

June 6, 2011

Mr. Douglas MacNeal, P.E.
Division of Environmental Remediation
Remedial Bureau C
625 Broadway, 11th Floor
Albany, New York 12233-7014

RE: Jay and Madison Street Site, Rome, New York Index # DO-0001-9210
FILE: 1118\36670

Dear Mr. MacNeal:

On behalf of National Grid, this letter presents the Work Plan describing the proposed scope of work for additional field efforts to support the Feasibility Study (FS) that is currently underway for the Rome (Jay and Madison Streets) former manufactured gas plant (MGP) site (the Site), located in the City of Rome, Oneida County, New York. The supplemental investigation will be performed under the Administrative Consent Order (ACO) Index Number DO-0001-9210 between Niagara Mohawk Power Corporation (NMPC), now National Grid, and the New York State Department of Environmental Conservation (NYSDEC), dated December 7, 1992.

This letter Work Plan has been divided into the following sections:

- Introduction
- Project Background
- Objectives
- Investigation Plan
- Quality Assurance (QA)/Quality Control (QC)
- Health and Safety
- Access Agreements
- Investigation Derived Waste Characterization and Disposal
- Reporting
- Project Schedule

INTRODUCTION

A Site Location Map is included as **Figure 1**. The scope of this supplemental investigation includes the collection of additional site-specific data to assist in the evaluation of remedial technologies during the Feasibility Study (FS).

The supplemental investigation will include the following five tasks:

- Task 1: Groundwater sampling, analysis, and product monitoring
- Task 2: Soil sampling and geotechnical testing
- Task 3: Supplemental delineation of soil impacted by MGP material.
- Task 4: Field inspection of on-site 8-inch sanitary sewer using closed-circuit television (CCTV)

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- Task 5: Field location of subsurface structures using geophysical survey techniques

PROJECT BACKGROUND

A Preliminary Site Assessment and Interim Remedial Measures (PSA/IRM) Study and a Remedial Investigation (RI) were performed at the Site between February 1998 and October 2010. A FS is currently underway, to address impacted soil and groundwater on the Site.

Preliminary technologies and process options being considered for the Site remedy include containment (hydraulic control), collection (product recovery), *in situ* treatment (*in situ* soil stabilization), and source removal. Data collected during this supplemental investigation will be utilized in conjunction with information presented in the RI to evaluate remedial technologies as part of the FS.

OBJECTIVES

The objectives of the supplemental investigation will be to collect sufficient data for the purposes of evaluating remedial technologies and developing potential remedial alternatives. The objective of each supplemental investigation task is detailed below.

Task 1: Groundwater sampling, analysis, and product monitoring

The objective of Task 1 is to collect additional groundwater samples and monitor the presence of non-aqueous phase liquid (NAPL) at selected on-site groundwater monitoring wells. Groundwater samples will be collected from four monitoring wells; MW-12, MW-05, MW-07S, and MW-08S. Groundwater monitoring wells MW-12 and MW-05 were selected to provide a current set of information pertaining to groundwater quality near the sanitary sewer line, while groundwater monitoring wells MW-07S and MW-08S were selected to evaluate the increase in volatile organic compound (VOC) concentrations observed in 2007 and 2008, as discussed in the RI Report. This additional data will be used to evaluate the distribution of Site constituents of concern (specifically benzene, toluene, ethylbenzene, xylene (BTEX) and chlorinated PAHs) for the purposes of the FS.

In addition to the collection of groundwater samples, monitoring well MW-11 and piezometer PIEZ-02 will be gauged for the presence of NAPL. Product monitoring will be conducted to assess whether product continues to accumulate in these locations.

Task 2: Soil Sampling and geotechnical testing

The objective of Task 2 is to evaluate the geotechnical index properties of Site soils. This additional data will be used to assist in the evaluation of *in situ* stabilization as a soil remedial technology.

Task 3: Supplemental delineation of soil impacted by MGP Material

The objective of Task 3 is to further define the extent of impacted soil on the Polka Dot property, proximal to soil borings MW-14 and SB-36. Impacted soil is defined as soil containing coal tar or separate phase NAPL. This information will be used to evaluate remedial options and costs of addressing these soils.

Task 4: Field inspection of on-site 8-inch sanitary sewer using closed-circuit television (CCTV)

The objective of Task 4 is to evaluate the integrity of, and the potential for inflow of groundwater containing site-related constituents into the sanitary sewer line situated within the City of Rome right-of-way along the southwestern boundary of the Eastern Parcel, parallel to Erie Boulevard. This additional data will be used to evaluate groundwater remedial technologies.

Task 5: Field location of subsurface structures using geophysical survey techniques

The objective of the field location of subsurface structures using geophysical survey techniques is to identify subsurface utilities and/or structures on the Eastern Parcel of the Site that may influence the applicability of soil and groundwater remedial technologies to be evaluated during the FS.

INVESTIGATION PLAN

The field investigation procedures and activities will be implemented in accordance with five companion documents previously prepared under the 1992 Order on Consent, specifically for the MGP Site investigations. The documents are listed below:

- *Final Work Plan for the Preliminary Site Assessment/Interim Remedial Measures (PSA/IRM) Study at the Rome (Jay and Madison St.) Site*, Rome, New York; June 1996.
- *Generic Quality Assurance Project Plan (GQAPP) for Site Investigations*, NMPC, June 1996.
- *Generic Field Sampling Plan for Site Investigations at Manufactured Gas Plants (GFSP)*; Prepared for Niagara Mohawk; Foster Wheeler Environmental Corporation; November 2002.
- *Health and Safety Plan (HASP) for PSA/IRM Study for the Former Rome (Jay & Madison) MGP Site*, Rome, New York; June 1996. [Updated in May 2005]
- *Remedial Investigation/Feasibility Study Work Plan, Study at the Rome (Jay and Madison Street) Former MGP Site*, Rome, New York; November 2004.

Task 1: Groundwater sampling, analysis, and product monitoring

Groundwater samples will be collected from four monitoring wells, MW-12, MW-05, MW-07S, and MW-08S. Groundwater monitoring wells MW-12 and MW-05 were selected to provide a current set of information pertaining to groundwater quality near the sanitary sewer line. Groundwater monitoring wells MW-07S and MW-08S were selected to evaluate the increase in VOC concentration observed in 2007 and 2008, as discussed in the RI Report. Monitoring well locations are depicted on **Figure 2**.

Sample collection methods will be consistent with the low flow sampling procedures described in the GFSP. Groundwater samples will be analyzed for VOCs and SVOCs using United States Environmental Protection Agency (USEPA) Methods 8260B and 8270C, respectively. A summary of the samples and associated QA/QC anticipated for the groundwater sampling program is summarized on **Table 1** below.

Table 1: Groundwater Sampling Program Summary

Analysis	No. of Samples	Trip Blank	Field Duplicate	MS	MSD	Total
VOCs	4	2	1	1	1	9
SVOCs	4	--	1	1	1	7

Laboratory analysis of environmental samples will be conducted in accordance with the current NYSDEC Analytical Services Protocol (ASP). The GQAPP presents the analytical methods and quality control objectives to be utilized for the analyses.

Consistent with previously completed efforts, Category B deliverables will be provided and a Data Usability Report (DUSR) will be prepared following review and evaluation of the analytical data. The DUSR will identify data gaps caused by non-compliant or rejected data and indicate corrective actions to be taken.

In addition to the collection of groundwater samples, monitoring well MW-11 and piezometer PIEZ-02, will be monitored for the presence of NAPL using an oil/water interface probe. If present, the NAPL will be removed using a dedicated bailer, placed in a 55-gallon drum, and staged on the Western Parcel for subsequent disposal at an appropriate off-site facility. Monitoring well locations are depicted on **Figure 2**.

Task 2: Soil sampling and geotechnical testing

Two soil borings will be completed proximal to the southwestern boundary of the Eastern Parcel to collect soil samples for geotechnical analysis to assist in the evaluation of *in situ* stabilization as a soil remedial technology in this area. Proposed soil boring locations are depicted on **Figure 2**. Final soil boring locations will be determined in the field based on the Site conditions (*e.g.*, utilities, traffic).

Soil borings will be completed via direct push (*e.g.*, Geoprobe®) sampling methods. Soil samples will be collected continuously from each soil probe using a macro core soil sampling system equipped with disposable PVC liners. The collected samples will be field screened for the presence of VOCs using a photoionization detector (PID), and visually observed for the presence of NAPL and other indicators of contamination (*e.g.*, staining, blebs). The borings will be situated in locations that are anticipated to be non-MGP-impacted materials, based on previous soil borings, and will be completed to a depth of approximately 20 ft below ground surface (bgs). Soil boring logs will be completed for each location. Blow counts will be obtained from previously installed borings located proximal to the proposed soil boring locations for geotechnical consideration.

Soil sampling equipment will be decontaminated with an Alconox® and potable water scrub followed by a potable water rinse. Drilling equipment will be decontaminated prior to initiating work and after the completion of each boring using a high-pressure steam cleaner. A temporary decontamination pad will be established on the Western Parcel for this purpose. Decontamination water will be collected, and containerized for subsequent off-site disposal.

Up to two soil samples will be collected from each boring. Sample collection methods will be consistent with those described in the GFSP. A summary of the geotechnical tests and associated American Society for Testing and Materials (ASTM) standard test methods is summarized on **Table 2** below.

Table 2: Geotechnical Testing Program Summary

Analysis	ASTM Standard Test Method	No. of Samples
Particle size analysis	D422	4
Liquid Limit, Plastic Limit, & Plasticity Index	D4318	4
Moisture content	D2216	4

Task 3: Supplemental delineation of soil impacted by MGP material

Impacted soils were observed within soil borings MW-14 and SB-36 during RI field activities on the Polka Dot Cleaners and Eastern Parcel, respectively. Groundwater monitoring well and soil boring locations are identified on **Figure 2**. Based on analytical data and field observations, impacted soil was identified between 4 and 12 ft bgs within the MW-14 soil boring. Visual evidence of tar was also observed within soil boring SB-36 during the RI field investigation. Impacted soil identified in these borings is likely related.

Up to four additional soil borings will be completed proximal to soil borings MW-14 and SB-36 to better define the horizontal and vertical extent of the impacted soil on the Polka Dot Dry Cleaner Property and Eastern Parcel. If necessary, additional borings will be completed based on field observations at the initial four locations. Soil borings will be completed via direct push (*e.g.*, Geoprobe®) sampling methods, and will be completed in conjunction with the above referenced geotechnical borings to be completed at the Site. Soil samples will be collected continuously from each boring and field screened for the presence of VOCs using a PID, and visually observed for the presence of NAPL and other indicators of contamination (*e.g.*, staining, blebs). The borings will be completed to a depth of approximately 4 ft below the observed staining, if any. Based on the information obtained at MW-14, it is anticipated that the borings will be approximately 20 ft deep. Soil boring logs will be completed for each location.

Soil sampling equipment will be decontaminated with an Alconox and potable water scrub followed by a potable water rinse. Drilling equipment will be decontaminated prior to initiating work and after the completion of each boring using a high-pressure steam cleaner. A temporary decontamination pad will be established on the Western Parcel for this purpose. Decontamination water will be collected and containerized for subsequent off-site disposal.

It is anticipated that up to four soil samples will be collected from borings advanced on the Polka Dot Dry Cleaner Property for subsequent laboratory analysis. Soil samples will be analyzed for VOCs and SVOCs using USEPA Methods 8260B and 8270C, respectively. A summary of the samples and associated QA/QC anticipated for the soil sampling program is summarized on **Table 3** below.

Table 3: Soil Sampling Program Summary

Analysis	No. of Samples	Field Duplicate	MS	MSD	Total
VOCs	4	1	1	1	7
SVOCs	4	1	1	1	7

Task 4: Field inspection of on-site 8-inch sanitary sewer using closed-circuit television (CCTV)

Approximately 260 linear feet of sanitary sewer line (8-inch diameter) traverses the southwestern boundary of the Eastern Parcel, parallel to Erie Boulevard. Given the location of the sanitary sewer line and the direction of groundwater flow to the southwest, the potential exists for the inflow of groundwater and storm water containing site-related constituents to enter the sanitary sewer line. Options for repair, if inflow is identified, could include installation of a new pipe or installation of a cured-in-place liner. The objective of the effort would be to prevent infiltration/inflow of impacted Site groundwater into the sanitary sewer line.

The CCTV rover/crawler will be introduced into the sanitary sewer line via a nearby manhole access point. The CCTV rover/crawler unit will provide visual observation of the interior of the pipe for evaluation of the integrity/condition of the pipe (*e.g.*, pitting, holes, obstructions, damage) and potential infiltration.

Documentation of the inspection will include a color DVD containing a continuous video recording, with audio, of the entire length of the pipe inspected, and an inspection log. The inspection log will include the following:

- Direction of camera travel and flow direction
- Location and angular orientation of notable deficiencies, including, but not limited to joints, crack, breaks, collapsed pipe, silt deposits, and inflow.

Task 5: Field location of subsurface structures using geophysical survey techniques

The survey will be conducted in two phases. The first phase will include an electromagnetic survey of the southern portion of the Eastern Parcel [*i.e.*, between the front of the on-site Burger King restaurant and Erie Boulevard (see **Figure 2**)], using a Geonics EM-61 magnetometer, capable of identifying ferrous anomalies to a depth of up to approximately 3 meters (9 ft). Anomalies identified using the EM-61 instrumentation will be evaluated, and areas that exhibit a dense magnetic response and/or are not able to be clearly interpreted will then be surveyed in the second phase of the investigation using ground penetrating radar (Mala Easy Locator with a 350mHz Antenna). Additionally, areas that were previously identified via historic maps or Site borings and test pits as containing non-ferrous utilities/structures (*e.g.*, non-reinforced concrete, wood pipes, clay pipes) will also be surveyed using GPR. The ground penetrating radar survey can provide more detail for interpreting subsurface utilities/structures where there are multiple objects and/or debris that causes interference on a magnetometer survey. If required, based on the results of the electromagnetic survey, the full area surveyed via EM-61 may be surveyed with GPR. This will be determined based upon the findings of the first phase of the survey.

QUALITY ASSURANCE (QA)/QUALITY CONTROL (QC)

Site-specific QA/QC requirements will be implemented in accordance with the GQAPP for Site investigations (NMPC, June 1996). The GQAPP was prepared under the 1992 Order on Consent for MGP Site investigations.

HEALTH AND SAFETY

Health and safety procedures will be performed in accordance with the HASP for PSA/IRM Study for the Former Rome (Jay & Madison Streets) MGP Site (June 1996). A Job Safety Analysis (JSA) will be completed prior to the initiation of tasks that are not included in, or otherwise defined by the HASP. Copies of the HASP and JSA (if warranted) will be maintained on-site with each field crew performing the work. Site perimeter monitoring, in accordance with the HASP, will be performed concurrent with subsurface investigation activities, and will include real-time air monitoring using a PID and a Dusttrak™ dust monitor (or similar).

ACCESS AGREEMENTS

Access agreements will be established with the City of Rome and Eastern Parcel and Polka Dot Cleaners property owners prior to the initiation of the proposed Site work.

INVESTIGATION DERIVED WASTE CHARACTERIZATION AND DISPOSAL

IDW will be handled in accordance with Section 3 of the NMPC GFSP. Water generated during decontamination and sampling activities will be placed in a polyethylene tank and stored in a secured area (*i.e.*, inside fenced areas) on the Western Parcel for subsequent characterization and disposal. Similarly, the soil generated during soil boring and sampling activities will be placed in 55-gallon drums staged on the Western Parcel for subsequent characterization and off-site disposal.

REPORTING

The investigation results, including validated analytical data, will be presented as appendix/appendices to the FS Report.

PROJECT SCHEDULE

The preliminary schedule for the supplemental investigation activities proposed herein is as follows:

Task	Anticipated Start Date	Anticipated Completion Date
Submittal of Draft Work Plan to NYSDEC	June 6, 2011	
NYSDEC Review of Draft Work Plan	June 7, 2011	July 7, 2011
Incorporation of Comments/Submittal of Final Work Plan	July 7, 2011	July 22, 2011
NYSDEC Approval of Work Plan	July 30, 2011	
Implementation Work Plan	Dependent on Execution of Access Agreement with Carrols Corp (4-week duration for investigation)	
Receipt / QA/QC of Analytical Data	6 weeks following initiation of field program	
Report Preparation and Submittal	2 Weeks following receipt of analytical data	

Please contact our office should you have any questions or comments.

Very truly yours,
O'BRIEN & GERE ENGINEERS, INC.

A handwritten signature in black ink, appearing to read "Deborah Y. Wright". The signature is written in a cursive style with a large initial 'D'.

Deborah Y. Wright, C.P.G.
Senior Managing Hydrogeologist

cc: Steven Anagnost – O'Brien & Gere
Steven Stucker – National Grid
Greg Rys - NYSDOH (e-mail)
Deborah Wright – O'Brien & Gere

REFERENCES

- Foster Wheeler Environmental Corporation, Prepared for Niagara Mohawk. 2002, *Generic Field Sampling Plan for Site Investigations at Manufactured Gas Plants (GFSP)*. November 2002.
- New York State Department of Environmental Conservation. 1992. Administrative Order on Consent (Index Number DO-0001-9210). December 7, 1992.
- New York State Department of Environmental Conservation. Division of Environmental Remediation. 1994. *Technical and Administrative Guidance Memorandum #4046 (TAGM 4046), Determination of Soil Cleanup Objectives and Cleanup Levels*. Albany, New York. January 1994.
- Niagara Mohawk. 1996. *Final Work Plan for the Preliminary Site Assessment/Interim Remedial Measures (PSA/IRM) Study at the Rome (Jay and Madison St.) Site, City of Rome, New York*. June 1996.
- Niagara Mohawk. 1996. *Generic Quality Assurance Project Plan (GQAPP) for Site Investigations*. June 1996.
- Niagara Mohawk. 2000. *Addendum to Final Work Plan for the Preliminary Site Assessment/Interim Remedial Measures (PSA/IRM) Study at the Rome (Jay and Madison Streets) Site, City of Rome, New York*. April 2000.
- O'Brien & Gere Engineers, Inc., 1996, 2005. *Health and Safety Plan (HASP) for PSA/IRM Study for the Former Rome (Jay & Madison) MGP Site, Rome, New York*. June 1996. [Updated in May 2005].
- O'Brien & Gere Engineers, Inc. 2004. *Remedial Investigation/Feasibility Study Work Plan, Study at the Rome (Jay and Madison Street) Former MGP Site, Rome, New York*. November 2004.

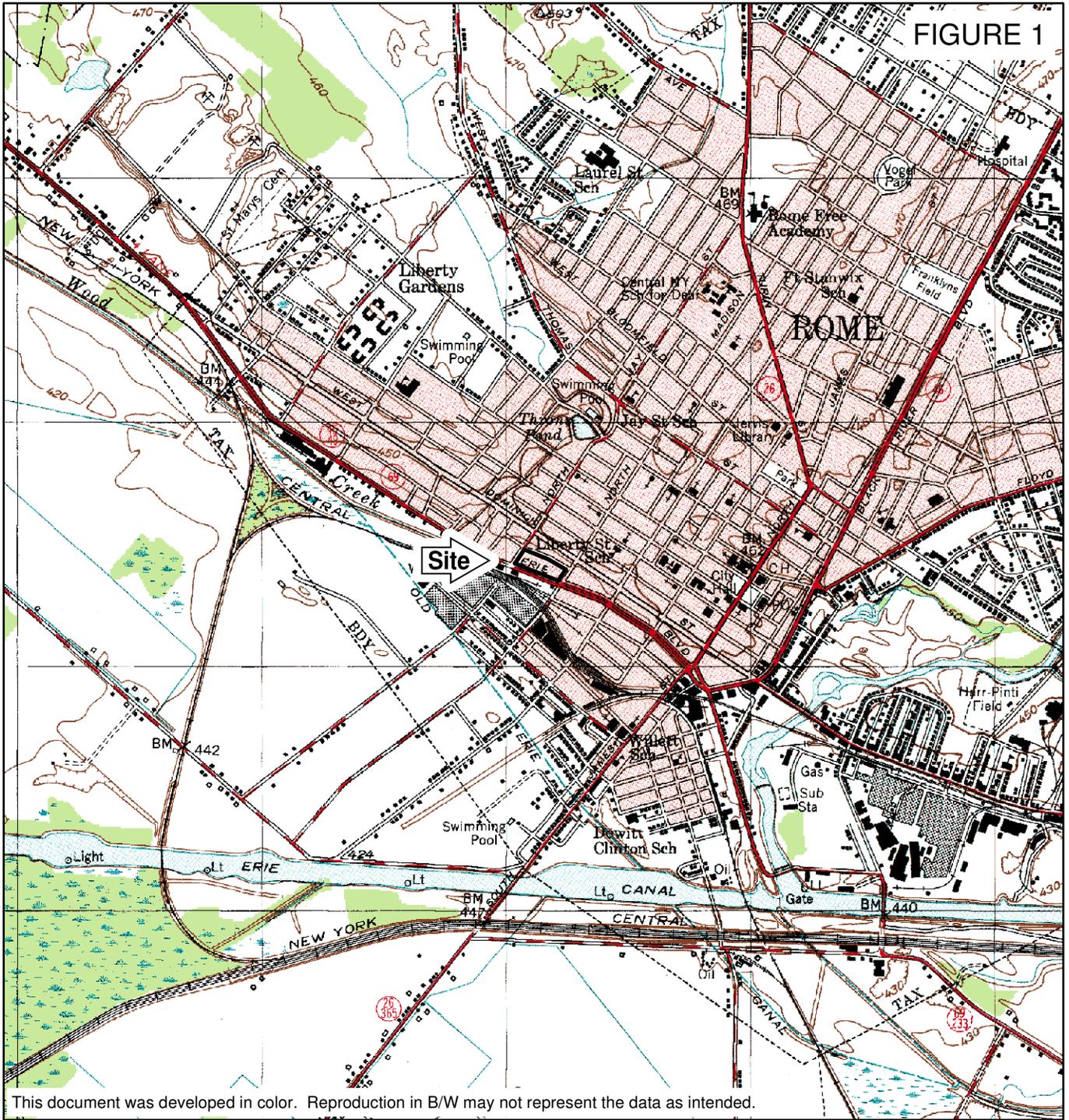
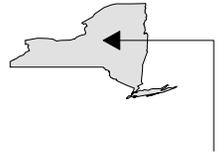


FIGURE 1

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ADAPTED FROM: ROME, NEW YORK USGS QUADRANGLE

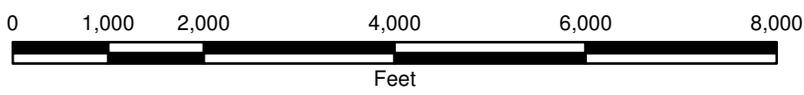
NATIONAL GRID
 ROME SITE
 (JAY & MADISON STREET)
 ONEIDA COUNTY, NEW YORK



MAP LOCATION



SITE LOCATION



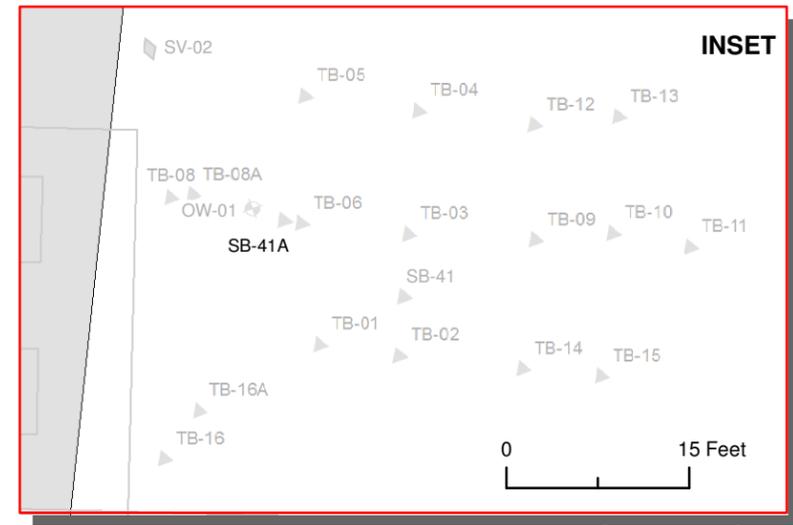
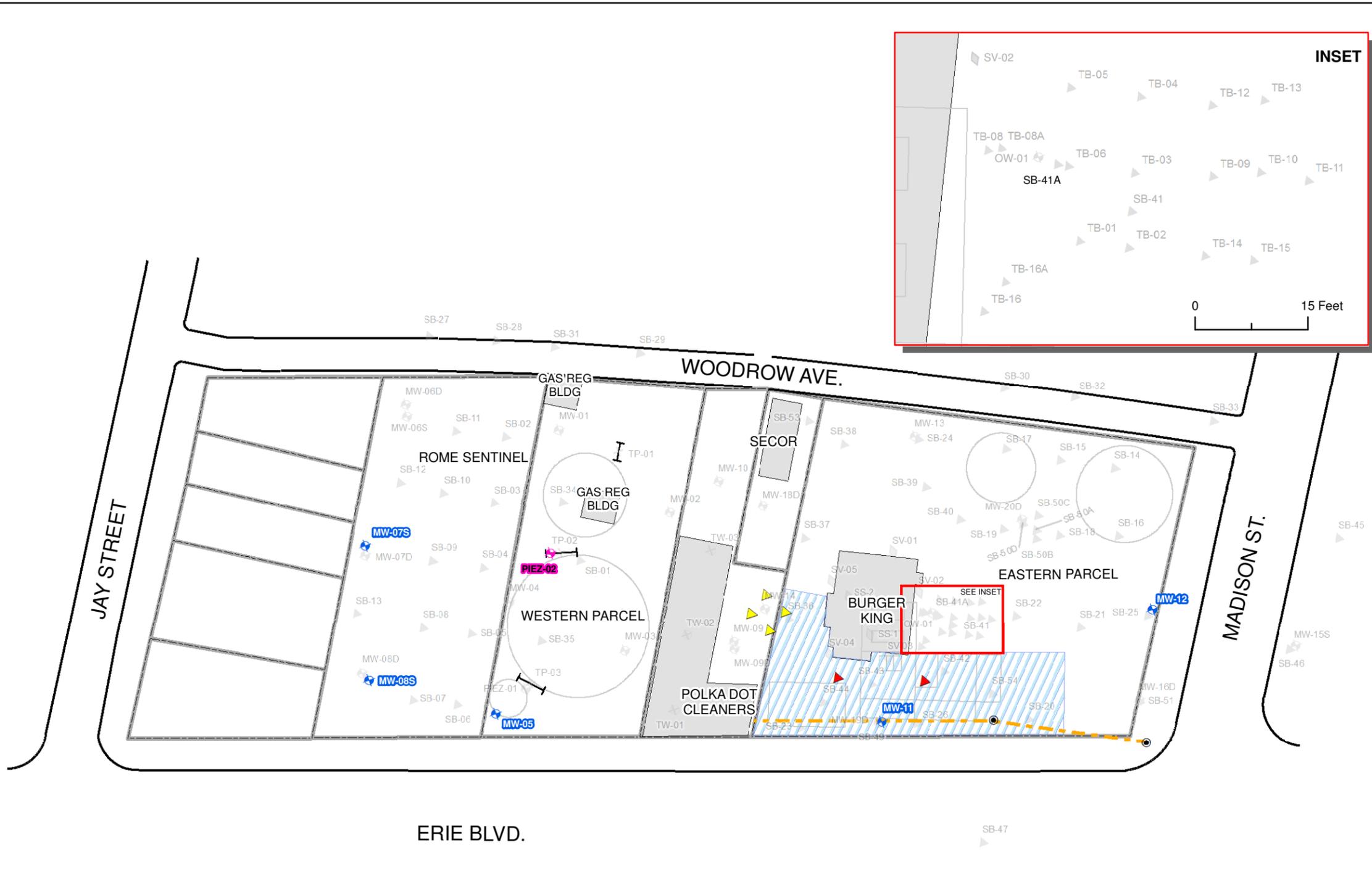


FIGURE 2

LEGEND

PROPOSED GROUNDWATER SAMPLING / PRODUCT MONITORING LOCATIONS

- MONITORING WELL
- PIEZOMETER

PROPOSED BORING LOCATIONS

- GEOTECHNICAL SOIL BORING
- MGP-RELATED IMPACT DELINEATION SOIL BORING

PROPOSED CCTV LOCATIONS

- SANITARY SEWER MANHOLE
- 8-INCH SANITARY SEWER

PROPOSED GEOPHYSICAL SURVEY LOCATION

- PROPOSED GEOPHYSICAL SURVEY LOCATION

LOCATION TYPE

- TAR BORING
- TB - # MONITORING WELL
- MW - # MONITORING WELL
- OW - # OBSERVATION WELL
- PIEZ - # PIEZOMETER
- TW - # TEMPORARY WELL
- SB - # SOIL BORING
- SS - # SUB SLAB
- SV - # SOIL VAPOR
- TP - # TEST PIT
- FORMER STRUCTURES
- PROPERTY LINE

NATIONAL GRID
ROME SITE
(JAY & MADISON STREET)
ONEIDA COUNTY, NEW YORK

INVESTIGATION AND SAMPLING PLAN



MAY 2011
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NOTE: Locations of 8-inch sanitary sewer line and manholes are approximate. Proposed soil boring locations are approximate and may be adjusted based on field conditions encountered. This document was developed in color. Reproduction in B/W may not represent the data as intended.