

July 25, 2011

Mr. Henry Willems
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Subject: Pre-Design Investigation Work Plan – 254 Maspeth Avenue Property
Equity Former Manufactured Gas Plant (MGP) Site
Brooklyn, New York
NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606

Dear Mr. Willems:

National Grid is submitting the following Pre-Design Investigation (PDI) Work Plan for the 254 Maspeth Avenue property located in Brooklyn, New York. The 254 Maspeth Avenue property is located within the footprint of the former Equity Manufactured Gas Plant (MPG) site (Site) which consists of three adjoining properties – 222 Maspeth Avenue, 252 Maspeth Avenue, and 254 Maspeth Avenue. This PDI is being conducted by National Grid pursuant to a Multi-site Order on Consent and administrative settlement with the New York State Department of Environmental Conservation (NYSDEC), Index # A2-0552-0606, and in accordance with applicable guidelines of the NYSDEC and the New York State Department of Health (NYSDOH). The PDI activities are scheduled for summer 2011 and will provide additional information needed for design of the Interim Remedial Measure (IRM) and proposed redevelopment construction activities for the 254 Maspeth Avenue property.

Background

Site History and Description

The Site was operated as a MGP by The Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from about 1903 to no later than 1932. The Site currently houses a waste recycling facility and associated vehicle and equipment storage, with primary Site activities occurring at the 222 Maspeth Avenue parcel currently operated by Cooper Tank Recycling (Cooper Tank). The entire Site is now owned by third parties as shown below.

Owner's Name and Address	Status
222 Maspeth Avenue Inc.	Lot used as an active waste recycling/ waste transfer station. Currently one enclosed building housing offices and one open building (no walls, with roof) housing waste recycling operations are present on the lot. The lot is operated by Cooper Tank Recycling Co.
Giovanna Bordone	Currently one building is located on the lot (approximately 2,500 square feet). Used as a maintenance center for equipment. Currently

Owner's Name and Address	Status
	leased by Cooper Tank Recycling Co.
254 Maspeth Ave, LLC.	Currently vacant land used for occasional storage of empty roll-offs and vehicle parking for Cooper Tank personnel working at 222 Maspeth Avenue.

Site Physical Characteristics

A Remedial Investigation (RI) of the Site is ongoing and is currently being conducted by National Grid. Specifics of the RI scope of work are presented in the NYSDEC-approved RI Work Plan (AECOM, 2009). During the RI, soils within the upper 15 to 20 feet of the 254 Maspeth Avenue were observed to consist of imported fill material made up of silt, sand and gravel mixed with slag, coal, brick, concrete, metal, ash, and clinkers. A layer of meadow mat (peat and clay) is present below the fill layer and acts to separate the underlying native soils from the overlying fill. Shallow groundwater is located at depths of approximately 7 feet below ground surface.

Interim Remedial Measures

The current owner of 254 Maspeth Avenue, Cooper Tank, is in the process of obtaining a NYSDEC Part 360 Permit for operating a recycling facility. This permit, which will include expansion of the current facility into the 252 and 254 Maspeth Avenue properties, requires construction of a minimum 8-inch thick concrete pad across the entire surface of the Site, a stormwater collection system, and a 30-foot high wall along the perimeter of the Site. These activities are expected to be invasive and could encounter residual MGP waste observed during the ongoing RI. As a result, National Grid and the NYSDEC have agreed that an Interim Remedial Action (IRM) be conducted on the 254 Maspeth Avenue property consisting of removal of visually tar saturated soils above the water table.

Summary of Impacts Requiring Further Delineation and/or Investigation for Design Components

Several environmental investigations were performed at the Site and indicate that MGP-related compounds are present in soil and groundwater on the Site. A summary of visual impacts and analytical soil data with PAH exceedances within the top 7 feet of the 254 Maspeth Avenue property is shown on Figure 1. Based on this data, the approximate extent of the area containing Non Aqueous Phase Liquid (NAPL)/tar is limited to soils around the SB-04, SB-12, and TP-02 locations and will be largely encompassed by the proposed IRM excavation area. However, there may be areas that require additional delineation beyond the proposed IRM excavation area or along the proposed perimeter wall footprint where tar/NAPL saturated soils maybe present. These other areas, if any, will be addressed during this PDI as discussed below.

Pre-Design Investigation

A PDI will be conducted to gather the remaining information needed to ensure a safe and effective design of the IRM and facilitate its implementation. The PDI will provide design data for excavation and address potential data gaps along the proposed perimeter wall footprint. In addition, the PDI will include soil pre-characterization for disposal. The objectives of the PDI for the 254 Maspeth Avenue property are listed below:

- delineate the horizontal extent of the visually contaminated soils located around SB-4, TP-2, and SB-12;
- confirm the vertical extent of the visually contaminated soils to be removed;
- investigate the unsaturated soils located within the footprint of the proposed perimeter wall; and
- pre-characterize soil for disposal options

The following tasks will be performed to provide data to meet the PDI objectives:

- Property access agreement
- Utility clearance
- Mobilization
- Test pit excavation
- Investigation derived waste management
- Community air monitoring
- Site survey

These tasks are detailed in the scope of work presented in the subsequent subsections.

Property Access Agreements

National Grid will obtain access agreements where additional investigation is required to delineate the extent of impacts to be remediated and to provide design data as necessary. Copies of access agreements will be kept onsite during the performance of the field investigations to ensure compliance with requirements.

Utility Clearance

A code 753 mark-out will be completed to identify subsurface utilities on 254 Maspeth Avenue property prior to intrusive activities. A spotter will be present at all times to provide utility lookout at each test pit location. Proposed sampling locations may be shifted to avoid subsurface and overhead utilities as appropriate.

Mobilization

Following procurement of appropriate agreements and permits, AECOM will mobilize to the 254 Maspeth Avenue property and set up a decontamination area, drum storage area, and heavy equipment laydown area for the PDI activities. This area will be placed within 254 Maspeth Avenue property in a centrally located area. AECOM will coordinate field activities with Cooper Tank to avoid or minimize disruptions, to the extent practicable.

Test Pit Excavation

Test pits will be excavated at locations presented in Figure 2 to delineate visually impacted soils observed at Remedial Investigation locations SB-4, TP-2, and SB-12 and to investigate the presence and delineate visually impacted soils, if any, along the footprint of the proposed perimeter wall. Table 1 provides a rationale for the test pit investigation.

At least one test pit (TP-2B) will be excavated with a backhoe or excavator to one to two feet into the water table to evaluate the presence and extent of tar observed at TP-2. Two soil samples will be collected from this test pit for soil disposal pre-characterization.

Test Pit TP-04 is proposed as part of the RI Work Plan Addendum. This test pit will be excavated during the PDI activities. Any visual impacts observed in this test pit will be delineated during the PDI activities. Soil analytical samples will be collected from test pit TP-4 as described in the RI Work Plan Addendum and Table 1.

The perimeter test pits (TP-5 through TP-17) will be advanced to the water table at a spacing of 50 feet. Each test pit will be 5 feet wide along the perimeter wall and extend at a minimum 15 feet into the 254 Maspeth Avenue property, from the property perimeter, to account for potential footings of the proposed perimeter wall. These perimeter test pits may extend further into the 254 Maspeth Avenue property based on visual impacts. Once all perimeter test pit locations in Figure 2 have been excavated, additional step out locations will be excavated at 25 foot intervals along the perimeter where visual MGP-residuals are observed in the initially proposed perimeter test pits. Proposed locations for perimeter test pits may be adjusted in the field based on access limitations and/or construction design considerations. One sample will be collected for every 50 feet of visually impacted soils (or approximately every 250 cubic yards of impacted soils [50 feet by 15 feet grid]). Table 2 provides a summary of the waste characterization analytical requirements for thermal treatment facilities that may be used for soil disposal.

The test pits will be logged by a geologist or an engineer recording such data as the presence of fill material or subsurface structures, the nature of each geologic unit encountered, observations regarding moisture content, the results of PID readings, and visual and olfactory observations regarding the presence of hydrocarbon-like residuals. Soils samples will be collected from the bucket of the excavator.

Soil removed during the excavation of the test pit will be temporarily stored on a sheet of plastic for return to the excavation. To the extent possible, clean soil will be segregated from impacted soil. Upon completion of each test pit, impacted soil and debris will be returned to the excavation first, followed by clean soil and any additional clean backfill needed to return the excavation to original grade.

If necessary, odor control foam and plastic sheeting will be used to minimize odors generated during test pitting. In the event that the CAMP or worker protection air monitoring criteria is exceeded, soil handling and excavation activities will be temporarily suspended and additional odor control measures will be evaluated.

Investigation Derived Waste Management

All Investigation Derived Waste (IDW) generated during the PDI will be collected in properly labeled 55-gallon drums and grouped by environmental matrix. Subsequently, the drums will be characterized with laboratory analyses and properly disposed in accordance with management of IDW procedures outlined in Field Sampling and Analytical Plan (FSAP) provided in the RI Work Plan (AECOM, 2009).

The majority of the soil removed during the excavation of test pits will be returned to the test pit. All additional residuals generated during the test pits (chemical treated soils and/or water) will be containerized and shipped to a pre-approved off-site disposal facility.

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Community Air Monitoring

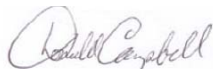
A Community Air Monitoring Plan (CAMP) has been developed as part of the NYSDEC-approved 2009 RI Work Plan, and it will be followed during all invasive fieldwork (test pitting). Community air monitoring requires real-time monitoring for VOCs, particulates (*i.e.*, dust), and MGP-related odors at the downwind perimeter of each designated work area when certain activities are in progress at the Site. The community air monitoring is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (*i.e.*, off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigation work activities. The CAMP provided as part of the RI Work Plan (AECOM, 2009) specifies action levels which require increased monitoring corrective actions to abate emissions and/or work shutdown for the PDI.

Site Survey

Following completion of the PDI, all sampling and investigation locations will be surveyed for elevation and location using a licensed New York surveyor. In addition, the survey will include other property elements such as property boundaries, topography, existing scales, and any visible storm drain features. This information will be merged with existing base map information to allow preparation of a revised base map for the Site.

If you have any questions, comments, or require any additional information, please do not hesitate to contact me (718) 963-5453 or via electronic mail (e-mail) at donald.campbell@us.ngrid.com.

Yours sincerely,



Donald Campbell
Project Manager

Cc: A. Demarco, NYSDOH (Electronic Copy Only)
T. Bell, National Grid (Electronic Copy Only)
A. Hecht, National Grid (Electronic Copy Only)
J. Giordano, National Grid (Electronic Copy Only)
P. Cox, AECOM (Electronic Copy Only)
S. Pandya, AECOM (Electronic Copy Only)

Tables

**Table 1
Summary of Test Pit Locations, Rationale, and Analyses
Pre-Design Investigation
Former Equity Gas Holder Site
Brooklyn, New York**

Test Pit ID	Test Pit Location	Test Pit Location Rationale	Completion Depth (ft bgs)	Sample Depth Interval	Number of Samples	Soil Sample Proposed Laboratory Analysis
TP-2B	Adjacent to SB-04 and TP-02	Delineate potential visual impacts above the water table along the northern portion of TP-02 and north and west of SB-04.	7 or Water Table whichever is deeper	Most Visually Impacted	2	Waste Characterization; See Table 2
TP-4	Footprint of former Tar Separator/Tar Well	Delineate potential visual impacts above the water table around former MGP structures. This test pit is proposed as part of the RI Work Plan Addendum but will be excavated during the PDI activities.	1 ft below the structure bottom if possible	Zone of Worst Case Impacts and First Clean or Bottom	2	VOCs, SVOCs, TAL Metals, Free CN, and Waste Characterization; See Table 2
TP-5 to TP-8*	Footprint of proposed Perimeter Wall	Investigate footprint of proposed perimeter wall for visual impacts	7 or Water Table whichever is deeper	As Per Table 2	One (1) Sample from each Visually Impacted Test Pit But No More Than One (1) Sample Every 50 ft by 15 Ft Grid	Waste Characterization; See Table 2
TP-9	Footprint of proposed Perimeter Wall	Combine with TP-4 to investigate footprint of proposed perimeter wall for visual impacts and Delineate potential visual impacts around SB-12	7 or Water Table whichever is deeper	As Per Table 2	One (1) Sample if Impacted	Waste Characterization; See Table 2
TP-10 to TP-17*	Footprint of proposed Perimeter Wall	Investigate footprint of proposed perimeter wall for visual impacts	7 or Water Table whichever is deeper	As Per Table 2	One (1) Sample from each Visually Impacted Test Pit But No More Than One (1) Sample Every 50 ft by 15 Ft Grid	Waste Characterization; See Table 2
Step-Out Test Pits*	Footprint of proposed Perimeter Wall	Delineation Test Pits Excavated along the Proposed Perimeter Wall. These Test Pits will be excavated 25 ft between from Any Visually Impacted Perimeter Test Pit and Clean Perimeter Test Pit.	7 or Water Table whichever is deeper	As Per Table 2	None	

Notes:

ft bgs - feet below ground surface.

Each Perimeter Test Pit proposed in Figure 2 constitutes a 50 ft by 15 ft grid e.g., TP-2 constitutes a 50 ft by 15 ft grid from TP-1 to TP-2 along the perimeter wall and TP-3 constitutes a 50 ft by 15 ft grid from TP-2 to TP-3.

* Only one waste characterization sample should be collected for every 50 ft by 15 ft grid that is visually impacted. For example if TP-1 is visually clean, TP-2 and TP-3 are visually impacted, and TP-4 is visually clean, One (1) sample will be collected from TP-2 and TP-3.

Table 2
Summary of Pre-characterization Disposal Facility Analytical Sampling Requirements
Pre-Design Investigation Work Plan
Former Equity MGP Site
Brooklyn, New York

Contaminant	EPA Method	Frequency	ESMI NJ ¹	CESP	Samples Required
Total VOCs	8260B	500 CY	X		76
Total PAHs	8270C	500 CY	X		76
Total PCBs	8082	500 CY	X	X	76
Total Metals	3050/6010B	500CY	X ²	X ³	76
TPH	8015M DRO to C-44	250 CY	X	X ⁴	152
TOX	9020B (9023)	250 CY		X ⁴	152
Ignitability	1010 (7.1.2)	1000 CY		X	38
Corrosivity	9040/9045	1000 CY		X	38
Reactivity (Cyanides & Sulfides)	7.3.3.2 & 7.3.4.1	1000 CY		X	38
Sulfur	ASTM D3176/4239D	1000 CY	X		38
TCLP Metals	1311/6010B	1000 CY		X ⁵	38
TCLP Hg	1311/7471	1000 CY		X ⁵	38
TCLP Herbicides	1311/8151A	1000 CY		X	38
TCLP Pesticides	1311/8081A	1000 CY		X	38
TCLP VOC	1311/8260	1000 CY		X	38
TCLP SVOC	1311/8270	1000 CY		X	38

Notes:

X signifies that the analysis is required

All TCLP levels are represented in mg/L

All totals are in mg/kg

(1) Composite of five samples (100 CY ea). Samples must be repeated for every 500 CY or fraction thereof.

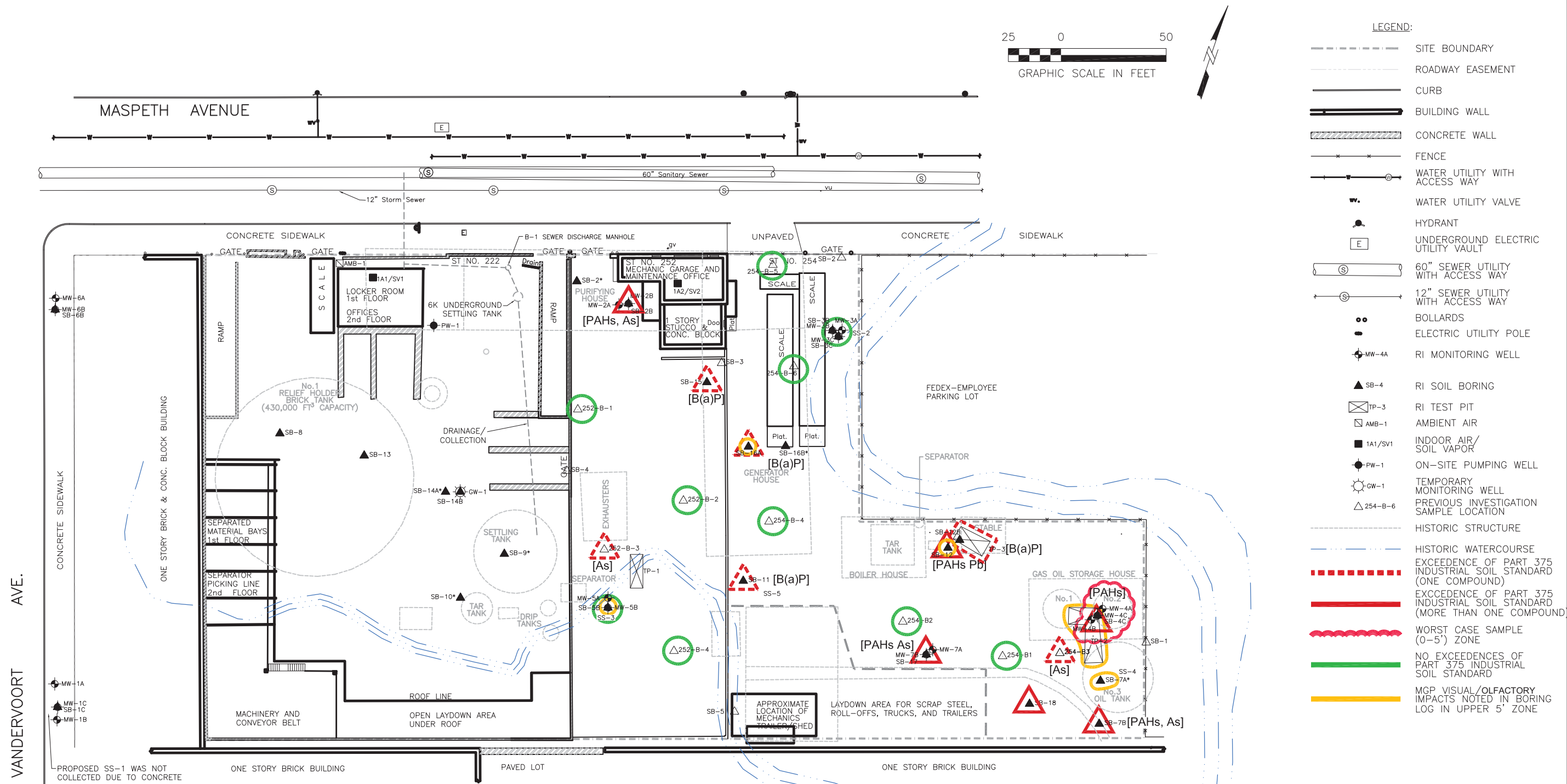
(2) Includes As, Be, Cd, Cr, Ni, Pb, Hg

(3) Includes As, Ba, Cd, Cr+6, Cu, Hg, Ni, Pb, Se, Ag, Zn

(4) One sample for initial 60 CY and second 60 CY, then every 250 CY thereafter.

(5) TCLP analysis required when total concentrations are 20x the RCRA limit [40 CRF 281 Subpart C].

Figures

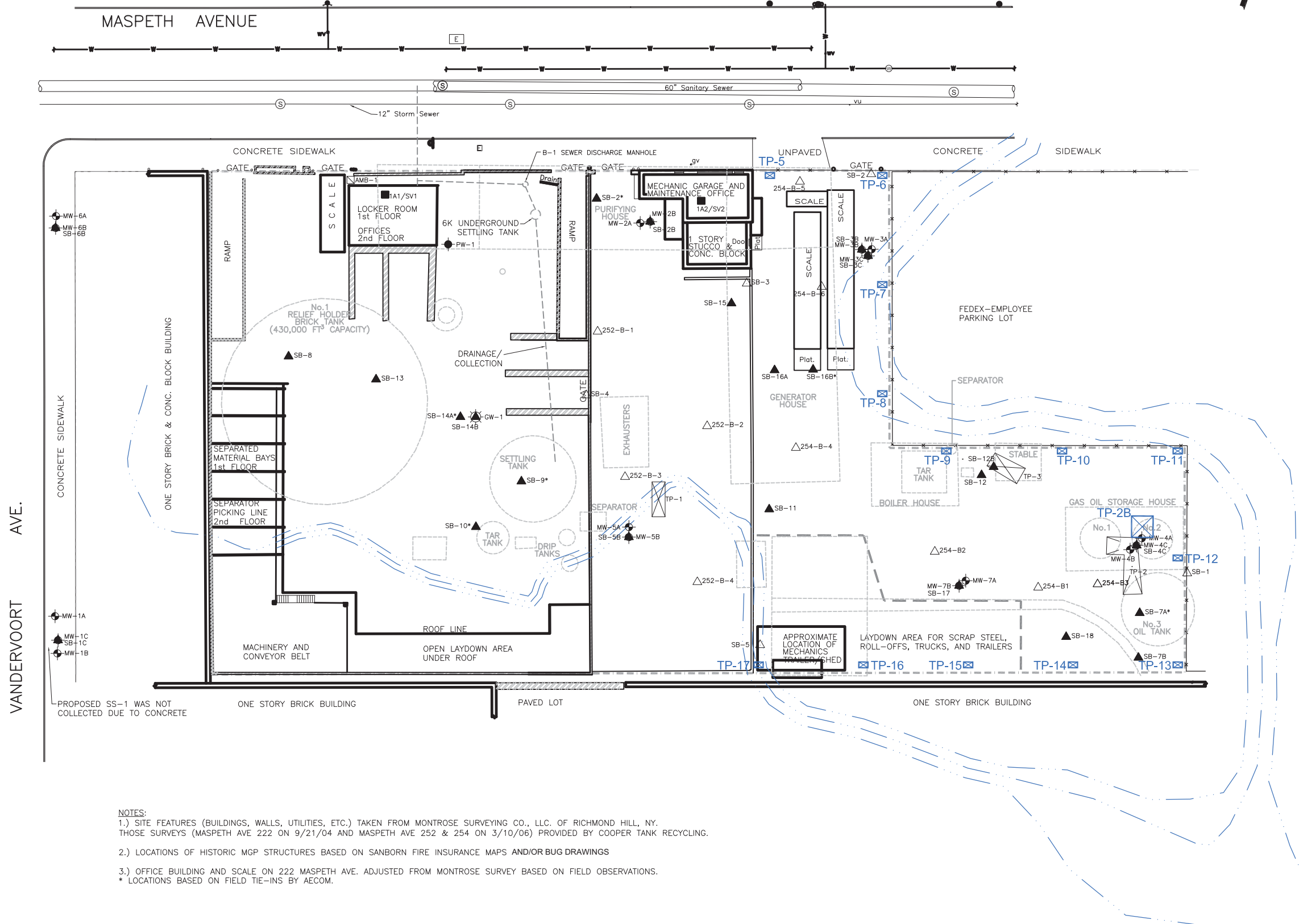
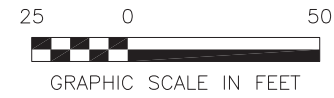


NOTES:
 1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN MONTRSE FROM SURVEYING CO., LLC. OF RICHMOND HILL, NY. THOSE SURVEYS (MASPETH AVE 222 ON 9/21/04 AND MASPETH AVE 252 & 254 ON 3/10/06) PROVIDED BY COOPER TANK RECYCLING.
 2.) LOCATIONS OF HISTORIC MGP STRUCTURES BASED ON SANBORN FIRE INSURANCE MAPS AND/OR BUG DRAWINGS
 3.) OFFICE BUILDING AND SCALE ON 222 MASPETH AVE. ADJUSTED FROM MONTRSE SURVEY BASED ON FIELD OBSERVATIONS.
 * LOCATIONS BASED ON FIELD TIE-INS BY AECOM.



NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY PRE-DESIGN INVESTIGATION 60137362-110		SITE LAYOUT AND INVESTIGATION LOCATIONS WITH SOIL IMPACT SUMMARY (0-7' BGS) 252 & 254 MASPETH AVE.
DATE: 07/11/2011	DRWN: BcV/WMA	FIGURE - 1

File: J:\Rem_Eng\Project Files\National Grid\1765-076 Equity Former MGP 11.0 CADD\6-2011\60137362-400-C06.dwg Layout: SITE (2) User: vershomb Plotted: Jul 21, 2011 - 12:55pm



- NOTES:**
- 1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN FROM MONTRÖSE SURVEYING CO., LLC. OF RICHMOND HILL, NY. THOSE SURVEYS (MASPETH AVE 222 ON 9/21/04 AND MASPETH AVE 252 & 254 ON 3/10/06) PROVIDED BY COOPER TANK RECYCLING.
 - 2.) LOCATIONS OF HISTORIC MGP STRUCTURES BASED ON SANBORN FIRE INSURANCE MAPS.
 - 3.) LOCATION OF HISTORIC INVESTIGATION LOCATIONS BASED ON EEA INC., 2004 REPORT (254 MASPETH AVE) AND GANNETT FLEMING 2005 REPORT (252 MASPETH AVE).
 - 4.) SITE CHARACTERIZATION INVESTIGATION LOCATIONS SURVEYED BY GEOD CONSULTING ON DECEMBER 11 AND 12, 2009.
 - 5.) OFFICE BUILDING AND SCALE ON 222 MASPETH AVE. ADJUSTED FROM MONTRÖSE SURVEY BASED ON FIELD OBSERVATIONS.
- * LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

- LEGEND:**
- SITE BOUNDARY
 - - - ROADWAY EASEMENT
 - CURB
 - ▬ BUILDING WALL
 - ▨ CONCRETE WALL
 - *— FENCE
 - |— WATER UTILITY WITH ACCESS WAY
 - W. WATER UTILITY VALVE
 - HYDRANT
 - E UNDERGROUND ELECTRIC UTILITY VAULT
 - (S)— 60" SEWER UTILITY WITH ACCESS WAY
 - (S)— 12" SEWER UTILITY WITH ACCESS WAY
 - BOLLARDS
 - ELECTRIC UTILITY POLE
 - MW-4A RI MONITORING WELL
 - ▲ SB-4 RI SOIL BORING
 - ⊠ TP-3 RI TEST PIT
 - ⊠ AMB-1 AMBIENT AIR
 - 1A1/SV1 INDOOR AIR/SOIL VAPOR
 - PW-1 ON-SITE PUMPING WELL
 - ☼ GW-1 TEMPORARY MONITORING WELL
 - △ 254-B-6 PREVIOUS INVESTIGATION SAMPLE LOCATION
 - - - HISTORIC STRUCTURE
 - - - HISTORIC WATERCOURSE
 - - - CURRENT FEATURE
 - ⊠ TP-15 PROPOSED TEST PIT

- NOTES:**
- 1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN FROM MONTRÖSE SURVEYING CO., LLC. OF RICHMOND HILL, NY. THOSE SURVEYS (MASPETH AVE 222 ON 9/21/04 AND MASPETH AVE 252 & 254 ON 3/10/06) PROVIDED BY COOPER TANK RECYCLING.
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- * LOCATIONS BASED ON FIELD TIE-INS BY AECOM.



NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY PRE-DESIGN INVESTIGATION 60137362-110		PROPOSED PRE-DESIGN INVESTIGATION LOCATIONS 252 & 254 MASPETH AVE.
DATE: 07/21/2011	DRWN: BcV/WMA	FIGURE - 2