	**30**	16	1U	**40**	**27**
Acenaphthylene	ug/l	NC	36	11	4.7	10	2.2	34	49	0.48 U	0.48 U	31	25
Anthracene	ug/l	50	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
Benzo(a)anthracene	ug/l	0.002	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
Benzo(a)pyrene	ug/l	0.000	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
Benzo(b)fluoranthene	ug/l	0.002	**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
Benzo(g,h,i)perylene	ug/l	NC	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
Benzo(k)fluoranthene	ug/l	0.002	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
Chrysene	ug/l	0.002	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
Dibenzo(a,h)anthracene	ug/l	NC	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
Fluoranthene	ug/l	50	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
Fluorene	ug/l	50	16	4.7	1.3	8.8	13	17	21	9.1	0.48 U	**22**	14
Indeno(1,2,3-cd)pyrene	ug/l	0.002	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
Naphthalene	ug/l	10	**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
Phenanthrene	ug/l	50	13	4.8 B	1.1	6.7	6.3	11	15	0.48 U	0.48 U	18	11
Pyrene	ug/l	50	1.9	2.1 B	0.50 U	1.1	0.87	1.3	2	0.48 U	0.48 U	3	1.8
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	0.01U	0.01U
Cyanide	mg/l	0.2	R	**0.25 J**	0.137	R	**0.34**	**0.41**	0.11	0.11	0.023	**0.25**	**0.24**

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

Sample Date		04/07/11	06/15/11	10/12/11	12/13/11	03/13/12	10/09/12	04/18/13	10/08/13	04/09/14	10/15/2014	4/16/2015
CONSTITUENT	**UNITS**											
MNA/WQ Parameters												
Alkalinity (as CaCO3)	mg/l	R	R	586 J	600 J	R	436	530	585	454	595	532
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
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
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
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
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
Methane	ug/l	270	170	37	400 B	140	550	170	150	75	410	160
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
Nitrogen	mg/l	2.6	1.8	R	R	3.2	3.8	3.6	2.8	2.4	3.3	2.1
Sulfate	mg/l	312 B	243 B	R	R	351 B	487	140	86	1U	107	38.2
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

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

FIGURES

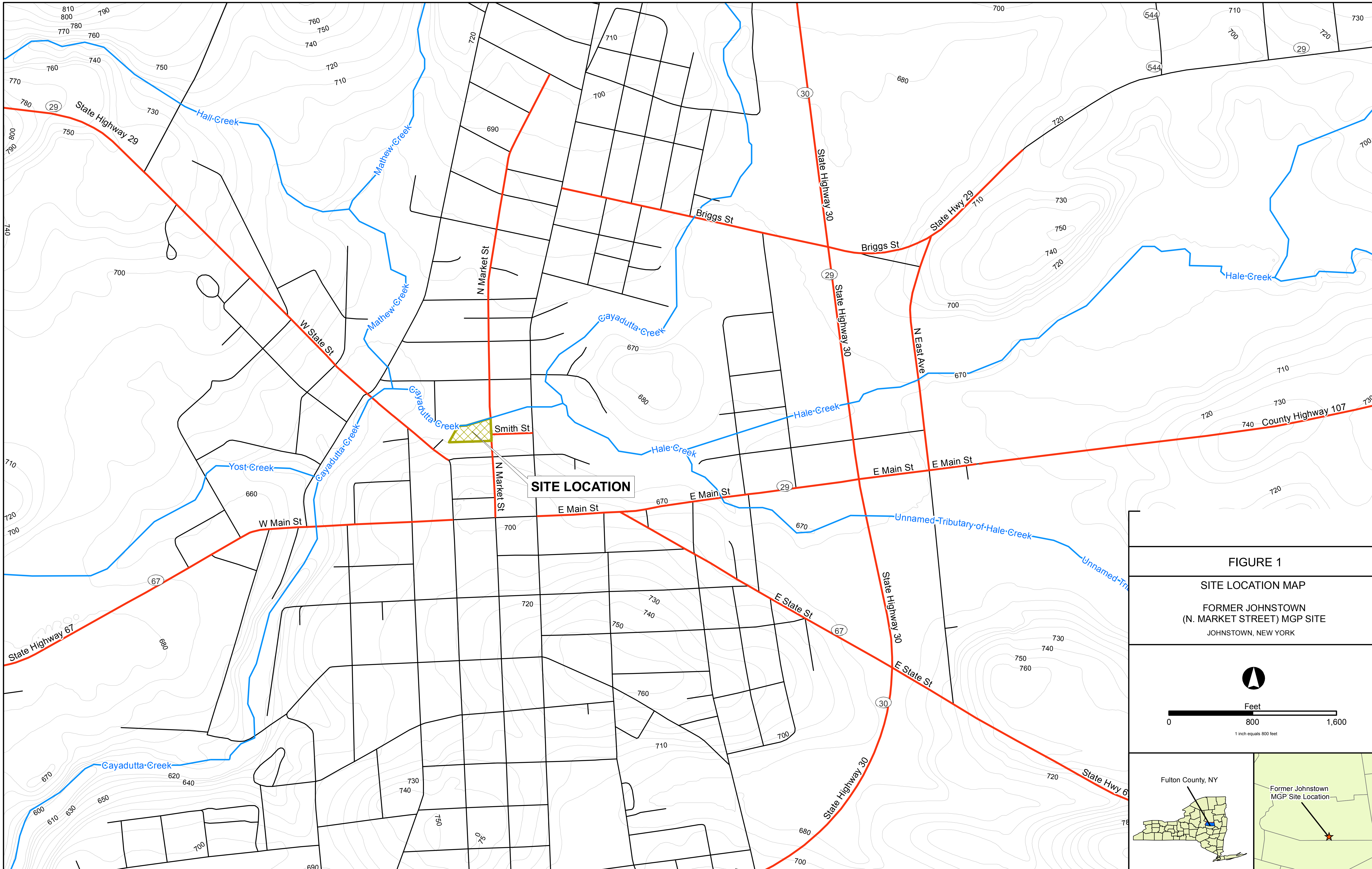


FIGURE 1

SITE LOCATION MAP

FORMER JOHNSTOWN
(N. MARKET STREET) MGP SITE
JOHNSTOWN, NEW YORK

REPUTED OWNER

City of Johnstown

BK. 738 PG. 322

Decommissioned
October 9, 2013

MW-9

MW-8

Decommissioned
October 9, 2013

Top of Bank

CAYADUTTA CREEK

Concrete Wall

SG-1

Stream Gauge Not
Accessible

SG-2

MW-10

MW-7

Sheet Pile
left in place
after IRM
activities

REPUTED OWNER
PETER G.
RANERI
162.19-14-7

MW-15

MW-14

Holder #2
1887-1918

NMPC
162.20-14-7

MW-16

MW-13

Holder #3
1898-1948

Existing Natural
Gas Regulator Station

Approx. Property
Lines

Holder #1
1859- 1896

MW-4

Retaining Wall

REPUTED OWNER
CITY OF JOHNSTOWN
162.20-14-3
COLONIAL CEMETERY

JOHNSTOWN
162.19-14-8

2 STY

2 STY
GARAGE

Museum

PARKING

Edge of Pavement

NORTH MARKET STREET

Sidewalk

Edge of Pavement

MW-11

CAYADUTTA CREEK

MW-12

2 Story
House

SMITH ST.

Warehouse

N

LEGEND

MONITORING WELL

STREAM GAUGE

HISTORIC MGP FEATURE (REMOVED)

HISTORIC MGP FEATURE

0 40 80

Feet

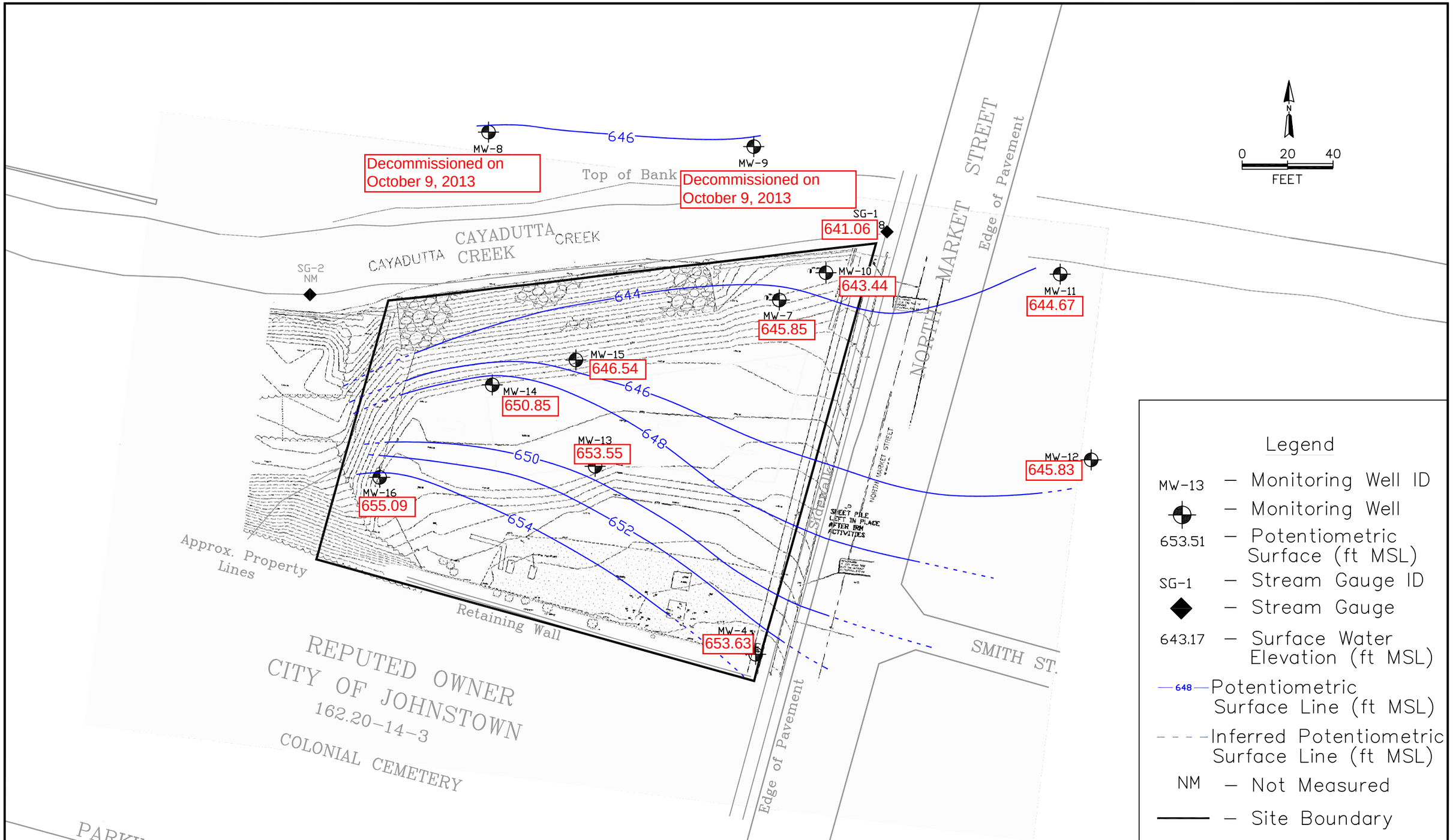
nationalgrid

SITE LOCATION PLAN
SHOWING MONITORING WELL LOCATIONS, HISTORIC MGP
FEATURES, AND SURROUNDING AREA

JOHNSTOWN (N. MARKET STREET) FORMER MGP SITE
JOHNSTOWN, NEW YORK

FIGURE 2

T:\GIS\National_Grid\JohnstownMXD\Feasibility_Study_2009\IRM_August_09\FIG_1_2_SITE_PLAN.mxd



nationalgrid

TITLE:
Potentiometric Surface Map
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 3 - Groundwater Elevations (April 2015)

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Sample ID		MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8
Sample Date		07/01/10	09/29/10	1/3/2011	4/6/2011	6/14/2011	10/11/11	12/13/11	03/13/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	0.98	0.63	0.73	2.39	0.71
ORP*	mV	73	-20	76	7	92	-92	-3	-52
Ferrous Iron	mg/l	1 U	0.56	0.2 U	0.68 J	1.6 J	1.5	1.4	1.2*
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.12	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	31.8	19.9	4 JB	2.5 JB	R	26.2 B
Methane	ug/l	49	45	81	84	29	190 J	190 B	64

CONSTITUENT	UNITS	Round 1	Round 2	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sample ID		MW-9	MW-9	MW-19	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
Sample Date		07/01/10	09/29/10	09/29/10 Duplicate	1/3/2011	4/6/2011	06/14/11	10/11/11	12/13/11	03/13/12
MNA/WQ Parameters										
Dissolved Oxygen*	mg/l	0	0		0	0	0.82	0.59	0.71	0.52
ORP*	mV	-16	4		-27	-87	-57	-65	-44	-161
Ferrous Iron	mg/l	0.1 U	0.1 U	0.1 U	0.1 U	2*	0.1 UJ	0.1 U	0.1 U	0.1 U
Nitrate	mg/l	NA	NA	NA	1 U	4.1	3.6	0.95	0.063	0.28
Sulfate	mg/l	NA	NA	NA	51.1	61.4	73.2 B	84.3	R	47.7
Methane	ug/l	22	170 D	140 D	12	3.6	7.6	6	25	90

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Sample ID		MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10	MW-10
Sample Date		07/01/10	09/29/10	1/4/2011	4/6/2011	6/14/2011	10/11/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	5.83	6.83	5.6	0.76	0.49
ORP*	mV	-104	-55	30	-47	-145	-60	-93	-61
Ferrous Iron	mg/l	2.78	0.31	0.2 U	0.2*	0.34 J	0.47	0.1 U	1.9*
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	167	306	296 B	320 B	R	238 B
Methane	ug/l	75	64	75	34	9.8	33	85	40

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15
Sample ID		MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15	MW-15
Sample Date		07/01/10	09/30/10	1/5/2011	4/7/2011	6/15/2011	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	3.02	0.26	0.52	0.34	0.51
ORP*	mV	-110	-158	-168	-123	-48	-157	-106	-143
Ferrous Iron	mg/l	1 U	0.15	1.36	3.8*	0.51 J	0.47 J	0.13 J	0.9*
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	182	137 B	193 B	R	R	202 B
Methane	ug/l	1300	820	3400 D	680	360	720	1900	1600

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Sample ID		MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11	MW-11
Sample Date		07/01/10	09/29/10	1/4/2011	4/7/2011	6/15/2011	10/11/11	12/13/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	7.65	0.40	0.40	0.38	4.95
ORP*	mV	-140	-158	-120	11	32	-113	-72	-69
Ferrous Iron	mg/l	3.64	0.2 U	0.5 U	4*	9.4 J	0.9 J	1.2*	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.13	0.05 U	0.05 U	0.05 U	0.092
Sulfate	mg/l	NA	NA	46.3	126 B	65.1 B	12.4	R	8.5 B
Methane	ug/l	740 D	730	420	4.8	68	190	360	160

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
Sample ID		MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14	MW-14
Sample Date		06/30/10	09/30/10	1/4/2011	4/7/2011	6/15/2011	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	0	6.21	0.58	0.48	1.02
ORP*	mV	88	-76	-118	204	4	-1	-71	-150
Ferrous Iron	mg/l	0.29	0.15	0.1 U	U*	0.11 J	0.1 U	0.2*	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.71	0.19	0.086	0.023 J	0.05 U
Sulfate	mg/l	NA	NA	53.3	5 U	19.6 B	5.6 JB	R	173 B
Methane	ug/l	9.1	94	120 D	1 U	6.2	46	15	70

CONSTITUENT	UNITS	Round 3	Round 6	Round 7	Round 8
Site ID		MW-12	MW-12	MW-12	MW-12
Sample ID		MW-12	MW-12	MW-12	MW-12
Sample Date		01/04/11	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters					
Dissolved Oxygen*	mg/l	0	2.76	0.84	2.03
ORP*	mV	61	107	6	34
Ferrous Iron	mg/l	0.1 U	0.3*	0.1 U	0.1 U
Nitrate	mg/l	4	6.6	6.2	3.2
Sulfate	mg/l	97.9	240 B	R	53.5 B
Methane	ug/l	2 U	1 U	1.1	0.56 J

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7
Sample ID		MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7	MW-7
Sample Date		07/01/10	09/30/10	1/4/2011	4/7/2011	6/15/2011	10/12/11	12/14/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0	0	6.56	0.66	0.83	0.65
ORP*	mV	-108	-89	-95	-80	-126	-170	-111	-87
Ferrous Iron	mg/l	3.66	1.12	0.1 U	3.2*	1.7 J	0.83 J	0.8*	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.02 U	0.05 U	0.05 U	0.05 U
Sulfate	mg/l	NA	NA	576	745 B	611 B	R	R	674 B
Methane	ug/l	920 D	290	510	190	210	190	300	210

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
Sample ID		MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16	MW-16
Sample Date		06/30/10	09/30/10	1/5/2011	4/7/2011	6/15/2011	10/12/11	12/13/11	03/13/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	0	0	0.11	0.79	0.26	1.2	0.9	1.15
ORP*	mV	-160	-110	-98	-27	57	33	-101	-122
Ferrous Iron	mg/l	0.29	0.1 U	0.44	2.2*	0.33 J	1.3*	0.08	0.1 U
Nitrate	mg/l	NA	NA	1 U	0.05 U	0.05 U	0.65	0.17	0.05 U
Sulfate	mg/l	NA	NA	316	312 B	243 B	R	R	351 B
Methane	ug/l	300	210	580 D	270	170	37	400 B	140

CONSTITUENT	UNITS	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Round 7	Round 8
Site ID		MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample ID		MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4	MW-4
Sample Date		06/30/10	09/29/10	1/4/2011	4/6/2011	6/14/2011	10/11/11	12/13/11	03/14/12
MNA/WQ Parameters									
Dissolved Oxygen*	mg/l	3.34	3.5	0.12	4.92	10.34	3.71	4.1	2.92
ORP*	mV	141	131	161	172	163	197	187	96
Ferrous Iron	mg/l	0.1 U	0.1 U	0.1 U	0.2*	0.1 U	0.1 U	0.1 U	0.1 U
Nitrate	mg/l	NA	NA	2.5	2.7	2.9	2.4	3	3.1
Sulfate	mg/l	NA	NA	49.2	56.7	74.2 B	52.9	R	56 B
Methane	ug/l	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U

CONSTITUENT	UNITS	Round 1		Round 2	Round 3		Round 4		Round 5		Round 6		Round 7		Round 8	
Site ID		MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13	MW-13
Sample ID		MW-13	MW-93	MW-13	MW-13	MW-103	MW-13	FIELD DUP	MW-13	FIELD DUP	MW-13	FIELD DUP	MW-13	FIELD DUP	MW-13	FIELD DUP
Sample Date		7/1/2010	7/1/2010	09/30/10	1/5/2011	1/5/2011	4/7/2011	4/7/2011	6/15/2011	6/15/2011	10/12/2011	10/12/2011	12/14/2011	12/14/2011	3/14/2012	3/14/2012
			Duplicate			Duplicate		Duplicate		Duplicate		Duplicate		Duplicate		Duplicate
MNA/WQ Parameters																
Dissolved Oxygen*	mg/l	0		0	0		0		0.22		0.48		1.53		0.41	
ORP*	mV	-234		-210	-251		-170		-142		-86		-230		-215	
Ferrous Iron	mg/l	0.27	0.26	0.1 U	0.32	0.29	0.2*		0.1 UJ	0.1 UJ	3.1 J	3.5 J	0.08 J	0.1 U	0.1 U	0.1 U
Nitrate	mg/l	NA	NA	NA	1 U	1 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
Sulfate	mg/l	NA	NA	NA	86.8	87.9	5 U	5 U	3.3 JB	3.3 JB	R	R	R	R	52.1 J	78.9 J
Methane	ug/l	160	160	77	110 D	130 D	32	35	46	32	28 J	30 J	72	71	66	82

Historical Groundwater Data
(Rounds 1-8)

Legend

MW-11 – Monitoring Well ID

– Monitoring Well

– Site Boundary

* – From field reading at time of groundwater sampling
B – Present in associated blank
D – From a diluted sample
U – Not detected
J – Estimated
NA – Not analyzed
ug/L – Micrograms per liter
mg/L – Milligrams per liter
mV – Millivolts

0 20 40
FEET

nationalgrid

TITLE:
Monitored Natural Attenuation/Water Quality Parameter Map
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 4

MW-8
Not Sampled

MW-9
Not Sampled

Top of Bank

CAYADUTTA CREEK

CAYADUTTA CREEK

MW-10
ND

MW-7
ND

MW-15
14.2

MW-14
ND

MW-13
91

MW-16
210

MW-4
ND

MW-11
11.8

MW-12
ND

NORTH MARKET STREET

Edge of Pavement

Sidewalk

NORTH MARKET STREET

SHEET PILE LEFT IN PLACE AFTER IRM ACTIVITIES

Approx. Property Lines

Retaining Wall

REPUTED OWNER
CITY OF JOHNSTOWN
162.20-14-3
COLONIAL CEMETERY

SMITH ST.

Edge of Pavement

PARKIN

N

0 20 40
FEET

Legend

MW-11 – Monitoring Well ID

– Monitoring Well

31.1 – BTEX Concentration (in ug/L)

1 – 5 ug/L BTEX

5 – 100 ug/L BTEX

100 – 1,000 ug/L BTEX

>1,000 ug/L BTEX

– Site Boundary

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes

ND – Not detected

New York State Department of Environmental Conservation Ambient Water Quality Standards are 1 ug/L for benzene and 5 ug/L for ethylbenzene, toluene, and xylenes.

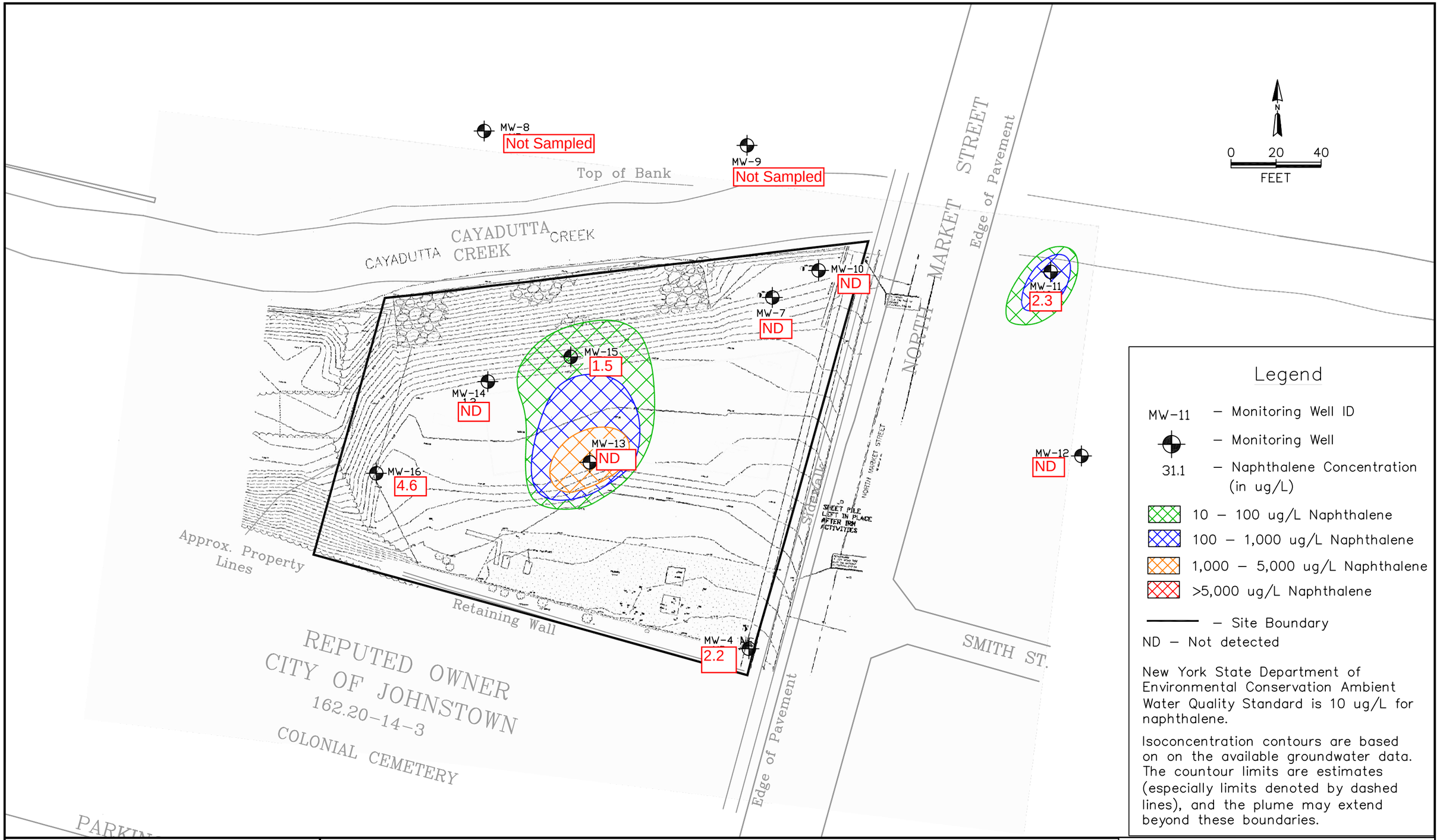
Isoconcentration contours are based on on the available groundwater data. The countour limits are estimates (especially limits denoted by dashed lines), and the plume may extend beyond these boundaries.

nationalgrid

TITLE:
BTEX Isoconcentration Contour
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 5

April 2015



nationalgrid

TITLE:
Naphthalene Isoconcentration Contour
Johnstown MGP Site
North Market Street, Johnstown, NY

Figure 6
April 2015

APPENDIX A

FIELD DATA

Site Management Plan Inspection Form

109 North Market Street
Johnstown, New York

Date: 4/16/2015 Time: 1300
Technician: Rosenzweig Weather: Clear 65 °F

Vegetation Cap				
Condition of Grass	GOOD	FAIR	POOR	COMMENTS:
Condition of Site Trees	NONE	MINOR	SIGNIFICANT	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: Dog walking
Litter	NONE	MINOR	SIGNIFICANT	COMMENTS:

General Comments:
City has been piling snow up on property. Same as years past. Still some snow left.

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: EN	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-64535-16327.1
Client Contact: Timothy Beaumont	Phone: 203-727-6584	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 2
Company: CDM Smith, Inc.				Job #:
Address: 6800 Old Collamer Road Suite 3	Due Date Requested:	Analysis Requested		Preservation Codes:
City: East Syracuse	TAT Requested (days): Standard			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: NY, 13057				
Phone:	PO #: 36380.105370			
Email: beaumonttj@cdmsmith.com	WO #:			Other:
Project Name: Johnstown semi-annual GW	Project #: 48011229			
Site:	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175_CO2 - Carbon dioxide	8270D_LL_PAH - PAH low level Semivolatiles	351.2 - Total Kjeldahl Nitrogen	6010C - Metals Pb/Mn	RSK_175 - Methane/Ethane/Ethene	8260C - BTEX - 8260	SM4500_S2_F - Sulfide	9012B - Cyanide, Total	353.2, 353.2_Nitrite, D516, Nitrate_Calc, SM4500_Cl_E	2320B - Alkalinity, Total	3500_FE_D - Ferrous Iron			Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	S	D	A	A	CB	B	N	N	N				
~~MW-4-0415~~				~~Water~~																	
MW-7-0415	4/16/15	1290	G	Water	N		X	X	X	X	X	X	X	X	X	X	X				
~~MW-10-0415~~	4/16/15	1245	G	Water	N		X	X	X	X	X	X	X	X	X	X	X				
~~MW-11-0415~~				~~Water~~																	
~~MW-12-0415~~				~~Water~~																	
MW-13-0415	4/16/15	1005	G	Water	N	Y	X	X	X	X	X	X	X	X	X	X	X				
MW-13-0415 MS	4/16/15	1005		Water		Y															
MW-13-0415 SD	4/16/15	1005		Water		Y															
MW-14-0415	4/16/15	845		Water		N															
MW-15-0415	4/16/15	1135		Water																	
MW-16-0415	4/16/15	745		Water																	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	4/16/15 1530	CDMS		4-16-15 1530	TA
Relinquished by:	Date/Time: 4-16-15 1800	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Yes A No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information
Client Contact: Timothy Beaumont
Company: CDM Smith, Inc.
Address: 6800 Old Collamer Road Suite 3
City: East Syracuse
State, Zip: NY, 13057
Phone:
Email: beaumonttj@cdmsmith.com
Project Name: Johnstown semi-annual GW
Site:

Sampler: ER
Phone: 202-727-6527
Due Date Requested:
TAT Requested (days): Standard
PO #: 36380.105370
WO #:
Project #: 48011229
SSOW#:

Lab PM: Mason, Becky C
E-Mail: becky.mason@testamericainc.com
Carrier Tracking No(s):

COC No: 480-64535-16327.2
Page: Page 2 of 2
Job #:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	R9K_176_CO2 - Carbon dioxide	8270D_LL_PAH - PAH low level SemiVolatiles	351.2 - Total Kjeldahl Nitrogen	8260C - BTEX - 8260	6010C - Metals Pb/Mn	R9K_175 - Methane/Ethane/Ethene	8260C - BTEX - 8260	SM4500_S2_F - Sulfide	9012B - Cyanide, Total	353.2, 353.2_Nitrite, D516, Nitrate_Calc, SM4500_Cl_E	2320B - Alkalinity, Total	3500_FE_D - Ferrous Iron	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	B	A	A	CB	B	N	F	N			
FD-0415	4/16/15	—	G	Water	N	N	X	X	X	X	X	X	X	X	X	X	X			
				Water																
				Water																

TDC
4-16-15

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:	Method of Shipment:	
Relinquished by:	Date/Time: 4/16/15 1530	Company: CDMS	Received by: TDC	Date/Time: 4-16-15 1530	Company: TD	
Relinquished by:	Date/Time: 4-16-15 1800	Company: TD	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: E Rosenzweig	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-64535-16327.1
Client Contact: Timothy Beaumont	Phone: 203 727 6524	E-Mail: becky.mason@testamericainc.com		Page: Page 1 of 2
Company: CDM Smith, Inc.				Job #:
Address: 6800 Old Collamer Road Suite 3	Due Date Requested:			
City: East Syracuse	TAT Requested (days): Standard			
State, Zip: NY, 13057				
Phone:	PO #: 36380.105370			
Email: beaumonttj@cdmsmith.com	WO #:			
Project Name: Johnstown semi-annual GW	Project #: 48011229			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175_CO2 - Carbon dioxide	8270D_LL_PAH - PAH low level Semivolatiles	351.2 - Total Kjeldahl Nitrogen	6010C - Metals Pb/Mn	RSK_175 - Methane/Ethane/Ethene	8260C - BTEX - 8260	SM4500_S2_F - Sulfide	9012B - Cyanide, Total	353.2, 353.2_Nitrite, D516, Nitrate_Calc, SM4500_Cl_E	2320B - Alkalinity, Total	3500_FE_D - Ferrous Iron	Total Number of containers	Special Instructions/Note:
MW-4-0415	4/17/15	905	G	Water	N	N	X	X	X	X	X	X	X	X	X	X	X		
~~MW-7-0415~~				Water															
~~MW-10-0415~~				Water															
MW-11-0415	4/17/15	1108	G	Water	N	N	X	X	X	X	X	X	X	X	X	X	X		
MW-12-0415	4/17/15	1005	G	Water	N	N	X	X	X	X	X	X	X	X	X	X	X		
~~MW-13-0415~~				Water															
MW-13-0415 MS				Water															
MW-13-0415 SD				Water															
MW-14-0415				Water															
MW-15-0415				Water															
MW-16-0415				Water															

480-78711 Chain of Custody

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	4/18/15 1210	CDMG	[signature]	4-17-15 1210	TA
[signature]	4-17-15 1800	TA	[signature]	18 APR 15 0130	TAB

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.9 #1

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler:	Lab PM: Mason, Becky C	Carrier Tracking No(s):	COC No: 480-64535-16327.2
Client Contact: Timothy Beaumont	Phone:	E-Mail: becky.mason@testamericainc.com		Page: Page 2 of 2
Company: CDM Smith, Inc.				Job #:
Address: 6800 Old Collamer Road Suite 3	Due Date Requested:			
City: East Syracuse	TAT Requested (days):			
State, Zip: NY, 13057				
Phone:	PO #: 36380.105370			
Email: beaumonttj@cdmsmith.com	WO #:			
Project Name: Johnstown semi-annual GW	Project #: 48011229			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175_CO2 - Carbon dioxide	8270D_LL_PAH - PAH low level Semivolatiles	351.2 - Total Kjeldahl Nitrogen	6010C - Metals Pb/Mn	RSK_175 - Methane/Ethane/Ethene	8260C - BTEX - 8260	SM4500_S2_F - Sulfide	9012B - Cyanide, Total	353.2, 353.2_Nitrite, D516, Nitrate_Calc, SM4500_Cl_E	2320B - Alkalinity, Total	3500_FE_D - Ferrous Iron	Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N	N	S	D	A	A	D	B	N	N	N	
~~FD-0415~~				~~Water~~															
Trip Blank	4/17/15	—	G	Water	N							X							
				Water															

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4/17/15 1210	CDMS		4-17-15 1210	TA
2	Relinquished by:	Date/Time: 4-17-15 1800	Company TA	Received by:	Date/Time: 18APR15 0120	Company TAS
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 0.9 #1

National Grid
109 North Market Street, Former MGP Site
Johnstown, New York

Spring Semi-Annual Event
April 16-17, 2015

Well ID	Sample?	Well Size?	DTW	DTP	DTB	Comments
RW-1	No	2"	16.84		21.50	
MW-4	Yes	2"	22.91		27.32	
MW-7	Yes	2"	13.23		22.10	
MW-10	Yes	2"	14.15		22.05	
MW-11	Yes	2"	12.62		22.90	
MW-12	Yes	2"	14.25		22.24	
MW-13	Yes	2"	11.34		22.75	MS/MSD
MW-14	Yes	2"	13.06		23.55	Duplicate Sample
MW-15	Yes	2"	15.31		23.00	
MW-16	Yes	2"	10.48		19.45	
Gauge-1 (bridge)	No		18.91			

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

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-4**

Date: 6/1/17
Weather: Rain 50°
Time In: 8:15 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	22.91	
Depth to Bottom:	(feet)	27.32	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	4.41	
Volume of Water in Well:	(gal)	0.71	
Three Well Volumes:	(gal)	2.12	

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: Clear No sheen/odor

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)	.500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes ☐	No ☒	

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	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
820		18.66	7.31	28	1.58	28.7	7.66	1.01
825		15.10	7.06	62	1.67	3.3	4.71	1.06
830		13.25	7.00	71	1.66	6.8	3.67	1.06
835		11.82	6.96	77	1.61	5.1	3.41	1.03
840		11.37	6.99	86	1.57	4.4	3.30	1.00
845		11.02	6.97	83	1.56	1.3	3.46	0.997

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes ☒	No ☐
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes ☒	No ☐
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes ☒	No ☐
	MANGANESE			
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes ☒	No ☐
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes ☒	No ☐
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes ☒	No ☐
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes ☒	No ☐
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes ☒	No ☐
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes ☒	No ☐
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes ☒	No ☐
D516	SULFATE	2 - 125 ml plastic	Yes ☒	No ☐
EPA Method 353.2	NITRATE			
SM_4500_Cl_E	CHLORIDE			

Sample ID: MW-4-0415 Duplicate? Yes ☐ No ☒
Sample Time: 850 MS/MSD? Yes ☐ No ☒

Shipped: Drop-off Albany Service Center ☐

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-7**

Date: 4/16/15
Weather: Clear ~ 60°
Time In: 1305 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	13.23	
Depth to Bottom:	(feet)	22.10	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	8.87	
Volume of Water in Well:	(gal)	1.42	
Three Well Volumes:	(gal)	4.27	

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: Clear No sheen 1330

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes ☐	No ☒	

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	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1310	13.61	16.75	7.33	~~-79~~	1.32	76.6	3.99	0.847
1315	13.98	16.73	7.10	-97	1.32	63.1	0.21	0.846
1320	14.34	16.80	7.10	-100	1.31	61.8	0.01	0.834
1325	14.61	16.87	7.09	-103	1.31	37.2	0.01	0.836
1330	14.91	16.67	7.09	-103	1.29	35.1	0.01	0.828
1335	15.09	17.05	7.10	-102	1.29	26.1	0.01	0.824

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 610B	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	
EPA Method 2320B	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
SM 4500_S2_F	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE	
D516	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 250 ml amber	Yes ☒	No ☐
3 - 40 ml vials	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
3 - 40 ml vials	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
3 - 40 ml vials	Yes ☒	No ☐
2 - 125 ml plastic	Yes ☒	No ☐

Shipped: Drop-off Albany Service Center ☐

Sample ID: MW-7-0415
Sample Time: 1340
Duplicate? Yes ☐ No ☒
MS/MSD? Yes ☐ No ☒

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-10**

Date: 4/16/15
Weather: Clear & 55°
Time In: 1210 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	14.15	
Depth to Bottom:	(feet)	22.05	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	7.90	
Volume of Water in Well:	(gal)	1.26	
Three Well Volumes:	(gal)	3.79	

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: clear No Sheen/Odor

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)	200				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes ☐	No ☒	

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	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1215	14.63	18.18	7.10	-22	2.62	302	5.59	1.65
1220	14.98	17.60	7.03	-65	2.61	254	1.55	1.67
1225	15.11	16.97	6.99	-81	2.57	217	0.01	1.60
1230	15.25	16.37	6.98	-78	2.38	200	0.01	1.52
1235	15.38	15.78	6.98	-75	2.49	191	0.01	1.59
1240	15.51	15.11	6.98	-71	2.41	125	0.01	1.54

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's
EPA SW-846 Method 8260	VOC's BTEX
EPA Method 610B	LEAD
	MANGANESE
EPA Method 9012A	TOTAL CYANIDE
RSK_175_CO2	DISSOLVED CARBON DIOXIDE
EPA Method 2320B	TOTAL ALKALINITY
EPA Method 351.2	TOTAL KJELDAHL NITROGEN
SM 4500_S2_F	SULFIDE
SM_3500_FE_D	FERROUS IRON
RSK_175	METHANE/ETHENE/ETHANE
D516	SULFATE
EPA Method 353.2	NITRATE
SM_4500_Cl_E	CHLORIDE

2 - 250 ml amber	Yes ☒	No ☐
3 - 40 ml vials	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
3 - 40 ml vials	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
1 - 250 ml plastic	Yes ☒	No ☐
1 - 125 ml plastic	Yes ☒	No ☐
3 - 40 ml vials	Yes ☒	No ☐
2 - 125 ml plastic	Yes ☒	No ☐

Sample ID: MW-10-0415 Duplicate? Yes ☐ No ☒
Sample Time: 1246 MS/MSD? Yes ☐ No ☒

Shipped: Drop-off Albany Service Center ☐

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-11**

Date: 4/17/15
Weather: Rain ± 45°
Time In: 1025 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	12.62	
Depth to Bottom:	(feet)	22.90	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	10.28	
Volume of Water in Well:	(gal)	1.64	
Three Well Volumes:	(gal)	4.93	

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: Clear No Sheen/Odor

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

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

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

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1030	12.71	17.35	7.10	-79	1.66	369	7.12	1.04
1035	12.77	15.42	6.99	-84	1.69	339	0.35	1.08
1040	12.81	14.22	6.96	-76	1.70	186	0.01	1.09
1045	12.84	13.97	6.92	-69	1.67	138	0.01	1.08
1050	12.86	13.53	6.88	-63	1.68	125	0.01	1.08
1055	12.87	13.71	6.81	-54	1.67	106	0.01	1.07

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's
EPA SW-846 Method 8260	VOC's BTEX
EPA Method 610B	LEAD
	MANGANESE
EPA Method 9012A	TOTAL CYANIDE
RSK_175_CO2	DISSOLVED CARBON DIOXIDE
EPA Method 2320B	TOTAL ALKALINITY
EPA Method 351.2	TOTAL KJELDAHL NITROGEN
SM 4500_S2_F	SULFIDE
SM_3500_FE_D	FERROUS IRON
RSK_175	METHANE/ETHENE/ETHANE
D516	SULFATE
EPA Method 353.2	NITRATE
SM_4500_Cl_E	CHLORIDE

2 - 250 ml amber	Yes [X]	No [ ]
3 - 40 ml vials	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
3 - 40 ml vials	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
3 - 40 ml vials	Yes [X]	No [ ]
2 - 125 ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [ ]

Sample ID: MW-11-041515 Duplicate? Yes [ ] No [X]
Sample Time: 1100 MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-12**

Date: 4/17/15
Weather: Rain ~40°
Time In: 915 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	14.25	
Depth to Bottom:	(feet)	22.24	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	7.99	
Volume of Water in Well:	(gal)	1.28	
Three Well Volumes:	(gal)	3.84	

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: clear No Sheen/Odor

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes [ ]	No [X]	

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

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

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
920	14.40	19.19	7.39	66	1.91	52.6	7.18	1.22
925	14.63	19.31	6.94	93	1.85	36.6	4.15	1.18
930	14.75	19.36	6.81	102	1.74	71.5	2.43	1.11
935	14.81	19.42	6.76	107	1.21	121	2.13	1.70
940	14.88	19.43	6.77	110	0.929	616	1.98	0.594
945	14.93	19.53	6.76	113	0.913	303	1.85	0.584

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes [X] No [ ]
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes [X] No [ ]
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes [X] No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes [X] No [ ]
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes [X] No [ ]
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes [X] No [ ]
D516	SULFATE	2 - 125 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE		
SM_4500_Cl_E	CHLORIDE		

Shipped: Drop-off Albany Service Center [ ]

Sample ID: MW-12-0415 Duplicate? Yes [ ] No [X]
Sample Time: 955 MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-13**

Date: 4/16/15
Weather: Clear & 50°
Time In: 930 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	11.34	
Depth to Bottom:	(feet)	22.75	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	11.41	
Volume of Water in Well:	(gal)	1.83	
Three Well Volumes:	(gal)	5.48	

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: Clear No Sheen/Odor

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)	500
Duration of Pumping:	(min)	30
Total Volume Removed:	(gal)	4

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

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

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

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
935	11.43	8.34	7.65	34	0.530	177	3.87	0.357
940	11.48	8.21	7.52	12	0.542	45.5	0.86	0.346
945	11.53	8.23	7.46	-3	0.529	10.6	0.01	0.336
950	11.59	8.22	7.71	-30	0.524	6.3	0.01	0.336
955	11.63	8.23	7.72	-22	0.524	5.8	0.01	0.336
1000	11.67	8.32	7.75	-18	0.522	4.6	0.01	0.334

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 610B	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	
EPA Method 2320B	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
SM 4500_S2_F	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE	
D516	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

6 - 250 ml amber	Yes [X]	No [ ]
9 - 40 ml vials	Yes [X]	No [ ]
3 - 250 ml plastic	Yes [X]	No [ ]
3 - 250 ml plastic	Yes [X]	No [ ]
9 - 40 ml vials	Yes [X]	No [ ]
3 - 125 ml plastic	Yes [X]	No [ ]
3 - 250 ml plastic	Yes [X]	No [ ]
3 - 250 ml plastic	Yes [X]	No [ ]
3 - 125 ml plastic	Yes [X]	No [ ]
9 - 40 ml vials	Yes [X]	No [ ]
6 - 125 ml plastic	Yes [X]	No [ ]

Sample ID: MW-13-041515
Sample Time: 1005

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

Shipped: Drop-off Albany Service Center [ ]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-14**

Date: 4/16/15
Weather: Clear ≈ 45°
Time In: 810 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	13.06	
Depth to Bottom:	(feet)	23.55	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	10.49	
Volume of Water in Well:	(gal)	1.68	
Three Well Volumes:	(gal)	5.04	

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: Clear No Sheen/Odor

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)	1500		
Duration of Pumping:	(min)	30		
Total Volume Removed:	(gal)	4		

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

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

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

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
815	13.08	5.94	7.52	-42	0.906	3998	3.85	0.580
820	13.10	6.14	7.95	-10	0.885	7800	0.79	0.561
825	13.11	6.35	7.31	5	0.811	281	0.04	0.516
830	13.12	6.85	7.34	29	0.782	243	0.01	0.500
835	13.13	6.88	7.35	66	0.753	223	0.01	0.481
840	13.14	7.21	7.36	117	0.729	50.0	0.01	0.466

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's		
EPA SW-846 Method 8260	VOC's BTEX		
EPA Method 610B	LEAD		
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE		
RSK_175_CO2	DISSOLVED CARBON DIOXIDE		
EPA Method 2320B	TOTAL ALKALINITY		
EPA Method 351.2	TOTAL KJELDAHL NITROGEN		
SM 4500_S2_F	SULFIDE		
SM_3500_FE_D	FERROUS IRON		
RSK_175	METHANE/ETHENE/ETHANE		
D516	SULFATE		
EPA Method 353.2	NITRATE		
SM_4500_Cl_E	CHLORIDE		

4 - 250 ml amber	Yes [X]	No [ ]
6 - 40 ml vials	Yes [X]	No [ ]
2 - 250 ml plastic	Yes [X]	No [ ]
2 - 250 ml plastic	Yes [X]	No [ ]
6 - 40 ml vials	Yes [X]	No [ ]
2 - 125 ml plastic	Yes [X]	No [ ]
2 - 250 ml plastic	Yes [X]	No [ ]
2 - 250 ml plastic	Yes [X]	No [ ]
2 - 125 ml plastic	Yes [X]	No [ ]
6 - 40 ml vials	Yes [X]	No [ ]
4 - 125 ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [ ]

Sample ID: MW-14-0415
Sample Time: 845
Duplicate? Yes [X] No [ ] **FD-0415**
MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-15**

Date: 4/16/15
Weather: Clear No Storm 55°
Time In: 1100 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	15.31	
Depth to Bottom:	(feet)	23.00	
Depth to Product:	(feet)	—	
Length of Water Column:	(feet)	7.69	
Volume of Water in Well:	(gal)	1.23	
Three Well Volumes:	(gal)	3.69	

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: Clear No Sheen/Odor

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes [ ]	No [ ]	

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

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

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1105	15.41	14.05	7.22	43	1.07	95.2	4.61	0.667
1110	15.46	13.17	6.92	-39	0.925	49.3	0.99	0.589
1115	15.51	13.05	6.90	-31	0.881	25.0	0.12	0.565
1120	15.55	12.90	6.91	-27	0.866	16.6	0.27	0.554
1125	15.57	13.00	6.88	-27	0.880	2.9	2.11	0.550
1130	15.61	13.09	6.88	-37	0.874	1.8	0.01	0.559

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	2 - 250 ml amber	Yes [X] No [ ]
EPA SW-846 Method 8260	VOC's BTEX	3 - 40 ml vials	Yes [X] No [ ]
EPA Method 610B	LEAD	1 - 250 ml plastic	Yes [X] No [ ]
	MANGANESE		
EPA Method 9012A	TOTAL CYANIDE	1 - 250 ml plastic	Yes [X] No [ ]
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	3 - 40 ml vials	Yes [X] No [ ]
EPA Method 2320B	TOTAL ALKALINITY	1 - 125 ml plastic	Yes [X] No [ ]
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	1 - 250 ml plastic	Yes [X] No [ ]
SM 4500_S2_F	SULFIDE	1 - 250 ml plastic	Yes [X] No [ ]
SM_3500_FE_D	FERROUS IRON	1 - 125 ml plastic	Yes [X] No [ ]
RSK_175	METHANE/ETHENE/ETHANE	3 - 40 ml vials	Yes [X] No [ ]
D516	SULFATE	2 - 125 ml plastic	Yes [X] No [ ]
EPA Method 353.2	NITRATE		
SM_4500_Cl_E	CHLORIDE		

Shipped: Drop-off Albany Service Center [ ]

Sample ID: MW-15-0415
Sample Time: 1135
Duplicate? Yes [ ] No [X]
MS/MSD? Yes [ ] No [X]

Laboratory: Test America Amherst, New York

National Grid
109 North Market Street, Johnstown New York

Sampling Personnel: Eric Rosenzweig
Job Number: 36380.105370
Well Id. **MW-16**

Date: 4/16/15
Weather: Clear ≈ 45°
Time In: 710 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	10.48	
Depth to Bottom:	(feet)	19.45	
Depth to Product:	(feet)		
Length of Water Column:	(feet)	8.97	
Volume of Water in Well:	(gal)	1.44	
Three Well Volumes:	(gal)	4.31	

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: Clear No Sheen/Odor

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)	500				
Duration of Pumping: (min)	30				
Total Volume Removed: (gal)	4	Did well go dry?	Yes [ ]	No [X]	

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

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

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
715	10.63	12.16	7.80	-64	1.34	22.1	7.86	0.862
720	10.89	12.30	7.77	-142	1.38	13.7	0.84	0.884
725	11.08	12.85	7.37	-152	1.30	12.5	0.01	0.871
730	11.26	13.38	7.38	-144	1.32	5.69	0.01	0.843
735	11.43	14.10	7.22	-97	1.23	11.9	0.31	0.784
740	11.69	14.72	6.86	-85	1.20	6.3	0.44	0.761

Sampling Information:

EPA SW-846 Method 8270	SVOC PAH's	
EPA SW-846 Method 8260	VOC's BTEX	
EPA Method 610B	LEAD	
	MANGANESE	
EPA Method 9012A	TOTAL CYANIDE	
RSK_175_CO2	DISSOLVED CARBON DIOXIDE	
EPA Method 2320B	TOTAL ALKALINITY	
EPA Method 351.2	TOTAL KJELDAHL NITROGEN	
SM 4500_S2_F	SULFIDE	
SM_3500_FE_D	FERROUS IRON	
RSK_175	METHANE/ETHENE/ETHANE	
D516	SULFATE	
EPA Method 353.2	NITRATE	
SM_4500_Cl_E	CHLORIDE	

2 - 250 ml amber	Yes [X]	No [ ]
3 - 40 ml vials	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
3 - 40 ml vials	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
1 - 250 ml plastic	Yes [X]	No [ ]
1 - 125 ml plastic	Yes [X]	No [ ]
3 - 40 ml vials	Yes [X]	No [ ]
2 - 125 ml plastic	Yes [X]	No [ ]

Shipped: Drop-off Albany Service Center [ ]

Sample ID: MW-16-0415
Sample Time: 745

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

Laboratory: Test America Amherst, New York

APPENDIX B

DATA USABILITY SUMMARY REPORT

Data Validation Services

120 Cobble Creek Road P.O. Box 208
North Creek, NY 12853

Phone 518-251-4429
harry@frontiernet.net

June 10, 2015

Matthew Millias
CDM Smith
One General Motors Dr. Suite 2
Syracuse, NY 13206

RE: **D**ata **U**sability **S**ummary **R**eport for National Grid- Johnstown Landfill Site Data Package
TAL-Buffalo Job Nos. 480-78609-1 and 480-78711-1

Dear Mr. Millias:

Review has been completed for the data package generated by TestAmerica Laboratories, Inc. that pertains to samples collected 04/16/15 and 04/17/15 at the National Grid Johnstown site. Nine aqueous samples and a field duplicate were analyzed for BTEX, low level PAHs, three dissolved gases, carbon disulfide, lead, manganese, and eight wet chemistry parameters. Methodologies utilized are those of the USEPA SW846 methods 6010B/8260B/8270C/9012, and ASTM, with additional QC requirements of the NYSDEC ASP.

The data packages submitted contain full deliverables for validation, but this usability report is generated from review of the summary form information, with review of sample raw data, and limited review of associated QC raw data. The reported summary forms have been reviewed for application of validation qualifiers, using guidance from the NMPC generic QAPP, USEPA Region 2 validation SOPs, the USEPA National Functional Guidelines for Data Review, and professional judgment, as affects the usability of the data. The following items were reviewed:

* Laboratory Narrative Discussion
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike Recoveries/Duplicate Correlations
* Field Duplicate Correlations
* Laboratory Control Sample(LCS)
* Preparation/Calibration Blanks
* Control Spike/Laboratory Control Samples
* Calibration/Low Level Standard Responses
* Instrumental Tunes
* ICP Serial Dilution Correlations
* Instrument IDLs
* Sample Quantitation and Identification

The items listed above which show deficiencies are discussed within the text of this narrative. All of the other items were determined to be acceptable for the DUSR level review.

In summary, most sample results are usable either as reported, or with minor qualification. However, the reporting limits for the semivolatile analytes have been edited upward to reflect the limitations of the processing.

Copies of the laboratory case narrative 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 recommended qualifications applied thereupon.

Chain-of-Custody/Sample Receipt

The ID and collection date/time for MW-10-0415 was lined through on the custody. The sample was received by the laboratory and processed/reported.

BTEX by EPA8260B/NYSDEC ASP

The result for total xylene in MW-11-0415 has been edited to reflect the value of 1.5 ug/L (the o-xylene concentration in the sample).

Sample holding times were met and instrumental tune fragmentations are within acceptance ranges. Surrogate and internal standard recoveries are within required limits. Blanks show no contamination.

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

The matrix spikes of MW-13-0415 show acceptable recoveries and correlations.

The blind field duplicate correlations of MW-14-0415 fall within guidance limits.

Some samples were processed only at dilution due to high concentrations of target analytes or initial foaming. This results in elevated reporting limits for undetected analytes.

PAHs by EPA8270C/NYSDEC ASP

The laboratory reporting limit of 0.5 ug/L was not supported by the calibration standards that establish the system linearity/sensitivity. The limits have been adjusted upward by a factor of two to reflect the lowest calibration standard response.

Surrogate and internal standard recoveries are within required limits, unless diluted beyond an applicable evaluation.

Results for analytes initially reported with the laboratory "E" flag, acenaphthene and acenapthylene in MW-11-0415, have been derived from the dilution analysis, thus reflecting responses within the established linear range of the instrument.

The matrix spike recoveries and duplicate correlations of MW-13-0415 show acceptable recoveries and correlations.

The blind field duplicate correlations of MW-14-0415 fall within guidance limits.

Some samples were processed only at dilution due to high concentrations of target analytes. This results in elevated reporting limits for undetected analytes.

Methane, Ethane, Ethene, and CO2 by RSK-175

The matrix spikes of MW-13-0415 show acceptable recoveries and correlations.

The blind field duplicate correlations of MW-14-0415 fall within guidance limits.

Instrument performance is compliant, blanks show no contamination, and reported results are substantiated by raw data.

Some samples were processed only at dilution due to high concentrations of target analytes. This results in elevated reporting limits for undetected analytes.

Lead and Manganese by EPA 6010B/NYSDEC ASP

The matrix spikes of MW-11-0415 and MW-13-0415 acceptable accuracy and precision, and the blind field duplicate correlations of MW-14-0415 fall within guidance limits.

The ICP Serial Dilution evaluations of MW-11-0415 and MW-13-0415 are acceptable.

Instrument performance is compliant, blanks show no contamination affecting reported results, and reported results are substantiated by the raw data.

Wet Chemistry—Chloride, Sulfide, Sulfate, Nitrate, TKN, Alkalinity, Ferrous Iron, and Total Cyanide

Due to the very short holding time from sample collection (15 minutes), all ferrous ion analyses were conducted beyond the holding time, and those results have been qualified as estimated in value, with a likely low bias.

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

Matrix spikes/laboratory duplicates of MW-13-0415 show acceptable recoveries/correlations, with the exception of the recovery for TKN (79% and 80%). The result for that analyte in the parent sample is qualified as estimated. A laboratory duplicate of alkalinity in MW-4-0415 shows a good correlation.

\The blind field duplicate correlations of MW-14-0415 fall within guidance limits, with the exception of that for TKN, which has a correlation above ±CRDL. The results for that analyte in the sample and its duplicate have been qualified as estimated.

Data Package Completeness

Although some of the specific NYSDEC Category B deliverables were not 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.

Very truly yours,

Judy Harry

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.
EMPC	The results do not meet all criteria for a confirmed identification. The quantitative value represents the Estimated Maximum Possible Concentration of the analyte in the sample.

CLIENT and LABORATORY SAMPLE IDs and CASE NARRATIVE

SAMPLE SUMMARY

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
480-78609-1	MW-7-0415	Water	04/16/2015 1240	04/17/2015 0200
480-78609-2	MW-13-0415	Water	04/16/2015 1005	04/17/2015 0200
480-78609-2MS	MW-13-0415 MS	Water	04/16/2015 1005	04/17/2015 0200
480-78609-2MSD	MW-13-0415 SD	Water	04/16/2015 1005	04/17/2015 0200
480-78609-3	MW-14-0415	Water	04/16/2015 0845	04/17/2015 0200
480-78609-4	MW-15-0415	Water	04/16/2015 1135	04/17/2015 0200
480-78609-5	MW-16-0415	Water	04/16/2015 0745	04/17/2015 0200
480-78609-6	FD-0415	Water	04/16/2015 0000	04/17/2015 0200
480-78609-7	MW-10-0415	Water	04/16/2015 1245	04/17/2015 0200
480-78609-8	trip blank	Water	04/16/2015 0000	04/17/2015 0200

SAMPLE SUMMARY

Client: CDM Smith, Inc.

Job Number: 480-78711-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
480-78711-1	MW-4-0415	Water	04/17/2015 0905	04/18/2015 0130
480-78711-2	MW-11-0415	Water	04/17/2015 1100	04/18/2015 0130
480-78711-3	MW-12-0415	Water	04/17/2015 1005	04/18/2015 0130
480-78711-4	TRIP BLANK	Water	04/17/2015 0000	04/18/2015 0130

Job Narrative
480-78609-1

Receipt
The samples were received on 4/17/2015 2:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.5° C, 0.6° C and 0.7° C.

Except:

From reviewing the COC it appeared Sampling Point MW-10-0415 was crossed off. When cooler was recieved it contained said sampling point. Log in includes MW-10-0415.

MW-10-0415 (480-78609-7)

GC/MS VOA
Method(s) 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-7-0415 (480-78609-1), MW-13-0415 (480-78609-2), MW-13-0415 MS (480-78609-2[MS]), MW-13-0415 SD (480-78609-2[MSD]), MW-14-0415 (480-78609-3) and MW-16-0415 (480-78609-5). Elevated reporting limits (RLs) are provided.

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

GC/MS Semi VOA
Method(s) 8270D_LL_PAH: The matrix spike and matrix spike duplicate (MS/MSD) recoveries for 237603 were outside control limits for Indeno[1,2,3-cd]pyrene. Sample matrix interference because the associated laboratory control sample (LCS) recovery was within acceptance limits.MW-13-0415 MS (480-78609-2[MS]) and MW-13-0415 SD (480-78609-2[MSD])

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

GC VOA
Method(s) RSK-175: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-16-0415 (480-78609-5). Elevated reporting limits (RLs) are provided.

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

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

General Chemistry
Method(s) SM 3500 FE D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: MW-7-0415 (480-78609-1), MW-13-0415 (480-78609-2), MW-13-0415 MS (480-78609-2[MS]), MW-13-0415 SD (480-78609-2[MSD]), MW-14-0415 (480-78609-3), MW-15-0415 (480-78609-4), MW-16-0415 (480-78609-5), FD-0415 (480-78609-6) and MW-10-0415 (480-78609-7).

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

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

Job Narrative
480-78711-1

Receipt
The samples were received on 4/18/2015 1:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

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

GC/MS Semi VOA
Method(s) 8270D_LL_PAH: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-11-0415 (480-78711-2). Elevated reporting limits (RLs) are provided.

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

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

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

General Chemistry
Method(s) SM 3500 FE D: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: MW-4-0415 (480-78711-1), MW-11-0415 (480-78711-2), MW-12-0415 (480-78711-3) and (480-78609-I-2).

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

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

QUALIFIED SAMPLE RESULTS FORMS

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-7-0415**

Lab Sample ID: 480-78609-1 Date Sampled: 04/16/2015 1240
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237424	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0582.D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 0516			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 0516				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		5.0
Toluene	ND		5.0
Ethylbenzene	ND		5.0
m-Xylene & p-Xylene	ND		10
o-Xylene	ND		5.0
Xylenes, Total	ND		10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		66 - 137
Toluene-d8 (Surr)	105		71 - 126
4-Bromofluorobenzene (Surr)	113		73 - 120
Dibromofluoromethane (Surr)	118		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-13-0415**

Lab Sample ID: 480-78609-2 Date Sampled: 04/16/2015 1005
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237424	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0583.D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 0544			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 0544				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	17		5.0
Toluene	17	F1	5.0
Ethylbenzene	17		5.0
m-Xylene & p-Xylene	24		10
o-Xylene	16		5.0
Xylenes, Total	40		10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		66 - 137
Toluene-d8 (Surr)	106		71 - 126
4-Bromofluorobenzene (Surr)	112		73 - 120
Dibromofluoromethane (Surr)	121		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-14-0415**

Lab Sample ID: 480-78609-3 Date Sampled: 04/16/2015 0845
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237424	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0584.D
Dilution:	4.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 0612			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 0612				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		4.0
Toluene	ND		4.0
Ethylbenzene	ND		4.0
m-Xylene & p-Xylene	ND		8.0
o-Xylene	ND		4.0
Xylenes, Total	ND		8.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		66 - 137
Toluene-d8 (Surr)	106		71 - 126
4-Bromofluorobenzene (Surr)	112		73 - 120
Dibromofluoromethane (Surr)	120		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-15-0415**

Lab Sample ID: 480-78609-4 Date Sampled: 04/16/2015 1135
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237424	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0585.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 0640			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 0640				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	16		1.0
Toluene	ND		1.0
Ethylbenzene	1.9		1.0
m-Xylene & p-Xylene	3.2		2.0
o-Xylene	7.5		1.0
Xylenes, Total	11		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		66 - 137
Toluene-d8 (Surr)	105		71 - 126
4-Bromofluorobenzene (Surr)	113		73 - 120
Dibromofluoromethane (Surr)	117		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-16-0415**

Lab Sample ID: 480-78609-5 Date Sampled: 04/16/2015 0745
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237424	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0586.D
Dilution:	8.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 0708			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 0708				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	91		8.0
Toluene	ND		8.0
Ethylbenzene	68		8.0
m-Xylene & p-Xylene	ND		16
o-Xylene	24		8.0
Xylenes, Total	24		16

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		66 - 137
Toluene-d8 (Surr)	107		71 - 126
4-Bromofluorobenzene (Surr)	113		73 - 120
Dibromofluoromethane (Surr)	121		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **FD-0415**

Lab Sample ID: 480-78609-6 Date Sampled: 04/16/2015 0000
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237557	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0615.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 2016			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 2016				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		1.0
Toluene	ND		1.0
Ethylbenzene	ND		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	ND		1.0
Xylenes, Total	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		66 - 137
Toluene-d8 (Surr)	103		71 - 126
4-Bromofluorobenzene (Surr)	111		73 - 120
Dibromofluoromethane (Surr)	121		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-10-0415**

Lab Sample ID: 480-78609-7 Date Sampled: 04/16/2015 1245
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237557	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0616.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 2043			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 2043				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		1.0
Toluene	ND		1.0
Ethylbenzene	ND		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	ND		1.0
Xylenes, Total	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		66 - 137
Toluene-d8 (Surr)	104		71 - 126
4-Bromofluorobenzene (Surr)	110		73 - 120
Dibromofluoromethane (Surr)	119		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **trip blank**

Lab Sample ID: 480-78609-8 Date Sampled: 04/16/2015 0000
Client Matrix: Water Date Received: 04/17/2015 0200

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237557	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0617.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/21/2015 2111			Final Weight/Volume:	5 mL
Prep Date:	04/21/2015 2111				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		1.0
Toluene	ND		1.0
Ethylbenzene	ND		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	ND		1.0
Xylenes, Total	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		66 - 137
Toluene-d8 (Surr)	103		71 - 126
4-Bromofluorobenzene (Surr)	110		73 - 120
Dibromofluoromethane (Surr)	119		60 - 140

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **MW-7-0415**

Lab Sample ID: 480-78609-1
Client Matrix: Water

Date Sampled: 04/16/2015 1240
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3160.D
Dilution:	1.0			Initial Weight/Volume:	253.8 mL
Analysis Date:	04/26/2015 0527			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	ND		~~0.49~~ 1.0
Acenaphthylene	ND		0.49
Anthracene	ND		0.49
Benzo(a)anthracene	ND		0.49
Benzo(a)pyrene	ND		0.49
Benzo(b)fluoranthene	ND		0.49
Benzo(g,h,i)perylene	ND		0.49
Benzo(k)fluoranthene	ND		0.49
Chrysene	ND		0.49
Dibenz(a,h)anthracene	ND		0.49
Fluoranthene	ND		0.49
Fluorene	ND		0.49
Indeno(1,2,3-cd)pyrene	ND		0.49
Naphthalene	ND		0.49
Phenanthrene	ND		0.49
Pyrene	ND		~~0.49~~

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	71		48 - 120
Nitrobenzene-d5	71		46 - 120
p-Terphenyl-d14	70		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **MW-13-0415**

Lab Sample ID: 480-78609-2
Client Matrix: Water

Date Sampled: 04/16/2015 1005
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3161.D
Dilution:	1.0			Initial Weight/Volume:	253.3 mL
Analysis Date:	04/26/2015 0556			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	ND		0.49 0.98
Acenaphthylene	ND		0.49
Anthracene	ND		0.49
Benzo(a)anthracene	ND		0.49
Benzo(a)pyrene	ND		0.49
Benzo(b)fluoranthene	ND		0.49
Benzo(g,h,i)perylene	ND		0.49
Benzo(k)fluoranthene	ND		0.49
Chrysene	ND		0.49
Dibenz(a,h)anthracene	ND		0.49
Fluoranthene	ND		0.49
Fluorene	ND		0.49
Indeno(1,2,3-cd)pyrene	ND	F1	0.49
Naphthalene	ND		0.49
Phenanthrene	ND		0.49
Pyrene	ND		0.49

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	76		48 - 120
Nitrobenzene-d5	79		46 - 120
p-Terphenyl-d14	83		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **MW-14-0415**

Lab Sample ID: 480-78609-3
Client Matrix: Water

Date Sampled: 04/16/2015 0845
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3162.D
Dilution:	1.0			Initial Weight/Volume:	264.6 mL
Analysis Date:	04/26/2015 0626			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	ND		~~0.47~~ 0.94
Acenaphthylene	ND		0.47
Anthracene	ND		0.47
Benzo(a)anthracene	ND		0.47
Benzo(a)pyrene	ND		0.47
Benzo(b)fluoranthene	ND		0.47
Benzo(g,h,i)perylene	ND		0.47
Benzo(k)fluoranthene	ND		0.47
Chrysene	ND		0.47
Dibenz(a,h)anthracene	ND		0.47
Fluoranthene	ND		0.47
Fluorene	ND		0.47
Indeno(1,2,3-cd)pyrene	ND		0.47
Naphthalene	ND		0.47
Phenanthrene	ND		0.47
Pyrene	ND		~~0.47~~

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	74		48 - 120
Nitrobenzene-d5	75		46 - 120
p-Terphenyl-d14	70		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **MW-15-0415**

Lab Sample ID: 480-78609-4
Client Matrix: Water

Date Sampled: 04/16/2015 1135
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3163.D
Dilution:	1.0			Initial Weight/Volume:	254.4 mL
Analysis Date:	04/26/2015 0656			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL	
Acenaphthene	6.7		0.49	0.98
Acenaphthylene	0.59		0.49	
Anthracene	ND		0.49	
Benzo(a)anthracene	ND		0.49	
Benzo(a)pyrene	ND		0.49	
Benzo(b)fluoranthene	ND		0.49	
Benzo(g,h,i)perylene	ND		0.49	
Benzo(k)fluoranthene	ND		0.49	
Chrysene	ND		0.49	
Dibenz(a,h)anthracene	ND		0.49	
Fluoranthene	ND		0.49	
Fluorene	1.2		0.49	
Indeno(1,2,3-cd)pyrene	ND		0.49	
Naphthalene	1.5		0.49	
Phenanthrene	ND		0.49	
Pyrene	ND		0.49	

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	64		48 - 120
Nitrobenzene-d5	63		46 - 120
p-Terphenyl-d14	66		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **MW-16-0415**

Lab Sample ID: 480-78609-5
Client Matrix: Water

Date Sampled: 04/16/2015 0745
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3164.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	04/26/2015 0725			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	27		~~0.50~~ 1.0
Acenaphthylene	25		0.50
Anthracene	1.8		0.50
Benzo(a)anthracene	ND		0.50
Benzo(a)pyrene	ND		0.50
Benzo(b)fluoranthene	ND		0.50
Benzo(g,h,i)perylene	ND		0.50
Benzo(k)fluoranthene	ND		0.50
Chrysene	ND		0.50
Dibenz(a,h)anthracene	ND		0.50
Fluoranthene	1.6		0.50
Fluorene	14		0.50
Indeno(1,2,3-cd)pyrene	ND		0.50
Naphthalene	4.6		0.50
Phenanthrene	11		0.50
Pyrene	1.8		~~0.50~~

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	67		48 - 120
Nitrobenzene-d5	66		46 - 120
p-Terphenyl-d14	58		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **FD-0415**

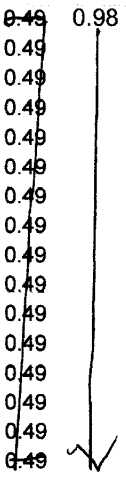
Lab Sample ID: 480-78609-6
Client Matrix: Water

Date Sampled: 04/16/2015 0000
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3165.D
Dilution:	1.0			Initial Weight/Volume:	255.3 mL
Analysis Date:	04/26/2015 0755			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	ND		0.49
Acenaphthylene	ND		0.49
Anthracene	ND		0.49
Benzo(a)anthracene	ND		0.49
Benzo(a)pyrene	ND		0.49
Benzo(b)fluoranthene	ND		0.49
Benzo(g,h,i)perylene	ND		0.49
Benzo(k)fluoranthene	ND		0.49
Chrysene	ND		0.49
Dibenz(a,h)anthracene	ND		0.49
Fluoranthene	ND		0.49
Fluorene	ND		0.49
Indeno(1,2,3-cd)pyrene	ND		0.49
Naphthalene	ND		0.49
Phenanthrene	ND		0.49
Pyrene	ND		0.49



Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	75		48 - 120
Nitrobenzene-d5	75		46 - 120
p-Terphenyl-d14	75		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78609-1

Client Sample ID: **MW-10-0415**

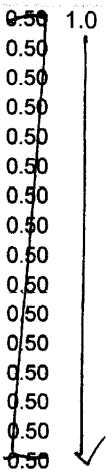
Lab Sample ID: 480-78609-7
Client Matrix: Water

Date Sampled: 04/16/2015 1245
Date Received: 04/17/2015 0200

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3166.D
Dilution:	1.0			Initial Weight/Volume:	248.6 mL
Analysis Date:	04/26/2015 0824			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	0.63		0.50
Acenaphthylene	ND		0.50
Anthracene	ND		0.50
Benzo(a)anthracene	ND		0.50
Benzo(a)pyrene	ND		0.50
Benzo(b)fluoranthene	ND		0.50
Benzo(g,h,i)perylene	ND		0.50
Benzo(k)fluoranthene	ND		0.50
Chrysene	ND		0.50
Dibenz(a,h)anthracene	ND		0.50
Fluoranthene	ND		0.50
Fluorene	ND		0.50
Indeno(1,2,3-cd)pyrene	ND		0.50
Naphthalene	ND		0.50
Phenanthrene	ND		0.50
Pyrene	ND		0.50



Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	75		48 - 120
Nitrobenzene-d5	77		46 - 120
p-Terphenyl-d14	73		24 - 136

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-7-0415**

Lab Sample ID: 480-78609-1 Date Sampled: 04/16/2015 1240
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1142			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	35		4.0

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-7-0415**

Lab Sample ID: 480-78609-1 Date Sampled: 04/16/2015 1240
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296012.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1304			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	7600		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-13-0415**

Lab Sample ID: 480-78609-2 Date Sampled: 04/16/2015 1005
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1254			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	ND		4.0

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-13-0415**

Lab Sample ID: 480-78609-2 Date Sampled: 04/16/2015 1005
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296013.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1312			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	1300		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-14-0415**

Lab Sample ID: 480-78609-3 Date Sampled: 04/16/2015 0845
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1217			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	ND		4.0

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-14-0415**

Lab Sample ID: 480-78609-3 Date Sampled: 04/16/2015 0845
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296016.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1337			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	5000		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-15-0415**

Lab Sample ID: 480-78609-4 Date Sampled: 04/16/2015 1135
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1346			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	16		4.0

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-15-0415**

Lab Sample ID: 480-78609-4 Date Sampled: 04/16/2015 1135
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296017.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1347			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	21000		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-16-0415**

Lab Sample ID: 480-78609-5 Date Sampled: 04/16/2015 0745
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	10			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1404			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		75
Ethene	ND		70
Methane	160		40

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-16-0415**

Lab Sample ID: 480-78609-5 Date Sampled: 04/16/2015 0745
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296018.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1357			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	9300		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **FD-0415**

Lab Sample ID: 480-78609-6 Date Sampled: 04/16/2015 0000
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1430			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	ND		4.0

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **FD-0415**

Lab Sample ID: 480-78609-6 Date Sampled: 04/16/2015 0000
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296019.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1406			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	5100		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-10-0415**

Lab Sample ID: 480-78609-7 Date Sampled: 04/16/2015 1245
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237083	Instrument ID:	PE-03
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/18/2015 1447			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	63		4.0

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-10-0415**

Lab Sample ID: 480-78609-7 Date Sampled: 04/16/2015 1245
Client Matrix: Water Date Received: 04/17/2015 0200

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296020.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1417			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	16000		1000

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-7-0415**

Lab Sample ID: 480-78609-1 Date Sampled: 04/16/2015 1240
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 1925			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.49		0.0030

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-13-0415**

Lab Sample ID: 480-78609-2 Date Sampled: 04/16/2015 1005
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 1928			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.031		0.0030

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-14-0415**

Lab Sample ID: 480-78609-3 Date Sampled: 04/16/2015 0845
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 1950			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.019		0.0030

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-15-0415**

Lab Sample ID: 480-78609-4 Date Sampled: 04/16/2015 1135
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 1953			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.68		0.0030

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-16-0415**

Lab Sample ID: 480-78609-5 Date Sampled: 04/16/2015 0745
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 1955			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.42		0.0030

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **FD-0415**

Lab Sample ID: 480-78609-6 Date Sampled: 04/16/2015 0000
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 1958			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.020		0.0030

Client: CDM Smith, Inc. Job Number: 480-78609-1

Client Sample ID: **MW-10-0415**

Lab Sample ID: 480-78609-7 Date Sampled: 04/16/2015 1245
Client Matrix: Water Date Received: 04/17/2015 0200

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-237487	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-236956	Lab File ID:	I1042015A-5.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/20/2015 2001			Final Weight/Volume:	50 mL
Prep Date:	04/17/2015 0820				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	1.3		0.0030

General Chemistry

Client Sample ID: **MW-7-0415**

Lab Sample ID: 480-78609-1 Date Sampled: 04/16/2015 1240
Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	1.1		mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1243					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	ND		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1118					
Cyanide, Total	0.18		mg/L	0.010	1.0	9012B
Analysis Batch: 480-238659	Analysis Date: 04/25/2015 1101					
Prep Batch: 480-238531	Prep Date: 04/24/2015 2230					
Sulfate	442	F1	mg/L	75.0	15	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 2032					
Alkalinity, Total	340		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND UJ	HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	67.7		mg/L	2.0	2.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 2013					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-13-0415**

Lab Sample ID: 480-78609-2 Date Sampled: 04/16/2015 1005
Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	0.62 J	F1	mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1243					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	ND		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1316					
Cyanide, Total	0.11	F1	mg/L	0.010	1.0	9012B
Analysis Batch: 480-238659	Analysis Date: 04/25/2015 1103					
Prep Batch: 480-238531	Prep Date: 04/24/2015 2230					
Sulfate	ND	F1	mg/L	5.0	1.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1756					
Alkalinity, Total	244		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND UJ	HF F1	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	17.3		mg/L	1.0	1.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 1841					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-14-0415**

Lab Sample ID: 480-78609-3 Date Sampled: 04/16/2015 0845

Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	0.22	J	mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1243					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	0.87		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1320					
Cyanide, Total	0.091		mg/L	0.010	1.0	9012B
Analysis Batch: 480-238659	Analysis Date: 04/25/2015 1107					
Prep Batch: 480-238531	Prep Date: 04/24/2015 2230					
Sulfate	ND		mg/L	5.0	1.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1738					
Alkalinity, Total	372		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	3.9		mg/L	1.0	1.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 1907					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-15-0415**

Lab Sample ID: 480-78609-4 Date Sampled: 04/16/2015 1135
Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	0.81		mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1243					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	0.28		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1321					
Cyanide, Total	0.29		mg/L	0.010	1.0	9012B
Analysis Batch: 480-238938	Analysis Date: 04/27/2015 1645					
Prep Batch: 480-238889	Prep Date: 04/27/2015 1314					
Sulfate	28.7		mg/L	5.0	1.0	D516-90, 02
Analysis Batch: 480-239271	Analysis Date: 04/28/2015 2250					
Alkalinity, Total	480		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	14.2		mg/L	1.0	1.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 1907					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-16-0415**

Lab Sample ID: 480-78609-5 Date Sampled: 04/16/2015 0745
Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	2.1		mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1243					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	0.14		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1322					
Cyanide, Total	0.24		mg/L	0.010	1.0	9012B
Analysis Batch: 480-238938	Analysis Date: 04/27/2015 1647					
Prep Batch: 480-238889	Prep Date: 04/27/2015 1314					
Sulfate	38.2		mg/L	5.0	1.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1909					
Alkalinity, Total	532		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	5.8		mg/L	1.0	1.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 1907					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **FD-0415**

Lab Sample ID: 480-78609-6 Date Sampled: 04/16/2015 0000

Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	0.43	J	mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1252					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	0.87		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1323					
Cyanide, Total	0.074		mg/L	0.010	1.0	9012B
Analysis Batch: 480-238938	Analysis Date: 04/27/2015 1648					
Prep Batch: 480-238889	Prep Date: 04/27/2015 1314					
Sulfate	ND		mg/L	5.0	1.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1738					
Alkalinity, Total	360		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	3.4		mg/L	1.0	1.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 2003					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-10-0415**

Lab Sample ID: 480-78609-7 Date Sampled: 04/16/2015 1245
Client Matrix: Water Date Received: 04/17/2015 0200

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	5.6		mg/L	0.40	2.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1417					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	ND		mg/L	0.050	1.0	353.2
Analysis Batch: 480-236939	Analysis Date: 04/17/2015 1127					
Cyanide, Total	0.098		mg/L	0.010	1.0	9012B
Analysis Batch: 480-238938	Analysis Date: 04/27/2015 1650					
Prep Batch: 480-238889	Prep Date: 04/27/2015 1314					
Sulfate	167		mg/L	25.0	5.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1746					
Alkalinity, Total	512		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-238481	Analysis Date: 04/24/2015 1020					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	698		mg/L	15.0	15	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 2006					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-4-0415**

Lab Sample ID: 480-78711-1 Date Sampled: 04/17/2015 0905
Client Matrix: Water Date Received: 04/18/2015 0130

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237697	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0633.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/22/2015 0455			Final Weight/Volume:	5 mL
Prep Date:	04/22/2015 0455				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		1.0
Toluene	ND		1.0
Ethylbenzene	ND		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	ND		1.0
Xylenes, Total	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		66 - 137
Toluene-d8 (Surr)	106		71 - 126
4-Bromofluorobenzene (Surr)	114		73 - 120
Dibromofluoromethane (Surr)	122		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-11-0415**

Lab Sample ID: 480-78711-2 Date Sampled: 04/17/2015 1100
Client Matrix: Water Date Received: 04/18/2015 0130

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237697	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0634.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/22/2015 0523			Final Weight/Volume:	5 mL
Prep Date:	04/22/2015 0523				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	7.3		1.0
Toluene	ND		1.0
Ethylbenzene	3.0		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	1.5		1.0
Xylenes, Total	~~ND~~ 1.5		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		66 - 137
Toluene-d8 (Surr)	105		71 - 126
4-Bromofluorobenzene (Surr)	116		73 - 120
Dibromofluoromethane (Surr)	123		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-12-0415**

Lab Sample ID: 480-78711-3 Date Sampled: 04/17/2015 1005
Client Matrix: Water Date Received: 04/18/2015 0130

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237697	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0635.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/22/2015 0551			Final Weight/Volume:	5 mL
Prep Date:	04/22/2015 0551				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		1.0
Toluene	ND		1.0
Ethylbenzene	ND		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	ND		1.0
Xylenes, Total	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		66 - 137
Toluene-d8 (Surr)	105		71 - 126
4-Bromofluorobenzene (Surr)	115		73 - 120
Dibromofluoromethane (Surr)	118		60 - 140

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 480-78711-4 Date Sampled: 04/17/2015 0000
Client Matrix: Water Date Received: 04/18/2015 0130

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	480-237697	Instrument ID:	HP5973Q
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	Q0636.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	04/22/2015 0618			Final Weight/Volume:	5 mL
Prep Date:	04/22/2015 0618				

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		1.0
Toluene	ND		1.0
Ethylbenzene	ND		1.0
m-Xylene & p-Xylene	ND		2.0
o-Xylene	ND		1.0
Xylenes, Total	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		66 - 137
Toluene-d8 (Surr)	104		71 - 126
4-Bromofluorobenzene (Surr)	115		73 - 120
Dibromofluoromethane (Surr)	117		60 - 140

Client: CDM Smith, Inc.

Job Number: 480-78711-1

Client Sample ID: **MW-4-0415**

Lab Sample ID: 480-78711-1
Client Matrix: Water

Date Sampled: 04/17/2015 0905
Date Received: 04/18/2015 0130

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3167.D
Dilution:	1.0			Initial Weight/Volume:	253.3 mL
Analysis Date:	04/26/2015 0854			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	ND		0.49
Acenaphthylene	ND		0.49
Anthracene	ND		0.49
Benzo(a)anthracene	ND		0.49
Benzo(a)pyrene	ND		0.49
Benzo(b)fluoranthene	ND		0.49
Benzo(g,h,i)perylene	ND		0.49
Benzo(k)fluoranthene	ND		0.49
Chrysene	ND		0.49
Dibenz(a,h)anthracene	ND		0.49
Fluoranthene	ND		0.49
Fluorene	ND		0.49
Indeno(1,2,3-cd)pyrene	ND		0.49
Naphthalene	ND		0.49
Phenanthrene	ND		0.49
Pyrene	ND		0.49

1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	65		48 - 120
Nitrobenzene-d5	67		46 - 120
p-Terphenyl-d14	84		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78711-1

Client Sample ID: **MW-11-0415**

Lab Sample ID: 480-78711-2
Client Matrix: Water

Date Sampled: 04/17/2015 1100
Date Received: 04/18/2015 0130

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3168.D
Dilution:	1.0			Initial Weight/Volume:	256.5 mL
Analysis Date:	04/26/2015 0923			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	~~59~~ 64	~~E~~	~~0.49~~ 0.98
Acenaphthylene	~~56~~ 60	~~E~~	0.49
Anthracene	4.2		0.49
Benzo(a)anthracene	1.9		0.49
Benzo(a)pyrene	0.84		0.49
Benzo(b)fluoranthene	0.68		0.49
Benzo(g,h,i)perylene	ND		0.49
Benzo(k)fluoranthene	ND		0.49
Chrysene	0.99		0.49
Dibenz(a,h)anthracene	ND		0.49
Fluoranthene	5.4		0.49
Fluorene	16		0.49
Indeno(1,2,3-cd)pyrene	ND		0.49
Naphthalene	2.3		0.49
Phenanthrene	1.5		0.49
Pyrene	4.2		~~0.49~~

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	70		48 - 120
Nitrobenzene-d5	68		46 - 120
p-Terphenyl-d14	77		24 - 136

Client: CDM Smith, Inc.

Job Number: 480-78711-1

Client Sample ID: **MW-12-0415**

Lab Sample ID: 480-78711-3
Client Matrix: Water

Date Sampled: 04/17/2015 1005
Date Received: 04/18/2015 0130

8270D_LL_PAH Semivolatile Organic Compounds (GC/MS) Low level PAH

Analysis Method:	8270D_LL_PAH	Analysis Batch:	480-238658	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-237603	Lab File ID:	W3169.D
Dilution:	1.0			Initial Weight/Volume:	248.9 mL
Analysis Date:	04/26/2015 0952			Final Weight/Volume:	1 mL
Prep Date:	04/21/2015 1413			Injection Volume:	1 uL

Analyte	Result (ug/L)	Qualifier	RL
Acenaphthene	ND		0.50
Acenaphthylene	ND		0.50
Anthracene	ND		0.50
Benzo(a)anthracene	ND		0.50
Benzo(a)pyrene	ND		0.50
Benzo(b)fluoranthene	ND		0.50
Benzo(g,h,i)perylene	ND		0.50
Benzo(k)fluoranthene	ND		0.50
Chrysene	ND		0.50
Dibenz(a,h)anthracene	ND		0.50
Fluoranthene	ND		0.50
Fluorene	ND		0.50
Indeno(1,2,3-cd)pyrene	ND		0.50
Naphthalene	ND		0.50
Phenanthrene	ND		0.50
Pyrene	ND		0.50

1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
2-Fluorobiphenyl	69		48 - 120
Nitrobenzene-d5	69		46 - 120
p-Terphenyl-d14	77		24 - 136

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-4-0415**

Lab Sample ID: 480-78711-1 Date Sampled: 04/17/2015 0905
Client Matrix: Water Date Received: 04/18/2015 0130

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237263	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/20/2015 1414			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	ND		4.0

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-4-0415**

Lab Sample ID: 480-78711-1 Date Sampled: 04/17/2015 0905
Client Matrix: Water Date Received: 04/18/2015 0130

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296021.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1453			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	12000		1000

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-11-0415**

Lab Sample ID: 480-78711-2 Date Sampled: 04/17/2015 1100
Client Matrix: Water Date Received: 04/18/2015 0130

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237263	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/20/2015 1527			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	13		4.0

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-11-0415**

Lab Sample ID: 480-78711-2 Date Sampled: 04/17/2015 1100
Client Matrix: Water Date Received: 04/18/2015 0130

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296022.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1506			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	15000		1000

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-12-0415**

Lab Sample ID: 480-78711-3 Date Sampled: 04/17/2015 1005
Client Matrix: Water Date Received: 04/18/2015 0130

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	480-237263	Instrument ID:	HP5890-21
	N/A		N/A	Initial Weight/Volume:	17 mL
Dilution:	1.0			Final Weight/Volume:	17 mL
Analysis Date:	04/20/2015 1449			Injection Volume:	5 mL
Prep Date:	N/A			Result Type:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Ethane	ND		7.5
Ethene	ND		7.0
Methane	ND		4.0

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-12-0415**

Lab Sample ID: 480-78711-3 Date Sampled: 04/17/2015 1005
Client Matrix: Water Date Received: 04/18/2015 0130

RSK-175 Dissolved Gases (GC)

Analysis Method:	RSK-175	Analysis Batch:	200-87345	Instrument ID:	CH2866.i
	N/A	Prep Batch:	N/A	Lab File ID:	13296023.D
Dilution:	1.0			Initial Weight/Volume:	18 mL
Analysis Date:	04/27/2015 1515			Final Weight/Volume:	18 mL
Prep Date:	N/A			Injection Volume:	400 uL

Analyte	Result (ug/L)	Qualifier	RL
Carbon dioxide	17000		1000

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-4-0415**

Lab Sample ID: 480-78711-1 Date Sampled: 04/17/2015 0905
Client Matrix: Water Date Received: 04/18/2015 0130

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-238008	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-237618	Lab File ID:	I1042215A-6.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/22/2015 1535			Final Weight/Volume:	50 mL
Prep Date:	04/21/2015 1429				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	ND		0.0030

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-11-0415**

Lab Sample ID: 480-78711-2 Date Sampled: 04/17/2015 1100
Client Matrix: Water Date Received: 04/18/2015 0130

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-238008	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-237618	Lab File ID:	I1042215A-6.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/22/2015 1538			Final Weight/Volume:	50 mL
Prep Date:	04/21/2015 1429				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.25		0.0030

Client: CDM Smith, Inc. Job Number: 480-78711-1

Client Sample ID: **MW-12-0415**

Lab Sample ID: 480-78711-3 Date Sampled: 04/17/2015 1005
Client Matrix: Water Date Received: 04/18/2015 0130

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	480-238008	Instrument ID:	ICAP1
Prep Method:	3005A	Prep Batch:	480-237618	Lab File ID:	I1042215A-6.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	04/22/2015 1600			Final Weight/Volume:	50 mL
Prep Date:	04/21/2015 1429				

Analyte	Result (mg/L)	Qualifier	RL
Lead	ND		0.010
Manganese	0.19		0.0030

General Chemistry

Client Sample ID: **MW-4-0415**

Lab Sample ID: 480-78711-1 Date Sampled: 04/17/2015 0905
Client Matrix: Water Date Received: 04/18/2015 0130

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	ND		mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1252					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	2.9		mg/L	0.050	1.0	353.2
Analysis Batch: 480-237138	Analysis Date: 04/18/2015 1232					
Cyanide, Total	ND		mg/L	0.010	1.0	9012B
Analysis Batch: 480-239146	Analysis Date: 04/28/2015 1109					
Prep Batch: 480-239006	Prep Date: 04/27/2015 2230					
Sulfate	60.0		mg/L	10.0	2.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1946					
Alkalinity, Total	384		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-239237	Analysis Date: 04/28/2015 1928					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	295		mg/L	10.0	10	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 2055					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-11-0415**

Lab Sample ID: 480-78711-2 Date Sampled: 04/17/2015 1100
Client Matrix: Water Date Received: 04/18/2015 0130

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	0.26		mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1252					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	0.28		mg/L	0.050	1.0	353.2
Analysis Batch: 480-237138	Analysis Date: 04/18/2015 1234					
Cyanide, Total	0.012		mg/L	0.010	1.0	9012B
Analysis Batch: 480-239146	Analysis Date: 04/28/2015 1110					
Prep Batch: 480-239006	Prep Date: 04/27/2015 2230					
Sulfate	82.9		mg/L	15.0	3.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1956					
Alkalinity, Total	428		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-239237	Analysis Date: 04/28/2015 1928					
Ferrous Iron	ND	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	314		mg/L	10.0	10	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 2055					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					

General Chemistry

Client Sample ID: **MW-12-0415**

Lab Sample ID: 480-78711-3 Date Sampled: 04/17/2015 1005
Client Matrix: Water Date Received: 04/18/2015 0130

Analyte	Result	Qual	Units	RL	Dil	Method
Total Kjeldahl Nitrogen	ND		mg/L	0.20	1.0	351.2
Analysis Batch: 480-239180	Analysis Date: 04/28/2015 1252					
Prep Batch: 480-238989	Prep Date: 04/28/2015 2258					
Nitrate as N	1.4		mg/L	0.050	1.0	353.2
Analysis Batch: 480-237138	Analysis Date: 04/18/2015 1237					
Cyanide, Total	ND		mg/L	0.010	1.0	9012B
Analysis Batch: 480-239146	Analysis Date: 04/28/2015 1112					
Prep Batch: 480-239006	Prep Date: 04/27/2015 2230					
Sulfate	54.8		mg/L	10.0	2.0	D516-90, 02
Analysis Batch: 480-238527	Analysis Date: 04/24/2015 1946					
Alkalinity, Total	368		mg/L	5.0	1.0	SM 2320B
Analysis Batch: 480-239237	Analysis Date: 04/28/2015 1928					
Ferrous Iron	0.16	UJ HF	mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 480-237115	Analysis Date: 04/18/2015 1011					
Chloride	139		mg/L	5.0	5.0	SM 4500 Cl- E
Analysis Batch: 480-239257	Analysis Date: 04/28/2015 2006					
Sulfide	ND		mg/L	1.0	1.0	SM 4500 S2 F
Analysis Batch: 480-237411	Analysis Date: 04/20/2015 1036					