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New York State Electric & Gas Corporation

2013 Periodic Review Report

Washington Street Former MGP Site
City of Binghamton, Broome County, New York
NYSDEC Site #C704046

June 2013

ARCADIS

Certification

I, John C. Brussel, P.E., certify that I am currently a New York State registered professional engineer and I had primary responsibility for the site inspection, groundwater monitoring, and vapor intrusion evaluation performed at the Washington Street former manufactured gas plant (MGP) site ("the site") during the period between December 19, 2011 and May 1, 2013. These activities were performed to confirm the effectiveness of the institutional and engineering controls, as required by the New York State Department of Environmental Conservation- (NYSDEC-) approved *Site Management Plan* (ARCADIS, 2011a). These activities were performed by persons under my direction on behalf of New York State Electric & Gas Corporation (NYSEG), which is responsible for the performance of the existing remedy. Neither NYSEG nor ARCADIS have direct control over the property owner or the owner's employees, and ARCADIS and/or NYSEG representatives are not present at the site on a regular basis. Based on my inquiry of the site owner and persons under my direction who performed the activities summarized herein, I certify that the following statements are true:

- The institutional and engineering controls employed at this site are functionally unchanged from the date the controls were put in place.
- There are no apparent changes that would impair the ability of the controls to protect human health and the environment.
- Use of the site is compliant with the Environmental Easement (Site #C704046, BCA Index No. A7-0518-0505) executed on March 31, 2011.
- The site inspection and sampling data demonstrate that the engineering control systems are performing as designed and remain effective.
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices, and the information presented in this report is accurate and complete.

John c. Brussel 6/25/13

John C. Brussel, P.E.
NYS PE License No. 075208

2013 Periodic Review Report

Washington Street
Former MGP Site
City of Binghamton,
Broome County, New York
NYSDEC Site #C704046

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Acronyms and Abbreviation

BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BTEX	benzene, toluene, ethylbenzene, and xylenes
CD	compact disc
COC	Certificate of Completion
DER-10	NYSDEC's document titled, DER-10/Technical Guidance for Site Investigation and Remediation, dated May 3, 2010
DNAPL	dense non-aqueous phase liquid
EE	Environmental Easement
FER	Final Engineering Report
IC/EC	Institutional Controls and Environmental Controls
MEK	methyl-ethyl ketone or butanone
MGP	manufactured gas plant
MSDS	material safety data sheets
NAPL	non-aqueous phase liquid

NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSEG	New York State Electric & Gas Corporation
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PRR	Periodic Review Report
RI	Remedial Investigation
SCOs	Soil Cleanup Objectives
SMP	Site Management Plan
SSD	sub-slab depressurization system
SVOCs	semi-volatile organic compounds
TAL	Target Analyte List
TCL	Target Compound List
TOGS 1.1.1	NYSDEC Division of Water, Technical and Operational Guidance Series document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations"
VI	vapor intrusion
VIMM	vapor intrusion mitigation measures
VOCs	volatile organic compounds
WDA	Washington Development Associates

Executive Summary

The Institutional Controls and Environmental Controls (IC/ECs) were evaluated for this Periodic Review Report (PRR) by conducting an inquiry of the property owner, performing a site-wide inspection, monitoring groundwater, and performing a vapor intrusion (VI) evaluation in accordance with the New York State Department of Environmental Conservation- (NYSDEC-) approved *Site Management Plan* (ARCADIS, 2011a) ("the SMP") and the Environmental Easement (Site #C704046, BCA Index No. A7-0518-0505; NYSDEC, 2011b) (the "EE") for the Washington Street former manufactured gas plant (MGP) site.

Based on the results of the periodic review activities described herein, the IC/ECs are in place, functionally unchanged, performing properly, and remain protective of human health and the environment. The asphalt pavement, concrete building slabs/sidewalks, and clean soil cover prevent direct contact exposure to underlying soil containing residuals from the former MGP. Groundwater analytical results are generally consistent with historical data and continue to indicate that the quality of groundwater beneath the site is unaffected by the former MGP, except at a localized area around monitoring well MW-5D. Use of groundwater at the site is prohibited by the EE without treatment rendering it safe for intended use. The findings of the VI investigation performed in March 2012 indicate that soil vapor intrusion is not occurring in the Twin River Commons building and that the existing passive sub-slab depressurization (SSD) system does not need to be activated.

NYSEG will continue to perform a site-wide inspection on an annual basis. Groundwater monitoring will continue to be performed to provide further data to evaluate trends. The next groundwater monitoring event is scheduled to be performed in 2013. If groundwater analytical results from 2013 are generally consistent with historical data, NYSEG may propose changing the frequency of the periodic review from once every year to once every three years (the change will require NYSDEC approval prior to implementation). It is anticipated that the groundwater monitoring will continue for four more events unless NYSEG and the NYSDEC agree that the monitoring objectives have been met in a shorter timeframe.

No further sub-slab vapor or indoor air sampling is required for the Twin River Commons Building unless the passive SSD system is to be decommissioned.

1. Introduction and Site Overview

This 2013 Periodic Review Report (PRR) has been prepared on behalf of New York State Electric & Gas Corporation (NYSEG) and Washington Development Associates, LLC (WDA) and documents the performance, effectiveness, and protectiveness of the remedy at the Washington Street former manufactured gas plant (MGP) in Binghamton, New York ("the site"). The site was redeveloped between 2010 and 2012 and now consists of a multi-story student housing/apartment building and associated parking lots, driveways, and landscaping areas. This PRR documents compliance with the Site Management Plan (ARCADIS, 2011a) (the "SMP") and the Environmental Easement (NYSDEC, 2011b) (the "EE") based on inquiries of the site owner (WDA), a site inspection, groundwater monitoring, and vapor intrusion (VI) evaluation. The SMP was prepared to manage residuals remaining onsite, as required by the EE and in accordance with the Environmental Conservation Law Article 71, Title 36. This report covers the time period between the New York State Department of Environmental Conservation's (NYSDEC's) December 19, 2011 issuance of the Certificate of Completion (COC) (NYSDEC, 2011a) and May 1, 2013.

This report has been prepared in accordance with:

- The SMP, EE (as Appendix C of the SMP), and COC, which are included as electronic attachments on the attached compact disc (CD).

- NYSDEC's document titled, "DER-10/Technical Guidance for Site Investigation and Remediation", dated May 3, 2010 (DER-10; NYSDEC, 2010).

1.1 Report Organization

This PRR has been organized in the following sections:

Section	Purpose
Executive Summary	Summarizes the PRR.
1. Introduction	Briefly summarizes the site background information, site history, site characterization, remedial activities, regulatory history, and remaining residuals.
2. Description of Institutional and Engineering Controls	Describes institutional controls and engineering controls (IC/ECs) employed at the site to be protective of human health and the environment.

Section	Purpose
3. Evaluation of Remedy Performance, Effectiveness, and Protectiveness	Presents results of the EC inspection/ evaluation, groundwater monitoring, and the scope and findings of the VI evaluation. Also includes the IC/EC certifications.
4. Conclusions and Recommendations	Provides the conclusions and recommendations of the PRR.
5. References	Presents the references for all documents cited in this report.

1.2 Background Information

This section presents relevant background information. A site description is presented below, followed by relevant site historical information, and the regulatory history for the site.

1.2.1 Site Location and Description

The site is located in Binghamton, Broome County, New York. The site occupies approximately 1.3-acres of land within a city block bounded by Susquehanna Street to the north, Riverside Drive to the south, Washington Street to the east, and a former roadway (Water Street) and the Chenango River to the west. As shown on Figure 1, the site is just northeast of the confluence of the Susquehanna and Chenango Rivers, which are lined by floodwalls.

Following NYSEG's remediation of the site, WDA constructed the Twin River Commons over the site and surrounding properties (including former Water Street). The Twin River Commons consists of a multi-story student housing/apartment building, parking lot, driveways, and landscaped areas.

1.2.2 Site History

An MGP operated on the site between 1853 and 1888, producing gas first by coal carbonization, and in later years (around 1884), by the carbureted water gas process. Once MGP operations ceased, the site was purchased and occupied by a number of companies performing various industrial and commercial operations, including automobile and truck sales and service, a gasoline filling station, and plumbing and electric supply facilities. Land use in the vicinity of the site has historically been commercial/industrial.

A series of investigations, including a Remedial Investigation (RI) and supplemental delineation investigation (SDI), were conducted at the site between November 2005 and March 2009 to characterize the nature and extent of environmental impacts at the site. During the investigations:

- Approximately 70 soil borings were drilled.
- Thirteen groundwater monitoring wells, one dense non-aqueous phase liquid (DNAPL) monitoring well, two temporary wells, and one piezometer were installed.
- Six test pits were excavated.
- Nearly 100 samples of environmental media were analyzed.

Generally, the investigations determined that MGP-related impacts were limited to onsite soils and groundwater. In October 2008, the NYSDEC determined that the site did not represent a significant threat to public health and/or the environment. However, MGP-related residuals beneath the site required remediation. The results of the RI, SDI, and earlier investigations are described in the SMP.

1.2.3 Remedial Activities and Site Redevelopment

The site was remediated in accordance with the NYSDEC-approved *Remedial Action Work Plan* (ARCADIS, 2010a) (the "RAWP") and RAWP Modifications #1 through #4. The remedial actions mitigated potential threats to human health and the environment by removing soils that were impacted by coal tar DNAPL and that contained constituents at concentrations exceeding the restricted-residential use soil cleanup objectives (SCOs) presented in 6 NYCRR Part 375-6.8(b) (NYSDEC, 2006). The remedial action was performed between April 2010 and August 2010. During this timeframe, approximately 12,500 cubic yards of impacted soils and 2,500 tons of construction and demolition debris were removed from the site and taken to permitted facilities for offsite treatment/disposal. The former gasholders, a tar well, and other MGP-related subsurface structures were removed from the site. The excavation areas are shown in Figure 2. Before imported clean backfill material was placed in the excavations, a demarcation layer was installed to separate the clean material from the native soils and reused backfill. The demarcation layer consists of: (1) black geo-grid or black geotextile at depths of approximately 15 feet or greater below the pre-remediation ground surface; and (2) orange construction fence within

approximately 2 feet to 8 feet below the pre-remediation ground surface. The locations and elevations of the different demarcation materials are shown in the SMP. The imported clean backfill constitutes part of a cover system to prevent human exposure to the underlying native soils and reused backfill.

Site redevelopment began while remediation was underway and was completed in Spring/Summer 2012. During site redevelopment, a demarcation layer (consisting of orange construction fence) was placed as follows: (1) over disturbed and undisturbed soils around the previously-excavated and backfilled areas; and (2) at the bottom of utility or foundation trenches. Imported clean fill and/or asphalt and concrete were placed over the demarcation layer to meet the requirements of the cover system specified in the EE. The soil cover system and demarcation layers are described in Section 2.2.1.

Once the grade under the proposed new building was established, WDA's contractors installed building foundations and vapor intrusion mitigation measures (VIMMs) (refer to Section 2.2.2 for further information) and then erected the Twin River Commons building.

1.2.4 Regulatory History

NYSEG entered into the Brownfield Cleanup Agreement (BCA) with the NYSDEC on October 17, 2005 to investigate and, as necessary, remediate environmental media impacted by the former MGP. In accordance with the BCA, NYSEG completed a multi-phase RI, an Alternatives Analysis/Remedial Work Plan, and a RAWP between November 2005 and March 2010. Further details of these activities are described in the SMP.

The remedial activities were performed by NYSEG's remedial contractor, AECOM, between April 2010 and August 2010. ARCADIS provided full-time onsite construction management services during the remedial activities. Site redevelopment was performed by WDA and was completed in Spring/Summary 2012. ARCADIS made periodic site visits to observe important, MGP-related aspects of the construction work performed in 2011. ARCADIS prepared and submitted the SMP and the *Final Engineering Report* (ARCADIS, 2011c) (the "FER") to the NYSDEC in December 2011. NYSDEC issued the COC for the site on December 19, 2011.

1.2.5 Remaining Site Residuals

MGP-related residuals remaining at the site after remediation are summarized below. The analytical results for documentation samples collected from soil remaining at the site following remediation are tabulated in the SMP.

1.2.5.1 Surface Soil

Surface soils that contain residual MGP impacts and were not excavated during the remedy (or subsequent redevelopment) are covered by the demarcation layer and soil cover system as described in Section 2.2. These underlying soils were found to contain certain polycyclic aromatic hydrocarbons (PAHs) and metals (lead) at concentrations exceeding the restricted-residential use SCOs.

In aggregate, the soil cover system addresses potential future human exposure in accordance with a NYSDEC Track 4 cleanup with the top 2 feet of exposed surface soils meeting the restricted-residential use SCOs, as described in 6 NYCRR Part 375-3.8(e)(4)(iii)(a)(1).

1.2.5.2 Subsurface Soil

The remedial activities implemented at the site targeted DNAPL-containing soil and the contents of Holders #1 and #2. MGP residuals are present in subsurface soils below some of the targeted remediation areas. Results for documentation samples collected along the bottom of the excavations indicate the presence of a few PAHs. Petroleum residues and some MGP residuals were observed at the bottom of the remedial excavations (22 feet below the pre-development grade). The impacted soils were removed to the extent practical. Further excavation below 22 feet was not performed because the bracing system installed to support excavation sidewalls (steel sheetpile) was not designed for deeper removal. These impacted soils are now covered with native soils that met criteria for subsurface re-use and clean fill totaling greater than 22 feet thick.

1.2.5.3 Groundwater

The remedial activities performed at the site removed potential remaining sources of impacts to groundwater. No groundwater removal or treatment was performed as part of the remedial activities, other than the removal and offsite treatment of an estimated 5,400 gallons of water from the bottom of the excavations.

Results from previous groundwater sampling events indicate that groundwater quality beneath the site is unaffected by the former MGP, except at wells MW-3, MW-5/5D, and MW-9. However, extensive soil (source) removal was performed in the area around monitoring wells MW-3 and MW-9 during the remedial action, and these wells were permanently removed. Based on source removal work, groundwater quality in this area is expected to improve. Replacement wells were not installed at the MW-3 and MW-9 locations because they are not critical to the overall monitoring network.

Groundwater analytical results were compared to the groundwater standards/guidance values presented in NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS) document titled ”Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations” (TOGS 1.1.1) dated June 1998, last revised June 2004. Concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds and PAHs in MW-5D and cyanide in MW-5 exceeded groundwater quality standards/guidance values in one or more sampling events. Data from the RI suggested that the volume of impacted groundwater near MW-5/5D is small. The historical groundwater analytical results for MW-3 and MW-9 are not summarized herein because they are no longer relevant after the source removal work was completed.

Groundwater is generally encountered between approximately 13 to 23 feet below ground surface at the site. The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.

2. Description of Institutional and Engineering Controls

This section describes the IC/ECs employed at the site to address residuals in the subsurface. A summary of the ICs is presented below, followed by a description of the ECs.

2.1 Institutional Controls

The ICs for this site are established in the EE and SMP. The ICs were developed to: (1) implement, maintain and monitor engineering control systems; (2) prevent future exposure to site residuals by controlling disturbances of the subsurface soils containing residuals; and (3) limit the use and development of the site to restricted-residential uses only. The ICs require the following:

- The Grantor and the Grantor's successors and assigns must comply with the EE and the SMP.
- All ECs must be operated and maintained as specified in the SMP.
- All ECs on the "controlled" property (i.e., the property subject to the EE and SMP) must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater and other environmental or public health monitoring must be performed as defined in the SMP.
- Data and information pertinent to site management of the controlled property must be reported at the frequency and in a manner defined in the SMP.

The EE and SMP put the following restrictions on the property:

- The property may only be used for restricted-residential purposes provided that the long-term IC/ECs included in the SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted use, without additional remediation and amendment of the EE, as approved by the NYSDEC.
- All future property owners shall be notified of the presence of site residuals in soil and groundwater at the site via the EE and SMP.

- All future activities on the property that will disturb site residuals in subsurface soils and groundwater must be conducted in accordance with the SMP.

- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.

- Vegetable gardens and farming on the property are prohibited.

- This property must not be used as a single family residential property.

- Site inspections shall be performed, and a certification statement shall be prepared to document the status of the controls as identified by the site inspection and inquiry of persons involved in site operations/maintenance.

2.2 Engineering Controls

Two Engineering Controls are employed at the site to protect human health and the environment: (1) a soil cover system; and (2) VI mitigation measures. These two systems are described below.

2.2.1 Soil Cover System

Exposure to MGP residuals in soil at the site is prevented by a soil cover system placed over the entire site. Depending on the location, the soil cover system consists of either:

- Imported clean soil at least 2 feet thick
- Clean soil plus asphalt pavement or concrete totaling at least 2 feet thick
- Asphalt/concrete at least 6-inches thick
- The building itself

The soil cover system was installed over demarcation layers that were placed during both remediation and site redevelopment, as described in Section 1.2.3. The demarcation layers provide a clear line for determining when the requirements of the Excavation Work Plan (Appendix A to the SMP) are triggered.

2.2.2 Vapor Intrusion Mitigation Measures

As a precaution, VIMMs were installed during construction of the Twin River Commons building. These measures are considered pro-active and precautionary because: (1) VI investigations conducted at buildings located within the footprint of the former MGP (i.e., the AAA building and On-the-Roxx restaurant, which were demolished in preparation for site remediation and redevelopment) indicated that VI was not occurring at these former buildings; and (2) remediation measures were performed to remove potential remaining source materials, consisting of former subsurface MGP structures and soil containing coal tar DNAPL.

The VIMMs consist of: (1) a vapor barrier under the concrete slab of the building; (2) sealed control joints and expansion joints; and (3) two separate, passive sub-slab depressurization (SSD) systems. The vapor barrier and SSD system vent piping extend under the entire sub-slab floor of the building, even though only a portion of the building extends over the site. During building construction, permanent sub-slab vapor sample collection points were installed at five sampling locations inside the building (locations SSV-1 through SSV-5, as shown on Figure 3). The sub-slab vapor sampling points were constructed as described in the *Vapor Intrusion Mitigation Measures Construction Completion Report* (ARCADIS, 2011b) included as Appendix H to the FER. These two reports are provided in portable document format on the attached CD.

3. Evaluation of Remedy Performance, Effectiveness, and Protectiveness

The performance, effectiveness, and protectiveness of the remedy were evaluated by: (1) reviewing owner responses to questions on the NYSDEC's "Institutional and Engineering Controls Certification Form" (Enclosure 2 to an April 3, 2013 letter from the NYSDEC to WDA); (2) inspecting and evaluating the ECs; (3) conducting groundwater monitoring; and (4) performing a VI evaluation.

The evaluation of the ICs is presented below, followed by an evaluation of the ECs.

3.1 Evaluation of Institutional Controls

The status of the ICs was assessed via owner responses to questions on the "Institutional and Engineering Controls Certification Form". The completed form is provided under separate cover. Based on the responses provided by WDA, the property boundaries are the same as those established in Schedule A of the EE (i.e., there has been no sale, subdivision, merger, or tax map amendment during the reporting period), the only permit issued during the reporting period was an Occupancy Permit, the site is not currently undergoing development, the site continues to be used for restricted-residential purposes, and the ICs remain in-place.

3.2 Inspection and Evaluation of Engineering Controls

A comprehensive site-wide inspection was performed during the week of July 16, 2012. The inspection was performed by ARCADIS on behalf of NYSEG and it evaluated whether the ECs:

- Continue to perform as designed.
- Continue being protective of human health and the environment.
- Comply with the requirements the SMP and the EE.
- Achieve remedial performance criteria.

The performance of the soil cover system is evaluated in the subsection below, followed by the evaluation of the VIMMs.

3.2.1 Evaluation of Soil Cover System

The surface cover was evaluated on July 20, 2012 by inspecting the paved parking/ driveway areas, concrete sidewalk, landscaping, and lowest level of the southern

portion of the Twin River Commons building. The findings of the inspection are documented on the Site-Wide Inspection Form included as Appendix A to this report. As indicated on the form, the only evidence of ground intrusive activities performed at the site where those performed by ARCADIS to restore seven monitoring wells that WDA had paved over in June 2012. WDA performed additional (final) paving to smooth out the abrupt transitions in preliminary pavement grades that had resulted from adjustments to the parking lot in December 2011 to achieve minimum cover requirements. The additional pavement provides further cover over MGP residuals.

Ground-intrusive work performed to restore the monitoring wells did not extend below the demarcation layer. Details of the well restorations are provided in Section 3.3.1. Apart from the monitoring well restoration work, there was no evidence of recent excavation/subsurface utility work, erosion, or cover material removal. Other observations were related to the completed construction of the building and landscaping of the surrounding area. Photographs obtained during the cover inspection are included as an electronic attachment (refer to the CD included with this report).

3.2.2 Evaluation of the Vapor Intrusion Mitigation Measures

Accessible portions of the SSD system were inspected as part of the post-construction VI evaluation performed on March 30, 2012. During the evaluation, ARCADIS determined that the wind driven turbines were unobstructed and spinning freely, and that the control valves were operational and in the open position. These controls were not re-evaluated during the July 20, 2012 site-wide inspection. Photographs showing the condition of the wind-driven turbines and SSD system control valves, as observed during the inspection, are provided as an electronic attachment (refer to the attached CD).

3.3 Groundwater Monitoring Plan Compliance Report

Groundwater monitoring was performed during the week of July 16, 2012 to:

- Evaluate the groundwater quality in the seven remaining shallow and deep monitoring wells in silt, sand/gravel, and till units below the site (i.e., monitoring wells MW-4R, MW-5, MW-5D, MW-6S, MW-6, MW-7R, and MW-7D, as shown on Figure 2).

- Evaluate the onsite post-remedial groundwater flow patterns via water levels from the above-referenced wells.

- Evaluate the post-remedial concentrations of constituents of interest in groundwater.

- Confirm that groundwater quality is improving and/or does not represent a significant threat to human health or the environment based on the site use.

3.3.1 Groundwater Monitoring Well Restoration

The above-identified seven groundwater monitoring wells needed restoration prior to groundwater sampling. WDA repaved the entire parking lot and associated driveways in June 2012 (to smooth out abrupt transitions left after paving in early December 2011 to meet minimum cover system requirements). During this paving, each of the seven flush-mount monitoring wells in the parking area was paved over. Monitoring wells needed to be modified and raised to accommodate the higher final pavement elevation. The following work was performed so that the wells could be sampled as required by the SMP:

- Locating the wells via a combination of field measurements, metal detector use, and identification of depressions in the pavement.

- Saw-cutting and removing up to 6-inches of the new pavement that covered the flush-mount curb box at each well location.

- Removing the existing curb boxes and surrounding pavement and subbase/stone (to a depth of approximately six inches) around each well.

- Installing new flush-mount curb boxes at each well.

Well restoration work was performed from July 16, 2012 through July 18, 2012. In compliance with the SMP, the NYSDEC was informed about the well restoration more than seven days in advance (via May 31, 2012 e-mail correspondence from NYSEG). Although the well restoration work did not disturb soils beneath the demarcation layer, real-time monitoring for organic vapors was performed at the worker breathing zone using a photoionization detector, and VOCs were not detected at concentrations greater than background. Following well modification, the new measuring-point elevation (top of casing) for each well was surveyed by NYSEG. The monitoring well construction details with the new surveyed elevations are presented in Table 1.

3.3.2 Groundwater Monitoring Fieldwork and Analysis

Prior to sampling, water-level measurements were obtained from the seven monitoring wells, and each well was checked for the presence of accumulated DNAPL. None was identified in any of the wells. The water-level data and corresponding groundwater elevations are presented in Table 2.

Groundwater samples were collected using low-flow purging and sampling techniques (a peristaltic pump with dedicated disposable tubing), as described in the *Field Sampling Plan* (BBL, 2005a), included as Appendix H to the SMP. Field parameters (pH, conductivity, dissolved oxygen, temperature, turbidity, and oxidation-reduction potential) were monitored every 5 minutes during purging. After turbidity levels decreased to below 50 nephelometric turbidity units and parameters stabilized, groundwater samples were collected for laboratory analysis. Field parameter measurements obtained during purging and immediately prior to sampling are presented on the groundwater sampling logs included in Appendix B to this report.

Groundwater samples, except those submitted for laboratory analysis for volatile organic compounds (VOCs), were collected using low-flow sampling techniques. Groundwater samples submitted for laboratory analysis of VOCs were collected using a disposable polyethylene bailer.

The groundwater samples were submitted to TestAmerica of Buffalo, New York for analysis for Target Compound List (TCL) VOCs, TCL semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) inorganic constituents (includes cyanide), and polychlorinated biphenyls (PCBs). Analytical results were reported using NYSDEC Analytical Services Protocol Category B data deliverables. The analytical results were validated by ARCADIS in accordance with United States Environmental Protection Agency (USEPA) National Functional Guidelines. The laboratory analytical reports and the data usability summary report are included on the attached CD.

3.3.3 Groundwater Monitoring Results

The validated groundwater analytical results for constituents detected in the groundwater samples are summarized in Table 3. Groundwater analytical results were compared to the NYSDEC groundwater standards/guidance values presented in TOGS 1.1.1. Results for VOCs identified in the groundwater samples at

concentrations above the TOGS 1.1.1 groundwater quality standards are shown on Figure 2. Analytical results obtained from the laboratory analysis of the groundwater samples collected during the July 2012 monitoring event are summarized below:

- VOCs and SVOCs were not identified at concentrations exceeding the groundwater standards/guidance values presented in TOGS 1.1.1 in samples from six of the seven monitoring wells. Consistent with historical data, groundwater at monitoring well MW-5D contained BTEX and select PAHs at concentrations exceeding the groundwater standards/guidance values. The analytical results for BTEX and PAHs at MW-5D compared to historical data are summarized below:

  - BTEX concentrations identified at MW-5D in July 2012 were approximately two to seven times less than those identified in July 2006, but were generally consistent with or slightly greater than those identified during the 2008 sampling events.

  - PAH concentrations identified at MW-5D in July 2012 were generally consistent with or less than those identified during the 2006 and 2008 sampling events.

- Inorganics were identified at concentrations exceeding the TOGS 1.1.1 groundwater standards in several samples. In all but one case, the inorganics that were detected above their respective standards were iron and manganese. These are common, naturally-occurring elements. The only other inorganic detected above its standard was lead in the sample collected from monitoring well MW-5D. Lead has not been detected in previous samples collected from this well. If lead continues to be detected above its criterion in the next two samplings, an assessment will be made as to whether: (1) the detections are real or sampling artifacts; (2) the lead poses a risk to human health and the environment; and (3) additional actions need to be taken.

- PCBs were not detected at concentrations above laboratory detection limits in any of the groundwater monitoring wells.

Based on review of the analytical results, the quality of groundwater beneath the site appears to be unaffected by the former MGP, except at well MW-5D, and data continues to support that the area of MGP-affected groundwater near MW-5D is small. However, there is not enough data to establish that residual groundwater

concentrations have become asymptotic over an extended period. Based on available data at MW-5D, BTEX concentrations have fluctuated and PAH concentrations identified in each monitoring event have remained generally consistent. These sampling results are common for residuals in groundwater at remediated MGPs.

Additional groundwater monitoring events are required to collect enough data to establish a statistically significant data trend. Typically, a trend can be established after eight events. The July 2012 data is the third set of data collected at MW-4/4R and MW-5, and the fourth set of data collected at MW-5D, MW-6S, MW-6, MW-7/7R, and MW-7D. Considering that MW-5D is the only monitoring well location that appears to be affected by the former MGP site, groundwater monitoring may be discontinued after four more monitoring events (or sooner if NYSEG and the NYSDEC agree that monitoring objectives have been accomplished in a shorter period). In addition, the number of wells included in the monitoring events may be reduced if acceptable to NYSEG and the NYSDEC.

The next groundwater monitoring event is scheduled for July 2013 and will involve obtaining a synoptic round of water level measurements and collecting groundwater samples from each well for laboratory analysis. The results of the 2013 groundwater monitoring event will be evaluated to re-assess the frequency of the periodic review. If groundwater analytical results from 2013 are generally consistent with historical data, the frequency of the periodic review could potentially be adjusted from annually to once every three years and the number of wells sampled could potentially be reduced, with NYSDEC approval.

3.4 Vapor Intrusion Evaluation Summary

A VI evaluation was also performed during this period as required in the *Vapor Intrusion Mitigation Measures Construction Completion Report*. The VI evaluation was performed once the building was fully enclosed and heating systems were turned on. The VI evaluation was performed to: (1) evaluate the potential presence of volatile organic vapors below the building floor slab; (2) evaluate the effectiveness of the sub-slab vapor barrier and passive SSD systems at preventing vapor intrusion into the building; and (3) assess whether the SSD system needs to be activated via the addition of fan-powered vents. The VI evaluation consisted of the following:

- Building reconnaissance to complete the New York State Department of Health (NYSDOH) Indoor Air Quality Questionnaire and Building Inventory form (included as Appendix B to the NYSDOH VI Guidance).

- Collecting and analyzing samples of sub-slab vapor, indoor air, and ambient (outdoor) air.

The scope and findings of the evaluation are summarized below.

3.4.1 Building Reconnaissance and Product Inventory

The building reconnaissance and product inventory was performed on March 30, 2012. During the building reconnaissance, the NYSDOH Indoor Air Quality Questionnaire and Building Inventory form was completed. Many products used for general construction were found throughout the building, including petroleum-based products such as Stoddard solvent, WD-40, solvent-based paint, and adhesives. Additional products identified during the building reconnaissance include polyethylene wrap, mastic that contains bitumen/asphalt, rubber, fatty acids and polymers, and tape that has an acrylic adhesive. The NYSDOH Indoor Air Quality Questionnaire and Inventory Form is included in Appendix D. The product inventory is included as Table 4.

3.4.2 Sub-Slab Vapor and Indoor Air Sampling

Sub-slab vapor and indoor air samples were collected from the five permanent sub-slab vapor sampling collection points (discussed in Section 2.2.2) and five paired indoor air sampling locations on the main floor of the building (SSV-1/IA-1 through SSV-5/IA-5) on March 30 and 31, 2012. Sampling locations are shown on Figure 3. An ambient air sample (sample AA-1) was also collected outside the building as part of the evaluation. Samples were collected in accordance with the *Vapor Intrusion Mitigation Measures Work Plan* (ARCADIS, 2010b) ("the VIMM Work Plan") and the *Vapor Intrusion Mitigation Measures Construction Completion Report* (ARCADIS, 2011b). Purging was performed prior to sampling at all locations, and tracer-gas testing was performed during purging at two representative locations, as described in the VIMM Work Plan. Samples were collected over an approximate 24-hour period, which was selected because building occupancy is primary residential. Sub-slab vapor, indoor air, and ambient air logs are included in Appendix C.

The sub-slab vapor and indoor/outdoor air samples were analyzed by TestAmerica of Knoxville, Tennessee for VOCs in accordance with USEPA Compendium Method TO-15. The analytical results were validated by ARCADIS. The laboratory analytical data reports and data usability reports are included as an electronic attachment (refer to the CD included with this report).

3.4.3 Vapor Intrusion Evaluation Results

This section first summarizes the VI evaluation analytical results, and then draws conclusions based on them. Analytical results are presented in Table 5 and summarized as follows:

- Several VOCs were detected in each sub-slab vapor and indoor air sample and in the outdoor air sample.

- The VOC concentrations identified in the indoor air are less than:

  - The NYSDOH air guideline values presented in Section 3.2.5 of the NYSDOH's "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006 ("NYSDOH VI Guidance"; NYSDOH, 2006) for all constituents.

  - Typical background indoor air values (i.e., the 90th percentile of background indoor air levels observed by the USEPA in public and commercial office buildings as referenced in Section 3.2.4 of the NYSDOH VI Guidance) for all detected constituents, except methyl ethyl ketone (MEK, also referred to as 2-butanone) and styrene. MEK was identified in Material Safety Data Sheets (MSDS) for several products being used by WDA's contractors inside the building. Styrene-type odors were reported on an MSDS for one of the products used inside the building. An inventory of products used inside the building and associated VOCs in the products is included as Table 4.

- None of the VOCs included in the NYSDOH's Decision Matrices were detected above laboratory detection limits in the sub-slab vapor samples, the indoor air samples, or the outdoor air sample.

- New York State does not have standards, criteria, or guidance values for VOC concentrations in sub-slab vapor. For evaluation purposes, the sub-slab vapor analytical results were compared to the typical background indoor air values and

found to be less than or generally consistent with typical background indoor air values, with one exception. A few VOCs were identified in sub-slab vapor sample SSV-2 at concentrations approximately an order of magnitude greater than the background indoor air values. These VOCs consist of 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, ethylbenzene, and o-xylene. Although it is not possible to attribute the VOCs in sample SSV-2 to a particular source, a preliminary forensics assessment of the data was performed by an ARCADIS forensic scientist and indicates the following:

- The constituents identified at sub-slab vapor sample SSV-2 appear to have a petroleum origin that could be from petroleum products in the building inventory or some light distillate fuel such as gasoline. The inventory identified Stoddard solvent, WD-40, solvent-based paint, and adhesives that are petroleum-based and potential sources of VOCs in the sub-slab vapor samples. Also, note that the sub-slab vapor samples were collected in the pea-stone filled space between the vapor barrier and the bottom of the concrete floor slab (not below the vapor barrier).

- It is less likely that coal tar was a contributor of the VOCs in sub-slab vapor because of the absence of key coal-tar-related constituents (e.g., thiophene, styrene, and indene) and the presence of certain petroleum-only indicator compounds (e.g., isoparaffins [2,3-dimethyl heptanes] and naphthenes [butylcyclohexane]).

The NYSDEC and NYSDOH had expressed concern about warm weather leading up to the sampling event and the event potentially being conducted outside the “heating season”. However, based on local weather data, temperatures prior to and during sampling were seasonal (overnight lows in the 30s and daytime highs below 50 degrees Fahrenheit), and the heating system inside the building was operational and maintaining indoor temperatures near 60 degrees during the event. This means that the sampling was conducted during a period that is consistent with the NYSDOH’s definition of the “heating season”.

The analytical results indicate that soil vapor intrusion is not occurring at the Twin River Commons building. The data support that the SSD system does not need to be activated. In May 30, 2012 e-mail correspondence, the NYSDEC in consultation with the NYSDOH also concluded that the passive system does not need to be made active. Follow-up e-mail correspondence from the NYSDEC dated June 20, 2012 indicates that no further VI sampling is needed unless the passive system was to be

deactivated. This e-mail correspondence is included as an electronic attachment on the attached CD.

3.5 Institutional and Environmental Controls Certification

The results of the inspection and site monitoring data have been evaluated as part of the IC/EC certification and confirm that the:

- IC/ECs are in place, are performing properly, and remain effective.
- IC/ECs are functionally unchanged from the date the controls were put in place and approved by the NYSDEC. As indicated in Section 3.2.1, additional paving was performed by WDA in June 2012. This resulted in further cover over MGP residuals above and beyond minimum cover requirements.
- There are no apparent changes that would impair the ability of the controls to protect human health and the environment.
- Use of the site is compliant with the EE (i.e., multi-story student housing building that is consistent with restricted-residential use designation).
- The site inspection and sampling data demonstrate that the EC systems are performing as designed and remain effective.
- Groundwater monitoring data indicates that the assumptions made in the qualitative exposure assessment remain valid.

In accordance with the EE, the site owner (WDA) shall continue to allow NYSDEC access to the site to evaluate the remedy.

4. Conclusions and Recommendations

The ICs for this site were assessed via owner responses to questions on the "Institutional and Engineering Controls Certification Form". Based on the responses received, the ICs continue to be compliant with the requirements of the EE. ECs were evaluated for this PRR by performing the following activities in accordance with the SMP:

- Site-wide inspection
- Groundwater monitoring
- VI evaluation

Based on the site-wide inspection, the existing soil cover system remains in-place and is functioning as designed. Groundwater analytical results are generally consistent with historical data and continue to indicate that the quality of groundwater beneath the site is unaffected by the former MGP, except at a localized area around MW-5D. The analytical results for the VI investigation indicate that soil vapor intrusion is not occurring at the Twin River Commons building.

In summary, the IC/ECs continue to be in place, functionally unchanged, performing properly, and protective of human health and the environment. NYSEG will continue to perform a site-wide inspection on an annual basis. Groundwater monitoring will continue to be performed to provide further data to evaluate trends. The next groundwater monitoring event is scheduled to be performed in July 2013. The results of the 2013 groundwater monitoring event will be evaluated to re-assess the frequency of the periodic review and scope of future groundwater monitoring. As supported by the NYSDEC and NYSDOH in May 30, 2012 e-mail correspondence, the passive SSD system in the Twin River Commons building does not require activation. No further sub-slab vapor or indoor air sampling is required for the building unless the passive SSD system is to be decommissioned.

5. References

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ARCADIS. 2011a. *Site Management Plan, Washington Street Former MGP Site, Binghamton, New York*, prepared for NYSEG. December 2011.

ARCADIS. 2011b. *Vapor Intrusion Mitigation Measures Construction Completion Report, Twin Rivers Commons Building, Binghamton, New York*, prepared for NYSEG. December 2011.

ARCADIS. 2011c. *Final Engineering Report, Washington Street Former MGP Site, Binghamton, New York*, prepared for NYSEG. December 2011.

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NYSDEC, 2011b. *Environmental Easement, County: Broome, Site No.: C704046, BCA Index No. A7-0518-0505.* March 31, 2011.

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NYSDOH. 2006. *Guidance for Evaluating Soil Vapor in the State of New York*, October 2006.

6. Disclaimer

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Tables

TABLE 1
MONITORING WELL AND PIEZOMETER CONSTRUCTION DETAILS

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID	Material Screened/ Location	Date Completed	Date of Most-Recent Well Modification	Northing Coordinate	Easting Coordinate	Measuring Point Elev.		Ground Surface Elev.		Well Diam.	Casing/Screen Type	Screen Slot Size	Screen Length	Post-Remedy Depth to Screened Interval (ft. bgs)		Post-Remedy Well Depth	Estimated Hydraulic Conductivity (K)	Estimated Hydraulic Conductivity (K)
				ft.	ft.	ft. NAVD 88		ft. NAVD 88		in.		in.	ft.	Top	Bottom	ft. bgs	cm/sec	ft/day
						pre-remedy	post-remedy	pre-remedy	post-remedy									
MW-4R	sand, gravel and cobbles	11/3/11	7/17/12	763862.97	1001464.69	NA	845.76	NA	846.27	2	PVC	0.01	10.0	17.1	26.9	27.4	7.4E-03	2.1E+01
MW-5	silt, gravel, cobbles, and sand	6/8/06	7/17/12	763766.17	1001444.74	842.32	844.35	842.72	844.95	2	PVC	0.01	10.0	18.0	28.0	28.0	1.7E-02	4.8E+01
MW-5D	fine sandy silt, medium sand, and gravel	6/7/06	7/17/12	763767.20	1001441.76	842.58	844.23	842.81	844.81	2	PVC	0.01	5.0	39.0	44.0	44.0	8.3E-04	2.4E+00
MW-6S	sand, silt, clay, and organics	6/12/06	7/18/12	763645.42	1001463.98	841.61	844.08	842.10	844.44	2	PVC	0.01	5.0	10.0	15.0	15.0	3.2E-03	9.2E+00
MW-6	silt, clay, sand, gravel, and cobbles	6/12/06	7/18/12	763641.56	1001463.96	841.65	843.90	842.13	844.37	2	PVC	0.01	10.0	21.8	31.8	31.8	1.7E-04	4.9E-01
MW-7R	clay, silt, sand, and gravel, and cobbles	11/3/11	7/18/12	763543.99	1001506.05	NA	842.93	NA	843.21	2	PVC	0.01	10.0	14.5	24.3	24.5	1.2E-02	3.4E+01
MW-7D	clay, silt, gravel, and cobbles	6/9/06	7/18/12	763539.70	1001503.08	841.51	842.44	841.91	842.97	2	PVC	0.01	5.0	38.1	43.1	43.1	3.0E-03	8.5E+00
PZ-1	silt, sand, clay, and gravel	6/16/06	NA	763499.48	1001737.14	841.87	841.87	842.12	842.12	2	PVC	0.01	10.0	14.0	24.0	24.0	--	--

Notes:
1. MW = Monitoring Well; S = Shallow Well; D = Deep Well; PZ = Piezometer.
2. All wells are flush-mounted and are constructed of 2-inch diameter polyvinyl chloride (PVC) .
3. TIC = Top of Inner Casing; NA = Not Applicable.
4. Elevations are in feet referenced to the North American Vertical Datum (NAVD) 1988. Datum: NAD 83, NYS Plane Central.
5. Depths are measured in feet referenced TIC.
6. -- = Data is not available.
7. * = 0.01 feet of drawdown was assumed due to no recorded drawdown during specific capacity testing.
8. NA = Not Applicable.
9. Measuring point and ground surface elevations were modified one or two times during remediation and site redevelopment. Pre-remedy elevations are from surveys performed as part of the remedial investigation, and the post-remedy elevations are from a survey performed following site redevelopment on 8/16/2012.

TABLE 2
WATER-LEVEL DATA

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location	Reference Point Elevation		Depth to Groundwater (feet bmp)					Groundwater Elevation (feet, NAVD 1988)				
	pre-remedy	post-remedy	6/27/2006	7/24/2006	1/17/2008	5/15/2008	7/17/2012 & 7/20/2012	6/27/2006	7/24/2006	1/17/2008	5/15/2008	7/17/2012 & 7/20/2012
MW-1R	845.67	--	18.69	17.82	17.83	20.69	NA	826.98	827.85	827.84	824.98	NA
MW-2	844.88	--	NA	16.09	15.74	NA	NA	NA	828.79	829.14	NA	NA
MW-3	842.01	--	NA	13.60	5.48	6.45	NA	NA	828.41	836.53	835.56	NA
MW-4	843.62	--	15.69	16.51	16.93	19.60	NA	827.93	827.11	826.69	824.02	NA
MW-4R	--	845.76	NA	NA	NA	NA	22.50	NA	NA	NA	NA	823.26
MW-5	842.32	844.35	14.16	15.09	15.09	17.91	20.29	828.16	827.23	827.23	824.41	824.06
MW-5D	842.58	844.23	14.71	14.82	15.34	18.1	20.35	827.87	827.76	827.24	824.48	823.88
MW-6S	841.61	844.08	7.00	7.19	7.00	7.56	8.29	834.61	834.42	834.61	834.05	835.79
MW-6	841.65	843.90	13.25	13.72	14.25	15.67	20.09	828.40	827.93	827.40	825.98	823.81
MW-7	841.62	--	13.22	13.92	NA	16.29	NA	828.40	827.70	NA	825.33	NA
MW-7R	--	842.93	NA	NA	NA	NA	18.26	NA	NA	NA	NA	824.67
MW-7D	841.51	842.44	13.14	13.76	NA	NA	18.30	828.37	827.75	NA	NA	824.14
MW-8	845.60	--	18.39	17.81	18.21	20.76	NA	827.21	827.79	827.39	824.84	NA
MW-8D	844.84	--	17.16	17.96	18.15	20.47	NA	827.68	826.88	826.69	824.37	NA
MW-9	842.04	--	NA	NA	5.83	6.48	NA	NA	NA	836.21	835.56	NA
PZ-1	841.87	--	13.86	14.23	NA	NA	NA	828.01	827.64	NA	NA	NA
SG-1	847.86	--	17.14	21.35	NA	NA	NA	830.72	826.51	NA	NA	NA
SG-2	855.76	--	25.02	29.40	NA	NA	NA	830.74	826.36	NA	NA	NA

Notes:

1. MW = Monitoring Well; R = Replacement Well; S = Shallow Well; D = Deep Well; PZ = Piezometer; SG = Staff Gauge (reference point on bridge).
2. -- = Not Installed; bmp = Below Measuring Point.
3. TIC = Top of Inner Well Casing.
4. Reference point elevations for monitoring wells and piezometer are the top of the inner casing.
5. Elevations are in feet referenced to the North American Vertical Datum (NAVD) 1988.
6. The water level measurements for each mobilization in 2006 and 2008 were taken within one hour, with the following exceptions:
   - Measurements from MW-6S and MW-6D on 6/27/2006, which were taken four hours earlier.
   - MW-2 was essentially dry on 6/27/2006 and 5/15/2008.
   - The water level in MW-3 on 6/27/2006 could not be positively determined due to the presence of non-aqueous phase liquid (NAPL) in the well.
   - Measurements from MW-5 on 1/17/2008, which was taken four hours later.
7. The water level measurements from 2012 were obtained immediately prior to sampling at each well (not as a synoptic round).
8. NA = not available.
9. Measuring point elevations were modified multiple times during remediation and site redevelopment. Pre-remedy elevations are from surveys performed as part of the remedial investigation, and the post-remedy elevations are from a survey performed following site redevelopment on 8/16/2012 .
10. Groundwater elevations calculated for 2006 and 2008 were measured from the pre-remedy reference point elevation. Groundwater elevations calculated for 2012 were measured from the post-remedy reference point elevation.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED CONSTITUENTS (ppb)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID:	NYSDEC Water Standard/	MW-1R		MW-2	MW-4		MW-4R	MW-5			MW-5D			
Date Collected:	Guidance Values	07/25/06	01/18/08	01/18/08	07/25/06	01/18/08	07/17/12	07/26/06	01/18/08	07/17/12	07/26/06	01/18/08	05/15/08	07/17/12
Detected VOCs														
1,1,1-Trichloroethane	5	1.0 J	1.0 J	<5.0	<5.0	<5.0	<1.0	<5.0 J	<5.0	<1.0	<5.0 J	<25 [<5.0]	<5.0 [<5.0]	<2.0
1,2-Dichloroethene (Total)	- -	<10	<10	<10	<10	<10	NA	<10	<10	NA	<10	<50 [<10]	<10 [<10]	NA
Acetone	50	<25	<25	<25	<25	<25	8.8 J	<25 J	<25	9.3 J	<25 J	22 J [10 J]	13 J [11 J]	20
Benzene	1	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	**31**	<25 [<5.0]	**3.0 J [4.0 J]**	**8.8**
Bromodichloromethane	50	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	<5.0	<25 [<5.0]	<5.0 [<5.0]	<2.0
Bromoform	50	<5.0 J	<5.0	<5.0	<5.0 J	<5.0	<1.0	<5.0 J	<5.0	<1.0	5.0 J	<25 [<5.0]	<5.0 [<5.0]	<2.0
Carbon disulfide	- -	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	<5.0	<25 [<5.0]	<5.0 [<5.0]	<2.0
Chloroform	7	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	2.9	<5.0	<25 [<5.0]	<5.0 [<5.0]	<2.0
cis-1,2-Dichloroethene	5	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0	NA	NA	NA	<2.0
Ethylbenzene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	**98**	<25 J [0.90 J]	**6.0 [7.0]**	**13**
Methyl ethyl ketone (MEK)	- -	<25	<25	<25 J	<25	<25	<10	<25 J	<25 J	<10	<25 J	<120 J [<25]	1.0 J [1.0 J]	<20
Methyl tert-butyl ether	- -	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0 J	<5.0	<1.0	<5.0 J	<25 [<5.0]	<5.0 [<5.0]	<2.0
Tetrachloroethene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	0.60 J	<5.0	0.41 J	<5.0 J	<25 [<5.0]	<5.0 [<5.0]	<2.0
Toluene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	**28**	<25 [<5.0]	2.0 J [2.0 J]	**7.7**
Total Xylenes	5	<15	<15	<15	<15	<15	<2.0	<15	<15	<2.0	**280**	<75 J [2.0 J]	**17 [20]**	**110**
Trichloroethene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<1.0	<5.0	<25 [<5.0]	<5.0 [<5.0]	<2.0
Vinyl chloride	2	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<5.0 J	<5.0	<1.0	<5.0 J	<25 [<5.0]	<5.0 [<5.0]	<2.0
Total BTEX	- -	<15	<15	<15	<15	<15	<2.0	<15	<15	<2.0	440	<75 [2.9 J]	28 J [33 J]	140
Total VOCs	- -	1.0 J	1.0 J	<25	<25	<25	8.8 J	0.60 J	<25	13 J	440 J	22 J [13 J]	42 J [45 J]	160
Detected SVOCs														
Carbazole	- -	NA	NA	NA	NA	NA	<5.6	NA	NA	<4.8	NA	NA	NA	32
2,4-Dimethylphenol	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	<9.0	<5.0 [<5.0]	0.90 J [2.0 J]	1.6 J
2-Methylnaphthalene	- -	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	120	0.60 J [2.0 J]	19 J [40 J]	17
2-Methylphenol	- -	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	<9.0	<5.0 [<5.0]	0.20 J [0.50 J]	<4.8
4,6-Dinitro-2-methylphenol	- -	<50	<10	<9.0	<48	<10	<11	<47	<49	<9.6	<47	<10 [<10]	11 [<10]	<9.6
4-Methylphenol	- -	<10	<5.0	<5.0	<10	<5.0	<11	<9.0	<24	<9.6	<9.0	<5.0 [<5.0]	<5.0 [0.50 J]	<9.6
Acenaphthene	20	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	**63**	**19 [21]**	**33 [50]**	**39**
Acenaphthylene	- -	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	15	3.0 J [4.0 J]	4.0 J [6.0]	2.8 J
Anthracene	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	11	4.0 J [4.0 J]	5.0 [7.0]	3.3 J
Benzo(a)anthracene	0.002	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	**1.0 J**	<5.0 [<5.0]	**0.30 J [0.40 J]**	**0.58 J**
Benzo(a)pyrene	- -	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	0.50 J	<5.0 [<5.0]	<5.0 [<5.0]	<4.8
Biphenyl	5	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	**14**	3.0 J [4.0 J]	**5.0 [10]**	**7.4**
Chrysene	0.002	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	**0.90 J**	<5.0 [<5.0]	<5.0 [<5.0]	**0.41 J**
Dibenzofuran	- -	<10	<5.0	<5.0	<10	<5.0	<11	<9.0	<24	<9.6	24	7.0 [7.0]	8.0 [14]	14
Di-n-butyl phthalate	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	<9.0	<5.0 [<5.0]	0.30 J [<5.0]	<4.8
Fluoranthene	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	7.0 J	3.0 J [3.0 J]	4.0 J [6.0]	2.3 J
Fluorene	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	40	12 [12]	16 [25]	14
Naphthalene	10	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	**670 D**	**36 J [67 J]**	**280 DJ [710 DJ]**	**260 D**
Phenanthrene	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	38	15 [16]	15 [24]	10
Phenol	1	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	<9.0	<5.0 [<5.0]	<5.0 [0.70 J]	<4.8

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED CONSTITUENTS (ppb)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID:	NYSDEC Water Standard/	MW-1R		MW-2	MW-4		MW-4R	MW-5			MW-5D			
Date Collected:	Guidance Values	07/25/06	01/18/08	01/18/08	07/25/06	01/18/08	07/17/12	07/26/06	01/18/08	07/17/12	07/26/06	01/18/08	05/15/08	07/17/12
Detected SVOCs (Cont.)														
Pyrene	50	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	5.0 J	2.0 J [2.0 J]	2.0 J [3.0 J]	1.6 J
Total Carcinogenic PAHs	- -	<10	<5.0	<5.0	<10	<5.0	<5.6	<9.0	<24	<4.8	2.4 J	<5.0 [<5.0]	0.30 J [0.40 J]	0.99 J
Total PAHs	- -	<10	<5.0	<5.0	<10	<5.0	<11	<9.0	<24	<9.6	960 J	90 J [130 J]	370 J [860 J]	350 J
Total SVOCs	- -	<150	<140	<140	<140	<140	<11	<140	<740	<9.6	1,000 J	110 J [140 J]	400 J [900 J]	370 J
Detected Inorganics														
Aluminum	- -	NA	NA	NA	NA	NA	1,700	NA	NA	<200	NA	NA	NA	1,600
Calcium	- -	NA	NA	NA	NA	NA	137,000	NA	NA	108,000	NA	NA	NA	43,600
Cobalt	- -	NA	NA	NA	NA	NA	1.70 J	NA	NA	<4.00	NA	NA	NA	1.00 J
Copper	200	NA	NA	NA	NA	NA	3.30 J	NA	NA	<10.0	NA	NA	NA	7.00 J
Iron	300	NA	NA	NA	NA	NA	**1,900**	NA	NA	<50.0	NA	NA	NA	**2,000**
Magnesium	- -	NA	NA	NA	NA	NA	23,300	NA	NA	14,400	NA	NA	NA	2,000
Manganese	300	NA	NA	NA	NA	NA	**660**	NA	NA	<3.00	NA	NA	NA	150
Nickel	100	NA	NA	NA	NA	NA	2.50 J	NA	NA	<10.0	NA	NA	NA	3.90 J
Potassium	- -	NA	NA	NA	NA	NA	10,000	NA	NA	9,400	NA	NA	NA	14,500
Sodium	- -	NA	NA	NA	NA	NA	116,000	NA	NA	46,500	NA	NA	NA	41,300
Vanadium	- -	NA	NA	NA	NA	NA	3.10 J	NA	NA	<5.00	NA	NA	NA	3.70 J
Zinc	2,000	NA	NA	NA	NA	NA	5.90 J	NA	NA	<10.0	NA	NA	NA	27.0
Arsenic	25	<10.0	<10.0	NA	<10.0	<10.0	<10.0	<10.0 J	<10.0	<10.0	10.1 J	12.7 [12.7]	NA	<10.0
Barium	1,000	73.4	87.1	NA	79.2	92.9	81.0	81.2	85.6	49.0	689	**1,270 [1,290]**	NA	210
Cadmium	5	<1.00	<1.00	NA	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 [<1.00]	NA	2.10
Chromium	50	<4.00	<4.00	NA	<4.00	<4.00	2.60 J	<4.00	<4.00	3.20 J	<4.00	<4.00 [<4.00]	NA	2.30 J
Cyanide	200	71.3	168 J	NA	33.3	66.0 J	150	**1,650**	**269 J**	21.0	13.7	17.8 J [20.4 J]	NA	5.70 J
Lead	25	<5.00	<5.00	NA	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00 [<5.00]	NA	**27.0**
Selenium	10	<15.0	<15.0	NA	<15.0	<15.0	<15.0	<15.0	**20.6**	<15.0	<15.0	<15.0 [<15.0]	NA	<15.0
Detected PCBs														
Aroclor 1248	0.09	<0.50	<0.048	NA	<0.48	<0.048	<0.055	<0.47	<0.047	<0.059	<0.47	<0.047 [<0.047]	NA	<0.053
Aroclor 1254	0.09	<0.50	<0.048	NA	<0.48	<0.048	<0.055	<0.47	**0.16**	<0.059	<0.47	<0.047 [<0.047]	NA	<0.053
Total PCBs	- -	<0.50	<0.048	NA	<0.48	<0.048	<0.055	<0.47	0.16	<0.059	<0.47	<0.047 [<0.047]	NA	<0.053

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED CONSTITUENTS (ppb)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID:	NYSDEC Water Standard/	MW-6				MW-6S				MW-7			MW-7R
Date Collected:	Guidance Values	06/27/06	07/26/06	01/17/08	07/20/12	06/27/06	07/26/06	01/17/08	07/20/12	06/26/06	07/27/06	01/24/08	07/20/12
Detected VOCs													
1,1,1-Trichloroethane	5	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	<5.0	<5.0 J	<5.0	<1.0
1,2-Dichloroethene (Total)	- -	<10	<10 [<10]	<40	NA	<10 [<10]	<10	<40	NA	14	12	<10	NA
Acetone	50	5.0 J	<25 [<25]	13 J	<10 [<10]	<25 [<25]	<25	<100	<10	4.0 J	<25 J	<25	<10
Benzene	1	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	<5.0	<5.0	<5.0	<1.0
Bromodichloromethane	50	1.0 J	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	<5.0	<5.0	<5.0	<1.0
Bromoform	50	<5.0	<5.0 J [<5.0 J]	<20	<1.0 J [<1.0 J]	<5.0 [<5.0]	<5.0 J	<20	<1.0 J	<5.0	<5.0 J	<5.0	<1.0 J
Carbon disulfide	- -	<5.0	<5.0 [<5.0]	<20	2.2 J [2.4 J]	<5.0 [<5.0]	<5.0	<20	<1.0 J	<5.0	<5.0	<5.0	<1.0 J
Chloroform	7	**8.0**	0.50 J [0.70 J]	<20	<1.0 [<1.0]	0.50 J [0.60 J]	1.0 J	<20	0.42 J	0.80 J	<5.0	<5.0	<1.0
cis-1,2-Dichloroethene	5	NA	NA	NA	<1.0 [<1.0]	NA	NA	NA	<1.0	NA	NA	NA	3.4
Ethylbenzene	5	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	<5.0	<5.0	<5.0	<1.0
Methyl ethyl ketone (MEK)	- -	<25	<25 [<25]	<100	<10 [<10]	<25 [<25]	<25	<100	<10	<25	<25 J	<25	<10
Methyl tert-butyl ether	- -	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	<5.0	<5.0 J	<5.0	<1.0
Tetrachloroethene	5	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	2.0 J	**6.0 J**	<5.0	4.3
Toluene	5	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 J [<5.0]	<5.0	<20	<1.0	<5.0	<5.0	<5.0	0.74 J
Total Xylenes	5	<15	<15 [<15]	<60	<2.0 [<2.0]	<15 [<15]	<15	<60	<2.0	<15	<15	<15	<2.0
Trichloroethene	5	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 J [<5.0]	<5.0	<20	<1.0	3.0 J	4.0 J	<5.0	0.98 J
Vinyl chloride	2	<5.0	<5.0 [<5.0]	<20	<1.0 [<1.0]	<5.0 [<5.0]	<5.0	<20	<1.0	**5.0**	**3.0 J**	<5.0	<1.0
Total BTEX	- -	<15	<15 [<15]	<60	<2.0 [<2.0]	<15 [<15]	<15	<60	<2.0	<15	<15	<15	0.74 J
Total VOCs	- -	14 J	0.50 J [0.70 J]	13 J	2.2 J [2.4 J]	0.50 J [0.60 J]	1.0 J	<100	0.42 J	29 J	25 J	<25	9.4 J
Detected SVOCs													
Carbazole	- -	NA	NA	NA	<4.7 [<4.8]	NA	NA	NA	<4.7	NA	NA	NA	<4.8
2,4-Dimethylphenol	50	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
2-Methylnaphthalene	- -	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
2-Methylphenol	- -	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
4,6-Dinitro-2-methylphenol	- -	NA	<47 [<48]	<10	<9.5 [<9.5]	NA	<47	<10	<9.5	NA	<48	<10	<9.6
4-Methylphenol	- -	NA	<9.0 [<10]	<5.0	<9.5 [<9.5]	NA	<9.0	<5.0	<9.5	NA	<10	<5.0	<9.6
Acenaphthene	20	NA	<9.0 [<10]	0.20 J	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8 J
Acenaphthylene	- -	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Anthracene	50	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Benzo(a)anthracene	0.002	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Benzo(a)pyrene	- -	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Biphenyl	5	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Chrysene	0.002	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Dibenzofuran	- -	NA	<9.0 [<10]	<5.0	<9.5 [<9.5]	NA	<9.0	<5.0	<9.5	NA	<10	<5.0	<9.6
Di-n-butyl phthalate	50	NA	<9.0 [<10]	0.30 J	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Fluoranthene	50	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Fluorene	50	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8 J
Naphthalene	10	NA	<9.0 [<10]	<5.0	<4.7 [2.2 J]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Phenanthrene	50	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Phenol	1	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8 J

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TABLE 3
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2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID:	NYSDEC Water Standard/	MW-6				MW-6S				MW-7			MW-7R
Date Collected:	Guidance Values	06/27/06	07/26/06	01/17/08	07/20/12	06/27/06	07/26/06	01/17/08	07/20/12	06/26/06	07/27/06	01/24/08	07/20/12
Detected SVOCs (Cont.)													
Pyrene	50	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8 J
Total Carcinogenic PAHs	- -	NA	<9.0 [<10]	<5.0	<4.7 [<4.8]	NA	<9.0	<5.0	<4.7	NA	<10	<5.0	<4.8
Total PAHs	- -	NA	<9.0 [<10]	0.20 J	<9.5 [2.2 J]	NA	<9.0	<5.0	<9.5	NA	<10	<5.0	<9.6
Total SVOCs	- -	NA	<140 [<140]	0.50 J	<9.5 [2.2 J]	NA	<140	<140	<9.5	NA	<140	<150	<9.6
Detected Inorganics													
Aluminum	- -	NA	NA	NA	160 J [170 J]	NA	NA	NA	86.0 J	NA	NA	NA	940
Calcium	- -	NA	NA	NA	157,000 [160,000]	NA	NA	NA	200,000	NA	NA	NA	105,000
Cobalt	- -	NA	NA	NA	1.00 J [1.10 J]	NA	NA	NA	4.50	NA	NA	NA	1.10 J
Copper	200	NA	NA	NA	1.70 J [<10.0]	NA	NA	NA	2.10 J	NA	NA	NA	4.10 J
Iron	300	NA	NA	NA	**2,000 [2,100]**	NA	NA	NA	**3,400**	NA	NA	NA	**2,100**
Magnesium	- -	NA	NA	NA	10,400 [10,600]	NA	NA	NA	18,200	NA	NA	NA	17,800
Manganese	300	NA	NA	NA	**5,700 [5,800]**	NA	NA	NA	**630**	NA	NA	NA	**5,100**
Nickel	100	NA	NA	NA	<10.0 B [<10.0 B]	NA	NA	NA	12.0	NA	NA	NA	<10.0 B
Potassium	- -	NA	NA	NA	16,800 [17,200]	NA	NA	NA	9,500	NA	NA	NA	14,100
Sodium	- -	NA	NA	NA	340,000 [348,000]	NA	NA	NA	116,000	NA	NA	NA	146,000
Vanadium	- -	NA	NA	NA	4.80 J [5.00]	NA	NA	NA	1.50 J	NA	NA	NA	5.20
Zinc	2,000	NA	NA	NA	<10.0 B [<10.0 B]	NA	NA	NA	12.0	NA	NA	NA	<100 B
Arsenic	25	NA	11.3 [11.3]	17.1	7.60 J [9.10 J]	NA	<10.0	<10.0	5.80 J	NA	**25.8**	**62.2**	<10.0
Barium	1,000	NA	136 [135]	197	140 [140]	NA	73.9	97.7	93.0	NA	419	552	200
Cadmium	5	NA	<1.00 [<1.00]	<1.00	<1.00 [0.570 J]	NA	<1.00	<1.00	0.860 J	NA	<1.00	<1.00	<1.00
Chromium	50	NA	<4.00 [<4.00]	<4.00	<4.00 [1.90 J]	NA	<4.00	<4.00	3.50 J	NA	<4.00	<4.00	2.50 J
Cyanide	200	56.6 J	55.0 [<10.0]	71.2 J	63.0 [63.0]	63.4 J [55.5 J]	112	148 J	34.0	<10.0	<10.0	<10.0	5.50 J
Lead	25	NA	<5.00 [<5.00]	<5.00	<5.00 [<5.00]	NA	<5.00	<5.00	4.20 J	NA	<5.00	<5.00	4.40 J
Selenium	10	NA	<15.0 [<15.0]	<15.0	<15.0 [<15.0]	NA	<15.0	**16.2**	<15.0	NA	<15.0	<15.0	<15.0
Detected PCBs													
Aroclor 1248	0.09	<0.60	**<0.48 [0.52]**	<0.048	<0.048 [<0.048]	<0.48 [<0.48]	**0.37 J**	<0.050	<0.048	<0.47	<0.47	<0.048	<0.052
Aroclor 1254	0.09	<0.60	**<0.48 [0.30 J]**	<0.048	<0.048 [<0.048]	<0.48 [<0.48]	**0.21 J**	<0.050	<0.048	<0.47	<0.47	<0.048	<0.052
Total PCBs	- -	<0.60	<0.48 [0.82 J]	<0.048	<0.048 [<0.048]	<0.48 [<0.48]	0.58 J	<0.050	<0.048	<0.47	<0.47	<0.048	<0.052

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED CONSTITUENTS (ppb)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID:	NYSDEC Water Standard/	MW-7D				MW-8		MW-8D	
Date Collected:	Guidance Values	06/27/06	07/27/06	01/24/08	07/20/12	07/26/06	01/18/08	07/25/06	01/17/08
Detected VOCs									
1,1,1-Trichloroethane	5	<5.0	<5.0 J	<5.0	<1.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethene (Total)	- -	<10	<10	<10	NA	<10	<10	<10	<10
Acetone	50	3.0 J	<25 J	<25	3.0 J	<25	<25	<25 J	<25
Benzene	1	**8.0**	**5.0**	0.70 J	<1.0	<5.0	<5.0	<5.0	<5.0
Bromodichloromethane	50	<5.0	<5.0	<5.0	0.47 J	<5.0	<5.0	<5.0	<5.0
Bromoform	50	<5.0	<5.0 J	<5.0	<1.0 J	<5.0 J	<5.0	<5.0	<5.0
Carbon disulfide	- -	<5.0	<5.0	<5.0	<1.0 J	<5.0	<5.0	<5.0	<5.0
Chloroform	7	<5.0	<5.0	<5.0	3.6	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	5	NA	NA	NA	<1.0	NA	NA	NA	NA
Ethylbenzene	5	<5.0	<5.0	<5.0	<1.0	0.50 J	<5.0	<5.0	<5.0
Methyl ethyl ketone (MEK)	- -	<25	<25 J	<25	<10	<25	5.0 J	<25	<25
Methyl tert-butyl ether	- -	1.0 J	0.70 J	<5.0	<1.0	<5.0	<5.0	<5.0	<5.0
Tetrachloroethene	5	<5.0	<5.0 J	<5.0	<1.0	<5.0	<5.0	<5.0	<5.0
Toluene	5	<5.0	<5.0	<5.0	0.95 J	<5.0	<5.0	<5.0	<5.0
Total Xylenes	5	<15	<15	<15	0.68 J	<15	<15	<15	<15
Trichloroethene	5	<5.0	<5.0	<5.0	<1.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	2	<5.0	<5.0 J	<5.0	<1.0	<5.0	<5.0	<5.0	<5.0
Total BTEX	- -	8.0	5.0	0.70 J	1.6 J	0.50 J	<15	<15	<15
Total VOCs	- -	12 J	5.7 J	0.70 J	8.7 J	0.50 J	5.0 J	<25	<25
Detected SVOCs									
Carbazole	- -	NA	NA	NA	<4.9	NA	NA	NA	NA
2,4-Dimethylphenol	50	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
2-Methylnaphthalene	- -	NA	<9.0	<5.0	<4.9	<9.0	1.0 J	<10	<5.0
2-Methylphenol	- -	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
4,6-Dinitro-2-methylphenol	- -	NA	<47	<9.0	<9.7	<47	<10	<48	<9.0
4-Methylphenol	- -	NA	<9.0	<5.0	<9.7	<9.0	<5.0	<10	<5.0
Acenaphthene	20	NA	<9.0	<5.0	<4.9	<9.0	0.80 J	<10	<5.0
Acenaphthylene	- -	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Anthracene	50	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Benzo(a)anthracene	0.002	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Benzo(a)pyrene	- -	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Biphenyl	5	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Chrysene	0.002	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Dibenzofuran	- -	NA	<9.0	<5.0	<9.7	<9.0	0.30 J	<10	<5.0
Di-n-butyl phthalate	50	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Fluoranthene	50	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Fluorene	50	NA	<9.0	<5.0	<4.9	<9.0	0.50 J	<10	<5.0
Naphthalene	10	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Phenanthrene	50	NA	<9.0	<5.0	<4.9	<9.0	0.30 J	<10	<5.0
Phenol	1	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0

See Notes on Page 7.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED CONSTITUENTS (ppb)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID:	NYSDEC Water Standard/	MW-7D				MW-8		MW-8D	
Date Collected:	Guidance Values	06/27/06	07/27/06	01/24/08	07/20/12	07/26/06	01/18/08	07/25/06	01/17/08
Detected SVOCs (Cont.)									
Pyrene	50	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Total Carcinogenic PAHs	- -	NA	<9.0	<5.0	<4.9	<9.0	<5.0	<10	<5.0
Total PAHs	- -	NA	<9.0	<5.0	<9.7	<9.0	2.4 J	<10	<5.0
Total SVOCs	- -	NA	<140	<140	<9.7	<140	2.9 J	<140	<140
Detected Inorganics									
Aluminum	- -	NA	NA	NA	860	NA	NA	NA	NA
Calcium	- -	NA	NA	NA	45,700	NA	NA	NA	NA
Cobalt	- -	NA	NA	NA	<4.00	NA	NA	NA	NA
Copper	200	NA	NA	NA	3.70 J	NA	NA	NA	NA
Iron	300	NA	NA	NA	47.0 J	NA	NA	NA	NA
Magnesium	- -	NA	NA	NA	3,400	NA	NA	NA	NA
Manganese	300	NA	NA	NA	5.60	NA	NA	NA	NA
Nickel	100	NA	NA	NA	<10.0	NA	NA	NA	NA
Potassium	- -	NA	NA	NA	10,600	NA	NA	NA	NA
Sodium	- -	NA	NA	NA	34,300	NA	NA	NA	NA
Vanadium	- -	NA	NA	NA	2.10 J	NA	NA	NA	NA
Zinc	2,000	NA	NA	NA	28.0	NA	NA	NA	NA
Arsenic	25	NA	14.5 J	16.9	<10.0	**43.6**	<10.0	<10.0	<10.0
Barium	1,000	NA	258	330	26.0	295	224	**1,110**	**1,590**
Cadmium	5	NA	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Chromium	50	NA	<4.00	<4.00	5.80	<4.00	<4.00	<4.00	<4.00
Cyanide	200	<10.0	<10.0	<10.0	<10.0	18.3	11.8 J	13.8	<10.0
Lead	25	NA	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Selenium	10	NA	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0
Detected PCBs									
Aroclor 1248	0.09	<0.57	<0.47	<0.047	<0.051	<0.48	<0.048	<0.48	<0.048
Aroclor 1254	0.09	<0.57	<0.47	<0.047	<0.051	<0.48	<0.048	<0.48	<0.048
Total PCBs	- -	<0.57	<0.47	<0.047	<0.30 B	<0.48	<0.048	<0.48	<0.048

See Notes on Page 7.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED CONSTITUENTS (ppb)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Notes:

1. Samples were collected by ARCADIS on the dates indicated.
2. VOCs = Target Compound List (TCL) Volatile Organic Compounds and Methyl-t-Butyl Ether (MTBE).
3. BTEX = Benzene, toluene, ethylbenzene and xylenes.
4. SVOCs = TCL Semi-Volatile Organic Compounds and Pyridine.
6. PAHs = Polycyclic aromatic hydrocarbons.
7. PCBs = Polychlorinated Biphenyls.
8. Laboratory analysis was performed by TestAmerica Laboratories, Inc. (TestAmerica), formerly Severn Trent Laboratories, Inc. (STL), of Buffalo, New York.
   - VOCs using United States Environmental Protection Agency (USEPA) SW-846 Method 8260B;
   - SVOCs using USEPA SW-846 Method 8270C;
   - Inorganics using USEPA SW-846 Methods 6010, 7470 and 9012A; and
   - PCBs using USEPA SW-846 Method 8082.
9. Total Carcinogenic PAHs consist of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, and Indeno(1,2,3-cd)pyrene.
10. Only those constituents detected in one or more samples are summarized.
11. Concentrations reported in parts per billion (ppb), which is equivalent to micrograms per liter (ug/L).
12. Field duplicate sample results are presented in brackets.
13. Data qualifiers are defined as follows:
    < = Constituent not detected at a concentration above the reported detection limit.
    B (Inorganic) - Indicates an estimated value between the instrument detection limit and the Reporting Limit (RL).
    D - Compound quantitated using a secondary dilution.
    J - Indicates that the associated numerical value is an estimated concentration.
14. NYSDEC groundwater standards/guidance values are from the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS) document titled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" (TOGS 1.1.1) dated June 1998, revised April 2000 and June 2004.
15. Shading indicates that the result exceeds the TOGS 1.1.1 Water Quality Standard/Guidance Value.
16. - - = No TOGS 1.1.1 Water Quality Standard/Guidance Value listed.
17. NA = Not Analyzed.
18. Results have been validated.

TABLE 4
VI EVALUATION PRODUCT INVENTORY

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Product Type	Trade Name	Product Description	Contains VOCs (Y/N)	Reported VOCs	VOCs included on TO-15 Analyte List
Adhesive	Lubrizol BLAZEMASTER® 88738 ORG 734 PWD	Orange powder, odorless	N	--	--
	Loctite PL Premium Polyurethane Adhesive	Beige highly viscous liquid	N	--	--
	Loctite Polyseamseal Painter's Caulk	White paste	N	--	--
	DAP® 4000® Subfloor & Deck Construction Adhesive	A tan paste product with a strong solvent odor.	Y	isoheptane (2-methylhexane), n-hexane, methylcyclopentane, 2-methylpentane, 3-methylpentane, toluene	n-hexane and toluene
	Tyco BLAZEMASTER® TFP 500 Low VOC Cement for CPVC Plastic Pipe	Red, medium, syrupy liquid	Y	*All PVC Cement:* acetone, cyclohexanone, methyl ethyl ketone (2-butanone), tetrahydrofuran *Tyco CPVC Cement*: chlorinated PVC resin	2-butanone
	OATEY CPVC FLOWGUARD GOLD ONE-STEP YELLOW CEMENT	Yellow/gold liquid with an ether-like odor	Y		
	WELD-ON® 704™ Low VOC PVC Plastic Pipe Cement	Highly flammable liquid and vapor	Y		
	WELD-ON® P-68™ Low VOC Primer for PVC and CPVC Plastic Pipe	Highly flammable liquid and vapor	Y		
Cleaner	Windex® Original Glass Cleaner	Blue liquid	Y	isopropanol (isopropyl alcohol)	--
	Windex® Crystal Rain	Blue liquid	Y	isopropanol (isopropyl alcohol) and 2-hexoxyethanol	--
	Simple Green All Purpose Cleaner	Green Liquid	Y	2-butoxyethanol	--
Drywall	National Gypsum Drywall	Paper faced gypsum boards with white/gray core	N	--	--
	Lafarge Drywall	Paper faced solid with white core	N	--	--
Grout	LATICRETE® 253 Gold	Grey or white odorless powder	N	--	--
	LATICRETE® Permacolor™ Grout	Proprietary powder	N	--	--
	LATICRETE® Premium Acrylic Caulk	Marble beige paste	Y	petroleum distillate	--
	Sherwin Williams PrepRite® Interior/Exterior Latex Block Filler, White	Off-white powder	N	--	--
Hand Cleaner	Fast Orange Pumice Lotion	White lotion with pumice	Y	triethanolamine (2,2',2"-Nitrilotriethanol)	--
Joint Compound	SHEETROCK® All Purpose Joint Compound	White or off white solid/power	N	--	--
	Lafarge Joint Compound, Ready Mixed	White or beige paste	Y	tiazine	--
Latex	DAP® Power Point™ 200 Elastomeric Acrylic Latex Caulk with Silicone	White thick liquid	Y	ethylene glycol, acetaldehyde (ethanol)	--
	LATICRETE® Hydro Ban	Olive colored, thick liquid, slight styrene odor	Y	ethylene glycol (ethane-1,2-diol)	--

See Notes on Page 2.

TABLE 4
VI EVALUATION PRODUCT INVENTORY

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Product Type	Trade Name	Product Description	Contains VOCs (Y/N)	Reported VOCs	VOCs included on TO-15 Analyte List
Lubricant	Loctite® Silver Grade Anti-Seize Lubricant Stick	Silver paste with a petroleum odor	Y	petroleum distillate	--
	WD-40 Aerosol	Flammable aerosol	Y	petroleum base oil	--
Paint	Aervoe 200 Clear Marking Coat - Aerosol	Aerosol	Y	acetone, aliphatic petroleum distillant, 2-butanone, n-butyl acetate, glycol methyl ether acetate, hydrocarbon propellant, propylene theyl acetate	2-butanone
	Dryvit Sandpebble® Fine DPR Pastel Base	Opaque viscous	N	--	--
	KRYLON® Industrial QUIK-MARK™ Solvent-Based Inverted Marking Paint (Fluorescent), Purple	Fluorescent purple paint mist	Y	acetone, butane, 2,3-dimethylbutane, ethylbenzene, hexane, 2-methylpentane, 3-methylpentane, propane, xylene	butane, ethylbenzene, xylene,
	Sherwin Williams MASTER HIDE® Flat Wall Paint, Extra White	White paint	N	--	--
	Sherwin Williams ProMar® 200 Interior Latex Primer, White	White primer	N	--	--
	Sherwin Williams PROMAR® 200 Interior Latex Egg-Shell Enamel, Extra White	White enamel	Y	ethylene glycol	--
	Sherwin Williams PROMAR® 200 Interior Latex Semi-Gloss Enamel, Extra White	White enamel	Y	ethylene glycol, 2-(2-butoxyeth oxy)-ethanol	--
Sealant	3M Brand Fire Barrier CP-25WB+	Red paste	N	--	--
	FPPI Pipefit®	White-cream colored paste with mild odor	N	--	--
	Daps Alex Ultra 230	off-white paste	Y	ethylene glycol, formaldehyde	--
	Hilti FS ONE Foil: acrylic sealant	Red paste	Y	ethylene glycol	--
	Hilti CP 506 Smoke & Acoustic Sealant	White paste	Y	ethylene glycol	--
	Sherwin Williams POWERHOUSE™ 1100A Siliconized Acrylic Latex Sealant - 60 Year, White	White paste	Y	--	--
	Weld-On® 505™ Key Tite Low VOC Pipe Joint Compound	Viscous, green liquid	Y	stoddard solvent	--
Spackling	Crawford's Natural Blend Painter's Putty	Off white thick putty	N	--	--
	Sherwin-Williams Shrink-Free Spackling	Spackling	N	--	--
Tile	Muskogee Tile - Porcelain Floor Tile	Ceramic tile	N	--	--

Note:
Inventory is based on Material Safety Data Sheets (MSDS) provided by Washington Development Associates (WDA) between February 6 and 8, 2012 and products observed during the Site Reconnaissance on March 30, 2012.

TABLE 5
SUB-SLAB VAPOR, INDOOR AIR, & AMBIENT AIR VOC ANALYTICAL RESULTS (ug/m^3)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID: / Date Collected:	USEPA Indoor Air Background Level	NYSDOH Air Guideline Value	SSV-1 03/31/12	IA-1 03/31/12	SSV-2 03/31/12	IA-2 03/31/12	SSV-3 03/31/12	IA-3 03/31/12	SSV-4 03/31/12	IA-4 03/31/12	SSV-5 03/31/12	IA-5 03/31/12	AA-1 03/31/12
1,2,3,4-Tetramethylbenzene	- -	- -	<1.2	<1.2	3.6 J	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2 [<1.2]	<1.2
1,2,3,5-Tetramethylbenzene	- -	- -	<1.1	<1.1	5.6 J	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1 [<1.1]	<1.1
1,2,4,5-Tetramethylbenzene	- -	- -	<1.1	<1.1	3.7 J	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1 [<1.1]	<1.1
1,4-Dioxane	- -	- -	<1.8	<1.8	<4.5	<1.8	<1.8	<1.8	7.3	<1.8	<1.8	<1.8 [<1.8]	<1.8
Cyclohexane	- -	- -	8.8	<1.7	24	<1.7	<1.7	<1.8	<1.7	<1.7	6.3	<1.7 [<1.7]	<1.7
Ethanol	- -	- -	78 J	34 J	33 J	24 J	6.2 J	20 J	13 J	26 J	19 J	31 J [26 J]	<3.8
tert-Butyl alcohol	- -	- -	<6.1	9.2	<15	<6.1	<6.1	<6.2	<6.1	<6.1	<6.1	<6.1 [<6.1]	<6.1
Thiopene	- -	- -	<0.69	<0.69	<1.7	<0.69	<0.69	<0.70	<0.69	<0.69	<0.69	<0.69 [<0.69]	<0.69
1,1,1-Trichloroethane	20.6	- -	<1.1	<1.1	<2.7	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1 [<1.1]	<1.1
1,1,2,2-Tetrachloroethane	- -	- -	<1.4	<1.4	<3.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4 [<1.4]	<1.4
1,1,2-Trichloro-1,2,2-trifluoroethane	- -	- -	<1.5	<1.5	<3.8	<1.5	<1.5	<1.6	<1.5	<1.5	<1.5	<1.5 [<1.5]	<1.5
1,1,2-Trichloroethane	1.5	- -	<1.1	<1.1	<2.7	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1 [<1.1]	<1.1
1,1-Dichloroethane	0.7	- -	<0.81	<0.81	<2.0	<0.81	<0.81	<0.83	<0.81	<0.81	<0.81	<0.81 [<0.81]	<0.81
1,1-Dichloroethene	1.4	- -	<0.79	<0.79	<2.0	<0.79	<0.79	<0.81	<0.79	<0.79	<0.79	<0.79 [<0.79]	<0.79
1,2,3-Trimethylbenzene	- -	- -	<0.98	<0.98	20 J	<0.98	<0.98	2.3 J	<0.98	1.1 J	<0.98	<0.98 [<0.98]	<0.98
1,2,4-Trichlorobenzene	6.8	- -	<7.4	<7.4	<18 J	<7.4	<7.4	<7.6	<7.4	<7.4	<7.4	<7.4 [<7.4]	<7.4
1,2,4-Trimethylbenzene	9.5	- -	<0.98	<0.98	31	<0.98	<0.98	4.4	<0.98	2.0	<0.98	<0.98 [<0.98]	<0.98
1,2-Dibromoethane (EDB)	1.5	- -	<1.5	<1.5	<3.8	<1.5	<1.5	<1.6	<1.5	<1.5	<1.5	<1.5 [<1.5]	<1.5
1,2-Dichloro-1,1,2,2-tetrafluoroethane	- -	- -	<1.4	<1.4	<3.5	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4 [<1.4]	<1.4
1,2-Dichlorobenzene	1.2	- -	<1.2	<1.2	<3.0	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2 [<1.2]	<1.2
1,2-Dichloroethane	0.9	- -	<0.81	<0.81	<2.0	<0.81	<0.81	<0.83	<0.81	<0.81	<0.81	<0.81 [<0.81]	<0.81
1,2-Dichloropropane	1.6	- -	<0.92	<0.92	<2.3	<0.92	<0.92	<0.94	<0.92	<0.92	<0.92	<0.92 [<0.92]	<0.92
1,3,5-Trimethylbenzene	3.7	- -	<0.98	<0.98	20	<0.98	<0.98	1.1	<0.98	<0.98	<0.98	<0.98 [<0.98]	<0.98
1,3-Dichlorobenzene	2.4	- -	<1.2	<1.2	<3.0	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2 [<1.2]	<1.2
1,4-Dichlorobenzene	5.5	- -	<1.2	<1.2	<3.0	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2 [<1.2]	<1.2
1-Methylnaphthalene	- -	- -	<15 J	<15 J	<36 J	<15	<15 J	<15 J	<15 J	<15	<15 J	<15 J [<15 J]	<15 J
2,2,4-Trimethylpentane	- -	- -	<2.3	<2.3	7.1	<2.3	<2.3	<2.4	<2.3	<2.3	<2.3	<2.3 [<2.3]	<2.3
2,3-Dimethylheptane	- -	- -	1.4	<1.0	110 J	<1.0	<1.0	<1.1	<1.0	<1.0	19 J	<1.0 [<1.0]	<1.0
2,3-Dimethylpentane	- -	- -	6.9	<0.82	15 J	<0.82	<0.82	<0.84	<0.82	<0.82	6.7 J	<0.82 [<0.82]	<0.82
2-Methylnaphthalene	- -	- -	<15 J	<15 J	<36 J	<15	<15 J	<15 J	<15 J	<15	<15 J	<15 J [<15 J]	<15 J
Benzene	9.4	- -	7.6	<0.64	11 J	<0.64	0.93	<0.65	2.7	<0.64	9.1	0.79 [<0.64]	<0.64
Benzylchloride	- -	- -	<2.1	<2.1	<5.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1 [<2.1]	<2.1
Bromodichloromethane	- -	- -	<1.3	<1.3	<3.3	<1.3	<1.3	<1.4	<1.3	<1.3	<1.3	<1.3 [<1.3]	<1.3
Bromoform	- -	- -	<2.1	<2.1	<5.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1 [<2.1]	<2.1
Bromomethane	1.7	- -	<0.78	<0.78	<1.9	<0.78	<0.78	<0.79	<0.78	<0.78	<0.78	<0.78 [<0.78]	<0.78
Butylcyclohexane	- -	- -	<1.1	<1.1	92 J	<1.1	<1.1	3.6 J	<1.1	2.2 J	<1.1	<1.1 [<1.1]	<1.1
Carbon tetrachloride	1.3	- -	<1.3	<1.3	<3.1	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3 [<1.3]	<1.3
Chlorobenzene	0.9	- -	<0.92	<0.92	<2.3	<0.92	<0.92	<0.94	<0.92	<0.92	<0.92	<0.92 [<0.92]	<0.92
Chlorodibromomethane	- -	- -	<1.7	<1.7	<4.2	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7 [<1.7]	<1.7
Chloroethane	1.1	- -	<0.53	<0.53	<1.3	<0.53	<0.53	<0.54	<0.53	<0.53	<0.53	<0.53 [<0.53]	<0.53
Chloroform	1.1	- -	3.8	<0.98	<2.4	<0.98	2.3	<1.0	1.2	<0.98	1.8	<0.98 [<0.98]	<0.98
Chloromethane	3.7	- -	<1.0	1.4	<2.6	1.2	<1.0	1.3	<1.0	1.1	1.3	1.3 [1.4]	1.3
cis-1,2-Dichloroethene	1.9	- -	<0.79	<0.79	<2.0	<0.79	<0.79	<0.81	<0.79	<0.79	<0.79	<0.79 [<0.79]	<0.79
cis-1,3-Dichloropropene	2.3	- -	<0.91	<0.91	<2.3	<0.91	<0.91	<0.93	<0.91	<0.91	<0.91	<0.91 [<0.91]	<0.91
Dichlorodifluoromethane	16.5	- -	2.7	3.3	<2.5	2.2	2.8	3.0	2.7	2.2	3.7	3.0 [2.7]	2.8

See Notes on Page 2.

TABLE 5
SUB-SLAB VAPOR, INDOOR AIR, & AMBIENT AIR VOC ANALYTICAL RESULTS (ug/m^3)

2013 PERIODIC REVIEW REPORT
NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

Location ID: / Date Collected:	USEPA Indoor Air Background Level	NYSDOH Air Guideline Value	SSV-1 03/31/12	IA-1 03/31/12	SSV-2 03/31/12	IA-2 03/31/12	SSV-3 03/31/12	IA-3 03/31/12	SSV-4 03/31/12	IA-4 03/31/12	SSV-5 03/31/12	IA-5 03/31/12	AA-1 03/31/12
Ethylbenzene	5.7	- -	<0.87	0.92	12	1.1	<0.87	3.2	<0.87	1.9	<0.87	<0.87 [1.5]	<0.87
Hexachlorobutadiene	6.8	- -	<11	<11	<26 J	<11	<11	<11	<11	<11	<11	<11 [<11]	<11
Indane	- -	- -	<0.97	<0.97	4.1 J	<0.97	<0.97	<0.99	<0.97	<0.97	<0.97	<0.97 [<0.97]	<0.97
Indene	- -	- -	<1.9	<1.9	<4.7	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9 [<1.9]	<1.9
Isopentane	- -	- -	55	5.9	22	5.2	8.5	7.7	24	9.2	55	22 [22]	<1.5
Methyl ethyl ketone (MEK)	12	- -	4.7	36	10	32	<2.9	39	3.0	37	12	32 [66]	<2.9
Methyl isobutyl ketone (MIBK)	6	- -	4.1	<2.0	<5.1	<2.0	<2.0	<2.1	<2.0	<2.0	8.0	<2.0 [<2.0]	<2.0
Methyl tert-butyl ether	11.5	- -	<3.6	<3.6	<8.9	<3.6	<3.6	<3.7	<3.6	<3.6	<3.6	<3.6 [<3.6]	<3.6
Methylene chloride	10	60	<1.7 J	<1.7 J	<4.3	<1.7	4.7 J	<1.8 J	<1.7 J	2.2	<1.7 J	3.3 J [<1.7 J]	1.8 J
m-Xylene & p-Xylene	22.2	- -	1.8	2.3	33	2.1	<0.87	11	<0.87	5.9	<0.87	<0.87 [4.0]	<0.87
n-Butane	- -	- -	54	2.3	26	1.9	25	2.0	33	1.8	53	2.6 [2.0]	1.6
n-Decane	- -	- -	<5.8	<5.8	230	<5.8	<5.8	22	<5.8	12	<5.8	<5.8 [<5.8]	<5.8
n-Dodecane	- -	- -	<7.0 J	<7.0 J	<17	<7.0	<7.0 J	<7.1 J	<7.0 J	<7.0	<7.0 J	<7.0 J [<7.0 J]	<7.0 J
n-Heptane	- -	- -	6.0	<2.0	45	<2.0	<2.0	<2.1	<2.0	<2.0	11	<2.0 [<2.0]	<2.0
n-Hexane	10.2	- -	21	8.2	38	6.2	2.2	5.1	2.3	5.2	25	<1.8 [4.9]	<1.8
n-Octane	- -	- -	<1.9	<1.9	120	<1.9	<1.9	<1.9	<1.9	<1.9	10	<1.9 [<1.9]	<1.9
Nonane	- -	- -	<2.6	<2.6	310	<2.6	<2.6	18	<2.6	12	6.3	<2.6 [3.8]	<2.6
n-Undecane	- -	- -	<6.4	<6.4	62	<6.4	<6.4	10	<6.4	<6.4	<6.4	<6.4 [<6.4]	<6.4
o-Xylene	7.9	- -	<0.87	0.89	24	<0.87	<0.87	4.0	<0.87	2.1	<0.87	<0.87 [1.3]	<0.87
Pentane	- -	- -	42	12	31	9.1	6.6	7.9	17	9.1	45	7.2 [8.7]	<3.0
Styrene	1.9	- -	<0.85	2.5	<2.1	0.94	<0.85	7.3	<0.85	4.7	<0.85	<0.85 [2.3]	<0.85
Tetrachloroethene	15.9	100	<1.4	<1.4	<3.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4 [1.7]	<1.4
Toluene	43	- -	9.2	13	43	10	1.1	9.3	40	8.2	4.8	20 [7.8]	1.2
trans-1,2-Dichloroethylene	- -	- -	<0.79	<0.79	<2.0	<0.79	<0.79	<0.81	<0.79	<0.79	<0.79	<0.79 [<0.79]	<0.79
trans-1,3-Dichloropropene	1.3	- -	<0.91	<0.91	<2.3	<0.91	<0.91	<0.93	<0.91	<0.91	<0.91	<0.91 [<0.91]	<0.91
Trichloroethene	4.2	5	<1.1	<1.1	<2.7	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	1.4 [<1.1]	<1.1
Trichlorofluoromethane	18.1	- -	2.0 J	1.8 J	<2.8	1.2	3.0 J	1.6 J	2.1 J	1.3	10 J	1.5 J [1.4 J]	1.6 J
Vinyl chloride	1.9	- -	<0.51	<0.51	<1.3	<0.51	<0.51	<0.52	<0.51	<0.51	<0.51	<0.51 [<0.51]	<0.51

Notes:
1. Samples were collected by ARCADIS on March 30-31, 2012 from the Twin River Commons Building at 45 Washington Street in Binghamton, NY.
2. USEPA = United Stated Environmental Protection Agency.
3. NYSDOH = New York State Department of Health.
4. Samples were analyzed for volatile organic compounds (VOCs) by TestAmerica, Inc of Knoxville, Tennessee using United States Environmental Protection Agency (USEPA) Compendium Method TO-15.
5. Sample designations indicate the following:
   -"SS" = subslab vapor sample;
   -"IA" = indoor air sample; and
   -"AA" = ambient (outdoor) air sample.
6. "USEPA Indoor Air Background Levels" are the 90th percentile of background indoor air levels observed by the USEPA in public and commercial office buildings, per USEPA database information referenced in Section 3.2.4 of the "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006).
7. "NYSDOH Air Guideline Values" are from the "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006).
8. Concentrations reported in micrograms per cubic meter (ug/m3).
9. < = Not detected at or above the associated reporting limit.
10. J = Indicates an estimated value above the laboratory reporting limit.
11. - - = Comparison value not available.
12. Field duplicate sample results are presented in brackets.
13. Results have been validated by ARCADIS.

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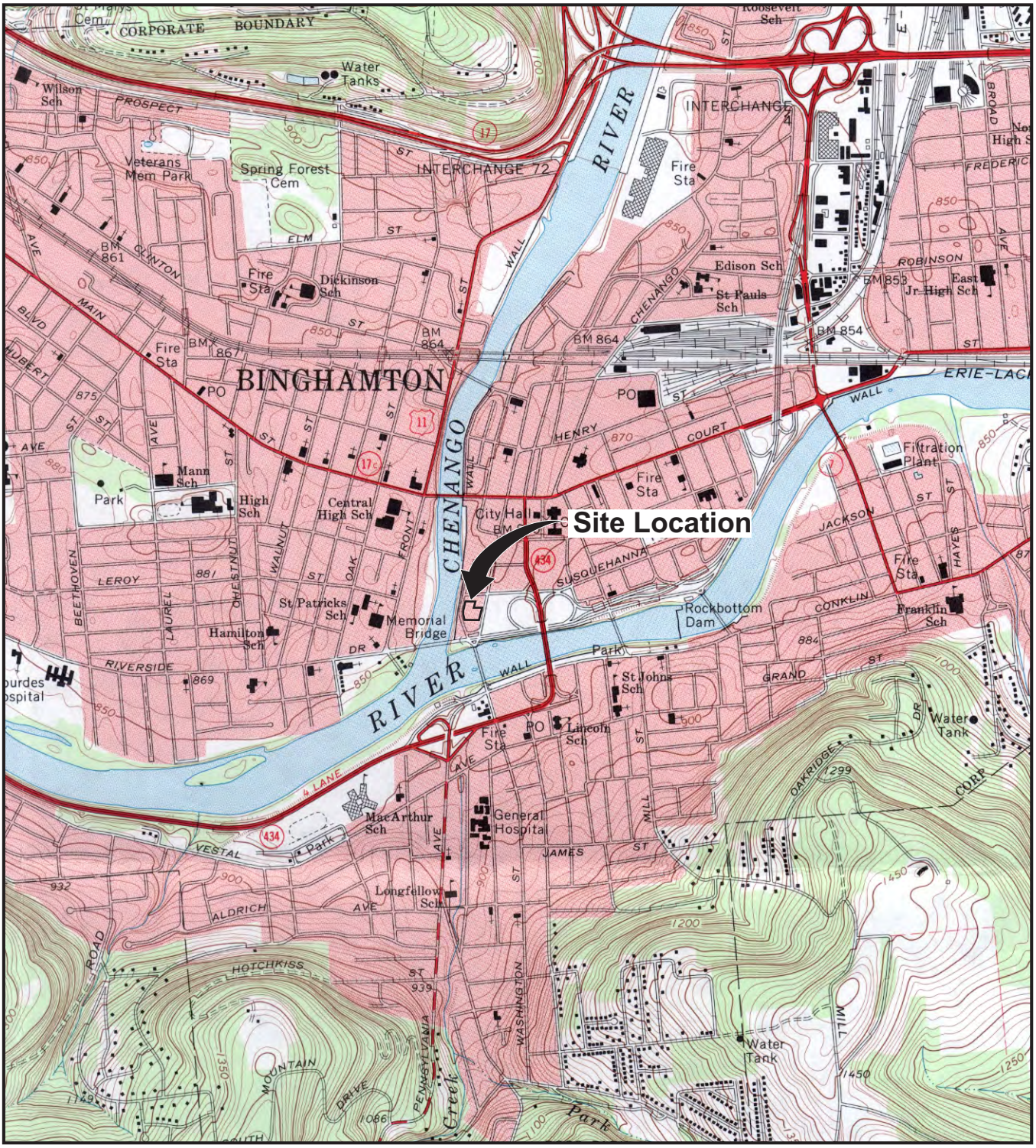
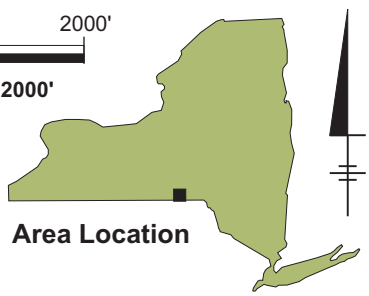
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., BINGHAMTON WEST, NY, 1968, PHOTOINSPECTED 1976.

2000' 0 2000'

Approximate Scale: 1" = 2000'



NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK

SITE LOCATION MAP

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FIGURE
1

05/09/2013 SYRACUSE, NY-ENV/141-DJHOWES
B0013097/0004/00001/CDR/13097N01.CDR

MW-4/MW-4R			
Date	7/25/2006	1/18/2008	7/17/2012
Inorganics			
Iron	NA	NA	1,900
Manganese	NA	NA	660

MW-5D				
Date	7/26/2006	1/18/2008	5/15/2008	7/17/2012
VOCs				
Benzene	31	<25 [<5.0]	3.0 J [4.0 J]	8.8
Ethylbenzene	98	<25 J [0.90 J]	6.0 [7.0]	13
Toluene	28	<25 [<5.0]	2.0 J [2.0 J]	7.7
Total Xylenes	280	<75 J [2.0 J]	17 [20]	110
SVOCs				
Acenaphthene	63	19 [21]	33 [50]	39
Benzo(a)anthracene	1.0 J	<5.0 [<5.0]	0.30 J [0.40 J]	0.58 J
Biphenyl	14	3.0 J [4.0 J]	5.0 [10]	7.4
Chrysene	0.90 J	<5.0 [<5.0]	<5.0 [<5.0]	0.41 J
Naphthalene	670 D	36 J [67 J]	280 DJ [710 DJ]	260 D
Inorganics				
Iron	NA	NA	NA	2000
Barium	689	1270 [1290]	NA	210
Lead	<5.00	<5.00 [<5.00]	NA	27.0

MW-5			
Date	7/26/2006	1/18/2008	7/17/2012
Inorganics			
Cyanide	1,650	269 J	21.0
Selenium	<15.0	20.6	<15.0
PCBs			
Aroclor 1254	<0.47	0.16	<0.059

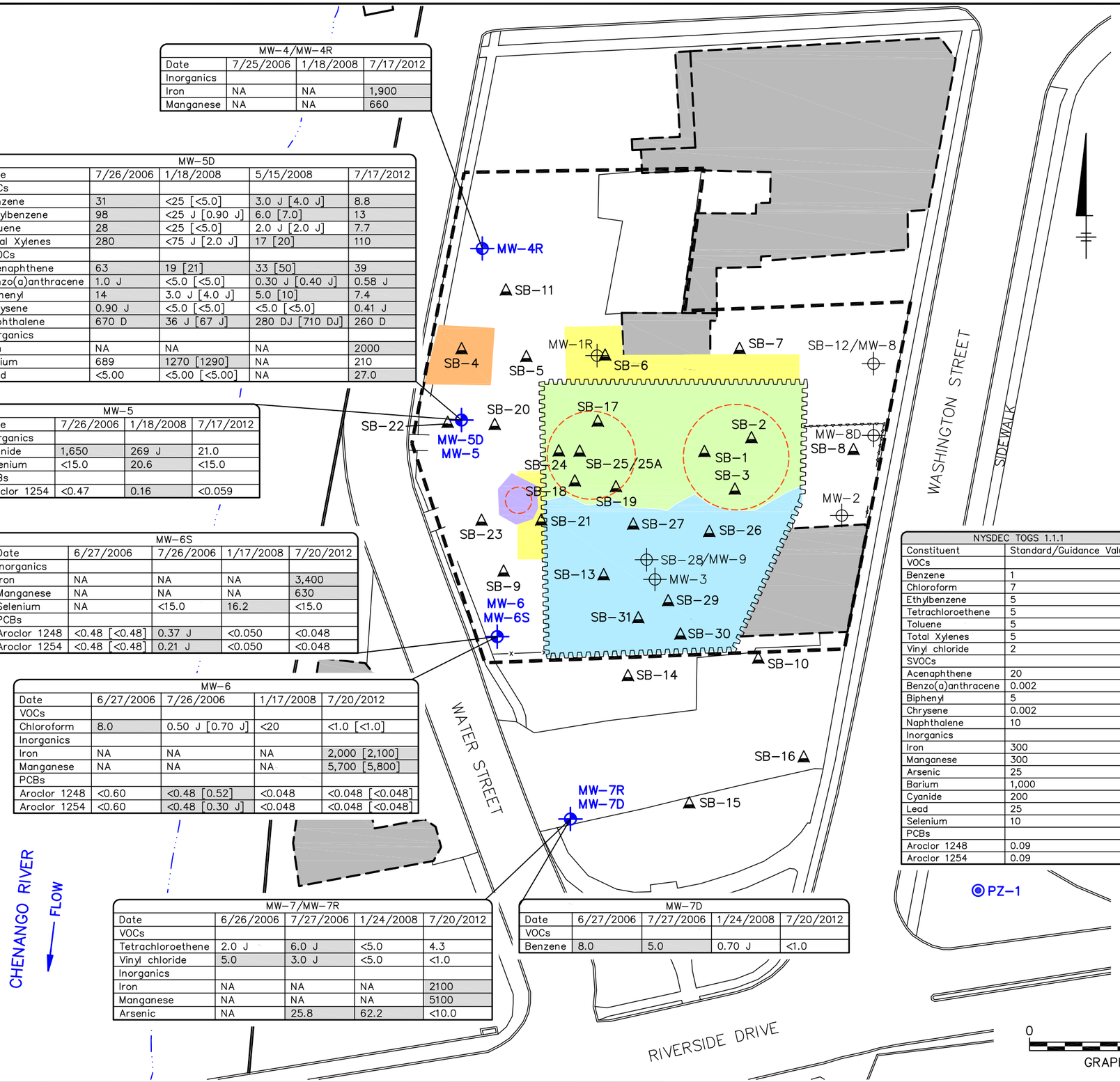
MW-6S				
Date	6/27/2006	7/26/2006	1/17/2008	7/20/2012
Inorganics				
Iron	NA	NA	NA	3,400
Manganese	NA	NA	NA	630
Selenium	NA	<15.0	16.2	<15.0
PCBs				
Aroclor 1248	<0.48 [<0.48]	0.37 J	<0.050	<0.048
Aroclor 1254	<0.48 [<0.48]	0.21 J	<0.050	<0.048

MW-6				
Date	6/27/2006	7/26/2006	1/17/2008	7/20/2012
VOCs				
Chloroform	8.0	0.50 J [0.70 J]	<20	<1.0 [<1.0]
Inorganics				
Iron	NA	NA	NA	2,000 [2,100]
Manganese	NA	NA	NA	5,700 [5,800]
PCBs				
Aroclor 1248	<0.60	<0.48 [0.52]	<0.048	<0.048 [<0.048]
Aroclor 1254	<0.60	<0.48 [0.30 J]	<0.048	<0.048 [<0.048]

MW-7/MW-7R				
Date	6/26/2006	7/27/2006	1/24/2008	7/20/2012
VOCs				
Tetrachloroethene	2.0 J	6.0 J	<5.0	4.3
Vinyl chloride	5.0	3.0 J	<5.0	<1.0
Inorganics				
Iron	NA	NA	NA	2100
Manganese	NA	NA	NA	5100
Arsenic	NA	25.8	62.2	<10.0

MW-7D				
Date	6/27/2006	7/27/2006	1/24/2008	7/20/2012
VOCs				
Benzene	8.0	5.0	0.70 J	<1.0

NYSDEC TOGS 1.1.1	
Constituent	Standard/Guidance Value
VOCs	
Benzene	1
Chloroform	7
Ethylbenzene	5
Tetrachloroethene	5
Toluene	5
Total Xylenes	5
Vinyl chloride	2
SVOCs	
Acenaphthene	20
Benzo(a)anthracene	0.002
Biphenyl	5
Chrysene	0.002
Naphthalene	10
Inorganics	
Iron	300
Manganese	300
Arsenic	25
Barium	1,000
Cyanide	200
Lead	25
Selenium	10
PCBs	
Aroclor 1248	0.09
Aroclor 1254	0.09



LEGEND:

- MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- EXCAVATION AREAS 1 & 2 TO AN AVERAGE DEPTH OF 21 FEET BGS
- EXCAVATION AREA 3 TO AN AVERAGE DEPTH OF 14 FEET BGS
- EXCAVATION AREA 4 TO AN AVERAGE DEPTH OF 2 FEET BGS
- EXCAVATION AREA 5, SURFACE COVER REMOVAL (ASPHALT/CONCRETE)
- EXCAVATION OF TAR WELL TO AN AVERAGE DEPTH OF 16 FEET BGS
- RI SOIL BORING LOCATION
- FORMER MONITORING WELL LOCATION
- FORMER WASHINGTON STREET MGP PROPERTY
- FORMER BUILDING (DEMOLISHED)
- FORMER HOLDERS
- FENCE
- GUARDRAIL
- LOCATION OF EXCAVATION BRACING

NOTES:

1. BASE MAP INFORMATION WAS PROVIDED BY NYSEG AND NYSEG DRAWINGS TITLED "WASHINGTON STREET MGP SITE, CITY OF BINGHAMTON, BROOME COUNTY NEW YORK" RECEIVED 8/3/06 & 8/17/06 FILE INDEX: BING_WASH2.DGN.
2. LOCATIONS OF FORMER HOLDERS ARE BASED ON SURVEY PERFORMED BY KEYSTONE ASSOCIATES DURING REMEDIAL ACTIVITIES IN 2010.
3. LOCATION AND SIZE OF FORMER TAR WELL IS APPROXIMATE, BASED ON FIELD OBSERVATIONS.
4. NYSDEC TOGs 1.1.1 = GROUNDWATER STANDARDS/GUIDANCE VALUES FOR CLASS GA WATER AS PRESENTED IN THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1, DATED JUNE 1998, LAST UPDATED JUNE 2004.
5. SHADING INDICATES THAT THE VALUE EXCEEDS THE TOGs 1.1.1 STANDARD/GUIDANCE VALUE.
6. ALL CONCENTRATIONS ARE PRESENTED IN PARTS PER BILLION (PPB), WHICH ARE EQUIVALENT TO MICROGRAMS PER LITER (ug/L).
7. FIELD DUPLICATE SAMPLE RESULTS ARE PRESENTED IN BRACKETS [].
8. J = THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED VALUE IS AN ESTIMATED CONCENTRATION.
9. D = COMPOUND QUANTITATED USING A SECONDARY DILUTION.
10. < = CONSTITUENT WAS NOT DETECTED AT A CONCENTRATION EXCEEDING THE PRESENTED LABORATORY DETECTION LIMIT.
11. VOCs = VOLATILE ORGANIC COMPOUNDS.
12. SVOCs = SEMI-VOLATILE ORGANIC COMPOUNDS.
13. PCBs = POLYCHLORINATED BIPHENYLS.
14. NA = NOT ANALYZED.
15. FIGURE ONLY SHOWS CONSTITUENTS AT CONCENTRATIONS EXCEEDING TOGs 1.1.1 STANDARD/GUIDANCE VALUES.

NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK
2013 PERIODIC REVIEW REPORT

GROUNDWATER ANALYTICAL RESULTS EXCEEDING STANDARDS/ GUIDANCE VALUES

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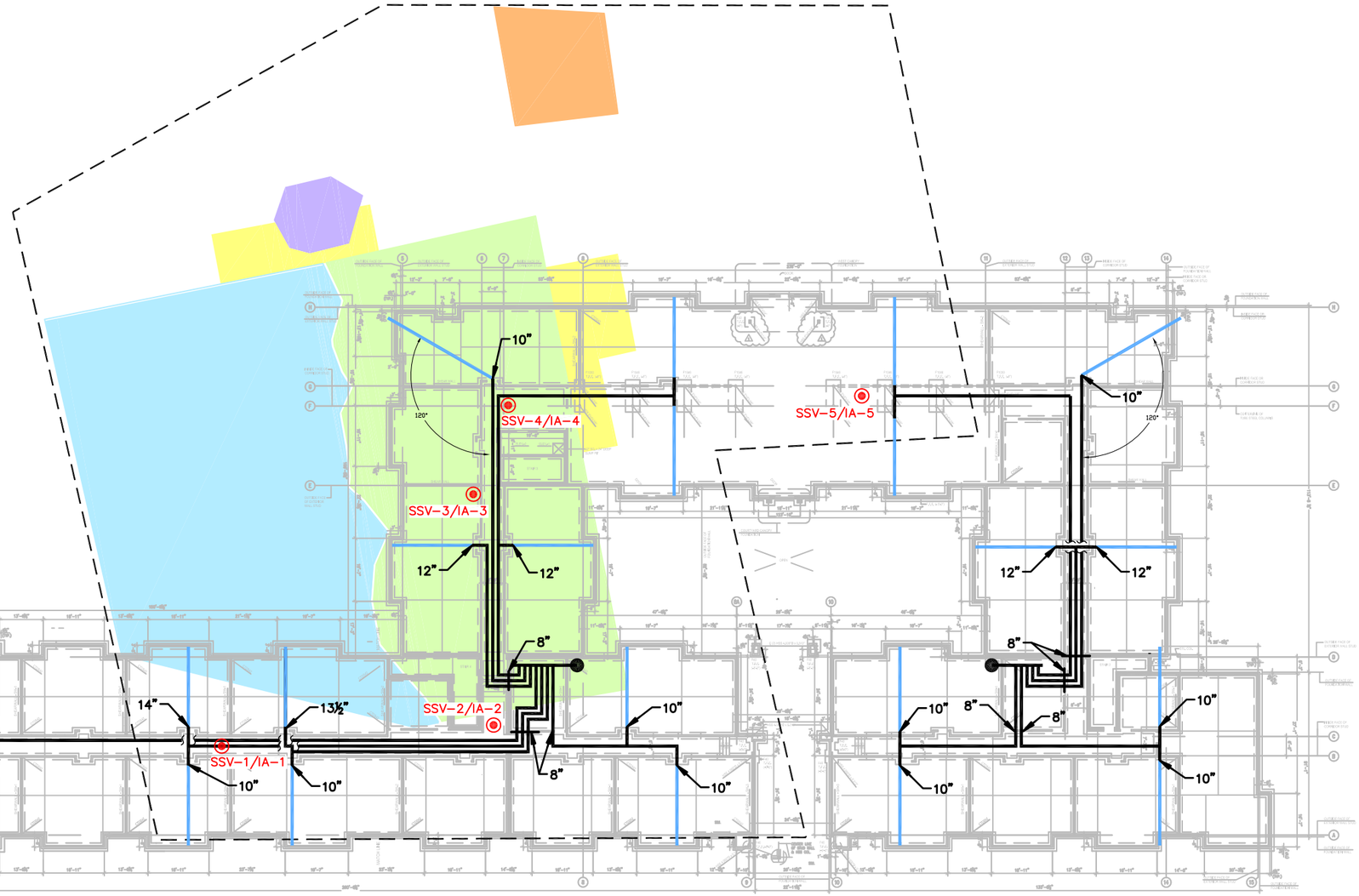
FIGURE
2



TWIN RIVER COMMONS BUILDING – 1st FLOOR, PLAN VIEW

LEGEND:

- PERFORATED PVC VAPOR VENT PIPING
- NON-PERFORATED HORIZONTAL HEADER/ CONVEYANCE PIPING
- LOCATION OF VENT RISER PIPING EXTENDING TO WIND-DRIVEN TURBINE LOCATED ABOVE ROOFTOP
- TEMPORARY VAPOR SAMPLING POINT
- 10" DEPTHS BELOW FINISHED FLOOR TO TOP OF PIPE
- EXCAVATION AREAS 1 & 2 TO AN AVERAGE DEPTH OF 21 FEET BGS
- EXCAVATION AREA 3 TO AN AVERAGE DEPTH OF 14 FEET BGS
- EXCAVATION AREA 4 TO AN AVERAGE DEPTH OF 2 FEET BGS
- EXCAVATION AREA 5, SURFACE COVER REMOVAL (ASPHALT/CONCRETE)
- EXCAVATION OF TAR WELL TO AN AVERAGE DEPTH OF 16 FEET BGS
- APPROXIMATE LIMITS OF FORMER WASHINGTON STREET MGP

NOTES:

1. BUILDING LAYOUT AND FLOOR PLAN ARE FROM "EINHORN YAFFEE PRESCOTT ARCHITECTURE AND ENGINEERING P.C. (EYP)" DRAWING TITLED "PARTIAL FOUNDATION PLAN – NORTH" AND "PARTIAL FOUNDATION PLAN – SOUTH" NUMBERS S011 AND S012, DATED 04/04/11, WITH AN APPROXIMATE SCALE OF $\frac{1}{8}$"=1'-0".
2. APPROXIMATE LIMITS OF FORMER MANUFACTURED GAS PLANT (MGP) ARE FROM THE BROWNFIELD CLEANUP AGREEMENT (BCA) BETWEEN NEW YORK STATE ELECTRIC & GAS CORPORATION (NYSEG) AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC), DATED OCTOBER 17, 2005 (INDEX #A7-0518-0505).
3. LIMITS OF EXCAVATION ARE BASED ON SURVEY PERFORMED DURING THE 2010 REMEDIAL ACTIVITIES.
4. BGS = BELOW GROUND SURFACE.
5. PIPE DIAMETERS NOT DRAWN TO SCALE.
6. LOCATION OF SOIL VAPOR VENT PIPING, DEDICATED SOIL VAPOR HEADER PIPING, VENT RISER PIPING, AND TEMPORARY VAPOR SAMPLING POINTS ARE BASED ON FIELD REPORTS BY KEYSTONE, OBSERVATIONS BY ARCADIS, AND DISCUSSION WITH WASHINGTON DEVELOPMENT ASSOCIATES.
7. SSD = SUB-SLAB DEPRESSURIZATION.
8. VI = VAPOR INTRUSION.

0 40' 80'

GRAPHIC SCALE

NEW YORK STATE ELECTRIC & GAS CORPORATION
WASHINGTON STREET FORMER MGP SITE
BINGHAMTON, NEW YORK
2013 PERIODIC REVIEW REPORT

VI EVALUATION SAMPLING LOCATIONS AND SSD SYSTEM PIPING LAYOUT

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FIGURE 3

Appendix A

Site-Wide Inspection Form

Washington Street Former MGP Site & Former Wehle Electric Site
Binghamton, Broome County, New York
Site-Wide Inspection Form

Date: 7-20-12
Personnel: MWE
Time of Arrival: 08:00
Time of Departure:

Weather Conditions: Rain/Overcast ~65°
Temperature: 65°
Wind Speed: ~8mph W
Wind Direction (from): W

Inspection Checklist	Yes	No	Comments
Exterior Cover System			
Intrusive Activities Being Performed?			
- Trenching?		✓	
- Excavation?		✓	
- Tunneling?		✓	
- Saw cutting?	✓		Saw Cut used to repair wells
Signs of Previous Intrusive Activities Performed?			MW-4R, MW-5^{S}, MW-6^{S}, MW-7^{S}
- Saw-cut pavement/concrete?		✓	
- Patched or repaved pavement/concrete?	✓		Entire Parking Lot Newly Paved
- New drainage feature?	✓		Parking lot designed for run-off
- Evidence of a new underground utility?		✓	
- New grass or vegetation?	✓		Landscaping done around perimeter and along new apartment building
Interior Slab (Twin River Commons Building)			
Potential Evidence of Intrusive Activities?			
- Floor covering or carpeting patched, repaired or replaced?		✓	
- New drainage feature?		✓	
- Evidence of a new sub-slab utility?		✓	
Passive Sub-Slab Depressurization System ★			
Wind-driven turbine spinning freely and unobstructed?		✓	N/A★
Control valves operating and in the open position? If not, why?	✓	✓	N/A★

★ Inspection of Passive Sub-Slab Depressurization System was performed as part of the March 2012 VI Evaluation, and it was not re-evaluated as part of this July 20, 2012 Inspection.

Washington Street Former MGP Site
Binghamton, Broome County, New York
Site-Wide Inspection Form

Date: 7-20-12

Personnel: MJE

Monitoring Well Condition	Y	N	
Groundwater monitoring needs to be performed this year?	✓		
Covers secure?	✓		
Casing in need of repair?	✓	✓	Wells have new pads + boxes
Concrete surface seal intact?	✓		
Settling in area around well?	✓		
Well obstructed?		✓	
Ponded water above well?		✓	
Well screen silted in?		✓	
Well in need of redevelopment?		✓	

General Comments/Suggested Action Items:
*See Site Photos

Appendix B

Groundwater Sampling Logs

Washington Street Former MGP Site, Binghamton, Broome County, NY
Site

Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: MJF
Client / Job Number: NYSEG / B0013097.03.01
Weather: Sunny ~90°
Well ID: MW-4R
Date: 7-17-12
Time In: 8:15 **Time Out:** 10:15

Well Information

Depth to Water:	22.50 (from MP)
Total Depth:	26.90 (from MP)
Length of Water Column:	4.4'
Volume of Water in Well:	0.7 gal.
Three Well Volumes:	2.1 gal.

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

Purging Information

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

Duration of Pumping: 65 (min)
Average Pumping Rate: 125 (ml/min) Water-Quality Meter Type: Horiba
Total Volume Removed: ~2.5 (gal) Did well go dry: Yes (No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	8:40	8:45	8:50	8:55	9:00	9:05	9:10	9:15	9:20
Volume Purged (mL)	–	–			23.20L				
Rate (mL/min)	~100	~125	~125	~125	~125	~125	~125	~125	~125
Depth to Water (ft.)	22.90	23.09	23.15	23.19	~~23.24~~ 24	23.22	23.23	23.24	23.25
pH	7.72	7.54	7.42	7.38	7.32	7.30	7.28	7.24	7.29
Temp. (C)	23.40	20.12	20.59	20.97	21.21	20.88	20.91	21.03	20.00
Conductivity (mS/cm)	1.52	1.58	1.61	1.60	1.55	1.49	1.52	1.49	1.44
Dissolved Oxygen	1.14	0.67	0.71	0.64	0.49	0.37	0.39	0.41	0.38
ORP (mV)	101	113	125	131	139	148	153	157	160
Turbidity (NTU)	401	275	312	383	404	328	281	224	170
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH
Sample ID: MW-4R	Sample Time: 10:00	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID	Dup. Time:	

Problems / Observations

PID = 0.0

Washington Street Former MGP Site, Binghamton, Broome County, NY
Site

Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: MWE
Well ID: MW-4R Cont.
Client / Job Number:
Date: 8-17-12
Weather:
Time In: 8:15 **Time Out:** 10:15

Well Information

Depth to Water:	(from MP)
Total Depth:	(from MP)
Length of Water Column:	
Volume of Water in Well:	
Three Well Volumes:	

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

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer Material:	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	(Bailer (VOCs))	(Peristaltic)	Grundfos	Other:
Duration of Pumping:	(min)			
Average Pumping Rate:	(ml/min)	Water-Quality Meter Type:		
Total Volume Removed:	(gal)	Did well go dry:	Yes	(No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	9:25	9:30	9:35	9:40	9:45				
Volume Purged (mL)									
Rate (mL/min)	~125	~125	~125	~125	~125				
Depth to Water (ft.)	23.43	23.44	23.44	23.44	23.45				
pH	7.23	7.21	7.20	7.20	7.19				
Temp. (C)	19.86	20.59	20.43	20.40	20.36				
Conductivity (mS/cm)	1.44	1.41	1.38	1.37	1.38				
Dissolved Oxygen	0.36	0.36	0.31	0.30	0.30				
ORP (mV)	162	171	180	181	181				
Turbidity (NTU)	136	105	67	46	44				
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID:		Sample Time:
MS/MSD:	Yes	No
Duplicate:	Yes	No
Duplicate ID		Dup. Time:

Problems / Observations

PID = 0.0

10:00 Sample

Washington Street Former MGP Site, Binghamton, Broome County, NY Page 1 of 1

Site *Event*

GROUNDWATER SAMPLING LOG

Sampling Personnel: MJE
Client / Job Number: NYSEG / B0013097.03.01
Weather: Sun ~95°
Well ID: MW-5
Date: 7-17-12
Time In: 11:45 **Time Out:**

Well Information

Depth to Water:	20.29 (from MP)
Total Depth:	27.95 (from MP)
Length of Water Column:	7.66
Volume of Water in Well:	1.2 gal.
Three Well Volumes:	3.7 gal.

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

Purging Information

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

Duration of Pumping: 45 (min)
Average Pumping Rate: ~125 (ml/min) Water-Quality Meter Type: Horiba
Total Volume Removed: ~2 gal (gal) Did well go dry: Yes (No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	12:00	12:05	12:10	12:15	12:20	12:25	12:30	12:35	12:40
Volume Purged (mL)									
Rate (mL/min)	~125	~125	~125	~125	~125	~125	~125	~125	~125
Depth to Water (ft.)	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31
pH	9.80	7.71	7.68	7.60	7.48	7.42	7.68	7.67	7.66
Temp. (C)	36.61	27.77	27.24	27.36	27.22	27.18	27.06	27.13	27.17
Conductivity (mS/cm)	0.542	0.701	0.708	0.704	0.703	0.703	0.703	0.703	0.703
Dissolved Oxygen	5.17	5.01	4.91	4.70	4.67	4.64	4.61	4.61	4.60
ORP (mV)	74	118	116	121	127	129	129	130	130
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH
Sample ID: MW-5	Sample Time: 13:00	
MS/MSD: Yes (No)		
Duplicate: Yes (No)		
Duplicate ID	Dup. Time:	

Problems / Observations

PID = 0.0

Washington Street Former MGP Site, Binghamton, Broome County, NY
Site

Event

GROUNDWATER SAMPLING LOG

Sampling Personnel: MWE
Client / Job Number: NYSEG / B0013097.03.01
Weather: Sun ~90°
Well ID: MW-5D
Date: 7-17-12
Time In: 10:30 **Time Out:**

Well Information

Depth to Water:	20.35 (from MP)
Total Depth:	43.20 (Soft) (from MP)
Length of Water Column:	22.85
Volume of Water in Well:	3.7 gal.
Three Well Volumes:	11.1 gal.

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

Purging Information

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

Duration of Pumping: 40 (min)
Average Pumping Rate: 125 (ml/min)
Total Volume Removed: ~2gal. (gal)
Water-Quality Meter Type: Horiba
Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3875 ml = 0.1337 cubic feet

Unit Stability

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	10:40	10:45	10:50	10:55	11:00	11:05	11:10	11:15	11:20
Volume Purged (mL)									
Rate (mL/min)	~125	~125	~125	~125	~125	~125	~125	~125	~125
Depth to Water (ft.)	20.40	20.50	20.50	20.50	20.50	20.50	20.50	20.50	20.50
pH	7.10	10.44	11.28	11.41	11.29	11.42	11.37	11.46	11.49
Temp. (C)	33.10	28.44	25.35	25.19	23.47	23.48	23.75	23.48	23.51
Conductivity (mS/cm)	0.507	0.451	0.462	0.453	0.459	0.458	0.457	0.454	0.454
Dissolved Oxygen	7.20	4.61	4.27	4.04	3.95	3.87	3.58	3.60	3.60
ORP (mV)	138	14	-40	-48	-44	-55	-55	-56	-56
Turbidity (NTU)	280	235	204	229	209	130	72	48	32
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID: MW-5D Sample Time: 11:30
MS/MSD: Yes (No)
Duplicate: Yes (No)
Duplicate ID: Dup. Time:

Problems / Observations

PID = 0.0

Washington Street Former MGP Site, Binghamton, Broome County, NY

Site *Event*

GROUNDWATER SAMPLING LOG

Sampling Personnel: Will Stephens
Well ID: MW-65
Client / Job Number:
Date: 7/20/12
Weather: Rainy Mid 70's
Time In: 1140 **Time Out:** 1255

Well Information

Depth to Water:	8.29' (from MP)
Total Depth:	15.39' (from MP)
Length of Water Column:	
Volume of Water in Well:	
Three Well Volumes:	

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

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer Material:	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:
Duration of Pumping:	(min)			
Average Pumping Rate:	(ml/min)	Water-Quality Meter Type:		
Total Volume Removed:	(gal)	Did well go dry:	Yes	No

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	1145	1150	1155	1200	1205	1210	1215	1220	
Volume Purged (mL)									
Rate (mL/min)	150	150	150	150	150	150	150	S	
Depth to Water (ft.)	8.34'	8.35'	8.38'	8.38'	8.40'	8.41'	8.41'	A	
pH	7.02	6.97	6.98	7.00	6.97	6.98	6.97	M	
Temp. (C)	22.20	22.35	22.31	22.34	22.38	22.40	22.41	P	
Conductivity (mS/cm)	1.29	1.30	1.30	1.30	1.30	1.29	1.31	L	
Dissolved Oxygen	0.66	0.70	0.30	0.18	0.10	0.10	0.09	E	
ORP (mV)	51	32	25	18	10	10	9		
Turbidity (NTU)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID:		Sample Time:
MS/MSD:	Yes	No
Duplicate:	Yes	No
Duplicate ID		Dup. Time:

Problems / Observations

PID = 0.0

Pump started @ 1140

Tube @ 13'

Industrial Place/Hampton Rd.

Washington Street Former MGP Site, Binghamton, Broome County, NY

Site *Event*

GROUNDWATER SAMPLING LOG

Sampling Personnel: Will Stephens **Well ID:** MW-6
Client / Job Number: B0013697.0003.00001 **Date:** 7/30/12
Weather: Raining 70's **Time In:** 0850 **Time Out:**

Well Information

Depth to Water: ~~19.9'~~ 20.09'	(from MP)
Total Depth: 30.98' (very soft bottom)	(from MP)
Length of Water Column: ~~4~~ 10.89'	
Volume of Water in Well:	
~~Three Well Volumes~~:	

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

Purging Information

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

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

Duration of Pumping: (min)
Average Pumping Rate: 150 (ml/min) Water-Quality Meter Type: Horriba
Total Volume Removed: (gal) Did well go dry: Yes No

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	0920	0925	0930	0935	0940	0945	0950	0955	1000
Volume Purged (mL)									
Rate (mL/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft.)	20.20	20.24	20.20	20.19	20.19	20.18	20.19	20.19	20.18
pH	7.02	7.05	7.06	7.07	7.07	7.05	7.05	7.05	7.05
Temp. (C)	17.84	18.17	18.39	18.41	18.51	18.41	18.48	18.57	18.64
Conductivity (mS/cm)	2.30	2.28	2.27	2.27	2.27	2.28	2.28	2.28	2.28
Dissolved Oxygen	1.21	1.16	0.76	0.34	0.23	0.26	0.20	0.02	0.00
ORP (mV)	-126	-126	-127	-125	-124	-124	-123	-122	-121
Turbidity (NTU)	602	553	469	374	355	329	303	198	155
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID:		Sample Time:
MS/MSD:	Yes	No
Duplicate:	Yes	No
Duplicate ID		Dup. Time:

Problems / Observations

PID = 0.0

Tube intake @ 22'

- Pumping began @ 0855
* Stopped due to soil leaking in Horriba
- Pumping began @ 0915 Ended @ 1220

Washington Street Former MGP Site, Binghamton, Broome County, NY

Site *Event*

GROUNDWATER SAMPLING LOG

Sampling Personnel: **Well ID:** MW-6
Client / Job Number: **Date:** 7/20/12
Weather: **Time In:** **Time Out:**

Well Information

Depth to Water:	(from MP)
Total Depth:	(from MP)
Length of Water Column:	
Volume of Water in Well:	
Three Well Volumes:	

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

Purging Information

Purging Method:	Bailer	Peristaltic	Grundfos	Other:
Tubing/Bailer Material:	St. Steel	Polyethylene	Teflon	Other:
Sampling Method:	Bailer (VOCs)	Peristaltic	Grundfos	Other:
Duration of Pumping:	(min)			
Average Pumping Rate:	(ml/min)	Water-Quality Meter Type:		
Total Volume Removed:	(gal)	Did well go dry:	Yes	No

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	1005	1010	1015	1020	1025	1030	1035	1040	
Volume Purged (mL)									
Rate (mL/min)	150	150	150	150	150	150	150	S	
Depth to Water (ft.)	20.18	20.18	20.18	20.18	20.19	20.20	20.19	A	
pH	7.04	7.03	7.03	7.03	7.03	7.04	7.02	M	
Temp. (C)	18.55	18.60	18.80	18.79	18.83	18.81	18.83	P	
Conductivity (mS/cm)	2.30	2.30	2.30	2.30	2.29	2.30	2.30	L	
Dissolved Oxygen	0.20	0.30	0.40	0.35	0.38	0.37	0.38	E	
ORP (mV)	-120	-119	-118	-118	-118	-117	-117		
Turbidity (NTU)	141	136	123	93.2	72.3	51.2	~~45.~~ 43.2		
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID:		Sample Time:
MS/MSD:	Yes	No
Duplicate:	Yes	No
Duplicate ID		Dup. Time:

Problems / Observations

PID =

Washington Street Former MGP Site, Binghamton, Broome County, NY

Site *Event*

GROUNDWATER SAMPLING LOG

Sampling Personnel: MJE
Client / Job Number: NYSEG/B0013097.03.01
Weather: Overcast ~65°
Well ID: MW-7D
Date: 7-20-12
Time In: 10:10 **Time Out:** 11:20

Well Information

Depth to Water:	18.30 (from MP)
Total Depth:	42.0 (from MP)
Length of Water Column:	23.7'
Volume of Water in Well:	3.8 gal.
Three Well Volumes:	11.5 gal.

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

Purging Information

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

Duration of Pumping: 60 (min)
Average Pumping Rate: 125 (ml/min)
Total Volume Removed: ~2gal (gal)
Water-Quality Meter Type: Horriba
Did well go dry: Yes (No)

Conversion Factors

gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L =3875 ml = 0.1337 cubic feet

Unit Stability

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	10:15	10:20	10:25	10:30	10:35	10:40	10:45	10:50	10:55
Volume Purged (mL)									
Rate (mL/min)	~125	~125	~125	~125	~125	~125	~125	~125	~125
Depth to Water (ft.)	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
pH	8.86	9.73	9.73	9.67	9.61	9.57	9.50	9.51	9.51
Temp. (C)	23.84	24.18	24.30	24.20	23.99	24.02	24.22	24.27	24.32
Conductivity (mS/cm)	0.453	0.390	0.378	0.372	0.368	0.368	0.366	0.366	0.365
Dissolved Oxygen	7.70	6.07	6.51	6.02	5.21	5.19	5.17	5.17	5.16
ORP (mV)	32	14	6	-1	1	3	2	3	4
Turbidity (NTU)	207	116	13.4	7.0	6.5	6.6	6.7	6.8	6.6
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID: MW-7D	Sample Time:
MS/MSD: Yes (No)	
Duplicate: Yes (No)	
Duplicate ID	Dup. Time:

Problems / Observations

PID = 0.0

Washington Street Former MGP Site, Binghamton, Broome County, NY

Site *Event*

GROUNDWATER SAMPLING LOG

Sampling Personnel: MJE
Client / Job Number: NYSEG/B0013097.03.01
Weather: Rain ~60°
Well ID: MW-7R
Date: 7-20-12
Time In: 8:10 **Time Out:** 9:45

Well Information

Depth to Water:	18.26 (from MP)
Total Depth:	24.45 Soft (from MP)
Length of Water Column:	6.19
Volume of Water in Well:	1.0 gal.
Three Well Volumes:	3 gal.

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

Purging Information

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

Duration of Pumping: 60 (min)
Average Pumping Rate: 125 (ml/min) Water-Quality Meter Type: Horiba
Total Volume Removed: ~2gal. (gal) Did well go dry: Yes (No)

Conversion Factors				
gal / ft. of water	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469
1 gal = 3.785 L =3875 ml = 0.1337 cubic feet				

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

Time: / Parameter:	1	2	3	4	5	6	7	8	9
	8:20	8:25	8:30	8:35	8:40	8:45	8:50	8:55	9:00
Volume Purged (mL)									
Rate (mL/min)	~125	~125	~125	~125	~125	~125	~125	~125	~125
Depth to Water (ft.)	18.28	18.28	18.28	18.28	18.28	18.28	18.28	18.28	18.28
pH	7.49	6.84	6.85	6.79	6.75	6.73	6.67	6.70	6.71
Temp. (C)	21.21	20.00	19.46	18.66	18.33	17.62	17.28	17.19	17.17
Conductivity (mS/cm)	1.35	1.34	1.29	1.26	1.26	1.26	1.25	1.25	1.25
Dissolved Oxygen	1.90	0.51	0.18	0.0	0.0	0.0	0.0	0.0	0.0
ORP (mV)	-29	-47	-51	-50	-43	-39	-33	-33	-32
Turbidity (NTU)	N/A	643	242	72.8	41.7	38.6	16.8	14.5	15.2
Notes:									

Sampling Information

Analyses	#	Laboratory
TCL PCBs	2	STL Buffalo, NY
TCL VOCs	3	STL Canton, OH
1,1,1-TCA, TCE	3	STL Canton, OH
Ethylbenzene, Isopropylbenzene, Xylene	3	STL Canton, OH

Sample ID: MW-7R Sample Time: 9:05
MS/MSD: (Yes) No
Duplicate: Yes (No)
Duplicate ID Dup. Time:

Problems / Observations

PID = 0.0

Appendix C

Sub-Slab Vapor, Indoor Air, and Ambient Air Sampling Logs

Indoor/Ambient Air Sample Collection Log

Sample ID: AMB-033012

Client:	NYSEG	**Date/Day:**	3/30/2012
Project:	Washington Street	**Sample Intake Height:**	3' ALS
Location:	Binghamton, NY	**Subcontractor:**	NA
Project #:	B0013097.0003.00001	**Miscellaneous Equipment:**	None
Samplers:	Daniel Zuck		
Coordinates:	(See attached Figure)	**Time Start:**	1410
Outdoor/Indoor:	Outdoor	**End Time:**	1055- 3/31/12

Instrument Readings:

Time	Canister Pressure (inches Hg)	Temperature (F)	Relative Humidity (%)	Air Speed (ft/min)	Barometric Pressure	PID (ppb) / (ppm)
1410	-29.5	48.6	23.9	1.4	TBD	0
1815	-24.75	51.2	29.3	1.7	TBD	0
0815	-10	---	---	---	---	---
1000	-8	40.1	79.2	3.1	TBD	0
1055	-7	39.0	83.7	1.9	TBD	0

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 1011N

Flow Controller ID: K210

General Observations/Notes:

Photos: 101-1525
Initial Digital reading pre-sample: -29.11
Final Digital reading following sample collection: -7.16

Indoor/Ambient Air Sample Collection Log

Sample ID: IA-1

Client:	NYSEG	**Date/Day:**	3/30/2012
Project:	Washington Street	**Sample Intake Height:**	3' ALS
Location:	Binghamton, NY	**Subcontractor:**	NA
Project #:	B0013097.0003.00001	**Miscellaneous Equipment:**	Cones
Samplers:	Daniel Zuck		
Coordinates:	(See attached Figure)	**Time Start:**	1441
Outdoor/Indoor:	Indoor	**End Time:**	1005 - 3/31/12

Instrument Readings:

Time	Canister Pressure (inches Hg)	Temperature (F)	Relative Humidity (%)	Air Speed (ft/min)	Barometric Pressure	PID (ppb) / (ppm)
1441	-28	62.2	34.5	0	NA	41
1642	-23.75	58.9	40.6	0	NA	69
0845	-8.5	58.9	48.7	0	NA	134
1005	-6.5	58.6	50.3	0	NA	235

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 6641

Flow Controller ID: K411

General Observations/Notes:

Photos: 101-1526
Initial Digital reading pre-sample: -29.16
Final Digital reading following sample collection: -7.54

Indoor/Ambient Air Sample Collection Log

Sample ID: IA-2

Client:	NYSEG	**Date/Day:**	3/30/2012
Project:	Washington Street	**Sample Intake Height:**	3' ALS
Location:	Binghamton, NY	**Subcontractor:**	NA
Project #:	B0013097.0003.00001	**Miscellaneous Equipment:**	Cones, Drill, Vacuum
Samplers:	Daniel Zuck		
Coordinates:	(See attached Figure)	**Time Start:**	1517
Outdoor/Indoor:	Indoor	**End Time:**	1025 - 3/31/12

Instrument Readings:

Time	Canister Pressure (inches Hg)	Temperature (F)	Relative Humidity (%)	Air Speed (ft/min)	Barometric Pressure	PID (ppb) / (ppm)
1517	-29.5	58.9	39.9	0	NA	0
1920	-25.0	59.3	34.7	0	NA	49
1025	-9.5	59.7	46.7	0	NA	0

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 6606

Flow Controller ID: K473

General Observations/Notes:

Photos: 101-1527
Initial Digital reading pre-sample: -29.21
Final Digital reading following sample collection: -9.21

Indoor/Ambient Air Sample Collection Log

Sample ID: IA-3

Client:	NYSEG	**Date/Day:**	3/30/2012
Project:	Washington Street	**Sample Intake Height:**	3' ALS
Location:	Binghamton, NY	**Subcontractor:**	NA
Project #:	B0013097.0003.00001	**Miscellaneous Equipment:**	Cones, Drill, Vacuum
Samplers:	Daniel Zuck		
Coordinates:	(See attached Figure)	**Time Start:**	1545
Outdoor/Indoor:	Indoor	**End Time:**	1143 - 3/31/12

Instrument Readings:

Time	Canister Pressure (inches Hg)	Temperature (F)	Relative Humidity (%)	Air Speed (ft/min)	Barometric Pressure	PID (ppb) / (ppm)
1545	-28.5	58.6	34.7	0	NA	0
1945	-24	57.3	38.6	0	NA	58
1015	-10	58.0	48.5	0	NA	143
1143	-8	56.2	51.4	0	NA	0

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 6621

Flow Controller ID: K481

General Observations/Notes:

Photos: 101-1528
Initial Digital reading pre-sample: -29.22
Final Digital reading following sample collection: -9.35

Indoor/Ambient Air Sample Collection Log

Sample ID: IA-4

Client:	NYSEG	**Date/Day:**	3/30/2012
Project:	Washington Street	**Sample Intake Height:**	3' ALS
Location:	Binghamton, NY	**Subcontractor:**	NA
Project #:	B0013097.0003.00001	**Miscellaneous Equipment:**	Cones
Samplers:	Daniel Zuck		
Coordinates:	(See attached Figure)	**Time Start:**	1455
Outdoor/Indoor:	Indoor	**End Time:**	1015 – 3/31/12

Instrument Readings:

Time	Canister Pressure (inches Hg)	Temperature (F)	Relative Humidity (%)	Air Speed (ft/min)	Barometric Pressure	PID (ppb) / (ppm)
1555	-30	58.3	35.8	0	NA	0
1955	-24.5	58.3	38.0	0	NA	34
1015	-6	58.0	48.5	0	NA	143

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 1536

Flow Controller ID: K452

General Observations/Notes:

Photos: 101-1529
Initial Digital reading pre-sample: -29.11
Final Digital reading following sample collection: -6.30

Indoor/Ambient Air Sample Collection Log

Sample ID: IA-5 / DUP-IA

Client:	NYSEG	**Date/Day:**	3/30/2012
Project:	Washington Street	**Sample Intake Height:**	3' ALS
Location:	Binghamton, NY	**Subcontractor:**	NA
Project #:	B0013097.0003.00001	**Miscellaneous Equipment:**	Cones, Tools, Vacuum, Building Equipment
Samplers:	Daniel Zuck		
Coordinates:	(See attached Figure)	**Time Start:**	1606
Outdoor/Indoor:	Indoor	**End Time:**	1150 – 3/31/12

Instrument Readings:

Time	Canister Pressure (inches Hg)	Temperature (F)	Relative Humidity (%)	Air Speed (ft/min)	Barometric Pressure	PID (ppb) / (ppm)
1606 DUP	-29	58.3	35.6	0	NA	0
1607 IA	-29	58.3	35.6	0	NA	0
2005 DUP	-25	58.7	37.5	0	NA	187
2005 IA	-24.5	58.7	37.5	0	NA	187
1150 DUP	-7.5	60.3	44.7	0	NA	36
1150 IA	-8	60.3	44.7	0	NA	36

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: DUP: 62339/ IA: 6387

Flow Controller ID: DUP: K139 / IA: K397

General Observations/Notes:

Photos: 101-1530
Initial Digital reading pre-sample: DUP -29.06 / IA -29.03
Final Digital reading following sample collection: DUP -7.80 / IA – 8.49

Soil Gas Sample Collection Log

Sample ID: SSV-1

Client:	NYSEG	**Date/Day:**	3/30/12
Project:	Washington Street	**Weather:**	Clear
Location:	Binghamton, NY	**Temperature:**	62.2 F
Project #:	B0013097.0003.00001	**Wind Speed/Direction:**	0 (ft/min) / (mph)
Samplers:	Daniel Zuck	**Subcontractor:**	NA
Logged By:	Daniel Zuck	**Equipment:**	PPB RAE/Helium Detector
Background PID Ambient Air Reading:	41 ppb	**Moisture Content of Sampling Zone (circle one):**	NA Dry / Moist
Sampling Depth:	~0.4' – ~0.5 '		
Probe (circle one):	(Permanent) / Temporary	**Approximate Volume of Sampling Train::**	30 mL (3 ' of ¼" ID tubing)
Time of Collection:	Start: 1440 Finish: 1005 - 3/31/12	**Approximate Purge Volume:**	90 mL= [(30) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 1012N

Flow Controller ID: K442

Tracer Gas Information (if applicable)

Tracer Gas: (Helium) / NA

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-29.1	Digital: -29.18 / Analog: -29.5	Digital: -8.37 / Analog: -9.5

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm	0.15% (1550 ppm)	83.5%	82.9%	2.9%

General Observations/Notes:

Photo ID: 101-1526	395 ppb reading on the PID following sample
Analog reading after 4 hrs: @ 1642 (-25.5)	Collection from soil vapor tubing.
Analog reading after 16 hrs: @ 0845 (-12)	
Final Reading @ 1005 – 9.5	
Differential Pressure: -0.001	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Soil Gas Sample Collection Log

Sample ID: SSV-2

Client:	NYSEG	**Date/Day:**	3/30/12
Project:	Washington Street	**Weather:**	Clear
Location:	Binghamton, NY	**Temperature:**	58.9 F
Project #:	B0013097.0003.00001	**Wind Speed/Direction:**	0 (ft/min) / (mph)
Samplers:	Daniel Zuck	**Subcontractor:**	NA
Logged By:	Daniel Zuck	**Equipment:**	PPB RAE/Helium Detector
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	~0.5' – ~0.6 '		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	30 mL (3 ' of ¼" ID tubing)
Time of Collection:	Start: 1516 Finish: 1020 – 3/31/12	**Approximate Purge Volume:**	90 mL= [(30) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 93112

Flow Controller ID: K480

Tracer Gas Information (if applicable)

Tracer Gas: (Helium) / NA

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-29.1	Digital: -29.15 / Analog: -27	Digital: -9.12 / Analog: -7

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
0 ppm	0.16% (1575 ppm)	82.5%	74.3%	2.9%

General Observations/Notes:

Photo ID: 101-1527	8331 ppb reading on the PID following sample
Analog reading after 4 hrs: @ 1918 (-22.75)	Collection from soil vapor tubing.
Analog reading after hrs: @ 1020 (-7)	
Differential Pressure: -0.001	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Soil Gas Sample Collection Log

Sample ID: SSV-3

Client:	NYSEG	**Date/Day:**	3/30/12
Project:	Washington Street	**Weather:**	Clear
Location:	Binghamton, NY	**Temperature:**	58.6 F
Project #:	B0013097.0003.00001	**Wind Speed/Direction:**	0 (ft/min) / (mph)
Samplers:	Daniel Zuck	**Subcontractor:**	NA
Logged By:	Daniel Zuck	**Equipment:**	PPB RAE/Helium Detector
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	~0.5' – ~0.6 '		
Probe (circle one):	Permanent / (Temporary)	**Approximate Volume of Sampling Train::**	30 mL (3 ' of ¼" ID tubing)
Time of Collection:	Start: 1544 Finish: 1143- 3/31/12	**Approximate Purge Volume:**	90 mL= [(30) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): 1 L (6 L)

Canister ID: 0184

Flow Controller ID: K299

Tracer Gas Information (if applicable)

Tracer Gas: Helium / (NA)

Canister Pressure (inches Hg):		
Reported By Laboratory	**Measured Prior to Sample Collection**	**Measured Following Sample Collection**
-28.7	Digital: -28.74 / Analog: -28.5	Digital: -8.11 / Analog: -7

Tracer Gas Concentration (if applicable):				
Measured from Soil Vapor Tubing		**Measured in 'Concentrated' Area**		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
--- ppm	--- ppm	---%	---%	---%

General Observations/Notes:

Photo ID: 101-1528	0 ppb reading on the PID following sample
Analog reading after 4 hrs: @ 1945 (-24.5)	Collection from soil vapor tubing.
Differential Pressure: -0.002	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Soil Gas Sample Collection Log

Sample ID: SSV-4

Client:	NYSEG	**Date/Day:**	3/30/12
Project:	Washington Street	**Weather:**	Clear
Location:	Binghamton, NY	**Temperature:**	37.9 F
Project #:	B0013097.0003.00001	**Wind Speed/Direction:**	0 (ft/min) / (mph)
Samplers:	Daniel Zuck	**Subcontractor:**	NA
Logged By:	Daniel Zuck	**Equipment:**	PPB RAE/Helium Detector
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	NA Dry / Moist
Sampling Depth:	~0.5' – ~0.6 '		
Probe (circle one):	(Permanent) / Temporary	**Approximate Volume of Sampling Train::**	30 mL (3 ' of ¼" ID tubing)
Time of Collection:	Start: 1555 Finish: 1220 – 3/31/12	**Approximate Purge Volume:**	90 mL= [(30) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 6672

Flow Controller ID: K404

Tracer Gas Information (if applicable)

Tracer Gas: Helium / (NA)

Canister Pressure (inches Hg):

Reported By Laboratory	Measured Prior to Sample Collection	Measured Following Sample Collection
-28.8	Digital: -28.88 / Analog: -29.0	Digital: -7.36 / Analog: -7

Tracer Gas Concentration (if applicable):

Measured from Soil Vapor Tubing		Measured in 'Concentrated' Area		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
--- ppm	--- ppm	---%	---%	---%

General Observations/Notes:

Photo ID: 101-1529	0 ppb reading on the PID following sample
Analog reading after 4 hrs: @ 1955 (-25)	Collection from soil vapor tubing.
Analog reading after hrs:	
Differential Pressure: 0.000	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Soil Gas Sample Collection Log

Sample ID: SSV-5

Client:	NYSEG	**Date/Day:**	3/30/12
Project:	Washington Street	**Weather:**	Clear
Location:	Binghamton, NY	**Temperature:**	58.3 F
Project #:	B0013097.0003.00001	**Wind Speed/Direction:**	0 (ft/min) / (mph)
Samplers:	Daniel Zuck	**Subcontractor:**	NA
Logged By:	Daniel Zuck	**Equipment:**	PPB RAE/Helium Detector
Background PID Ambient Air Reading:	0 ppb	**Moisture Content of Sampling Zone (circle one):**	NA Dry / Moist
Sampling Depth:	~0.5' – ~0.6 '		
Probe (circle one):	(Permanent) / Temporary	**Approximate Volume of Sampling Train::**	30 mL (3 ' of ¼" ID tubing)
Time of Collection:	Start: 1603 Finish: 1140 – 3/31/12	**Approximate Purge Volume:**	90 mL= [(30) * (3v)]

Nearby Groundwater Monitoring Wells/Water Levels:

Well ID	Depth to Groundwater (feet)

SUMMA Canister Information

Size (circle one): **1 L** **(6 L)**

Canister ID: 04731

Flow Controller ID: K507

Tracer Gas Information (if applicable)

Tracer Gas: Helium / (NA)

Canister Pressure (inches Hg):		
Reported By Laboratory	**Measured Prior to Sample Collection**	**Measured Following Sample Collection**
-29.1	Digital: -28.96 / Analog: -28.5	Digital: -9.02 / Analog: -7

Tracer Gas Concentration (if applicable):				
Measured from Soil Vapor Tubing		**Measured in 'Concentrated' Area**		
Post Purge	**Post Sample**	**Prior to Purging**	**Post Purging**	**Post Sampling**
--- ppm	--- ppm	---%	---%	---%

General Observations/Notes:

Photo ID: 101-1530	119 ppb reading on the PID following sample
Analog reading after 4 hrs: @ 2005 (-24)	Collection from soil vapor tubing.
Analog reading after hrs:	
Differential Pressure: -0.366	

Approximating One-Well Volume (for purging temporary points):
Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Appendix D

Completed NYSDOH Indoor Air Quality Questionnaire and Inventory Form

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name L.C. Healy / D. Zuck Date/Time Prepared 3/30/12

Preparer's Affiliation ARCADIS Phone No. 315-671-9120

Purpose of Investigation Post Mitigation Vapor Intrusion Evaluation

1. OCCUPANT: NA – No Occupants yet

Interviewed: Y / (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: (Y) / N

Last Name: Nicolich First Name: John

Address: 45 Washington Street, Binghamton, NY 13901

County: Broome

Home Phone: --- Office Phone: 607-343-2156

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: Restricted Residential

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	[Townhouses/Condos]
Modular	Log Home	Other: Dormitory

If multiple units, how many? 127

If the property is commercial, type?

Business Type(s) NA

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors 4 Building age Brand New (still being constructed)

Is the building insulated? (Y) / N How air tight? Tight / Average / (Not Tight)**

**Close cell from fiberglass bat insulation*

***Tight** – After Build Complete*
****Not Tight** - Currently*

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Stairs

Airflow near source

Doors/Windows, Heater (gas)

Outdoor air infiltration

Doors/Windows Closed ~ 1-2 hrs prior to sampling; Air Temp ~ 58-60°F

Infiltration into air ducts

Not on first floor

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete - *some*	stone	brick
b. Basement type:	full	crawlspace	slab - *none*	other _____
c. Basement floor:	concrete	dirt	stone	other NA
d. Basement floor:	uncovered	covered	covered with NA	
e. Concrete floor:	unsealed	sealed	sealed with _____	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with TBD	
h. The basement/slab is:	wet	damp	dry	moldy NA
i. The basement is:	finished	unfinished	partially finished	NA
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: NA (feet) *Above grade*

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

_____

_____

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation - *Gas*	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other *Hot water only, concentric vent kit*
Roof-top HVAC Units	*Wall Package Terminal HVAC System*		

The primary type of fuel used is:

Natural Gas*	Fuel Oil	Kerosene
Electric**	Propane	Solar
Wood	Coal	

**Hot water heater also heats the wall packaged units*
***Air Conditioning / fan*

Domestic hot water tank fueled by: Natural Gas

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning:

Central Air	Window units	Open Windows	None
↑*Roof-top Units Hallways/common space*	↑*Per Residential Unit*		

Are there air distribution ducts present? (Y) N *Each unit's Packaged Terminal Air Conditionier(PTAC)*

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Not all installed in first floor

7. OCCUPANCY

Is basement/lowest level occupied? (Full-time) (Occasionally) Seldom Almost Never

When complete *During building construction*

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	None
1st Floor	Fitness Center, Café, Multi-media Movie and Gaming, Residential Units
2nd Floor	Residential Units
3rd Floor	Residential Units
4th Floor	Residential Units

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / (N)

b. Does the garage have a separate heating unit? Y / N / (NA)

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / (NA) Please specify _____

d. Has the building ever had a fire? Y / (N) When? _____

e. Is a kerosene or unvented gas space heater present? Y / (N) Where? _____

f. Is there a workshop or hobby/craft area? (Y) / N Where & Type? All areas are a "workshop" @ this point

g. Is there smoking in the building? Y / (N) How frequently? _____

h. Have cleaning products been used recently? (Y) / N When & Type? Windex, Simple Green

i. Have cosmetic products been used recently? Y / (N) When & Type? _____

j. Has painting/staining been done in the last 6 months? (Y) / N Where & When? Everywhere

k. Is there new carpet, drapes or other textiles? (Y) / N Where & When? Everywhere

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? Y / (N) If yes, where vented? _____

n. Is there a bathroom exhaust fan? (371 Units) (Y) / N If yes, where vented? Directly outside

o. Is there a clothes dryer? (Y) / N If yes, is it vented outside? (Y) / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? (Y) / N

If yes, please describe: Building Odors: Drywall, Wood, Joint Compound

Do any of the building occupants use solvents at work? (Y) / N

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? Adhesives, Latex, Paints, and Joint Compound

If yes, are their clothes washed at work? Y / (N)

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) (No)
Yes, use dry-cleaning infrequently (monthly or less) Unknown
Yes, work at a dry-cleaning service

Is there a radon and SSDS mitigation system for the building/structure? (Y) / N Date of July 2011

Is the system active or passive? (Active/Passive)

9. WATER AND SEWAGE

Water Supply: (Public Water) Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: (Public Sewer) Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: N/A

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

PLEASE SEE FIGURE FOR THE FLOOR PLANS

First Floor:

PLEASE SEE FIGURE FOR THE FLOOR PLANS

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

PLEASE SEE FIGURE 2 FOR THE OUTDOOR PLOTS

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: PPB RAE

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo Y / N**
	PLEASE SEE TABLE 1 FOR THE PRODUCT INVENTORY					

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Compact Disc

Site Management Plan

Certificate of Completion

Vapor Intrusion Mitigation Measures Construction Completion Report

Vapor Intrusion Investigation Photographs

Site Inspection and Well Repair Photographs

Laboratory Analytical Results

Sub-Slab Vapor, Indoor Air, and Ambient Air Data Usability Summary Reports Groundwater Data Usability Summary Reports

Vapor Intrusion Evaluation Correspondence

Groundwater Monitoring Correspondence