EAST 138TH STREET WORKS FORMER MGP SITE

BRONX COUNTY

BRONX, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 203108

Prepared for:

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31-01 20th Avenue – Building 136

Astoria, New York 11105

Prepared by:

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Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

APRIL 2023

CERTIFICATION STATEMENT

I, Amit Haryani, certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Amit Haryani, PE

4/20/2023 DATE

TABLE OF CONTENTS

EAST 138TH STREET WORKS FORMER MGP SITE
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SITE MANAGEMENT PLAN

Table of Contents

TABLES

FIGURES

APPENDICES

LIST OF ACRONYMS

amsl	above mean sea level
AECOM	AECOM USA, Inc.
AS	Air Sparging
ASP	Analytical Services Protocol
Atlas	The Atlas Baby Carriage Company
AWQSGVs	Ambient Water Quality Standards and Guidance Values
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAMP	Community Air Monitoring Plan
CC	coal carbonization
C/D	Construction and Demolition
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cf	cubic feet
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
CO	Certificate of Occupancy
CO_2	Carbon Dioxide
COC	Certificate of Completion
Con Edison	Consolidated Edison Company of New York, Inc.
CP	Commissioner Policy
CWG	carbureted water gas
CVOCs	chlorinated volatile organic compounds
DCE	dichloroethene
DD	Decision Document
DER	Division of Environmental Remediation
DNAPL	dense non-aqueous phase liquid
EC	Engineering Control
ECL	Environmental Conservation Law
EE	Environmental Easement
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
FID	flame ionization detector
ft/ft	foot per foot
GC	gas chromatograph
GHG	Green House Gas
GIS	Geographic Information System
GWE&T	Groundwater Extraction and Treatment

IC	Institutional Control
LNAPL	Light non-aqueous phase liquid
MAH	monocyclic aromatic hydrocarbon
MGP	manufactured gas plant
META	META Environmental, Inc.
µg/L	micrograms per liter
MOSF	Major Oil Storage Facility
MS	mass spectrometer
MTBE	methyl tert-butyl ether
NAPL	Non-aqueous phase liquid
NYC	New York City
NYC ACRIS	New York City Automated City Register Information System
NYC OASIS	New York City Open Accessible Space Information System
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PCE	perchloroethylene
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SC	Site Characterization
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
SVOC	semi-volatile organic compound

TAL	Target Analyte List
TCE	tetrachloroethylene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
TOGS	Technical and Operational Guidance Series
URS	URS Corporation -New York
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VC	vinyl chloride
VOC	volatile organic compound

EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification: 203108 – East 138th Street Works Former MGP Site, Bronx, New York [Block 2590 Lot 51, Block 2591 Lot 46, Block 2592 Lot 35, Block 2597 Lot 1, Block 2598 Lot 1, Block 2598, Lot 46, Block 2598 Lot 62, and Block 2598, Lot 66 on the Bronx Tax Map (see Figure 1-2). Block 2590/Lot 51 and Block 2598/Lot 1 are the only parcels to which obligations in the Environmental Easements and Site Management Plan apply]

Institutional Controls:	1. The properties may be used for commercial and industrial uses;	
	2a. Groundwater Use is Prohibited 2b. Property Use is Commercial and Industrial Uses 2c. Environmental Easement [Block 2590/Lot 51 and Block 2598/Lot 1]	
	3. All ECs must be inspected at a frequency and in a manner defined in this SMP as summarized below.	
Engineering Controls:	1. Site Cover 2. Excavation Work Plan 3. Site Inspection 4. Groundwater Monitoring 5. Monitoring Well Maintenance 6. Non-Aqueous Phase Liquid (NAPL) Monitoring	
Inspection:		Frequency

1. Site Inspection for Property Use	Annually
Monitoring:	
1. Groundwater Monitoring Wells MW-01, MW-02, MW-03, MW-05, MW-06, MWMF-04, MWMF-05, and MWMF-08	Annually
2. NAPL Monitoring Groundwater Monitoring Wells BW-01, BW-02, BW-03 and BW-04	Annually
Maintenance:	
1. Monitoring Wells/Curb Boxes	Annually
Reporting:	
1. Groundwater Monitoring Data	Annually
2. NAPL Monitoring Data	Annually
3. Periodic Review Report	Annually, or as otherwise determined

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the East 138th Street Works Former Manufactured Gas Plant (MGP) Site located in the Bronx, New York (hereinafter referred to as the "Site"). See Figure 1-1. Consolidated Edison Company of New York, Inc. (Con Edison) conducted site investigation activities under Voluntary Cleanup Agreement (VCA) Index No. D2-0003-02-08 with the New York State Department of Environmental Conservation (NYSDEC) dated August 15, 2002. The Site is now governed by NYSDEC Order on Consent and Administrative Settlement Index No.: CO 0-20180516-519, effective July 23, 2018 (NYSDEC, July 2018).

A figure showing the site location and boundaries of this site is provided in Figure 1-2. The boundaries of the portion of the site subject to the Environmental Easements (EEs) are more fully described in the metes and bounds site description that is part of the EEs provided in Appendix A. The Site is comprised of 8 parcels. Block 2598/Lot 46 is currently managed under NYSDEC's Brownfield Cleanup Program (BCP) (BCP Site # 203053-05-12) and a separate EE was filed and authorized by NYSDEC on February 22, 2014 for this parcel (Appendix A).

Some contamination remains at this site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An EE granted to the NYSDEC, and recorded with the Bronx County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the EE is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the EE and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the EE. Failure to properly implement the SMP is a violation of the EE, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law,

6NYCRR Part 375 and the Order on Consent and Administrative Settlement Index No.: CO 0-20180516-519, effective July 23, 2018, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix B of this SMP.

This SMP was prepared by AECOM USA, Inc. (AECOM), on behalf of Con Edison, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the EE for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the EE for the site, the NYSDEC will provide a notice of any approved changes to the SMP and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to Con Edison and the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent and Administrative Settlement Index No.: CO 0-20180516-519, effective July 23, 2018, 6 NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser or new Remedial Party has been provided with a copy of the Order on Consent and Administrative Settlement Index No.: CO 0-20180516-519, effective July 23, 2018, and all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1-1 on the following page includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1-1: Notifications*

Name	Contact Information
Mr. Michael Squire	(518) 402-9662 derweb@dec.ny.gov
NYSDEC Region 2	(718) 482-4900 r2.info@dec.ny.gov
Con Edison	(877) 602-6633

* Note: Notifications are subject to change and will be updated, as necessary.

2.0 SUMMARY OF PREVIOUS REMEDIAL INVESTIGATIONS AND ACTIONS

2.1 Site Location and Description

The site is located in the Bronx, Bronx County, New York and is identified as Block 2590 Lot 51, Block 2591 Lot 46, Block 2592 Lot 35, Block 2597 Lot 1, Block 2598 Lot 1, Block 2598 Lot 46, Block 2598 Lot 62, and Block 2598, Lot 66 on the Bronx Tax Map (see Figure 1-2). The site is an approximately 12-acre area and is bounded by East 141st Street to the north, East 138th Street to the south, the East River to the east, and the New York, New Haven, and Hartford Railroad tracks to the west (see Figure 1-2 – Site Plan). The boundaries of the site are more fully described in Appendix A –EE. The owner(s) of the site parcel(s) at the time of issuance of this SMP is/are:

- Walcott Shoe LLC (Block 2590, Lot 51)
- Empire 850 LLC (Block 2591, Lot 46)
- LEGEIS Realty LLC (Block 2592, Lot 35)
- Sprague Resources, LP (Block 2597, Lot 1)
- 885 East 138th Street L.L.C. (Block 2598, Lot 1)
- BPA North LLC (Block 2598, Lot 46)
- Walnut Realty Associates, LLC (Block 2598, Lot 62)
- ANDA Realty, LLC (Block 2598, Lot 66)

2.2 Physical Setting

2.2.1 Land Use

The Site consists of eight parcels of land now occupied by commercial/industrial businesses, a bulk fuel terminal, dry cleaning facilities, and parking lots. The Site is zoned M3-1, a manufacturing district, designed to accommodate heavy industrial uses. There are a number of businesses and commercial/industrial facilities that currently occupy the former MGP site area which are identified in the Manufactured Gas Plant History Report (GEI, 2003).

Land use in the surrounding area is predominantly industrial paper manufacturing, a marble importing facility, steel cutting facilities, the Major Oil Storage Facility (MOSF), dry cleaning facilities, and storage warehouses. The nearest residential area, according to New York City Geographic Information System (GIS) mapping is located near the corner of Locust Avenue and East 141st Street.

2.2.2 Geology

The Site is located near the border between the New England Uplands and the Atlantic Coastal Lowlands physiographic provinces. The overburden is predominantly comprised of miscellaneous fill, glacial till and recent alluvium including clay, silt, sands, gravel, cobbles, and boulders overlying bedrock. Bedrock consists of the Fordham Gneiss, Middle Proterozoic in age, and the Inwood Marble, Early Ordovician to Early Cambrian in age. The overburden is estimated to be between 4 and approximately 46 feet deep and is comprised of predominantly miscellaneous fill, glacial till and tidal marsh deposits.

The Site is located near a northeast trending geologic contact between the Fordham Gneiss and the Inwood Marble (Fisher et al., 1970). The Fordham Gneiss is subdivided into four Members (A through D). Member A consists of predominantly pinkish white to salmon-red and medium gray gneiss. Member B consists predominantly of black and white banded gneiss. Members C and D are largely undivided comprised of schistose-, hornblende-, amphibolite- and quartz gneiss rocks. The Inwood Marble consists predominantly of calcite and dolomitic marble. Based on the geologic mapping of the area, Member B of the Fordham Gneiss and rocks of the Inwood Marble underlie the western portion of the Site. There is reportedly a northeast trending thrust fault that thrust older rocks of the Manhattan Schist over the younger rocks of the Inwood Marble and Fordham Gneiss. This thrust fault is mapped in the area of the western boundary of the Site near the railroad tracks northwest of Rose Feiss Boulevard (Fisher et al., 1970).

Figure 2-1 presents the locations of the monitoring wells and cross sections developed from subsurface information gathered as part of the RI. Cross sections A-A', B-B', C-C', and D-D' are shown on Figures 2-2 through 2-5, respectively. Lithology observed in the soil borings indicated that the site is underlain by a series of unconsolidated sediments overlying bedrock. The overburden includes an upper fill layer, overlying natural alluvial sediments interbedded with sand, silt and sand, gravel, clayey silt, clay, and silty peat and peat. The fill unit ranges from approximately 5 to 13-foot continuous layer comprised of sand, gravel, rock and brick fragments, and other anthropogenic materials. The fill layer appears to be thickest beneath the warehouse buildings located at Block 2598, Lot 46 and Block 2598, Lot 1. In the area immediately surrounding and within the former gas holder #4 on Block 2598, Lot 46, fill material extends to a maximum depth of 46 feet. The fill materials on Block 2598, Lot 1 around the former gas holders extends to approximately 21 feet below ground surface (bgs).

Throughout the site area, an alluvial sand unit represented by stratified sands of varying textures containing some to no fines is present to the top of bedrock. Three distinct layers were observed within the sand unit at Block 2598, Lot 46. In areas outside the footprint of former gas holder #4, a layer approximately

2 to 16 feet thick of silt, sand and gravel, continuously underlies the fill layer. A clayey silt layer up to 10 feet thick, that includes peat and other organic material, is found below the silt, sand and gravel layer over the majority of Block 2598, Lot 46 west of Locust Avenue.

A sand, and silt and sand layer, between zero and 25 feet thick, is present above the top of bedrock in the central portion of Block 2598, Lot 46 (Figure 2-2). A clay wedge, approximately up to 20 feet thick, was found between the silt and peat layer and underlying sand layer west of Rose Feiss Boulevard. Interstratified sands with silt, and clay and silt, up to approximately 25 feet thick were observed along the southern portion of Block 2598, Lot 46.

An estimated top of bedrock elevation contour is provided in Figure 2-6. The bedrock surface elevation was estimated based upon drilling refusal obtained at most boring locations, and confirmed bedrock depths at bedrock monitoring wells BW-01 through BW-04. At several boring locations, the presence of igneous and intrusive rock fragments lodged within the macrocore sampler at refusal depths was noted during the field investigations. The estimated bedrock surface slopes away from the East River, from approximately -10 feet above mean sea level (amsl) near Locust Avenue to approximately -20 to -25 feet amsl near the intersection of Rose Feiss Boulevard and East 140th Street. The bedrock appears to have been excavated to approximately -33 feet amsl in the vicinity of former gas holder #4 and appears to be approximately -10 feet amsl near gas holders #1 through #3.

Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

The primary hydrogeologic unit identified beneath the investigation area is the upper glacial aquifer. The groundwater within the overburden is present in unconfined conditions and is not used for potable purposes. The water table surface was found to be between approximately 3 and 6 feet bgs depending on the well location and time of year that water level gauging was performed. Classification of groundwater at the site is GA, although tidal influence extends inland from the East River to approximately Locust Avenue. Several rounds of groundwater levels were obtained during the RI and measurements are generally consistent between rounds. The water levels measured during the August 2015 synoptic gauging were used to develop the shallow overburden and bedrock groundwater contour maps provided in Figures 2-7 through 2-10. These Figures show groundwater elevations based on water levels measured during both high and low tide.

Based on water levels measured on August 11, 2015 during high tide (Figure 2-7), a groundwater

mound occurs which is centered beneath Block 2598, Lot 46. Groundwater flows radially away from the mound. The groundwater mound is attributable to localized variations in subsurface geology, bedrock topography, and presence of subsurface utilities, based upon information obtained as part of the 295 Locust Avenue RI (URS, 2012). A relatively shallow horizontal hydraulic gradient is apparent east of Locust Avenue.

For the August 12, 2015 water level round during low tide in the shallow overburden (Figure 2-8), there is a relatively steep hydraulic gradient east of Locust Avenue toward the East River. The groundwater mound situated at Block 2598, Lot 46 was also still present, and horizontal hydraulic gradients are somewhat steeper with very similar groundwater flow directions around the mound as compared to Figure 2-7. Based upon water levels obtained, there is tidal influence in the shallow overburden groundwater, and it is most apparent east of Locust Avenue, but does extend further west to a much lesser degree. Since the East River water level elevations were generally lower than most of the water level measurements recorded in the monitoring wells during low tide, the overall groundwater flow is toward the East River. However, locally and in the immediate area around Block 2598, Lot 46, there appears to be variations in the direction of groundwater flow. The local deviations to the overall flow (i.e., towards the East River) are likely due to variations in subsurface geology, bedrock topography, and presence of subsurface utilities and structures that may impact localized groundwater flow.

Bedrock wells are only located around the perimeter of Block 2598, Lot 46, and as such, the observations and conclusions are limited to this area. For the August 11, 2015 water level round during high tide in the bedrock (Figure 2-9), groundwater flows from BW-01 and BW-04 towards the west and southwest at Block 2598, Lot 46. Horizontal hydraulic gradients are relatively shallow as there is not much variation across the Block. For the August 12, 2015 water level round during low tide in the bedrock (Figure 2-10), there is very little difference compared to the measurements recorded during high tide, and generally similar groundwater flow direction. Based upon water levels obtained in in bedrock, there is no apparent measurable tidal influence in the bedrock groundwater. Since the East River water level elevations were lower than the water level measurements recorded in the bedrock monitoring wells during low and high tides, the overall groundwater regional flow is expected to be toward the East River.

The vertical hydraulic gradients on August 11, 2015 were determined to be flat at MWMF-07S/MWMF-07D (0.0 foot per foot [ft/ft]), downward at MWMF-08/BW-02 (0.0217 ft/ft), and upward at MWMF-05/BW-03 (0.0252 ft/ft). Overall, there is no appreciable vertical gradient between groundwater in the overburden and bedrock.

Groundwater elevation data is provided in Table 2-1. Groundwater monitoring well construction logs are provided in Appendix C.

2.3 Investigation and Remedial History

A summary of the site history is provided below. In brief, the former MGP site was constructed between 1869 and 1879 and facilities associated with gas manufacturing were operated by Con Edison or its predecessor companies from 1869 through the mid-1930s. The summary information below was obtained from the Manufactured Gas Plant History Report (GEI, 2003). Full titles for each of the reports referenced below are provided in Section 8.0 - References.

Central Gas Lighting Company (formerly Westchester County Gas Lighting Company prior to 1875) initially constructed the East 138th Street Works between 1869 and 1879 on Block 2598, Lot 1. The former plant expanded operations into Block 2597, Lot 1 by the 1880s. In 1897, Central Gas Lighting Company changed its name to Central Union Gas Company and was a subsidiary to Con Edison by 1910 and merged into Con Edison in 1936. From plant start up through 1891, plant operations generated gas using the coal gas process. In 1892, the plant expanded to include the carbureted water gas processes. Four below-grade gas holders were constructed with capacities between 75,000 and 2,630,000 cubic feet (cf). Manufactured gas was produced at the plant until 1932 when it was decommissioned in 1934/1935, when almost all of the MGP structures were removed. The former MGP site had a daily capacity of 8,000,000 cf.

Prior to the Remedial Investigation (RI), investigations were conducted at three parcels that were part of the former MGP, including Block 2591, Lot 46; Block 2597, Lot 1; and Block 2598, Lot 46 as part of environmental assessments; and a subsurface investigation was conducted by the RETEC Group, Inc. in 2007 to support the 36-inch gas main installation along the southern portion of East 138th Street for Con Edison, as discussed below. At Block 2591, Lot 46, ten soil borings were advanced around the perimeter of a 10,000-gallon No. 2 oil UST situated in the interior of the building footprint approximately mid-block along Rose Feiss Boulevard to depths between 2 and 16 feet bgs to assess subsurface conditions around the UST (MC Environmental, 2010). At Block 2597, Lot 1, several borings were advanced and monitoring wells installed to assess soil and groundwater conditions at the MOSF terminal (Castle Port Morris, 2010). At Block 2598, Lot 46, previous investigations include the RI of the 295 Locust Avenue portion of the former MGP Site in 2012; the Phase I and II Environmental Site Assessments of the 295 Locust Avenue and 901-903 East 140th Street portions of the property in 2009 (Roux, May and June 2009); the Indoor Air Sampling Summary in 2004 (Environ, April 2004); the Environmental Review of Murray Feiss Import

Corp. in 2004 (March 2004); review of the Manufactured Gas Plant History in 2003 (GEI, January 2003); and the Phase I Environmental Site Assessment of the Murray Feiss Distribution Center in 1998 (Environmental Planning & Management, Inc., November 1998).

During the Site Characterization (SC) and RI field investigations, soil, soil vapor, groundwater and ambient air samples were collected for laboratory analysis. Soil vapor and ambient air samples were collected at Block 2598 Lot 46, which being managed under BCP Site #C203053-05-12/ EE #C203053; therefore, these samples, and the locations where they were collected, are not discussed in this SMP. Sampling locations are shown on Figure 2-11. The RI field investigations were summarized in the Remedial Investigation of the East 138th Street Works Site (URS, 2016).

A summary for each tax parcel is provided below. This information has been compiled from a review of Sanborn Maps, Bronx Building Department records, city directories, and chain-of-title searches. Records reviewed did not indicate whether buildings constructed after the MGP operated had basements and if subsurface materials were removed during post-MGP site development.

2.3.1 Block 2590, Lot 51

Bronx Building Department records indicate that Central Union Gas Company demolished all buildings on this lot circa 1934. No structures are shown on the 1935 and 1946 Sanborn Maps. It is unknown what this lot was used for from 1934 to 1946. Con Edison sold this lot in 1946, and according to Bronx Building Department records, a large factory building was constructed on the lot circa 1946. Bronx Building Department records and the 1951 Sanborn Map indicate the building was occupied by The Atlas Baby Carriage Company (Atlas) and a soap manufacturer, and that a 3,000-gallon underground storage tank (UST) was installed in 1947 (the location and contents of the tank is unknown). The building is visible on the 1954 aerial photograph. Bronx Building Department records indicate that in 1960, the building was still occupied by Atlas and also leased to Empire State Dry Cleaners and Launderers. The Bronx Building Department issued a certificate of occupancy (CO) in 1961 for building alterations for the manufacture of baby carriages, a steam laundry, dry cleaning establishment, clothes storage, and office space. The 1968 through 1989 Sanborn Maps do not indicate the building use/occupant, and there were no listings for the lot in the EDR city directory report. The 1996 Sanborn Map indicates an automobile auction company as a building occupant. Automobile service businesses currently occupy the building. The 2023 owner of record is listed as Walcott Shoe LLC according to the New York City Automated City Register Information System and New York City Open Accessible Space Information System (NYC ACRIS/ NYC OASIS).

Three soil borings were advanced along the eastern sidewalk perimeter of this property. Property

access was not granted to obtain subsurface information beneath the building. There were no volatile organic compound (VOC) exceedances of commercial use soil cleanup objectives (SCOs) in any samples collected from perimeter portions around the property as summarized in Tables 2-2 and 2-3. Benzo(a)pyrene and dibenz(a,h)anthracene were the only semi-volatile organic compounds (SVOCs) detected above commercial use SCOs. There were no metals detected exceeding commercial use SCOs. As depicted in Figure 1-2, this property was used for MGP manufacturing operations. This parcel is subject to EE and SMP conditions.

2.3.2 Block 2591, Lot 46

The store house and office (former garage) building was demolished circa 1936. Con Edison sold this lot in 1937 to the Harlem Metal Corporation and it appears that the lot was operated as a scrap metal yard from 1937 to 1959. The 1946 and 1951 Sanborn Maps show the scrap metal yard with a few small buildings (labeled office, storage, and steel cutting) on the lot. The yard is visible on the 1954 photograph. The lot was sold in 1959 to the Jacklee Corporation, and a large commercial building was constructed in 1960. The building is visible on a 1966 aerial photograph. Bronx Building Department records and the 1968 through 1984 Sanborn Maps indicate Empire Liquor Corporation (warehouse and office) occupied the building from 1960 to the mid-1980s. The 1989 and 1996 Sanborn Maps show the building occupied by Paper Enterprises, Inc. A 1993 city directory listed Best Marketing Reps and Paper Corporation (party supplies) as the building occupant. A 2000 city directory listed Consolidated Paper Company, Paper Enterprises, and Peter Pak as building occupants. The 2023 owner of record is listed as Empire 850 LLC. (NYC ACRIS/ NYC OASIS).

Seventeen soil borings were advanced in both interior portions and the sidewalk areas at this property. There were no VOC exceedances of commercial use SCOs in any samples collected from this property as summarized in Tables 2-4 and 2-5. Several polycyclic aromatic hydrocarbons (PAHs) were detected above commercial use SCOs in the area near the 10,000-gallon fuel oil UST, former MGP pipe racks, and former MGP coal shed. In general, there were fewer or no exceedances in the central and western-central portion of the property. Metals exceeding commercial use SCOs included arsenic, barium, copper, lead, and mercury, which are not generally associated with MGP operations.

Four soil samples were collected for forensic analysis at locations on this property including SB-02 (4.7-5.3 feet), SB-38 (7.8-8.5 feet), SB-39 (5-5.5 feet), and MW-01 (11-12 feet). One light non-aqueous phase liquid (LNAPL) sample was collected from piezometer B-7 adjacent to the 10,000-gallon fuel oil UST. SB-02 was situated adjacent to the 10,000-gallon fuel oil UST; SB-38 and SB-39 were situated within

the footprint of a former coal storage area and nearby a former MGP gasoline UST; and MW-01 is near the former pipe racks associated with the former MGP. META Environmental, Inc. (META) reported the sample from SB-02 was No. 6 fuel oil or severely weathered crude oil; SB-38 had similarities with carbureted water gas (CWG) tars; SB-39 had similarities with both No. 6 and crude oil; MW-01 had similarities with coal carbonization (CC) and CWG tars; and B-7 contained a mixture of petroleum products and coal tars.

In 2011, the NYSDEC reviewed SC investigation data and issued two letters regarding its review of data collected around and within the Paper Enterprises building portion of this property. The letters are provided in Appendix D. NYSDEC indicated that no further investigation, remedial action or ICs were required at this property since there was no significant source of MGP contamination there.

2.3.3 Block 2592, Lot 35

The storage buildings/sheds were removed from this lot circa 1934; no structures are shown on the 1935 and 1946 Sanborn Maps. Con Edison sold this lot to Walnut Avenue Realty Corporation in 1945. It is unknown what this lot was used for from 1935 to circa 1950. The 1951 Sanborn Map and 1954 aerial photograph show a commercial building occupied by Colonial Steel Corporation on the western portion of the lot. A gasoline UST is shown on the interior, southern side of the building. The building was added on to between 1954 and 1966, as the building in the 1966 aerial photograph covers the whole lot. The 1968 through 1996 Sanborn Maps show the building occupied by Colonial Steel. Colonial Steel continues to occupy the building. The 2023 owner of record is listed as LEGEIS Realty LLC (NYC ACRIS/ NYC OASIS).

Note that there were no MGP operations known to have been performed at this property. Two perimeter soil borings were advanced in sidewalk areas at this property (MW-03 and SB-06). There were no VOC exceedances of commercial use SCOs in any samples collected from this property as summarized in Tables 2-6 and 2-7. Benzo(a)pyrene was the only SVOC detected above the commercial use SCO. There were no metals detected that exceeded commercial use SCOs. One soil sample was collected at MW-03 (6-7 feet) which contained LNAPL. MW-03 is situated adjacent to the former anthracite coal storage area. META reported that LNAPL in the soil sample was classified as a mixture of No. 4/5/6 fuel oils. No further investigation or remedial action is required for this property.

2.3.4 Block 2597, Lot 1

Bronx Building Department records indicate that Central Union demolished all the buildings and structures on this lot circa 1934; no structures are shown on the 1935 and 1946 Sanborn Maps. Bronx Building Department records indicate that in 1937 Con Edison leased this lot (including an office and locker building) to Schiavone-Bonomo Corporation which used it as a junkyard. It is unknown how long this lot was used for a junkyard, or if there were other uses from 1934 to the late 1940s. Con Edison sold this lot in 1946 to the Petroleum Terminal Corporation. A bulk fuel oil terminal was constructed on this lot in the late 1940s. Large fuel oil tanks and small ancillary buildings were constructed on the southern two- thirds of this lot in the late 1940s. These mounded tanks are shown on the 1951 Sanborn Map and the 1954 aerial photograph. Fuel loading racks were constructed on the northern one-third of this lot sometime between 1954 and 1966. This lot continues to be operated as a bulk fuel oil terminal. The 2023 owner of record is listed as Sprague Resources, LP. (NYC ACRIS/ NYC OASIS).

Six soil borings were advanced at perimeter locations around this property. There were no VOC exceedances in any samples collected from this property. There were no VOC exceedances of commercial use SCOs in any samples collected from this property as summarized in Tables 2-8 and 2-9. Several PAHs were detected above commercial use SCOs, however total PAHs were generally low, and were generally at depth beneath structural material. There were no metals detected that exceeded commercial use SCOs. Two samples were collected at SB-20 (near former retort house – 5-5.5 feet) and SB-21 (near former tar tanks – 21-22 feet). META reported the sample from SB-20 had similarities with gas oil and fuel oils and the sample from SB-21 had similarities with CWG tars. No further investigation or remedial action is required for this property.

2.3.5 Block 2598, Lot 1

Central Union Gas Company demolished/removed all structures on this lot circa 1934; no structures are shown on the 1935 and 1946 Sanborn Maps. It is unknown what this lot was used for from 1934 to 1950. Con Edison sold this lot in 1946. In 1947, the AS Beck Shoe Company, Inc. acquired the lot, and according to Bronx Building Department records, constructed a large commercial building on the lot in 1950. Two 5,000-gallon USTs were also installed when the building was constructed. The location of the two tanks is unknown. The 1951 and 1968 Sanborn Maps indicate the building was occupied by A.S. Beck and labeled "shoe warehouse." Bronx Building Department records indicate a CO was issued in 1977 for building alterations, and that the building would be used for a factory, woodworking shop, warehouse, shipping and receiving, parts assembly, and offices. Bronx Building Department records indicate that the

two USTs were still located on the site in 1978. The 1978 through 1996 Sanborn Maps indicate the building as a warehouse. Murray Feiss Industries (light fixture manufacturers) occupied the building for a period of time, although it is unknown when Murray Feiss Industries occupied it. A 2000 city directory lists Modem Tech Cleaners as a building occupant that year. A commercial cleaning business was observed to occupy the building during GEI's walkover (GEI, 2003). The 2023 owner of record is listed as 885 East 138th Street L.L.C. (NYC ACRIS/ NYC OASIS).

Fourteen soil borings were advanced in both interior portions and the sidewalk areas at this property. Benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds exceeded individual commercial use SCOs in two soil borings (SB-43 and SB-44) within the footprint of former gas holders #2 and #1, respectively (Figure 2-12). Tables 2-10 and 2-11 summarize the analytical results.

SVOCs detected above SCOs included PAHs, phenol, di-n-butylphthalate, 1,1-biphenyl, cresols, and 2,6-dinitrotoluene. PAHs were detected at the highest concentrations from samples collected in the areas of former gas holders #1 and #2, and along the southern and eastern property perimeter. PAHs were detected at greater concentrations and frequencies above commercial use SCOs in the areas within or near the footprint of the three former gas holders (where coal tar was observed in SB-43 and SB-44). Coal tar was also observed in bedrock well BW-01, which is situated to the north at adjacent Block 2598. The maximum detected PAH concentrations and greatest frequency of exceedances occurred in SB-43 and/or SB-44 where coal tar was observed at depths between 5 and 20 feet bgs and were located within the footprint of former gas holders #1 and #2. Metals exceeding commercial use SCOs include arsenic, copper, and mercury, although they are generally not associated with MGP operations.

Nine soil samples were collected for forensic analysis at locations on this property including SB-07 (adjacent to former water gas plant -13.3-14.2 feet), SB-16 (adjacent to former governor house - 5-6.5' and 17.5-18 feet), SB-17 (adjacent to tar well #2 – 5.5-6 feet), SB-43 (gas holder #2 -10-12 feet), SB-44 (gas holder #1 – 15-20 feet), MW-05 (adjacent to gas holder #2 – 4.5-5' and 20.5-21 feet), and MW-06 (downgradient of gas holder #1 – 10.5-11 feet). META reported the sample from SB-07 had similarities with CC and coal tar; SB-16 had similarities with CWG tars; SB-17 had similarities with CC and CWG tars; SB-43 was coal tar/creosote; SB-44 was coal tar/creosote; MW-05 had similarities with CWG tars; and MW-06 had similarities with CC and CWG tars. This parcel is subject to EE and SMP conditions.

2.3.6 Block 2598, Lot 46

Central Union Gas Company demolished/removed all MGP structures on the northern portion of this lot circa 1934, and Con Edison sold this lot in 1946. No structures or uses are shown on the 1935, 1946,

and 1951 Sanborn Maps. No structures are shown on the 1954 aerial photograph. It is unknown what the northern portion of this lot was used for from 1934 to the mid-1960s. Parked vehicles and a dispenser island canopy are visible on the northern portion of the lot on the 1966 aerial photograph. Aerial photographs and the 1968 through 1996 Sanborn Maps indicate that a filling station and parking area for vehicles and trucks were located on the northern portion of this lot. A building was constructed on the southern portion of this lot (not formerly owned/occupied by the MGP) between 1908 and 1935. 1935 through 1968 Sanborn Maps and city directories indicate this building was occupied by various businesses (building supplies, a private garage and repair business, a metal warehouse, woodworking, millwork, and motor freight business) until the early 1970s. The 1978 through 1996 Sanborn Maps and city directories indicate that Hertz Corporation Truck Rental occupied the building from the early 1970s to the late 1990s. This building was demolished in the late 1990s. A large industrial building was constructed circa 2000 on the entire lot, which was occupied by Murray Feiss Industries, and was recently sold. The 2023 owner of record is listed as BPA North LLC/ (NYC ACRIS/ NYC OASIS).

No field investigations were performed under the subject field effort addressed by the Decision Document (DD) (NYSDEC, October 2018) because this property is being managed under BCP Site #C203053-05-12 EE #C203053 as discussed in Section 1.0. The RI report for the 295 Locust Avenue Site was submitted to NYSDEC in April 2012.

2.3.7 Block 2598, Lot 62

No structures are shown on the 1935 and 1946 Sanborn Map. It is unknown what this lot was used for from circa 1934 to 1950. Con Edison sold this lot in 1945. A small building labeled office is shown on the center of the lot on the 1951 Sanborn Map. According to a 1954 aerial photograph and the 1968 Sanborn Map, a garage building was constructed in 1954 on the entire lot. City directories indicate this building was occupied by a garage business in the 1960s. Service System Corporation was listed as occupying the building in 1976. Directories and deed information indicates that Steiner Egg Noodle Co./Steiner Foods occupied the building from 1973 to 1993. It is unknown what this building was used for from 1993 to 2001. A machine shop and welding shop currently occupy the building. The 2023 owner of record is listed as Walnut Realty Associates, LLC (NYC ACRIS/ NYC OASIS).

Note that there were no MGP operations known to have been performed at this property. One soil boring was advanced in the sidewalk area adjacent to this property (MW-04). There were no VOC, SVOC, or metals exceedances of commercial use SCOs in any samples collected from this property, as summarized in Tables 2-12 and 2-13. No further investigation or remedial action is required for this property.

2.3.8 Block 2598, Lot 66

No structures are shown on the 1935 Sanborn Map. It is unknown what this lot was used for from circa 1934 to 1946. A storage building occupied by Griffin Wellpoint Corporation is shown on the lot on the 1946 and 1951 Sanborn Maps. Records reviewed do not indicate what the building was used for from the early 1950s to 2001. A Carting and Demolition Company currently occupy the building. The 2023 owner of record is listed as ANDA Realty, LLC (NYC ACRIS/ NYC OASIS).

This property was not investigated because there were no MGP operations known to have been performed there. No further investigation or remedial action is required for this property.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the DD dated October 2018 are as follows:

2.4.1 Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

2.4.2 Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

2.4.3 Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

2.5.1 Soil

A summary of the detected analytical results exceeding Commercial Use SCOs in the RI soil samples for each property investigated as part of this RI Report is presented in Tables 2-6 (Block 2592, Lot 35), 2-12 (Block 2598, Lot 62), 2-4 (Block 2591, Lot 46), 2-2 (Block 2590, Lot 51), 2-10 (Block 2598, Lot 1), and 2-8 (Block 2597, Lot 1). Statistical summaries of the detected TCL parameters and comparisons to Commercial Use SCOs for each property are presented in Tables 2-7 (Block 2592, Lot 35), 2-13 (Block 2598, Lot 62), 2-5 (Block 2591, Lot 46), 2-3 (Block 2590, Lot 51), 2-11 (Block 2598, Lot 1), and 2-9 (Block 2597, Lot 1). The locations of detected VOC and SVOC soil results from samples collected during the RI that exceeded Commercial Use SCOs at properties south of East 139th Street and north of East 139th Street are shown on Figures 2-12 and 2-13, respectively.

As part of the RI, and to assess the potential sources of polycyclic aromatic hydrocarbon (PAH) contamination and fuel-related compounds present at the former MGP operation areas, a total of 16 soil samples and one LNAPL sample were sent to META for forensic and fuel-fingerprinting analyses. Hydrocarbon fingerprints and extended PAH analyses/diagnostic ratios, as well as site history and observations made during the RI fieldwork, were evaluated as part of the characterization. META reported that the majority of samples were classified as a mixture of pyrogenic and petrogenic materials. Some samples were tentatively identified as generally tar and tar mixtures from a CC or CWG manufacturing process, and mixtures of fuel and weathered fuel products determined to be present based upon gas

chromatograph/mass spectrometer (GC/MS) and gas chromatograph/flame ionization detector (GC/FID) chromatograms. The 16 soil samples were collected from former MGP operational areas and were biased at locations and depths where there was visual and/or field screening evidence, including elevated photoionization detector (PID) readings, visual observations of chemical impact such as sheens, blebs, presence of coal tar dense non-aqueous phase liquid (DNAPL), and/or odors characteristic of former MGP operations or petroleum constituents. The LNAPL sample was collected from piezometer B-7 situated on Block 2591, Lot 46 in the immediate vicinity of the 10,000-gallon fuel oil UST. These samples were analyzed for hydrocarbon fingerprints and an expanded list of monocyclic aromatic hydrocarbons (MAHs) and PAHs. Complete results are summarized in the RI Report and a brief summary is provided below.

2.5.1.1 Block 2590, Lot 51

Three soil borings were advanced along the eastern sidewalk perimeter of this property. Property access was not granted to obtain subsurface information beneath the building. There were no VOC exceedances of commercial use SCOs in any samples collected from perimeter portions around the property as summarized in Tables 2-2 and 2-3. Benzo(a)pyrene and dibenz(a,h)anthracene were the only SVOCs detected above commercial use SCOs. There were no metals detected exceeding commercial use SCOs. As depicted in Figure 1-2, this property was used for MGP manufacturing operations.

2.5.1.2 Block 2591, Lot 46

Seventeen soil borings were advanced in both interior portions and the sidewalk areas at this property. There were no VOC exceedances of commercial use SCOs in any samples collected from this property, as summarized in Tables 2-4 and 2-5. Several PAHs were detected above commercial use SCOs in the area near the 10,000-gallon fuel oil UST, former MGP pipe racks, and former MGP coal shed. In general, there were fewer or no exceedances in the central and western-central portion of the property. Metals exceeding commercial use SCOs included arsenic, barium, copper, lead, and mercury, which are not generally associated with MGP operations.

Four soil samples were collected for forensic analysis at locations on this property including SB-02 (4.7-5.3 feet), SB-38 (7.8-8.5 feet), SB-39 (5-5.5 feet), and MW-01 (11-12 feet). One LNAPL sample was collected from piezometer B-7 adjacent to the 10,000-gallon fuel oil UST. SB-02 was situated adjacent to the 10,000-gallon fuel oil UST; SB-38 and SB-39 were situated within the footprint of a former coal storage area and nearby a former MGP gasoline UST; and MW-01 is near the former pipe racks associated with the former MGP. META reported the sample from SB-02 was No. 6 fuel oil or severely weathered crude oil; SB-38 had similarities with CWG tars; SB-39 had similarities with both No. 6 and crude oil;

MW-01 had similarities with CC and CWG tars; and B-7 contained a mixture of petroleum products and coal tars.

In 2011, the NYSDEC reviewed SC investigation data and issued two letters regarding its review of data collected around and within the Paper Enterprises building portion of this property. The letters are provided in Appendix D. NYSDEC indicated that no further investigation, remedial action or ICs were required at this property since there were no significant source of MGP contamination there.

2.5.1.3 Block 2592, Lot 35

Note that there were no MGP operations known to have been performed at this property. Two perimeter soil borings were advanced in sidewalk areas at this property (MW-03 and SB-06). There were no VOC exceedances of commercial use SCOs in any samples collected from this property as summarized in Tables 2-6 and 2-7. Benzo(a)pyrene was the only SVOC detected above the commercial use SCO. There were no metals detected that exceeded commercial use SCOs.

One soil sample was collected at MW-03 (6-7 feet) which contained LNAPL. MW-03 is situated adjacent to the former anthracite coal storage area. META reported that LNAPL in the soil sample was classified as a mixture of No. 4/5/6 fuel oils.

2.5.1.4 Block 2597, Lot 1

Six soil borings were advanced at perimeter locations around this property. There were no VOC exceedances in any samples collected from this property. There were no VOC exceedances of commercial use SCOs in any samples collected from this property as summarized in Tables 2-8 and 2-9. Several PAHs were detected above commercial use SCOs, however total PAHs were generally low, and were generally at depth beneath structural material. There were no metals detected that exceeded commercial use SCOs.

Two samples were collected at SB-20 (near former retort house – 5-5.5 feet) and SB-21 (near former tar tanks – 21-22 feet). META reported the sample from SB-20 had similarities with gas oil and fuel oils and the sample from SB-21 had similarities with CWG tars.

2.5.1.5 Block 2598, Lot 1

Fourteen soil borings were advanced in both interior portions and the sidewalk areas at this property. BTEX compounds exceeded individual commercial use SCOs in two soil borings (SB-43 and SB-44) within the footprint of former gas holders #2 and #1, respectively (Figure 2-12). Tables 2-10 and 2-

11 summarize the analytical results.

SVOCs detected above SCOs included PAHs, phenol, di-n-butylphthalate, 1,1-biphenyl, cresols, and 2,6-dinitrotoluene. PAHs were detected at the highest concentrations from samples collected in the areas of former gas holders #1 and #2, and along the southern and eastern property perimeter. PAHs were detected at greater concentrations and frequencies above commercial use SCOs in the areas within or near the footprint of the three former gas holders (where coal tar was observed in SB-43 and SB-44). Coal tar was also observed in bedrock well BW-01, which is situated to the north at adjacent Block 2598. The maximum detected PAH concentrations and greatest frequency of exceedances occurred in SB-43 and/or SB-44 where coal tar was observed at depths between 5 and 20 feet bgs and which were located within the footprint of former gas holders #1 and #2. Metals exceeding commercial use SCOs include arsenic, copper, and mercury, although they are generally not associated with MGP operations.

Nine soil samples were collected for forensic analysis at locations on this property including SB-07 (adjacent to former water gas plant -13.3-14.2 feet), SB-16 (adjacent to former governor house - 5-6.5 and 17.5-18 feet), SB-17 (adjacent to tar well #2 – 5.5-6 feet), SB-43 (gas holder #2 -10-12 feet), SB-44 (gas holder #1 – 15-20 feet), MW-05 (adjacent to gas holder #2 – 4.5-5 and 20.5-21 feet), and MW-06 (downgradient of gas holder #1 – 10.5-11 feet). META reported the sample from SB-07 had similarities with CC and coal tar; SB-16 had similarities with CWG tars; SB-17 had similarities with CC and CWG tars; SB-43 was coal tar/creosote; SB-44 was coal tar/creosote; MW-05 had similarities with CWG tars; and MW-06 had similarities with CC and CWG tars.

2.5.1.6 Block 2598, Lot 46

No field investigations were performed under the subject field effort addressed by the DD because this property is being managed under BCP Site #C203053-05-12/ EE #C203053 as discussed in Section 1.0. The RI report for the 295 Locust Avenue Site was submitted to NYSDEC in April 2012.

2.5.1.7 Block 2598, Lot 62

Note that there were no MGP operations known to have been performed at this property. One soil boring was advanced in the sidewalk area adjacent to this property (MW-04). There were no VOC, SVOC, or metals exceedances of commercial use SCOs in any samples collected from this property, as summarized in Tables 2-12 and 2-13.

2.5.1.8 Block 2598, Lot 66

This property was not investigated because there were no MGP operations known to have been performed there.

2.6 Groundwater

The standards, criteria, and guidance (SCGs) for groundwater are the Ambient Water Quality Standards and Guidance Values (AWQSGVs) for Class GA standards and guidance values presented in NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 (April 2000 and including subsequent revisions). Tables 2-14 and 2-15 summarize the laboratory analytical results for VOCs, SVOCs, and metals detected in overburden and bedrock groundwater samples, respectively, collected during the March 2012, April 2015, and August 2015 sampling events. Results exceeding TOGS No. 1.1.1 Class GA groundwater criteria are circled.

2.6.1 Overburden

While groundwater contamination is spread across the site area, it is most concentrated in the vicinity of Block 2598, Lot 46 and to a lesser extent near Block 2598, Lot 1. The locations of detected results for VOCs and SVOCs, and total cyanide that exceeded their respective criteria during the August 2015 sampling event are shown on Figure 2-14. There were no VOCs, SVOCs, or total cyanide detected above criteria in upgradient monitoring well MW-02; monitoring wells MW-04, MWMF-02, and MWMF-07D situated around the perimeter of Block 2598, Lot 46; and monitoring well MW-07 situated at Block 2597, Lot 1.

Detected VOCs exceeding criteria included chlorinated VOCs (CVOCs) [perchloroethylene (PCE) and its degradation products: trichloroethylene (TCE), cis- and trans-1,2-dichloroethene (DCE); 1,1-dichloroethane, and vinyl chloride (VC); 1,2-dichloroethane; methylene chloride; chloroform, and chloroethane], BTEX compounds, methyl tert-butyl ether (MTBE), and isopropylbenzene. CVOCs were detected at the greatest frequencies in MWMF-04, nearest to the dry cleaners operating across East 139th Street; however, total CVOCs were detected at the highest concentrations in MW-03, at 6,500 micrograms per liter (µg/L). PCE and its degradation products were detected at their greatest concentrations in MWMF-04. Other CVOCs included 1,1,2,2-tetrachloroethane and 1,1,2-trichloroethane. CVOCs are associated with dry cleaning facilities and are not MGP-related. MTBE was detected above criteria in MWMF-01 and MWMF-05. MTBE is a gasoline additive and ubiquitous in urban areas.

Detected SVOCs included 1,1'-biphenyl, methylphenol isomers, 2-nitrophenol, 2-chlorophenol, and MGP-related contaminants naphthalene, acenaphthene, benzo(a)anthracene, benzo(b)fluoranthene, chrysene, and phenol. The greatest concentrations of SVOCs, naphthalene in particular, were detected in monitoring wells east, north, and south of former gas holders #1, #2, and #3 around Block 2598, Lot 1, and gas holder #4 around Block 2598, Lot 46.

Total cyanide was detected above the groundwater standard at most locations across the former MGP operational area. Iron, manganese, magnesium, selenium, and sodium exceeded groundwater SCGs in the majority of the groundwater samples. Additionally, lead exceeded the groundwater SCG in MW-03, MW-04, MW-05, and MW-06. Other metals that exceeded criteria were arsenic, barium, beryllium, cadmium, chromium, copper, nickel, thallium, and zinc. These metals are generally not associated with MGP operations.

2.6.2 Bedrock

Contamination in the bedrock is more concentrated compared to in the overburden (Figure 2-15). Relative to the criteria and overburden results, elevated levels of VOCs were detected in all four wells located around Block 2598, Lot 46.

Detected VOCs exceeding criteria included trans- and cis-1,2-DCE, 1,1-dichloroethene, 1,2-dichloroethane, VC, BTEX compounds, MTBE, isopropylbenzene, styrene, and acetone. The highest concentrations of CVOCs were detected in BW-02 nearest to the dry cleaners operating across East 139th Street.

Detected SVOCs exceeding criteria included 1,1'-biphenyl, methylphenol isomers, and PAHs naphthalene, acenaphthene, and phenol. The greatest concentrations of SVOCs, naphthalene in particular, were detected in monitoring wells BW-01 and BW-02.

Total cyanide detections exceeded the groundwater criterion in BW-01, BW-02, and BW-03. Iron, lead, manganese, magnesium, selenium, chromium, thallium, nickel, and sodium exceeded groundwater SCGs in bedrock wells. These metals are generally not associated with MGP operations.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the EE;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix E) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the DD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to commercial and industrial uses only. Adherence to these ICs on the site is required by the EE and will be implemented under this SMP, and in accordance with the Health and Safety Plan (Appendix F). ICs identified in the EE may not be discontinued without an amendment to or extinguishment of the EE. The IC boundaries are shown on Figure 3-1. These ICs are:

- The property may be used for : commercial and industrial uses;

- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the New York City Department of Health and Mental Hygiene to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the EE.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 3-1, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited.
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.
- Should a building foundation or building slab be removed in the future, a cover

system will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable SCOs.

3.3 Engineering Controls

Exposure to remaining contamination at the site is prevented by Engineering Controls in the form of a cover system at locations as shown on Figure 3-1. This cover system is comprised of asphalt pavement, concrete-covered sidewalks, and concrete building slabs. The Excavation Work Plan (EWP) provided in Appendix E outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in Attachment 1 of Appendix E.

3.3.1 Site Inspection for Property Use

A site inspection will be performed in accordance with the Operation, Maintenance and Monitoring (OM&M) Plan of this SMP. The annual inspection will include an update/verification of the current property use and site owner of record, and an exterior perimeter inspection of the property. The inspection form is provided in Appendix G – OM&M Plan.

3.3.2 Groundwater Monitoring

Wells to be monitored are shown on Figure 3-2. Procedures for groundwater monitoring are documented in the OM&M Plan (Section 5.0 of this SMP) and in the Field Sampling Plan in Appendix H. Appendix G provides the OM&M Plan. Figure 3-1 shows the location of the ECs for the site.

3.3.2.1 Monitoring Well Maintenance

Procedures for monitoring well inspections are documented in the OM&M Plan (Section 5.0 of this SMP) and in the Field Sampling Plan in Appendix H. Appendix G provides the OM&M Plan. Forms to be used to document monitoring well inspections are provided in Appendix I. Figure 3-1 shows the location of the ECs for the site.

3.3.2.2 NAPL Measurements

Procedures for NAPL measurements in bedrock monitoring wells are documented in the OM&M

Plan (Section 5.0 of this SMP) and in the Field Sampling Plan in Appendix H. Appendix G provides the OM&M Plan. Forms to be used to document NAPL measurements are provided in Appendix I. Figure 3- 1 shows the location of the ECs for the site.

3.3.3 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the DD. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

3.3.3.1 Monitoring Wells associated with Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC with consultation with NYSDOH, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the system will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix J.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater only);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment.

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site-wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During

these inspections, an inspection form will be completed as provided in Appendix I – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report (PRR). The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the EE;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date; and

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the groundwater on a routine basis. Sampling locations, required analytical parameters, and schedule are provided in Table 4-1 – Post Remediation Sampling Requirements and Schedule on the following page. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 4-1 – Post Remediation Sampling Requirements and Schedule

Sampling Location	Analytical Parameters				Schedule
	VOCs (EPA Method 8260)	SVOCs (EPA Method 8270C)	TAL Metals (EPA Method 6010B/7470)	Total Cyanide (Method 9012A)	
MW-01	X	X	X	X	Annual
MW-02	X	X	X	X	Annual
MW-03	X	X	X	X	Annual
MW-05	X	X	X	X	Annual
MW-06	X	X	X	X	Annual
MWMF-04	X	X	X	X	Annual
MWMF-05	X	X	X	X	Annual
MWMF-08	X	X	X	X	Annual
BW-01	NAPL Check Only	NAPL Check Only	NAPL Check Only	NAPL Check Only	Annual
BW-02	NAPL Check Only	NAPL Check Only	NAPL Check Only	NAPL Check Only	Annual
BW-03	NAPL Check Only	NAPL Check Only	NAPL Check Only	NAPL Check Only	Annual
BW-04	NAPL Check Only	NAPL Check Only	NAPL Check Only	NAPL Check Only	Annual

Detailed sample collection and analytical procedures and protocols are provided in Appendix H – Field Sampling Plan and Appendix J – Quality Assurance Project Plan.

4.3.1 Groundwater Sampling

Groundwater monitoring will be performed annually to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells has been installed to monitor upgradient, on-site and downgradient groundwater conditions at the site, and also monitor bedrock for presence of NAPL.

Table 4-2 summarizes the wells' identification number, as well as the location, depths, diameter and screened intervals of the wells.

Table 4-2 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-01	Block 2591, Lot 46	232350.2 N 1009728.4 E	2	8.11	8.11	5.11	-4.89
MW-02	East 139th Street – Upgradient	232319.1 N 1009366.9 E	2	9.00	9.00	6.00	-4.00
MW-03	Block 2592, Lot 35	232521.2 N 1009930.3 E	2	8.43	8.43	4.43	-5.57
MW-05	Block 2598, Lot 1	231695.8 N 1009773.4 E	2	9.48	9.48	6.48	-11.2
MW-06	Block 2598, Lot 1	231654.2 N 1009886.3 E	2	9.97	9.97	6.97	-0.03
MWMF-04	Block 2598, Lot 62	231967.9 N 1009879.8 E	2	7.93	7.93	-11.07	-21.07
MWMF-05	Block 2598, Lot 46	232146.8 N 1009903.1 E	2	7.94	7.94	4.94	-5.06
MWMF-08	Block 2598, Lot 46	231943.1 N 1009912.9 E	2	8.12	8.12	5.62	-4.38
BW-01	Block 2598, Lot 46	231866.5 N 1010013.6 E	2	8.89	8.89	-13.11	-23.11
BW-02	Block 2598, Lot 46	231948.9 N 1009906.6 E	2	8.13	8.13	-28.87	-38.87
BW-03	Block 2598, Lot 46	232140.8 N 1009898.2 E	2	8.01	8.01	-37.99	-47.99
BW-04	Block 2598, Lot 46	232007.9 N 1010179.3 E	2	8.79	8.79	-18.71	-28.71

Monitoring well construction logs are included in Appendix C of this document.

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable. Routine annual inspections will be performed including an exterior inspection of the curb box and well riser and j-plug.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent PRR. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix I - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the site-specific Field Sampling Plan provided as Appendix H of this document.

5.0 OPERATION, MAINTENANCE AND MONITORING PLAN

5.1 General

The site remedy does not rely on any mechanical systems, such as groundwater treatment systems, sub-slab depressurization systems or air sparge/soil vapor extraction systems to protect public health and the environment. However, the monitoring wells used for the site remedy must be maintained. This OM&M Plan (Appendix G) provides a brief description of the measures necessary to utilize, monitor, and maintain the monitoring wells used for sampling and the remedy selected for the site. This OM&M Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the monitoring wells;
- Will be updated periodically to reflect changes in site conditions or the manner in which the monitoring wells are maintained.

Further detail regarding the OM&M of the monitoring wells and sampling is provided in Appendix G – OM&M Plan. There are no mechanical systems to maintain. A copy of this OM&M Plan, along with the complete SMP, is to be maintained at the site. This OM&M Plan is not to be used as a stand-alone document, but as a component document of this SMP.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of vulnerability assessments that will be conducted for the site during periodic assessments, and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

Table 6-1: Vulnerability Assessment

Planning Areas	Current and Expected Stresses to Systems in This Planning Area	Projected Impact of Changes to Systems in This Planning Area (without preparedness action)	Vulnerability Assessment		
			Degree of Sensitivity of Systems in this Planning Area	Adaptive Capacity of Systems in this Planning Area	Vulnerability of Systems in this Planning Area
Flood Control	Increased flooding may render monitoring wells inaccessible for sampling events	Increased precipitation will raise the water table and increase flash flooding, which will flood the monitoring wells with increasing frequency	Low-increased risk of flooding will flood monitoring wells with increasing frequency	Medium-To adapt to flash flooding events, monitoring well casing heights can be raised. Nothing can be done to prevent flooding caused by a raised water table.	Low
Road Operation and Maintenance	Higher temperatures in winter lead to fewer travel disruptions associated with snow and ice	Higher temperatures in winter will lead to fewer travel disruptions associated with snow and ice	Moderate (but positive)-higher temperatures will lead to fewer travel disruptions associated with snow and ice	n/a	Low
	Increased risk of flooding leads to more travel disruptions associated with landslides, road washouts, and flooding	Increased risk of flooding will lead to more travel disruptions associated with landslides, road washouts, and flooding	Low-increased risk of flooding will lead to more travel disruptions associated with landslides, road washouts, and flooding	Medium-Vehicles can take another route to get to the site that is less impacted.	Low

Table 6-1 displays the vulnerability assessment performed for the East 138th Street Works Former MGP Site, following the guidance of "Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments" (Center for Science and Earth Systems, 2007).

The site has a low vulnerability to flooding. While the site is not located within a floodplain, an increase in intense rain events can lead to increased occurrences of flooding due to municipal storm water system problems, as well as an elevated water table. These conditions may cause the locations of monitoring wells to flood, and therefore become unavailable for sampling. Increased flooding would also cause more travel disruptions on the way to the site for sampling events. This can be mitigated by vehicles finding alternate routes to the site which are less impacted.

The site has a low vulnerability to increased temperatures. Higher temperatures in the winter would be a benefit, as there would be fewer travel disruptions associated with snow and ice.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the PRR.

- Waste Generation: No further remediation is necessary at the site. Only small quantities of groundwater purge water will be generated. The groundwater purge water will be transported and disposed of at an approved off-site facility.
- Energy usage: No further active remediation is necessary at the site. Therefore, there will be no substantial energy usage during site management.
- Emissions: Local staffing will be utilized for site management activities. By utilizing local staffing, emissions associated with travel to and from the site are decreased.
- Water usage: No further active remediation is necessary at the site. Therefore, there is no expected water usage during site management.
- Land and/or ecosystems: No further active remediation is currently occurring at the site. Therefore, there are no expected disturbances of land and/or

ecosystems during site management.

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

6.2.2 Frequency of Groundwater Sampling

Transportation to and from the Site and use of consumables in relation to visiting the Site in order to conduct inspections and/or collect samples and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources. Site inspections and sampling will be done concurrently. Local laboratories will be utilized to the extent practicable.

6.2.3 Metrics and Reporting

Because no further active remediation is currently occurring at the site, reporting is not necessary for waste generation, energy usage, emissions, water usage, or land and/or ecosystems.

6.3 Remedial System Optimization

A RSO study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. The responsibilities of the owners and remedial party are presented in Appendix K. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the DD;
- The management and operation of the remedial system is exceeding the estimated costs;

- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

The RSO study will focus on overall site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

7.0 REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix I. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 7-1 and summarized in the PRR.

Table 7-1: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Groundwater and NAPL Monitoring Report	Annually
Site Inspection Report	Annually
Periodic Review Report	Annually, or as otherwise determined by the Department

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc.);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody

documentation, etc.);

- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for

replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A PRR will be submitted to the Department beginning sixteen (16) months after the NYSDEC approves the SMP. After submittal of the initial PRR, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. In the event that the site is subdivided into separate parcels with different ownership, a single PRR will be prepared that addresses the site described in Appendix A -EE. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the PRR. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link:

http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific DD;
  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
  - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the DD.
  - The overall performance and effectiveness of the remedy.

7.3 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a [qualified environmental professional or Professional Engineer licensed to practice in New York State (depending on the need to evaluate engineering systems)] will prepare, and include in the PRR, the following certification as per the requirements of NYSDEC DER-10:

"For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*

- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are 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.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative] [I have been authorized and designated by all site owners/remedial parties to sign this certification] for the site."

The signed certification will be included in the PRR.

The PRR will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The PRR may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.4 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the

NYSDEC.

7.5 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3), upon completion of an RSO, an RSO report must be submitted to the Department for approval. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, Health and Safety Plans etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

6 NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

Bouwer, H. The Bouwer and Rice Slug Test – An Update, Ground Water, Vol. 27, No. 3, pp 304 – 309. 1989.

Castle Port Morris Subsurface Data – Atlantic Site, East 138th Street, Bronx, 2010.

Center for Science in the Earth System, University of Washington and King County. "Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments". September 2007.

Environ International Corp. Environmental Review of Murray Feiss Import Corp., Bronx, NY, prepared by Environ International Corp. March 2004.

Environ International Corp. Indoor Air Sampling Summary Letter Report – Murray Feiss Import Corp., Bronx, NY. April 2004.

Environmental Planning & Management, Inc. Phase I Environmental Site Assessment – Murray Feiss Distribution Center 275-295 Locust Avenue – Bronx, NY. November 1998.

Fisher, D.W., and Rickard, L.V. Geologic Map of New York- Lower Hudson Sheet. New York State Museum and science Service, Map and Chart Series No. 15. 1970.

GEI Consultants, Inc. Manufactured Gas Plant History: East 138th Street Works and East 137th Street Station, Bronx, NY, prepared for Consolidated Edison Company of NY, Inc. January 2003.

MC Environmental, LLC. Summary Letter Report to Paper Enterprises, Inc. March 2010.

New York City Automated City Register Information System (NYC ACRIS) https://a836-acris.nyc.gov/CP/

New York City Open Accessible Space Information System (NYC OASIS): https://www.oasisnyc.net/map.aspx

New York State Department of Environmental Conservation (NYSDEC). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

NYSDEC. CP-51 Soil Cleanup Guidance for Total PAHs. October 2010.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation". May 2010.

NYSDEC. Consolidated Edison Company of New York, Inc. Multi-Site VCP Transition Order on Consent and Administrative Settlement Index No.: CO 0-20180516-519. July 2018.NYSDEC. Decision Document, CE - E. 138th St. - Bronx Works, State Superfund Project, Bronx, Bronx County, Site No. 203108. October 2018.

Roux Associates. Phase I Environmental Site Assessment: 295 Locust Avenue (Former Distribution Center) and 901-903 East 140th Street (Former Parking Lot) Bronx, New York prepared for Locust East 140th L.P. May 2009.

Roux Associates. Phase II Environmental Site Assessment: 295 Locust Avenue (Former Distribution Center) and 901-903 East 140th Street (Former Parking Lot) Bronx, New York, prepared for Locust East 140th L.P. June 2009.

The RETEC Group. Subsurface Letter Report to Con Edison to Support the 36-inch Gas Main Installation. April 2007.

URS. Remedial Investigation Work Plan for the 138th Street Works Former MGP Site, Site # V00551, 295 Locust Avenue Site (Block 2598/Lot 46), Bronx County, New York. January 2011.

URS. Remedial Investigation of the 295 Locust Avenue (Block 2598/Lot 46) Portion of the East 138th Street Works Former MGP Site, Site # V00551, Bronx County, New York. April 2012.

URS. Remedial Investigation of the East 138th Street Works Site, Site # V00551, Bronx County, New York. March 2016.

United States Environmental Protection Agency. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water. Cincinnati, OH: National Risk Management Research Laboratory, Office of Research and Development, USEPA. EPA/600/R-98/128. September 1998.

U.S. Geologic Survey (USGS) a. Feasibility of Using Ground Water as a Supplemental Supply for Brooklyn and Queens, New York. Coram, NY. 1999.

USGS. Ground-Water Resources of Kings and Queens Counties, Long Island, New York. Water-Supply Paper 2498. 1999.

TABLES

TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
BW-01	231866.498	1010013.592	8.89		8.59			8/11/2015 1200	3.70	4.89	0.00		HIGH TIDE
								8/12/2015 1714	3.77	4.82	0.00		LOW TIDE
BW-02	231948.889	1009906.592	8.13		7.58			8/11/2015 1139	3.45	4.13	0.00		HIGH TIDE
								8/12/2015 1705	3.50	4.08	0.00		LOW TIDE
BW-03	232140.815	1009898.169	8.01		7.46			3/12/2012 0830	3.61	3.85	0.00		LOW TIDE
								3/12/2012 1504	3.60	3.86	0.00		HIGH TIDE
								8/11/2015 1032	2.68	4.78	0.00		HIGH TIDE
								8/12/2015 1658	3.10	4.36	0.00		LOW TIDE
BW-04	232007.889	1010179.276	8.79		8.34			8/11/2015 1321	3.52	4.82	0.00		HIGH TIDE
								8/12/2015 1648	3.56	4.78	0.00		LOW TIDE
MW-01	232350.24	1009728.42	8.11	8.11	7.86			5/13/2010 1559	4.62	3.24	0.00		
								6/8/2010 1713	4.94	2.92	0.00		
								6/9/2010 0833	4.93	2.93	0.00		
								6/9/2010 1356	4.92	2.94	0.00		
								4/19/2011 1017	4.51	3.35	0.00		
								5/4/2011 0840	4.24	3.62	0.00		
								7/6/2011 1316	4.79	3.07	0.00		
								7/29/2011 1309	4.90	2.96	0.00		
								1/11/2012 0807	4.90	2.96	0.00		LOW TIDE
								1/11/2012 1217	4.89	2.97	0.00		HIGH TIDE
								3/12/2012 0833	5.11	2.75	0.00		LOW TIDE
								3/12/2012 1512	5.11	2.75	0.00		HIGH TIDE

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

Filter = ([tblGWD].[SITEID]="02")

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TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								8/11/2015 0950	4.76	3.10	0.00		HIGH TIDE
								8/12/2015 1751	4.77	3.09	0.00		LOW TIDE
MW-02	232319.09	1009366.94	9	9.00	8.71			5/13/2010 1523	5.59	3.12	0.00		
								6/8/2010 1703	5.81	2.90	0.00		
								6/9/2010 0828	5.79	2.92	0.00		
								6/9/2010 1351	5.78	2.93	0.00		
								4/19/2011 1025	5.31	3.40	0.00		
								5/4/2011 0830	5.41	3.30	0.00		
								7/6/2011 1109	5.65	3.06	0.00		
								7/29/2011 1300	5.73	2.98	0.00		
								1/11/2012 0728	5.75	2.96	0.00		LOW TIDE
								1/11/2012 1211	5.74	2.97	0.00		HIGH TIDE
								3/12/2012 0915	5.99	2.72	0.00		LOW TIDE
								3/12/2012 1610	5.95	2.76	0.00		HIGH TIDE
								8/11/2015 0854	5.55	3.16	0.00		HIGH TIDE
								8/12/2015 1805	5.57	3.14	0.00		LOW TIDE
MW-03	232521.22	1009930.27	8.43	8.43	8.12			5/13/2010 1627	7.26	0.86	0.71		
								6/8/2010 1836	7.85	0.27	1.30		DTW est from 6/9/10 msmnts
								6/9/2010 0846	7.99	0.13	1.32		
								6/9/2010 1411	7.90	0.22	1.29		
								4/19/2011 1112	NM	-	NP	-	Thick petro-like LNAPL
								7/6/2011 1330	NM	-	NP	-	ck LNAPL, couldn't detect wa
								8/11/2015 0926	7.15	0.97	1.34		HIGH TIDE
								8/12/2015 1759	8.40	-0.28	2.15		LOW TIDE

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

Filter = ([tblGWD].[SITEID]="02")

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TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MW-04	232103.94	1010136.428	8.13	8.13	7.74			5/13/2010 1535	2.82	4.92	0.00		
								6/8/2010 1731	3.12	4.62	0.00		
								6/9/2010 0838	3.13	4.61	0.00		
								6/9/2010 1401	3.09	4.65	0.00		
								4/19/2011 0913	2.73	5.01	0.00		
								5/4/2011 1159	2.85	4.89	0.00		
								7/6/2011 1146	2.95	4.79	0.00		
								7/29/2011 1320	3.05	4.69	0.00		
								1/11/2012 0706	3.31	4.43	0.00		LOW TIDE
								1/11/2012 1147	3.31	4.43	0.00		HIGH TIDE
								3/12/2012 0836	3.31	4.43	0.00		LOW TIDE
								3/12/2012 1526	3.24	4.50	0.00		HIGH TIDE
								8/11/2015 1311	2.87	4.87	0.00		HIGH TIDE
								8/12/2015 1653	2.82	4.92	0.00		LOW TIDE
MW-05	231695.8	1009773.41	9.48	9.48	9.08			5/13/2010 1610	5.51	3.57	0.01		
								6/8/2010 1650	5.80	3.28	0.00		
								6/9/2010 0804	5.82	3.26	0.00		
								6/9/2010 1345	5.77	3.31	0.00		
								4/19/2011 0849	5.44	3.64	0.00		Petroleum odor
								5/4/2011 0750	5.44	3.64	0.00		Petroleum odor
								7/6/2011 1043	5.59	3.49	0.00		een on water, strong pet. od
								7/29/2011 1234	5.70	3.38	0.00		ater and bentonite in roadbo
								1/11/2012 0652	5.97	3.11	0.00		LOW TIDE
								1/11/2012 1145	5.94	3.14	0.00		HIGH TIDE
								3/12/2012 0908	6.08	3.00	0.00		LOW TIDE

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

Filter = ([tblGWD].[SITEID]="02")

Printed: 8/15/2017 8:48:52 AM
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TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								3/12/2012 1605	6.00	3.08	0.00		HIGH TIDE
								8/11/2015 0822	5.50	3.58	0.00		HIGH TIDE
								8/12/2015 1445	5.00	4.08	0.00		LOW TIDE
MW-06	231654.24	1009986.3	9.97	9.97	9.66			5/13/2010 1021	5.64	4.02	0.00		
								6/8/2010 1636	5.89	3.77	0.00		
								6/9/2010 0819	5.90	3.76	0.00		
								6/9/2010 1341	5.85	3.81	0.00		
								4/19/2011 0840	5.54	4.12	0.00		
								5/4/2011 0755	5.68	3.98	0.00		
								7/6/2011 1053	5.74	3.92	0.00		Faint naphthalene-like odor.
								7/29/2011 1249	5.80	3.86	0.00		
								1/11/2012 0700	5.92	3.74	0.00		LOW TIDE
								1/11/2012 1138	5.91	3.75	0.00		HIGH TIDE
								3/12/2012 0855	6.02	3.64	0.00		LOW TIDE
								3/12/2012 1542	6.00	3.66	0.00		HIGH TIDE
								8/11/2015 0918	5.70	3.96	0.00		HIGH TIDE
								8/12/2015 1729	5.58	4.08	0.00		LOW TIDE
MW-07-URS	231355.217	1010153.699	8.3		7.90								
MNW								8/11/2015 0910	5.03	2.87	0.00		HIGH TIDE
MNW								8/12/2015 1426	5.44	2.46	0.00		LOW TIDE
MW-11	232284.286	1009815.033	8.05	8.05	7.82			4/19/2011 1010	4.63	3.19	0.00		
								5/4/2011 0848	4.86	2.96	0.00		
								7/6/2011 1322	5.05	2.77	0.00		
								1/11/2012 0801	5.27	2.55	0.00		LOW TIDE
								1/11/2012 1229	5.26	2.56	0.00		HIGH TIDE

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								3/12/2012 0834	5.39	2.43	0.00		LOW TIDE
								3/12/2012 1516	5.36	2.46	0.00		HIGH TIDE
								8/11/2015 1045	4.91	2.91	0.00		HIGH TIDE
								8/12/2015 1751	4.95	2.87	0.00		LOW TIDE
MWMF-01	232141.829	1010003.914	8.33	8.33	8.01			4/19/2011 0925	3.04	4.97	0.00		
								5/4/2011 0916	3.32	4.69	0.00		
								7/6/2011 1213	3.43	4.58	0.00		Faint pet. odor.
								7/29/2011 1227	3.44	4.57	0.00		
								1/11/2012 0716	3.70	4.31	0.00		LOW TIDE
								1/11/2012 1153	3.69	4.32	0.00		HIGH TIDE
								3/12/2012 0835	3.75	4.26	0.00		LOW TIDE
								3/12/2012 1521	3.69	4.32	0.00		HIGH TIDE
								8/11/2015 1305	3.30	4.71	0.00		HIGH TIDE
								8/12/2015 1656	3.36	4.65	0.00		LOW TIDE
MWMF-02	231854.044	1010105.879	9.39	9.39	9.04			4/19/2011 1042	3.32	5.72	0.00		
								5/4/2011 1126	3.46	5.58	0.00		
								1/11/2012 0738	4.18	4.86	0.00		LOW TIDE
								1/11/2012 1240	4.32	4.72	0.00		HIGH TIDE
								3/12/2012 1035	4.31	4.73	0.00		LOW TIDE
								3/12/2012 1422	4.24	4.80	0.00		HIGH TIDE
								8/11/2015 1333	4.13	4.91	0.00		HIGH TIDE
								8/12/2015 1636	4.41	4.63	0.00		LOW TIDE
MWMF-03	231919.439	1009950.521	8.43	8.43	8.04			4/19/2011 1004	1.71	6.33	0.00		
								5/4/2011 0945	1.97	6.07	0.00		

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								7/6/2011 1228	2.13	5.91	0.00		
								7/29/2011 1301	2.11	5.93	0.00		
								1/11/2012 0805	2.29	5.75	0.00		LOW TIDE
								1/11/2012 1220	2.32	5.72	0.00		HIGH TIDE
								3/12/2012 0929	2.48	5.56	0.00		LOW TIDE
								3/12/2012 1623	2.44	5.60	0.00		HIGH TIDE
								8/11/2015 1135	1.77	6.27	0.00		HIGH TIDE
								8/12/2015 1711	2.07	5.97	0.00		LOW TIDE
MWMF-04	231967.923	1009879.828	7.93	7.93	7.69			4/19/2011 0950	3.50	4.19	0.00		Petro and naphtalene odors
								5/4/2011 0934	3.69	4.00	0.00		
								7/6/2011 1243	3.71	3.98	0.00		Naphthalene-like odor.
								7/29/2011 1247	3.62	4.07	0.00		
								1/11/2012 0750	3.77	3.92	0.00		LOW TIDE
								1/11/2012 1229	3.78	3.91	0.00		HIGH TIDE
								3/12/2012 0920	3.65	4.04	0.00		LOW TIDE
								3/12/2012 1615	3.60	4.09	0.00		HIGH TIDE
								8/11/2015 0000	NM	-	NM	-	HIGH TIDE
								8/12/2015 0000	NM	-	NM	-	LOW TIDE
MWMF-05	232146.796	1009903.072	7.94	7.94	7.70			4/19/2011 0934	4.61	3.09	0.00		
								5/4/2011 0920	4.93	2.77	0.00		
								7/6/2011 1219	4.97	2.73	0.00		Faint pet. odor.
								7/29/2011 1232	5.12	2.58	0.00		
								1/11/2012 0727	5.45	2.25	0.00		LOW TIDE
								1/11/2012 1159	5.45	2.25	0.00		HIGH TIDE
								3/12/2012 0831	5.62	2.08	0.00		LOW TIDE

NM - No Measurement

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Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

Filter = ([tblGWD].[SITEID]="02")

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TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								3/12/2012 1507	5.66	2.04	0.00		HIGH TIDE
								8/11/2015 1030	4.00	3.70	0.00		HIGH TIDE
								8/12/2015 1645	3.90	3.80	0.00		LOW TIDE
MWMF-06	232075.175	1009848.805	8	8.00	7.70			4/19/2011 0944	6.28	1.42	0.00		Slight petroleum odor
								5/4/2011 0930	6.26	1.44	0.00		
								7/6/2011 1256	6.33	1.37	0.00		Faint naphthalene-like odor.
								7/29/2011 1240	6.45	1.25	0.00		
								1/11/2012 0742	6.74	0.96	0.00		LOW TIDE
								1/11/2012 1208	6.71	0.99	0.00		HIGH TIDE
								3/12/2012 0828	7.02	0.68	0.00		LOW TIDE
								3/12/2012 1500	6.98	0.72	0.00		HIGH TIDE
								8/11/2015 1022	4.00	3.70	0.00		HIGH TIDE
								8/12/2015 1652	4.12	3.58	0.00		LOW TIDE
MWMF-07D	231986.385	1010206.057	9.01	9.01	8.74			4/19/2011 0905	3.77	4.97	0.00		Slight petroleum odor
								5/4/2011 0903	3.90	4.84	0.00		
								7/6/2011 1128	4.15	4.59	0.00		
								7/29/2011 1206	4.22	4.52	0.00		
								1/11/2012 0646	4.53	4.21	0.00		LOW TIDE
								1/11/2012 1138	4.51	4.23	0.00		HIGH TIDE
								3/12/2012 0851	4.84	3.90	0.00		LOW TIDE
								3/12/2012 1536	4.50	4.24	0.00		HIGH TIDE
								8/11/2015 1250	3.90	4.84	0.00		HIGH TIDE
								8/12/2015 1641	3.95	4.79	0.00		LOW TIDE
MWMF-07S	231992.085	1010198.017	8.95	8.95	8.69			4/19/2011 0909	3.74	4.95	0.00		Petroleum odor

NM - No Measurement

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Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

Filter = ([tblGWD].[SITEID]="02")

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TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								5/4/2011 0859	3.98	4.71	0.00		
								7/6/2011 1133	4.06	4.63	0.00		
								7/29/2011 1213	4.19	4.50	0.00		
								1/11/2012 0659	4.46	4.23	0.00		LOW TIDE
								1/11/2012 1142	4.44	4.25	0.00		HIGH TIDE
								3/12/2012 0849	4.47	4.22	0.00		LOW TIDE
								3/12/2012 1532	4.45	4.24	0.00		HIGH TIDE
								8/11/2015 1251	3.85	4.84	0.00		HIGH TIDE
								8/12/2015 1645	3.87	4.82	0.00		LOW TIDE
MWMF-08	231943.098	1009912.908	8.12	8.12	7.78			4/19/2011 0959	2.80	4.98	0.00		Naphthalene odor at bottom
								5/4/2011 0942	2.80	4.98	0.00		
								7/6/2011 1234	2.92	4.86	0.00		Naphthalene-like odor.
								7/29/2011 1256	2.73	5.05	0.00		
								1/11/2012 0756	3.18	4.60	0.00		LOW TIDE
								1/11/2012 1214	3.17	4.61	0.00		HIGH TIDE
								3/12/2012 0927	3.34	4.44	0.00		LOW TIDE
								3/12/2012 1620	3.32	4.46	0.00		HIGH TIDE
								8/11/2015 1132	2.90	4.88	0.00		HIGH TIDE
								8/12/2015 1708	2.97	4.81	0.00		LOW TIDE
MWRX-01	231906.009	1010157.368	9.63	9.63	9.34			4/19/2011 1035	4.23	5.11	0.00		
								5/4/2011 1149	4.32	5.02	0.00		
								7/29/2011 1308	4.60	4.74	0.00		
								8/11/2015 1241	4.65	4.69	0.00		HIGH TIDE
								8/12/2015 1634	4.60	4.74	0.00		LOW TIDE

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
MWRX-02	231967.076	1009887.912	8.09	8.09	7.72			5/4/2011 0938	2.89	4.83	0.00		
								7/6/2011 1249	2.93	4.79	0.00		Odd chemical odor.
								7/29/2011 1252	2.97	4.75	0.00		
								1/11/2012 0755	3.29	4.43	0.00		LOW TIDE
								1/11/2012 1235	3.27	4.45	0.00		HIGH TIDE
								8/11/2015 1137	3.10	4.62	0.00		HIGH TIDE
								8/12/2015 1702	3.11	4.61	0.00		LOW TIDE
MWRX-03	232101.447	1009869.383	8.17	8.17	7.73			4/19/2011 0939	6.05	1.68	0.00		
								5/4/2011 0925	6.03	1.70	0.00		
								7/6/2011 1302	6.13	1.60	0.00		Roadbox half-filled w/ water.
								7/29/2011 1236	6.30	1.43	0.00		
								1/11/2012 0733	6.65	1.08	0.00		LOW TIDE
								1/11/2012 1204	6.64	1.09	0.00		HIGH TIDE
								8/11/2015 1025	4.24	3.49	0.00		HIGH TIDE
								8/12/2015 1657	4.20	3.53	0.00		LOW TIDE
MWRX-04	232067.787	1010099.607	8.32	8.32	7.91			4/19/2011 1055	3.12	4.79	0.00		Riser underwater w/bentonite
								5/4/2011 0912	3.27	4.64	0.00		Road box filled w/water
								7/6/2011 1139	3.22	4.69	0.00		Roadbox filled w/ water.
								7/29/2011 1222	3.15	4.76	0.00		
								8/11/2015 1315	3.10	4.81	0.00		HIGH TIDE
								8/12/2015 1650	3.21	4.70	0.00		LOW TIDE
MWRX-05	232103.462	1010161.007	8.32	8.32	8.05			5/4/2011 1155	2.78	5.27	0.00		
								7/29/2011 0820	3.10	4.95	0.00		

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:
A Overburden
B Bedrock

Type:
MNW Monitoring Well

TABLE 2-1
GROUNDWATER ELEVATION MEASUREMENTS
EAST 138TH STREET WORKS FORMER MGP SITE

Location ID / Type	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Geol. Zone	Specific Gravity	Date / Time	Depth to Water (ft)	Water Elev. (ft)	Product Thick. (ft)	Corrected Water Elev. (ft)	Remark
								8/11/2015 0000	NM	-	NM	-	HIGH TIDE
								8/12/2015 0000	NM	-	NM	-	LOW TIDE

NM - No Measurement

The value noted in the column labeled Specific Gravity is an assumed value for free product, if found.

Geologic Zone:

A	Overburden
B	Bedrock

Type:

MNW	Monitoring Well

Filter = ([tblGWD].[SITEID]="02")

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TABLE 2-2
BLOCK 2590 LOT 51
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-09	SB-09	SB-11	SB-11	SB-11
Sample ID				SB-09-(4.5-5.5)	SB-09-(7-8)	SB-11-(3-4)	SB-11-(4.5-5)	SB-11-(13-13.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	7.0-8.0	3.0-4.0	4.5-5.0	13.0-13.5
Date Sampled				04/27/10	04/28/10	04/28/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
Acetone	MG/KG	0.05	500		0.010 J		0.036 J	0.017 J
Carbon disulfide	MG/KG	2.7 CP-51	-					
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Total Volatile Organic Compounds	MG/KG	-	-	ND	0.01	ND	0.036	0.017
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.21 J		0.034 J	2.5 J	0.026 J
Acenaphthene	MG/KG	20	500	0.14 J		0.038 J	0.11 J	
Acenaphthylene	MG/KG	100	500	0.35		1.4	1.5 J	
Acetophenone	MG/KG	-	-			0.23	0.36 J	
Anthracene	MG/KG	100	500	0.43		0.71	0.51 J	
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	1.3		3.0	2.2 J	0.033 J
Benzo(a)pyrene	MG/KG	1	1	1.1		2.4	1.4 J	0.027 J
Benzo(b)fluoranthene	MG/KG	1	5.6	0.96 J		4.4 J	3.3 J	0.032 J
Benzo(g,h,i)perylene	MG/KG	100	500	0.67		3.1	2.4 J	
Benzo(k)fluoranthene	MG/KG	0.8	56	1.0 J		2.6	2.6 J	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.46	0.024 J	0.049 J	2.7	0.044 J
Butylbenzylphthalate	MG/KG	100 CP-51	-				0.040 J	
Carbazole	MG/KG	-	-	0.069 J		0.081 J	0.087 J	
Chrysene	MG/KG	1	56	1.1		3.7	3.3 J	0.022 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-2
BLOCK 2590 LOT 51
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-09	SB-09	SB-11	SB-11	SB-11
Sample ID				SB-09-(4.5-5.5)	SB-09-(7-8)	SB-11-(3-4)	SB-11-(4.5-5)	SB-11-(13-13.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	7.0-8.0	3.0-4.0	4.5-5.0	13.0-13.5
Date Sampled				04/27/10	04/28/10	04/28/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.21 J		0.86 J	0.72 J	
Dibenzofuran	MG/KG	7	350	0.047 J		0.058 J	0.16 J	
Di-n-octylphthalate	MG/KG	100 CP-51	-			0.032 J		
Fluoranthene	MG/KG	100	500	2.0		5.2	3.4 J	0.047 J
Fluorene	MG/KG	30	500	0.15 J		0.12 J	0.34 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.66 J		2.5 J	1.9 J	
Naphthalene	MG/KG	12	500	0.36		0.11 J	3.4 J	0.12 J
Phenanthrene	MG/KG	100	500	1.1		1.5	2.7 J	
Pyrene	MG/KG	100	500	3.2		7.1	4.2 J	0.054 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	14.94	ND	38.772	36.48	0.361
Total Semivolatile Organic Compounds	MG/KG	-	-	15.516	0.024	39.222	39.827	0.405
Metals								
Aluminum	MG/KG	10000 CP-51	-	10,200	9,540	6,340	4,960	11,500
Arsenic	MG/KG	13	16	2.6	1.3	7.9	8.2	0.79 J
Barium	MG/KG	350	400	92.6	48.6	80.1	78.1	69.1
Beryllium	MG/KG	7.2	590		0.30 J			
Cadmium	MG/KG	2.5	9.3	0.34	0.054 J	0.13 J	0.66	0.14 J
Calcium	MG/KG	10000 CP-51	-	13,400 J	896 J	1,010 J	7,160 J	1,390 J
Chromium	MG/KG	30	1500	21.2	15.2	20.5	12.5	25.1
Cobalt	MG/KG	20 CP-51	-	7.7	6.4	4.7	6.6	8.9

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-2
BLOCK 2590 LOT 51
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-09	SB-09	SB-11	SB-11	SB-11
Sample ID				SB-09-(4.5-5.5)	SB-09-(7-8)	SB-11-(3-4)	SB-11-(4.5-5)	SB-11-(13-13.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	7.0-8.0	3.0-4.0	4.5-5.0	13.0-13.5
Date Sampled				04/27/10	04/28/10	04/28/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Copper	MG/KG	50	270	42.0	8.9	55.0	75.1	18.9
Iron	MG/KG	2000 CP-51	-	18,500	16,500	30,000	38,100	27,100
Lead	MG/KG	63	1000	70.7	6.9	269	142	7.4
Magnesium	MG/KG	-	-	7,840	2,690	2,480	3,610	4,180
Manganese	MG/KG	1600	10000	195	287	112	159	637
Mercury	MG/KG	0.18	2.8	0.16	0.013 J	0.31	0.69	
Nickel	MG/KG	30	310	18.8	11.2	13.6	13.2	16.6
Potassium	MG/KG	-	-	2,040	645 J	1,660 J	1,370 J	1,760 J
Selenium	MG/KG	3.9	1500	2.3	1.2	2.6	2.0	2.6
Sodium	MG/KG	-	-	321	751	216	957	382
Vanadium	MG/KG	39 CP-51	-	30.1	21.4	31.7	20.8	33.9
Zinc	MG/KG	109	10000	115 J	30.4 J	44.8 J	123 J	40.8 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Only Detected Results Reported.

TABLE 2-2
BLOCK 2590 LOT 51
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-12	SB-12	SB-12	SB-12	SB-12
Sample ID				SB-12-(3.5-4)	20100427-FD-1	SB-12-(4.5-5.5)	SB-12-(7-8)	SB-12-(12-13)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.5	4.5-5.5	7.0-8.0	12.0-13.0
Date Sampled				04/27/10	04/27/10	04/27/10	04/29/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Volatile Organic Compounds								
Acetone	MG/KG	0.05	500		0.0086 J	0.011 J	0.013 J	0.011 J
Carbon disulfide	MG/KG	2.7 CP-51	-					0.0037
Isopropylbenzene	MG/KG	2.3 CP-51	-				0.0050 J	
Total Volatile Organic Compounds	MG/KG	-	-	ND	0.0086	0.011	0.018	0.0147
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.020 J				0.085 J
Acenaphthene	MG/KG	20	500		0.023 J	0.023 J		
Acenaphthylene	MG/KG	100	500	0.14 J		0.021 J		
Acetophenone	MG/KG	-	-	0.045 J				
Anthracene	MG/KG	100	500	0.042 J				
Benzaldehyde	MG/KG	-	-	0.040 J				
Benzo(a)anthracene	MG/KG	1	5.6	0.15 J		0.031 J		
Benzo(a)pyrene	MG/KG	1	1	0.27		0.037 J		
Benzo(b)fluoranthene	MG/KG	1	5.6	0.35 J		0.056 J		
Benzo(g,h,i)perylene	MG/KG	100	500	0.36		0.040 J		
Benzo(k)fluoranthene	MG/KG	0.8	56	0.25 J		0.026 J		
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.022 J	0.035 J	0.12 J	0.047 J	
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-					
Chrysene	MG/KG	1	56	0.17 J		0.034 J		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-2
BLOCK 2590 LOT 51
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-12	SB-12	SB-12	SB-12	SB-12
Sample ID				SB-12-(3.5-4)	20100427-FD-1	SB-12-(4.5-5.5)	SB-12-(7-8)	SB-12-(12-13)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.5	4.5-5.5	7.0-8.0	12.0-13.0
Date Sampled				04/27/10	04/27/10	04/27/10	04/29/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.12 J				
Dibenzofuran	MG/KG	7	350					
Di-n-octylphthalate	MG/KG	100 CP-51	-					
Fluoranthene	MG/KG	100	500	0.11 J	0.027 J	0.035 J		
Fluorene	MG/KG	30	500					
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.39 J		0.045 J		
Naphthalene	MG/KG	12	500	0.026 J		0.037 J		0.40
Phenanthrene	MG/KG	100	500	0.024 J				
Pyrene	MG/KG	100	500	0.22	0.031 J	0.047 J		
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	2.642	0.081	0.432	ND	0.485
Total Semivolatile Organic Compounds	MG/KG	-	-	2.749	0.116	0.552	0.047	0.485
Metals								
Aluminum	MG/KG	10000 CP-51	-	17,300	14,000	11,900	11,800	15,900
Arsenic	MG/KG	13	16	1.6	2.0	1.4		10.4
Barium	MG/KG	350	400	72.4	85.2 J	141 J	73.6	31.5
Beryllium	MG/KG	7.2	590	0.37 J	0.42 J	0.32 J		0.75 J
Cadmium	MG/KG	2.5	9.3	0.26	0.17 J	0.19 J	0.14 J	0.28 J
Calcium	MG/KG	10000 CP-51	-	990 J	1,260 J	1,740 J	2,290 J	1,410 J
Chromium	MG/KG	30	1500	37.8	23.7	29.9	31.7	30.0
Cobalt	MG/KG	20 CP-51	-	6.8	6.9	8.8	12.9	11.1

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-2
BLOCK 2590 LOT 51
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-12	SB-12	SB-12	SB-12	SB-12
Sample ID				SB-12-(3.5-4)	20100427-FD-1	SB-12-(4.5-5.5)	SB-12-(7-8)	SB-12-(12-13)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.5	4.5-5.5	7.0-8.0	12.0-13.0
Date Sampled				04/27/10	04/27/10	04/27/10	04/29/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Metals								
Copper	MG/KG	50	270	34.1	17.6	24.9	33.4	13.7
Iron	MG/KG	2000 CP-51	-	34,400	24,300	22,500	30,100	45,800
Lead	MG/KG	63	1000	9.5	8.5	8.9	7.3	15.0
Magnesium	MG/KG	-	-	5,210	4,000	4,490	6,660	7,830
Manganese	MG/KG	1600	10000	214	261 J	137 J	612	622
Mercury	MG/KG	0.18	2.8				0.014 J	
Nickel	MG/KG	30	310	22.8	18.2	22.5	24.6	25.6
Potassium	MG/KG	-	-	2,650	1,610	2,090	3,960 J	3,730 J
Selenium	MG/KG	3.9	1500	2.5	1.4 J	1.7	3.1	1.8 J
Sodium	MG/KG	-	-	279	193	208	177	5,450
Vanadium	MG/KG	39 CP-51	-	52.3	33.3	37.1	45.5	42.5
Zinc	MG/KG	109	10000	56.5 J	50.9 J	60.1 J	58.0 J	80.8 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

Advanced Selection: BLOCK 2590 LOT 51
J:\Projects\11175538.00000\DB\Program\EDMS.mde
Printed: 12/28/2015 10:44:03 AM
[SITEID] = '02' AND [MATRIX] = 'SO' AND ([LOCID] = 'SB-09' OR [LOCID] = 'SB-12' OR [LOCID] = 'SB-11') AND ([SACODE] = 'N' OR [SACODE] = 'FD') AND NOT ([UNITS] = 'PERCENT' OR [PRCCODE] = 'STD')

TABLE 2-3
BLOCK 2590 LOT 51
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	500	10	7	0.009	0.036	0.015	0	SB-11	4.5-5
Carbon disulfide	MG/KG	-	10	1	0.004	0.004	0.004	0	SB-12	12-13
Isopropylbenzene	MG/KG	-	10	1	0.005	0.005	0.005	0	SB-12	7-8
Semivolatile Organic Compounds										
2-Methylnaphthalene	MG/KG	-	10	6	0.020	2.50	0.479	0	SB-11	4.5-5
Acenaphthene	MG/KG	500	10	5	0.023	0.140	0.067	0	SB-09	4.5-5.5
Acenaphthylene	MG/KG	500	10	5	0.021	1.50	0.682	0	SB-11	4.5-5
Acetophenone	MG/KG	-	10	3	0.045	0.360	0.212	0	SB-11	4.5-5
Anthracene	MG/KG	500	10	4	0.042	0.710	0.423	0	SB-11	3-4
Benzaldehyde	MG/KG	-	10	1	0.040	0.040	0.040	0	SB-12	3.5-4
Benzo(a)anthracene	MG/KG	5.6	10	6	0.031	3.00	1.12	0	SB-11	3-4
Benzo(a)pyrene	MG/KG	1	10	6	0.027	2.40	0.872	3	SB-11	3-4
Benzo(b)fluoranthene	MG/KG	5.6	10	6	0.032	4.40	1.52	0	SB-11	3-4
Benzo(g,h,i)perylene	MG/KG	500	10	5	0.040	3.10	1.31	0	SB-11	3-4
Benzo(k)fluoranthene	MG/KG	56	10	5	0.026	2.60	1.30	0	SB-11	4.5-5
bis(2-Ethylhexyl)phthalate	MG/KG	-	10	9	0.022	2.70	0.389	0	SB-11	4.5-5
Butylbenzylphthalate	MG/KG	-	10	1	0.040	0.040	0.040	0	SB-11	4.5-5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-3
BLOCK 2590 LOT 51
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Carbazole	MG/KG	-	10	3	0.069	0.087	0.079	0	SB-11	4.5-5
Chrysene	MG/KG	56	10	6	0.022	3.70	1.39	0	SB-11	3-4
Dibenz(a,h)anthracene	MG/KG	0.56	10	4	0.120	0.860	0.478	2	SB-11	3-4
Dibenzofuran	MG/KG	350	10	3	0.047	0.160	0.088	0	SB-11	4.5-5
Di-n-octylphthalate	MG/KG	-	10	1	0.032	0.032	0.032	0	SB-11	3-4
Fluoranthene	MG/KG	500	10	7	0.027	5.20	1.55	0	SB-11	3-4
Fluorene	MG/KG	500	10	3	0.120	0.340	0.203	0	SB-11	4.5-5
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	10	5	0.045	2.50	1.10	0	SB-11	3-4
Naphthalene	MG/KG	500	10	7	0.026	3.40	0.636	0	SB-11	4.5-5
Phenanthrene	MG/KG	500	10	4	0.024	2.70	1.33	0	SB-11	4.5-5
Pyrene	MG/KG	500	10	7	0.031	7.10	2.12	0	SB-11	3-4
Metals										
Aluminum	MG/KG	-	10	10	4,960	1.73E+04	1.13E+04	0	SB-12	3.5-4
Arsenic	MG/KG	16	10	9	0.790	10.40	4.02	0	SB-12	12-13
Barium	MG/KG	400	10	10	31.50	141.0	77.22	0	SB-12	4.5-5.5
Beryllium	MG/KG	590	10	5	0.300	0.750	0.432	0	SB-12	12-13
Cadmium	MG/KG	9.3	10	10	0.054	0.660	0.236	0	SB-11	4.5-5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-3
BLOCK 2590 LOT 51
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Calcium	MG/KG	-	10	10	896.0	1.34E+04	3,155	0	SB-09	4.5-5.5
Chromium	MG/KG	1500	10	10	12.50	37.80	24.76	0	SB-12	3.5-4
Cobalt	MG/KG	-	10	10	4.70	12.90	8.08	0	SB-12	7-8
Copper	MG/KG	270	10	10	8.90	75.10	32.36	0	SB-11	4.5-5
Iron	MG/KG	-	10	10	1.65E+04	4.58E+04	2.87E+04	0	SB-12	12-13
Lead	MG/KG	1000	10	10	6.90	269.0	54.52	0	SB-11	3-4
Magnesium	MG/KG	-	10	10	2,480	7,840	4,899	0	SB-09	4.5-5.5
Manganese	MG/KG	10000	10	10	112.0	637.0	323.6	0	SB-11	13-13.5
Mercury	MG/KG	2.8	10	5	0.013	0.690	0.237	0	SB-11	4.5-5
Nickel	MG/KG	310	10	10	11.20	25.60	18.71	0	SB-12	12-13
Potassium	MG/KG	-	10	10	645.0	3,960	2,152	0	SB-12	7-8
Selenium	MG/KG	1500	10	10	1.20	3.10	2.12	0	SB-12	7-8
Sodium	MG/KG	-	10	10	177.0	5,450	893.4	0	SB-12	12-13
Vanadium	MG/KG	-	10	10	20.80	52.30	34.86	0	SB-12	3.5-4
Zinc	MG/KG	10000	10	10	30.40	123.0	66.03	0	SB-11	4.5-5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-01	MW-01	MW-01	MW-01	MW-11
Sample ID				MW-01-(3.4-4)	MW-01-(4.5-5)	MW-01-(11-12)	MW-01-(16.5-18)	MW-11-(3.5-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.4-4.0	4.5-5.0	11.0-12.0	16.5-18.0	3.5-4.5
Date Sampled				03/24/10	03/24/10	03/26/10	03/26/10	01/07/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500		0.0052 J	0.030 J	0.0088 J	0.021 J
Benzene	MG/KG	0.06	44			0.32		0.0018 J
Carbon disulfide	MG/KG	2.7 CP-51	-				0.0077	0.0014 J
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390			0.34		
Isopropylbenzene	MG/KG	2.3 CP-51	-			0.036 J		
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500			0.39		0.0012 J
Xylene (total)	MG/KG	0.26	500	0.0028		1.4 J		
Total BTEX	MG/KG	-	-	0.0028	ND	2.45	ND	0.003
Total Volatile Organic Compounds	MG/KG	-	-	0.0028	0.0052	2.516	0.0165	0.0254
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-			14	0.039 J	0.045 J
2,4-Dimethylphenol	MG/KG	-	-			0.50 J		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-01	MW-01	MW-01	MW-01	MW-11
Sample ID				MW-01-(3.4-4)	MW-01-(4.5-5)	MW-01-(11-12)	MW-01-(16.5-18)	MW-11-(3.5-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.4-4.0	4.5-5.0	11.0-12.0	16.5-18.0	3.5-4.5
Date Sampled				03/24/10	03/24/10	03/26/10	03/26/10	01/07/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-			34 J	0.073 J	0.20
2-Methylphenol (o-cresol)	MG/KG	0.33	500			0.29 J		
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500			0.73 J		0.039 J
Acenaphthene	MG/KG	20	500			52	0.18 J	0.082 J
Acenaphthylene	MG/KG	100	500		0.062 J	23	0.064 J	0.28
Acetophenone	MG/KG	-	-					
Anthracene	MG/KG	100	500		0.030 J	59	0.21	0.43
Benzo(a)anthracene	MG/KG	1	5.6	0.091 J	0.16 J	62	0.23	0.77
Benzo(a)pyrene	MG/KG	1	1	0.067 J	0.14 J	49	0.18 J	0.70
Benzo(b)fluoranthene	MG/KG	1	5.6	0.077 J	0.19 J	59	0.21	0.84
Benzo(g,h,i)perylene	MG/KG	100	500			41		0.61
Benzo(k)fluoranthene	MG/KG	0.8	56	0.034 J	0.065 J	20	0.070 J	0.39
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.13 J	0.10 J		0.054 J	0.16 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-			26	0.066 J	0.19
Chrysene	MG/KG	1	56	0.087 J	0.18 J	50	0.17 J	0.69
Dibenz(a,h)anthracene	MG/KG	0.33	0.56		0.032 J	21 J	0.044 J	0.12 J
Dibenzofuran	MG/KG	7	350			45	0.16 J	0.18 J
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500	0.14 J	0.23	120	0.40	1.5

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-01	MW-01	MW-01	MW-01	MW-11
Sample ID				MW-01-(3.4-4)	MW-01-(4.5-5)	MW-01-(11-12)	MW-01-(16.5-18)	MW-11-(3.5-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.4-4.0	4.5-5.0	11.0-12.0	16.5-18.0	3.5-4.5
Date Sampled				03/24/10	03/24/10	03/26/10	03/26/10	01/07/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500			51	0.19 J	0.25
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6			33 J		0.44 J
Naphthalene	MG/KG	12	500			270	1.1	1.0
Phenanthrene	MG/KG	100	500	0.051 J	0.078 J	190	0.73	1.3
Phenol	MG/KG	0.33	500			0.59 J		0.020 J
Pyrene	MG/KG	100	500	0.16 J	0.31	120	0.42	1.6
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	0.707	1.477	1,254	4.271	11.202
Total Semivolatile Organic Compounds	MG/KG	-	-	0.837	1.577	1,341.11	4.59	11.836
Metals								
Aluminum	MG/KG	10000 CP-51	-	14,000	5,550	5,040	10,200	7,770
Antimony	MG/KG	12 CP-51	-					1.1 J
Arsenic	MG/KG	13	16	3.0	4.0	5.6	6.2	5.2
Barium	MG/KG	350	400	80.7 J	39.4 J	35.5 J	21.8 J	317
Beryllium	MG/KG	7.2	590	1.0 J	0.52 J	0.41 J	0.72 J	0.49
Cadmium	MG/KG	2.5	9.3	0.24 J	0.34	0.61	0.44	0.51 J
Calcium	MG/KG	10000 CP-51	-	2,010 J	156,000 J	2,200 J	2,170 J	23,700 J
Chromium	MG/KG	30	1500	25.0	13.0	10.8 J	20.9 J	22.1
Cobalt	MG/KG	20 CP-51	-	10.0 J	5.2 J	5.2 J	7.5 J	6.7 J
Copper	MG/KG	50	270	16.4 J	17.0 J	28.9	10.9	31.2
Iron	MG/KG	2000 CP-51	-	25,500	20,400	29,700	24,600	15,300 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

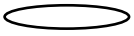
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

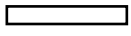
Location ID				MW-01	MW-01	MW-01	MW-01	MW-11
Sample ID				MW-01-(3.4-4)	MW-01-(4.5-5)	MW-01-(11-12)	MW-01-(16.5-18)	MW-11-(3.5-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.4-4.0	4.5-5.0	11.0-12.0	16.5-18.0	3.5-4.5
Date Sampled				03/24/10	03/24/10	03/26/10	03/26/10	01/07/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Lead	MG/KG	63	1000	51.3 J	29.5 J	20.6 J	10.1 J	680 J
Magnesium	MG/KG	-	-	4,170	7,920	2,450 J	4,930 J	3,360
Manganese	MG/KG	1600	10000	479 J	439 J	161 J	253 J	482
Mercury	MG/KG	0.18	2.8	0.045	0.10	0.053	0.019 J	0.38
Nickel	MG/KG	30	310	18.4 J	9.8 J	10.1 J	16.9 J	17.1
Potassium	MG/KG	-	-	1,120	841	694	2,190	3,030
Selenium	MG/KG	3.9	1500	2.4		1.4	1.0 J	
Silver	MG/KG	2	1500		0.073 J			
Sodium	MG/KG	-	-	144	135	1,090	2,800	199
Thallium	MG/KG	5 CP-51	-	2.2		0.30 J	0.86	
Vanadium	MG/KG	39 CP-51	-	32.2	15.5	11.7 J	25.5 J	22.0
Zinc	MG/KG	109	10000	52.3 J	48.3 J	39.9 J	48.3 J	109 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.


Concentration Exceeds Criteria (1)


Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-11	MW-11	SB-01	SB-01	SB-01
Sample ID				MW-11-(5-6)	MW-11-(20-21)	SB-01-(4.5-5)	SB-01-(5-5.5)	SB-01-(8.5-10)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				5.0-6.0	20.0-21.0	4.5-5.0	5.0-5.5	8.5-10.0
Date Sampled				01/17/11	01/17/11	03/24/10	03/25/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.0074 J	0.014 J		0.0053 J	0.022 J
Benzene	MG/KG	0.06	44			0.0058		0.0047 J
Carbon disulfide	MG/KG	2.7 CP-51	-	0.0033	0.017			0.0047 J
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500					
Xylene (total)	MG/KG	0.26	500					
Total BTEX	MG/KG	-	-	ND	ND	0.0058	ND	0.0047
Total Volatile Organic Compounds	MG/KG	-	-	0.0107	0.031	0.0058	0.0053	0.0314
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.050 J				
2,4-Dimethylphenol	MG/KG	-	-					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-11	MW-11	SB-01	SB-01	SB-01
Sample ID				MW-11-(5-6)	MW-11-(20-21)	SB-01-(4.5-5)	SB-01-(5-5.5)	SB-01-(8.5-10)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				5.0-6.0	20.0-21.0	4.5-5.0	5.0-5.5	8.5-10.0
Date Sampled				01/17/11	01/17/11	03/24/10	03/25/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.17 J		0.046 J	0.037 J	
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500	0.035 J				
Acenaphthene	MG/KG	20	500	0.27		0.075 J	0.086 J	0.047 J
Acenaphthylene	MG/KG	100	500	0.38		0.34	0.45	
Acetophenone	MG/KG	-	-			0.031 J		
Anthracene	MG/KG	100	500	0.64		0.15 J	0.21	
Benzo(a)anthracene	MG/KG	1	5.6	1.2	0.031 J	0.63	0.85	0.049 J
Benzo(a)pyrene	MG/KG	1	1	1.1		0.47	0.69	0.042 J
Benzo(b)fluoranthene	MG/KG	1	5.6	1.4		0.67	1.0	
Benzo(g,h,i)perylene	MG/KG	100	500	1.2		0.46	0.75	
Benzo(k)fluoranthene	MG/KG	0.8	56	0.57		0.30	0.41	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.11 J		0.075 J	0.067 J	0.097 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.28		0.031 J	0.034 J	
Chrysene	MG/KG	1	56	1.1		0.71	0.97	0.052 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.19 J		0.11 J	0.21	
Dibenzofuran	MG/KG	7	350	0.27		0.047 J	0.041 J	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.024 J				
Fluoranthene	MG/KG	100	500	2.3	0.048 J	1.2	1.7	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-11	MW-11	SB-01	SB-01	SB-01
Sample ID				MW-11-(5-6)	MW-11-(20-21)	SB-01-(4.5-5)	SB-01-(5-5.5)	SB-01-(8.5-10)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				5.0-6.0	20.0-21.0	4.5-5.0	5.0-5.5	8.5-10.0
Date Sampled				01/17/11	01/17/11	03/24/10	03/25/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	0.38		0.060 J	0.082 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.79		0.31	0.53	
Naphthalene	MG/KG	12	500	0.45		0.067 J	0.051 J	
Phenanthrene	MG/KG	100	500	2.1	0.041 J	0.26	0.32	
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	2.2	0.049 J	1.4	1.6	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	16.44	0.169	7.258	9.946	0.19
Total Semivolatile Organic Compounds	MG/KG	-	-	17.209	0.169	7.442	10.088	0.287
Metals								
Aluminum	MG/KG	10000 CP-51	-	4,640 J	12,600 J	7,260	8,320	13,600 J
Antimony	MG/KG	12 CP-51	-	0.64 J	0.88 J		0.72 J	
Arsenic	MG/KG	13	16	1.5	12.8	3.2	3.8	4.0 J
Barium	MG/KG	350	400	37.0 J	28.6 J	120 J	255 J	34.9 J
Beryllium	MG/KG	7.2	590	0.17 J	0.62 J	0.73 J	1.1 J	0.96 J
Cadmium	MG/KG	2.5	9.3	0.14 J	0.70	0.48	0.77	0.59 J
Calcium	MG/KG	10000 CP-51	-	46,100 J	1,800 J	17,400 J	6,930 J	2,920 J
Chromium	MG/KG	30	1500	12.4 J	26.6 J	24.7	25.2	27.0 J
Cobalt	MG/KG	20 CP-51	-	6.3 J	10.4 J	6.3 J	9.8 J	8.7 J
Copper	MG/KG	50	270	15.1	14.1	122 J	189 J	12.5 J
Iron	MG/KG	2000 CP-51	-	12,000 J	48,500 J	22,900	32,300	26,300 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-11	MW-11	SB-01	SB-01	SB-01
Sample ID				MW-11-(5-6)	MW-11-(20-21)	SB-01-(4.5-5)	SB-01-(5-5.5)	SB-01-(8.5-10)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				5.0-6.0	20.0-21.0	4.5-5.0	5.0-5.5	8.5-10.0
Date Sampled				01/17/11	01/17/11	03/24/10	03/25/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Lead	MG/KG	63	1000	37.9 J	12.3 J	186 J	1,190 J	12.7 J
Magnesium	MG/KG	-	-	4,380 J	6,370 J	3,610	4,290	6,780 J
Manganese	MG/KG	1600	10000	259 J	534 J	149 J	203 J	383 J
Mercury	MG/KG	0.18	2.8	0.096 J	0.97 J	0.67	2.6	
Nickel	MG/KG	30	310	12.5 J	23.7 J	13.8 J	18.7 J	23.3 J
Potassium	MG/KG	-	-	1,030	2,990	1,530	1,770	2,920 J
Selenium	MG/KG	3.9	1500			1.6	1.9	1.8 J
Silver	MG/KG	2	1500			0.11 J	0.28 J	
Sodium	MG/KG	-	-	209	2,620	107	116	3,470 J
Thallium	MG/KG	5 CP-51	-		0.54 J	0.41 J	0.83	1.0 J
Vanadium	MG/KG	39 CP-51	-	12.5 J	34.8 J	27.9	37.2	43.7 J
Zinc	MG/KG	109	10000	86.4 J	68.2 J	140 J	297 J	61.6 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-01	SB-02	SB-02	SB-02	SB-02
Sample ID				SB-01-(33-34)	20100 325-FD-1	SB-02-(4.7-5.3)	SB-02-(11.5-13)	SB-02-(27-28)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				33.0-34.0	4.7-5.3	4.7-5.3	11.5-13.0	27.0-28.0
Date Sampled				03/29/10	03/25/10	03/25/10	03/29/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500			0.0014 J		
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.0055 J	0.012 J	0.014 J	0.023 J	
Benzene	MG/KG	0.06	44		0.0079	0.0079	0.0024 J	
Carbon disulfide	MG/KG	2.7 CP-51	-				0.024 J	
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-		0.0052 J	0.0037 J		
Ethylbenzene	MG/KG	1	390		0.0015 J	0.0016 J		
Isopropylbenzene	MG/KG	2.3 CP-51	-		0.029	0.019		
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-		0.022	0.015		
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500					
Xylene (total)	MG/KG	0.26	500		0.0074	0.0057		
Total BTEX	MG/KG	-	-	ND	0.0168	0.0152	0.0024	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.0055	0.085	0.0683	0.0494	ND
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					
2,4-Dimethylphenol	MG/KG	-	-					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-01	SB-02	SB-02	SB-02	SB-02
Sample ID				SB-01-(33-34)	20100 325-FD-1	SB-02-(4.7-5.3)	SB-02-(11.5-13)	SB-02-(27-28)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				33.0-34.0	4.7-5.3	4.7-5.3	11.5-13.0	27.0-28.0
Date Sampled				03/29/10	03/25/10	03/25/10	03/29/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-		9.6	10		
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
Acenaphthene	MG/KG	20	500		2.2 J	1.7 J		
Acenaphthylene	MG/KG	100	500		0.54 J	0.55 J		
Acetophenone	MG/KG	-	-					
Anthracene	MG/KG	100	500		0.85 J	0.95 J		
Benzo(a)anthracene	MG/KG	1	5.6		1.4 J	1.4 J		
Benzo(a)pyrene	MG/KG	1	1		0.78 J	0.91 J		
Benzo(b)fluoranthene	MG/KG	1	5.6		0.59 J	0.54 J		
Benzo(g,h,i)perylene	MG/KG	100	500		0.79 J	0.99 J		
Benzo(k)fluoranthene	MG/KG	0.8	56		0.44 J	0.54 J		
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.037 J			0.10 J	0.041 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-					
Chrysene	MG/KG	1	56		1.1 J	1.2 J		
Dibenz(a,h)anthracene	MG/KG	0.33	0.56		0.26 J	0.29 J		
Dibenzofuran	MG/KG	7	350					
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500		1.1 J	1.1 J	0.035 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-01	SB-02	SB-02	SB-02	SB-02
Sample ID				SB-01-(33-34)	20100 325-FD-1	SB-02-(4.7-5.3)	SB-02-(11.5-13)	SB-02-(27-28)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				33.0-34.0	4.7-5.3	4.7-5.3	11.5-13.0	27.0-28.0
Date Sampled				03/29/10	03/25/10	03/25/10	03/29/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500		2.7 J	2.7 J		
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6		0.64 J	0.64 J		
Naphthalene	MG/KG	12	500		0.63 J	0.63 J	0.10 J	
Phenanthrene	MG/KG	100	500		3.2 J	4.4 J		
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500		2.6 J	2.6 J		
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	ND	29.42	31.14	0.135	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	0.037	29.42	31.14	0.235	0.041
Metals								
Aluminum	MG/KG	10000 CP-51	-	5,130	14,500	15,200	16,400 J	6,920
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	3.5	2.1	2.0	8.2 J	2.5
Barium	MG/KG	350	400	35.0 J	71.2 J	79.2 J	32.8 J	58.1 J
Beryllium	MG/KG	7.2	590	0.57 J	1.5 J	1.1 J	1.1 J	0.52 J
Cadmium	MG/KG	2.5	9.3	0.24	0.86 J	1.3 J	0.81 J	0.23
Calcium	MG/KG	10000 CP-51	-	1,440 J	1,270 J	1,610 J	2,490 J	1,010 J
Chromium	MG/KG	30	1500	20.3 J	31.3	34.2	32.5 J	16.8 J
Cobalt	MG/KG	20 CP-51	-	7.9 J	11.8 J	9.6 J	11.5 J	6.5 J
Copper	MG/KG	50	270	19.8	38.4 J	59.9 J	14.1 J	11.9
Iron	MG/KG	2000 CP-51	-	17,100	25,000	24,800	42,200 J	15,700

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-01	SB-02	SB-02	SB-02	SB-02
Sample ID				SB-01-(33-34)	20100 325-FD-1	SB-02-(4.7-5.3)	SB-02-(11.5-13)	SB-02-(27-28)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				33.0-34.0	4.7-5.3	4.7-5.3	11.5-13.0	27.0-28.0
Date Sampled				03/29/10	03/25/10	03/25/10	03/29/10	03/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Metals								
Lead	MG/KG	63	1000	3.7 J	10.4 J	20.1 J	13.6 J	5.2 J
Magnesium	MG/KG	-	-	2,990 J	4,370	4,970	7,860 J	2,930 J
Manganese	MG/KG	1600	10000	87.1 J	125 J	117 J	443 J	107 J
Mercury	MG/KG	0.18	2.8		0.022 J	0.085	0.026 J	
Nickel	MG/KG	30	310	20.3 J	26.1 J	24.3 J	28.0 J	11.7 J
Potassium	MG/KG	-	-	1,820	2,070	2,550	3,460 J	702
Selenium	MG/KG	3.9	1500	0.71 J	1.5 J	1.3		0.83 J
Silver	MG/KG	2	1500			0.13 J		
Sodium	MG/KG	-	-	430	126	154	3,400 J	572
Thallium	MG/KG	5 CP-51	-	0.37 J	0.96 J	1.0	1.4 J	0.39 J
Vanadium	MG/KG	39 CP-51	-	18.9 J	38.4	39.6	40.6 J	18.1 J
Zinc	MG/KG	109	10000	31.2 J	267 J	154 J	76.2 J	26.3 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

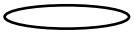
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-03	SB-03	SB-04	SB-04	SB-04
Sample ID				SB-03-(4.5-5.5)	SB-03-(28-29)	SB-04-(2.5-3.5)	SB-04-(4.2-5)	SB-04-(11-12)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	28.0-29.0	2.5-3.5	4.2-5.0	11.0-12.0
Date Sampled				03/26/10	03/29/10	04/13/10	04/13/10	04/16/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.020 J	0.0081 J			
Benzene	MG/KG	0.06	44	0.012				
Carbon disulfide	MG/KG	2.7 CP-51	-					
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-	0.017				
Ethylbenzene	MG/KG	1	390	0.0060				
Isopropylbenzene	MG/KG	2.3 CP-51	-	0.082 J				
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-	0.080 J				
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500					
Xylene (total)	MG/KG	0.26	500	0.012 J				
Total BTEX	MG/KG	-	-	0.03	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.229	0.0081	ND	ND	ND
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					
2,4-Dimethylphenol	MG/KG	-	-					

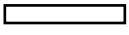
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-03	SB-03	SB-04	SB-04	SB-04
Sample ID				SB-03-(4.5-5.5)	SB-03-(28-29)	SB-04-(2.5-3.5)	SB-04-(4.2-5)	SB-04-(11-12)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	28.0-29.0	2.5-3.5	4.2-5.0	11.0-12.0
Date Sampled				03/26/10	03/29/10	04/13/10	04/13/10	04/16/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	35				
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
Acenaphthene	MG/KG	20	500	2.7				
Acenaphthylene	MG/KG	100	500			0.062 J	0.064 J	
Acetophenone	MG/KG	-	-					
Anthracene	MG/KG	100	500	1.5 J	0.021 J	0.059 J	0.083 J	
Benzo(a)anthracene	MG/KG	1	5.6	1.7 J	0.036 J	0.25	0.29	
Benzo(a)pyrene	MG/KG	1	1	0.98 J		0.22	0.22	
Benzo(b)fluoranthene	MG/KG	1	5.6	0.83 J		0.30	0.32	
Benzo(g,h,i)perylene	MG/KG	100	500	0.86 J		0.21	0.20 J	
Benzo(k)fluoranthene	MG/KG	0.8	56	0.76 J		0.091 J	0.091 J	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-		0.095 J		0.054 J	0.034 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-					
Chrysene	MG/KG	1	56	2.6	0.026 J	0.26	0.29	
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.22 J		0.041 J	0.045 J	
Dibenzofuran	MG/KG	7	350					
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500	1.8 J	0.045 J	0.35	0.50	0.043 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-03	SB-03	SB-04	SB-04	SB-04
Sample ID				SB-03-(4.5-5.5)	SB-03-(28-29)	SB-04-(2.5-3.5)	SB-04-(4.2-5)	SB-04-(11-12)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	28.0-29.0	2.5-3.5	4.2-5.0	11.0-12.0
Date Sampled				03/26/10	03/29/10	04/13/10	04/13/10	04/16/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	3.8			0.039 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.57 J		0.17 J	0.17 J	
Naphthalene	MG/KG	12	500	1.1 J		0.022 J	0.022 J	
Phenanthrene	MG/KG	100	500	9.7	0.067 J	0.20 J	0.34	
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	4.6	0.073 J	0.38	0.52	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	68.72	0.268	2.615	3.194	0.043
Total Semivolatile Organic Compounds	MG/KG	-	-	68.72	0.363	2.615	3.248	0.077
Metals								
Aluminum	MG/KG	10000 CP-51	-	9,010	5,720	10,700 J	9,650 J	10,100 J
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	3.2	1.6	4.3	8.1	8.3
Barium	MG/KG	350	400	68.3 J	29.3 J	79.2 J	53.1 J	22.5 J
Beryllium	MG/KG	7.2	590	0.92 J	0.58 J	1.1 J	0.91 J	0.73 J
Cadmium	MG/KG	2.5	9.3	1.5	0.19 J	0.51	0.41	0.29 J
Calcium	MG/KG	10000 CP-51	-	2,910 J	1,040 J	4,100 J	3,570 J	1,300 J
Chromium	MG/KG	30	1500	24.5 J	16.0 J	27.3 J	27.0 J	21.5 J
Cobalt	MG/KG	20 CP-51	-	9.0 J	4.3 J	11.1 J	18.2 J	7.5 J
Copper	MG/KG	50	270	90.3	18.0	38.6 J	19.0 J	8.3 J
Iron	MG/KG	2000 CP-51	-	22,600	10,000	33,000	29,000	26,900

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-03	SB-03	SB-04	SB-04	SB-04
Sample ID				SB-03-(4.5-5.5)	SB-03-(28-29)	SB-04-(2.5-3.5)	SB-04-(4.2-5)	SB-04-(11-12)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.5-5.5	28.0-29.0	2.5-3.5	4.2-5.0	11.0-12.0
Date Sampled				03/26/10	03/29/10	04/13/10	04/13/10	04/16/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Lead	MG/KG	63	1000	94.4 J	3.3 J	59.6 J	26.9 J	9.0 J
Magnesium	MG/KG	-	-	3,350 J	2,520 J	5,850 J	5,370 J	5,210 J
Manganese	MG/KG	1600	10000	114 J	70.6 J	250 J	206 J	317 J
Mercury	MG/KG	0.18	2.8	0.17		4.1 J	0.97 J	0.018 J
Nickel	MG/KG	30	310	21.2 J	10.2 J	24.4 J	24.4 J	16.9 J
Potassium	MG/KG	-	-	1,770	1,500	3,570 J	3,210 J	2,470 J
Selenium	MG/KG	3.9	1500	0.68 J	0.83 J	3.5	3.6	3.2
Silver	MG/KG	2	1500			0.15 J	0.12 J	0.16 J
Sodium	MG/KG	-	-	122	279	287 J	325 J	3,620 J
Thallium	MG/KG	5 CP-51	-	0.50 J	0.27 J	1.7	1.7	2.5
Vanadium	MG/KG	39 CP-51	-	31.0 J	23.5 J	33.7 J	31.7 J	26.0 J
Zinc	MG/KG	109	10000	488 J	25.5 J	127 J	66.3 J	50.1 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-05	SB-05	SB-05	SB-32	SB-32
Sample ID				SB-05-(4-5)	SB-05-(6.5-7.0)	SB-05-(11.5-12)	SB-32-(3-4)	SB-32-(5-6)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-5.0	6.5-7.0	11.5-12.0	3.0-4.0	5.0-6.0
Date Sampled				04/13/10	04/16/10	04/16/10	01/13/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500		0.047 J	0.015 J		0.030 J
Benzene	MG/KG	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	-		0.024 J	0.0050 J		
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390		0.040			
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500		0.019			
Xylene (total)	MG/KG	0.26	500		0.034			
Total BTEX	MG/KG	-	-	ND	0.093	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	ND	0.164	0.02	ND	0.03
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.027 J	25 J		0.14 J	0.027 J
2,4-Dimethylphenol	MG/KG	-	-		1.8 J			

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-05	SB-05	SB-05	SB-32	SB-32
Sample ID				SB-05-(4-5)	SB-05-(6.5-7.0)	SB-05-(11.5-12)	SB-32-(3-4)	SB-32-(5-6)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-5.0	6.5-7.0	11.5-12.0	3.0-4.0	5.0-6.0
Date Sampled				04/13/10	04/16/10	04/16/10	01/13/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.12 J	84 J		0.42	0.048 J
2-Methylphenol (o-cresol)	MG/KG	0.33	500		1.1 J			
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500		3.2 J		0.050 J	
Acenaphthene	MG/KG	20	500	0.035 J	250	0.21 J	0.32	0.024 J
Acenaphthylene	MG/KG	100	500	0.90			2.5	0.50
Acetophenone	MG/KG	-	-	0.026 J				
Anthracene	MG/KG	100	500	0.29	140 J	0.43 J	2.4	0.15 J
Benzo(a)anthracene	MG/KG	1	5.6	2.1	390	0.27 J	7.6	0.56
Benzo(a)pyrene	MG/KG	1	1	2.8	290	0.12 J	9.2	1.8
Benzo(b)fluoranthene	MG/KG	1	5.6	2.6	370	0.16 J	11	1.3
Benzo(g,h,i)perylene	MG/KG	100	500	3.1	160	0.16 J	6.4	2.8
Benzo(k)fluoranthene	MG/KG	0.8	56	1.7	27 J	0.072 J	2.5	0.41
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.069 J				0.026 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.039 J	96 J	0.11 J	0.37	
Chrysene	MG/KG	1	56	1.9	390	0.28 J	7.3	0.64
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.64	27 J	0.046 J	1.7	0.33
Dibenzofuran	MG/KG	7	350	0.036 J	170	0.35 J	0.64	0.023 J
Di-n-butylphthalate	MG/KG	0.014 CP-51	-				0.23	
Fluoranthene	MG/KG	100	500	2.8	1,100	0.56 J	13	0.53

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-05	SB-05	SB-05	SB-32	SB-32
Sample ID				SB-05-(4-5)	SB-05-(6.5-7.0)	SB-05-(11.5-12)	SB-32-(3-4)	SB-32-(5-6)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-5.0	6.5-7.0	11.5-12.0	3.0-4.0	5.0-6.0
Date Sampled				04/13/10	04/16/10	04/16/10	01/13/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	0.089 J	170	0.78 J	0.96	0.062 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	2.1 J	140 J	0.078 J	5.4	1.7
Naphthalene	MG/KG	12	500	0.11 J	410	0.13 J	0.58	0.15 J
Phenanthrene	MG/KG	100	500	0.90	1,200	2.1 J	7.7	0.25
Phenol	MG/KG	0.33	500		1.1 J			
Pyrene	MG/KG	100	500	2.5	830	0.41 J	14	1.2
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	24.684	5,978	5.806	92.98	12.454
Total Semivolatile Organic Compounds	MG/KG	-	-	24.881	6,276.2	6.266	94.41	12.53
Metals								
Aluminum	MG/KG	10000 CP-51	-	9,250 J	5,720 J	16,400 J	6,550	3,690 J
Antimony	MG/KG	12 CP-51	-				0.71 J	0.52 J
Arsenic	MG/KG	13	16	2.3	4.8	5.0 J	8.2	2.0
Barium	MG/KG	350	400	113 J	94.7 J	54.5 J	144	42.3 J
Beryllium	MG/KG	7.2	590	0.95 J	0.55 J	1.1 J	0.30	0.20 J
Cadmium	MG/KG	2.5	9.3	0.35	0.22 J	0.38 J	1.5	0.096 J
Calcium	MG/KG	10000 CP-51	-	12,000 J	102,000 J	1,620 J	22,300 J	7,270 J
Chromium	MG/KG	30	1500	21.4 J	12.7 J	35.0 J	23.4	7.9 J
Cobalt	MG/KG	20 CP-51	-	9.0 J	4.6 J	18.2 J	7.5	3.8 J
Copper	MG/KG	50	270	33.5 J	50.3 J	62.4 J	58.6 J	21.9
Iron	MG/KG	2000 CP-51	-	22,700	10,900	20,200 J	21,200	12,900 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

[SITEID] = '02' AND [MATRIX] = 'SO' AND ([LOCID] = 'MW-01' OR [LOCID] = 'SB-32' OR [LOCID] = 'MW-11' OR [LOCID] = 'SB-40' OR [LOCID] = 'SB-38' OR [LOCID] = 'SB-37' OR [LOCID] = 'SB-39' OR [LOCID] = 'SB-03' OR [LOCID] = 'SB-02' OR [LOCID] = 'SB-36' OR [LOCID] = 'SB-01' OR [LOCID] = 'SB-04' OR [LOCID] = 'SB-05' OR [LOCID] = 'SB-35' OR [LOCID] = 'SB-34' OR [LOCID]

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-05	SB-05	SB-05	SB-32	SB-32
Sample ID				SB-05-(4-5)	SB-05-(6.5-7.0)	SB-05-(11.5-12)	SB-32-(3-4)	SB-32-(5-6)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-5.0	6.5-7.0	11.5-12.0	3.0-4.0	5.0-6.0
Date Sampled				04/13/10	04/16/10	04/16/10	01/13/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Lead	MG/KG	63	1000	52.9 J	175 J	20.2 J	266	99.9 J
Magnesium	MG/KG	-	-	8,120 J	2,820 J	6,310 J	3,830 J	1,350 J
Manganese	MG/KG	1600	10000	246 J	1,150 J	222 J	248	125 J
Mercury	MG/KG	0.18	2.8	0.36 J	1.5 J	0.13 J	0.32 J	0.0070 J
Nickel	MG/KG	30	310	20.9 J	14.1 J	29.3 J	21.9	11.7 J
Potassium	MG/KG	-	-	2,790 J	891 J	3,610 J	1,400	494
Selenium	MG/KG	3.9	1500	3.0	1.1 J	3.8 J	1.7	0.65 J
Silver	MG/KG	2	1500	0.10 J	0.20 J	0.20 J		
Sodium	MG/KG	-	-	295 J	730 J	3,400 J	254	275
Thallium	MG/KG	5 CP-51	-	1.7	4.5	1.7 J		
Vanadium	MG/KG	39 CP-51	-	26.4 J	14.4 J	42.0 J	23.4	10.4 J
Zinc	MG/KG	109	10000	95.8 J	144 J	72.8 J	215 J	41.0 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-32	SB-32	SB-33	SB-33	SB-33
Sample ID				SB-32-(9-10)	SB-32-(13-14)	SB-33-(3.5-4)	SB-33-(10.5-11)	SB-33-(13.5-14)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-10.0	13.0-14.0	3.5-4.0	10.5-11.0	13.5-14.0
Date Sampled				01/17/11	01/17/11	01/11/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500	0.0072 J				
Acetone	MG/KG	0.05	500	0.036 J	0.017 J	0.0042 J	0.019 J	0.014 J
Benzene	MG/KG	0.06	44				0.015	
Carbon disulfide	MG/KG	2.7 CP-51	-	0.0023	0.012		0.0088	
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500			0.0016 J		
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500	0.0020 J			0.0027 J	
Xylene (total)	MG/KG	0.26	500	0.0053			0.013	
Total BTEX	MG/KG	-	-	0.0073	ND	ND	0.0307	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.0528	0.029	0.0058	0.0585	0.014
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.025 J			2.2	
2,4-Dimethylphenol	MG/KG	-	-				0.46	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

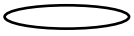
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

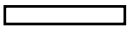
Location ID				SB-32	SB-32	SB-33	SB-33	SB-33
Sample ID				SB-32-(9-10)	SB-32-(13-14)	SB-33-(3.5-4)	SB-33-(10.5-11)	SB-33-(13.5-14)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-10.0	13.0-14.0	3.5-4.0	10.5-11.0	13.5-14.0
Date Sampled				01/17/11	01/17/11	01/11/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.056 J		0.027 J	5.5	
2-Methylphenol (o-cresol)	MG/KG	0.33	500				0.21 J	
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500				0.57	
Acenaphthene	MG/KG	20	500	0.075 J		0.14 J	3.4	
Acenaphthylene	MG/KG	100	500	0.12 J		0.28	8.0	0.034 J
Acetophenone	MG/KG	-	-				0.044 J	
Anthracene	MG/KG	100	500	0.24		0.42	14	0.052 J
Benzo(a)anthracene	MG/KG	1	5.6	0.41		1.6	16	0.11 J
Benzo(a)pyrene	MG/KG	1	1	0.48		1.6	17	0.10 J
Benzo(b)fluoranthene	MG/KG	1	5.6	0.56		2.0	21	0.13 J
Benzo(g,h,i)perylene	MG/KG	100	500	0.33		1.0	11	0.066 J
Benzo(k)fluoranthene	MG/KG	0.8	56	0.24		0.89	4.4	0.053 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.081 J		0.27	0.55	
Butylbenzylphthalate	MG/KG	100 CP-51	-				0.076 J	
Carbazole	MG/KG	-	-	0.21		0.15 J	4.8	
Chrysene	MG/KG	1	56	0.38		1.6	15	0.094 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.11 J		0.29	2.9	0.019 J
Dibenzofuran	MG/KG	7	350	0.22		0.050 J	8.9	0.023 J
Di-n-butylphthalate	MG/KG	0.014 CP-51	-				0.040 J	
Fluoranthene	MG/KG	100	500	0.66		2.7	39	0.20

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.


Concentration Exceeds Criteria (1)


Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-32	SB-32	SB-33	SB-33	SB-33
Sample ID				SB-32-(9-10)	SB-32-(13-14)	SB-33-(3.5-4)	SB-33-(10.5-11)	SB-33-(13.5-14)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-10.0	13.0-14.0	3.5-4.0	10.5-11.0	13.5-14.0
Date Sampled				01/17/11	01/17/11	01/11/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	0.18 J		0.12 J	11	0.034 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.30		0.94	9.4	0.060 J
Naphthalene	MG/KG	12	500	0.32		0.047 J	25	0.021 J
Phenanthrene	MG/KG	100	500	0.38		1.2	46	0.13 J
Phenol	MG/KG	0.33	500				0.40	
Pyrene	MG/KG	100	500	0.62		2.6	37	0.19
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	5.461	ND	17.454	285.6	1.293
Total Semivolatile Organic Compounds	MG/KG	-	-	5.997	ND	17.924	303.85	1.316
Metals								
Aluminum	MG/KG	10000 CP-51	-	10,100 J	16,700 J	6,300	5,740	8,430
Antimony	MG/KG	12 CP-51	-	1.5 J	1.2 J	0.40 J	2.4 J	
Arsenic	MG/KG	13	16	1.8	8.0	6.1	7.3	1.7
Barium	MG/KG	350	400	72.3 J	34.5 J	720	118	42.8
Beryllium	MG/KG	7.2	590	0.21 J	0.81 J	0.29	0.23	0.55
Cadmium	MG/KG	2.5	9.3	0.34	0.64	0.87	2.4	0.49
Calcium	MG/KG	10000 CP-51	-	1,760 J	2,000 J	61,600 J	23,400 J	20,600 J
Chromium	MG/KG	30	1500	63.2 J	34.7 J	14.3	37.1	15.9
Cobalt	MG/KG	20 CP-51	-	9.0 J	11.4 J	4.5	7.5	9.3
Copper	MG/KG	50	270	25.1	15.1	27.5 J	141 J	15.8 J
Iron	MG/KG	2000 CP-51	-	20,600 J	26,900 J	11,200	41,000	14,400

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-32	SB-32	SB-33	SB-33	SB-33
Sample ID				SB-32-(9-10)	SB-32-(13-14)	SB-33-(3.5-4)	SB-33-(10.5-11)	SB-33-(13.5-14)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-10.0	13.0-14.0	3.5-4.0	10.5-11.0	13.5-14.0
Date Sampled				01/17/11	01/17/11	01/11/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Lead	MG/KG	63	1000	7.5 J	19.6 J	1,330	232	9.0
Magnesium	MG/KG	-	-	6,210 J	8,020 J	3,680 J	3,110 J	14,700 J
Manganese	MG/KG	1600	10000	172 J	447 J	182	263	317
Mercury	MG/KG	0.18	2.8		0.028 J	0.20 J	0.47 J	0.13 J
Nickel	MG/KG	30	310	35.0 J	29.0 J	13.6	17.6	13.6
Potassium	MG/KG	-	-	3,100	3,890	1,480	927	1,050
Selenium	MG/KG	3.9	1500			0.60 J	0.64 J	0.92 J
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	911	4,570	393	472	468
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	31.4 J	42.2 J	19.8	32.7	23.8
Zinc	MG/KG	109	10000	42.5 J	76.7 J	486 J	246 J	41.3 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-34	SB-34	SB-35	SB-35	SB-35
Sample ID				SB-34-(10-11)	SB-34-(20-20.9)	01182011-FD-1	SB-35-(9.5-10.0)	SB-35-(17.2-17.8)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-11.0	20.0-20.9	9.5-10.0	9.5-10.0	17.2-17.8
Date Sampled				01/14/11	01/14/11	01/18/11	01/18/11	01/18/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			Field Duplicate (1-1)		
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500					0.0033 J
Acetone	MG/KG	0.05	500	0.015 J	0.012 J	0.012 J	0.018 J	0.028 J
Benzene	MG/KG	0.06	44					
Carbon disulfide	MG/KG	2.7 CP-51	-		0.0050			0.0022 J
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500			0.0017 J		
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500				0.0022	
Xylene (total)	MG/KG	0.26	500					
Total BTEX	MG/KG	-	-	ND	ND	ND	0.0022	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.015	0.017	0.0137	0.0202	0.0335
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					
2,4-Dimethylphenol	MG/KG	-	-					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-34	SB-34	SB-35	SB-35	SB-35
Sample ID				SB-34-(10-11)	SB-34-(20-20.9)	01182011-FD-1	SB-35-(9.5-10.0)	SB-35-(17.2-17.8)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-11.0	20.0-20.9	9.5-10.0	9.5-10.0	17.2-17.8
Date Sampled				01/14/11	01/14/11	01/18/11	01/18/11	01/18/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			Field Duplicate (1-1)		
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-					
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
Acenaphthene	MG/KG	20	500	0.020 J				
Acenaphthylene	MG/KG	100	500	0.036 J	0.036 J			
Acetophenone	MG/KG	-	-					
Anthracene	MG/KG	100	500	0.036 J	0.053 J			0.068 J
Benzo(a)anthracene	MG/KG	1	5.6	0.11 J	0.11 J	0.060 J	0.052 J	0.14 J
Benzo(a)pyrene	MG/KG	1	1	0.13 J	0.13 J	0.069 J	0.058 J	0.14 J
Benzo(b)fluoranthene	MG/KG	1	5.6	0.17 J	0.16 J	0.082 J	0.069 J	0.19 J
Benzo(g,h,i)perylene	MG/KG	100	500	0.092 J	0.085 J	0.056 J	0.057 J	0.096 J
Benzo(k)fluoranthene	MG/KG	0.8	56	0.061 J	0.058 J	0.037 J	0.035 J	0.087 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-			0.058 J	0.033 J	
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-					
Chrysene	MG/KG	1	56	0.12 J	0.11 J	0.057 J	0.053 J	0.13 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.024 J				0.031 J
Dibenzofuran	MG/KG	7	350		0.028 J			
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500	0.18 J	0.19 J	0.082 J	0.073 J	0.21

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

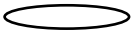
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-34	SB-34	SB-35	SB-35	SB-35
Sample ID				SB-34-(10-11)	SB-34-(20-20.9)	01182011-FD-1	SB-35-(9.5-10.0)	SB-35-(17.2-17.8)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-11.0	20.0-20.9	9.5-10.0	9.5-10.0	17.2-17.8
Date Sampled				01/14/11	01/14/11	01/18/11	01/18/11	01/18/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			Field Duplicate (1-1)		
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500		0.036 J			0.032 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.078 J	0.088 J	0.047 J	0.040 J	0.091 J
Naphthalene	MG/KG	12	500	0.033 J	0.088 J			
Phenanthrene	MG/KG	100	500	0.11 J	0.17 J	0.052 J	0.043 J	0.15 J
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	0.19	0.19 J	0.083 J	0.076 J	0.19 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	1.39	1.504	0.625	0.556	1.555
Total Semivolatile Organic Compounds	MG/KG	-	-	1.39	1.532	0.683	0.589	1.555
Metals								
Aluminum	MG/KG	10000 CP-51	-	9,950	15,200	5,580 J	5,690 J	14,000 J
Antimony	MG/KG	12 CP-51	-	0.43 J	0.47 J	0.48 J	0.37 J	1.3 J
Arsenic	MG/KG	13	16	3.8	11.6			1.2
Barium	MG/KG	350	400	73.3	33.6	33.7 J	36.9 J	59.6 J
Beryllium	MG/KG	7.2	590	0.69	0.75	0.45 J	0.41 J	0.48 J
Cadmium	MG/KG	2.5	9.3	0.93	1.1		0.099 J	0.40
Calcium	MG/KG	10000 CP-51	-	15,900 J	1,950 J	46,000 J	31,800 J	1,150 J
Chromium	MG/KG	30	1500	19.5	30.9	11.1 J	11.4 J	27.9 J
Cobalt	MG/KG	20 CP-51	-	10.4	10.4	7.4 J	6.2 J	9.4 J
Copper	MG/KG	50	270	36.3 J	16.0 J	16.0	13.5	17.5
Iron	MG/KG	2000 CP-51	-	15,700	34,400	10,400 J	9,110 J	19,400 J

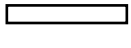
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-34	SB-34	SB-35	SB-35	SB-35
Sample ID				SB-34-(10-11)	SB-34-(20-20.9)	01182011-FD-1	SB-35-(9.5-10.0)	SB-35-(17.2-17.8)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-11.0	20.0-20.9	9.5-10.0	9.5-10.0	17.2-17.8
Date Sampled				01/14/11	01/14/11	01/18/11	01/18/11	01/18/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			Field Duplicate (1-1)		
Metals								
Lead	MG/KG	63	1000	129	16.2	16.7 J	9.6 J	10.9 J
Magnesium	MG/KG	-	-	8,950 J	7,250 J	29,900 J	21,000 J	5,870 J
Manganese	MG/KG	1600	10000	305	469	272 J	461 J	251 J
Mercury	MG/KG	0.18	2.8	0.20 J	0.044 J	0.040 J	0.067 J	0.039 J
Nickel	MG/KG	30	310	22.1	25.0	10.4 J	11.1 J	21.2 J
Potassium	MG/KG	-	-	1,440	3,710	1,110	1,270	2,010
Selenium	MG/KG	3.9	1500	1.2	2.6			
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	406	4,360	322	322	1,430
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	26.2	40.1	17.9 J	17.6 J	31.8 J
Zinc	MG/KG	109	10000	86.6 J	71.6 J	38.1 J	33.2 J	57.6 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-36	SB-36	SB-36	SB-36	SB-37
Sample ID				01132011-FD-1	SB-36-(3-4)	SB-36-(6.5-7)	SB-36-(13.5-14.2)	SB-37-(3-4)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	6.5-7.0	13.5-14.2	3.0-4.0
Date Sampled				01/13/11	01/13/11	01/17/11	01/17/11	01/06/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)				
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500			0.0038 J		
Acetone	MG/KG	0.05	500	0.014 J		0.020 J	0.014 J	
Benzene	MG/KG	0.06	44			0.0021 J		
Carbon disulfide	MG/KG	2.7 CP-51	-	0.0012 J			0.0050	
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500			0.0015 J		
Xylene (total)	MG/KG	0.26	500					
Total BTEX	MG/KG	-	-	ND	ND	0.0036	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.0152	ND	0.0274	0.019	ND
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	3.6 J	0.94	0.028 J		0.37
2,4-Dimethylphenol	MG/KG	-	-	0.40	0.19			

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-36	SB-36	SB-36	SB-36	SB-37
Sample ID				01132011-FD-1	SB-36-(3-4)	SB-36-(6.5-7)	SB-36-(13.5-14.2)	SB-37-(3-4)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	6.5-7.0	13.5-14.2	3.0-4.0
Date Sampled				01/13/11	01/13/11	01/17/11	01/17/11	01/06/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	11	3.0	0.12 J		1.2
2-Methylphenol (o-cresol)	MG/KG	0.33	500	0.23	0.12 J			0.021 J
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500	0.64	0.27	0.025 J		0.054 J
Acenaphthene	MG/KG	20	500	7.5 J	2.0	0.052 J		0.78
Acenaphthylene	MG/KG	100	500	25	6.8	1.4		2.7
Acetophenone	MG/KG	-	-	0.048 J	0.023 J	0.074 J		0.038 J
Anthracene	MG/KG	100	500	38	11	0.49		2.9
Benzo(a)anthracene	MG/KG	1	5.6	58	17	1.4		6.3
Benzo(a)pyrene	MG/KG	1	1	50	14	1.6		5.7
Benzo(b)fluoranthene	MG/KG	1	5.6	66	17	3.3		7.1
Benzo(g,h,i)perylene	MG/KG	100	500	30	8.3	2.3		3.8
Benzo(k)fluoranthene	MG/KG	0.8	56	21	6.8	1.1		1.7
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-			0.046 J		0.30
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	12	3.4 J	0.066 J		1.1
Chrysene	MG/KG	1	56	51	14	1.7		5.5
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	6.3 J	2.5	0.60		1.0
Dibenzofuran	MG/KG	7	350	19	5.5			1.8
Di-n-butylphthalate	MG/KG	0.014 CP-51	-			0.054 J		0.059 J
Fluoranthene	MG/KG	100	500	130	39	1.6	0.052 J	15

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-36	SB-36	SB-36	SB-36	SB-37
Sample ID				01132011-FD-1	SB-36-(3-4)	SB-36-(6.5-7)	SB-36-(13.5-14.2)	SB-37-(3-4)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	6.5-7.0	13.5-14.2	3.0-4.0
Date Sampled				01/13/11	01/13/11	01/17/11	01/17/11	01/06/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	26	7.8	0.14 J		2.3
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	27	7.6	2.0 J		3.3
Naphthalene	MG/KG	12	500	21	7.5	0.23		3.6
Phenanthrene	MG/KG	100	500	140	39	0.61	0.055 J	15
Phenol	MG/KG	0.33	500	0.39	0.15 J			0.033 J
Pyrene	MG/KG	100	500	120	35	2.0	0.048 J	14
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	827.8	238.3	20.642	0.155	91.88
Total Semivolatile Organic Compounds	MG/KG	-	-	864.108	248.893	20.935	0.155	95.655
Metals								
Aluminum	MG/KG	10000 CP-51	-	8,680	10,800	4,710 J	14,700 J	7,020
Antimony	MG/KG	12 CP-51	-	0.66 J	0.86 J	1.7 J	0.67 J	2.8 J
Arsenic	MG/KG	13	16	3.9	4.2	9.2	11.1	9.2
Barium	MG/KG	350	400	73.3	87.9	230 J	28.5 J	367
Beryllium	MG/KG	7.2	590	0.26	0.35	0.16 J	0.73 J	0.47
Cadmium	MG/KG	2.5	9.3	0.75	0.97	1.0	0.69	2.4 J
Calcium	MG/KG	10000 CP-51	-	4,190 J	3,170 J	11,100 J	1,930 J	20,500 J
Chromium	MG/KG	30	1500	23.4	27.0	15.9 J	31.1 J	28.0
Cobalt	MG/KG	20 CP-51	-	7.7	8.2	4.7 J	11.0 J	7.3 J
Copper	MG/KG	50	270	46.9 J	115 J	85.4	13.9	148
Iron	MG/KG	2000 CP-51	-	17,800	20,800	24,000 J	32,400 J	34,900 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

[SITEID] = '02' AND [MATRIX] = 'SO' AND ([LOCID] = 'MW-01' OR [LOCID] = 'SB-32' OR [LOCID] = 'MW-11' OR [LOCID] = 'SB-40' OR [LOCID] = 'SB-38' OR [LOCID] = 'SB-37' OR [LOCID] = 'SB-39' OR [LOCID] = 'SB-03' OR [LOCID] = 'SB-02' OR [LOCID] = 'SB-36' OR [LOCID] = 'SB-01' OR [LOCID] = 'SB-04' OR [LOCID] = 'SB-05' OR [LOCID] = 'SB-35' OR [LOCID] = 'SB-34' OR [LOCID]

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-36	SB-36	SB-36	SB-36	SB-37
Sample ID				01132011-FD-1	SB-36-(3-4)	SB-36-(6.5-7)	SB-36-(13.5-14.2)	SB-37-(3-4)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	6.5-7.0	13.5-14.2	3.0-4.0
Date Sampled				01/13/11	01/13/11	01/17/11	01/17/11	01/06/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)				
Metals								
Lead	MG/KG	63	1000	85.1	96.2	355 J	13.6 J	762 J
Magnesium	MG/KG	-	-	4,380 J	4,580 J	1,820 J	7,250 J	4,370
Manganese	MG/KG	1600	10000	132	171	166 J	553 J	333
Mercury	MG/KG	0.18	2.8	0.16 J	0.21 J	0.61 J	0.0090 J	1.0
Nickel	MG/KG	30	310	19.2	20.2	13.8 J	25.8 J	23.0
Potassium	MG/KG	-	-	1,790	2,420	1,440	3,360	2,270
Selenium	MG/KG	3.9	1500	1.4	1.3 J	0.95 J		
Silver	MG/KG	2	1500			0.37 J		0.16 J
Sodium	MG/KG	-	-	194	206	409	3,730	347
Thallium	MG/KG	5 CP-51	-					0.99
Vanadium	MG/KG	39 CP-51	-	27.0	34.0	35.3 J	37.8 J	22.9
Zinc	MG/KG	109	10000	113 J	142 J	230 J	72.7 J	556 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-37	SB-37	SB-37	SB-38	SB-38
Sample ID				SB-37-(8.5-9)	SB-37-(8.2-9.0)	SB-37-(13.5-14.5)	SB-38-(4-5)	SB-38-(7.8-8.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				8.5-9.0	8.2-9.0	13.5-14.5	4.0-5.0	7.8-8.5
Date Sampled				01/06/11	01/11/11	01/11/11	01/06/11	01/11/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500		0.0078 J			
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500		0.11 J	0.013 J		0.019 J
Benzene	MG/KG	0.06	44		0.026 J		0.0016 J	0.0074
Carbon disulfide	MG/KG	2.7 CP-51	-		0.0088 J			
Chloroform	MG/KG	0.37	350	0.11 J				
Cyclohexane	MG/KG	-	-	2.0	0.49 J			
Ethylbenzene	MG/KG	1	390	2.8	8.6 J			0.019
Isopropylbenzene	MG/KG	2.3 CP-51	-	0.41	0.61 J			0.0048
Methyl tert-butyl ether	MG/KG	0.93	500					
Methylcyclohexane	MG/KG	-	-	1.6	0.67 J			0.0042 J
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					0.048
Toluene	MG/KG	0.7	500		0.082 J		0.0018 J	0.017
Xylene (total)	MG/KG	0.26	500	0.33 J	4.6 J			0.083
Total BTEX	MG/KG	-	-	3.13	13.308	ND	0.0034	0.1264
Total Volatile Organic Compounds	MG/KG	-	-	7.25	15.2046	0.013	0.0034	0.2024
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-				0.071 J	54 J
2,4-Dimethylphenol	MG/KG	-	-					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-37	SB-37	SB-37	SB-38	SB-38
Sample ID				SB-37-(8.5-9)	SB-37-(8.2-9.0)	SB-37-(13.5-14.5)	SB-38-(4-5)	SB-38-(7.8-8.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				8.5-9.0	8.2-9.0	13.5-14.5	4.0-5.0	7.8-8.5
Date Sampled				01/06/11	01/11/11	01/11/11	01/06/11	01/11/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-				0.43	520
2-Methylphenol (o-cresol)	MG/KG	0.33	500				0.042 J	
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500				0.14 J	
Acenaphthene	MG/KG	20	500	6.1	3.3		0.15 J	17
Acenaphthylene	MG/KG	100	500	3.8			3.6	29
Acetophenone	MG/KG	-	-	0.85 J			0.12 J	24
Anthracene	MG/KG	100	500	2.4	1.5		2.0	45 J
Benzo(a)anthracene	MG/KG	1	5.6	3.6	0.72 J		7.1	150
Benzo(a)pyrene	MG/KG	1	1	2.0 J	0.54 J		6.4	65 J
Benzo(b)fluoranthene	MG/KG	1	5.6	7.1	0.50 J		11	120
Benzo(g,h,i)perylene	MG/KG	100	500	3.7	0.36 J		7.4	56 J
Benzo(k)fluoranthene	MG/KG	0.8	56	3.5	0.45 J		2.5	24
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.36 J			0.15 J	
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.40 J			0.19 J	
Chrysene	MG/KG	1	56	6.9	1.6 J		7.4	160
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	1.4 J	0.12 J		1.7	15
Dibenzofuran	MG/KG	7	350	3.0	1.7 J		0.21	14
Di-n-butylphthalate	MG/KG	0.014 CP-51	-				0.035 J	
Fluoranthene	MG/KG	100	500	3.0	1.5 J		8.7	190

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-37	SB-37	SB-37	SB-38	SB-38
Sample ID				SB-37-(8.5-9)	SB-37-(8.2-9.0)	SB-37-(13.5-14.5)	SB-38-(4-5)	SB-38-(7.8-8.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				8.5-9.0	8.2-9.0	13.5-14.5	4.0-5.0	7.8-8.5
Date Sampled				01/06/11	01/11/11	01/11/11	01/06/11	01/11/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	6.2	3.6		0.29	88
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	3.2 J	0.29 J		6.0 J	44 J
Naphthalene	MG/KG	12	500	0.80 J	0.54		1.9	1,100
Phenanthrene	MG/KG	100	500	10	5.8		3.0	420
Phenol	MG/KG	0.33	500				0.047 J	
Pyrene	MG/KG	100	500	5.5	2.8 J		14	300
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	69.2	23.62	ND	83.57	3,343
Total Semivolatile Organic Compounds	MG/KG	-	-	73.81	25.32	ND	84.575	3,435
Metals								
Aluminum	MG/KG	10000 CP-51	-	3,310	2,670	12,900	9,990	2,220
Antimony	MG/KG	12 CP-51	-	1.0 J		0.66 J	1.3 J	3.2 J
Arsenic	MG/KG	13	16	4.1	3.9	4.2	5.6	32.7
Barium	MG/KG	350	400	67.4	84.3	31.7	69.3	88.6
Beryllium	MG/KG	7.2	590	0.19 J	0.17 J	0.41	0.40	0.039 J
Cadmium	MG/KG	2.5	9.3	0.12 J	0.39	0.54	0.66 J	2.7
Calcium	MG/KG	10000 CP-51	-	567 J	1,870 J	1,060 J	3,630 J	725 J
Chromium	MG/KG	30	1500	13.9	6.8	19.2	22.8	14.2
Cobalt	MG/KG	20 CP-51	-	1.5 J	3.3	8.2	4.4 J	4.8
Copper	MG/KG	50	270	26.7	58.3 J	13.3 J	72.9	319 J
Iron	MG/KG	2000 CP-51	-	12,800 J	14,000	20,100	18,200 J	62,200

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-37	SB-37	SB-37	SB-38	SB-38
Sample ID				SB-37-(8.5-9)	SB-37-(8.2-9.0)	SB-37-(13.5-14.5)	SB-38-(4-5)	SB-38-(7.8-8.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				8.5-9.0	8.2-9.0	13.5-14.5	4.0-5.0	7.8-8.5
Date Sampled				01/06/11	01/11/11	01/11/11	01/06/11	01/11/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Metals								
Lead	MG/KG	63	1000	54.6 J	20.7	7.7	169 J	275
Magnesium	MG/KG	-	-	1,080	515 J	3,620 J	5,740	1,470 J
Manganese	MG/KG	1600	10000	38.0	61.4	816	156	211
Mercury	MG/KG	0.18	2.8	0.44	0.15 J	0.0094 J	0.70	0.58 J
Nickel	MG/KG	30	310	9.2	6.8	14.5	18.0	9.7
Potassium	MG/KG	-	-	613	1,170	1,010	2,360	868
Selenium	MG/KG	3.9	1500		1.1	1.2 J		4.2
Silver	MG/KG	2	1500	0.085 J			0.080 J	
Sodium	MG/KG	-	-	74.2	75.6	916	285	292
Thallium	MG/KG	5 CP-51	-	0.56 J			0.47 J	0.84 J
Vanadium	MG/KG	39 CP-51	-	21.5	13.3	26.2	33.1	24.1
Zinc	MG/KG	109	10000	26.3 J	26.5 J	33.0 J	169 J	162 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

[SITEID] = '02' AND [MATRIX] = 'SO' AND ([LOCID] = 'MW-01' OR [LOCID] = 'SB-32' OR [LOCID] = 'MW-11' OR [LOCID] = 'SB-40' OR [LOCID] = 'SB-38' OR [LOCID] = 'SB-37' OR [LOCID] = 'SB-39' OR [LOCID] = 'SB-03' OR [LOCID] = 'SB-02' OR [LOCID] = 'SB-36' OR [LOCID] = 'SB-01' OR [LOCID] = 'SB-04' OR [LOCID] = 'SB-05' OR [LOCID] = 'SB-35' OR [LOCID] = 'SB-34' OR [LOCID]

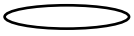
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

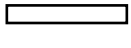
Location ID				SB-38	SB-38	SB-39	SB-39	SB-39
Sample ID				SB-38-(11-11.5)	SB-38-(15.5-16.5)	SB-39-(3.5-4)	SB-39-(5-5.5)	SB-39-(6.7-7.7)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				11.0-11.5	15.5-16.5	3.5-4.0	5.0-5.5	6.7-7.7
Date Sampled				01/11/11	01/11/11	01/07/11	01/07/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2-Dichlorobenzene	MG/KG	1.1	500					
2-Butanone	MG/KG	0.12	500		0.0057 J			
Acetone	MG/KG	0.05	500		0.032 J		0.059 J	
Benzene	MG/KG	0.06	44		0.0019 J		0.035	0.31 J
Carbon disulfide	MG/KG	2.7 CP-51	-		0.041			
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-				0.091	0.43
Ethylbenzene	MG/KG	1	390					
Isopropylbenzene	MG/KG	2.3 CP-51	-	1.0			0.24	1.2
Methyl tert-butyl ether	MG/KG	0.93	500		0.0022 J			
Methylcyclohexane	MG/KG	-	-	1.3			0.36	2.2
Methylene chloride	MG/KG	0.05	500		0.0017 J			
Styrene	MG/KG	300 CP-51	-					
Toluene	MG/KG	0.7	500		0.0069		0.016 J	
Xylene (total)	MG/KG	0.26	500					
Total BTEX	MG/KG	-	-	ND	0.0088	ND	0.051	0.31
Total Volatile Organic Compounds	MG/KG	-	-	2.3	0.0914	ND	0.801	4.14
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					
2,4-Dimethylphenol	MG/KG	-	-					

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.


Concentration Exceeds Criteria (1)


Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-38	SB-38	SB-39	SB-39	SB-39
Sample ID				SB-38-(11-11.5)	SB-38-(15.5-16.5)	SB-39-(3.5-4)	SB-39-(5-5.5)	SB-39-(6.7-7.7)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				11.0-11.5	15.5-16.5	3.5-4.0	5.0-5.5	6.7-7.7
Date Sampled				01/11/11	01/11/11	01/07/11	01/07/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	43			12	70
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
Acenaphthene	MG/KG	20	500	2.6			9.1	8.4
Acenaphthylene	MG/KG	100	500			0.73 J		
Acetophenone	MG/KG	-	-					
Anthracene	MG/KG	100	500	1.5		0.60 J	4.3	2.6
Benzo(a)anthracene	MG/KG	1	5.6	1.7		2.4	3.4	1.4 J
Benzo(a)pyrene	MG/KG	1	1	1.4		2.4	1.7 J	0.76 J
Benzo(b)fluoranthene	MG/KG	1	5.6	1.2		3.6	1.3 J	0.88 J
Benzo(g,h,i)perylene	MG/KG	100	500	1.1		1.9 J	0.74 J	
Benzo(k)fluoranthene	MG/KG	0.8	56	1.1		1.3 J	0.49 J	0.43 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-				0.45 J	
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-			0.22 J		1.0 J
Chrysene	MG/KG	1	56	2.3		2.5	5.2	1.5 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.33		0.48 J	0.33 J	
Dibenzofuran	MG/KG	7	350	1.3				4.1
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500	1.7		4.5	3.8	2.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-38	SB-38	SB-39	SB-39	SB-39
Sample ID				SB-38-(11-11.5)	SB-38-(15.5-16.5)	SB-39-(3.5-4)	SB-39-(5-5.5)	SB-39-(6.7-7.7)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				11.0-11.5	15.5-16.5	3.5-4.0	5.0-5.5	6.7-7.7
Date Sampled				01/11/11	01/11/11	01/07/11	01/07/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Fluorene	MG/KG	30	500	3.8 J		0.22 J	11	10
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.87		1.7 J	0.58 J	0.36 J
Naphthalene	MG/KG	12	500	4.7				8.5
Phenanthrene	MG/KG	100	500	10		2.3	23	19
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	3.6 J		4.4	9.1	5.7
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	80.9	ND	29.03	86.04	132.23
Total Semivolatile Organic Compounds	MG/KG	-	-	82.2	ND	29.25	86.49	137.33
Metals								
Aluminum	MG/KG	10000 CP-51	-	11,600	14,100	6,290	7,180	9,440 J
Antimony	MG/KG	12 CP-51	-	0.38 J		1.2 J	0.99 J	1.0 J
Arsenic	MG/KG	13	16	1.5	8.6	3.9	1.7	1.3
Barium	MG/KG	350	400	144	31.0	142	58.9	38.5 J
Beryllium	MG/KG	7.2	590		0.72	0.35	0.39	0.31 J
Cadmium	MG/KG	2.5	9.3	0.78	0.84	1.0 J	1.2 J	0.26
Calcium	MG/KG	10000 CP-51	-	6,630 J	1,720 J	29,000 J	9,230 J	2,540 J
Chromium	MG/KG	30	1500	15.4	29.1	15.5	25.0	17.5 J
Cobalt	MG/KG	20 CP-51	-	10.1	10	4.4 J	6.7 J	10.7 J
Copper	MG/KG	50	270	37.3 J	12.4 J	34.2	35.6	15.9
Iron	MG/KG	2000 CP-51	-	24,100	29,300	10,700 J	16,400 J	12,300 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-38	SB-38	SB-39	SB-39	SB-39
Sample ID				SB-38-(11-11.5)	SB-38-(15.5-16.5)	SB-39-(3.5-4)	SB-39-(5-5.5)	SB-39-(6.7-7.7)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				11.0-11.5	15.5-16.5	3.5-4.0	5.0-5.5	6.7-7.7
Date Sampled				01/11/11	01/11/11	01/07/11	01/07/11	01/17/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Lead	MG/KG	63	1000	8.1	12.4	163 J	55.2 J	6.3 J
Magnesium	MG/KG	-	-	5,320 J	6,860 J	2,930	5,420	4,280 J
Manganese	MG/KG	1600	10000	554	421	261	151	181 J
Mercury	MG/KG	0.18	2.8	0.042 J	0.017 J	0.58	0.32	0.0098 J
Nickel	MG/KG	30	310	11.5	23.7	14.2	21.0	20.1 J
Potassium	MG/KG	-	-	6,460	3,070	1,990	2,050	1,670
Selenium	MG/KG	3.9	1500	0.94 J	2.2 J			
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	270	4,680	281	141	185
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	45.8	37.7	19.0	27.2	22.9 J
Zinc	MG/KG	109	10000	44.0 J	69.1 J	136 J	130 J	96.3 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

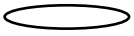
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-39	SB-40	SB-40
Sample ID				SB-39-(14-15)	SB-40-(9.5-10)	SB-40-(13.5-14.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				14.0-15.0	9.5-10.0	13.5-14.5
Date Sampled				01/17/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			
Volatile Organic Compounds						
1,2-Dichlorobenzene	MG/KG	1.1	500			
2-Butanone	MG/KG	0.12	500			0.0062 J
Acetone	MG/KG	0.05	500	0.011 J		0.030 J
Benzene	MG/KG	0.06	44			
Carbon disulfide	MG/KG	2.7 CP-51	-	0.014		
Chloroform	MG/KG	0.37	350			
Cyclohexane	MG/KG	-	-			
Ethylbenzene	MG/KG	1	390			
Isopropylbenzene	MG/KG	2.3 CP-51	-			
Methyl tert-butyl ether	MG/KG	0.93	500			
Methylcyclohexane	MG/KG	-	-			
Methylene chloride	MG/KG	0.05	500	0.0017 J		
Styrene	MG/KG	300 CP-51	-			
Toluene	MG/KG	0.7	500			
Xylene (total)	MG/KG	0.26	500			
Total BTEX	MG/KG	-	-	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.0267	ND	0.0362
Semivolatile Organic Compounds						
1,1'-Biphenyl	MG/KG	60 CP-51	-			
2,4-Dimethylphenol	MG/KG	-	-			

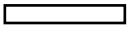
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-39	SB-40	SB-40
Sample ID				SB-39-(14-15)	SB-40-(9.5-10)	SB-40-(13.5-14.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				14.0-15.0	9.5-10.0	13.5-14.5
Date Sampled				01/17/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			
Semivolatile Organic Compounds						
2-Methylnaphthalene	MG/KG	0.41 CP-51	-			
2-Methylphenol (o-cresol)	MG/KG	0.33	500			
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500			
Acenaphthene	MG/KG	20	500		2.4	0.020 J
Acenaphthylene	MG/KG	100	500			
Acetophenone	MG/KG	-	-			
Anthracene	MG/KG	100	500		0.69	
Benzo(a)anthracene	MG/KG	1	5.6		0.45	
Benzo(a)pyrene	MG/KG	1	1		0.26	
Benzo(b)fluoranthene	MG/KG	1	5.6		0.25	
Benzo(g,h,i)perylene	MG/KG	100	500		0.14 J	
Benzo(k)fluoranthene	MG/KG	0.8	56		0.078 J	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-			
Butylbenzylphthalate	MG/KG	100 CP-51	-			
Carbazole	MG/KG	-	-			
Chrysene	MG/KG	1	56		0.97	
Dibenz(a,h)anthracene	MG/KG	0.33	0.56		0.059 J	
Dibenzofuran	MG/KG	7	350		0.78	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-			
Fluoranthene	MG/KG	100	500		0.70	0.020 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

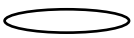
TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-39	SB-40	SB-40
Sample ID				SB-39-(14-15)	SB-40-(9.5-10)	SB-40-(13.5-14.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				14.0-15.0	9.5-10.0	13.5-14.5
Date Sampled				01/17/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			
Semivolatile Organic Compounds						
Fluorene	MG/KG	30	500		2.4	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6		0.098 J	
Naphthalene	MG/KG	12	500		0.47	0.052 J
Phenanthrene	MG/KG	100	500		2.2	
Phenol	MG/KG	0.33	500			
Pyrene	MG/KG	100	500		1.7	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	ND	12.865	0.092
Total Semivolatile Organic Compounds	MG/KG	-	-	ND	13.645	0.092
Metals						
Aluminum	MG/KG	10000 CP-51	-	11,200 J	1,330	14,600
Antimony	MG/KG	12 CP-51	-	0.76 J		0.63 J
Arsenic	MG/KG	13	16	9.1	2.9	2.5
Barium	MG/KG	350	400	22.3 J	54.1	87.2
Beryllium	MG/KG	7.2	590	0.55 J	0.064 J	0.69
Cadmium	MG/KG	2.5	9.3	0.49	0.16 J	1.0
Calcium	MG/KG	10000 CP-51	-	3,230 J	938 J	1,460 J
Chromium	MG/KG	30	1500	23.4 J	6.9	41.6
Cobalt	MG/KG	20 CP-51	-	8.2 J	1.7 J	15.6
Copper	MG/KG	50	270	10.1	23.6 J	27.6 J
Iron	MG/KG	2000 CP-51	-	38,600 J	6,900	33,700

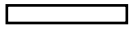
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-4
BLOCK 2591 LOT 46
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-39	SB-40	SB-40
Sample ID				SB-39-(14-15)	SB-40-(9.5-10)	SB-40-(13.5-14.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				14.0-15.0	9.5-10.0	13.5-14.5
Date Sampled				01/17/11	01/14/11	01/14/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**			
Metals						
Lead	MG/KG	63	1000	10.4 J	30.2	10.3
Magnesium	MG/KG	-	-	5,830 J	412 J	6,200 J
Manganese	MG/KG	1600	10000	388 J	22.6	368
Mercury	MG/KG	0.18	2.8	0.0073 J	0.014 J	0.018 J
Nickel	MG/KG	30	310	19.6 J	6.0	26.8
Potassium	MG/KG	-	-	2,620	412	2,770
Selenium	MG/KG	3.9	1500		1.4 J	1.5
Silver	MG/KG	2	1500			
Sodium	MG/KG	-	-	3,400	93.7	1,500
Thallium	MG/KG	5 CP-51	-			
Vanadium	MG/KG	39 CP-51	-	31.1 J	8.6	45.2
Zinc	MG/KG	109	10000	53.4 J	18.9 J	63.2 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-5
BLOCK 2591 LOT 46
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
1,2-Dichlorobenzene	MG/KG	500	53	2	0.001	0.008	0.005	0	SB-37	8.2-9
2-Butanone	MG/KG	500	53	5	0.003	0.007	0.005	0	SB-32	9-10
Acetone	MG/KG	500	53	37	0.004	0.110	0.021	0	SB-37	8.2-9
Benzene	MG/KG	44	53	16	0.002	0.320	0.048	0	MW-01	11-12
Carbon disulfide	MG/KG	-	53	18	0.001	0.041	0.010	0	SB-38	15.5-16.5
Chloroform	MG/KG	350	53	1	0.110	0.110	0.110	0	SB-37	8.5-9
Cyclohexane	MG/KG	-	53	7	0.004	2.00	0.434	0	SB-37	8.5-9
Ethylbenzene	MG/KG	390	53	8	0.002	8.60	1.48	0	SB-37	8.2-9
Isopropylbenzene	MG/KG	-	53	10	0.005	1.20	0.363	0	SB-39	6.7-7.7
Methyl tert-butyl ether	MG/KG	500	53	1	0.002	0.002	0.002	0	SB-38	15.5-16.5
Methylcyclohexane	MG/KG	-	53	9	0.004	2.20	0.695	0	SB-39	6.7-7.7
Methylene chloride	MG/KG	500	53	4	0.002	0.002	0.002	0	SB-39	14-15
Styrene	MG/KG	-	53	1	0.048	0.048	0.048	0	SB-38	7.8-8.5
Toluene	MG/KG	500	53	12	0.001	0.390	0.045	0	MW-01	11-12
Xylene (total)	MG/KG	500	53	11	0.003	4.60	0.590	0	SB-37	8.2-9
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	53	16	0.025	54.00	6.29	0	SB-38	7.8-8.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-5
BLOCK 2591 LOT 46
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
2,4-Dimethylphenol	MG/KG	-	53	5	0.190	1.80	0.670	0	SB-05	6.5-7
2-Methylnaphthalene	MG/KG	-	53	25	0.027	520.0	33.60	0	SB-38	7.8-8.5
2-Methylphenol (o-cresol)	MG/KG	500	53	7	0.021	1.10	0.288	0	SB-05	6.5-7
3&4-Methylphenol (m,p-cresol)	MG/KG	500	53	11	0.025	3.20	0.523	0	SB-05	6.5-7
Acenaphthene	MG/KG	500	53	32	0.020	250.0	11.66	0	SB-05	6.5-7
Acenaphthylene	MG/KG	500	53	28	0.034	29.00	3.97	0	SB-38	7.8-8.5
Acetophenone	MG/KG	-	53	10	0.023	24.00	2.53	0	SB-38	7.8-8.5
Anthracene	MG/KG	500	53	38	0.021	140.0	8.82	0	SB-05	6.5-7
Benzo(a)anthracene	MG/KG	5.6	53	43	0.031	390.0	17.29	9	SB-05	6.5-7
Benzo(a)pyrene	MG/KG	1	53	41	0.042	290.0	12.95	18	SB-05	6.5-7
Benzo(b)fluoranthene	MG/KG	5.6	53	40	0.069	370.0	17.87	10	SB-05	6.5-7
Benzo(g,h,i)perylene	MG/KG	500	53	36	0.056	160.0	9.67	0	SB-05	6.5-7
Benzo(k)fluoranthene	MG/KG	56	53	40	0.034	27.00	3.14	0	SB-05	6.5-7
bis(2-Ethylhexyl)phthalate	MG/KG	-	53	26	0.026	0.550	0.136	0	SB-33	10.5-11
Butylbenzylphthalate	MG/KG	-	53	1	0.076	0.076	0.076	0	SB-33	10.5-11
Carbazole	MG/KG	-	53	21	0.031	96.00	6.98	0	SB-05	6.5-7
Chrysene	MG/KG	56	53	42	0.026	390.0	17.56	2	SB-05	6.5-7

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-5
BLOCK 2591 LOT 46
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Dibenz(a,h)anthracene	MG/KG	0.56	53	35	0.019	27.00	2.44	12	SB-05	6.5-7
Dibenzofuran	MG/KG	350	53	26	0.023	170.0	10.67	0	SB-05	6.5-7
Di-n-butylphthalate	MG/KG	-	53	6	0.024	0.230	0.074	0	SB-32	3-4
Fluoranthene	MG/KG	500	53	46	0.020	1,100	36.85	1	SB-05	6.5-7
Fluorene	MG/KG	500	53	34	0.032	170.0	11.95	0	SB-05	6.5-7
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	53	37	0.040	140.0	7.96	7	SB-05	6.5-7
Naphthalene	MG/KG	500	53	35	0.021	1,100	53.17	1	SB-38	7.8-8.5
Phenanthrene	MG/KG	500	53	43	0.041	1,200	50.28	1	SB-05	6.5-7
Phenol	MG/KG	500	53	8	0.020	1.10	0.341	0	SB-05	6.5-7
Pyrene	MG/KG	500	53	43	0.048	830.0	35.94	1	SB-05	6.5-7
Metals										
Aluminum	MG/KG	-	53	53	1,330	1.67E+04	9,139	0	SB-32	13-14
Antimony	MG/KG	-	53	30	0.370	3.20	1.03	0	SB-38	7.8-8.5
Arsenic	MG/KG	16	53	51	1.20	32.70	5.42	1	SB-38	7.8-8.5
Barium	MG/KG	400	53	53	21.80	720.0	92.03	1	SB-33	3.5-4
Beryllium	MG/KG	590	53	52	0.039	1.50	0.576	0	SB-02	4.7-5.3
Cadmium	MG/KG	9.3	53	52	0.096	2.70	0.710	0	SB-38	7.8-8.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-5
BLOCK 2591 LOT 46
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Calcium	MG/KG	-	53	53	567.0	1.56E+05	1.39E+04	0	MW-01	4.5-5
Chromium	MG/KG	1500	53	53	6.80	63.20	22.68	0	SB-32	9-10
Cobalt	MG/KG	-	53	53	1.50	18.20	8.12	0	SB-05	11.5-12
Copper	MG/KG	270	53	53	8.30	319.0	45.70	1	SB-38	7.8-8.5
Iron	MG/KG	-	53	53	6,900	6.22E+04	2.31E+04	0	SB-38	7.8-8.5
Lead	MG/KG	1000	53	53	3.30	1,330	132.2	2	SB-33	3.5-4
Magnesium	MG/KG	-	53	53	412.0	2.99E+04	5,601	0	SB-35	9.5-10
Manganese	MG/KG	10000	53	53	22.60	1,150	288.5	0	SB-05	6.5-7
Mercury	MG/KG	2.8	53	48	0.007	4.10	0.390	1	SB-04	2.5-3.5
Nickel	MG/KG	310	53	53	6.00	35.00	18.33	0	SB-32	9-10
Potassium	MG/KG	-	53	53	412.0	6,460	2,052	0	SB-38	11-11.5
Selenium	MG/KG	1500	53	35	0.600	4.20	1.68	0	SB-38	7.8-8.5
Silver	MG/KG	1500	53	14	0.073	0.370	0.158	0	SB-36	6.5-7
Sodium	MG/KG	-	53	53	74.20	4,680	1,055	0	SB-38	15.5-16.5
Thallium	MG/KG	-	53	24	0.270	4.50	1.15	0	SB-05	6.5-7
Vanadium	MG/KG	-	53	53	8.60	45.80	27.87	0	SB-38	11-11.5
Zinc	MG/KG	10000	53	53	18.90	556.0	116.1	0	SB-37	3-4

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-6
BLOCK 2592 LOT 35
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-03	MW-03	MW-03	SB-06	SB-06
Sample ID				MW-03-(3.5-4.5)	MW-03-(6-7)	MW-03-(14-15)	SB-06-(3-4)	20100414-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.5	6.0-7.0	14.0-15.0	3.0-4.0	4.5-5.5
Date Sampled				04/15/10	04/19/10	04/19/10	04/14/10	04/14/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					Field Duplicate (1-1)
Volatile Organic Compounds								
Acetone	MG/KG	0.05	500		0.061 J	0.0051 J	0.020 J	0.0040 J
Benzene	MG/KG	0.06	44		0.31			
Carbon disulfide	MG/KG	2.7 CP-51	-		0.015 J			
Ethylbenzene	MG/KG	1	390		0.036			
Isopropylbenzene	MG/KG	2.3 CP-51	-		2.4 J			
Methyl acetate	MG/KG	-	-				0.0064	0.0056
Methylcyclohexane	MG/KG	-	-		1.0 J			
Methylene chloride	MG/KG	0.05	500				0.0012 J	
Tetrachloroethene	MG/KG	1.3	150		0.020			
Toluene	MG/KG	0.7	500		0.024			
Xylene (total)	MG/KG	0.26	500		0.29 J			
Total BTEX	MG/KG	-	-	ND	0.66	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	ND	4.156	0.0051	0.0276	0.0096
Semivolatile Organic Compounds								
2-Methylnaphthalene	MG/KG	0.41 CP-51	-		14 J			
Acenaphthene	MG/KG	20	500		1.0 J		0.027 J	
Acenaphthylene	MG/KG	100	500	0.12 J			0.048 J	
Anthracene	MG/KG	100	500	0.047 J	1.7 J		0.16 J	
Benzo(a)anthracene	MG/KG	1	5.6	0.20	1.9 J		0.44	0.077 J
Benzo(a)pyrene	MG/KG	1	1	0.21 J	1.5 J		0.29	0.046 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-6
BLOCK 2592 LOT 35
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-03	MW-03	MW-03	SB-06	SB-06
Sample ID				MW-03-(3.5-4.5)	MW-03-(6-7)	MW-03-(14-15)	SB-06-(3-4)	20100414-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.5	6.0-7.0	14.0-15.0	3.0-4.0	4.5-5.5
Date Sampled				04/15/10	04/19/10	04/19/10	04/14/10	04/14/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					Field Duplicate (1-1)
Semivolatile Organic Compounds								
Benzo(b)fluoranthene	MG/KG	1	5.6	0.20 J	1.8 J		0.34	0.071 J
Benzo(g,h,i)perylene	MG/KG	100	500	0.24 J	0.88 J		0.23	0.057 J
Benzo(k)fluoranthene	MG/KG	0.8	56	0.15 J	0.90 J		0.11 J	0.040 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.12 J	1.1 J	0.084 J	0.15 J	0.033 J
Carbazole	MG/KG	-	-				0.042 J	
Chrysene	MG/KG	1	56	0.21	3.1 J		0.37	0.065 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.040 J			0.034 J	
Dibenzofuran	MG/KG	7	350				0.023 J	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.021 J	1.6 J			
Fluoranthene	MG/KG	100	500	0.29	4.0 J		1.1	0.14 J
Fluorene	MG/KG	30	500		4.0 J		0.042 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.15 J	0.64 J		0.16 J	0.039 J
Naphthalene	MG/KG	12	500	0.021 J				
Phenanthrene	MG/KG	100	500	0.096 J	10 J		0.50	0.026 J
Pyrene	MG/KG	100	500	0.27	7.0 J		0.96	0.15 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	2.244	52.42	ND	4.811	0.711
Total Semivolatile Organic Compounds	MG/KG	-	-	2.385	55.12	0.084	5.026	0.744
Metals								
Aluminum	MG/KG	10000 CP-51	-	8,670 J	10,000	9,770	8,650 J	9,310 J
Arsenic	MG/KG	13	16	2.1	0.78 J		1.8	1.2

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-6
BLOCK 2592 LOT 35
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-03	MW-03	MW-03	SB-06	SB-06
Sample ID				MW-03-(3.5-4.5)	MW-03-(6-7)	MW-03-(14-15)	SB-06-(3-4)	20100414-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.5	6.0-7.0	14.0-15.0	3.0-4.0	4.5-5.5
Date Sampled				04/15/10	04/19/10	04/19/10	04/14/10	04/14/10
Parameter	Units	Criteria (1)	Criteria (2)					Field Duplicate (1-1)
Metals								
Barium	MG/KG	350	400	72.1 J	53.8 J	81.0 J	91.9 J	73.7 J
Beryllium	MG/KG	7.2	590	0.84 J	1.0 J	1.4 J	0.93 J	1.0 J
Cadmium	MG/KG	2.5	9.3	0.34	0.088 J	0.14 J	0.22 J	0.30
Calcium	MG/KG	10000 CP-51	-	4,400 J	2,430	2,750	3,720 J	4,580 J
Chromium	MG/KG	30	1500	22.3 J	34.4 J	27.3 J	22.8 J	28.5 J
Cobalt	MG/KG	20 CP-51	-	9.9 J	7.4 J	12.2 J	10.0 J	10.3 J
Copper	MG/KG	50	270	49.2 J	51.7	30.9	32.8 J	33.4 J
Iron	MG/KG	2000 CP-51	-	19,900	19,000	23,300	25,200	22,700
Lead	MG/KG	63	1000	41.3 J	8.5	5.0	33.0 J	7.0 J
Magnesium	MG/KG	-	-	5,400 J	4,270 J	6,450 J	4,100 J	6,220 J
Manganese	MG/KG	1600	10000	291 J	134 J	281 J	240 J	194 J
Mercury	MG/KG	0.18	2.8	0.16 J			0.19 J	0.024 J
Nickel	MG/KG	30	310	19.1 J	22.2 J	22.8 J	19.3 J	22.9 J
Potassium	MG/KG	-	-	3,010 J	2,000	3,630	3,660 J	2,840 J
Selenium	MG/KG	3.9	1500	1.9	2.5	3.2	3.4	2.5
Silver	MG/KG	2	1500	0.070 J	0.11 J		0.093 J	
Sodium	MG/KG	-	-	123 J	291 J	275 J	123 J	159 J
Thallium	MG/KG	5 CP-51	-	1.8			1.9	1.3 J
Vanadium	MG/KG	39 CP-51	-	28.2 J	29.2	34.3	27.7 J	30.9 J
Zinc	MG/KG	109	10000	115 J	213 J	50.3 J	53.4 J	102 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-6
BLOCK 2592 LOT 35
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-06
Sample ID				SB-06-(4.5-5.5)
Matrix				Soil
Depth Interval (ft)				4.5-5.5
Date Sampled				04/14/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	
Volatile Organic Compounds				
Acetone	MG/KG	0.05	500	
Benzene	MG/KG	0.06	44	
Carbon disulfide	MG/KG	2.7 CP-51	-	
Ethylbenzene	MG/KG	1	390	
Isopropylbenzene	MG/KG	2.3 CP-51	-	
Methyl acetate	MG/KG	-	-	
Methylcyclohexane	MG/KG	-	-	
Methylene chloride	MG/KG	0.05	500	
Tetrachloroethene	MG/KG	1.3	150	
Toluene	MG/KG	0.7	500	0.0013 J
Xylene (total)	MG/KG	0.26	500	
Total BTEX	MG/KG	-	-	0.0013
Total Volatile Organic Compounds	MG/KG	-	-	0.0013
Semivolatile Organic Compounds				
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	
Acenaphthene	MG/KG	20	500	
Acenaphthylene	MG/KG	100	500	
Anthracene	MG/KG	100	500	
Benzo(a)anthracene	MG/KG	1	5.6	0.071 J
Benzo(a)pyrene	MG/KG	1	1	0.047 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-6
BLOCK 2592 LOT 35
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-06
Sample ID				SB-06-(4.5-5.5)
Matrix				Soil
Depth Interval (ft)				4.5-5.5
Date Sampled				04/14/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	
Semivolatile Organic Compounds				
Benzo(b)fluoranthene	MG/KG	1	5.6	0.066 J
Benzo(g,h,i)perylene	MG/KG	100	500	0.050 J
Benzo(k)fluoranthene	MG/KG	0.8	56	0.030 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.044 J
Carbazole	MG/KG	-	-	
Chrysene	MG/KG	1	56	0.069 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	
Dibenzofuran	MG/KG	7	350	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	
Fluoranthene	MG/KG	100	500	0.15 J
Fluorene	MG/KG	30	500	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.037 J
Naphthalene	MG/KG	12	500	
Phenanthrene	MG/KG	100	500	0.024 J
Pyrene	MG/KG	100	500	0.14 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	0.684
Total Semivolatile Organic Compounds	MG/KG	-	-	0.728
Metals				
Aluminum	MG/KG	10000 CP-51	-	11,900 J
Arsenic	MG/KG	13	16	1.6

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-6
BLOCK 2592 LOT 35
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-06
Sample ID				SB-06-(4.5-5.5)
Matrix				Soil
Depth Interval (ft)				4.5-5.5
Date Sampled				04/14/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	
Metals				
Barium	MG/KG	350	400	80.7 J
Beryllium	MG/KG	7.2	590	1.1 J
Cadmium	MG/KG	2.5	9.3	0.31
Calcium	MG/KG	10000 CP-51	-	4,460 J
Chromium	MG/KG	30	1500	28.7 J
Cobalt	MG/KG	20 CP-51	-	11.9 J
Copper	MG/KG	50	270	32.5 J
Iron	MG/KG	2000 CP-51	-	26,400
Lead	MG/KG	63	1000	9.2 J
Magnesium	MG/KG	-	-	6,930 J
Manganese	MG/KG	1600	10000	311 J
Mercury	MG/KG	0.18	2.8	0.021 J
Nickel	MG/KG	30	310	23.6 J
Potassium	MG/KG	-	-	3,130 J
Selenium	MG/KG	3.9	1500	3.4
Silver	MG/KG	2	1500	
Sodium	MG/KG	-	-	142 J
Thallium	MG/KG	5 CP-51	-	2.3 J
Vanadium	MG/KG	39 CP-51	-	35.9 J
Zinc	MG/KG	109	10000	64.8 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-7
BLOCK 2592 LOT 35
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	500	6	4	0.004	0.061	0.023	0	MW-03	6-7
Benzene	MG/KG	44	6	1	0.310	0.310	0.310	0	MW-03	6-7
Carbon disulfide	MG/KG	-	6	1	0.015	0.015	0.015	0	MW-03	6-7
Ethylbenzene	MG/KG	390	6	1	0.036	0.036	0.036	0	MW-03	6-7
Isopropylbenzene	MG/KG	-	6	1	2.40	2.40	2.40	0	MW-03	6-7
Methyl acetate	MG/KG	-	6	2	0.006	0.006	0.006	0	SB-06	3-4
Methylcyclohexane	MG/KG	-	6	1	1.00	1.00	1.00	0	MW-03	6-7
Methylene chloride	MG/KG	500	6	1	0.001	0.001	0.001	0	SB-06	3-4
Tetrachloroethene	MG/KG	150	6	1	0.020	0.020	0.020	0	MW-03	6-7
Toluene	MG/KG	500	6	2	0.001	0.024	0.013	0	MW-03	6-7
Xylene (total)	MG/KG	500	6	1	0.290	0.290	0.290	0	MW-03	6-7
Semivolatile Organic Compounds										
2-Methylnaphthalene	MG/KG	-	6	1	14.00	14.00	14.00	0	MW-03	6-7
Acenaphthene	MG/KG	500	6	2	0.027	1.00	0.514	0	MW-03	6-7
Acenaphthylene	MG/KG	500	6	2	0.048	0.120	0.084	0	MW-03	3.5-4.5
Anthracene	MG/KG	500	6	3	0.047	1.70	0.636	0	MW-03	6-7
Benzo(a)anthracene	MG/KG	5.6	6	5	0.071	1.90	0.538	0	MW-03	6-7
Benzo(a)pyrene	MG/KG	1	6	5	0.046	1.50	0.419	1	MW-03	6-7
Benzo(b)fluoranthene	MG/KG	5.6	6	5	0.066	1.80	0.495	0	MW-03	6-7

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-7
BLOCK 2592 LOT 35
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Benzo(g,h,i)perylene	MG/KG	500	6	5	0.050	0.880	0.291	0	MW-03	6-7
Benzo(k)fluoranthene	MG/KG	56	6	5	0.030	0.900	0.246	0	MW-03	6-7
bis(2-Ethylhexyl)phthalate	MG/KG	-	6	6	0.033	1.10	0.255	0	MW-03	6-7
Carbazole	MG/KG	-	6	1	0.042	0.042	0.042	0	SB-06	3-4
Chrysene	MG/KG	56	6	5	0.065	3.10	0.763	0	MW-03	6-7
Dibenz(a,h)anthracene	MG/KG	0.56	6	2	0.034	0.040	0.037	0	MW-03	3.5-4.5
Dibenzofuran	MG/KG	350	6	1	0.023	0.023	0.023	0	SB-06	3-4
Di-n-butylphthalate	MG/KG	-	6	2	0.021	1.60	0.811	0	MW-03	6-7
Fluoranthene	MG/KG	500	6	5	0.140	4.00	1.14	0	MW-03	6-7
Fluorene	MG/KG	500	6	2	0.042	4.00	2.02	0	MW-03	6-7
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	6	5	0.037	0.640	0.205	0	MW-03	6-7
Naphthalene	MG/KG	500	6	1	0.021	0.021	0.021	0	MW-03	3.5-4.5
Phenanthrene	MG/KG	500	6	5	0.024	10.00	2.13	0	MW-03	6-7
Pyrene	MG/KG	500	6	5	0.140	7.00	1.70	0	MW-03	6-7
Metals										
Aluminum	MG/KG	-	6	6	8,650	1.19E+04	9,717	0	SB-06	4.5-5.5
Arsenic	MG/KG	16	6	5	0.780	2.10	1.50	0	MW-03	3.5-4.5
Barium	MG/KG	400	6	6	53.80	91.90	75.53	0	SB-06	3-4
Beryllium	MG/KG	590	6	6	0.840	1.40	1.05	0	MW-03	14-15

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-7
BLOCK 2592 LOT 35
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Cadmium	MG/KG	9.3	6	6	0.088	0.340	0.233	0	MW-03	3.5-4.5
Calcium	MG/KG	-	6	6	2,430	4,580	3,723	0	SB-06	4.5-5.5
Chromium	MG/KG	1500	6	6	22.30	34.40	27.33	0	MW-03	6-7
Cobalt	MG/KG	-	6	6	7.40	12.20	10.28	0	MW-03	14-15
Copper	MG/KG	270	6	6	30.90	51.70	38.42	0	MW-03	6-7
Iron	MG/KG	-	6	6	1.90E+04	2.64E+04	2.28E+04	0	SB-06	4.5-5.5
Lead	MG/KG	1000	6	6	5.00	41.30	17.33	0	MW-03	3.5-4.5
Magnesium	MG/KG	-	6	6	4,100	6,930	5,562	0	SB-06	4.5-5.5
Manganese	MG/KG	10000	6	6	134.0	311.0	241.8	0	SB-06	4.5-5.5
Mercury	MG/KG	2.8	6	4	0.021	0.190	0.099	0	SB-06	3-4
Nickel	MG/KG	310	6	6	19.10	23.60	21.65	0	SB-06	4.5-5.5
Potassium	MG/KG	-	6	6	2,000	3,660	3,045	0	SB-06	3-4
Selenium	MG/KG	1500	6	6	1.90	3.40	2.82	0	SB-06	4.5-5.5
Silver	MG/KG	1500	6	3	0.070	0.110	0.091	0	MW-03	6-7
Sodium	MG/KG	-	6	6	123.0	291.0	185.5	0	MW-03	6-7
Thallium	MG/KG	-	6	4	1.30	2.30	1.83	0	SB-06	4.5-5.5
Vanadium	MG/KG	-	6	6	27.70	35.90	31.03	0	SB-06	4.5-5.5
Zinc	MG/KG	10000	6	6	50.30	213.0	99.75	0	MW-03	6-7

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-07-URS	MW-07-URS	SB-18	SB-18	SB-18
Sample ID				MW-7-(4-4.5)	MW-7-(9.8-10.5)	SB-18-(4-4.5)	SB-18-(5.5-6)	SB-18-(8.5-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-4.5	9.8-10.5	4.0-4.5	5.5-6.0	8.5-9.0
Date Sampled				12/15/11	12/16/11	05/11/10	05/12/10	05/12/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
Acetone	MG/KG	0.05	500				0.0045 J	0.030 J
Carbon disulfide	MG/KG	2.7 CP-51	-					
Isopropylbenzene	MG/KG	2.3 CP-51	-		0.031			
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500		0.018			
Xylene (total)	MG/KG	0.26	500					
Total BTEX	MG/KG	-	-	ND	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	ND	0.049	ND	0.0045	0.03
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					
2-Chloronaphthalene	MG/KG	-	-	1.3 J	1.3 J			
2-Methylnaphthalene	MG/KG	0.41 CP-51	-				1.0	
Acenaphthene	MG/KG	20	500				0.42	
Acenaphthylene	MG/KG	100	500				6.1	0.049 J
Anthracene	MG/KG	100	500	0.088 J	0.18		2.7	
Benzo(a)anthracene	MG/KG	1	5.6	0.42	0.048 J	0.14 J	2.6	0.042 J
Benzo(a)pyrene	MG/KG	1	1	0.39		0.17 J	3.0	0.036 J
Benzo(b)fluoranthene	MG/KG	1	5.6	0.30		0.16 J	5.4	
Benzo(g,h,i)perylene	MG/KG	100	500	0.24		0.14 J	3.1	
Benzo(k)fluoranthene	MG/KG	0.8	56	0.34		0.096 J	2.5 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. NA - Not analyzed.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-07-URS	MW-07-URS	SB-18	SB-18	SB-18
Sample ID				MW-7-(4-4.5)	MW-7-(9.8-10.5)	SB-18-(4-4.5)	SB-18-(5.5-6)	SB-18-(8.5-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-4.5	9.8-10.5	4.0-4.5	5.5-6.0	8.5-9.0
Date Sampled				12/15/11	12/16/11	05/11/10	05/12/10	05/12/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.066 J	0.21	0.22	0.17 J	0.030 J
Butylbenzylphthalate	MG/KG	100 CP-51	-			0.019 J		
Carbazole	MG/KG	-	-				0.022 J	
Chrysene	MG/KG	1	56	0.38	0.075 J	0.11 J	1.9	0.032 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.074 J		0.036 J	1.4	
Dibenzofuran	MG/KG	7	350					
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.11 J	0.11 J			
Di-n-octylphthalate	MG/KG	100 CP-51	-			0.042 J		
Fluoranthene	MG/KG	100	500	0.57		0.11 J	1.8	0.040 J
Fluorene	MG/KG	30	500				0.48	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.21		0.14 J	2.5 J	
Naphthalene	MG/KG	12	500					
Phenanthrene	MG/KG	100	500	0.27		0.044 J	0.48	0.042 J
Pyrene	MG/KG	100	500	0.57	0.25	0.14 J	3.5	0.12 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	3.852	0.553	1.286	38.88	0.361
Total Semivolatile Organic Compounds	MG/KG	-	-	5.328	2.173	1.567	39.072	0.391
Metals								
Aluminum	MG/KG	10000 CP-51	-	10,600	11,500	9,410	10,300	28,600
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	1.7		1.5		

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. NA - Not analyzed.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

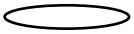
TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-07-URS	MW-07-URS	SB-18	SB-18	SB-18
Sample ID				MW-7-(4-4.5)	MW-7-(9.8-10.5)	SB-18-(4-4.5)	SB-18-(5.5-6)	SB-18-(8.5-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.0-4.5	9.8-10.5	4.0-4.5	5.5-6.0	8.5-9.0
Date Sampled				12/15/11	12/16/11	05/11/10	05/12/10	05/12/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Barium	MG/KG	350	400	94.4	48.1	72.2	85.6	353
Beryllium	MG/KG	7.2	590	0.71	0.69		0.098 J	
Cadmium	MG/KG	2.5	9.3			0.25	0.31	0.58
Calcium	MG/KG	10000 CP-51	-	8,450	3,980	3,750	10,900	3,140
Chromium	MG/KG	30	1500	41.5	69.1	26.0	29.6	177
Cobalt	MG/KG	20 CP-51	-	8.3	8.3	9.7	11.1	20.9
Copper	MG/KG	50	270	44.4	89.2	33.6	31.0	28.0
Iron	MG/KG	2000 CP-51	-	20,500	21,500	22,600	26,500	46,400
Lead	MG/KG	63	1000	26.1	2.7	11.3	5.9	1.5
Magnesium	MG/KG	-	-	10,100	9,600	5,160	10,600	18,200
Manganese	MG/KG	1600	10000	280	195	289	209	386
Mercury	MG/KG	0.18	2.8	0.040 J		0.095		
Nickel	MG/KG	30	310	26.8	40.3	20	35.0	71.8
Potassium	MG/KG	-	-	6,170	8,880	3,010	3,500	16,500
Selenium	MG/KG	3.9	1500			1.5	1.4	
Sodium	MG/KG	-	-	1,300	204	145	131	171
Thallium	MG/KG	5 CP-51	-	0.65 J	0.90 J			0.59 J
Vanadium	MG/KG	39 CP-51	-	42.8	42.2	34.6	38.3	127
Zinc	MG/KG	109	10000	57.0	44.7	53.5	49.1	94.7

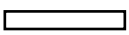
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. NA - Not analyzed.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

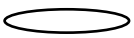
TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-19	SB-19	SB-19	SB-20	SB-20
Sample ID				20100512-FD-1	SB-19-(3-4)	SB-19-(5-5.5)	SB-20-(3-3.5)	SB-20-(4.5-5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	5.0-5.5	3.0-3.5	4.5-5.0
Date Sampled				05/12/10	05/12/10	05/12/10	12/15/11	12/15/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)				
Volatile Organic Compounds								
Acetone	MG/KG	0.05	500	0.031 J	0.016 J	0.24 J		0.014 J
Carbon disulfide	MG/KG	2.7 CP-51	-			0.019		0.0034 J
Isopropylbenzene	MG/KG	2.3 CP-51	-			0.065 J		
Methylcyclohexane	MG/KG	-	-			0.044 J		
Methylene chloride	MG/KG	0.05	500				0.009	
Xylene (total)	MG/KG	0.26	500			0.013 J		
Total BTEX	MG/KG	-	-	ND	ND	0.013	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.031	0.016	0.381	0.009	0.0174
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					
2-Chloronaphthalene	MG/KG	-	-				1.4 J	
2-Methylnaphthalene	MG/KG	0.41 CP-51	-				0.21	
Acenaphthene	MG/KG	20	500					
Acenaphthylene	MG/KG	100	500	0.065 J	0.022 J			
Anthracene	MG/KG	100	500	0.045 J		1.9		1.3 J
Benzo(a)anthracene	MG/KG	1	5.6	0.23	0.021 J	0.60	0.10 J	0.31
Benzo(a)pyrene	MG/KG	1	1	0.23	0.023 J	0.57	0.10 J	0.29
Benzo(b)fluoranthene	MG/KG	1	5.6	0.27 J		0.34 J	0.14 J	0.12 J
Benzo(g,h,i)perylene	MG/KG	100	500	0.22	0.024 J	0.44	0.15 J	
Benzo(k)fluoranthene	MG/KG	0.8	56	0.11 J		0.34 J	0.10 J	0.17 J

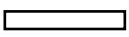
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-19	SB-19	SB-19	SB-20	SB-20
Sample ID				20100512-FD-1	SB-19-(3-4)	SB-19-(5-5.5)	SB-20-(3-3.5)	SB-20-(4.5-5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	5.0-5.5	3.0-3.5	4.5-5.0
Date Sampled				05/12/10	05/12/10	05/12/10	12/15/11	12/15/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)				
Semivolatile Organic Compounds								
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.065 J	0.046 J	0.054 J	0.061 J	
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-					
Chrysene	MG/KG	1	56	0.20		1.8	0.098 J	0.22
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.036 J		0.33 J	0.043 J	
Dibenzofuran	MG/KG	7	350					0.49 J
Di-n-butylphthalate	MG/KG	0.014 CP-51	-				0.10 J	
Di-n-octylphthalate	MG/KG	100 CP-51	-					
Fluoranthene	MG/KG	100	500	0.39	0.019 J	0.89	0.12 J	0.26
Fluorene	MG/KG	30	500			3.4		
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.20 J	0.021 J	0.24 J	0.11 J	
Naphthalene	MG/KG	12	500				0.13 J	
Phenanthrene	MG/KG	100	500	0.10 J	0.022 J	1.6	0.11 J	0.41 J
Pyrene	MG/KG	100	500	0.49	0.023 J	1.5	0.11 J	0.55 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	2.586	0.175	13.95	1.521	3.63
Total Semivolatile Organic Compounds	MG/KG	-	-	2.651	0.221	14.004	3.082	4.12
Metals								
Aluminum	MG/KG	10000 CP-51	-	14,100	13,900	9,720	13,700	17,400
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16				1.7	1.9

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. NA - Not analyzed.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-19	SB-19	SB-19	SB-20	SB-20
Sample ID				20100512-FD-1	SB-19-(3-4)	SB-19-(5-5.5)	SB-20-(3-3.5)	SB-20-(4.5-5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	3.0-4.0	5.0-5.5	3.0-3.5	4.5-5.0
Date Sampled				05/12/10	05/12/10	05/12/10	12/15/11	12/15/11
Parameter	Units	Criteria (1)	Criteria (2)	Field Duplicate (1-1)				
Metals								
Barium	MG/KG	350	400	55.7	57.7	76.2	192	225
Beryllium	MG/KG	7.2	590				0.80	0.94
Cadmium	MG/KG	2.5	9.3	0.32	0.32	0.27		0.15 J
Calcium	MG/KG	10000 CP-51	-	1,770	1,660	2,100	3,040	11,500
Chromium	MG/KG	30	1500	12.1 J	21.9 J	11.9	25.7	71.6
Cobalt	MG/KG	20 CP-51	-	8.8	8.4	9.0	5.7	15.7
Copper	MG/KG	50	270	56.8	51.6	57.8	35.9	32.2
Iron	MG/KG	2000 CP-51	-	29,400	29,500	24,700	26,800	42,800
Lead	MG/KG	63	1000	12.4	9.4	6.3	17.5	13.9
Magnesium	MG/KG	-	-	7,950	7,240	6,380	8,730	13,000
Manganese	MG/KG	1600	10000	222	204	237	241	174
Mercury	MG/KG	0.18	2.8	0.010 J	0.0086 J	0.031 J	0.11	0.021 J
Nickel	MG/KG	30	310	10.4	13.0	6.8	19.4	58.2
Potassium	MG/KG	-	-	3,860	3,760	2,550	8,570	7,550
Selenium	MG/KG	3.9	1500	2.0	2.3	1.8		
Sodium	MG/KG	-	-	370	326	175	132	112
Thallium	MG/KG	5 CP-51	-				1.1	1.2
Vanadium	MG/KG	39 CP-51	-	41.8	45.2	49.6	70.4	99.0
Zinc	MG/KG	109	10000	80.5	74.9	58.3	128	165

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

Blank cell or ND - Not detected. NA - Not analyzed.

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Only Detected Results Reported.

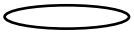
TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

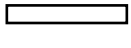
Location ID				SB-21	SB-21	SB-21	SB-22	SB-22
Sample ID				SB-21-(3.5-4)	SB-21-(10-11)	SB-21-(21-22)	20111215-FD-1	SB-22-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	10.0-11.0	21.0-22.0	4.0-4.5	4.0-4.5
Date Sampled				12/15/11	12/16/11	12/16/11	12/15/11	12/15/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				Field Duplicate (1-1)	
Volatile Organic Compounds								
Acetone	MG/KG	0.05	500		0.010 J	0.0088 J		
Carbon disulfide	MG/KG	2.7 CP-51	-		0.0029			
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500				0.0036	
Xylene (total)	MG/KG	0.26	500					
Total BTEX	MG/KG	-	-	ND	ND	ND	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	ND	0.0129	0.0088	0.0036	ND
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.13 J	32			
2-Chloronaphthalene	MG/KG	-	-	1.4 J		1.4 J	1.3 J	1.3 J
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.092 J				
Acenaphthene	MG/KG	20	500	0.17 J	120			
Acenaphthylene	MG/KG	100	500	0.60	22	0.091 J	0.092 J	0.12 J
Anthracene	MG/KG	100	500	0.84	60	0.28	0.085 J	0.097 J
Benzo(a)anthracene	MG/KG	1	5.6	2.8 D	39	0.39	0.29	0.30
Benzo(a)pyrene	MG/KG	1	1	2.9 D	28	0.55	0.28	0.38
Benzo(b)fluoranthene	MG/KG	1	5.6	2.5	18 J	0.16 J	0.25	0.26
Benzo(g,h,i)perylene	MG/KG	100	500	1.9	12 J	0.26	0.18	0.27
Benzo(k)fluoranthene	MG/KG	0.8	56	2.4	11 J	0.12 J	0.19	0.30

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.


Concentration Exceeds Criteria (1)


Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-21	SB-21	SB-21	SB-22	SB-22
Sample ID				SB-21-(3.5-4)	SB-21-(10-11)	SB-21-(21-22)	20111215-FD-1	SB-22-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	10.0-11.0	21.0-22.0	4.0-4.5	4.0-4.5
Date Sampled				12/15/11	12/16/11	12/16/11	12/15/11	12/15/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				Field Duplicate (1-1)	
Semivolatile Organic Compounds								
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.084 J			0.094 J	0.11 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.23				
Chrysene	MG/KG	1	56	1.5	37	0.32	0.24	0.29
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.37			0.068 J	0.083 J
Dibenzofuran	MG/KG	7	350	0.14 J	6.4 J			
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.15 J		0.087 J	0.11 J	0.10 J
Di-n-octylphthalate	MG/KG	100 CP-51	-					
Fluoranthene	MG/KG	100	500	4.0 D	62	0.23	0.33	0.35
Fluorene	MG/KG	30	500	0.20	62			
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	1.6	8.2 J	0.073 J	0.13 J	0.20
Naphthalene	MG/KG	12	500	0.093 J	32	0.065 J		
Phenanthrene	MG/KG	100	500	2.3	190	0.088 J	0.16 J	0.17 J
Pyrene	MG/KG	100	500	3.5 D	99	1.7	0.34	0.40
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	27.765	800.2	4.327	2.635	3.22
Total Semivolatile Organic Compounds	MG/KG	-	-	29.899	838.6	5.814	4.139	4.73
Metals								
Aluminum	MG/KG	10000 CP-51	-	4,080	7,980	18,800	8,850	8,200
Antimony	MG/KG	12 CP-51	-	4.0				
Arsenic	MG/KG	13	16	9.6	4.8	9.0	2.1	2.1

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

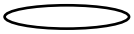
TABLE 2-8
BLOCK 2597 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-21	SB-21	SB-21	SB-22	SB-22
Sample ID				SB-21-(3.5-4)	SB-21-(10-11)	SB-21-(21-22)	20111215-FD-1	SB-22-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	10.0-11.0	21.0-22.0	4.0-4.5	4.0-4.5
Date Sampled				12/15/11	12/16/11	12/16/11	12/15/11	12/15/11
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				Field Duplicate (1-1)	
Metals								
Barium	MG/KG	350	400	66.9	79.3	104	61.8	56.2
Beryllium	MG/KG	7.2	590	0.36	0.85	2.0	0.63	0.62
Cadmium	MG/KG	2.5	9.3	0.87				0.016 J
Calcium	MG/KG	10000 CP-51	-	32,200	1,960	2,350	10,300	14,800
Chromium	MG/KG	30	1500	13.9	21.2	45.8	26.4	29.3
Cobalt	MG/KG	20 CP-51	-	3.1	4.9	9.1	6.3	6.4
Copper	MG/KG	50	270	37.1	16.4	52.8	28.1	28.8
Iron	MG/KG	2000 CP-51	-	55,400	19,800	37,700	17,000	18,200
Lead	MG/KG	63	1000	132	6.9	48.8	34.7	41.5
Magnesium	MG/KG	-	-	2,530	4,440	10,000	8,240	7,430
Manganese	MG/KG	1600	10000	276	198	515	291	260
Mercury	MG/KG	0.18	2.8	0.13	0.012 J	0.046	0.066	0.045
Nickel	MG/KG	30	310	14.0	11.5	21.7	20.1	20.1
Potassium	MG/KG	-	-	1,190	4,040	10,700	3,700	3,710
Selenium	MG/KG	3.9	1500					
Sodium	MG/KG	-	-	259	614	2,840	402	385
Thallium	MG/KG	5 CP-51	-		0.33 J	0.93 J	0.54 J	0.65 J
Vanadium	MG/KG	39 CP-51	-	25.5	32.6	77.2	31.9	37.0
Zinc	MG/KG	109	10000	159	35.2	93.8	51.8	52.8

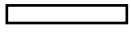
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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Only Detected Results Reported.

TABLE 2-9
BLOCK 2597 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	500	15	8	0.005	0.240	0.044	0	SB-19	5-5.5
Carbon disulfide	MG/KG	-	15	3	0.003	0.019	0.008	0	SB-19	5-5.5
Isopropylbenzene	MG/KG	-	15	2	0.031	0.065	0.048	0	SB-19	5-5.5
Methylcyclohexane	MG/KG	-	15	1	0.044	0.044	0.044	0	SB-19	5-5.5
Methylene chloride	MG/KG	500	15	3	0.004	0.018	0.010	0	MW-07-URS	9.8-10.5
Xylene (total)	MG/KG	500	15	1	0.013	0.013	0.013	0	SB-19	5-5.5
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	15	2	0.130	32.00	16.07	0	SB-21	10-11
2-Chloronaphthalene	MG/KG	-	15	7	1.30	1.40	1.34	0	SB-20	3-3.5
2-Methylnaphthalene	MG/KG	-	15	3	0.092	1.00	0.434	0	SB-18	5.5-6
Acenaphthene	MG/KG	500	15	3	0.170	120.0	40.20	0	SB-21	10-11
Acenaphthylene	MG/KG	500	15	9	0.022	22.00	3.24	0	SB-21	10-11
Anthracene	MG/KG	500	15	11	0.045	60.00	6.14	0	SB-21	10-11
Benzo(a)anthracene	MG/KG	5.6	15	15	0.021	39.00	3.15	1	SB-21	10-11
Benzo(a)pyrene	MG/KG	1	15	14	0.023	28.00	2.64	3	SB-21	10-11
Benzo(b)fluoranthene	MG/KG	5.6	15	12	0.120	18.00	2.33	1	SB-21	10-11
Benzo(g,h,i)perylene	MG/KG	500	15	12	0.024	12.00	1.58	0	SB-21	10-11
Benzo(k)fluoranthene	MG/KG	56	15	12	0.096	11.00	1.47	0	SB-21	10-11
bis(2-Ethylhexyl)phthalate	MG/KG	-	15	12	0.030	0.220	0.101	0	SB-18	4-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-9
BLOCK 2597 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Butylbenzylphthalate	MG/KG	-	15	1	0.019	0.019	0.019	0	SB-18	4-4.5
Carbazole	MG/KG	-	15	2	0.022	0.230	0.126	0	SB-21	3.5-4
Chrysene	MG/KG	56	15	14	0.032	37.00	3.15	0	SB-21	10-11
Dibenz(a,h)anthracene	MG/KG	0.56	15	9	0.036	1.40	0.271	1	SB-18	5.5-6
Dibenzofuran	MG/KG	350	15	3	0.140	6.40	2.34	0	SB-21	10-11
Di-n-butylphthalate	MG/KG	-	15	7	0.087	0.150	0.110	0	SB-21	3.5-4
Di-n-octylphthalate	MG/KG	-	15	1	0.042	0.042	0.042	0	SB-18	4-4.5
Fluoranthene	MG/KG	500	15	14	0.019	62.00	5.08	0	SB-21	10-11
Fluorene	MG/KG	500	15	4	0.200	62.00	16.52	0	SB-21	10-11
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	15	12	0.021	8.20	1.14	1	SB-21	10-11
Naphthalene	MG/KG	500	15	4	0.065	32.00	8.07	0	SB-21	10-11
Phenanthrene	MG/KG	500	15	14	0.022	190.0	13.99	0	SB-21	10-11
Pyrene	MG/KG	500	15	15	0.023	99.00	7.48	0	SB-21	10-11
Metals										
Aluminum	MG/KG	-	15	15	4,080	2.86E+04	1.25E+04	0	SB-18	8.5-9
Antimony	MG/KG	-	15	1	4.00	4.00	4.00	0	SB-21	3.5-4
Arsenic	MG/KG	16	15	9	1.50	9.60	3.82	0	SB-21	3.5-4
Barium	MG/KG	400	15	15	48.10	353.0	108.5	0	SB-18	8.5-9
Beryllium	MG/KG	590	15	10	0.098	2.00	0.770	0	SB-21	21-22

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-9
BLOCK 2597 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Cadmium	MG/KG	9.3	15	9	0.016	0.870	0.343	0	SB-21	3.5-4
Calcium	MG/KG	-	15	15	1,660	3.22E+04	7,460	0	SB-21	3.5-4
Chromium	MG/KG	1500	15	15	11.90	177.0	41.53	0	SB-18	8.5-9
Cobalt	MG/KG	-	15	15	3.10	20.90	9.05	0	SB-18	8.5-9
Copper	MG/KG	270	15	15	16.40	89.20	41.58	0	MW-07-URS	9.8-10.5
Iron	MG/KG	-	15	15	1.70E+04	5.54E+04	2.93E+04	0	SB-21	3.5-4
Lead	MG/KG	1000	15	15	1.50	132.0	24.73	0	SB-21	3.5-4
Magnesium	MG/KG	-	15	15	2,530	1.82E+04	8,640	0	SB-18	8.5-9
Manganese	MG/KG	10000	15	15	174.0	515.0	265.1	0	SB-21	21-22
Mercury	MG/KG	2.8	15	12	0.009	0.130	0.051	0	SB-21	3.5-4
Nickel	MG/KG	310	15	15	6.80	71.80	25.94	0	SB-18	8.5-9
Potassium	MG/KG	-	15	15	1,190	1.65E+04	5,846	0	SB-18	8.5-9
Selenium	MG/KG	1500	15	5	1.40	2.30	1.80	0	SB-19	3-4
Sodium	MG/KG	-	15	15	112.0	2,840	504.4	0	SB-21	21-22
Thallium	MG/KG	-	15	9	0.330	1.20	0.766	0	SB-20	4.5-5
Vanadium	MG/KG	-	15	15	25.50	127.0	53.01	0	SB-18	8.5-9
Zinc	MG/KG	10000	15	15	35.20	165.0	79.89	0	SB-20	4.5-5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-05	MW-05	MW-05	MW-05	MW-06
Sample ID				MW-05-(3-3.5)	MW-05-(4.5-5)	MW-05-(15-16)	MW-05-(20.5-21)	MW-06-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	4.5-5.0	15.0-16.0	20.5-21.0	4.0-4.5
Date Sampled				04/26/10	04/26/10	04/30/10	04/30/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-					
1,2-Dichloroethene (cis)	MG/KG	0.25	500				1.3 J	
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500		0.047 J			
Benzene	MG/KG	0.06	44		0.047	3.1	21	
Carbon disulfide	MG/KG	2.7 CP-51	-					
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390		0.36	29	93	
Isopropylbenzene	MG/KG	2.3 CP-51	-		0.092 J	0.68 J	2.2 J	
Methylcyclohexane	MG/KG	-	-		0.0076 J			
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-			17	40	
Tetrachloroethene	MG/KG	1.3	150					
Toluene	MG/KG	0.7	500		0.014	13	28	
Xylene (total)	MG/KG	0.26	500		0.19	49	170	
Total BTEX	MG/KG	-	-	ND	0.611	94.1	312	ND
Total Volatile Organic Compounds	MG/KG	-	-	ND	0.7576	111.78	355.5	ND
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-		0.37 J	1.4	29	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias.

D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

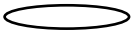
TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

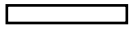
Location ID				MW-05	MW-05	MW-05	MW-05	MW-06
Sample ID				MW-05-(3-3.5)	MW-05-(4.5-5)	MW-05-(15-16)	MW-05-(20.5-21)	MW-06-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	4.5-5.0	15.0-16.0	20.5-21.0	4.0-4.5
Date Sampled				04/26/10	04/26/10	04/30/10	04/30/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-				1.2 J	
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.27	14	17 J	180	0.058 J
2-Methylphenol (o-cresol)	MG/KG	0.33	500	0.024 J				
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500	0.044 J		0.031 J		
3,3'-Dichlorobenzidine	MG/KG	-	-				0.68 J	
Acenaphthene	MG/KG	20	500	2.2	5.4	1.2	22	
Acenaphthylene	MG/KG	100	500	1.8	1.3 J	8.4 J	64 J	0.096 J
Acetophenone	MG/KG	-	-	0.12 J	0.18 J			
Anthracene	MG/KG	100	500	3.7 J	3.2	2.9	24 J	0.050 J
Benzaldehyde	MG/KG	-	-		0.33 J			
Benzo(a)anthracene	MG/KG	1	5.6	17	5.1	2.6	21 J	0.38
Benzo(a)pyrene	MG/KG	1	1	2.5	3.9	1.9 J	18 J	0.58 J
Benzo(b)fluoranthene	MG/KG	1	5.6	17	3.3 J	1.4	11 J	0.66 J
Benzo(g,h,i)perylene	MG/KG	100	500	7.7	1.8 J	0.57	4.5 J	0.52
Benzo(k)fluoranthene	MG/KG	0.8	56	2.7	3.0 J	0.73	6.1	0.34
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.31	0.30 J	0.048 J		0.031 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	1.1	0.29 J	0.021 J	0.23 J	
Chrysene	MG/KG	1	56	2.1	5.0	2.6	25	0.41
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	2.4 J	0.50 J	0.19 J	1.2 J	0.15 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.


Concentration Exceeds Criteria (1)


Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-05	MW-05	MW-05	MW-05	MW-06
Sample ID				MW-05-(3-3.5)	MW-05-(4.5-5)	MW-05-(15-16)	MW-05-(20.5-21)	MW-06-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	4.5-5.0	15.0-16.0	20.5-21.0	4.0-4.5
Date Sampled				04/26/10	04/26/10	04/30/10	04/30/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	0.41	0.42 J	0.19 J	3.0	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.039 J				
Fluoranthene	MG/KG	100	500	31	7.3	4.9 J	26 J	0.31
Fluorene	MG/KG	30	500	1.2	3.4	4.2 J	31 J	0.020 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	8.8	1.9 J	0.45 J	3.2 J	0.45
Naphthalene	MG/KG	12	500	0.31	32	30 J	540	0.20
Phenanthrene	MG/KG	100	500	13	11	14 J	90 J	0.10 J
Phenol	MG/KG	0.33	500			0.050 J		
Pyrene	MG/KG	100	500	30	11	7.1 J	51 J	0.39
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	143.68	113.1	100.14	1,118	4.714
Total Semivolatile Organic Compounds	MG/KG	-	-	145.727	114.99	101.88	1,152.11	4.745
Metals								
Aluminum	MG/KG	10000 CP-51	-	9,270	16,500	10,500	6,810	13,000
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	12.4	3.9	2.5	0.66 J	3.6 J
Barium	MG/KG	350	400	120	75.1	54.9	150	71.9 J
Beryllium	MG/KG	7.2	590	0.24 J				0.38 J
Cadmium	MG/KG	2.5	9.3	0.41	0.42	0.23	0.26	0.23
Calcium	MG/KG	10000 CP-51	-	3,190 J	1,650 J	2,280 J	2,240 J	1,230
Chromium	MG/KG	30	1500	24.2	51.5	34.7	25.5	28.8

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias.

D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-05	MW-05	MW-05	MW-05	MW-06
Sample ID				MW-05-(3-3.5)	MW-05-(4.5-5)	MW-05-(15-16)	MW-05-(20.5-21)	MW-06-(4-4.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	4.5-5.0	15.0-16.0	20.5-21.0	4.0-4.5
Date Sampled				04/26/10	04/26/10	04/30/10	04/30/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Cobalt	MG/KG	20 CP-51	-	6.8	18.1	15.6	14.1	6.9 J
Copper	MG/KG	50	270	83.5	425	33.5	34.3	22.2
Iron	MG/KG	2000 CP-51	-	28,700	19,000	18,500	21,300	20,300
Lead	MG/KG	63	1000	250	48.1	39.4	8.9	28.2 J
Magnesium	MG/KG	-	-	3,840	4,980	4,600	4,210	4,080 J
Manganese	MG/KG	1600	10000	163	122	140	737	145 J
Mercury	MG/KG	0.18	2.8	0.38	0.070			
Nickel	MG/KG	30	310	18.0	39.5	36.6	28.1	16.9 J
Potassium	MG/KG	-	-	2,360	2,710	2,520 J	3,080 J	2,080 J
Selenium	MG/KG	3.9	1500	2.3	2.7	2.0	2.4	
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	222	154	155	191	254 J
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	45.2	55.5	40.0	28.8	36.5 J
Zinc	MG/KG	109	10000	93.8 J	278 J	218 J	41.0 J	57.7 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

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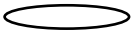
TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-06	SB-07	SB-07	SB-07	SB-07
Sample ID				MW-06-(10.5-11)	SB-07-(3-4)	SB-07-(4.5-5.5)	SB-07-(13.3-14.2)	SB-07-(16-17)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.5-11.0	3.0-4.0	4.5-5.5	13.3-14.2	16.0-17.0
Date Sampled				05/12/10	04/14/10	04/14/10	04/20/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-					
1,2-Dichloroethene (cis)	MG/KG	0.25	500				0.0091 J	0.031
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.089 J	0.0058 J			
Benzene	MG/KG	0.06	44	0.041	0.0015 J	0.048	0.84	0.84
Carbon disulfide	MG/KG	2.7 CP-51	-					
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390	21		0.026	2.1	0.15
Isopropylbenzene	MG/KG	2.3 CP-51	-	0.38 J			0.014 J	
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-	1.7 J			2.6	0.33
Tetrachloroethene	MG/KG	1.3	150		0.013			
Toluene	MG/KG	0.7	500	0.94 J	0.0012 J		0.68	0.62
Xylene (total)	MG/KG	0.26	500	52		0.050 J	6.5	0.54 J
Total BTEX	MG/KG	-	-	73.981	0.0027	0.124	10.12	2.15
Total Volatile Organic Compounds	MG/KG	-	-	76.15	0.0215	0.124	12.7431	2.511
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	15	0.25 J	0.33 J	3.5 J	0.052 J

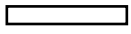
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-06	SB-07	SB-07	SB-07	SB-07
Sample ID				MW-06-(10.5-11)	SB-07-(3-4)	SB-07-(4.5-5.5)	SB-07-(13.3-14.2)	SB-07-(16-17)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.5-11.0	3.0-4.0	4.5-5.5	13.3-14.2	16.0-17.0
Date Sampled				05/12/10	04/14/10	04/14/10	04/20/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	160	2.2 J	0.21 J	31 J	0.41 J
2-Methylphenol (o-cresol)	MG/KG	0.33	500				0.077 J	
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500				0.049 J	
3,3'-Dichlorobenzidine	MG/KG	-	-					
Acenaphthene	MG/KG	20	500	17 J	3.2 J	6.4	2.6 J	0.023 J
Acenaphthylene	MG/KG	100	500	20 J	38	6.0	18	0.19 J
Acetophenone	MG/KG	-	-		0.35 J			
Anthracene	MG/KG	100	500	12	16 J	21	10	0.39
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	13	70	15	9.4	0.17 J
Benzo(a)pyrene	MG/KG	1	1	9.4 J	66	12	5.7 J	0.076 J
Benzo(b)fluoranthene	MG/KG	1	5.6	10 J	91	12	5.7 J	0.071 J
Benzo(g,h,i)perylene	MG/KG	100	500	3.8	64	8.1	3.2 J	0.068 J
Benzo(k)fluoranthene	MG/KG	0.8	56	4.0	27	3.7	2.0	0.037 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-					0.033 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.42 J	3.2 J	7.3	9.7	1.2
Chrysene	MG/KG	1	56	13 J	65	12	7.8	0.13 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	1.2 J	11 J	2.8 J	1.2	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias.

D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

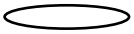
TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-06	SB-07	SB-07	SB-07	SB-07
Sample ID				MW-06-(10.5-11)	SB-07-(3-4)	SB-07-(4.5-5.5)	SB-07-(13.3-14.2)	SB-07-(16-17)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.5-11.0	3.0-4.0	4.5-5.5	13.3-14.2	16.0-17.0
Date Sampled				05/12/10	04/14/10	04/14/10	04/20/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	2.6	2.7 J	9.2	6.9 J	0.084 J
Di-n-butylphthalate	MG/KG	0.014 CP-51	-		0.073 J			
Fluoranthene	MG/KG	100	500	20 J	160	49	23	0.37
Fluorene	MG/KG	30	500	27 J	5.8 J	15	14	0.52
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	3.0 J	44	6.2	2.9	0.047 J
Naphthalene	MG/KG	12	500	370	4.0 J	7.7	71	2.1
Phenanthrene	MG/KG	100	500	73	55	51	41	0.64
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	43	140	36	20	0.32
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	799.4	862.2	264.11	268.5	5.562
Total Semivolatile Organic Compounds	MG/KG	-	-	817.42	868.773	280.94	288.726	6.931
Metals								
Aluminum	MG/KG	10000 CP-51	-	12,600	11,700 J	9,250 J	6,280	6,970
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16		8.1	1.8	0.21 J	0.38 J
Barium	MG/KG	350	400	116	212 J	46.8 J	57.6 J	86.4 J
Beryllium	MG/KG	7.2	590		0.93 J	0.66 J	0.89 J	0.91 J
Cadmium	MG/KG	2.5	9.3	0.30	3.0	0.22 J	0.10 J	0.21
Calcium	MG/KG	10000 CP-51	-	1,110	60,700 J	3,090 J	1,390	4,220
Chromium	MG/KG	30	1500	75.7	29.4 J	16.8 J	18.0 J	30.8 J

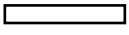
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-06	SB-07	SB-07	SB-07	SB-07
Sample ID				MW-06-(10.5-11)	SB-07-(3-4)	SB-07-(4.5-5.5)	SB-07-(13.3-14.2)	SB-07-(16-17)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				10.5-11.0	3.0-4.0	4.5-5.5	13.3-14.2	16.0-17.0
Date Sampled				05/12/10	04/14/10	04/14/10	04/20/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Cobalt	MG/KG	20 CP-51	-	8.8	6.4 J	6.9 J	7.4 J	10.1 J
Copper	MG/KG	50	270	27.4	101 J	12.0 J	18.5	28.9
Iron	MG/KG	2000 CP-51	-	29,700	26,200	20,700	17,100	20,100
Lead	MG/KG	63	1000	5.3	265 J	12.6 J	3.1	6.5
Magnesium	MG/KG	-	-	8,120	7,430 J	3,050 J	3,620 J	5,520 J
Manganese	MG/KG	1600	10000	187	388 J	325 J	140 J	235 J
Mercury	MG/KG	0.18	2.8		4.2 J	0.052 J		
Nickel	MG/KG	30	310	41.1	22.7 J	12.3 J	16.7 J	28.9 J
Potassium	MG/KG	-	-	5,280	1,910 J	1,000 J	2,300	3,000
Selenium	MG/KG	3.9	1500	2.2	2.2	4.0	2.9	3.4
Silver	MG/KG	2	1500		0.17 J	0.11 J		
Sodium	MG/KG	-	-	178	574 J	173 J	179 J	179 J
Thallium	MG/KG	5 CP-51	-		1.6	1.7		
Vanadium	MG/KG	39 CP-51	-	66.1	30.3 J	18.1 J	22.4	33.3
Zinc	MG/KG	109	10000	51.7	165 J	33.2 J	34.4 J	36.5 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias.

D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-08	SB-08	SB-08	SB-08	SB-10
Sample ID				SB-08-(3-3.5)	SB-08-(5-6)	SB-08-(7-7.5)	SB-08-(10.5-11)	20100426-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.0-6.0	7.0-7.5	10.5-11.0	3.0-4.0
Date Sampled				04/28/10	04/28/10	04/29/10	04/29/10	04/26/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					Field Duplicate (1-1)
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-					
1,2-Dichloroethene (cis)	MG/KG	0.25	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.0092 J	0.076 J	0.22 J	0.22 J	0.0084 J
Benzene	MG/KG	0.06	44				0.33 J	
Carbon disulfide	MG/KG	2.7 CP-51	-				0.0073 J	
Chloroform	MG/KG	0.37	350			0.020 J	0.028 J	
Cyclohexane	MG/KG	-	-			0.098 J	0.35 J	
Ethylbenzene	MG/KG	1	390				2.6	
Isopropylbenzene	MG/KG	2.3 CP-51	-				2.5 J	
Methylcyclohexane	MG/KG	-	-			0.21 J	0.55 J	
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Tetrachloroethene	MG/KG	1.3	150					
Toluene	MG/KG	0.7	500				0.043 J	
Xylene (total)	MG/KG	0.26	500			0.017 J	2.9 J	
Total BTEX	MG/KG	-	-	ND	ND	0.017	5.873	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.0092	0.076	0.565	9.5283	0.0084
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.055 J			4.8	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (1)

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-08	SB-08	SB-08	SB-08	SB-10
Sample ID				SB-08-(3-3.5)	SB-08-(5-6)	SB-08-(7-7.5)	SB-08-(10.5-11)	20100426-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.0-6.0	7.0-7.5	10.5-11.0	3.0-4.0
Date Sampled				04/28/10	04/28/10	04/29/10	04/29/10	04/26/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					Field Duplicate (1-1)
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.22	0.27 J		28	
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-					
Acenaphthene	MG/KG	20	500	0.38	1.8	0.70	26	
Acenaphthylene	MG/KG	100	500	3.0	1.7	0.16 J	7.5	
Acetophenone	MG/KG	-	-	0.072 J	0.21 J			
Anthracene	MG/KG	100	500	2.5	1.0	0.52 J	15	
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	7.1	2.4	0.61	13	0.056 J
Benzo(a)pyrene	MG/KG	1	1	4.9	1.5 J	0.32 J	13 J	0.031 J
Benzo(b)fluoranthene	MG/KG	1	5.6	6.2	2.4 J	0.23 J	8.5 J	0.039 J
Benzo(g,h,i)perylene	MG/KG	100	500	1.7 J	0.97	0.10 J	3.3	0.023 J
Benzo(k)fluoranthene	MG/KG	0.8	56	3.0 J	1.1	0.12 J	3.4	0.021 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.43		0.088 J		0.097 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.17 J				
Chrysene	MG/KG	1	56	8.0	3.1	0.53	12	0.043 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.93 J	0.32 J	0.026 J	0.99 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

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Only Detected Results Reported.

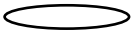
TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-08	SB-08	SB-08	SB-08	SB-10
Sample ID				SB-08-(3-3.5)	SB-08-(5-6)	SB-08-(7-7.5)	SB-08-(10.5-11)	20100426-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.0-6.0	7.0-7.5	10.5-11.0	3.0-4.0
Date Sampled				04/28/10	04/28/10	04/29/10	04/29/10	04/26/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					Field Duplicate (1-1)
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	0.16 J	0.31 J	0.12 J	0.52 J	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500	28	3.5	0.50 J	18	0.080 J
Fluorene	MG/KG	30	500	0.54	2.7	0.65	15	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	1.7 J	0.77 J	0.072 J	2.4 J	
Naphthalene	MG/KG	12	500	0.17 J	0.44	0.11 J	74	
Phenanthrene	MG/KG	100	500	5.4	0.55	0.53 J	55	0.041 J
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	15	8.4 J	1.9	30	0.073 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	88.74	32.92	7.078	325.09	0.407
Total Semivolatile Organic Compounds	MG/KG	-	-	89.627	33.44	7.286	330.41	0.504
Metals								
Aluminum	MG/KG	10000 CP-51	-	8,070	9,650	12,400	11,400	14,600 J
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	4.4	7.7	1.6	0.43 J	0.46 J
Barium	MG/KG	350	400	61.9	65.4	35.5	105	96.8
Beryllium	MG/KG	7.2	590	0.18 J	0.33 J	0.42 J		0.26 J
Cadmium	MG/KG	2.5	9.3	0.14 J	0.46	0.055 J	0.13 J	0.27
Calcium	MG/KG	10000 CP-51	-	58,400 J	925 J	516 J	1,090 J	653 J
Chromium	MG/KG	30	1500	19.2	17.3	23.6	32.3	47.9 J

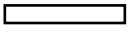
Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.



Concentration Exceeds Criteria (1)



Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-08	SB-08	SB-08	SB-08	SB-10
Sample ID				SB-08-(3-3.5)	SB-08-(5-6)	SB-08-(7-7.5)	SB-08-(10.5-11)	20100426-FD-1
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.0-6.0	7.0-7.5	10.5-11.0	3.0-4.0
Date Sampled				04/28/10	04/28/10	04/29/10	04/29/10	04/26/10
Parameter	Units	Criteria (1)	Criteria (2)					Field Duplicate (1-1)
Metals								
Cobalt	MG/KG	20 CP-51	-	4.1	7.0	5.5	10.5	8.7 J
Copper	MG/KG	50	270	31.1	36.8	22.9	37.0	35.5
Iron	MG/KG	2000 CP-51	-	13,900	27,500	24,700	28,500	33,500
Lead	MG/KG	63	1000	107	74.3	7.5	8.0	8.0 J
Magnesium	MG/KG	-	-	6,150	2,570	3,100	4,700	6,890 J
Manganese	MG/KG	1600	10000	186	120	203	346	204 J
Mercury	MG/KG	0.18	2.8	0.55	0.091			
Nickel	MG/KG	30	310	11.9	25.8	25.0	23.8	27.6 J
Potassium	MG/KG	-	-	1,300 J	1,270 J	1,210 J	3,340 J	3,840 J
Selenium	MG/KG	3.9	1500	2.3	1.9	1.7	2.8	2.3
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	179	125	177	221	121 J
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	20.9	25.4	36.8	41.5	51.0 J
Zinc	MG/KG	109	10000	56.7 J	203 J	49.9 J	88.4 J	79.7 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias.

D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-10	SB-10	SB-10	SB-13	SB-13
Sample ID				SB-10-(3-4)	SB-10-(5-5.5)	SB-10-(11-11.5)	SB-13-(3-4)	SB-13-(15-16)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	5.0-5.5	11.0-11.5	3.0-4.0	15.0-16.0
Date Sampled				04/26/10	04/26/10	04/29/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-		0.0017 J			
1,2-Dichloroethene (cis)	MG/KG	0.25	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.0044 J	0.0085 J			0.038 J
Benzene	MG/KG	0.06	44			0.024 J		0.0049 J
Carbon disulfide	MG/KG	2.7 CP-51	-			0.0045 J		0.0083 J
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390					0.0089 J
Isopropylbenzene	MG/KG	2.3 CP-51	-					
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500				0.0059	
Styrene	MG/KG	300 CP-51	-					
Tetrachloroethene	MG/KG	1.3	150					
Toluene	MG/KG	0.7	500	0.0021 J				0.0049 J
Xylene (total)	MG/KG	0.26	500					0.018 J
Total BTEX	MG/KG	-	-	0.0021	ND	0.024	ND	0.0367
Total Volatile Organic Compounds	MG/KG	-	-	0.0065	0.0102	0.0285	0.0059	0.083
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-					0.024 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-10	SB-10	SB-10	SB-13	SB-13
Sample ID				SB-10-(3-4)	SB-10-(5-5.5)	SB-10-(11-11.5)	SB-13-(3-4)	SB-13-(15-16)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	5.0-5.5	11.0-11.5	3.0-4.0	15.0-16.0
Date Sampled				04/26/10	04/26/10	04/29/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.049 J		0.086 J		0.17 J
2-Methylphenol (o-cresol)	MG/KG	0.33	500	0.028 J				
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500	0.027 J				
3,3'-Dichlorobenzidine	MG/KG	-	-					
Acenaphthene	MG/KG	20	500	0.13 J				0.090 J
Acenaphthylene	MG/KG	100	500	0.58				0.11 J
Acetophenone	MG/KG	-	-	0.091 J				
Anthracene	MG/KG	100	500	0.44				0.18 J
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	2.0	0.030 J		0.023 J	0.25
Benzo(a)pyrene	MG/KG	1	1	1.9	0.021 J		0.026 J	0.17 J
Benzo(b)fluoranthene	MG/KG	1	5.6	2.4 J			0.032 J	0.17 J
Benzo(g,h,i)perylene	MG/KG	100	500	1.2			0.024 J	0.084 J
Benzo(k)fluoranthene	MG/KG	0.8	56	1.8 J				0.087 J
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.14 J	0.089 J		0.033 J	2.0
Butylbenzylphthalate	MG/KG	100 CP-51	-					0.027 J
Carbazole	MG/KG	-	-	0.12 J				
Chrysene	MG/KG	1	56	1.6	0.029 J		0.026 J	0.24
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.11 J				0.022 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-10	SB-10	SB-10	SB-13	SB-13
Sample ID				SB-10-(3-4)	SB-10-(5-5.5)	SB-10-(11-11.5)	SB-13-(3-4)	SB-13-(15-16)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	5.0-5.5	11.0-11.5	3.0-4.0	15.0-16.0
Date Sampled				04/26/10	04/26/10	04/29/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	0.035 J				0.059 J
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.033 J				
Fluoranthene	MG/KG	100	500	2.7	0.037 J			0.53
Fluorene	MG/KG	30	500	0.10 J				0.15 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.23 J			0.025 J	0.064 J
Naphthalene	MG/KG	12	500	0.065 J		0.21 J		0.35
Phenanthrene	MG/KG	100	500	1.3	0.021 J			0.65
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	2.3	0.047 J			0.53
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	18.904	0.185	0.296	0.156	3.847
Total Semivolatile Organic Compounds	MG/KG	-	-	19.378	0.274	0.296	0.189	5.957
Metals								
Aluminum	MG/KG	10000 CP-51	-	9,280 J	14,600	19,400 J	15,800	3,870
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	5.3	0.45 J	12.2 J	3.4	0.67 J
Barium	MG/KG	350	400	71.2	102	47.3 J	59.3	31.8
Beryllium	MG/KG	7.2	590			0.89 J	0.46 J	
Cadmium	MG/KG	2.5	9.3	0.17 J	0.22 J	0.32 J	0.29	0.15 J
Calcium	MG/KG	10000 CP-51	-	1,690 J	1,090 J	1,590 J	925 J	31,900 J
Chromium	MG/KG	30	1500	22.4 J	50.7	37.4 J	29.7	11.4

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-10	SB-10	SB-10	SB-13	SB-13
Sample ID				SB-10-(3-4)	SB-10-(5-5.5)	SB-10-(11-11.5)	SB-13-(3-4)	SB-13-(15-16)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-4.0	5.0-5.5	11.0-11.5	3.0-4.0	15.0-16.0
Date Sampled				04/26/10	04/26/10	04/29/10	04/28/10	04/29/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Cobalt	MG/KG	20 CP-51	-	5.3 J	8.7	13.8 J	7.1	2.2 J
Copper	MG/KG	50	270	32.9	34.6	18.0 J	20.6	27.8
Iron	MG/KG	2000 CP-51	-	25,000	33,200	53,100 J	29,800	6,690
Lead	MG/KG	63	1000	116 J	7.8	17.6 J	17.5	156
Magnesium	MG/KG	-	-	3,410 J	7,320	8,910 J	3,590	4,180
Manganese	MG/KG	1600	10000	109 J	197	750 J	135	135
Mercury	MG/KG	0.18	2.8					0.37
Nickel	MG/KG	30	310	14.1 J	29.7	32.0 J	20.7	13.0
Potassium	MG/KG	-	-	1,700 J	3,820	4,230 J	1,480	548 J
Selenium	MG/KG	3.9	1500	1.5 J	2.8	1.9 J	1.6	1.4 J
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	207 J	164	1,550 J	991	473
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	30.0 J	51.7	54.5 J	36.1	9.1
Zinc	MG/KG	109	10000	51.6 J	76.0 J	95.2 J	49.0 J	78.3 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-14	SB-14	SB-14	SB-15	SB-15
Sample ID				SB-14-(3.5-4)	SB-14-(4.5-5)	SB-14-(14.5-15)	SB-15-(3-3.5)	SB-15-(6-6.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.0	14.5-15.0	3.0-3.5	6.0-6.5
Date Sampled				04/28/10	04/28/10	04/29/10	05/04/10	05/04/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-					
1,2-Dichloroethene (cis)	MG/KG	0.25	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500	0.012 J	0.041 J	0.0081 J		0.041 J
Benzene	MG/KG	0.06	44					0.13
Carbon disulfide	MG/KG	2.7 CP-51	-					0.0071 J
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390					0.36
Isopropylbenzene	MG/KG	2.3 CP-51	-					0.072 J
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-					
Tetrachloroethene	MG/KG	1.3	150					
Toluene	MG/KG	0.7	500					0.32
Xylene (total)	MG/KG	0.26	500					2.9
Total BTEX	MG/KG	-	-	ND	ND	ND	ND	3.71
Total Volatile Organic Compounds	MG/KG	-	-	0.012	0.041	0.0081	ND	3.8301
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-				30 J	4.9 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-14	SB-14	SB-14	SB-15	SB-15
Sample ID				SB-14-(3.5-4)	SB-14-(4.5-5)	SB-14-(14.5-15)	SB-15-(3-3.5)	SB-15-(6-6.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.0	14.5-15.0	3.0-3.5	6.0-6.5
Date Sampled				04/28/10	04/28/10	04/29/10	05/04/10	05/04/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	-			0.092 J	170 J	31
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-					
Acenaphthene	MG/KG	20	500			0.062 J	110 J	1.6
Acenaphthylene	MG/KG	100	500	0.079 J		0.068 J	60 J	14 J
Acetophenone	MG/KG	-	-				0.56 J	
Anthracene	MG/KG	100	500	0.026 J		0.044 J	56 J	4.2 J
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	0.047 J	0.046 J	0.18 J	63 J	4.5 J
Benzo(a)pyrene	MG/KG	1	1	0.038 J	0.037 J	0.20 J	46 J	1.9 J
Benzo(b)fluoranthene	MG/KG	1	5.6	0.053 J	0.039 J	0.23 J	50 J	3.5 J
Benzo(g,h,i)perylene	MG/KG	100	500			0.19 J	23 J	1.4
Benzo(k)fluoranthene	MG/KG	0.8	56	0.027 J	0.025 J	0.12 J	21 J	2.1
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.091 J	0.29	0.061 J	0.29 J	
Butylbenzylphthalate	MG/KG	100 CP-51	-				0.16 J	
Carbazole	MG/KG	-	-				7.5	0.32
Chrysene	MG/KG	1	56	0.053 J	0.059 J	0.20 J	50 J	4.4 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56			0.034 J	5.4	0.45 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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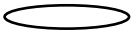
Concentration Exceeds Criteria (1)

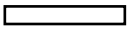
Concentration Exceeds Criteria (2)

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-14	SB-14	SB-14	SB-15	SB-15
Sample ID				SB-14-(3.5-4)	SB-14-(4.5-5)	SB-14-(14.5-15)	SB-15-(3-3.5)	SB-15-(6-6.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.0	14.5-15.0	3.0-3.5	6.0-6.5
Date Sampled				04/28/10	04/28/10	04/29/10	05/04/10	05/04/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350				96 J	1.3
Di-n-butylphthalate	MG/KG	0.014 CP-51	-					
Fluoranthene	MG/KG	100	500	0.057 J	0.088 J	0.24	180 J	6.0 J
Fluorene	MG/KG	30	500				73 J	7.0 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6			0.15 J	22 J	1.0
Naphthalene	MG/KG	12	500			0.33	770	100
Phenanthrene	MG/KG	100	500	0.041 J	0.068 J	0.086 J	280 J	20
Phenol	MG/KG	0.33	500					
Pyrene	MG/KG	100	500	0.068 J	0.11 J	0.35	180 J	11 J
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	0.489	0.472	2.576	2,159.4	214.05
Total Semivolatile Organic Compounds	MG/KG	-	-	0.58	0.762	2.637	2,293.91	220.57
Metals								
Aluminum	MG/KG	10000 CP-51	-	13,100	12,600	11,500	12,200	19,400
Antimony	MG/KG	12 CP-51	-					
Arsenic	MG/KG	13	16	2.8	2.5	1.5	5.6 J	1.0 J
Barium	MG/KG	350	400	58.5	63.7	63.8	136 J	147 J
Beryllium	MG/KG	7.2	590	0.35 J	0.56 J	0.39 J		
Cadmium	MG/KG	2.5	9.3	0.16 J	0.14 J	0.19	0.55	0.55
Calcium	MG/KG	10000 CP-51	-	1,190 J	1,300 J	3,930 J	1,700	1,960
Chromium	MG/KG	30	1500	24.7	20.4	19.9	34.4 J	46.7 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-14	SB-14	SB-14	SB-15	SB-15
Sample ID				SB-14-(3.5-4)	SB-14-(4.5-5)	SB-14-(14.5-15)	SB-15-(3-3.5)	SB-15-(6-6.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.5-5.0	14.5-15.0	3.0-3.5	6.0-6.5
Date Sampled				04/28/10	04/28/10	04/29/10	05/04/10	05/04/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Cobalt	MG/KG	20 CP-51	-	8.3	8.0	8.2	9.1 J	20.9 J
Copper	MG/KG	50	270	28.0	17.7	32.0	85.7	26.6
Iron	MG/KG	2000 CP-51	-	26,300	23,500	23,000	41,800	22,600
Lead	MG/KG	63	1000	65.8	23.4	45.5	230 J	4.0 J
Magnesium	MG/KG	-	-	4,120	3,130	3,590	4,670 J	7,580 J
Manganese	MG/KG	1600	10000	256	267	463	153 J	1,230 J
Mercury	MG/KG	0.18	2.8	0.050	0.036 J	0.067	1.3 J	
Nickel	MG/KG	30	310	16.9	14.8	15.3	20.7 J	28.0 J
Potassium	MG/KG	-	-	1,510 J	950 J	1,320 J	2,630 J	10,900 J
Selenium	MG/KG	3.9	1500	1.9	1.5	1.4		
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	148	175	750	195	259
Thallium	MG/KG	5 CP-51	-					1.6
Vanadium	MG/KG	39 CP-51	-	35.3	29.4	30.7	43.8 J	61.9 J
Zinc	MG/KG	109	10000	72.4 J	43.8 J	68.3 J	96.1 J	84.7 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-15	SB-16	SB-16	SB-16	SB-16
Sample ID				SB-15-(22-23)	SB-16-(3.5-4)	SB-16-(6-6.5)	SB-16-(9-10)	SB-16-(17.5-18)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				22.0-23.0	3.5-4.0	6.0-6.5	9.0-10.0	17.5-18.0
Date Sampled				05/04/10	05/05/10	05/05/10	05/05/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-					
1,2-Dichloroethene (cis)	MG/KG	0.25	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500		0.0089 J		0.011 J	
Benzene	MG/KG	0.06	44	1.6		0.45 J		3.1
Carbon disulfide	MG/KG	2.7 CP-51	-					
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-					
Ethylbenzene	MG/KG	1	390	22		22		19
Isopropylbenzene	MG/KG	2.3 CP-51	-	0.31 J		0.49 J		1.4 J
Methylcyclohexane	MG/KG	-	-					
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-	3.5				
Tetrachloroethene	MG/KG	1.3	150					
Toluene	MG/KG	0.7	500	0.79	0.0012 J	0.54 J		0.41 J
Xylene (total)	MG/KG	0.26	500	35		0.59 J		18
Total BTEX	MG/KG	-	-	59.39	0.0012	23.58	ND	40.51
Total Volatile Organic Compounds	MG/KG	-	-	63.2	0.0101	24.07	0.011	41.91
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.12 J	0.074 J	0.10 J		2.7

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-15	SB-16	SB-16	SB-16	SB-16
Sample ID				SB-15-(22-23)	SB-16-(3.5-4)	SB-16-(6-6.5)	SB-16-(9-10)	SB-16-(17.5-18)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				22.0-23.0	3.5-4.0	6.0-6.5	9.0-10.0	17.5-18.0
Date Sampled				05/04/10	05/05/10	05/05/10	05/05/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.63	0.40	0.60		9.0
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500					
3,3'-Dichlorobenzidine	MG/KG	-	-					
Acenaphthene	MG/KG	20	500	0.16 J	0.16 J	1.2	0.027 J	6.6
Acenaphthylene	MG/KG	100	500	1.1	1.2	3.1		2.6 J
Acetophenone	MG/KG	-	-	0.12 J	0.085 J			
Anthracene	MG/KG	100	500	0.68	0.74	2.7		3.3 J
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	1.4	1.5	6.1		2.8 J
Benzo(a)pyrene	MG/KG	1	1	1.6	2.0 J	3.0		2.9 J
Benzo(b)fluoranthene	MG/KG	1	5.6	1.9 J	1.9 J	3.5 J		1.7 J
Benzo(g,h,i)perylene	MG/KG	100	500	1.6	2.0	1.5		0.81
Benzo(k)fluoranthene	MG/KG	0.8	56	1.7	2.2	2.8		1.1
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-		0.19 J	0.25	0.037 J	0.11 J
Butylbenzylphthalate	MG/KG	100 CP-51	-					
Carbazole	MG/KG	-	-	0.054 J	0.058 J	0.13 J		0.096 J
Chrysene	MG/KG	1	56	1.8	1.8	6.7		2.6 J
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	0.45 J	0.54 J	0.55 J		0.25 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-15	SB-16	SB-16	SB-16	SB-16
Sample ID				SB-15-(22-23)	SB-16-(3.5-4)	SB-16-(6-6.5)	SB-16-(9-10)	SB-16-(17.5-18)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				22.0-23.0	3.5-4.0	6.0-6.5	9.0-10.0	17.5-18.0
Date Sampled				05/04/10	05/05/10	05/05/10	05/05/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	0.12 J	0.095 J	0.14 J		0.38
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.037 J	0.037 J			
Fluoranthene	MG/KG	100	500	2.8	2.7	11		4.2
Fluorene	MG/KG	30	500	0.57	0.42	1.2		4.6
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	1.2	1.4 J	1.3		0.60 J
Naphthalene	MG/KG	12	500	0.38	0.23	0.30		22
Phenanthrene	MG/KG	100	500	3.8	2.9	8.1		14
Phenol	MG/KG	0.33	500					0.099 J
Pyrene	MG/KG	100	500	3.8	3.4	18		7.8
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	25.57	25.49	71.65	0.027	86.86
Total Semivolatile Organic Compounds	MG/KG	-	-	26.021	26.029	72.27	0.064	90.245
Metals								
Aluminum	MG/KG	10000 CP-51	-	5,620	9,070	10,300	15,000	9,300
Antimony	MG/KG	12 CP-51	-			0.64 J		
Arsenic	MG/KG	13	16	1.7 J	5.7 J	16.6 J	4.3 J	1.2 J
Barium	MG/KG	350	400	48.8 J	111 J	73.9 J	75.7 J	87.6 J
Beryllium	MG/KG	7.2	590	0.30 J	0.37 J	0.33 J	0.43 J	0.16 J
Cadmium	MG/KG	2.5	9.3	0.25	0.92	2.6	0.17 J	0.19 J
Calcium	MG/KG	10000 CP-51	-	1,030	17,000	5,840	953	1,130
Chromium	MG/KG	30	1500	24.2 J	24.3 J	25.1 J	19.8 J	34.8 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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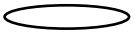
Concentration Exceeds Criteria (1)

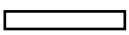
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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-15	SB-16	SB-16	SB-16	SB-16
Sample ID				SB-15-(22-23)	SB-16-(3.5-4)	SB-16-(6-6.5)	SB-16-(9-10)	SB-16-(17.5-18)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				22.0-23.0	3.5-4.0	6.0-6.5	9.0-10.0	17.5-18.0
Date Sampled				05/04/10	05/05/10	05/05/10	05/05/10	05/05/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Cobalt	MG/KG	20 CP-51	-	8.2 J	9.3 J	9.3 J	7.2 J	11.3 J
Copper	MG/KG	50	270	25.8	54.2	53.1	15.6	26.5
Iron	MG/KG	2000 CP-51	-	16,700	24,900	113,000	21,300 J	25,000
Lead	MG/KG	63	1000	5.0 J	91.9 J	66.6 J	9.0 J	7.5 J
Magnesium	MG/KG	-	-	2,990 J	5,240 J	4,260 J	3,460 J	4,870 J
Manganese	MG/KG	1600	10000	164 J	226 J	406 J	156 J	261 J
Mercury	MG/KG	0.18	2.8		2.1 J	0.70 J	0.0073 J	
Nickel	MG/KG	30	310	17.7 J	22.5 J	19.7 J	14.9 J	25.1 J
Potassium	MG/KG	-	-	2,340 J	2,010 J	2,090 J	923 J	4,550 J
Selenium	MG/KG	3.9	1500					
Silver	MG/KG	2	1500					
Sodium	MG/KG	-	-	224	302	165	201	128
Thallium	MG/KG	5 CP-51	-		0.52 J			
Vanadium	MG/KG	39 CP-51	-	30.8 J	29.9 J	36.2 J	29.7 J	37.5 J
Zinc	MG/KG	109	10000	35.5 J	113 J	134 J	41.5 J	43.5 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-17	SB-17	SB-17	SB-41	SB-41
Sample ID				SB-17-(3-3.5)	SB-17-(5.5-6)	SB-17-(12-12.5)	SB-41 (0.5-1.0)	SB-41 (7-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.5-6.0	12.0-12.5	0.5-1.0	7.0-9.0
Date Sampled				05/11/10	05/11/10	05/12/10	02/18/14	02/18/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-					
1,2-Dichloroethene (cis)	MG/KG	0.25	500					
2-Butanone	MG/KG	0.12	500					
Acetone	MG/KG	0.05	500		0.040 J	0.12 J		0.0054 J
Benzene	MG/KG	0.06	44		0.025	5.7 J		0.0024 J
Carbon disulfide	MG/KG	2.7 CP-51	-		0.022			
Chloroform	MG/KG	0.37	350					
Cyclohexane	MG/KG	-	-			0.038 J		
Ethylbenzene	MG/KG	1	390		1.7	11		
Isopropylbenzene	MG/KG	2.3 CP-51	-		0.074 J	0.33 J		
Methylcyclohexane	MG/KG	-	-			0.14 J		
Methylene chloride	MG/KG	0.05	500					
Styrene	MG/KG	300 CP-51	-			15		
Tetrachloroethene	MG/KG	1.3	150					
Toluene	MG/KG	0.7	500		0.19 J	12		
Xylene (total)	MG/KG	0.26	500		2.6 J	66	0.0092 J	
Total BTEX	MG/KG	-	-	ND	4.515	94.7	0.0092	0.0024
Total Volatile Organic Compounds	MG/KG	-	-	ND	4.651	110.328	0.0092	0.0078
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.15 J	0.60			NA

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-17	SB-17	SB-17	SB-41	SB-41
Sample ID				SB-17-(3-3.5)	SB-17-(5.5-6)	SB-17-(12-12.5)	SB-41 (0.5-1.0)	SB-41 (7-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.5-6.0	12.0-12.5	0.5-1.0	7.0-9.0
Date Sampled				05/11/10	05/11/10	05/12/10	02/18/14	02/18/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					NA
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	1.8 J	1.3	670	0.075 J	NA
2-Methylphenol (o-cresol)	MG/KG	0.33	500					NA
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500	0.048 J				NA
3,3'-Dichlorobenzidine	MG/KG	-	-					NA
Acenaphthene	MG/KG	20	500	0.31 J	2.7	33 J		NA
Acenaphthylene	MG/KG	100	500	4.6	3.1	180 J	0.59	NA
Acetophenone	MG/KG	-	-				0.064 J	NA
Anthracene	MG/KG	100	500	4.0	6.8	64 J	0.21 J	NA
Benzaldehyde	MG/KG	-	-					NA
Benzo(a)anthracene	MG/KG	1	5.6	22	4.1	79 J	0.65	NA
Benzo(a)pyrene	MG/KG	1	1	24	2.7	41 J	0.74	NA
Benzo(b)fluoranthene	MG/KG	1	5.6	26 J	2.7 J		1.1	NA
Benzo(g,h,i)perylene	MG/KG	100	500	14	1.4		0.85	NA
Benzo(k)fluoranthene	MG/KG	0.8	56	13 J	1.4 J		0.48	NA
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.10 J	0.020 J			NA
Butylbenzylphthalate	MG/KG	100 CP-51	-				0.043 J	NA
Carbazole	MG/KG	-	-	0.38 J	7.1		0.071 J	NA
Chrysene	MG/KG	1	56	22	4.2	73 J	0.86	NA
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	3.4 J	0.57		0.17 J	NA

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-17	SB-17	SB-17	SB-41	SB-41
Sample ID				SB-17-(3-3.5)	SB-17-(5.5-6)	SB-17-(12-12.5)	SB-41 (0.5-1.0)	SB-41 (7-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.5-6.0	12.0-12.5	0.5-1.0	7.0-9.0
Date Sampled				05/11/10	05/11/10	05/12/10	02/18/14	02/18/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	0.40 J	2.6			NA
Di-n-butylphthalate	MG/KG	0.014 CP-51	-				0.26 J	NA
Fluoranthene	MG/KG	100	500	47	8.3	120 J	0.83	NA
Fluorene	MG/KG	30	500	1.4 J	3.4	120 J		NA
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	12 J	1.3		0.82	NA
Naphthalene	MG/KG	12	500	1.8 J	16	1,800	0.090 J	NA
Phenanthrene	MG/KG	100	500	10	7.9	380	0.34 J	NA
Phenol	MG/KG	0.33	500					NA
Pyrene	MG/KG	100	500	59	13	230 J	1.0	NA
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	266.31	80.87	3,790	8.805	NA
Total Semivolatile Organic Compounds	MG/KG	-	-	267.388	91.19	3,790	9.243	NA
Metals								
Aluminum	MG/KG	10000 CP-51	-	4,990	11,100	9,170	2,840	NA
Antimony	MG/KG	12 CP-51	-				0.53 J	NA
Arsenic	MG/KG	13	16	3.5	0.77		6.2	NA
Barium	MG/KG	350	400	50.1	48.4	202	88.1	NA
Beryllium	MG/KG	7.2	590	0.071 J	0.17		0.28	NA
Cadmium	MG/KG	2.5	9.3	0.20 J	0.23	0.22	0.28	NA
Calcium	MG/KG	10000 CP-51	-	808	1,630	1,040	21,800	NA
Chromium	MG/KG	30	1500	9.6	19.7	39.0	6.2	NA

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-17	SB-17	SB-17	SB-41	SB-41
Sample ID				SB-17-(3-3.5)	SB-17-(5.5-6)	SB-17-(12-12.5)	SB-41 (0.5-1.0)	SB-41 (7-9)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.0-3.5	5.5-6.0	12.0-12.5	0.5-1.0	7.0-9.0
Date Sampled				05/11/10	05/11/10	05/12/10	02/18/14	02/18/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Metals								
Cobalt	MG/KG	20 CP-51	-	4.7	5.4	8.6	22.2	NA
Copper	MG/KG	50	270	14.7	19.2	30.0	34.3	NA
Iron	MG/KG	2000 CP-51	-	11,100	26,300	25,000	6,550	NA
Lead	MG/KG	63	1000	53.1	7.5	4.0	154	NA
Magnesium	MG/KG	-	-	1,320	3,440	5,140	1,940	NA
Manganese	MG/KG	1600	10000	64.9	265	135	57.0	NA
Mercury	MG/KG	0.18	2.8	0.27	0.24		0.20	NA
Nickel	MG/KG	30	310	15.4	13.6	40.4	9.8	NA
Potassium	MG/KG	-	-	503	1,500	3,050	600	NA
Selenium	MG/KG	3.9	1500	1.3 J	1.4	1.8	0.61 J	NA
Silver	MG/KG	2	1500					NA
Sodium	MG/KG	-	-	338	572	100	937	NA
Thallium	MG/KG	5 CP-51	-				0.34 J	NA
Vanadium	MG/KG	39 CP-51	-	12.8	26.4	36.6	12.3	NA
Zinc	MG/KG	109	10000	78.5	36.9	43.1	116	NA

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-41	SB-42	SB-42	SB-42	SB-43
Sample ID				SB-41 (9-11)	DUP021914	SB-42 (0.5-1.0)	SB-42 (18.5-19.5)	SB-43 (1-2)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-11.0	0.5-1.0	0.5-1.0	18.5-19.5	1.0-2.0
Date Sampled				02/18/14	02/19/14	02/19/14	02/21/14	02/19/14
Parameter	Units	Criteria (1)	Criteria (2)		Field Duplicate (1-1)			
Volatile Organic Compounds								
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-	NA				
1,2-Dichloroethene (cis)	MG/KG	0.25	500	NA				
2-Butanone	MG/KG	0.12	500	NA				
Acetone	MG/KG	0.05	500	NA	0.0065 J	0.012 J		
Benzene	MG/KG	0.06	44	NA			2.5	0.0014 J
Carbon disulfide	MG/KG	2.7 CP-51	-	NA				
Chloroform	MG/KG	0.37	350	NA				
Cyclohexane	MG/KG	-	-	NA				
Ethylbenzene	MG/KG	1	390	NA			8.2	
Isopropylbenzene	MG/KG	2.3 CP-51	-	NA			1.0	
Methylcyclohexane	MG/KG	-	-	NA				
Methylene chloride	MG/KG	0.05	500	NA				0.0031 J
Styrene	MG/KG	300 CP-51	-	NA			5.0	
Tetrachloroethene	MG/KG	1.3	150	NA				
Toluene	MG/KG	0.7	500	NA			5.8	
Xylene (total)	MG/KG	0.26	500	NA			17	
Total BTEX	MG/KG	-	-	NA	ND	ND	33.5	0.0014
Total Volatile Organic Compounds	MG/KG	-	-	NA	0.0065	0.012	39.5	0.0045
Semivolatile Organic Compounds								
1,1'-Biphenyl	MG/KG	60 CP-51	-	0.078 J	0.47	0.42	17 J	0.040 J

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SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-41	SB-42	SB-42	SB-42	SB-43
Sample ID				SB-41 (9-11)	DUP021914	SB-42 (0.5-1.0)	SB-42 (18.5-19.5)	SB-43 (1-2)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-11.0	0.5-1.0	0.5-1.0	18.5-19.5	1.0-2.0
Date Sampled				02/18/14	02/19/14	02/19/14	02/21/14	02/19/14
Parameter	Units	Criteria (1)	Criteria (2)		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-					
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	0.69	0.20 J	0.13 J	240 D	0.15 J
2-Methylphenol (o-cresol)	MG/KG	0.33	500					
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500				0.13 J	
3,3'-Dichlorobenzidine	MG/KG	-	-					
Acenaphthene	MG/KG	20	500	5.9 D	0.75	0.59	9.0 J	0.17 J
Acenaphthylene	MG/KG	100	500	3.2	4.8 DJ	2.4 J	98 DJ	1.5
Acetophenone	MG/KG	-	-					
Anthracene	MG/KG	100	500	4.9 D	3.7 DJ	2.6	32 DJ	0.68
Benzaldehyde	MG/KG	-	-					
Benzo(a)anthracene	MG/KG	1	5.6	11 D	4.5 D	2.9	33 DJ	1.5
Benzo(a)pyrene	MG/KG	1	1	10 D	3.3 DJ	2.1	21 DJ	2.0
Benzo(b)fluoranthene	MG/KG	1	5.6	12 D	4.4 DJ	2.2 J	13 DJ	2.6
Benzo(g,h,i)perylene	MG/KG	100	500	9.4 D	2.5 J	1.1 J	6.7 J	1.9
Benzo(k)fluoranthene	MG/KG	0.8	56	5.0 D	2.2 J	0.95 J	5.5 J	0.96
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-					0.097 J
Butylbenzylphthalate	MG/KG	100 CP-51	-	0.071 J				
Carbazole	MG/KG	-	-	0.16 J	0.18 J	0.069 J	0.31 J	0.14 J
Chrysene	MG/KG	1	56	17 D	5.1 DJ	2.9 J	27 DJ	2.0
Dibenz(a,h)anthracene	MG/KG	0.33	0.56	2.2	0.64 J	0.33 J	2.1	0.45

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. J+ - The reported concntration is an estimated value, with high bias.

D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-41	SB-42	SB-42	SB-42	SB-43
Sample ID				SB-41 (9-11)	DUP021914	SB-42 (0.5-1.0)	SB-42 (18.5-19.5)	SB-43 (1-2)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-11.0	0.5-1.0	0.5-1.0	18.5-19.5	1.0-2.0
Date Sampled				02/18/14	02/19/14	02/19/14	02/21/14	02/19/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**		Field Duplicate (1-1)			
Semivolatile Organic Compounds								
Dibenzofuran	MG/KG	7	350	0.27 J	0.41	0.29 J		
Di-n-butylphthalate	MG/KG	0.014 CP-51	-	0.12 J	0.10 J	0.10 J		0.041 J
Fluoranthene	MG/KG	100	500	15 D	7.5 DJ	4.0 DJ	38 DJ	2.0
Fluorene	MG/KG	30	500	2.1	4.1 D	2.6	41 DJ	0.36 J
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	8.3 D	2.6 J	1.2 J	6.3 J	1.9
Naphthalene	MG/KG	12	500	3.3	0.50	0.48	710 D	0.73
Phenanthrene	MG/KG	100	500	8.1 D	13 D	8.2 D	140 DJ	1.4
Phenol	MG/KG	0.33	500				0.13 J	
Pyrene	MG/KG	100	500	22 D	11 DJ	6.6 DJ	42 J	2.8
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	140.09	70.79	41.28	1,464.6	23.1
Total Semivolatile Organic Compounds	MG/KG	-	-	140.789	71.95	42.159	1,482.17	23.418
Metals								
Aluminum	MG/KG	10000 CP-51	-	6,100	6,480	7,100	11,100	3,440
Antimony	MG/KG	12 CP-51	-			1.7 J		0.44 J
Arsenic	MG/KG	13	16	13.3	12.0	10.4	1.8	6.8
Barium	MG/KG	350	400	64.4	145	135	69.0	99.5
Beryllium	MG/KG	7.2	590	0.28	0.44	0.46		0.32
Cadmium	MG/KG	2.5	9.3	0.33			0.46	0.15 J
Calcium	MG/KG	10000 CP-51	-	5,420	4,140	5,080	1,320	5,810
Chromium	MG/KG	30	1500	13.2	15.5	24.8 J	48.2	7.6

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-41	SB-42	SB-42	SB-42	SB-43
Sample ID				SB-41 (9-11)	DUP021914	SB-42 (0.5-1.0)	SB-42 (18.5-19.5)	SB-43 (1-2)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				9.0-11.0	0.5-1.0	0.5-1.0	18.5-19.5	1.0-2.0
Date Sampled				02/18/14	02/19/14	02/19/14	02/21/14	02/19/14
Parameter	Units	Criteria (1)	Criteria (2)		Field Duplicate (1-1)			
Metals								
Cobalt	MG/KG	20 CP-51	-	3.1	10.7	13.3	11.1	9.1
Copper	MG/KG	50	270	65.4	54.5	53.5	34.0	59.8
Iron	MG/KG	2000 CP-51	-	20,500	21,500	18,500	21,700	10,100
Lead	MG/KG	63	1000	335	134	144	2.1	76.9
Magnesium	MG/KG	-	-	3,860	2,230	2,790	6,580	1,640
Manganese	MG/KG	1600	10000	140	128	127	545	68.9
Mercury	MG/KG	0.18	2.8	0.28	0.18	0.13		0.30
Nickel	MG/KG	30	310	21.2	15.3	17.7	39.6	10.4
Potassium	MG/KG	-	-	719	1,460	1,590	5,120	798
Selenium	MG/KG	3.9	1500		2.1		0.62 J	1.3 J
Silver	MG/KG	2	1500				0.40 J	
Sodium	MG/KG	-	-	479	685	681	168	376
Thallium	MG/KG	5 CP-51	-					
Vanadium	MG/KG	39 CP-51	-	50.7	24.3	26.6	47.3	14.1
Zinc	MG/KG	109	10000	133	103	105	52.2	94.9

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-43	SB-44	SB-44	SB-44
Sample ID				SB-43 (10-12)	SB-44 (1.5-2)	SB-44 (10-12)	SB-44 (15-20)
Matrix				Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-12.0	1.5-2.0	10.0-12.0	15.0-20.0
Date Sampled				02/19/14	02/19/14	02/21/14	02/21/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				
Volatile Organic Compounds							
1,2,4-Trichlorobenzene	MG/KG	3.4 CP-51	-				
1,2-Dichloroethene (cis)	MG/KG	0.25	500				
2-Butanone	MG/KG	0.12	500		0.0071 J		
Acetone	MG/KG	0.05	500		0.040 J		
Benzene	MG/KG	0.06	44	1,600	0.0030	2,600	2,000
Carbon disulfide	MG/KG	2.7 CP-51	-				
Chloroform	MG/KG	0.37	350				
Cyclohexane	MG/KG	-	-				
Ethylbenzene	MG/KG	1	390	82	0.014	2,600	690
Isopropylbenzene	MG/KG	2.3 CP-51	-		0.0052	25 J	
Methylcyclohexane	MG/KG	-	-				
Methylene chloride	MG/KG	0.05	500		0.0029 J		
Styrene	MG/KG	300 CP-51	-	220	0.0012 J	1,300	1,000
Tetrachloroethene	MG/KG	1.3	150				
Toluene	MG/KG	0.7	500	950		3,800	2,500
Xylene (total)	MG/KG	0.26	500	1,000	0.0063	4,700	2,000
Total BTEX	MG/KG	-	-	3,632	0.0233	13,700	7,190
Total Volatile Organic Compounds	MG/KG	-	-	3,852	0.0797	15,025	8,190
Semivolatile Organic Compounds							
1,1'-Biphenyl	MG/KG	60 CP-51	-	530 J	0.34 J	150 J	1,800

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-43	SB-44	SB-44	SB-44
Sample ID				SB-43 (10-12)	SB-44 (1.5-2)	SB-44 (10-12)	SB-44 (15-20)
Matrix				Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-12.0	1.5-2.0	10.0-12.0	15.0-20.0
Date Sampled				02/19/14	02/19/14	02/21/14	02/21/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				
Semivolatile Organic Compounds							
2,6-Dinitrotoluene	MG/KG	0.17 CP-51	-				
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	4,700 DJ		4,100 D	28,000 D
2-Methylphenol (o-cresol)	MG/KG	0.33	500				
3&4-Methylphenol (m,p-cresol)	MG/KG	0.33	500	1,100 DJ		0.65 J	
3,3'-Dichlorobenzidine	MG/KG	-	-				
Acenaphthene	MG/KG	20	500	950 J	0.84	150 J	1,300
Acenaphthylene	MG/KG	100	500		2.8	700 J	9,900 DJ
Acetophenone	MG/KG	-	-				
Anthracene	MG/KG	100	500	2,800 DJ	4.0 D	360 DJ	3,400
Benzaldehyde	MG/KG	-	-				
Benzo(a)anthracene	MG/KG	1	5.6	2,500 DJ	5.5 D	230 DJ	1,600
Benzo(a)pyrene	MG/KG	1	1		3.8 DJ	130 J	1,200
Benzo(b)fluoranthene	MG/KG	1	5.6	2,600 DJ	3.9 D	99 J	890
Benzo(g,h,i)perylene	MG/KG	100	500		2.0	35 J	490
Benzo(k)fluoranthene	MG/KG	0.8	56	830 DJ	2.8	48 J	450
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-				
Butylbenzylphthalate	MG/KG	100 CP-51	-				
Carbazole	MG/KG	-	-	700 J		5.7	81 J
Chrysene	MG/KG	1	56	2,000 DJ	5.5 D	250 DJ	1,700
Dibenz(a,h)anthracene	MG/KG	0.33	0.56		0.58	14	140 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-43	SB-44	SB-44	SB-44
Sample ID				SB-43 (10-12)	SB-44 (1.5-2)	SB-44 (10-12)	SB-44 (15-20)
Matrix				Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-12.0	1.5-2.0	10.0-12.0	15.0-20.0
Date Sampled				02/19/14	02/19/14	02/21/14	02/21/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				
Semivolatile Organic Compounds							
Dibenzofuran	MG/KG	7	350			59 J	700
Di-n-butylphthalate	MG/KG	0.014 CP-51	-				
Fluoranthene	MG/KG	100	500	7,800 D	7.4 D	340 DJ	2,700
Fluorene	MG/KG	30	500		3.9 D	710 DJ	4,000 DJ
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6		2.0	42 J	510 J
Naphthalene	MG/KG	12	500	48,000 D	0.46	11,000 D	74,000 D
Phenanthrene	MG/KG	100	500	12,000 D	15 D	1,500 DJ	11,000 DJ
Phenol	MG/KG	0.33	500	350 J			
Pyrene	MG/KG	100	500	6,700 D	13 D	530 DJ	5,000 DJ
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	90,880	73.48	20,238	146,280
Total Semivolatile Organic Compounds	MG/KG	-	-	93,560	73.82	20,453.35	148,861
Metals							
Aluminum	MG/KG	10000 CP-51	-	NA	11,300	9,910 J	NA
Antimony	MG/KG	12 CP-51	-	NA		1.7 J	NA
Arsenic	MG/KG	13	16	NA	11.5	30.9	NA
Barium	MG/KG	350	400	NA	98.2	66.6	NA
Beryllium	MG/KG	7.2	590	NA	0.47	0.54	NA
Cadmium	MG/KG	2.5	9.3	NA		0.53	NA
Calcium	MG/KG	10000 CP-51	-	NA	3,940	7,710	NA
Chromium	MG/KG	30	1500	NA	25.6	14.5	NA

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

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D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-10
BLOCK 2598 LOT 1
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				SB-43	SB-44	SB-44	SB-44
Sample ID				SB-43 (10-12)	SB-44 (1.5-2)	SB-44 (10-12)	SB-44 (15-20)
Matrix				Soil	Soil	Soil	Soil
Depth Interval (ft)				10.0-12.0	1.5-2.0	10.0-12.0	15.0-20.0
Date Sampled				02/19/14	02/19/14	02/21/14	02/21/14
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**				
Metals							
Cobalt	MG/KG	20 CP-51	-	NA	10.2	3.7	NA
Copper	MG/KG	50	270	NA	83.9	123 J	NA
Iron	MG/KG	2000 CP-51	-	NA	22,600	18,500	NA
Lead	MG/KG	63	1000	NA	224	306	NA
Magnesium	MG/KG	-	-	NA	3,960	2,650	NA
Manganese	MG/KG	1600	10000	NA	159	103	NA
Mercury	MG/KG	0.18	2.8	NA	0.83	3.7 J+	NA
Nickel	MG/KG	30	310	NA	26.5	24.7	NA
Potassium	MG/KG	-	-	NA	1,910	935 J	NA
Selenium	MG/KG	3.9	1500	NA	1.2 J	5.1	NA
Silver	MG/KG	2	1500	NA			NA
Sodium	MG/KG	-	-	NA	285	644 J	NA
Thallium	MG/KG	5 CP-51	-	NA		1.5	NA
Vanadium	MG/KG	39 CP-51	-	NA	33.0	29.3	NA
Zinc	MG/KG	109	10000	NA	147	165	NA

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

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Concentration Exceeds Criteria (2)

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Only Detected Results Reported.

TABLE 2-11
BLOCK 2598 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
1,2,4-Trichlorobenzene	MG/KG	-	43	1	0.002	0.002	0.002	0	SB-10	5-5.5
1,2-Dichloroethene (cis)	MG/KG	500	43	3	0.009	1.30	0.447	0	MW-05	20.5-21
2-Butanone	MG/KG	500	43	1	0.007	0.007	0.007	0	SB-44	1.5-2
Acetone	MG/KG	500	43	23	0.004	0.220	0.047	0	SB-08	10.5-11
Benzene	MG/KG	44	43	24	0.001	2,600	260.0	3	SB-44	10-12
Carbon disulfide	MG/KG	-	43	5	0.005	0.022	0.010	0	SB-17	5.5-6
Chloroform	MG/KG	350	43	2	0.020	0.028	0.024	0	SB-08	10.5-11
Cyclohexane	MG/KG	-	43	3	0.038	0.350	0.162	0	SB-08	10.5-11
Ethylbenzene	MG/KG	390	43	20	0.009	2,600	180.2	2	SB-44	10-12
Isopropylbenzene	MG/KG	-	43	15	0.005	25.00	2.30	0	SB-44	10-12
Methylcyclohexane	MG/KG	-	43	4	0.008	0.550	0.227	0	SB-08	10.5-11
Methylene chloride	MG/KG	500	43	3	0.003	0.006	0.004	0	SB-13	3-4
Styrene	MG/KG	-	43	12	0.001	1,300	217.1	0	SB-44	10-12
Tetrachloroethene	MG/KG	150	43	1	0.013	0.013	0.013	0	SB-07	3-4
Toluene	MG/KG	500	43	21	0.001	3,800	348.3	3	SB-44	10-12
Xylene (total)	MG/KG	500	43	22	0.006	4,700	369.2	3	SB-44	10-12
Semivolatile Organic Compounds										
1,1'-Biphenyl	MG/KG	-	43	28	0.024	1,800	92.56	0	SB-44	15-20

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-11
BLOCK 2598 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
2,6-Dinitrotoluene	MG/KG	-	43	1	1.20	1.20	1.20	0	MW-05	20.5-21
2-Methylnaphthalene	MG/KG	-	43	35	0.049	2.80E+04	1,096	0	SB-44	15-20
2-Methylphenol (o-cresol)	MG/KG	500	43	3	0.024	0.077	0.043	0	SB-07	13.3-14.2
3&4-Methylphenol (m,p-cresol)	MG/KG	500	43	8	0.027	1,100	137.6	1	SB-43	10-12
3,3'-Dichlorobenzidine	MG/KG	-	43	1	0.680	0.680	0.680	0	MW-05	20.5-21
Acenaphthene	MG/KG	500	43	35	0.023	1,300	76.06	2	SB-44	15-20
Acenaphthylene	MG/KG	500	43	36	0.068	9,900	309.8	2	SB-44	15-20
Acetophenone	MG/KG	-	43	10	0.064	0.560	0.185	0	SB-15	3-3.5
Anthracene	MG/KG	500	43	37	0.026	3,400	185.5	2	SB-44	15-20
Benzaldehyde	MG/KG	-	43	1	0.330	0.330	0.330	0	MW-05	4.5-5
Benzo(a)anthracene	MG/KG	5.6	43	41	0.023	2,500	115.9	17	SB-43	10-12
Benzo(a)pyrene	MG/KG	1	43	40	0.021	1,200	41.01	29	SB-44	15-20
Benzo(b)fluoranthene	MG/KG	5.6	43	39	0.032	2,600	99.79	15	SB-43	10-12
Benzo(g,h,i)perylene	MG/KG	500	43	36	0.023	490.0	19.36	0	SB-44	15-20
Benzo(k)fluoranthene	MG/KG	56	43	38	0.021	830.0	38.17	2	SB-43	10-12
bis(2-Ethylhexyl)phthalate	MG/KG	-	43	23	0.020	2.00	0.223	0	SB-13	15-16
Butylbenzylphthalate	MG/KG	-	43	4	0.027	0.160	0.075	0	SB-15	3-3.5
Carbazole	MG/KG	-	43	28	0.021	700.0	29.54	0	SB-43	10-12

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-11
BLOCK 2598 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Chrysene	MG/KG	56	43	41	0.026	2,000	105.8	5	SB-43	10-12
Dibenz(a,h)anthracene	MG/KG	0.56	43	33	0.022	140.0	5.91	17	SB-44	15-20
Dibenzofuran	MG/KG	350	43	28	0.035	700.0	31.70	1	SB-44	15-20
Di-n-butylphthalate	MG/KG	-	43	10	0.033	0.260	0.084	0	SB-41	0.5-1
Fluoranthene	MG/KG	500	43	40	0.037	7,800	291.8	2	SB-43	10-12
Fluorene	MG/KG	500	43	33	0.020	4,000	154.5	2	SB-44	15-20
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	43	35	0.025	510.0	19.78	9	SB-44	15-20
Naphthalene	MG/KG	500	43	37	0.065	7.40E+04	3,718	7	SB-44	15-20
Phenanthrene	MG/KG	500	43	40	0.021	1.20E+04	645.6	3	SB-43	10-12
Phenol	MG/KG	500	43	4	0.050	350.0	87.57	0	SB-43	10-12
Pyrene	MG/KG	500	43	40	0.047	6,700	331.3	3	SB-43	10-12
Metals										
Aluminum	MG/KG	-	41	41	2,840	1.94E+04	1.03E+04	0	SB-15	6-6.5
Antimony	MG/KG	-	41	5	0.440	1.70	1.00	0	SB-42	10-12
Arsenic	MG/KG	16	41	39	0.210	30.90	5.39	2	SB-44	10-12
Barium	MG/KG	400	41	41	31.80	212.0	87.79	0	SB-07	3-4
Beryllium	MG/KG	590	41	29	0.071	0.930	0.430	0	SB-07	3-4
Cadmium	MG/KG	9.3	41	38	0.055	3.00	0.413	0	SB-07	3-4

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-11
BLOCK 2598 LOT 1
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Calcium	MG/KG	-	41	41	516.0	6.07E+04	6,698	0	SB-07	3-4
Chromium	MG/KG	1500	41	41	6.20	75.70	27.45	0	MW-06	10.5-11
Cobalt	MG/KG	-	41	41	2.20	22.20	9.17	0	SB-41	0.5-1
Copper	MG/KG	270	41	41	12.00	425.0	49.29	1	MW-05	4.5-5
Iron	MG/KG	-	41	41	6,550	1.13E+05	2.53E+04	0	SB-16	6-6.5
Lead	MG/KG	1000	41	41	2.10	335.0	77.47	0	SB-41	9-11
Magnesium	MG/KG	-	41	41	1,320	8,910	4,384	0	SB-10	11-11.5
Manganese	MG/KG	10000	41	41	57.00	1,230	252.2	0	SB-15	6-6.5
Mercury	MG/KG	2.8	41	23	0.007	4.20	0.700	2	SB-07	3-4
Nickel	MG/KG	310	41	41	9.80	41.10	22.31	0	MW-06	10.5-11
Potassium	MG/KG	-	41	41	503.0	1.09E+04	2,351	0	SB-15	6-6.5
Selenium	MG/KG	1500	41	31	0.610	5.10	2.08	0	SB-44	10-12
Silver	MG/KG	1500	41	3	0.110	0.400	0.227	0	SB-42	18.5-19.5
Sodium	MG/KG	-	41	41	100.0	1,550	348.3	0	SB-10	11-11.5
Thallium	MG/KG	-	41	6	0.340	1.70	1.21	0	SB-07	4.5-5.5
Vanadium	MG/KG	-	41	41	9.10	66.10	34.43	0	MW-06	10.5-11
Zinc	MG/KG	10000	41	41	33.20	278.0	88.89	0	MW-05	4.5-5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-12
BLOCK 2598 LOT 62
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-04	MW-04	MW-04
Sample ID				MW-04-(3.5-4.5)	MW-04-(3.5-4.5)	MW-04-(8.5-9.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				3.5-4.5	3.5-4.5	8.5-9.5
Date Sampled				04/16/10	04/16/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)		
Volatile Organic Compounds						
Acetone	MG/KG	0.05	500	0.012 J	0.020 J	0.0067 J
Isopropylbenzene	MG/KG	2.3 CP-51	-	0.10 J	0.16 J	
Methylcyclohexane	MG/KG	-	-	0.17 J	0.28 J	
Styrene	MG/KG	300 CP-51	-		0.017 J	
Xylene (total)	MG/KG	0.26	500	0.0064 J		
Total BTEX	MG/KG	-	-	0.0064	ND	ND
Total Volatile Organic Compounds	MG/KG	-	-	0.2884	0.477	0.0067
Semivolatile Organic Compounds						
2-Methylnaphthalene	MG/KG	0.41 CP-51	-	10 J	9.2 J	
Acenaphthene	MG/KG	20	500		0.43 J	
Acenaphthylene	MG/KG	100	500		0.31 J	
Anthracene	MG/KG	100	500	0.17 J	0.43	
Benzo(a)anthracene	MG/KG	1	5.6	0.22	0.14 J	
Benzo(a)pyrene	MG/KG	1	1	0.13 J	0.10 J	
Benzo(b)fluoranthene	MG/KG	1	5.6	0.16 J	0.14 J	
Benzo(g,h,i)perylene	MG/KG	100	500	0.099 J	0.22	
Benzo(k)fluoranthene	MG/KG	0.8	56	0.066 J	0.060 J	
bis(2-Ethylhexyl)phthalate	MG/KG	50 CP-51	-	0.052 J	0.044 J	
Chrysene	MG/KG	1	56	0.22 J	0.15 J	
Dibenz(a,h)anthracene	MG/KG	0.33	0.56		0.026 J	

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-12
BLOCK 2598 LOT 62
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-04	MW-04	MW-04
Sample ID				MW-04-(3.5-4.5)	MW-04-(3.5-4.5)	MW-04-(8.5-9.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				3.5-4.5	3.5-4.5	8.5-9.5
Date Sampled				04/16/10	04/16/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)		
Semivolatile Organic Compounds						
Dibenzofuran	MG/KG	7	350		0.31 J	
Di-n-butylphthalate	MG/KG	0.014 CP-51	-		0.11 J	
Fluoranthene	MG/KG	100	500	0.46	0.30	
Fluorene	MG/KG	30	500		0.77 J	
Indeno(1,2,3-cd)pyrene	MG/KG	0.5	5.6	0.073 J	0.13 J	
Naphthalene	MG/KG	12	500	0.56	0.54	
Phenanthrene	MG/KG	100	500	4.7	3.8	
Pyrene	MG/KG	100	500	1.3	1.0	
Total Polynuclear Aromatic Hydrocarbons	MG/KG	-	-	18.158	17.746	ND
Total Semivolatile Organic Compounds	MG/KG	-	-	18.21	18.21	ND
Metals						
Aluminum	MG/KG	10000 CP-51	-	8,910	11,500 J	8,120
Arsenic	MG/KG	13	16		2.2	1.4
Barium	MG/KG	350	400	83.6 J	71.4 J	46.0 J
Beryllium	MG/KG	7.2	590	1.2 J	0.90 J	0.65 J
Cadmium	MG/KG	2.5	9.3	0.087 J	0.33	0.045 J
Calcium	MG/KG	10000 CP-51	-	14,500	6,900 J	1,450
Chromium	MG/KG	30	1500	22.6 J	27.0 J	14.2 J
Cobalt	MG/KG	20 CP-51	-	9.6 J	12.3 J	6.3 J
Copper	MG/KG	50	270	35.6	27.2 J	9.2

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-12
BLOCK 2598 LOT 62
SUMMARY OF DETECTED COMPOUNDS IN RI SOIL SAMPLES
EAST 138th STREET WORKS SITE

Location ID				MW-04	MW-04	MW-04
Sample ID				MW-04-(3.5-4.5)	MW-04-(3.5-4.5)	MW-04-(8.5-9.5)
Matrix				Soil	Soil	Soil
Depth Interval (ft)				3.5-4.5	3.5-4.5	8.5-9.5
Date Sampled				04/16/10	04/16/10	04/20/10
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)		
Metals						
Iron	MG/KG	2000 CP-51	-	22,300	25,300	19,700
Lead	MG/KG	63	1000	11.6	7.8 J	4.9
Magnesium	MG/KG	-	-	11,200 J	6,680 J	2,800 J
Manganese	MG/KG	1600	10000	232 J	213 J	213 J
Mercury	MG/KG	0.18	2.8		0.013 J	
Nickel	MG/KG	30	310	17.3 J	21.2 J	11.5 J
Potassium	MG/KG	-	-	3,060	2,200 J	828
Selenium	MG/KG	3.9	1500	3.7	2.6	1.5
Silver	MG/KG	2	1500	0.12 J		0.087 J
Sodium	MG/KG	-	-	126 J	118 J	53.0 J
Thallium	MG/KG	5 CP-51	-		1.7	
Vanadium	MG/KG	39 CP-51	-	31.3	35.1 J	16.1
Zinc	MG/KG	109	10000	52.4 J	40.0 J	28.5 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

- = No standard, criteria or guidance value.

J - The reported concentration is an estimated value. Blank cell or ND - Not detected. NA - Not analyzed.

Only Detected Results Reported.

TABLE 2-13
BLOCK 2598 LOT 62
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Volatile Organic Compounds										
Acetone	MG/KG	500	3	3	0.007	0.020	0.013	0	MW-04	3.5-4.5
Isopropylbenzene	MG/KG	-	3	2	0.100	0.160	0.130	0	MW-04	3.5-4.5
Methylcyclohexane	MG/KG	-	3	2	0.170	0.280	0.225	0	MW-04	3.5-4.5
Styrene	MG/KG	-	3	1	0.017	0.017	0.017	0	MW-04	3.5-4.5
Xylene (total)	MG/KG	500	3	1	0.006	0.006	0.006	0	MW-04	3.5-4.5
Semivolatile Organic Compounds										
2-Methylnaphthalene	MG/KG	-	3	2	9.20	10.00	9.60	0	MW-04	3.5-4.5
Acenaphthene	MG/KG	500	3	1	0.430	0.430	0.430	0	MW-04	3.5-4.5
Acenaphthylene	MG/KG	500	3	1	0.310	0.310	0.310	0	MW-04	3.5-4.5
Anthracene	MG/KG	500	3	2	0.170	0.430	0.300	0	MW-04	3.5-4.5
Benzo(a)anthracene	MG/KG	5.6	3	2	0.140	0.220	0.180	0	MW-04	3.5-4.5
Benzo(a)pyrene	MG/KG	1	3	2	0.100	0.130	0.115	0	MW-04	3.5-4.5
Benzo(b)fluoranthene	MG/KG	5.6	3	2	0.140	0.160	0.150	0	MW-04	3.5-4.5
Benzo(g,h,i)perylene	MG/KG	500	3	2	0.099	0.220	0.160	0	MW-04	3.5-4.5
Benzo(k)fluoranthene	MG/KG	56	3	2	0.060	0.066	0.063	0	MW-04	3.5-4.5
bis(2-Ethylhexyl)phthalate	MG/KG	-	3	2	0.044	0.052	0.048	0	MW-04	3.5-4.5
Chrysene	MG/KG	56	3	2	0.150	0.220	0.185	0	MW-04	3.5-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-13
BLOCK 2598 LOT 62
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Semivolatile Organic Compounds										
Dibenz(a,h)anthracene	MG/KG	0.56	3	1	0.026	0.026	0.026	0	MW-04	3.5-4.5
Dibenzofuran	MG/KG	350	3	1	0.310	0.310	0.310	0	MW-04	3.5-4.5
Di-n-butylphthalate	MG/KG	-	3	1	0.110	0.110	0.110	0	MW-04	3.5-4.5
Fluoranthene	MG/KG	500	3	2	0.300	0.460	0.380	0	MW-04	3.5-4.5
Fluorene	MG/KG	500	3	1	0.770	0.770	0.770	0	MW-04	3.5-4.5
Indeno(1,2,3-cd)pyrene	MG/KG	5.6	3	2	0.073	0.130	0.102	0	MW-04	3.5-4.5
Naphthalene	MG/KG	500	3	2	0.540	0.560	0.550	0	MW-04	3.5-4.5
Phenanthrene	MG/KG	500	3	2	3.80	4.70	4.25	0	MW-04	3.5-4.5
Pyrene	MG/KG	500	3	2	1.00	1.30	1.15	0	MW-04	3.5-4.5
Metals										
Aluminum	MG/KG	-	3	3	8,120	1.15E+04	9,510	0	MW-04	3.5-4.5
Arsenic	MG/KG	16	3	2	1.40	2.20	1.80	0	MW-04	3.5-4.5
Barium	MG/KG	400	3	3	46.00	83.60	67.00	0	MW-04	3.5-4.5
Beryllium	MG/KG	590	3	3	0.650	1.20	0.917	0	MW-04	3.5-4.5
Cadmium	MG/KG	9.3	3	3	0.045	0.330	0.154	0	MW-04	3.5-4.5
Calcium	MG/KG	-	3	3	1,450	1.45E+04	7,617	0	MW-04	3.5-4.5
Chromium	MG/KG	1500	3	3	14.20	27.00	21.27	0	MW-04	3.5-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-13
BLOCK 2598 LOT 62
STATISTICAL SUMMARY OF COMPOUNDS DETECTED IN RI SOIL SAMPLES - COMMERCIAL USE
EAST 138th STREET WORKS SITE

Parameter	Units	Criteria*	No. of Samples	No. of Detections	Range of Detections			No. Exceed	Location of Max Value	Depth Of Max
					Min	Max	Avg			
Metals										
Cobalt	MG/KG	-	3	3	6.30	12.30	9.40	0	MW-04	3.5-4.5
Copper	MG/KG	270	3	3	9.20	35.60	24.00	0	MW-04	3.5-4.5
Iron	MG/KG	-	3	3	1.97E+04	2.53E+04	2.24E+04	0	MW-04	3.5-4.5
Lead	MG/KG	1000	3	3	4.90	11.60	8.10	0	MW-04	3.5-4.5
Magnesium	MG/KG	-	3	3	2,800	1.12E+04	6,893	0	MW-04	3.5-4.5
Manganese	MG/KG	10000	3	3	213.0	232.0	219.3	0	MW-04	3.5-4.5
Mercury	MG/KG	2.8	3	1	0.013	0.013	0.013	0	MW-04	3.5-4.5
Nickel	MG/KG	310	3	3	11.50	21.20	16.67	0	MW-04	3.5-4.5
Potassium	MG/KG	-	3	3	828.0	3,060	2,029	0	MW-04	3.5-4.5
Selenium	MG/KG	1500	3	3	1.50	3.70	2.60	0	MW-04	3.5-4.5
Silver	MG/KG	1500	3	2	0.087	0.120	0.104	0	MW-04	3.5-4.5
Sodium	MG/KG	-	3	3	53.00	126.0	99.00	0	MW-04	3.5-4.5
Thallium	MG/KG	-	3	1	1.70	1.70	1.70	0	MW-04	3.5-4.5
Vanadium	MG/KG	-	3	3	16.10	35.10	27.50	0	MW-04	3.5-4.5
Zinc	MG/KG	10000	3	3	28.50	52.40	40.30	0	MW-04	3.5-4.5

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

Concentration Exceeds Criteria

Only Detected Results Reported.

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-01	MW-02	MW-03	MW-04	MW-05
Sample ID			MW-01	MW-02	MW-03	MW-04	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	UG/L	5					
1,1,2-Trichloroethane	UG/L	1					
1,1-Dichloroethane	UG/L	5					
1,2-Dichloroethane	UG/L	0.6					14
1,2-Dichloroethene (cis)	UG/L	5			3,800 D		6.8
1,2-Dichloroethene (trans)	UG/L	5					
1,2-Dichloropropane	UG/L	1					
Acetone	UG/L	50					
Benzene	UG/L	1	18		7.8		480 D
Bromodichloromethane	UG/L	50					
Bromomethane	UG/L	5					
Carbon disulfide	UG/L	60					
Chlorobenzene	UG/L	5					
Chloroethane	UG/L	5					
Chloroform	UG/L	7					
Chloromethane	UG/L	5					
Cyclohexane	UG/L	-		2.0	2.7		1.4
Ethylbenzene	UG/L	5	5.5		4.3		640 D
Isopropylbenzene	UG/L	5			2.6		64
Methyl tert-butyl ether	UG/L	10					
Methylcyclohexane	UG/L	-			2.1		2.1
Methylene chloride	UG/L	5					

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-01	MW-02	MW-03	MW-04	MW-05
Sample ID			MW-01	MW-02	MW-03	MW-04	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
Styrene	UG/L	5					
Tetrachloroethene	UG/L	5					
Toluene	UG/L	5	1.6		1.4		150 D
Trichloroethene	UG/L	5					
Vinyl chloride	UG/L	2			2,700 D		
Xylene (total)	UG/L	5	15		29		600 D
Total BTEX	UG/L	-	40.1	ND	42.5	ND	1,870
Total Volatile Organic Compounds	UG/L	-	40.1	2	6,549.9	ND	1,958.3
Semivolatile Organic Compounds							
1,1'-Biphenyl	UG/L	5	11				32
2,4,6-Trichlorophenol	UG/L	1					
2,4-Dichlorophenol	UG/L	5			1.2 J		
2,4-Dimethylphenol	UG/L	50					
2-Chlorophenol	UG/L	1					
2-Methylnaphthalene	UG/L	-	21		11		640 DJ
2-Methylphenol (o-cresol)	UG/L	1					
2-Nitrophenol	UG/L	1					
3&4-Methylphenol (m,p-cresol)	UG/L	1					5.8
4-Nitrophenol	UG/L	1					
Acenaphthene	UG/L	20	67 DJ	1.0 J		2.3 J	67 J
Acenaphthylene	UG/L	-	3.5 J				38
Acetophenone	UG/L	-					

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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WHERE [MATRIX] = 'WG' AND [LOGDATE] >= #8/11/2015# AND NOT [LOCID] LIKE 'BW-*';

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-01	MW-02	MW-03	MW-04	MW-05
Sample ID			MW-01	MW-02	MW-03	MW-04	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***					
Semivolatile Organic Compounds							
Anthracene	UG/L	50	5.6		0.89 J		6.9
Benzaldehyde	UG/L	-					
Benzo(a)anthracene	UG/L	0.002			0.97 J		0.95 J
Benzo(a)pyrene	UG/L	ND			0.69 J		0.95 J
Benzo(b)fluoranthene	UG/L	0.002			0.92 J		0.71 J
bis(2-Ethylhexyl)phthalate	UG/L	5	1.0 J	1.2 J			0.83 J
Carbazole	UG/L	-	46 DJ				6.2
Chrysene	UG/L	0.002			1.0 J		0.92 J
Dibenzofuran	UG/L	-	38				4.6 J
Diethylphthalate	UG/L	50					
Dimethylphthalate	UG/L	50	2.6 J	2.6 J	1.7 J	4.2 J	3.1 J
Fluoranthene	UG/L	50	6.6		2.5 J		2.9 J
Fluorene	UG/L	50	31		2.3 J	1.1 J	33
Naphthalene	UG/L	10	570 D				5,700 D
Phenanthrene	UG/L	50	39		6.6		31
Phenol	UG/L	1					3.2 J
Pyrene	UG/L	50	4.4 J		2.3 J		4.2 J
Total Polynuclear Aromatic Hydrocarbons	UG/L	-	748.1	1	29.17	3.4	6,526.53
Total Semivolatile Organic Compounds	UG/L	-	846.7	4.8	32.07	7.6	6,582.26
Metals							
Aluminum	UG/L	-			107 J		6,140
Arsenic	UG/L	25				6.7 J	

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-01	MW-02	MW-03	MW-04	MW-05
Sample ID			MW-01	MW-02	MW-03	MW-04	MW-05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/12/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***					
Metals							
Barium	UG/L	1000	267	1,790	212	118 J	259
Beryllium	UG/L	3					
Cadmium	UG/L	5					
Calcium	UG/L	-	305,000	281,000	460,000	73,000	85,600
Chromium	UG/L	50			2.3 J	1.1 J	15.8 J
Cobalt	UG/L	-	0.99 J				9.2 J
Copper	UG/L	200	5.8 J	12.2 J	8.5 J		29.0 J
Iron	UG/L	300	23,600	52,300	51,200	16,000	28,500
Lead	UG/L	25		5.9 J	8.4 J		7.7 J
Magnesium	UG/L	35000	131,000	116,000	85,000	19,600	36,900
Manganese	UG/L	300	1,130	2,670	2,050	718	841
Mercury	UG/L	0.7			0.037 J		
Nickel	UG/L	100		2.4 J	17.7 J	2.1 J	20.8 J
Potassium	UG/L	-	61,500	57,100 J	46,400	19,500	11,600
Selenium	UG/L	10	32.8	15.6 J	13.6 J		
Silver	UG/L	50					
Sodium	UG/L	20000	1,360,000	3,030,000	345,000	253,000	160,000
Thallium	UG/L	0.5					
Vanadium	UG/L	-	4.2 J	7.4 J	9.8 J	2.5 J	20.8 J
Zinc	UG/L	2000					24.5 J
Miscellaneous Parameters							
Cyanide, Total	UG/L	200	126		470		482

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Sample ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/12/15	08/12/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	UG/L	5					
1,1,2-Trichloroethane	UG/L	1					
1,1-Dichloroethane	UG/L	5					
1,2-Dichloroethane	UG/L	0.6				7.4	
1,2-Dichloroethene (cis)	UG/L	5				2.3	
1,2-Dichloroethene (trans)	UG/L	5					
1,2-Dichloropropane	UG/L	1					
Acetone	UG/L	50					
Benzene	UG/L	1	11			340 D	
Bromodichloromethane	UG/L	50					
Bromomethane	UG/L	5					
Carbon disulfide	UG/L	60					
Chlorobenzene	UG/L	5					
Chloroethane	UG/L	5					
Chloroform	UG/L	7					
Chloromethane	UG/L	5					
Cyclohexane	UG/L	-				6.0	
Ethylbenzene	UG/L	5	47			5.0	
Isopropylbenzene	UG/L	5	15	1.5		15	
Methyl tert-butyl ether	UG/L	10				25	
Methylcyclohexane	UG/L	-					
Methylene chloride	UG/L	5					

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Sample ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/12/15	08/12/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
Styrene	UG/L	5					
Tetrachloroethene	UG/L	5					
Toluene	UG/L	5				2.5	
Trichloroethene	UG/L	5					
Vinyl chloride	UG/L	2				3.2	
Xylene (total)	UG/L	5	37			4.4	
Total BTEX	UG/L	-	95	ND	ND	351.9	ND
Total Volatile Organic Compounds	UG/L	-	110	1.5	ND	410.8	ND
Semivolatile Organic Compounds							
1,1'-Biphenyl	UG/L	5	6.5				
2,4,6-Trichlorophenol	UG/L	1					
2,4-Dichlorophenol	UG/L	5					
2,4-Dimethylphenol	UG/L	50					
2-Chlorophenol	UG/L	1					
2-Methylnaphthalene	UG/L	-					
2-Methylphenol (o-cresol)	UG/L	1			0.66 J		
2-Nitrophenol	UG/L	1					
3&4-Methylphenol (m,p-cresol)	UG/L	1			0.86 J		
4-Nitrophenol	UG/L	1					
Acenaphthene	UG/L	20	30	2.4 J	7.0	30	
Acenaphthylene	UG/L	-	3.1 J				
Acetophenone	UG/L	-					

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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EAST 138th STREET WORKS SITE

Location ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Sample ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/12/15	08/12/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***					
Semivolatile Organic Compounds							
Anthracene	UG/L	50	2.2 J			0.62 J	
Benzaldehyde	UG/L	-					
Benzo(a)anthracene	UG/L	0.002					
Benzo(a)pyrene	UG/L	ND					
Benzo(b)fluoranthene	UG/L	0.002					
bis(2-Ethylhexyl)phthalate	UG/L	5		0.73 J	6.6	2.1 J	1.1 J
Carbazole	UG/L	-	1.4 J		1.2 J	5.1	
Chrysene	UG/L	0.002					
Dibenzofuran	UG/L	-	4.0 J			2.5 J	
Diethylphthalate	UG/L	50					
Dimethylphthalate	UG/L	50	2.4 J	2.3 J	2.0 J	2.2 J	2.9 J
Fluoranthene	UG/L	50	5.7				
Fluorene	UG/L	50	8.7		0.61 J	9.4	
Naphthalene	UG/L	10	34			8.8	
Phenanthrene	UG/L	50	10				
Phenol	UG/L	1			0.67 J	2.0 J	
Pyrene	UG/L	50	7.7				
Total Polynuclear Aromatic Hydrocarbons	UG/L	-	101.4	2.4	7.61	48.82	ND
Total Semivolatile Organic Compounds	UG/L	-	115.7	5.43	19.6	62.72	4
Metals							
Aluminum	UG/L	-			769		202
Arsenic	UG/L	25					9.8 J

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Sample ID			MW-06	MW-07-URS	MW-11	MWMF-01	MWMF-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/12/15	08/12/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***					
Metals							
Barium	UG/L	1000	436	390	486	231	
Beryllium	UG/L	3					
Cadmium	UG/L	5					
Calcium	UG/L	-	295,000	214,000	295,000	163,000	78,100
Chromium	UG/L	50		0.78 J	1.7 J	0.95 J	
Cobalt	UG/L	-			1.7 J	5.5 J	
Copper	UG/L	200			7.5 J	4.4 J	
Iron	UG/L	300	4,560	511	33,000	28,500	9,670
Lead	UG/L	25					
Magnesium	UG/L	35000	32,800	107,000	106,000	19,300	10,700
Manganese	UG/L	300	993	1,420	1,120	720	975
Mercury	UG/L	0.7					
Nickel	UG/L	100	3.4 J	4.4 J	1.4 J	2.2 J	
Potassium	UG/L	-	24,000	43,700	47,300	24,500	8,650
Selenium	UG/L	10	14.2 J	16.7 J	17.3 J		12.2 J
Silver	UG/L	50					
Sodium	UG/L	20000	676,000	1,010,000	825,000	353,000	37,500
Thallium	UG/L	0.5					
Vanadium	UG/L	-	1.7 J	3.0 J	5.6 J	3.6 J	1.8 J
Zinc	UG/L	2000					
Miscellaneous Parameters							
Cyanide, Total	UG/L	200	234		155	898	31.0

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-03	MWMF-03	MWMF-04	MWMF-05	MWMF-06
Sample ID			DUPLICATE-081315	MWMF-03	MWMF-04	WMMF-05	MWMF-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatile Organic Compounds							
1,1,2,2-Tetrachloroethane	UG/L	5			22		
1,1,2-Trichloroethane	UG/L	1			120	2.4	
1,1-Dichloroethane	UG/L	5			9.4	1.6	
1,2-Dichloroethane	UG/L	0.6			150 D	14	2.0
1,2-Dichloroethene (cis)	UG/L	5	1.4	1.5	450 D	120	13
1,2-Dichloroethene (trans)	UG/L	5			140	2.9	
1,2-Dichloropropane	UG/L	1			5.2		
Acetone	UG/L	50			280 DJ	62 J	27 J
Benzene	UG/L	1	26	24	120 D	190 D	26
Bromodichloromethane	UG/L	50			1.2		
Bromomethane	UG/L	5			140 J		
Carbon disulfide	UG/L	60			97	110	42
Chlorobenzene	UG/L	5			1.2		
Chloroethane	UG/L	5			80		
Chloroform	UG/L	7			77	5.1	
Chloromethane	UG/L	5		1.2	720 D	11	3.5
Cyclohexane	UG/L	-					
Ethylbenzene	UG/L	5		1.0	4.8	110	
Isopropylbenzene	UG/L	5	2.7	2.6		11	
Methyl tert-butyl ether	UG/L	10			8.0	13	
Methylcyclohexane	UG/L	-					
Methylene chloride	UG/L	5			320 D	20	7.8

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-03	MWMF-03	MWMF-04	MWMF-05	MWMF-06
Sample ID			DUPLICATE-081315	MWMF-03	MWMF-04	WMMF-05	MWMF-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Volatile Organic Compounds							
Styrene	UG/L	5					1.0
Tetrachloroethene	UG/L	5			20		
Toluene	UG/L	5			1.8	8.5	2.1
Trichloroethene	UG/L	5			9.6		
Vinyl chloride	UG/L	2			52	190	6.4
Xylene (total)	UG/L	5				49	
Total BTEX	UG/L	-	26	25	126.6	357.5	28.1
Total Volatile Organic Compounds	UG/L	-	30.1	30.3	2,829.2	920.5	130.8
Semivolatile Organic Compounds							
1,1'-Biphenyl	UG/L	5			2.3 J		
2,4,6-Trichlorophenol	UG/L	1					0.73 J
2,4-Dichlorophenol	UG/L	5					
2,4-Dimethylphenol	UG/L	50					
2-Chlorophenol	UG/L	1					1.2 J
2-Methylnaphthalene	UG/L	-			1.5 J	1.1 J	
2-Methylphenol (o-cresol)	UG/L	1				1.6 J	1.5 J
2-Nitrophenol	UG/L	1			3.5 J		
3&4-Methylphenol (m,p-cresol)	UG/L	1			1.7 J	1.1 J	2.0 J
4-Nitrophenol	UG/L	1			2.3 J		
Acenaphthene	UG/L	20	0.59 J			7.8	0.89 J
Acenaphthylene	UG/L	-				1.0 J	
Acetophenone	UG/L	-			600 D	13	16

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-03	MWMF-03	MWMF-04	MWMF-05	MWMF-06
Sample ID			DUPLICATE-081315	MWMF-03	MWMF-04	WMMF-05	MWMF-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Semivolatile Organic Compounds							
Anthracene	UG/L	50					
Benzaldehyde	UG/L	-			180 DJ		2.3 J
Benzo(a)anthracene	UG/L	0.002					
Benzo(a)pyrene	UG/L	ND					
Benzo(b)fluoranthene	UG/L	0.002					
bis(2-Ethylhexyl)phthalate	UG/L	5	0.92 J			0.67 J	
Carbazole	UG/L	-					
Chrysene	UG/L	0.002					
Dibenzofuran	UG/L	-				0.94 J	
Diethylphthalate	UG/L	50					0.50 J
Dimethylphthalate	UG/L	50	2.8 J	2.7 J		4.6 J	3.0 J
Fluoranthene	UG/L	50					
Fluorene	UG/L	50				0.82 J	
Naphthalene	UG/L	10			170 DJ	37	
Phenanthrene	UG/L	50			0.84 J	4.4 J	
Phenol	UG/L	1			0.64 J	1.3 J	1.1 J
Pyrene	UG/L	50					
Total Polynuclear Aromatic Hydrocarbons	UG/L	-	0.59	ND	172.34	52.12	0.89
Total Semivolatile Organic Compounds	UG/L	-	4.31	2.7	962.78	75.33	29.22
Metals							
Aluminum	UG/L	-			442,000	95,500	1,810
Arsenic	UG/L	25			47.6		

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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WHERE [MATRIX] = 'WG' AND [LOGDATE] >= #8/11/2015# AND NOT [LOCID] LIKE 'BW-*';

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-03	MWMF-03	MWMF-04	MWMF-05	MWMF-06
Sample ID			DUPLICATE-081315	MWMF-03	MWMF-04	WMMF-05	MWMF-06
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			08/13/15	08/13/15	08/13/15	08/12/15	08/12/15
Parameter	**Units**	**Criteria***	Field Duplicate (1-1)				
Metals							
Barium	UG/L	1000				29.0 J	59.3 J
Beryllium	UG/L	3			41.4	8.5	0.44 J
Cadmium	UG/L	5	1.4 J	1.3 J	10.4		
Calcium	UG/L	-	246,000	240,000	474,000	462,000	271,000
Chromium	UG/L	50			771	144	132
Cobalt	UG/L	-			930	148	102
Copper	UG/L	200	58.1	54.5	1,520	97.5	52.2
Iron	UG/L	300	2,770	2,840	261,000	1,430,000	594,000
Lead	UG/L	25	33.9	32.5	35.7	40.6	39.9
Magnesium	UG/L	35000	27,200	27,100	812,000	269,000	58,200
Manganese	UG/L	300	1,190	1,200	34,800	13,900	3,930
Mercury	UG/L	0.7			0.10 J		
Nickel	UG/L	100	125	124	3,610	2,340	1,150
Potassium	UG/L	-	38,600	38,400	24,100	82,500	58,800
Selenium	UG/L	10	22.0 J	12.7 J		36.7	44.2
Silver	UG/L	50				11.8 J	7.0 J
Sodium	UG/L	20000	261,000	264,000	5,850,000	1,940,000	462,000
Thallium	UG/L	0.5			37.8	56.2	18.0 J
Vanadium	UG/L	-	15.3 J	15.7 J	502	524	757
Zinc	UG/L	2000	641	608	4,040	4,780	800
Miscellaneous Parameters							
Cyanide, Total	UG/L	200	158	237			144

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

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Printed: 12/29/2015 9:54:32 AM
WHERE [MATRIX] = 'WG' AND [LOGDATE] >= #8/11/2015# AND NOT [LOCID] LIKE 'BW-*';

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-07D	MWMF-07S	MWMF-08
Sample ID			MWMF-07D	MWMF-07S	MWMF-08
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			08/11/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***			
Volatile Organic Compounds					
1,1,2,2-Tetrachloroethane	UG/L	5			
1,1,2-Trichloroethane	UG/L	1			
1,1-Dichloroethane	UG/L	5			
1,2-Dichloroethane	UG/L	0.6			39
1,2-Dichloroethene (cis)	UG/L	5	1.4		30
1,2-Dichloroethene (trans)	UG/L	5			1.7
1,2-Dichloropropane	UG/L	1			
Acetone	UG/L	50			140 J
Benzene	UG/L	1			1,700 D
Bromodichloromethane	UG/L	50			
Bromomethane	UG/L	5			
Carbon disulfide	UG/L	60			3.4
Chlorobenzene	UG/L	5			1.0
Chloroethane	UG/L	5			
Chloroform	UG/L	7			
Chloromethane	UG/L	5		1.4	
Cyclohexane	UG/L	-		4.4	2.2
Ethylbenzene	UG/L	5			2,600 D
Isopropylbenzene	UG/L	5		14	130
Methyl tert-butyl ether	UG/L	10			1.4
Methylcyclohexane	UG/L	-		3.7	1.9
Methylene chloride	UG/L	5			2.6

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value; D - Result reported from a secondary dilution analysis.

Only Detected Results Reported.

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-07D	MWMF-07S	MWMF-08
Sample ID			MWMF-07D	MWMF-07S	MWMF-08
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			08/11/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***			
Volatile Organic Compounds					
Styrene	UG/L	5			
Tetrachloroethene	UG/L	5			
Toluene	UG/L	5		1.5	450 D
Trichloroethene	UG/L	5			
Vinyl chloride	UG/L	2			15
Xylene (total)	UG/L	5			2,000 D
Total BTEX	UG/L	-	ND	1.5	6,750
Total Volatile Organic Compounds	UG/L	-	1.4	25	7,118.2
Semivolatile Organic Compounds					
1,1'-Biphenyl	UG/L	5			6.1
2,4,6-Trichlorophenol	UG/L	1			
2,4-Dichlorophenol	UG/L	5			
2,4-Dimethylphenol	UG/L	50		1.3 J	10
2-Chlorophenol	UG/L	1			
2-Methylnaphthalene	UG/L	-			140 DJ
2-Methylphenol (o-cresol)	UG/L	1		0.82 J	
2-Nitrophenol	UG/L	1			
3&4-Methylphenol (m,p-cresol)	UG/L	1		1.2 J	
4-Nitrophenol	UG/L	1			
Acenaphthene	UG/L	20			7.6
Acenaphthylene	UG/L	-			2.8 J
Acetophenone	UG/L	-			85 DJ

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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Only Detected Results Reported.

TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-07D	MWMF-07S	MWMF-08
Sample ID			MWMF-07D	MWMF-07S	MWMF-08
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			08/11/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***			
Semivolatile Organic Compounds					
Anthracene	UG/L	50			
Benzaldehyde	UG/L	-			
Benzo(a)anthracene	UG/L	0.002			
Benzo(a)pyrene	UG/L	ND			
Benzo(b)fluoranthene	UG/L	0.002			
bis(2-Ethylhexyl)phthalate	UG/L	5	0.69 J	5.0	0.66 J
Carbazole	UG/L	-			0.92 J
Chrysene	UG/L	0.002			
Dibenzofuran	UG/L	-			1.0 J
Diethylphthalate	UG/L	50			
Dimethylphthalate	UG/L	50	3.2 J	3.1 J	4.3 J
Fluoranthene	UG/L	50			
Fluorene	UG/L	50			2.1 J
Naphthalene	UG/L	10		9.0	3,800 D
Phenanthrene	UG/L	50			1.5 J
Phenol	UG/L	1		0.77 J	6.9
Pyrene	UG/L	50			
Total Polynuclear Aromatic Hydrocarbons	UG/L	-	ND	9	3,954
Total Semivolatile Organic Compounds	UG/L	-	3.89	21.19	4,068.88
Metals					
Aluminum	UG/L	-	137 J		
Arsenic	UG/L	25			

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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TABLE 2-14
SUMMARY OF DETECTED COMPOUNDS IN AUGUST 2015 OVERBURDEN GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			MWMF-07D	MWMF-07S	MWMF-08
Sample ID			MWMF-07D	MWMF-07S	MWMF-08
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			08/11/15	08/12/15	08/13/15
Parameter	**Units**	**Criteria***			
Metals					
Barium	UG/L	1000	643	63.8 J	
Beryllium	UG/L	3			
Cadmium	UG/L	5			
Calcium	UG/L	-	863,000	167,000	455,000
Chromium	UG/L	50			21.2
Cobalt	UG/L	-	31.3 J	1.1 J	
Copper	UG/L	200	5.7 J		16.7 J
Iron	UG/L	300	5,870	5,210	214,000
Lead	UG/L	25	11.6	10.5	18.4
Magnesium	UG/L	35000	217,000	95,100	631,000
Manganese	UG/L	300	37,300	650	38,300
Mercury	UG/L	0.7			
Nickel	UG/L	100	31.4 J	0.86 J	758
Potassium	UG/L	-	30,800	16,700	82,400
Selenium	UG/L	10		20.2 J	28.3 J
Silver	UG/L	50			
Sodium	UG/L	20000	2,480,000	151,000	3,340,000
Thallium	UG/L	0.5	22.3		38.0
Vanadium	UG/L	-		2.2 J	322
Zinc	UG/L	2000	17.0 J		7.0 J
Miscellaneous Parameters					
Cyanide, Total	UG/L	200	7.9 J	26.5 J	252

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

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WHERE [MATRIX] = 'WG' AND [LOGDATE] >= #8/11/2015# AND NOT [LOCID] LIKE 'BW-*';

TABLE 2-15
SUMMARY OF DETECTED COMPOUNDS IN BEDROCK GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			BW-01	BW-01	BW-02	BW-02	BW-02
Sample ID			BW-01	BW-01	03122012-FD-1	BW-02	BW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/12/12	08/13/15	03/12/12	03/12/12	08/13/15
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatile Organic Compounds							
1,1-Dichloroethene	UG/L	5					6.8
1,2-Dichloroethane	UG/L	0.6					730 D
1,2-Dichloroethene (cis)	UG/L	5	220	230 J	7,100	6,800	3,600 D
1,2-Dichloroethene (trans)	UG/L	5		3.1			46
4-Methyl-2-pentanone	UG/L	-					9.8 J
Acetone	UG/L	50		28 J			480 J
Benzene	UG/L	1	26,000 D	37,000 D	19,000	19,000	34,000 D
Carbon disulfide	UG/L	60					3.8
Chloromethane	UG/L	5					3.3
Cyclohexane	UG/L	-					3.7
Ethylbenzene	UG/L	5	1,200	2,000 D	1,200	1,100	750 D
Isopropylbenzene	UG/L	5		23			10
Methyl tert-butyl ether	UG/L	10		9.4			23
Methylcyclohexane	UG/L	-					3.4
Methylene chloride	UG/L	5					1.2
Styrene	UG/L	5	4,300				
Toluene	UG/L	5	12,000	13,000 D	14,000	13,000	2,600 D
Trichloroethene	UG/L	5					1.0
Vinyl chloride	UG/L	2		66	990	940	2,000 D
Xylene (total)	UG/L	5	5,700	5,000 D	8,600	8,300	4,300 D
Total BTEX	UG/L	-	44,900	57,000	42,800	41,400	41,650
Total Volatile Organic Compounds	UG/L	-	49,420	57,359.5	50,890	49,140	48,572

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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B (inoranics) - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 2-15
SUMMARY OF DETECTED COMPOUNDS IN BEDROCK GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			BW-01	BW-01	BW-02	BW-02	BW-02
Sample ID			BW-01	BW-01	03122012-FD-1	BW-02	BW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/12/12	08/13/15	03/12/12	03/12/12	08/13/15
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Semivolatile Organic Compounds							
1,1'-Biphenyl	UG/L	5	28	33	18	17	11
2,4-Dimethylphenol	UG/L	50		270 DJ	1,500 J		1,400 D
2-Methylnaphthalene	UG/L	-	510 DJ	480 DJ	330 DJ	310 DJ	220 DJ
2-Methylphenol (o-cresol)	UG/L	1	80 J	170 DJ	1,300 DJ	1,300 DJ	760 DJ
3&4-Methylphenol (m,p-cresol)	UG/L	1	21	47 J	1,300 DJ	2,400 D	1,200 D
3,3'-Dichlorobenzidine	UG/L	5					1.1 J
Acenaphthene	UG/L	20	11	29	5.9 J	5.6 J	3.9 J
Acenaphthylene	UG/L	-	190 DJ	140 J	5.1 J	5.2 J	4.7 J
Acetophenone	UG/L	-					
Anthracene	UG/L	50	7.5 J	4.9 J	5.2 J	5.4 J	2.1 J
bis(2-Chloroethyl)ether	UG/L	1	70 J				
bis(2-Ethylhexyl)phthalate	UG/L	5	0.94 J			0.93 J	2.5 J
Carbazole	UG/L	-	86 J	76 J	10	9.4 J	5.4
Dibenzofuran	UG/L	-	21	25	2.9 J	2.8 J	
Dimethylphthalate	UG/L	50					
Fluoranthene	UG/L	50	3.5 J	2.7 J	1.6 J	1.5 J	0.57 J
Fluorene	UG/L	50	31	35	11	11	0.57 J
Naphthalene	UG/L	10	6,800 D	6,100 D	7,300 D	6,800 D	3,700 D
Phenanthrene	UG/L	50	32	32	14	14	7.3
Phenol	UG/L	1	15	31	1,200 DJ	1,100 DJ	540 DJ
Pyrene	UG/L	50	2.7 J	2.3 J	1.6 J	1.6 J	0.85 J
Total Polynuclear Aromatic Hydrocarbons	UG/L	-	7,587.7	6,825.9	7,674.4	7,154.3	3,939.99
Total Semivolatile Organic Compounds	UG/L	-	7,909.64	7,477.9	13,005.3	11,984.43	7,859.99

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value. D - Result reported from a secondary dilution analysis.

B (inoranics) - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 2-15
SUMMARY OF DETECTED COMPOUNDS IN BEDROCK GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			BW-01	BW-01	BW-02	BW-02	BW-02
Sample ID			BW-01	BW-01	03122012-FD-1	BW-02	BW-02
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/12/12	08/13/15	03/12/12	03/12/12	08/13/15
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Metals							
Aluminum	UG/L	-	73.0 B			66.6 B	
Arsenic	UG/L	25			10.9 B	9.6 B	
Barium	UG/L	1000	41.0 B		79.3 B	79.8 B	
Cadmium	UG/L	5	1.4 B				
Calcium	UG/L	-	140,000	242,000	230,000	227,000	555,000
Chromium	UG/L	50	2.2 B		4.1 B	4.9 B	10.5 J
Cobalt	UG/L	-	1.8 B	3.2 J	10.9 B	11.0 B	
Copper	UG/L	200		6.9 J			47.6
Iron	UG/L	300	38,400	60,200	3,130	3,130	841,000
Lead	UG/L	25					27.0
Magnesium	UG/L	35000	74,100	136,000	9,580	9,440	315,000
Manganese	UG/L	300	1,780	2,650	45.3 B	44.8 B	68,700
Nickel	UG/L	100	2.1 B	1.5 J	16.6 B	16.7 B	562
Potassium	UG/L	-	28,900 J	35,000	96,000 J	96,100 J	320,000
Selenium	UG/L	10		22.8 J			28.5 J
Silver	UG/L	50					10.8 J
Sodium	UG/L	20000	401,000	569,000	218,000	220,000	2,820,000
Thallium	UG/L	0.5					69.0
Vanadium	UG/L	-		6.6 J	32.3 B	31.9 B	799
Zinc	UG/L	2000					16.7 J
Miscellaneous Parameters							
Cyanide, Total	UG/L	200	221	218	7,160 J	6,870 J	1,880

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

(oval) Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value. D - Result reported from a secondary dilution analysis.

B (inoranics) - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 2-15
SUMMARY OF DETECTED COMPOUNDS IN BEDROCK GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			BW-03	BW-03	BW-04	BW-04	BW-04
Sample ID			BW-03	BW-03	BW-04	BW-04	DUPLICATE-081115
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/13/12	08/12/15	03/13/12	08/11/15	08/11/15
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Volatile Organic Compounds							
1,1-Dichloroethene	UG/L	5					
1,2-Dichloroethane	UG/L	0.6				82	73
1,2-Dichloroethene (cis)	UG/L	5			1,200	56	54
1,2-Dichloroethene (trans)	UG/L	5					
4-Methyl-2-pentanone	UG/L	-					
Acetone	UG/L	50					
Benzene	UG/L	1	44,000 D	72,000 D	11,000	2,900 D	3,100 D
Carbon disulfide	UG/L	60		1.0 J			
Chloromethane	UG/L	5					
Cyclohexane	UG/L	-		7.0 J			1.0
Ethylbenzene	UG/L	5	2,700	2,600 D	780	1,100 D	1,100 D
Isopropylbenzene	UG/L	5		53 J		24	23
Methyl tert-butyl ether	UG/L	10				1.4	1.5
Methylcyclohexane	UG/L	-		4.5 J		1.5	1.4
Methylene chloride	UG/L	5		1.1 J			
Styrene	UG/L	5			2,600	380 D	410 D
Toluene	UG/L	5	300	100 J	8,000	2,500 D	2,600 D
Trichloroethene	UG/L	5		1.0 J			
Vinyl chloride	UG/L	2			200	12	12
Xylene (total)	UG/L	5	1,100	650 D	3,300	1,400 D	1,500 D
Total BTEX	UG/L	-	48,100	75,350	23,080	7,900	8,300
Total Volatile Organic Compounds	UG/L	-	48,100	75,417.6	27,080	8,456.9	8,875.9

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value. D - Result reported from a secondary dilution analysis.

B (inoranics) - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 2-15
SUMMARY OF DETECTED COMPOUNDS IN BEDROCK GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			BW-03	BW-03	BW-04	BW-04	BW-04
Sample ID			BW-03	BW-03	BW-04	BW-04	DUPLICATE-081115
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/13/12	08/12/15	03/13/12	08/11/15	08/11/15
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Semivolatile Organic Compounds							
1,1'-Biphenyl	UG/L	5	5.5 J	4.1 J	24	20	19
2,4-Dimethylphenol	UG/L	50		1.7 J		6.1	22
2-Methylnaphthalene	UG/L	-	8.2 J		380 DJ	220 DJ	220 DJ
2-Methylphenol (o-cresol)	UG/L	1	13		16	8.1	8.7
3&4-Methylphenol (m,p-cresol)	UG/L	1	23		12	7.9	8.4
3,3'-Dichlorobenzidine	UG/L	5					
Acenaphthene	UG/L	20	18	9.1	13	31	28
Acenaphthylene	UG/L	-	20	19	170 DJ	84 DJ	80 DJ
Acetophenone	UG/L	-	2.4 J	3.2 J	11	4.8 J	4.8 J
Anthracene	UG/L	50			8.1 J	7.2	6.7
bis(2-Chloroethyl)ether	UG/L	1					
bis(2-Ethylhexyl)phthalate	UG/L	5	0.54 J	0.91 J	0.87 J		0.70 J
Carbazole	UG/L	-	2.6 J	2.3 J	30	18	18
Dibenzofuran	UG/L	-	0.90 J	0.68 J	13	10	9.8
Dimethylphthalate	UG/L	50		2.4 J		3.0 J	5.3
Fluoranthene	UG/L	50			4.0 J	4.6 J	4.4 J
Fluorene	UG/L	50	4.4 J	3.8 J	31	23	21
Naphthalene	UG/L	10	1,200 D	370 D	3,800 D	1,900 D	2,000 D
Phenanthrene	UG/L	50	1.8 J	1.4 J	40 J	39	37
Phenol	UG/L	1	24	8.8	7.3 J	9.8	10
Pyrene	UG/L	50			4.0 J	5.3	5.3
Total Polynuclear Aromatic Hydrocarbons	UG/L	-	1,252.4	403.3	4,450.1	2,314.1	2,402.4
Total Semivolatile Organic Compounds	UG/L	-	1,324.34	427.39	4,564.27	2,401.8	2,509.1

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

- = No standard or guidance value.

J - The reported concentration is an estimated value. D - Result reported from a secondary dilution analysis.

B (inoranics) - The reported concentration is an estimated value.

Only Detected Results Reported.

TABLE 2-15
SUMMARY OF DETECTED COMPOUNDS IN BEDROCK GROUNDWATER
EAST 138th STREET WORKS SITE

Location ID			BW-03	BW-03	BW-04	BW-04	BW-04
Sample ID			BW-03	BW-03	BW-04	BW-04	DUPLICATE-081115
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			03/13/12	08/12/15	03/13/12	08/11/15	08/11/15
Parameter	**Units**	**Criteria***					Field Duplicate (1-1)
Metals							
Aluminum	UG/L	-			155 B	529	674
Arsenic	UG/L	25					
Barium	UG/L	1000	97.5 B	60.6 J	139 B	195 J	199 J
Cadmium	UG/L	5					
Calcium	UG/L	-	496,000	474,000	55,100	113,000	114,000
Chromium	UG/L	50	125	0.65 J	1.3 B	2.6 J	3.1 J
Cobalt	UG/L	-	6.9 B	6.0 J	0.97 B		
Copper	UG/L	200		5.0 J			4.2 J
Iron	UG/L	300	3,680	4,240	2,940	5,400	5,590
Lead	UG/L	25		4.2 J			
Magnesium	UG/L	35000	189,000	198,000	48,300	80,100	80,100
Manganese	UG/L	300	434	386	588	1,000	995
Nickel	UG/L	100			7.6 B	3.6 J	3.8 J
Potassium	UG/L	-	49,200 J	40,600	21,100 J	14,500	14,400
Selenium	UG/L	10	18.3 B	26.7 J		15.7 J	15.9 J
Silver	UG/L	50					
Sodium	UG/L	20000	1,760,000	1,940,000	285,000	199,000	204,000
Thallium	UG/L	0.5					
Vanadium	UG/L	-			1.8 B	3.1 J	3.3 J
Zinc	UG/L	2000					21.8
Miscellaneous Parameters							
Cyanide, Total	UG/L	200	1,140	1,140	37.6	20.9	16.0 J

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

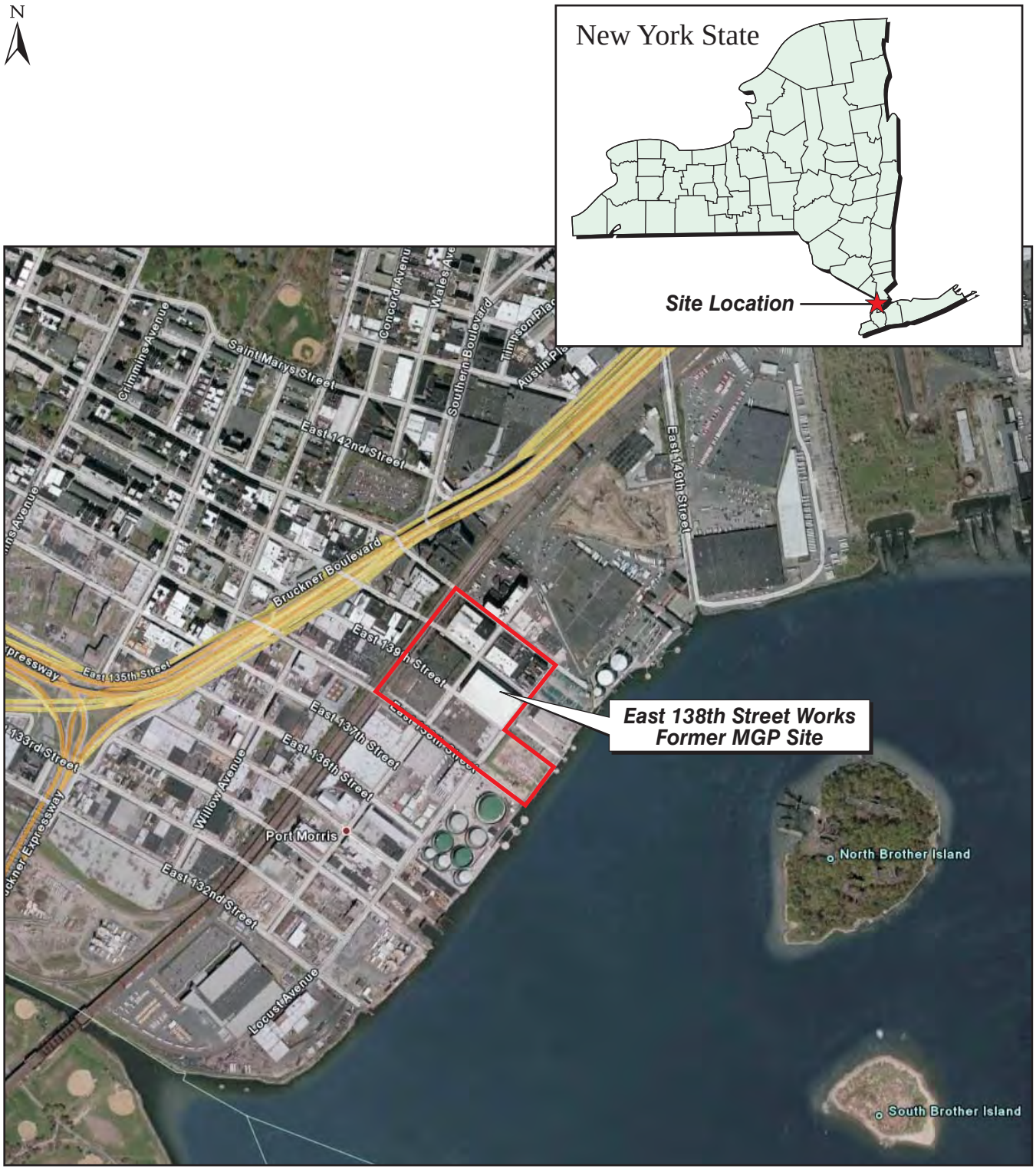
- = No standard or guidance value.

J - The reported concentration is an estimated value. D - Result reported from a secondary dilution analysis.

B (inoranics) - The reported concentration is an estimated value.

Only Detected Results Reported.

FIGURES

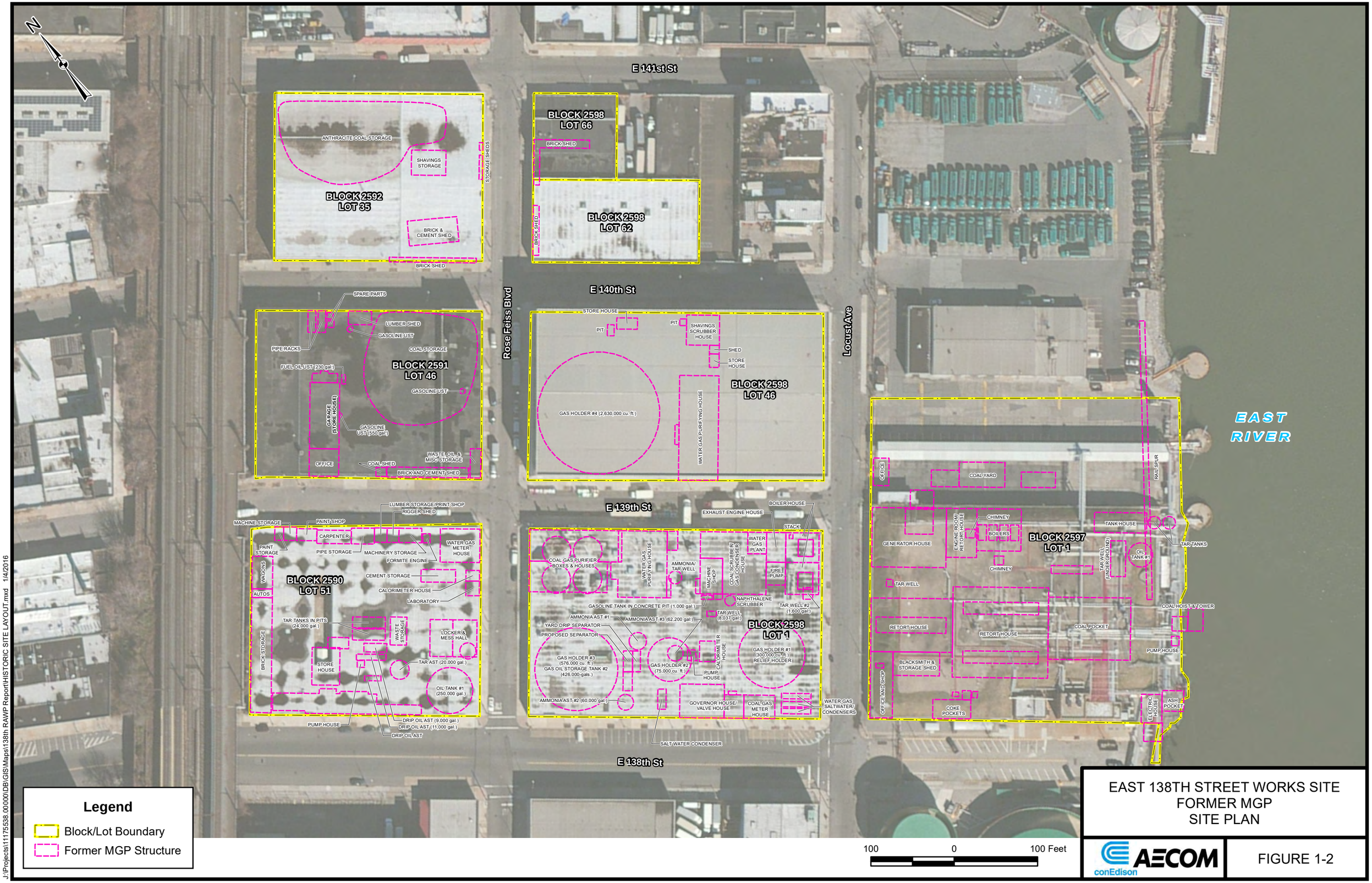


AG20003A-111755538-010416-GCM

conEdison AECOM

SITE LOCATION MAP
EAST 138TH STREET WORKS FORMER MGP
BRONX, NEW YORK

FIGURE 1-1


N
E 141st St
BLOCK 2592
LOT 35
ANTHRACITE COAL STORAGE
SHAVINGS STORAGE
STORAGE SHEDS
BRICK & CEMENT SHED
BRICK SHED
BLOCK 2598
LOT 66
BRICK SHED
BLOCK 2598
LOT 62
BRICK SHED
E 140th St
Rose Feiss Blvd
Locust Ave
SPARE PARTS
LUMBER SHED
GASOLINE UST
PIPE RACKS
COAL STORAGE
FUEL OIL UST (230 gal.)
BLOCK 2591
LOT 46
GASOLINE UST
GARAGE (STORE HOUSE)
GASOLINE UST (550 gal.)
OFFICE
COAL SHED
WASTE OIL & MISC. STORAGE
BRICK AND CEMENT SHED
STORE HOUSE
PIT
PIT
SHAVINGS SCRUBBER HOUSE
SHED
STORE HOUSE
BLOCK 2598
LOT 46
GAS HOLDER #4 (2,630,000 cu. ft.)
WATER GAS PURIFYING HOUSE
E 139th St
LUMBER STORAGE/PRINT SHOP
RIGGER SHED
MACHINE STORAGE
PAINT SHOP
CARPENTER
PAINT STORAGE
PIPE STORAGE
MACHINERY STORAGE
FORMITE ENGINE
WATER GAS METER HOUSE
WAGONS
BLOCK 2590
LOT 51
CEMENT STORAGE
CALORIMETER HOUSE
AUTOS
LABORATORY
TAR TANKS IN PITS (24,000 gal.)
WASTE STORAGE
LOCKER & MESS HALL
BRICK STORAGE
STORE HOUSE
TAR AST (20,000 gal.)
OIL TANK #1 (250,000 gal.)
PUMP HOUSE
DRIP OIL AST (9,000 gal.)
DRIP OIL AST (11,000 gal.)
DRIP OIL AST
EXHAUST ENGINE HOUSE
BOILER HOUSE
STACK
WATER GAS PLANT
COAL GAS PURIFIER BOXES & HOUSES
WATER GAS PURIFYING HOUSE
AMMONIA/ TAR WELL
MACHINE SHOP
COAL SCRUBBER/ GAS CONDENSER HOUSE
FIRE PUMP
NAPHTHALENE SCRUBBER
GASOLINE TANK IN CONCRETE PIT (1,000 gal.)
TAR WELL #2 (1,600 gal.)
AMMONIA AST #1
AMMONIA AST #3 (62,200 gal.)
TAR WELL (8,037 gal.)
YARD DRIP SEPARATOR
PROPOSED SEPARATOR
BLOCK 2598
LOT 1
GAS HOLDER #3 (576,000 cu. ft.)
GAS OIL STORAGE TANK #2 (426,000 gals.)
GAS HOLDER #2 (75,000 cu. ft.)
CALORIMETER HOUSE
PUMP HOUSE
GAS HOLDER #1 (300,000 cu. ft.) RELIEF HOLDER
AMMONIA AST #2 (60,000 gal.)
GOVERNOR HOUSE/ VALVE HOUSE
COAL GAS METER HOUSE
WATER GAS, SALTWATER/ CONDENSERS
SALT WATER CONDENSER
E 138th St
EAST RIVER
OFFICE
COAL YARD
RAIL SPUR
CHIMNEY
ENGINE ROOM/ RETORT HOUSE
BOILERS
TANK HOUSE
GENERATOR HOUSE
BLOCK 2597
LOT 1
TAR TANKS
OIL TANK #1
TAR WELL (UNDERGROUND)
CHIMNEY
TAR WELL
COAL HOIST & TOWER
RETORT HOUSE
RETORT HOUSE
COAL POCKET
PUMP HOUSE
BLACKSMITH & STORAGE SHED
OFFICE AND SHOP
COKE POCKETS
ELECTRIC HOUSE
ASH POCKET
Legend
Block/Lot Boundary
Former MGP Structure
100
0
100 Feet
EAST 138TH STREET WORKS SITE
FORMER MGP
SITE PLAN
AECOM
conEdison
FIGURE 1-2
J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\HISTORIC SITE LAYOUT.mxd 1/4/2016

N

E 141st St

E 140th St

E 139th St

E 138th St

Rose Feiss Blvd

Locust Ave

BLOCK 2592
LOT 35

BLOCK 2598
LOT 66

BLOCK 2598
LOT 62

BLOCK 2591
LOT 46

BLOCK 2598 LOT 46

BLOCK 2590
LOT 51

BLOCK 2598
LOT 1

BLOCK 2597
LOT 1

EAST
RIVER

MW-03
SB-06
MW-04
MWRX-05
BW-04
MWMF-07S
MWMF-07D
MW-01
SB-32
MW-11
SB-33
SB-40
SB-39
SB-03
SB-34
SB-38
SB-02
SB-35
SB-37
SB-36
SB-01
SB-05
SB-04
MW-02
SBMF-08
SBMF-07
MWMF-04
MWMF-08
SBRX-01
SBMF-06
SBMF-05
SB-07
SB-14
SB-09
SB-12
SB-13
SB-11
SB-43
SB-41
SB-42
SB-44
SB-10
SB-15
MW-05
SB-16
SB-08
SB-17
MW-06
SB-18
SB-22
SB-21
SB-19
SB-20
MW-07-URS
MWMF-01
MWRX-04
SBMF-03
SBMF-12
SBMF-13
SBMF-14
MWMF-05
BW-03
SBMF-22
SBMF-23
SBMF-15
SBMF-20
SBMF-09
SBMF-11
MWRX-03
SBMF-19
MWRX-01
SBMF-10
SBMF-17
SBMF-02
MWMF-06
SBMF-18
SBMF-16
SBMF-21
SBMF-04
SBMF-01
MWMF-02
MWRX-02
BW-02
MWMF-03
BW-01
SBMF-05

A
A'
B
B'
C
C'
D
D'

Legend

- Soil Boring
- Monitoring Well
- Cross-Section

NOTE:
Boring locations depicted in Block 2598 Lot 46 are shown for reference only. Refer to the RI Report for the 295 Locust Avenue Site (URS, April 2012)

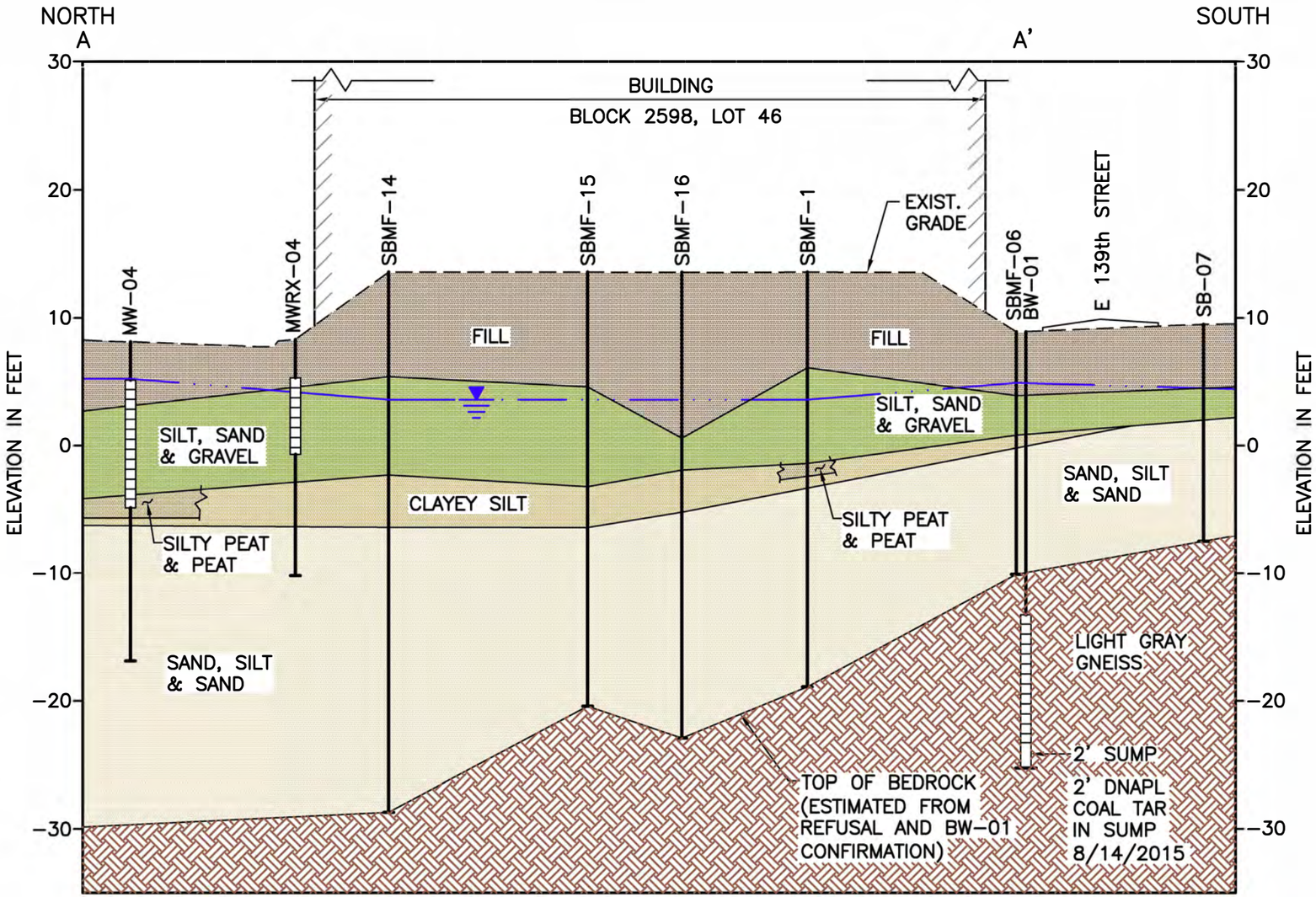
100 0 100 Feet

EAST 138TH STREET WORKS SITE
CROSS-SECTION LOCATIONS

AECOM
conEdison

FIGURE 2-1

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\XSECTIONS.mxd 3/20/2017



NOTES:

1. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARDLY ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM, 1988.
3. THE DEPTH TO WATER WAS MEASURED IN ALL WELLS ON MAY 4, 2011.

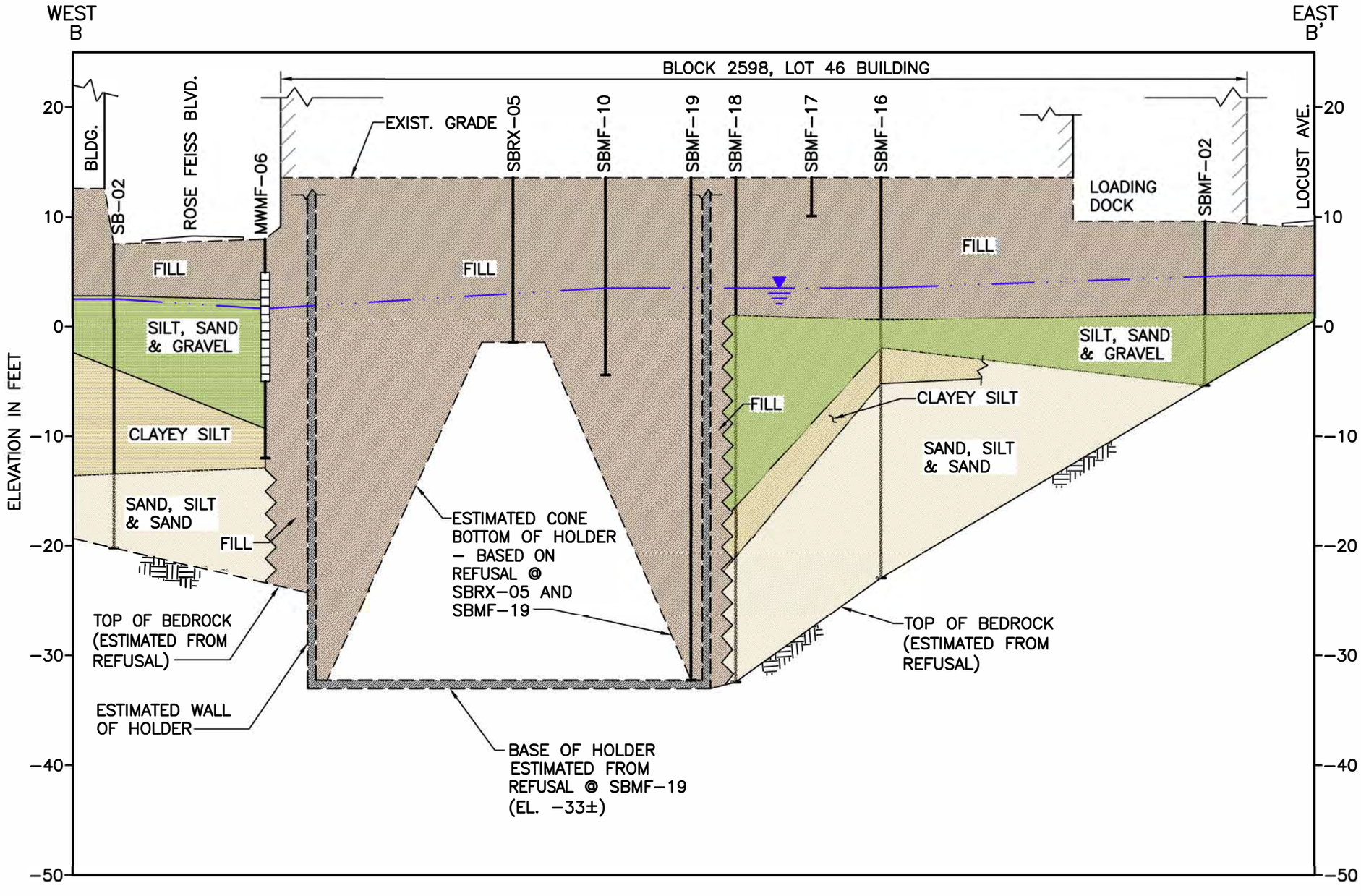
40' 0 40'
HORIZ. SCALE IN FEET

10' 0 10'
VERT. SCALE IN FEET

EAST 138th STREET WORKS SITE
BLOCK 2598, LOT 46
CROSS-SECTION A-A'

conEdison AECOM FIGURE 2-2

J:\Projects\11175538.00000\CAD\DEC 2015 SUBMITTAL\FIGURE 3-2, 1:1, 12/22/15 -1-RAL



NOTES:

1. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARDLY ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM, 1988.
3. THE DEPTH TO WATER WAS MEASURED IN ALL WELLS ON MAY 4, 2011.

40' 0 40'
HORIZ. SCALE IN FEET

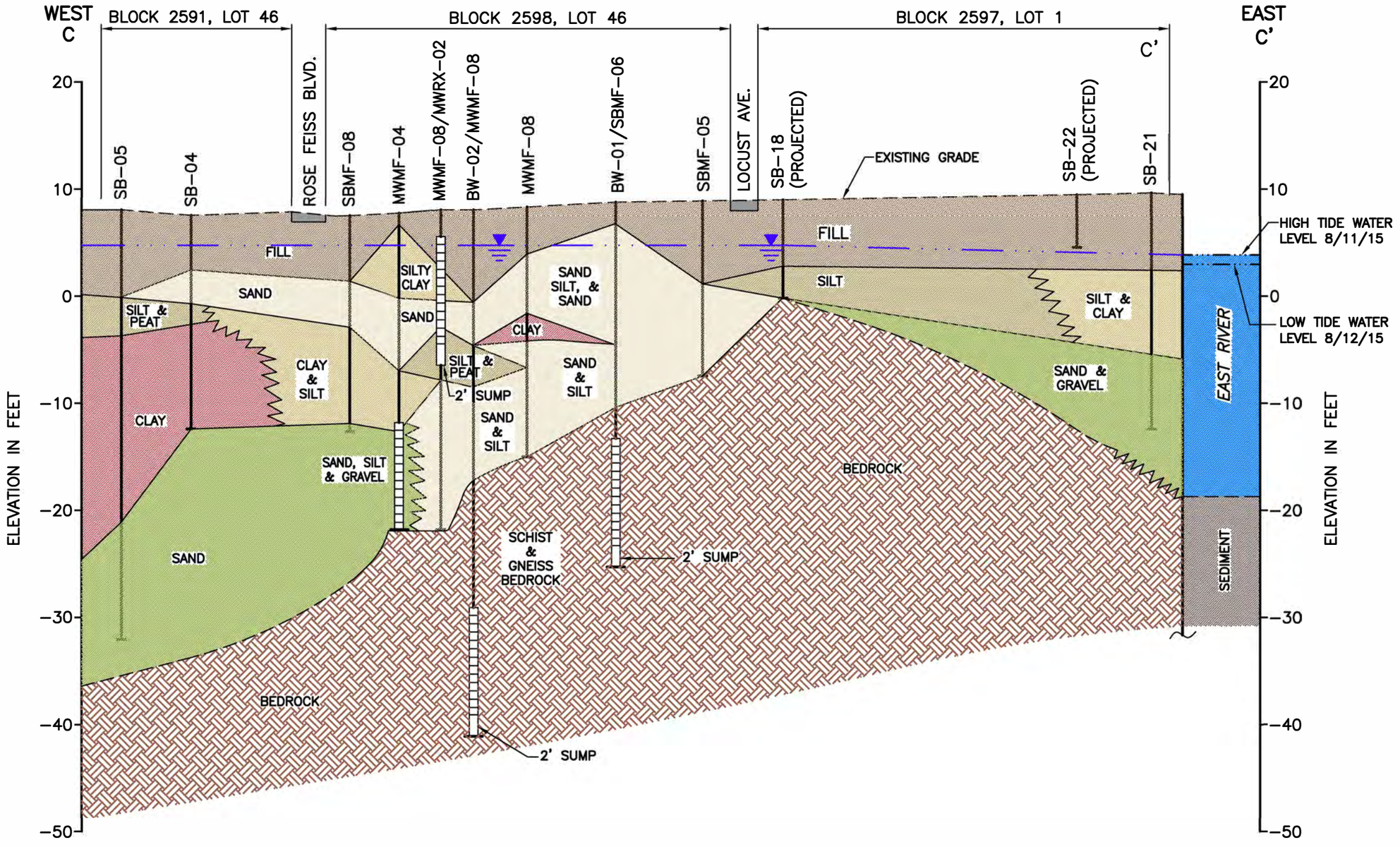
10' 0 10'
VERT. SCALE IN FEET

EAST 138th STREET WORKS SITE
BLOCK 2598, LOT 46
CROSS-SECTION B-B'

conEdison AECOM

FIGURE 2-3

J:\Projects\11175538.00000\CAD\DEC 2015 SUBMITTAL\FIGURE 3-3.dwg, FIG 3-3, 1:1, 12/22/15 -1-RAL



NOTES:

1. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARDLY ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM, 1988.
3. THE DEPTH TO WATER WAS MEASURED IN ALL WELLS ON 8/11/2015.

100' 0 100'
HORIZ. SCALE IN FEET

10' 0 10'
VERT. SCALE IN FEET

EAST 138th STREET WORKS SITE
BLOCK 2591, LOT 46
BLOCK 2598, LOT 46
BLOCK 2597, LOT 1
CROSS-SECTION C-C'

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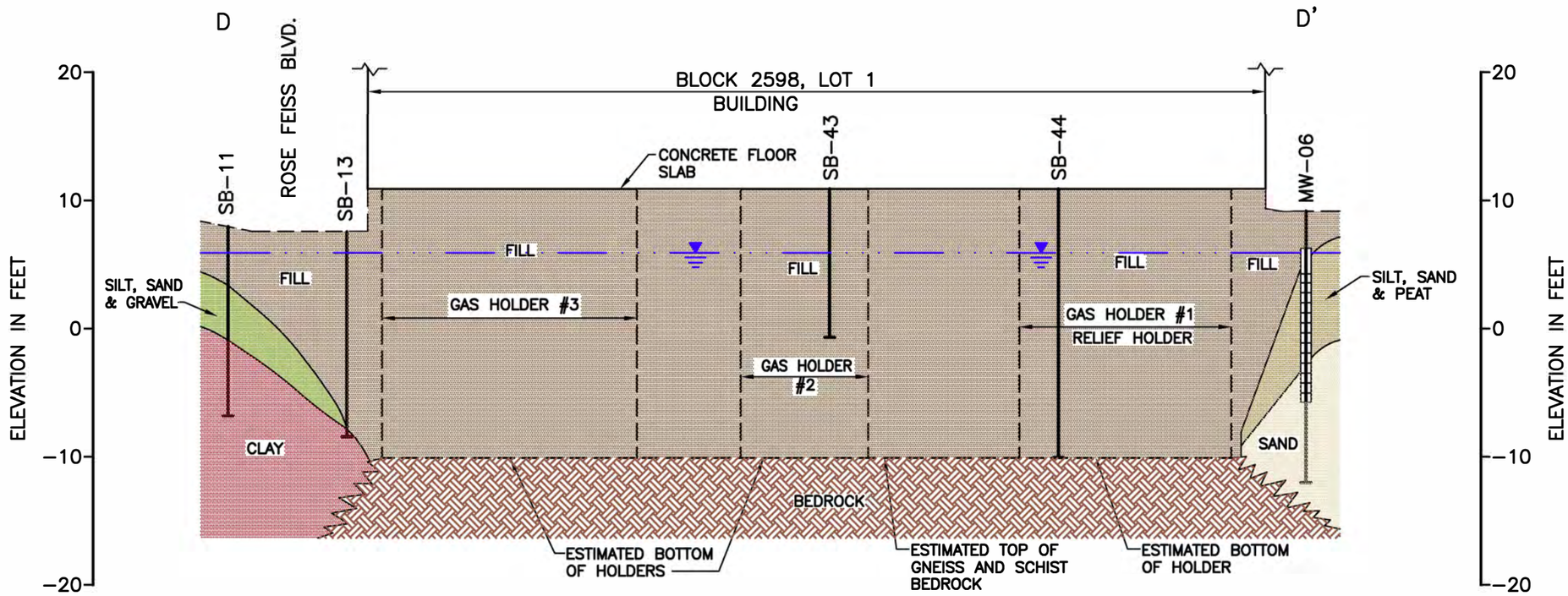
FIGURE 2-4

J:\Projects\11175538.00000\CAD\DEC 2015 SUBMITTAL\FIGURE 3-4 & 3-5.dwg, FIG 3-4, 1:1, 1/13/16 -1-RAL



NOTES:

1. GEOLOGIC CONDITIONS SHOWN ARE REPRESENTATIVE OF CONDITIONS ENCOUNTERED AT EACH BORING LOCATION TO THE DEPTH DRILLED. EXTRAPOLATIONS BETWEEN BORINGS HAVE BEEN INTERPRETED USING STANDARDLY ACCEPTED GEOLOGIC PRACTICES AND PRINCIPLES. ACTUAL CONDITIONS MAY VARY BETWEEN BORINGS FROM THOSE SHOWN.
2. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM, 1988.
3. THE DEPTH TO WATER WAS MEASURED IN ALL WELLS ON 8/11/2015.

50' 0 50'
HORIZ. SCALE IN FEET

10' 0 10'
VERT. SCALE IN FEET

EAST 138th STREET WORKS SITE
BLOCK 2598, LOT 1
CROSS-SECTION D-D'

conEdison AECOM FIGURE 2-5

J:\Projects\11175538.00000\CAD\DEC 2015 SUBMITTAL\FIGURE 3-4 & 3-5.dwg, FIG 3-5, 1:1, 1/8/16 -1-RAL

N

E 141st St

MW-03

BLOCK 2598
LOT 66

BLOCK 2592
LOT 35

BLOCK 2593
LOT 62

Locust Ave

SB-06, -22.21

MWRX-05

MW-04

SBMF-03, -21.38

BW-04, -16.21

E 140th St

SB-32, -6.91

MW-01

MW-11

MWMF-01

MWRX-04, -29.04

MWMF-07D, -10.79

SBMF-12, -24.61

SBMF-13, -30.41

SBMF-14, -28.70

MWMF-07S

SB-33, -7.63

BLOCK 2591
LOT 46

MWMF-05

BW-03, -31.99

SBMF-20, -33.00

BLOCK 2598
LOT 46

SB-40, -7.37

SB-39, -17.27

SBMF-09, -31.40

SBMF-15, -20.40

SB-03, -21.36

SBMF-22

SBMF-11

MWRX-01

SB-34, -12.65

SB-38, -7.34

MWRX-03

SBMF-23

SBMF-17

SB-35, -7.43

SB-02, -20.44

SBMF-10

SBMF-16, -22.91

SBMF-02, -5.37

SB-37, -7.50

MWMF-06

SBMF-19, -33.00

SBMF-18, -32.41

SB-36, -12.58

SBMF-04, -33.00

SBMF-01, -18.90

MWMF-02, -6.61

SBMF-21

SB-01, -26.77

MWRX-02

BW-02, -22.87

MWMF-03

SBRX-01

BW-01, -10.11

SB-05, -31.96

SB-04, -12.21

SBMF-08

SBMF-05, -7.37

SB-21, -12.03

MW-02

E 139th St

SBMF-07

MWMF-08

SBMF-06, -10.08

SB-22, 4.75

MWMF-04

SB-18, 0.11

SB-14, -7.42

SB-07, -7.49

SB-09, -7.47

SB-17, -2.63

BLOCK 2590
LOT 51

SB-12, -7.00

Rose Felss Blvd

BLOCK 2593
LOT 1

BLOCK 2597
LOT 1

MW-06, -1.03

SB-43, -0.79

SB-13, -8.13

SB-44, -9.80

SB-11, -6.82

SB-41, -5.81

SB-42, -8.80

SB-19, 4.29

SB-16, -8.30

SB-08, -1.28

SB-10, -6.12

SB-20, -3.75

SB-15, -13.97

MW-05, -11.52

E 138th St

MW-07-URS

EAST
RIVER

-5
-10
-15
-20
-25
-30

100 0 100 Feet

Legend

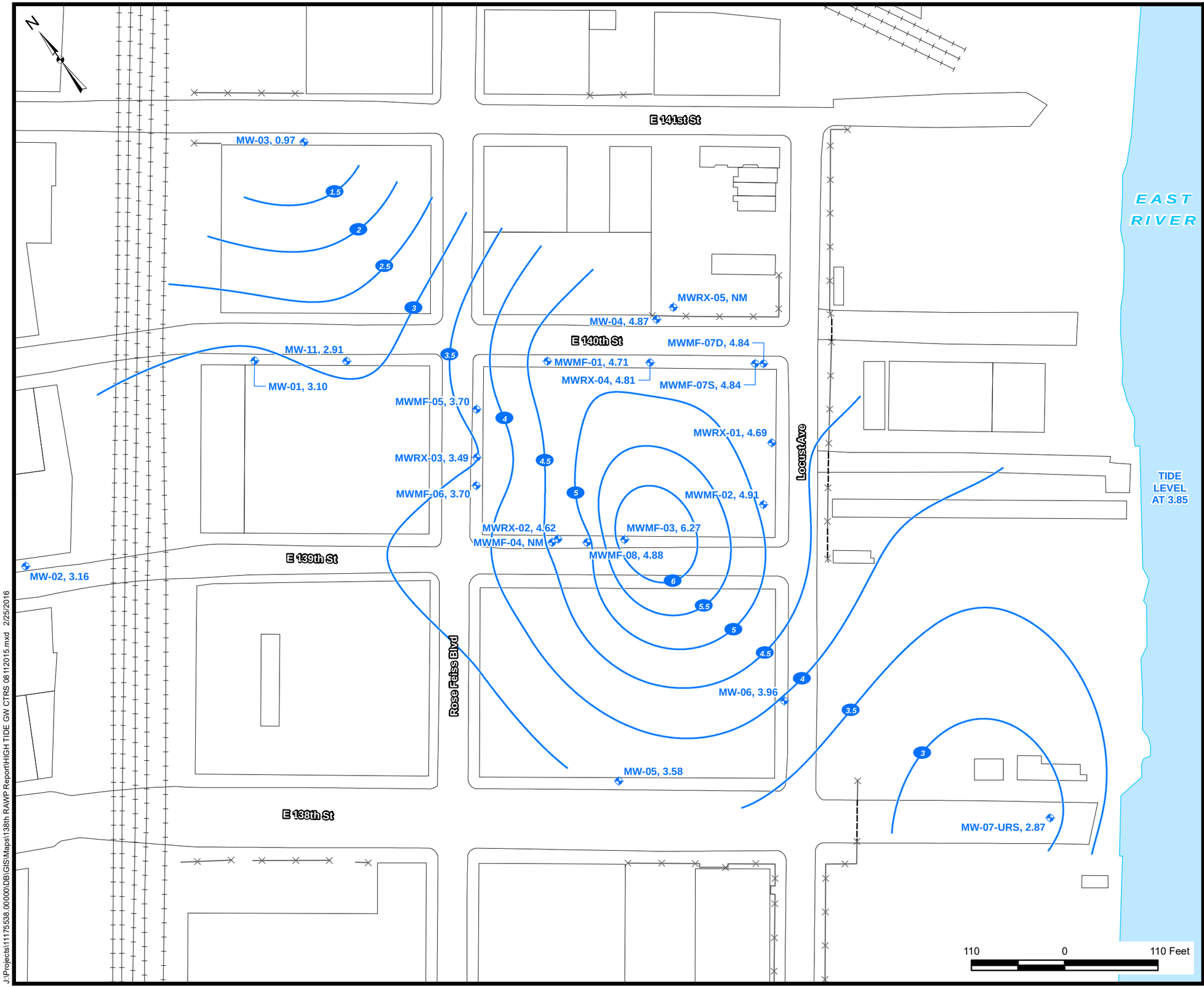
- Soil Boring
- Monitoring Well
- -10 Top of Bedrock Contour (ft amsl)

EAST 138TH STREET WORKS SITE
ESTIMATED TOP OF
BEDROCK CONTOURS

AECOM
conEdison

FIGURE 2-6

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\BEDROCK CONTOURS.mxd 3/21/2017



Legend

- Monitoring Well
- Groundwater Elevation Contours (FT AMSL)

High/Low Tides (8/11/2015)

Tide	Time (Local)	FT AMSL
Lower Low Water (LL):	04:42	-3.25
Lower High Water (H):	09:00	3.85
Higher Low Water (L):	16:18	-3.04
Higher High Water (HH):	22:30	4.82

Source: NOAA, Center for Operational Oceanographic Products and Services (CO-OPS), Tides & Currents Website data (verified) for Kings Point, NY (Station ID: 8516945)

NOTES:
1. Sampling Event Times: 08:22 - 13:33
2. FT AMSL = Feet Above Mean Sea Level
3. Kings Point NOAA Station is approximately 7.5 miles east of East 138th Street Works site.

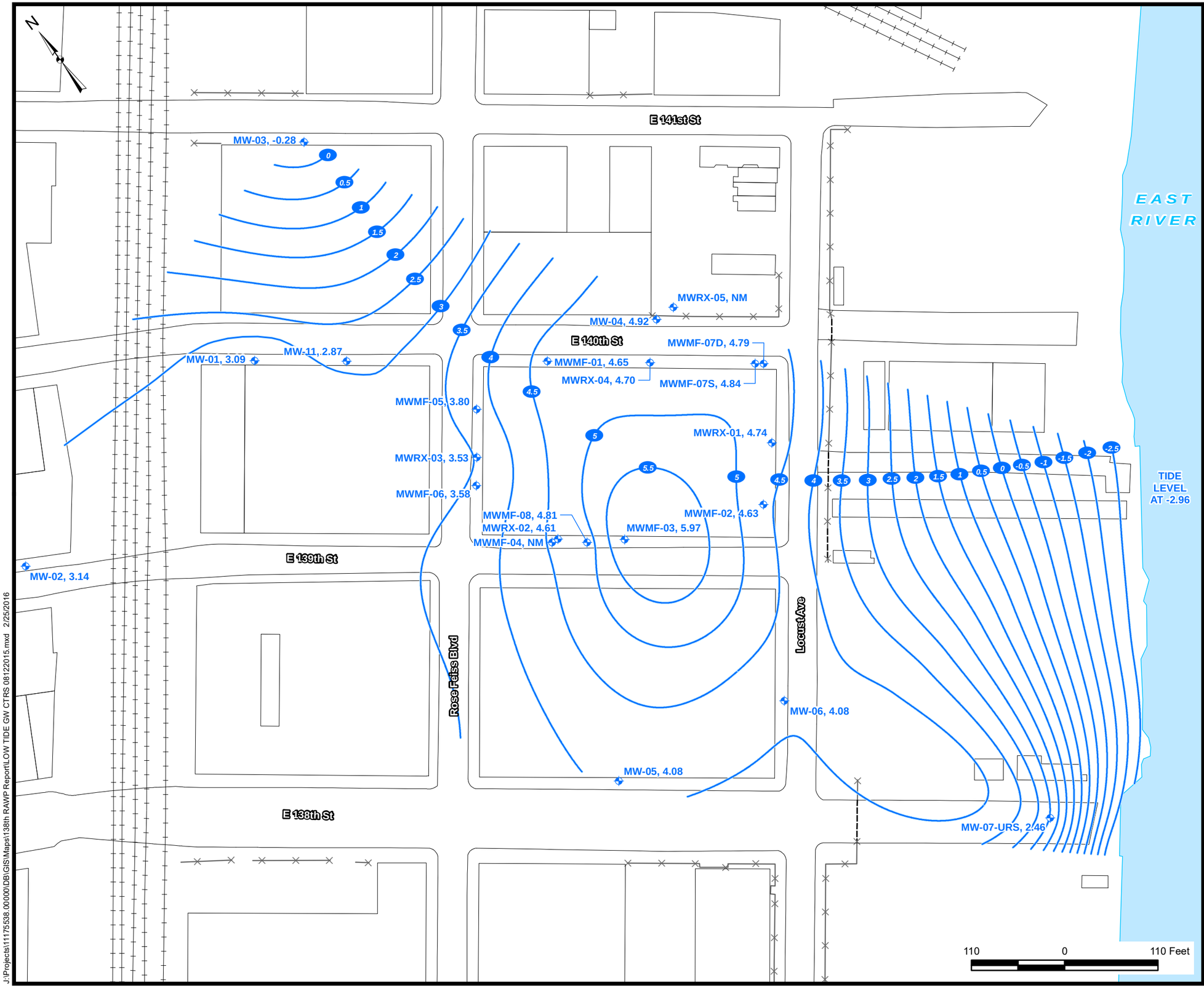
SOURCE:
ESRI World Street Map

EAST 138TH STREET WORKS SITE GROUNDWATER ELEVATION CONTOURS AT HIGH TIDE (AUGUST 11, 2015)

conEdison AECOM

FIGURE 2-7

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\HIGH TIDE GW CTRS 08112015.mxd 2/25/2016



Legend

- Monitoring Well
- Groundwater Elevation Contours (FT AMSL)

High/Low Tides (8/12/2015)

Tide	Time (Local)	FT AMSL
Lower Low Water (LL):	05:24	-3.33
Lower High Water (H):	11:06	4.00
Higher Low Water (L):	16:54	-2.96
Higher High Water (HH):	23:00	4.64

Source: NOAA, Center for Operational Oceanographic Products and Services (CO-OPS), Tides & Currents Website data (verified) for Kings Point, NY (Station ID: 8516945)

NOTES:
1. Sampling Event Times: 14:26 - 18:05
2. FT AMSL = Feet Above Mean Sea Level
3. Kings Point NOAA Station is approximately 7.5 miles east of East 138th Street Works site.

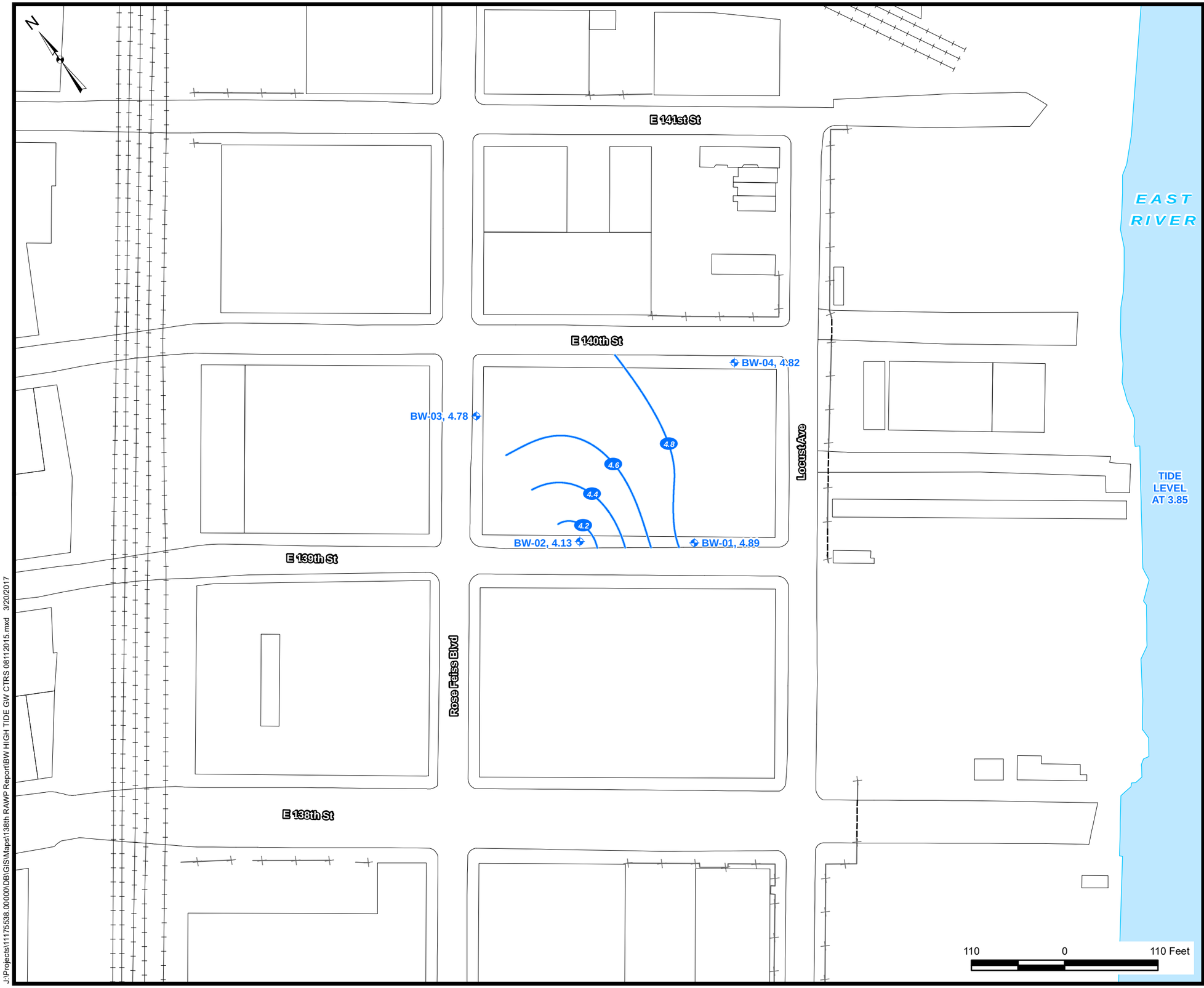
SOURCE:
ESRI World Street Map

EAST 138TH STREET WORKS SITE GROUNDWATER ELEVATION CONTOURS AT LOW TIDE (AUGUST 12, 2015)

conEdison AECOM

FIGURE 2-8

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\LOW TIDE GW CTRS 08122015.mxd 2/25/2016



Legend

- Monitoring Well
- Groundwater Elevation Contours (FT AMSL)

High/Low Tides (8/11/2015)

Tide	Time (Local)	FT AMSL
Lower Low Water (LL):	04:42	-3.25
Lower High Water (H):	09:00	3.85
Higher Low Water (L):	16:18	-3.04
Higher High Water (HH):	22:30	4.82

Source: NOAA, Center for Operational Oceanographic Products and Services (CO-OPS), Tides & Currents Website data (verified) for Kings Point, NY (Station ID: 8516945)

NOTES:
1. Sampling Event Times: 08:22 - 13:33
2. FT AMSL = Feet Above Mean Sea Level
3. Kings Point NOAA Station is approximately 7.5 miles east of East 138th Street Works site.

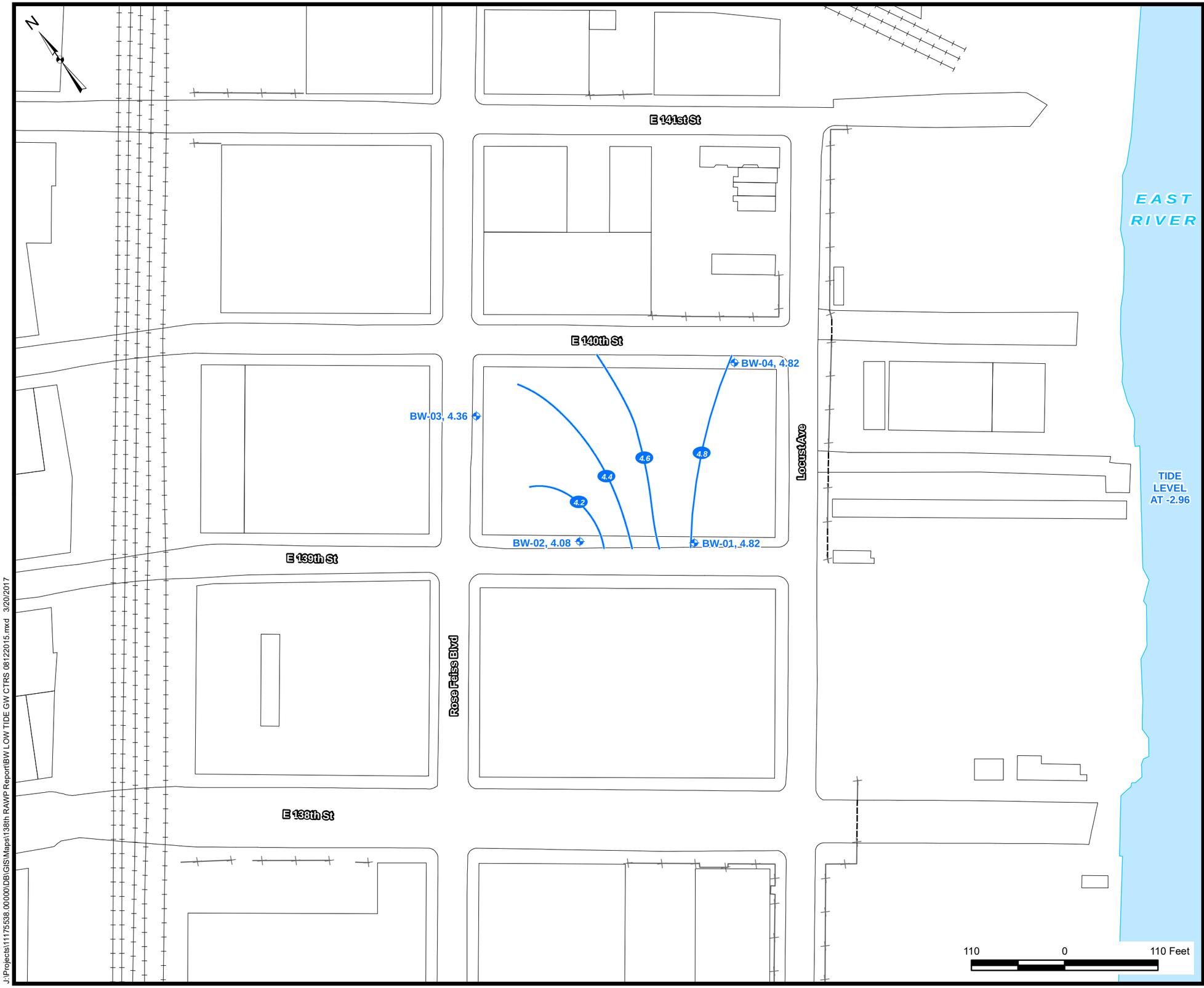
SOURCE:
ESRI World Street Map

EAST 138TH STREET WORKS SITE BEDROCK GROUNDWATER ELEVATION CONTOURS AT HIGH TIDE (AUGUST 11, 2015)

conEdison AECOM

FIGURE 2-9

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\BW HIGH TIDE GW CTRS 08112015.mxd 3/20/2017



Legend

- Monitoring Well
- Groundwater Elevation Contours (FT AMSL)

High/Low Tides (8/12/2015)

Tide	Time (Local)	FT AMSL
Lower Low Water (LL):	05:24	-3.33
Lower High Water (H):	11:06	4.00
Higher Low Water (L):	16:54	-2.96
Higher High Water (HH):	23:00	4.64

Source: NOAA, Center for Operational Oceanographic Products and Services (CO-OPS), Tides & Currents Website data (verified) for Kings Point, NY (Station ID: 8516945)

NOTES:
1. Sampling Event Times: 14:26 - 18:05
2. FT AMSL = Feet Above Mean Sea Level
3. Kings Point NOAA Station is approximately 7.5 miles east of East 138th Street Works site.

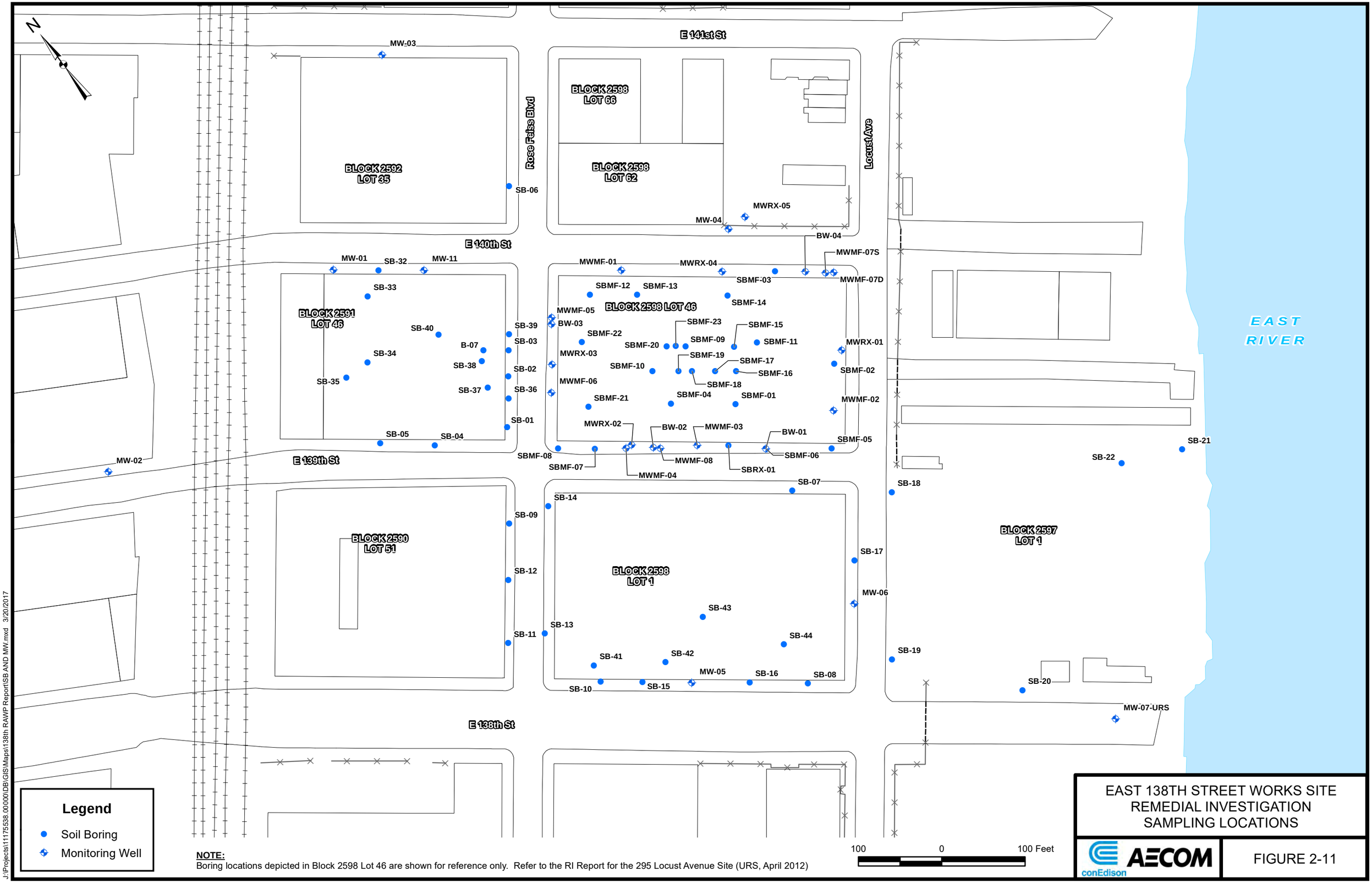
SOURCE:
ESRI World Street Map

EAST 138TH STREET WORKS SITE BEDROCK GROUNDWATER ELEVATION CONTOURS AT LOW TIDE (AUGUST 12, 2015)

conEdison AECOM

FIGURE 2-10

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\BW LOW TIDE GW CTRS 08122015.mxd 3/20/2017



NOTE:
Boring locations depicted in Block 2598 Lot 46 are shown for reference only. Refer to the RI Report for the 295 Locust Avenue Site (URS, April 2012)

EAST 138TH STREET WORKS SITE
REMEDIAL INVESTIGATION
SAMPLING LOCATIONS

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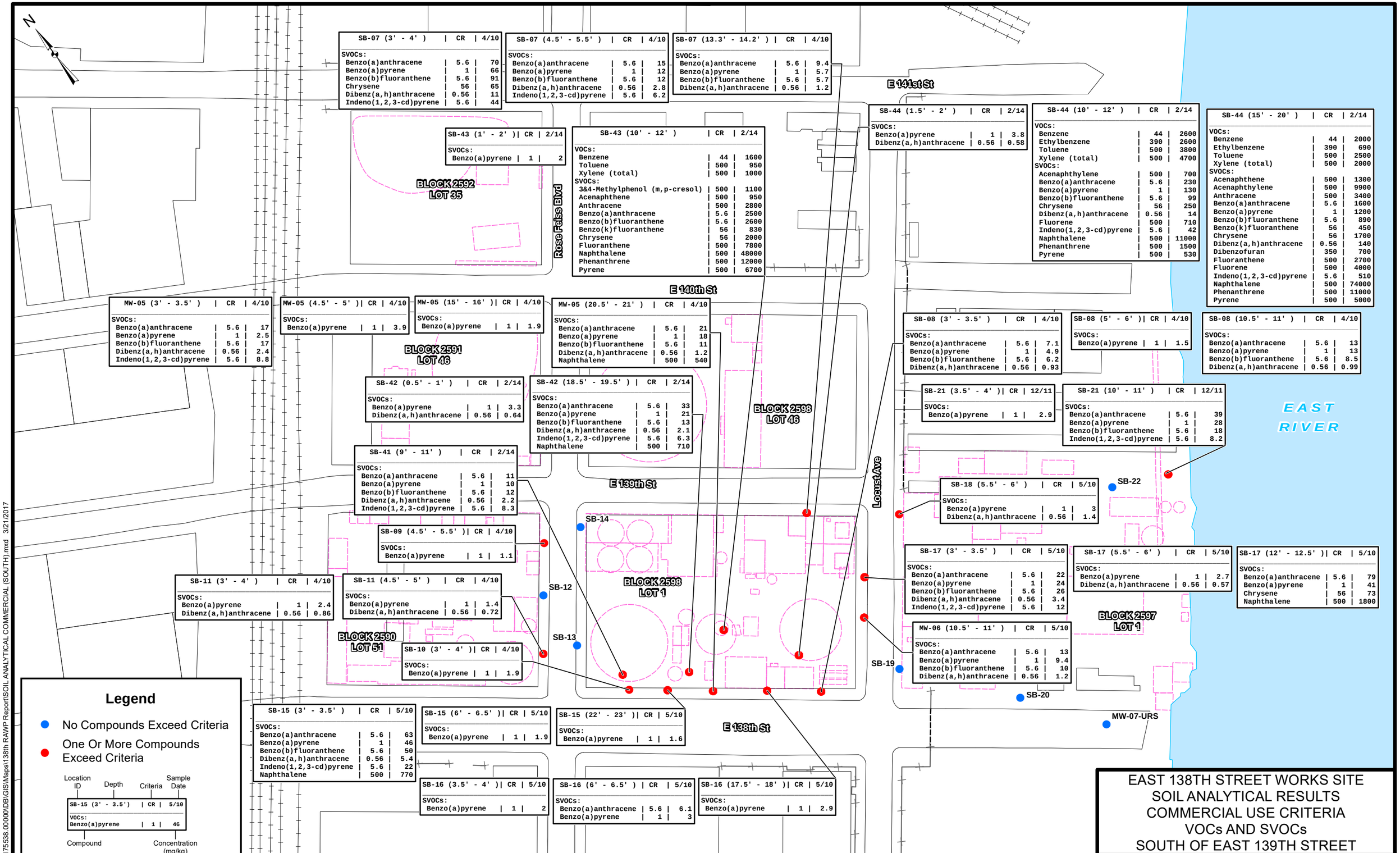
FIGURE 2-11

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\SB AND MW.mxd 3/20/2017



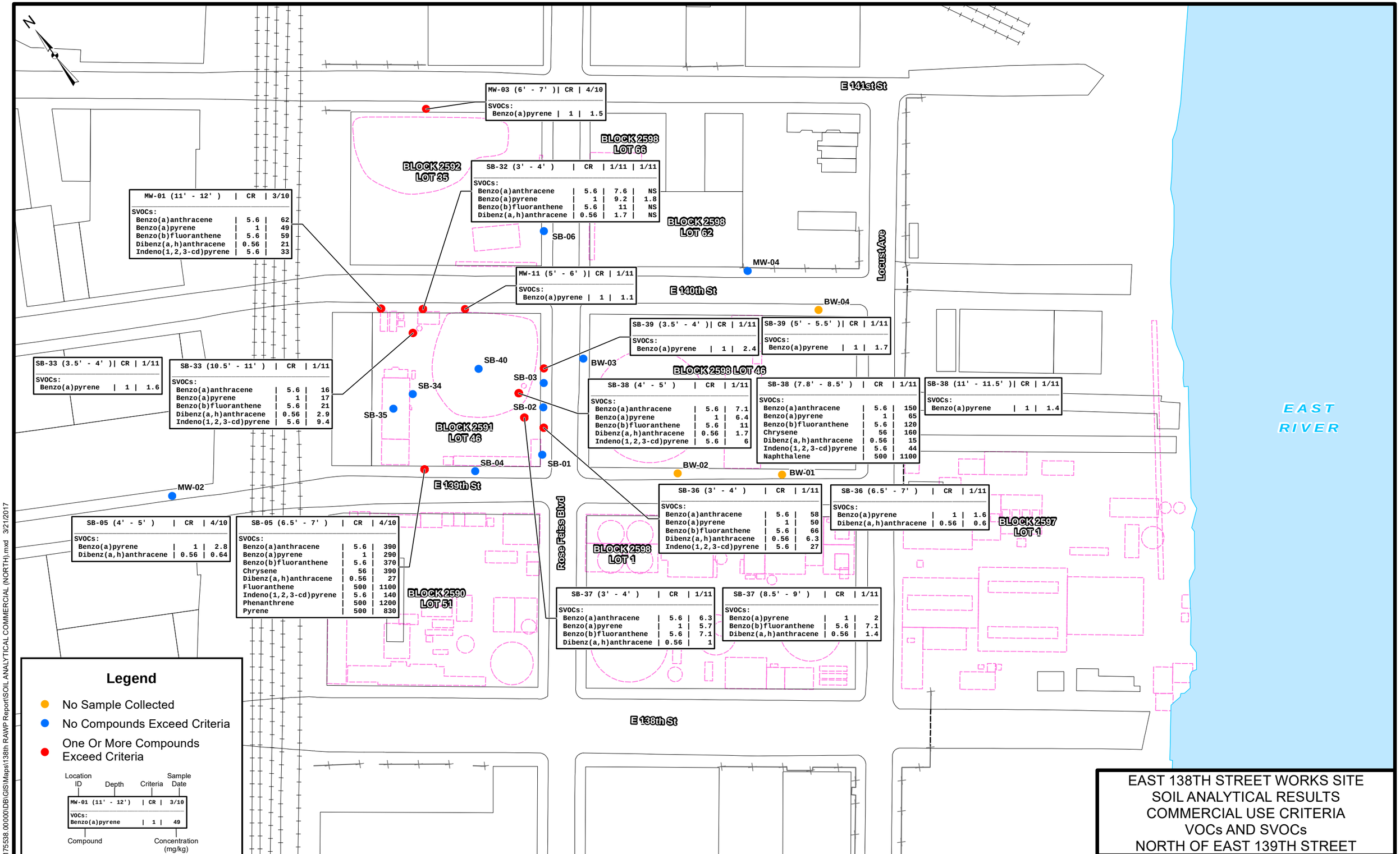
NOTE:
-6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.
-Former MGP Structure Labels can be found on Figure 2-1

EAST 138TH STREET WORKS SITE
SOIL ANALYTICAL RESULTS
COMMERCIAL USE CRITERIA
VOCs AND SVOCs
SOUTH OF EAST 139TH STREET

conEdison AECOM

FIGURE 2-12

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\SOIL ANALYTICAL COMMERCIAL (SOUTH).mxd 3/21/2017



MW-03 (6' - 7')| CR | 4/10

SVOCs:

Benzo(a)pyrene	1	1.5

MW-01 (11' - 12') | CR | 3/10

SVOCs:

Benzo(a)anthracene	5.6	62
Benzo(a)pyrene	1	49
Benzo(b)fluoranthene	5.6	59
Dibenz(a,h)anthracene	0.56	21
Indeno(1,2,3-cd)pyrene	5.6	33

SB-32 (3' - 4') | CR | 1/11 | 1/11

SVOCs:

Benzo(a)anthracene	5.6	7.6	NS
Benzo(a)pyrene	1	9.2	1.8
Benzo(b)fluoranthene	5.6	11	NS
Dibenz(a,h)anthracene	0.56	1.7	NS

MW-11 (5' - 6')| CR | 1/11

SVOCs:

Benzo(a)pyrene	1	1.1

SB-33 (3.5' - 4')| CR | 1/11

SVOCs:

Benzo(a)pyrene	1	1.6

SB-33 (10.5' - 11') | CR | 1/11

SVOCs:

Benzo(a)anthracene	5.6	16
Benzo(a)pyrene	1	17
Benzo(b)fluoranthene	5.6	21
Dibenz(a,h)anthracene	0.56	2.9
Indeno(1,2,3-cd)pyrene	5.6	9.4

SB-39 (3.5' - 4')| CR | 1/11

SVOCs:

Benzo(a)pyrene	1	2.4

SB-39 (5' - 5.5')| CR | 1/11

SVOCs:

Benzo(a)pyrene	1	1.7

SB-38 (4' - 5') | CR | 1/11

SVOCs:

Benzo(a)anthracene	5.6	7.1
Benzo(a)pyrene	1	6.4
Benzo(b)fluoranthene	5.6	11
Dibenz(a,h)anthracene	0.56	1.7
Indeno(1,2,3-cd)pyrene	5.6	6

SB-38 (7.8' - 8.5') | CR | 1/11

SVOCs:

Benzo(a)anthracene	5.6	150
Benzo(a)pyrene	1	65
Benzo(b)fluoranthene	5.6	120
Chrysene	56	160
Dibenz(a,h)anthracene	0.56	15
Indeno(1,2,3-cd)pyrene	5.6	44
Naphthalene	500	1100

SB-38 (11' - 11.5')| CR | 1/11

SVOCs:

Benzo(a)pyrene	1	1.4

SB-05 (4' - 5') | CR | 4/10

SVOCs:

Benzo(a)pyrene	1	2.8
Dibenz(a,h)anthracene	0.56	0.64

SB-05 (6.5' - 7') | CR | 4/10

SVOCs:

Benzo(a)anthracene	5.6	390
Benzo(a)pyrene	1	290
Benzo(b)fluoranthene	5.6	370
Chrysene	56	390
Dibenz(a,h)anthracene	0.56	27
Fluoranthene	500	1100
Indeno(1,2,3-cd)pyrene	5.6	140
Phenanthrene	500	1200
Pyrene	500	830

SB-36 (3' - 4') | CR | 1/11

SVOCs:

Benzo(a)anthracene	5.6	58
Benzo(a)pyrene	1	50
Benzo(b)fluoranthene	5.6	66
Dibenz(a,h)anthracene	0.56	6.3
Indeno(1,2,3-cd)pyrene	5.6	27

SB-36 (6.5' - 7') | CR | 1/11

SVOCs:

Benzo(a)pyrene	1	1.6
Dibenz(a,h)anthracene	0.56	0.6

SB-37 (3' - 4') | CR | 1/11

SVOCs:

Benzo(a)anthracene	5.6	6.3
Benzo(a)pyrene	1	5.7
Benzo(b)fluoranthene	5.6	7.1
Dibenz(a,h)anthracene	0.56	1

SB-37 (8.5' - 9') | CR | 1/11

SVOCs:

Benzo(a)pyrene	1	2
Benzo(b)fluoranthene	5.6	7.1
Dibenz(a,h)anthracene	0.56	1.4

Legend

- No Sample Collected
- No Compounds Exceed Criteria
- One Or More Compounds Exceed Criteria

Location ID | Depth | Criteria | Sample Date

MW-01 (11' - 12') | CR | 3/10

VOCs:
Benzo(a)pyrene | 1 | 49

Compound | Concentration (mg/kg)

Former MGP Structure

NOTE:
-6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.
-Former MGP Structure Labels can be found on Figure 2-1

110 0 110 Feet

EAST 138TH STREET WORKS SITE
SOIL ANALYTICAL RESULTS
COMMERCIAL USE CRITERIA
VOCs AND SVOCs
NORTH OF EAST 139TH STREET

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FIGURE 2-13

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\SOIL ANALYTICAL COMMERCIAL (NORTH).mxd 3/21/2017

N

MW-03	CRIT	8/15
VOCs:		
1,2-Dichloroethene (cis)	5	3800
Benzene	1	7.8
Vinyl chloride	2	2700
Xylene (total)	5	29
SVOCs:		
Benzo(a)anthracene	0.002	0.97
Benzo(b)fluoranthene	0.002	0.92
Chrysene	0.002	1
Miscellaneous:		
Cyanide, Total	200	470

MW-11	CRIT	8/15
SVOCs:		
bis(2-Ethylhexyl)phthalate	5	6.6

MWMF-05	CRIT	8/15
VOCs:		
1,1,2-Trichloroethane	1	2.4
1,2-Dichloroethane	0.6	14
1,2-Dichloroethene (cis)	5	120
Acetone	50	62
Benzene	1	190
Carbon disulfide	60	110
Chloromethane	5	11
Ethylbenzene	5	110
Isopropylbenzene	5	11
Methyl tert-butyl ether	10	13
Methylene chloride	5	20
Toluene	5	8.5
Vinyl chloride	2	190
Xylene (total)	5	49
SVOCs:		
2-Methylphenol (o-cresol)	1	1.6
3&4-Methylphenol (m,p-cresol)	1	1.1
Naphthalene	10	37
Phenol	1	1.3

MW-01	CRIT	8/15
VOCs:		
Benzene	1	18
Ethylbenzene	5	5.5
Xylene (total)	5	15
SVOCs:		
1,1'-Biphenyl	5	11
Acenaphthene	20	67
Naphthalene	10	570

MWMF-07S	CRIT	8/15
VOCs:		
Isopropylbenzene	5	14
SVOCs:		
3&4-Methylphenol (m,p-cresol)	1	1.2

MWMF-06	CRIT	8/15
VOCs:		
1,2-Dichloroethane	0.6	2
1,2-Dichloroethene (cis)	5	13
Benzene	1	26
Methylene chloride	5	7.8
Vinyl chloride	2	6.4
SVOCs:		
2-Chlorophenol	1	1.2
2-Methylphenol (o-cresol)	1	1.5
3&4-Methylphenol (m,p-cresol)	1	2
Phenol	1	1.1

MWMF-01	CRIT	8/15
VOCs:		
1,2-Dichloroethane	0.6	7.4
Benzene	1	340
Isopropylbenzene	5	15
Methyl tert-butyl ether	10	25
Vinyl chloride	2	3.2
SVOCs:		
Acenaphthene	20	30
Phenol	1	2
Miscellaneous:		
Cyanide, Total	200	898

MWMF-04	CRIT	8/15
VOCs:		
1,1,2,2-Tetrachloroethane	5	22
1,1,2-Trichloroethane	1	120
1,1-Dichloroethane	5	9.4
1,2-Dichloroethane	0.6	150
1,2-Dichloroethene (cis)	5	450
1,2-Dichloroethene (trans)	5	140
1,2-Dichloropropane	1	5.2
Acetone	50	280
Benzene	1	120
Bromomethane	5	140
Carbon disulfide	60	97
Chloroethane	5	80
Chloroform	7	77
Chloromethane	5	720
Methylene chloride	5	320
Tetrachloroethene	5	20
Trichloroethene	5	9.6
Vinyl chloride	2	52
SVOCs:		
2-Nitrophenol	1	3.5
3&4-Methylphenol (m,p-cresol)	1	1.7
4-Nitrophenol	1	2.3
Naphthalene	10	170

MWMF-03	CRIT	8/15
VOCs:		
Benzene	1	26
Miscellaneous:		
Cyanide, Total	200	237

MW-06	CRIT	8/15
VOCs:		
Benzene	1	11
Ethylbenzene	5	47
Isopropylbenzene	5	15
Xylene (total)	5	37
SVOCs:		
1,1'-Biphenyl	5	6.5
Acenaphthene	20	30
Naphthalene	10	34
Miscellaneous:		
Cyanide, Total	200	234

MWMF-08	CRIT	8/15
VOCs:		
1,2-Dichloroethane	0.6	39
1,2-Dichloroethene (cis)	5	30
Acetone	50	140
Benzene	1	1700
Ethylbenzene	5	2600
Isopropylbenzene	5	130
Toluene	5	450
Vinyl chloride	2	15
Xylene (total)	5	2000
SVOCs:		
1,1'-Biphenyl	5	6.1
Naphthalene	10	3800
Phenol	1	6.9
Miscellaneous:		
Cyanide, Total	200	252

MW-05	CRIT	8/15
VOCs:		
1,2-Dichloroethane	0.6	14
1,2-Dichloroethene (cis)	5	6.8
Benzene	1	480
Ethylbenzene	5	640
Isopropylbenzene	5	64
Toluene	5	150
Xylene (total)	5	600
SVOCs:		
1,1'-Biphenyl	5	32
3&4-Methylphenol (m,p-cresol)	1	5.8
Acenaphthene	20	67
Benzo(a)anthracene	0.002	0.95
Benzo(b)fluoranthene	0.002	0.71
Chrysene	0.002	0.92
Naphthalene	10	5700
Phenol	1	3.2
Miscellaneous:		
Cyanide, Total	200	482

E 141st St
E 140th St
E 139th St
E 138th St
Rose Felps Blvd
Locust Ave
BLOCK 2592 LOT 35
BLOCK 2598 LOT 66
BLOCK 2598 LOT 62
BLOCK 2591 LOT 46
BLOCK 2598 LOT 46
BLOCK 2590 LOT 51
BLOCK 2598 LOT 1
BLOCK 2597 LOT 1
MW-01
MW-02
MW-03
MW-04
MW-05
MW-06
MW-07-URS
MWMF-01
MWMF-02
MWMF-03
MWMF-04
MWMF-05
MWMF-06
MWMF-07D
MWMF-07S
MWMF-08
EAST RIVER

Legend

- No Compounds Exceed Criteria
- One Or More Compounds Exceed Criteria

Location ID / Sample Criteria / Date

MWMF-03	CRIT	8/15
VOCs:		
Benzene	1	26

Compound / Concentration (µg/L)

NOTE: NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

110 0 110 Feet

EAST 138TH STREET WORKS SITE OVERBURDEN GROUNDWATER ANALYTICAL RESULTS (AUGUST 2015)

AECOM conEdison

FIGURE 2-14

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\GW ANALYTICAL (AUG 2015).mxd 3/20/2017

N

E 141st St

BLOCK 2592
LOT 35

BLOCK 2598
LOT 66

BLOCK 2598
LOT 62

E 140th St

BLOCK 2598
LOT 46

BLOCK 2591
LOT 46

Rose Feiss Blvd

Locust Ave

EAST
RIVER

E 139th St

BLOCK 2590
LOT 51

BLOCK 2598
LOT 1

BLOCK 2597
LOT 1

BW-03	CRIT	3/12	8/15
VOCs:			
Benzene	1	44000	72000
Ethylbenzene	5	2700	2600
Isopropylbenzene	5	ND	53
Toluene	5	300	100
Xylene (total)	5	1100	650
SVOCs:			
1,1'-Biphenyl	5	5.5	BC
2-Methylphenol (o-cresol)	1	13	ND
3&4-Methylphenol (m,p-cresol)	1	23	ND
Naphthalene	10	1200	370
Phenol	1	24	8.8
Metals:			
Chromium	50	125	BC
Iron	300	3680	4240
Magnesium	35000	189000	198000
Manganese	300	434	386
Selenium	10	18.3	26.7
Sodium	20000	1760000	1940000
Miscellaneous:			
Cyanide, Total	200	1140	1140

BW-04	CRIT	3/12	8/15
VOCs:			
1,2-Dichloroethane	0.6	ND	82
1,2-Dichloroethene (cis)	5	1200	56
Benzene	1	11000	3100
Ethylbenzene	5	780	1100
Isopropylbenzene	5	ND	24
Styrene	5	2600	410
Toluene	5	8000	2600
Vinyl chloride	2	200	12
Xylene (total)	5	3300	1500
SVOCs:			
1,1'-Biphenyl	5	24	20
2-Methylphenol (o-cresol)	1	16	8.7
3&4-Methylphenol (m,p-cresol)	1	12	8.4
Acenaphthene	20	BC	31
Naphthalene	10	3800	2000
Phenol	1	7.3	10
Metals:			
Iron	300	2940	5590
Magnesium	35000	48300	80100
Manganese	300	588	1000
Selenium	10	ND	15.9
Sodium	20000	285000	204000

BW-02	CRIT	3/12	8/15
VOCs:			
1,1-Dichloroethene	5	ND	6.8
1,2-Dichloroethane	0.6	ND	730
1,2-Dichloroethene (cis)	5	7100	3600
1,2-Dichloroethene (trans)	5	ND	46
Acetone	50	ND	480
Benzene	1	19000	34000
Ethylbenzene	5	1200	750
Isopropylbenzene	5	ND	10
Methyl tert-butyl ether	10	ND	23
Toluene	5	14000	2600
Vinyl chloride	2	990	2000
Xylene (total)	5	8600	4300
SVOCs:			
1,1'-Biphenyl	5	18	11
2,4-Dimethylphenol	50	1500	1400
2-Methylphenol (o-cresol)	1	1300	760
3&4-Methylphenol (m,p-cresol)	1	2400	1200
Naphthalene	10	7300	3700
Phenol	1	1200	540
Metals:			
Iron	300	3130	841000
Lead	25	ND	27
Magnesium	35000	BC	315000
Manganese	300	BC	68700
Nickel	100	BC	562
Selenium	10	ND	28.5
Sodium	20000	220000	2820000
Thallium	0.5	ND	69
Miscellaneous:			
Cyanide, Total	200	7160	1880

BW-01	CRIT	3/12	8/15
VOCs:			
1,2-Dichloroethene (cis)	5	220	230
Benzene	1	26000	37000
Ethylbenzene	5	1200	2000
Isopropylbenzene	5	ND	23
Styrene	5	4300	ND
Toluene	5	12000	13000
Vinyl chloride	2	ND	66
Xylene (total)	5	5700	5000
SVOCs:			
1,1'-Biphenyl	5	28	33
2,4-Dimethylphenol	50	ND	270
2-Methylphenol (o-cresol)	1	80	170
3&4-Methylphenol (m,p-cresol)	1	21	47
Acenaphthene	20	BC	29
bis(2-Chloroethyl)ether	1	70	ND
Naphthalene	10	6800	6100
Phenol	1	15	31
Metals:			
Iron	300	38400	60200
Magnesium	35000	74100	136000
Manganese	300	1780	2650
Selenium	10	ND	22.8
Sodium	20000	401000	569000
Miscellaneous:			
Cyanide, Total	200	221	218

Legend

- No Compounds Exceed Criteria
- One Or More Compounds Exceed Criteria

Location ID | Criteria | Sample Date

BW-03	CRIT	3/12	8/15
VOCs:			
Benzene	1	44000	72000

Compound | Concentration (µg/L)

ND - Not Detected
BC - Below Criteria

NOTE: NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998 (including April 2000 and June 2004 addenda). Class GA.

110 0 110 Feet

EAST 138TH STREET WORKS SITE
BEDROCK GROUNDWATER ANALYTICAL RESULTS
(MARCH 2012 & AUGUST 2015)

conEdison AECOM

FIGURE 2-15

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\BEDROCK GW ANALYTICAL.mxd 3/20/2017

N

E 141st St

BLOCK 2592
LOT 35

BLOCK 2598
LOT 66

BLOCK 2598
LOT 62

E 140th St

Rose Feiss Blvd

Locust Ave

BLOCK 2591
LOT 46

BLOCK 2598
LOT 46

EAST
RIVER

E 139th St

BLOCK 2590
LOT 51

BLOCK 2598
LOT 1

BLOCK 2597
LOT 1

E 138th St

Legend

- Area Subject to EE (#C203053) and BCP (#C203053-05-12)
- Area Subject to ICs/ ECs and SMP Conditions
- Block/Lot Boundary

100 0 100 Feet

EAST 138TH STREET WORKS
FORMER MGP SITE
PROPOSED REMEDIAL ALTERNATIVE
PROPERTIES UNDER
ENVIRONMENTAL EASEMENT/ SMP

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FIGURE 3-1

J:\Projects\11175538.00000\DB\GIS\Maps\138th RAWP Report\RAWP Figure 4-1.mxd 3/21/2017

N

E 141st St

MW-03

BLOCK 2592
LOT 35

Rose Feiss Blvd

BLOCK 2598
LOT 66

BLOCK 2598
LOT 62

Locust Ave

MW-04

E 140th St

MW-01

MW-11

MWMF-01

BW-04

MWMF-07D

MWMF-07S

MWMF-05

BLOCK 2591
LOT 46

BW-03

BLOCK 2598
LOT 46

MWMF-06

MWMF-02

MWMF-08

MWMF-03

BW-01

MWMF-04

BW-02

MW-02

E 139th St

BLOCK 2590
LOT 51

BLOCK 2598
LOT 1

MW-06

BLOCK 2597
LOT 1

MW-05

MW-07-URS

E 138th St

EAST
RIVER

Legend

- MW-02 Existing Monitoring Well to be included in Annual Groundwater Monitoring
- MW-04 Proposed Monitoring Well to be Decommissioned
- BW-01 Existing Bedrock Monitoring Well - NAPL Measurements Only
- Block/Lot Boundary

100 0 100 Feet

EAST 138TH STREET WORKS SITE
ANNUAL GROUNDWATER MONITORING
PROGRAM WELLS

conEdison AECOM

FIGURE 3-2

\\na.aecomnet.com\LFS\AMER\Buffalo-USBUF1\DCS\Projects\111755538.00000\DB\GIS\Maps\138th RAWP Report\RAWP Figure 4-2.mxd 11/6/2018

APPENDIX A

Environmental Easement/Notice/Deed Restriction

(In Progress)

APPENDIX B

List of Site Contacts

Appendix B List of Site Contacts*

NYSDEC Central Office	(518) 402-9662 derweb@dec.ny.gov
NYSDEC Region 2 Office	(718) 482-4900 r2.info@dec.ny.gov
Consolidated Edison	(877) 602-6633

*Note: Contacts are subject to change and will be updated as necessary

APPENDIX C

Monitoring Well Boring and Construction Logs

URS Corporation

TEST BORING LOG

BORING NO. : BW-01

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Glacier Drilling, LLC

NORTHING: 231866.5 **EASTING:** 1010013.6

GROUNDWATER:

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore	HQ	
DIA.		2"	4"	
WT.				
LENGTH		10'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.89

DATE STARTED: 1/31/12

DATE FINISHED: 2/3/12

DRILLER: Allan Augustin

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1	N/A	100%	Brown	Medium dense	Concrete	FILL	0.8	Moist
							FILL. SILT and fine to medium SAND, some fine to medium gravel. No odor.			
						Soft				Wet
-5		2	N/A	100%			Fine SAND, trace silt and fine gravel. No odor.	SP	0.0	
						Dense	SILT, some organics. Faint sulfur odor.	ML	0.4	
						Medium dense	Fine SAND, trace organics and silt. No odor.	SP	0.0	
-10		3	N/A	92%		Dense			0.4	
						Medium dense	Fine SAND, trace silt. No odor. (Gray/white mottled silt, trace fine sand, lens 11.7-11.9')			
-15		4	N/A	64%		Dense	Fine SAND, trace fine gravel.		0.4	
							Fine to medium SAND and SILT, trace fine gravel. No odor.	SM	0.5	
							Fine to medium SAND, some to trace silt and fine gravel. Faint naphthalene odor and sheen from a 1/2" black sand lens at 18.9'.		30.6	
-20		5	N/A	52.5%	Gray	Broken	Light gray fine grained gneiss. Banding and fractures subhorizontal to approximately 45 Degrees off horizontal. Naphthalene odor and sheen in fractures at 23.4 to 24 '.		0.0	Bedrock
									0.3	Slight sheen on drill water 23'-24' and 24'-29'.
-25		6	N/A	96.8%			Light gray fine grained gneiss. Banding		1.3	

COMMENTS: See soil boring log for SBMF-06 for drilling dates and other information.

Bedrock monitoring well drilled with CME HSA drilling rig. Well adjacent to soil boring SBMF-06 drilled 3/14/2011.

Bedrock description from HQ core drilled from 19 to 34 ' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-01

PROJECT: East 138th Street Works Site

SHEET: 2 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25					Gray Banded	Broken	and fractures approx. 30 to 40 degrees off horizontal becoming near vertical at 29'. Naphthalene-like odor and DNAPL coating in fractures at 25' and 29'. LNAPL in mud tub		44.5	LNAPL in drill water 24' to 29' Rods coated with sheen
-30		7	N/A	83.3%			Light gray fine grained gneiss. Fractures and banding near vertical to approx. 45 degrees. Entire core coated with DNAPL assumed to be from 29' zone and dragged along core as it was drilled. LNAPL in mud tub.	N/A		Entire core coated with sheen. Greatest impacts 29'-31'
-35							Bottom of Boring at 34 feet.			
-40										
-45										
-50										
-55										

COMMENTS: See soil boring log for SBMF-06 for drilling dates and other information.

Bedrock monitoring well drilled with CME HSA drilling rig. Well adjacent to soil boring SBMF-06 drilled 3/14/2011.

Bedrock description from HQ core drilled from 19 to 34 ' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-02

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Glacier Drilling, LLC

NORTHING: 231948.9 **EASTING:** 1009906.6

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	CAS.	SAMPLER	CORE	TUBE
			TYPE		Macrocore	HQ	
			DIA.		2"	4"	
			WT.				
			LENGTH		10'		
			* POCKET PENETROMETER READING				

GROUND ELEVATION: 8.13

DATE STARTED: 1/30/12

DATE FINISHED: 2/2/12

DRILLER: Allan Augustin

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1	N/A	100%	Gray	Medium dense	Concrete	FILL	225	Moist
							FILL. SILT and fine to medium SAND, some to trace fine gravel and brick. Petroleum odor 0.8 ft. through 5 ft. Naphthalene odor below 5 ft bgs.			Wet
-5		2	N/A	64%	Brown	Soft				
							Fine to medium SAND, trace fine gravel. Strong naphthalene odor. Sheen.	SW	1047	
-10		3	N/A	88%		Medium dense	SILT and peat-like vegetation. Undifferentiated chemical odor.	ML	300	
-15		4	N/A	78%			SILT. Faint naphthalene-like odor.	Pt	77.0	
					Gray		Fine SAND. Faint naphthalene-like odor.	SP	75.2	
					Brown		Fine to medium SAND, some silt, trace fine gravel. Faint naphthalene-like odor.	SW	77.0	
-20		5	N/A	66%			Fine SAND. Very faint naphthalene-like odor.	SP	17.1	
							SILT and fine to medium SAND, trace fine gravel. Faint naphthalene-like odor.	SM	12.0	
-25										

COMMENTS:

Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-08 drilled on 3/18/2011.

Bedrock description from SQ core drilled from 31' to 36' and from HQ core drilled from 36' to 49' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-02

PROJECT: East 138th Street Works Site

SHEET: 2 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25		6	N/A	62%		Dense	SILT and fine SAND, trace fine gravel sized weathered shist bedrock. Naphthalene-like odor.		73.7	
-30		7	N/A		Gray		No samples collected			
		8	N/A	30.8%		Broken	Light gray shist rock. Foliated, medium grained mica rich shist rock with subhorizontal fractures and banding. Faint naphthalene odor at 31 feet.	N/A	2.0	Bedrock Slight sheen on drill water
-35		9	N/A				No core sample collected. Borehole drilled with a roller bit. Rock very broken, no sheen or odor.		0.0	
		10	N/A	70%			39-45.3': Medium grained gray gneiss rock, with fractures and banding approximately horizontal; 45.3'-47.5': fine grained gneiss rock with numerous alternating light and dark bands, oriented approximately 20 degrees.to approximately 45 degrees. 47.5'-49': light gray dolomitic marble, slight reaction to HCL. Crystal structure visible in fractures. DNAPL and naphthalene-like odor at 39 to 40' and 45' bgs in fractures.		4.5	LNAPL in drill water at 40'.
-40				83.9%						
-45									0.2	LNAPL sheen on fracture at 47'.
-50							Bottom of boring at 49 feet.			
-55										

COMMENTS:

Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-08 drilled on 3/18/2011.

Bedrock description from SQ core drilled from 31' to 36' and from HQ core drilled from 36' to 49' bgs.

BORING NO. : BW-02

URS Corporation

TEST BORING LOG

BORING NO. : BW-03

PROJECT/PROJECT LOCATION: East 138th Street Works Site
SHEET: 1 OF 3

CLIENT: Consolidated Edison Company of New York
JOB NO. : 11176159

BORING CONTRACTOR: Glacier Drilling, LLC
NORTHING: 232140.8 **EASTING:** 1009898.2

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	CAS.	SAMPLER	CORE	TUBE
			TYPE		Macrocore	HQ	
			DIA.		2"	4"	
			WT.				
			LENGTH		10'		
			* POCKET PENETROMETER READING				

GROUND ELEVATION: 8.01
DATE STARTED: 1/26/12
DATE FINISHED: 2/2/12
DRILLER: Allan Augustin
GEOLOGIST: J. Boyd
REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1	N/A	100%	Brown	Medium dense	Concrete	FILL	0.6	Moist
							FILL. SILT and fine to medium SAND, some fine gravel. No odor.			
-5		2	N/A	68%			SILT and fine to medium SAND, some fine gravel. Faint petroleum odor.	SM	1.4	Wet
							Fine to medium SAND. No odor.	SW	0.1	
-10		3	N/A	76%	Black	Dense	Fine to coarse SAND, trace fine gravel. Moderate naphthalene-like odor.		45.8	
					Brown - Gray		SILT, some organics, trace mollusk shells. Strong sulfur odor.	ML	118.1	
-15		4	N/A	66%						
							Fine SAND, some silt. Faint sulfur odor.	SM	2.4	
-20		5	N/A				No samples collected. Roller bit to refusal at 34.5 feet. Set up for rock core.	N/A		No sheen, NAPL or odor on drill water
-25										

COMMENTS: Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-05 completed on 3/17/11.

Bedrock description from SQ core drilled from 40 to 48' and from HQ core drilled from 48' to 58' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-03

PROJECT: East 138th Street Works Site

SHEET: 2 OF 3

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25								N/A		No odors, NAPL or sheen.
-30										
-35		6	N/A	20%	Gray	Very Broken	Weathered schist bedrock mixed with 70% soil comprised of silt and rounded gravel. Faint Naphthalene odor observed at 38 feet.		0.0	No odors, NAPL or sheen.
									7.1	Took soil sample at 38.5'-39.5'.
-40		7	N/A	10%		Broken	Fine to medium grained gneiss. Thin, dark gray approximately horizontal banding to approximately 42.5 ' bgs. Core from approx. 42.5 to 45 missing. From approx. 45' to 48' bgs, very fractured medium grained medium gray gneiss. Quartz rich gneiss.		0.0	No odors, NAPL or sheen.
-45										
		8	N/A	0%	Dark gray	Very Broken	Dark gray foliated shist. Highly fractured with fracture orientation approx. horizontal. No rock pieces greater than 3.5 inches. No odors or sheen. Friable.		0.0	No odors, NAPL or sheen.
-50										
		9	N/A	45%	Medium gray.	Broken	Medium gray shist, foliated, friable. No odors or sheen.		0.0	No odors, NAPL or sheen.
-55							Gray medium fine grained gneiss. Dark			

COMMENTS: Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-05 completed on 3/17/11.

Bedrock description from SQ core drilled from 40 to 48' and from HQ core drilled from 48' to 58' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-03

PROJECT: East 138th Street Works Site

SHEET: 3 OF 3

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
					Light gray.	Broken	and light gray banding oriented approximately 45 degrees. No odors or sheen.	N/A	0.0	No odors, NAPL or sheen.
							Bottom of boring at 58 feet.			
-60										
-65										
-70										
-75										
-80										
-85										

COMMENTS: Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-05 completed on 3/17/11.

Bedrock description from SQ core drilled from 40 to 48' and from HQ core drilled from 48' to 58' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-04

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Glacier Drilling, LLC

NORTHING: 232007.9 **EASTING:** 1010179.3

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.		2"	4"	
				WT.				
				LENGTH		10'		
				* POCKET PENETROMETER READING				

GROUND ELEVATION: 8.79

DATE STARTED: 1/25/12

DATE FINISHED: 2/1/12

DRILLER: Allan Augustin

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1	N/A	100%	Brown	Medium dense	Concrete	FILL	0.0	Moist
							FILL. SILT and fine to medium SAND, trace to some fine gravel. No odor.			
						Loose				
					Gray	Soft	Same as above with moderate petroleum odor.		106	Wet
-5		2	N/A	58%	Brown	Medium dense	SILT and fine SAND. Moderate petroleum odor.	SM	108	
								SW	—	
						Loose	Fine to medium SAND and trace fine gravel. Faint petroleum odor.		0.0	
-10		3	N/A	30%			Medium to coarse SAND, some fine gravel and fractured rock. No odor.			
						Medium dense	SILT and fine to medium SAND, trace fine gravel. No odor.	SM	0.0	
-15		4	N/A	63%			SILT, some fine to medium sand, trace fine gravel. No odor.		0.0	
-20		5	N/A	No samples collected.			No sample collected. Roller bit to refusal at 24.5 feet.	N/A	0.2	No NAPL, sheen or odor in drill water.
-25		6	N/A	18.3%	Gray	Very Broken			0.0	Bedrock

COMMENTS: Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-07D drilled on 3/18/2011.

Bedrock description from HQ core drilled from 24.5' to 39.5' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : BW-04

PROJECT: East 138th Street Works Site

SHEET: 2 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25					Gray	Broken	Gray fine grained felsic gneiss. Well fractured along mica-rich subhorizontal banding.	N/A	0.0	No NAPL, sheen or odor in drill water.
-30		7	N/A	88.3%			Medium gray fine grained felsic gneiss with darker banding and fractures at approximately 45 degrees.		0.2	No NAPL, sheen or odor in drill water.
-35		8	N/A	85.8%			Medium gray fine grained felsic gneiss with alternating lighter and darker banding and fractures at approximately 45 degrees.		0.0	No NAPL, sheen or odor in drill water.
-40							Bottom of Boring at 39.5 feet.			
-45										
-50										
-55										

COMMENTS: Bedrock monitoring well drilled with CME HSA drilling rig. Well located adjacent to MWMF-07D drilled on 3/18/2011.

Bedrock description from HQ core drilled from 24.5' to 39.5' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-01

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232350.24 **EASTING:** 1009728.42

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
6/8/2010	1713	4.94	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.11

DATE STARTED: 03/24/10

DATE FINISHED: 03/26/10

DRILLER: Peter Eichler

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1					Concrete.			
					Black	Loose		FILL	0.8	Moist
					Brown	Dense	FILL. Cinders, some silt, trace brick and wood. No odor.	FILL	1.2	
							FILL. SILT and fine to medium SAND, trace fine gravel and brick. No odor.			
-5		2				Loose	FILL. Cinders. No odor.	FILL	0.0	Wet
						Medium dense	FILL. Fine to medium SAND and fine GRAVEL, some silt. No odor.	FILL	0.0	
-10		3					SILT, trace fine sand. No odor.	ML	0.3	
					Black		SILT, some fine to medium sand and fine gravel. Moderate petroleum-like odor. Slight sheen.	ML	4.9	
					Gray	Soft	SILT, no odor.	ML	2.2	
-15		4					CLAY. Faint undifferented chemical odor.	CL	3.6	
							Clay, some organic material (yellow leaf-like material). Sulfur odor.	CL	12.8	
-20		5								
							CLAY. Trace mollusc shells. Sulfur odor.	CL	18-42	
-25										

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.1-4', 4.5-5', 11-12', and 18-19' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3 to 13 ' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-01

PROJECT: East 138th Street Works Site

SHEET: 2 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25		6								
-30		7				Medium dense	Fine SAND, some silt.	SM	5.1	
							Fine SAND, trace mica flakes. No odor.	SP	0.0	
-35							End of boring at 35' bgs.			
-40										
-45										
-50										
-55										

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.1-4', 4.5-5', 11-12', and 18-19' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3 to 13 ' bgs.

BORING NO. : MW-01

URS Corporation

TEST BORING LOG

BORING NO. : MW-02

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232319.09 **EASTING:** 1009366.94

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
6/9/2010	1351	5.78	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 9.00

DATE STARTED: 04/14/2010

DATE FINISHED: 04/30/2010

DRILLER: Evan Moraitis

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%			Concrete			
					Brown	Medium dense	FILL. Fine to coarse SAND and fine GRAVEL, some silt. No odor.	FILL	1.3	Moist
							FILL. SILT, some fine to medium sand. Faint petroleum odor.	FILL	2.8	
-5		2		37%	Gray / Brown		Fine to coarse SAND and fine GRAVEL. Petroleum odor.	SW	36.2	Wet
							Fine SAND, trace silt and fine gravel. No odor.	SP	4.7	
						Loose	Coarse SAND and fine GRAVEL. No odor.	GP	0.2	
-10		3		60%						
						Medium dense	Fine SAND, some silt. No odor.	SM	0.2	
						Loose	Fine to coarse SAND and fine gravel.	SW	0.2	
-15		4		13%						
					Black	Medium dense	SILT, trace fine gravel. Sulfur odor.	GM	0.3	
-20		5		93%	Gray		CLAY, trace organics (yellow leaf-like material). Strong sulfur odor.	CL	135	
-25										

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.5-4.5', 5.5-6' and 12-12.5' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3.5 to 13.5 ' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-02

PROJECT: East 138th Street Works Site

SHEET: 2 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25		6		92%						
-30		7		97%			CLAY, trace organics (yellow leaf-like material) and mollusc shells. Strong sulfur odor.	CL	137	
					Brown		Peat. Slight sulfur odor.	Pt	10.1	
-35					Gray		CLAY, trace organics (yellow leaf-like material) and mollusc shells. Strong sulfur odor.	CL	120.2	
							End of boring at 35' bgs.			
-40										
-45										
-50										
-55										

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.5-4.5', 5.5-6' and 12-12.5' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3.5 to 13.5 ' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-03

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232521.22 **EASTING:** 1009930.27

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	CAS.	SAMPLER	CORE	TUBE
			TYPE		Macrocore		
			DIA.		2"		
			WT.				
			LENGTH		5'		
			* POCKET PENETROMETER READING				

GROUND ELEVATION: 8.43

DATE STARTED: 04/15/2010

DATE FINISHED: 04/19/2010

DRILLER: Evan Moraitis

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%			Concrete	Concrete		
					Brown	Medium dense	FILL. Fine to coarse SAnd and fine GRAVEL, some silt. No odor.	FILL	0.9	Moist
-5		2		47%			Fine SAND and SILT, trace fine gravel. No odor.	SM	3.1	
					Black		Fine to coarse SAND, trace silt and fine gravel. Strong petroleum odor. Sheen.	SW	29.6	Wet
					Brown		Fine to coarse SAND, trace to some silt and fine gravel. Faint petroleum odor.	SW	11.3	
-10		3		60%						
							Fine to coarse SAND, trace to some silt and fine gravel. No odor.	SW	0.3	
-15		4		0%			No recovery.	SW		
							Fine to coarse SAND, trace to some silt and fine gravel. No odor.	SW	4.6	
-20		5		88%	Gray	Dense	CLAY, trace organics (yellow leaf-like material). Strong sulfur odor.	CL	23.3	
							CLAY. Faint sulfur odor.	CL	12.2	
-25										

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.5-4.5', 6-7' and 14-15' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 4 to 14' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-03

PROJECT: East 138th Street Works Site

SHEET: 2 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
-25		6		97%			CLAY, trace organics (yellow leaf-like material) and mollusc shells. Moderate sulfur odor.	CL	8.2	
-30							End of boring at 30' bgs.			
-35										
-40										
-45										
-50										
-55										

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.5-4.5', 6-7' and 14-15' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 4 to 14' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-04

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232103.94 **EASTING:** 1010136.43

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
6/9/2010	0838	3.13'	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.13

DATE STARTED: 04/16/2010

DATE FINISHED: 04/20/2010

DRILLER: Evan Moraitis

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%			Concrete			
					Brown	Loose		FILL	0.1	Moist
							Fill. Fine to coarse SAND and fine GRAVEL, some silt. No odor.	FILL	0.1	
					Gray - brown	Medium dense	Fill. SILT, some fine to medium sand, trace fine gravel. No odor.	FILL	96.7	
							Fill. Fine to medium SAND, trace silt. Strong petroleum odor.	FILL	89.2	Wet
-5		2		57%	Brown		Fill. Fine to medium SAND, trace silt. Strong petroleum odor. Sheen.	GP	7.9	
							Fine to medium SAND and fine GRAVEL, some silt. Moderate petroleum odor.	SP	1.2	
-10		3		100%			Fine SAND, trace silt. Faint petroleum odor.	SP	0.3	
							Fine SAND, trace silt. No odor.			
							PEAT. Strong sulfur odor.	Pt	52.8	
					Gray	Dense	CLAY and SILT, some organics (yellow leaf-like material). Strong sulfur odor.	CL	34.6	
-15		4		40%			Silt and fine SAND. Faint sulfur odor.	ML	1.9	
					Brown	Medium dense	Fine micaceous SAND, trace silt. No odor.	MH	0.3	
-20		5		0%			No recovery. Sample flowed out of macrocore liner.	No recovery		
-25							End of boring at 25' bgs.			

COMMENTS: Boring advanced with track mounted Geoprobe 6620.

Soil samples collected from 3.5-4.5' and 8.5-9.5' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3 to 13' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-05

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231695.80 **EASTING:** 1009773.41

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
6/9/2010	0804	5.82'	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 9.48

DATE STARTED: 04/26/2010

DATE FINISHED: 05/04/2010

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%	Brown	Medium dense	Concrete.	Concrete		
								FILL	0.9	Moist
							FILL. Fine to coarse SAND and fine GRAVEL, some silt, trace brick. No odor.			
							FILL. SILT and fine to medium sand, some fine gravel. Moderate to strong naphthalene odor. Slight sheen (jar shake test).	FILL	32.3	
-5		2		80%				SW	105	
						Soft	Fine to coarse SAND and fine gravel, some silt. Strong naphthalene odor. Sheen.	SM	24.8	Wet
						Medium dense		SM	19	
					Black			Pt	51.9	
					Brown		SILT and fine SAND, trace fine gravel. Strong naphthalene odor.	ML	25.6	
-10		3		85%			Fine SAND, some silt. Strong naphthalene odor.	SM	19.7	
							PEAT. Strong naphthalene odor.			
							SILT, some organic material. Moderate naphthalene odor.	SM	34.5	
					Black		SILT and fine SAND. Moderate naphthalene odor.	SW	230	
-15		4		57%					1200	
					Brown		Fine SAND, some silt, trace fine gravel. Moderate naphthalene odor.	SM	245	
							Fine to medium SAND, trace silt. Strong naphthalene odor. Sheen.			
							SILT and fine SAND. Strong naphthalene odor.			
-20		5		100%				SM	950	
							SILT and fine SAND. Strong naphthalene odor. DNAPL .			
							Refusal at 21' bgs. End of boring at 21' bgs.			
-25										

COMMENTS: Boring advanced with track mounted Geoprobe 7720.

Soil samples collected from 3-3.5', 4.5-5', 15-16', and 20.5-21' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3 to 20.5' bgs.

BORING NO. : MW-05

URS Corporation

TEST BORING LOG

BORING NO. : MW-06

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231654.24 **EASTING:** 1009986.30

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
6/9/2010	0819	5.90	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 9.97

DATE STARTED: 05/05/2010

DATE FINISHED: 05/12/2010

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%	Brown	Medium dense	Concrete	FILL	0.3	Moist
							FILL. Fine to coarse SAND and fine gravel. No odor.			
							FILL. SILT and fine SAND, trace fine gravel. No odor.	FILL	0.4	
-5		2		58%	Black	Loose	Fine to medium SAND, trace fine gravel and silt. Strong naphthalene odor.	GM	184	Wet
-10		3		100%		Dense	Weathered bedrock. Naphthalene odor. Sheen.	Bedrock	190	
							Refusal at 11' bgs. End of boring at 11' bgs.			
-15										
-20										
-25										

COMMENTS: Boring advanced with track mounted Geoprobe 7720.

Soil samples collected from 4-4.5' and 10.5-11' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 3 to 10' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MW-07-URS

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231355.22 **EASTING:** 1010153.70

GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE
DATE	TIME	LEVEL	TYPE	TYPE		Macrocore		
				DIA.		2"		
				WT.				
				LENGTH		5'		
				* POCKET PENETROMETER READING				

GROUND ELEVATION: 8.30

DATE STARTED: 12/15/11

DATE FINISHED: 12/16/11

DRILLER: John Diamond

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%	Brown	Medium dense	Asphalt	FILL	0.0	Moist
							FILL. Cobble Stone layer.			
							FILL. Fine to medium SAND, with concrete layer 1.0-1.8'.		0.1	
-5							FILL: SILT, trace fine to medium sand and fine gravel. Several cobbles. No odor.		0.1	V. Moist
		2		53%				SM	22.2	
					Black		SILT and fine SAND. Faint petroleum odor. Trace fine gravel 6.0-8.8'.		26.4	Wet
						Dense	SILT, trace fine sand.	ML	8.4	
-10		3		100%			SILT, some fine sand.		33.7	
									30.9	
							Refusal at 10.5' bgs. End of boring at 10.5' bgs.			
-15										
-20										
-25										

COMMENTS: Boring advanced with track mounted Geoprobe 7720.

Soil samples collected from 4-4.5' and 9.8-10.5' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10 slot screen set from 4.6 to 9.6' bgs.

BORING NO. : MW-07-URS

URS Corporation

TEST BORING LOG

BORING NO. : MW-11

PROJECT/PROJECT LOCATION: East 138th Street Works Site

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison of New York

JOB NO. : 11176159

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232284.29 **EASTING:** 1009815.03

GROUNDWATER:

DATE	TIME	LEVEL	TYPE

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.05

DATE STARTED: 1/07/11

DATE FINISHED: 1/19/11

DRILLER: Lukas Reiss

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID (PPM)	REMARKS
0		1		100%					0	
					Brown	Medium dense	Concrete	Fill	0.4	Moist
							FILL. Silt and fine to medium sand, some to trace fine gravel. No odor.			
					Gray		FILL. Silt, trace fine to medium sand and fine gravel. No odor.	Fill	0.3	
-5		2		58%	Brown	Soft-medium dense	Fine SAND, some to trace silt, trace fine gravel. No odor.	SM	0	Wet
-10		3		100%						
-15		4		0%			No Recovery.		0	
-20		5		62%	Gray	Stiff	Silty CLAY, trace organics (yellow-green plant material). Strong sulfur odor.	CL	8.9	
-25							End of boring at 25' bgs.			

COMMENTS: Boring advanced with track mounted Geoprobe 6600 or 7700.

Soil samples collected from 3.5-4.5', 5-6' and 20-21' bgs and analyzed for VOCs, SVOCs and TAL metals.

2" diameter Schedule 40 PVC 10 slot screen set from 3 to 13' bgs. 2" diam. Sched. 40 PVC sump set from 13 to 15 ' bgs

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-01

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232141.8 **EASTING:** 1010004

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0916	3.32	
Date	Time	GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.33

DATE STARTED: 3/3/11

DATE FINISHED: 3/16/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Gray Brown	Medium dense	CONCRETE	FILL	0.0	Moist
							SILT and fine to medium SAND, trace fine gravel and brick. No odor.			
-5		2		40%		Soft	Fine to medium SAND, some silt, trace fine gravel. Faint sulfur odor.	SM	0.8	Wet
-10		3		40%						
						Medium dense	PEAT. Strong sulfur odor.	Pt	53.6	
-15		4		68%		Stiff	SILT, some organics. Strong sulfur odor.	ML	111	
					Gray	Medium dense	SILT, some fine sand. Sulfur odor.	SM	47.3	
-20							Bottom of boring 20' bgs.			
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 4.5-5.2' and 19-20' bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 3-13' bgs. 2-inch PVC sump set 13-15' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-02

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231854 **EASTING:** 1010106

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	1126	3.46	
Date	Time	GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 9.39

DATE STARTED: 3/3/11

DATE FINISHED: 3/16/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Brown	Dense	Concrete			
							SILT and fine to medium SAND, some fine gravel, brick and cobble sized rock. No odor.	FILL	0.0	Moist
						Medium dense	SILT, some fine sand. No odor.	SM	0.0	Wet
-5		2		82%			Fine SAND. No odor.	SP	1.8	
							Fine SAND and SILT. No odor.	SM	0.5	
							Fine SAND, trace silt. No odor.		0.5	
-10		3		60%			Fine to medium SAND, some silt, trace fine gravel. No odor.		0.3	
-15		4		100%	Dark brown	Dense	Fine to medium SAND, trace silt. No odor. No odor.		0.0	
							Refusal at 16' bgs.			
-20										
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 6-7' and 15.2-16' bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 3-13' bgs. 2-inch PVC sump set 13-15' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-03

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231920.6 **EASTING:** 1009949

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0945	1.97	
		GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2		
WT.				
LENGTH		5		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.43

DATE STARTED: 3/7/11

DATE FINISHED: 3/18/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Brown	Medium dense	Concrete	FILL	0.0	Moist
							SILT and fine to medium SAND, trace fine gravel. No odor.		0.0	Wet
					Black		Fine to medium SAND and fine GRAVEL, trace silt. Faint naphthalene-like odor at 3.0'.		63.7	
-5		2		70%			SILT and fine to coarse SAND, some fine gravel. Faint naphthalene-like odor and oily sheen.	SM	8.8	
							Fine to medium SAND, some silt, trace fine gravel. Faint undifferentiated chemical odor.			
					Brown		Fine SAND, trace silt and fine gravel. No odor.		2.1	
-10		3		88%			Silty CLAY, some organics. Faint sulfur odor.	ML	10.2	
							Fine SAND, trace silt. No odor.	SP	3.1	
-15		4		76%			Fine SAND, some silt, trace fine gravel. Faint naphthalene-like odor.	SM	15.8	
					Black		Micaceous SILT and fine SAND, trace fine gravel. Faint naphthalene-like odor.		18.8	
-20		5		83%	Brown	Dense	Micaceous fine to medium SAND sized weathered shist bedrock. Strong undifferentiated chemical odor at 21.5'.	—	198	
-25							Refusal at 23' bgs.			

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600. Soil samples collected from 2.5-3', 4.5-5', 19-20' and 22-23' bgs.

Samples analyzed for VOCs, SVOCs and TAL metals. Fingerprint sample collected from 4.5-5' bgs.

2-inch diameter Schedule 40 PVC 10-slot screen set 3-13' bgs. 2-inch PVC sump set 13-15' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-04

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 OF 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231968.7 **EASTING:** 1009878

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0934	3.69	
Date	Time	GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 7.93

DATE STARTED: 3/4/11

DATE FINISHED: 3/21/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%			CONCRETE			
					Brown	Medium dense	Silt and fine to medium sand, some fine gravel. No odor.	FILL	0.0	Moist
									0.0	
					Gray	Soft	SILT and fine to medium SAND. No odor.		0.0	
-5		2		66%	Brown		SILT, trace fine gravel. Swampy odor.			Wet
							Silt and fine to medium sand, trace fine gravel. Swampy odor.	SM	0.7	
					Gray		Silty CLAY, trace brown organics. Faint sulfur odor.	CL	4.9	
					Brown		Fine to medium SAND, trace silt.and fine gravel. Faint naphthalene-like odor.	SW	48.3	
-10		3		76%		Medium dense				
-15		4		86%		Stiff	Clayey SILT, some organics. Strong sulfur odor.	ML	88.2	
-20		5		52%	Black	Plastic	Clay. Sulfur odor.	CL	12.6	
					Gray	Dense	Fine SAND, trace silt. No odor.	SP	4.2	
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 5.5-6', 10-11' and 28.2-29', bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 19-29' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-04

PROJECT: Con Ed 138th Street

SHEET: 2 OF 2

CLIENT: Con Ed

JOB NO. : 11176431

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
-25		6		75%						
							SILT, some fine to medium sand. Faint naphthalene-like odor.	SM	17.0	
							SILT. Faint naphthalene-like odor.	ML	31.5	
					Black			SW	122	
-30							Micaceous fine to medium SAND, trace silt and fine gravel. Naphthalene odor.			
							Refusal at 29' bgs.			

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 5.5-6', 10-11' and 28.2-29', bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 19-29' bgs.

BORING NO. : MWMF-04

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-05

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232146.8 **EASTING:** 1009903

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0920	4.93	
Date	Time	GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 7.94

DATE STARTED: 3/3/11

DATE FINISHED: 3/17/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Brown	Medium dense	Concrete			
							FILL. SILT and fine to medium SAND, some fine gravel. No odor.	FILL	0.6	Moist
-5		2		68%			SILT and fine to medium SAND, some fine gravel. Faint petroleum odor.	SM	1.4	Wet
-10		3		76%			Fine to medium SAND. No odor.	SW	0.1	
					Black	Dense	Fine to coarse SAND, trace fine gravel. Moderate naphthalene-like odor.		45.8	
					Brown - Gray		SILT, some organics, trace mollusk shells. Strong sulfur odor.	ML	118.1	
-15		4		66%						
							Fine SAND, some silt. Faint sulfur odor.	SM	2.4	
-20							Bottom of boring at 20' bgs.			
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 5-5.5', 11-12' and 19.5-20' bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 3-13' bgs. 2-inch PVC sump set 13-15' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-06

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 232075.2 **EASTING:** 1009849

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0930	6.26	
		GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2		
WT.				
LENGTH		5		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.00

DATE STARTED: 3/3/11

DATE FINISHED: 3/17/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Brown	Medium dense	Concrete FILL. Silt and fine to medium sand, some fine gravel. Sewage odor 3-5 feet.	FILL	0.0	Moist
-5		2		66%	Black	Soft	Fine SAND, some silt, trace fine gravel. Undifferentiated chemical odor.	SM	24.9	Wet
					Gray		Fine SAND, some silt. No odor.		1.7	
-10		3		70%						
					Black	Medium dense	Fine to medium SAND. Sewage-like odor.	SW	3.2	
-15		4		76%						
					Brown Gray - Brown	Stiff	Silty CLAY, trace organics. Faint sulfur odor.	ML	2.2	
-20							Bottom of boring at 20' bgs.			
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 6-6.5' and 16.5-17' bgs, and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 3-13' bgs. 2-inch PVC sump set 13-15' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-07S

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231992.1 **EASTING:** 1010198

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0859	3.98	
		GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2		
WT.				
LENGTH		5		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.95

DATE STARTED: 3/10/11

DATE FINISHED: 3/16/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Brown	Medium dense	Concrete	FILL	0.0	Moist
							FILL. SILT and fine to medium SAND, trace fine gravel, bricks, cobbles and asphalt. No odor.			
							SILT and fine to medium SAND. No odor.		1.4	
-5		2		68%	Black	Soft		SM	998	Wet
							Fine SAND, trace to some silt. Strong petroleum odor.			
					Brown		Same as above. Faint petroleum odor.		13.5	
						Dense	SILT and fine to medium SAND. No odor.		5.0	
						Medium dense		SW	2.0	
-10		3		58%			Fine to medium SAND and fine GRAVEL, some silt. No odor.			
					Gray		Fine to medium SAND, trace fine gravel. No odor.		0.3	
-15							Bottom of boring at 15' bgs.			
-20										
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3.5-4', 4.5-5.5' and 14-15' bgs, and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 3.2' - 9.2' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-07D

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 1

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231986.4 **EASTING:** 1010206

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0903	3.90 btoc	
		GW	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2		
WT.				
LENGTH		5		

* POCKET PENETROMETER READING

GROUND ELEVATION: 9.01

DATE STARTED: 3/10/11

DATE FINISHED: 3/15/11

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Brown	Medium dense	Concrete	FILL	0.0	Moist
							FILL. SILT and fine to medium SAND, trace to some fine gravel. No odor.			
						Loose				
					Gray	Soft	Same as above with moderate petroleum odor.		106	Wet
-5		2		58%	Brown	Medium dense	SILT and fine SAND. Moderate petroleum odor.	SM	108	
								SW	—	
						Loose	Fine to medium SAND and trace fine gravel. Faint petroleum odor.		0.0	
-10		3		30%			Medium to coarse SAND, some fine gravel and fractured rock. No odor.			
						Medium dense	SILT and fine to medium SAND, trace fine gravel. No odor.	SM	0.0	
-15		4		63%			SILT, some fine to medium sand, trace fine gravel. No odor.		0.0	
-20							Refusal at 19.8' bgs.			
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 19-19.8' bgs and analyzed for VOCs, SVOCs and TAL metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 14.1-19.1' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-08

PROJECT/PROJECT LOCATION: Con Ed 138th Street, 295 Locust Ave. Property

SHEET: 1 **OF** 2

CLIENT: Consolidated Edison Company of New York

JOB NO. : 11176431

BORING CONTRACTOR: Zebra Environmental

NORTHING: 231942.6 **EASTING:** 1009913

GROUNDWATER:

DATE	TIME	LEVEL	TYPE
5/4/11	0942	2.80 btoc	

	CAS.	SAMPLER	CORE	TUBE
TYPE		Macrocore		
DIA.		2"		
WT.				
LENGTH		5'		

* POCKET PENETROMETER READING

GROUND ELEVATION: 8.12

DATE STARTED: 3/4/11

DATE FINISHED: 3/1811

DRILLER: Luke Caballero

GEOLOGIST: J. Boyd

REVIEWED BY: M. Gutmann

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
0		1		100%	Gray	Medium dense	Concrete			
							FILL. SILT and fine to medium SAND, some to trace fine gravel and brick. Petroleum odor 0.8 ft. through 5 ft. Naphthalene odor below 5 ft bgs.	FILL	225	Moist
-5		2		64%	Brown	Soft				Wet
							Fine to medium SAND, trace fine gravel. Strong naphthalene odor. Sheen.	SW	1047	
-10		3		88%		Medium dense	SILT and peat-like vegetation. Undifferentiated chemical odor.	ML	300	
-15		4		78%			SILT. Faint naphthalene-like odor.	Pt	77.0	
					Gray		Fine SAND. Faint naphthalene-like odor.	SP	75.2	
					Brown		Fine to medium SAND, some silt, trace fine gravel. Faint naphthalene-like odor.	SW	77.0	
-20		5		66%			Fine SAND. Very faint naphthalene-like odor.	SP	17.1	
							SILT and fine to medium SAND, trace fine gravel. Faint naphthalene-like odor.	SM	12.0	
-25										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 5.5-6 and 29.5-30' bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 2.5-12.5' bgs. 2-inch PVC sump set 12.5-14.5' bgs.

URS Corporation

TEST BORING LOG

BORING NO. : MWMF-08

PROJECT: Con Ed 138th Street

SHEET: 2 OF 2

CLIENT: Con Ed

JOB NO. : 11176431

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE BLOW COUNT	REC% / RQD%	COLOR	SOIL CONSISTENCY / ROCK HARDNESS	MATERIAL DESCRIPTION	USCS	PID	REMARKS
-25		6		62%		Dense	SILT and fine SAND, trace fine gravel sized weathered shist bedrock. Naphthalene-like odor.		73.7	
-30							Refusal at 30' bgs.			
-35										
-40										
-45										
-50										
-55										

COMMENTS: Boring advanced with a track-mounted Geoprobe 6600.

Soil samples collected from 3-3.5', 5.5-6 and 29.5-30' bgs and analyzed for VOCs, SVOCs, and TAL Metals.

2-inch diameter Schedule 40 PVC 10-slot screen set 2.5-12.5' bgs. 2-inch PVC sump set 12.5-14.5' bgs.

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

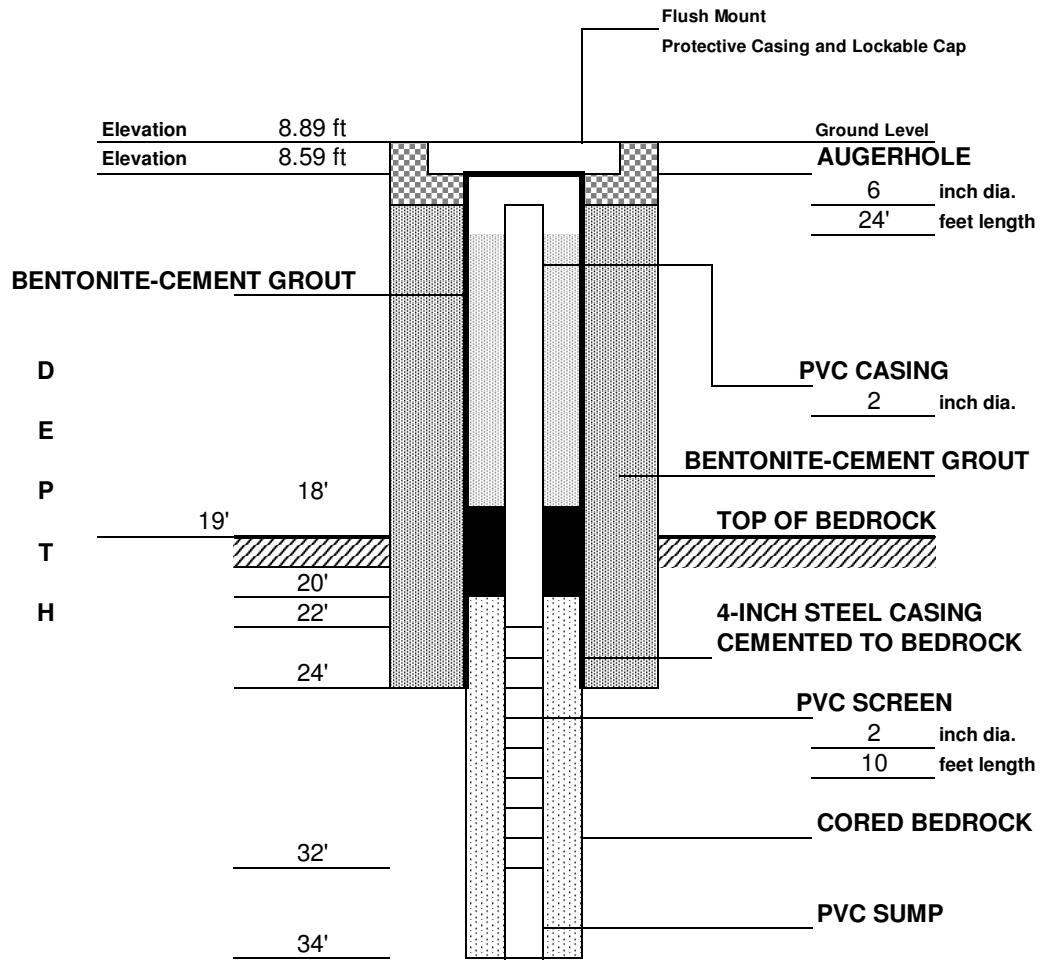
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/3/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for SBMF-06



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 22-32'	**Type:** #1 Sand **Setting:** 20-34'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 18-20'
		Type: Bentonite Cement Grout **Setting:** 1-18'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. A 5-feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-01**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

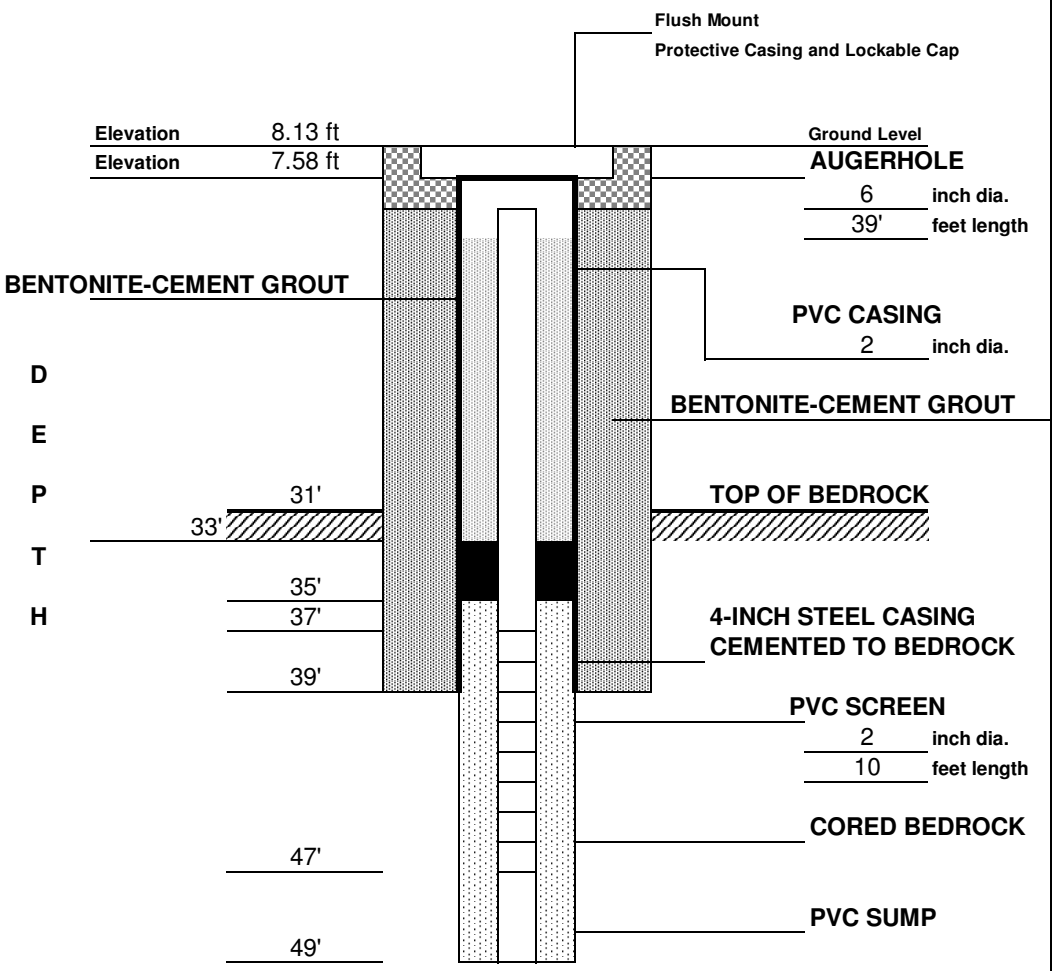
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/2/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for MWMF-04



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 37'-47'	**Type:** #1 Sand **Setting:** 35-49'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL***
		Type: Bentonite **Setting:** 33-35'
		Type: Bentonite Cement Grout **Setting:** 1-33'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. An 8 feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-02**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

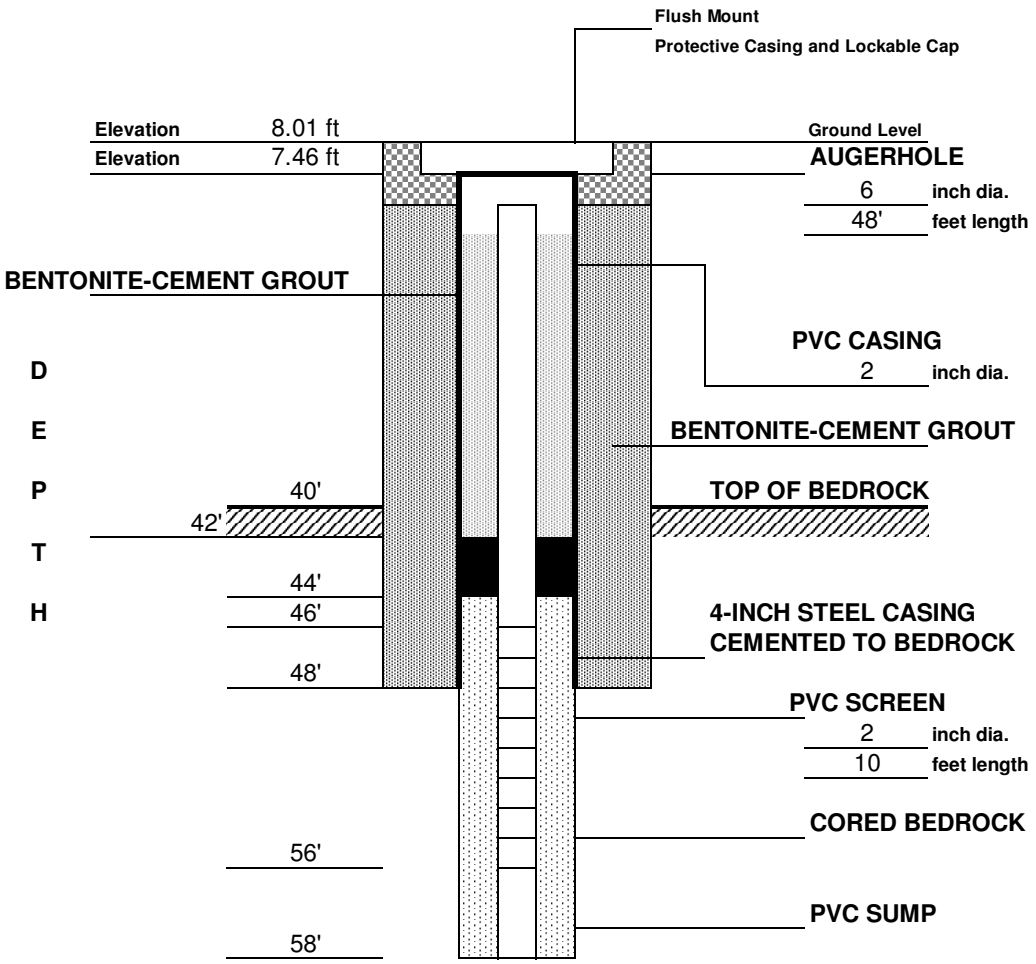
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/2/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for MWMF-05



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 46-56'	**Type:** #1 Sand **Setting:** 44-58'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 42-44'
		Type: Bentonite Cement Grout **Setting:** 1-42'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. An 8 feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-03**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

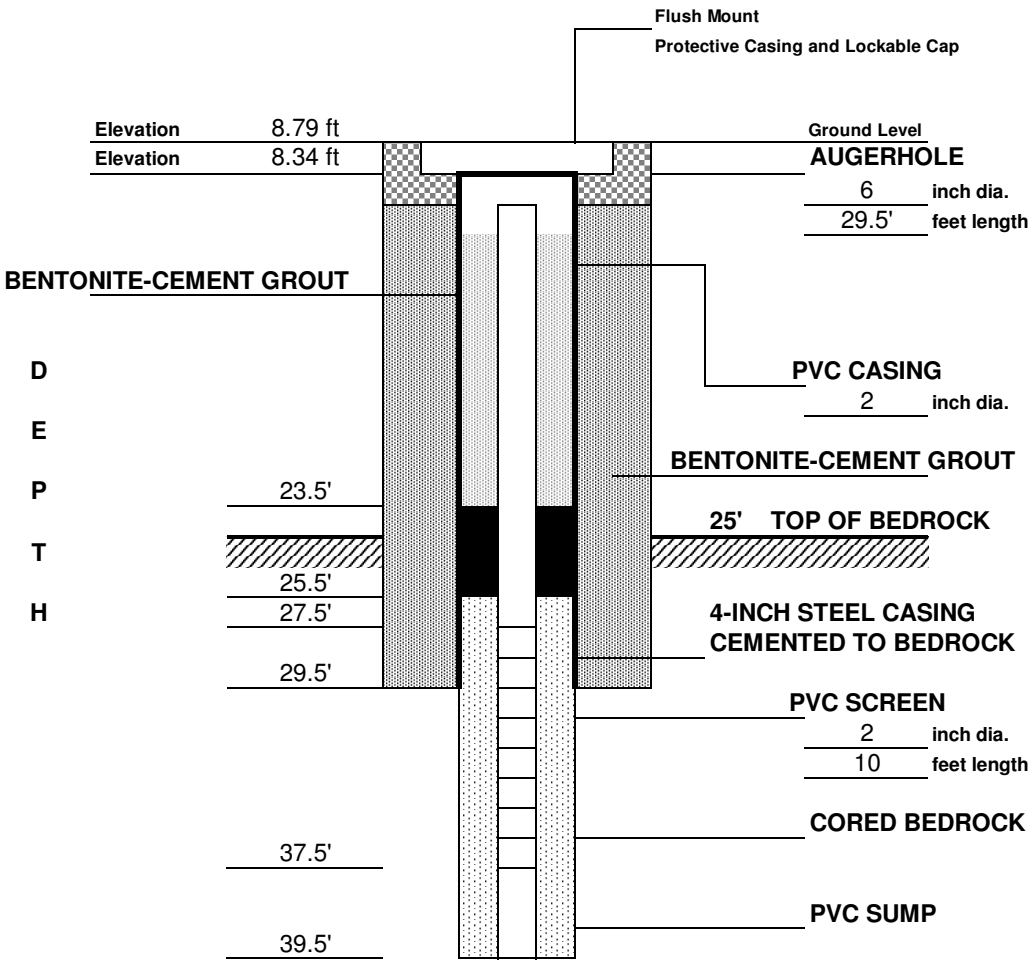
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/1/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for MWMF-07D



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 27.5'-37.5'	**Type:** #1 Sand **Setting:** 25.5'-39.5'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 23.5'-25.5'
		Type: Bentonite Cement Grout **Setting:** 1-23.5'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. A 4.5 feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-04**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Peter Eichler

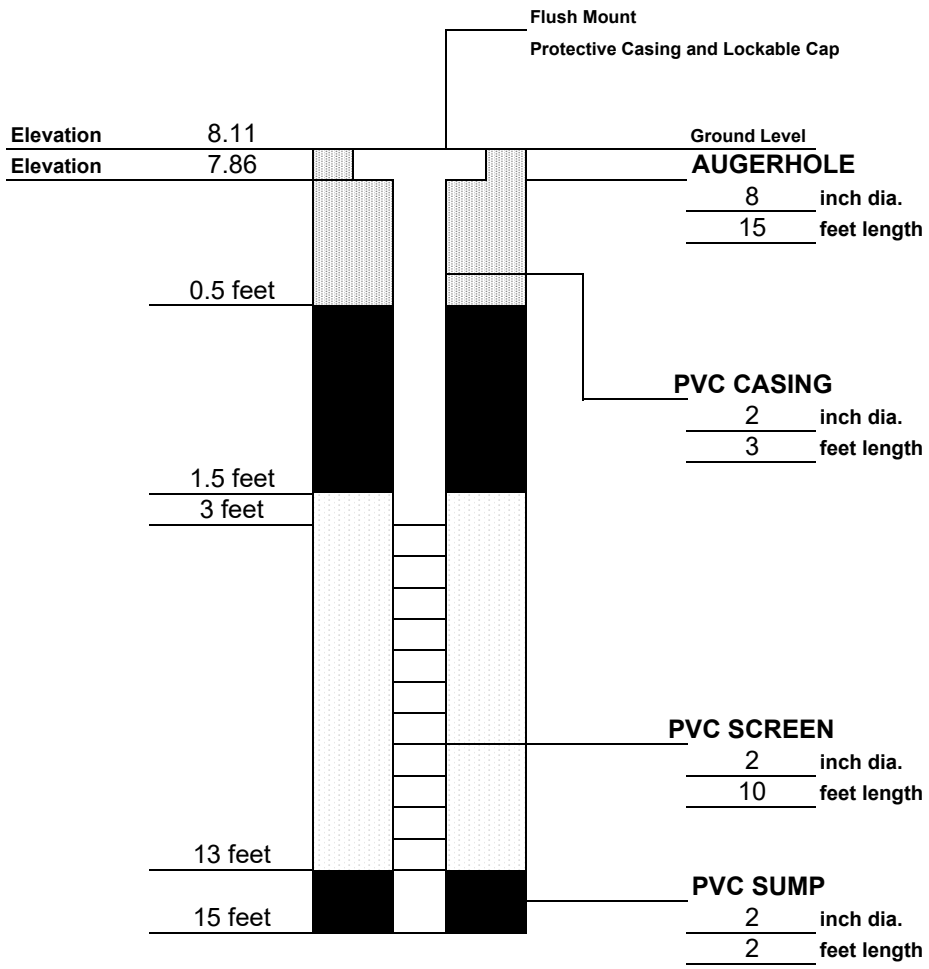
Rig Make/Model:
GeoProbe 6620

Date:
3/26/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-01**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Evan Moraitis

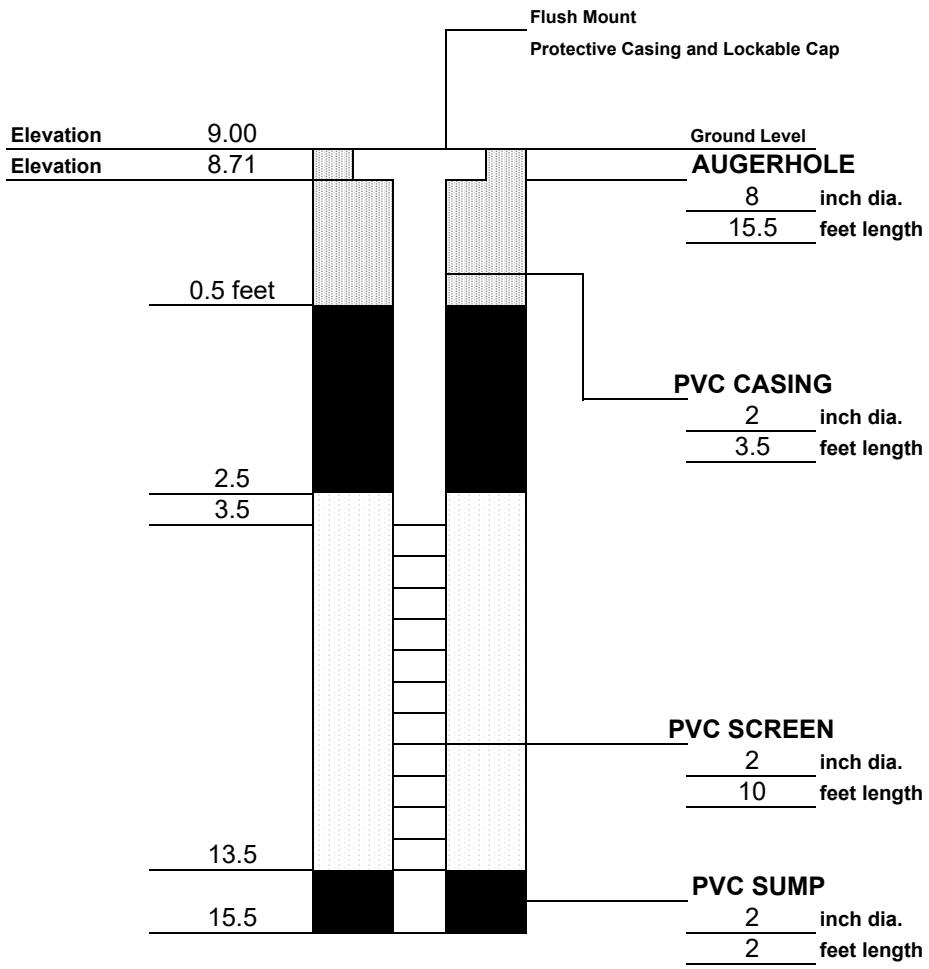
Rig Make/Model: GeoProbe 6620

Date: 4/30/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2.5' to 13.5'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2.5' and 13.5' to 15.5'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-02**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Evan Moraitis

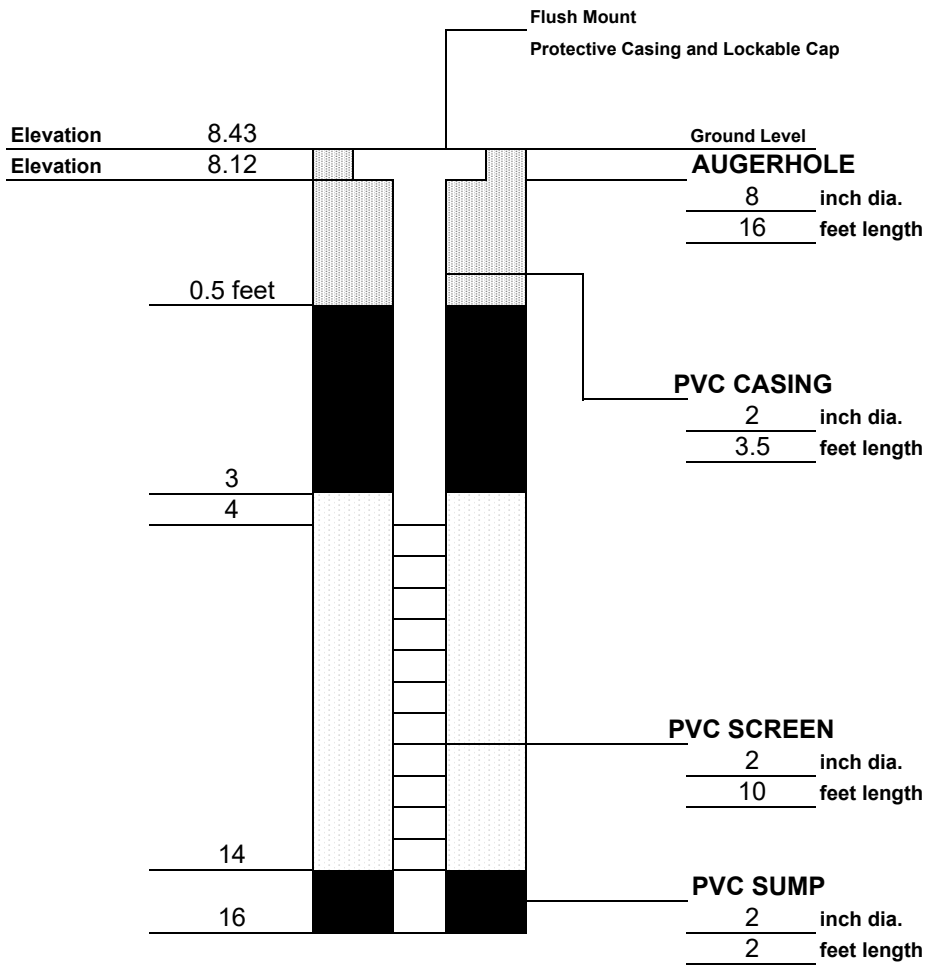
Rig Make/Model: GeoProbe 6620

Date: 4/19/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 3' to 14'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 3' and 14' to 16'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-03**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Evan Moraitis

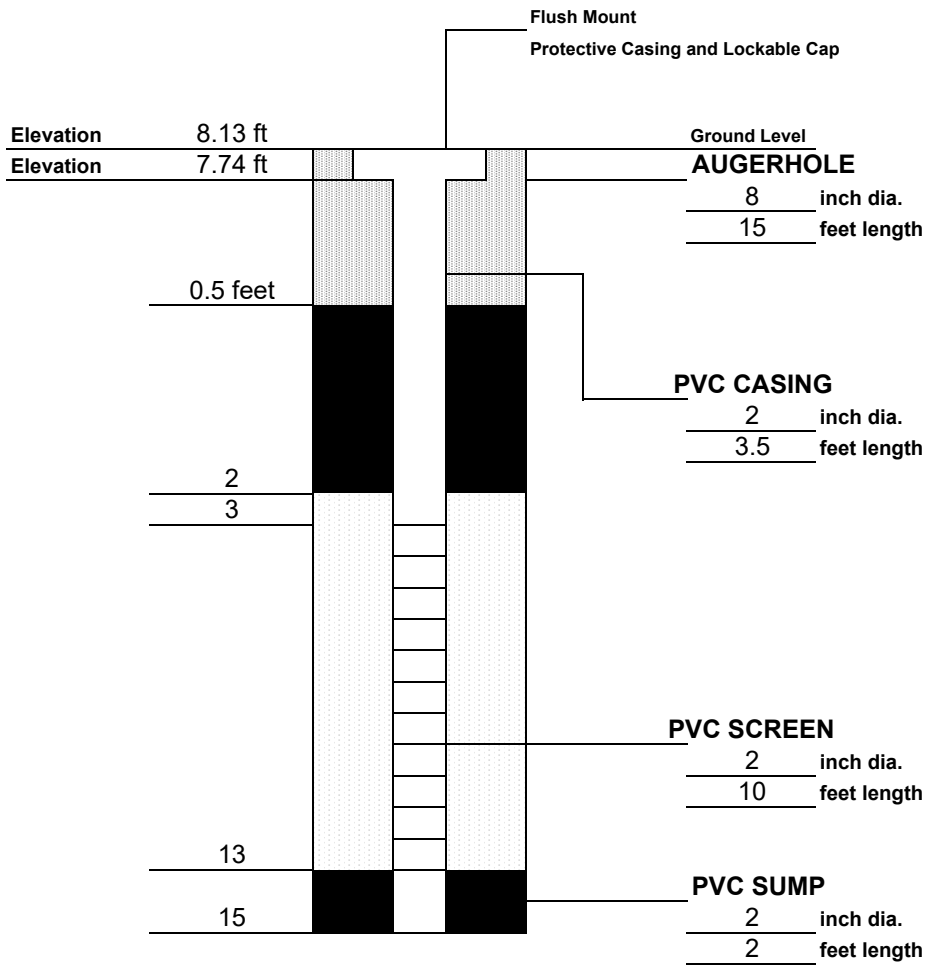
Rig Make/Model: GeoProbe 6620

Date: 4/20/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-04**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
John Diamond

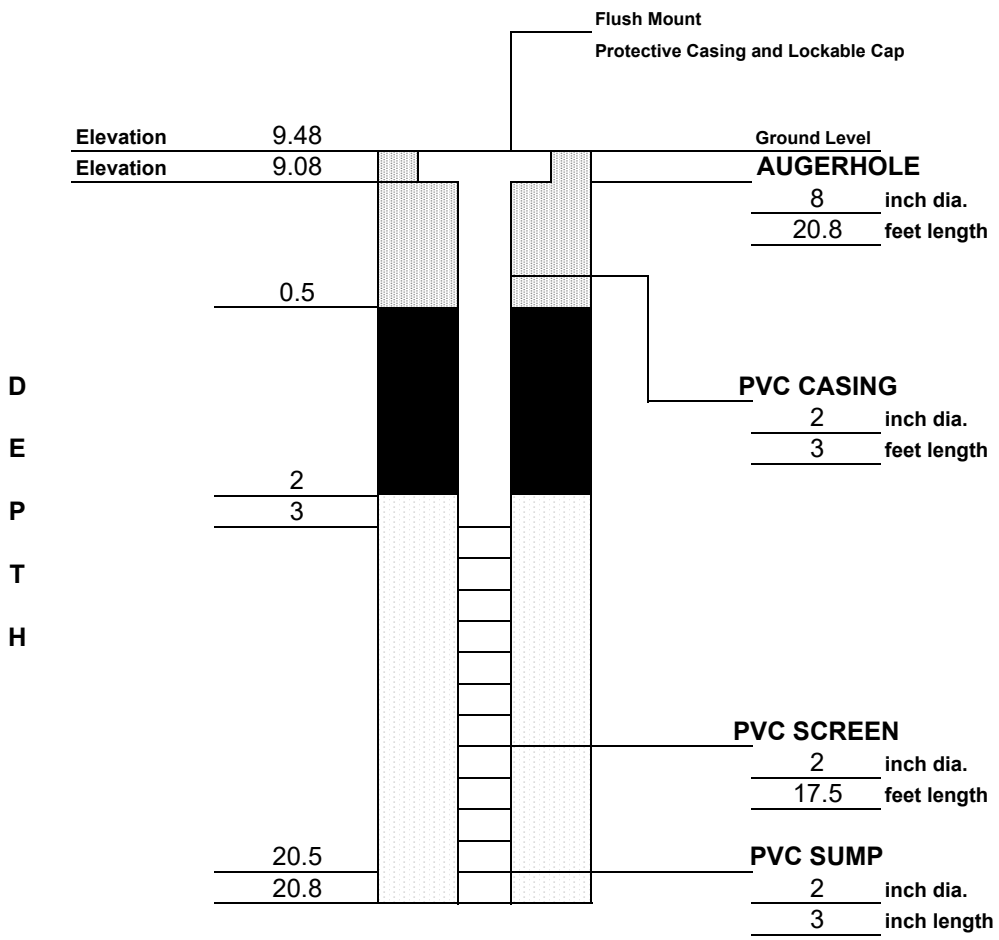
Rig Make/Model:
GeoProbe 6620

Date:
5/4/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2' to 20.8'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-05**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

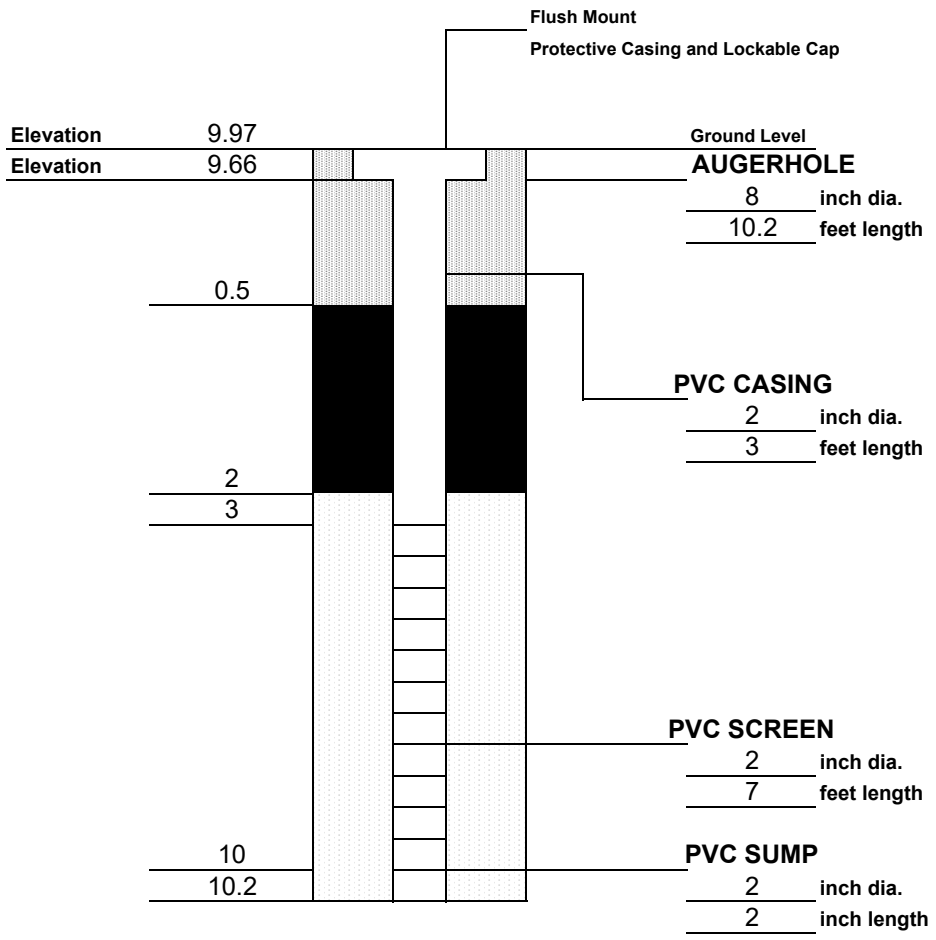
Rig Make/Model:
GeoProbe 7720

Date:
5/12/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2' to 10.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-06**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

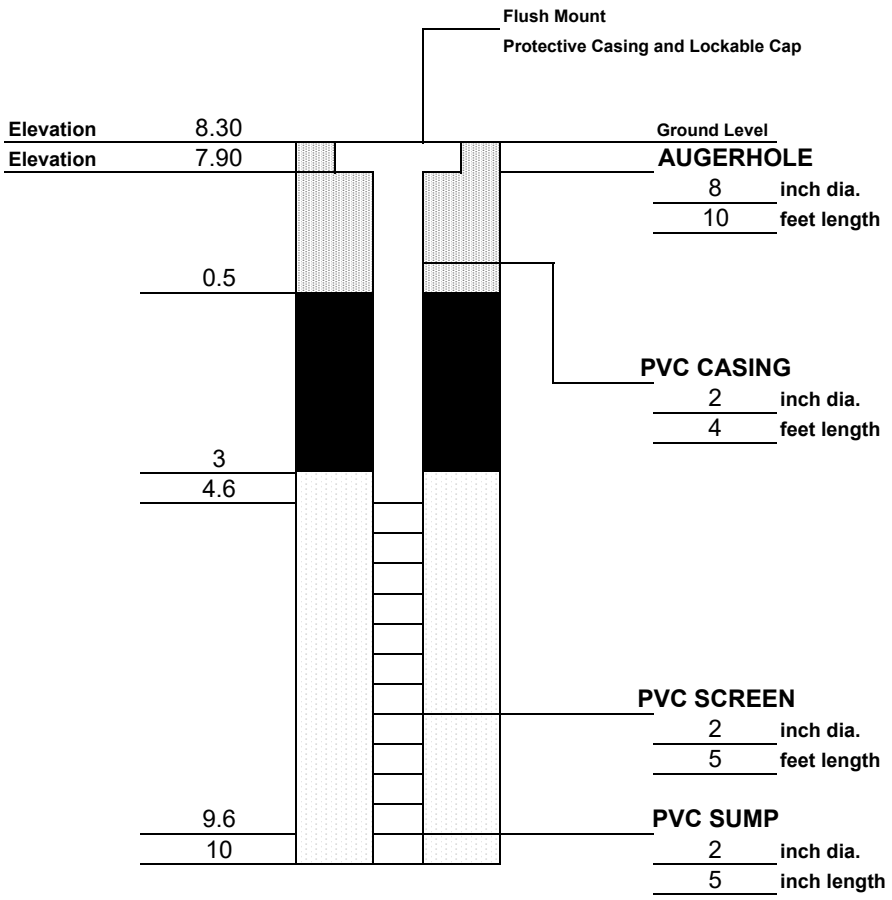
Rig Make/Model:
GeoProbe 6620

Date:
12/16/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL		*SCREEN MATERIAL*		*FILTER MATERIAL*	
Surface:	Steel grade box	**Type:**	2" PVC	**Type:** #1 Sand 3' to 10'	**Setting:**
Monitor:	2" PVC	**Slot Size:**	.010"	***SEAL MATERIAL***	
				Type: Bentonite	**Setting:** 0.5' to 3'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-07**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Lukas Reiss

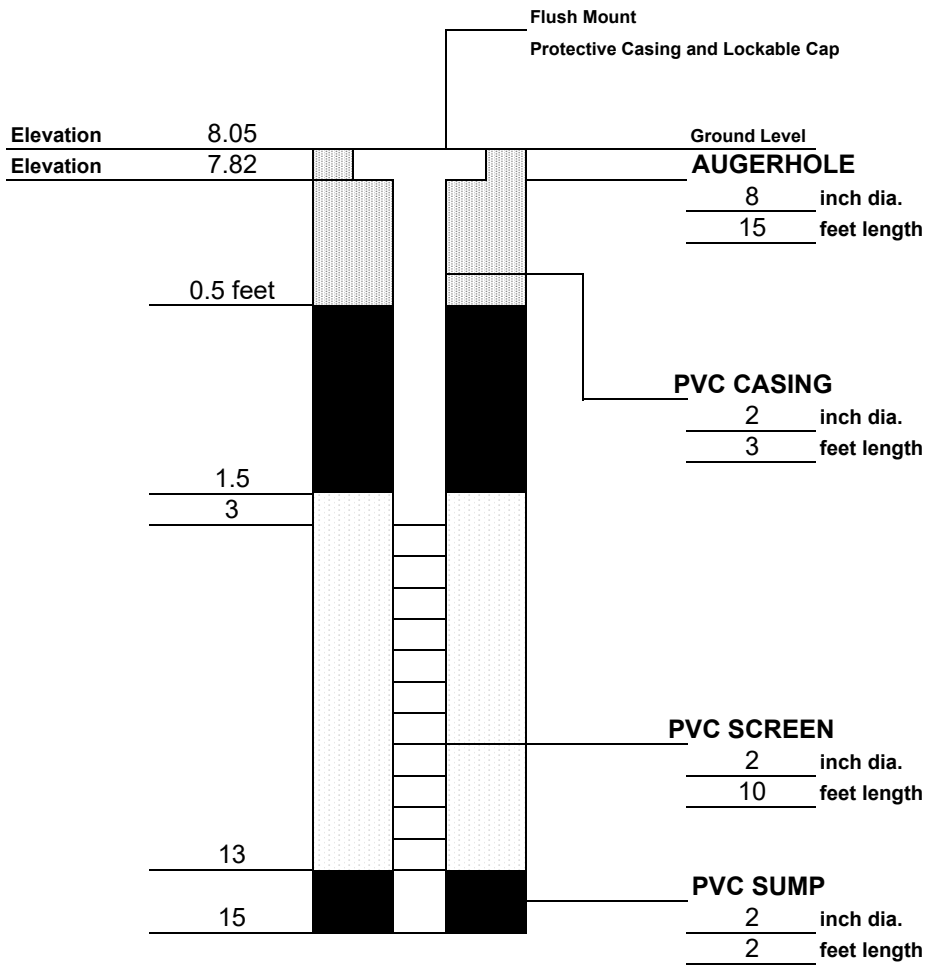
Rig Make/Model: GeoProbe 6620

Date: 1/19/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-11**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

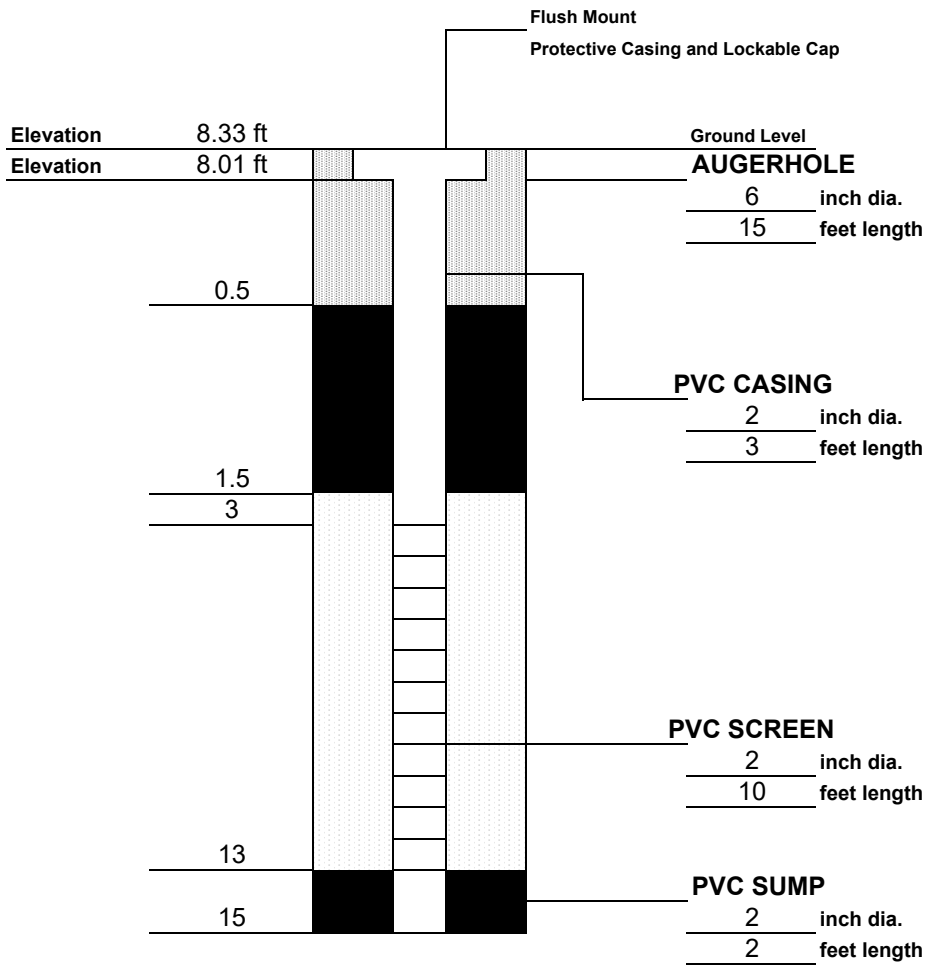
Rig Make/Model: GeoProbe 6620

Date: 3/16/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-01**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

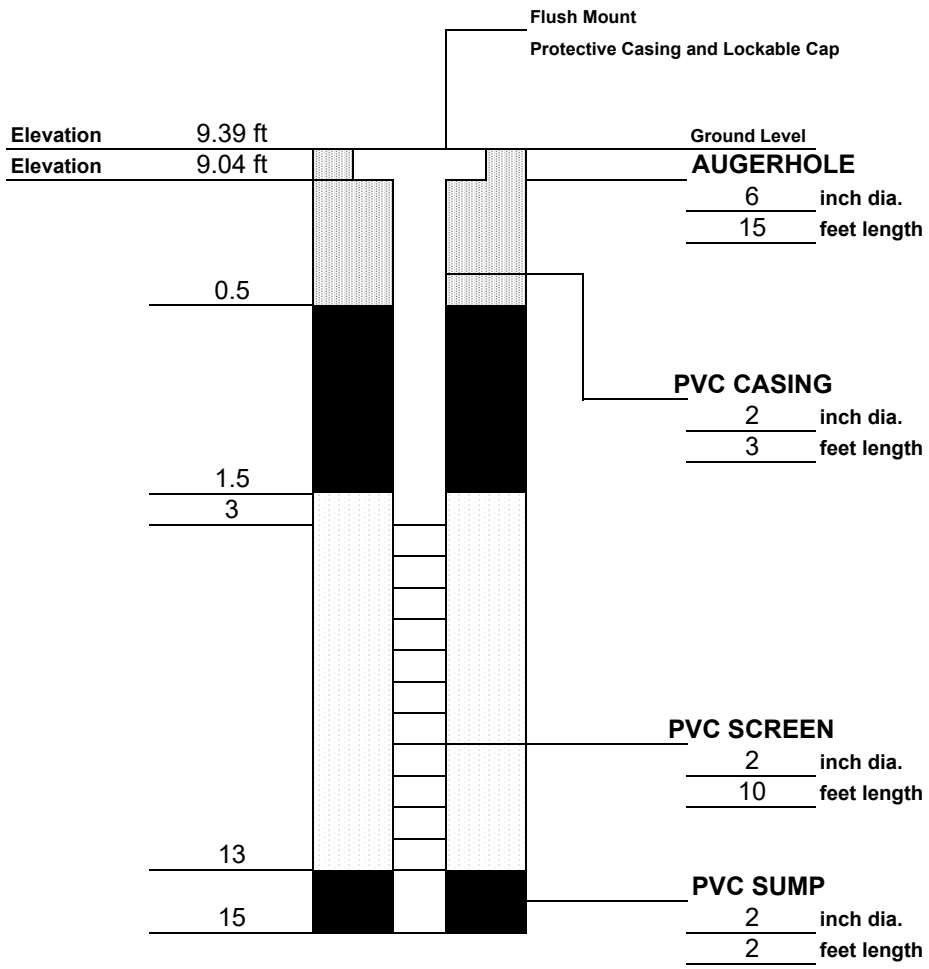
Rig Make/Model: GeoProbe 6620

Date: 3/15/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-02**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

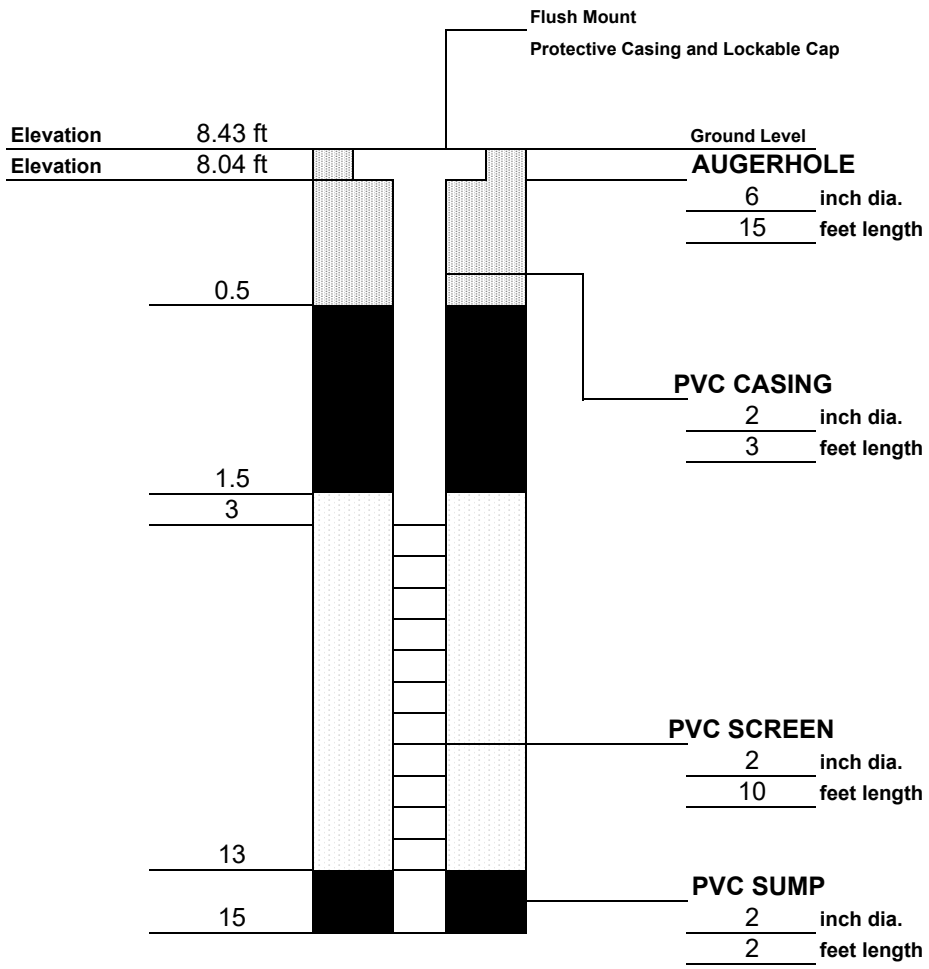
Rig Make/Model: GeoProbe 6620

Date: 3/18/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-03**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

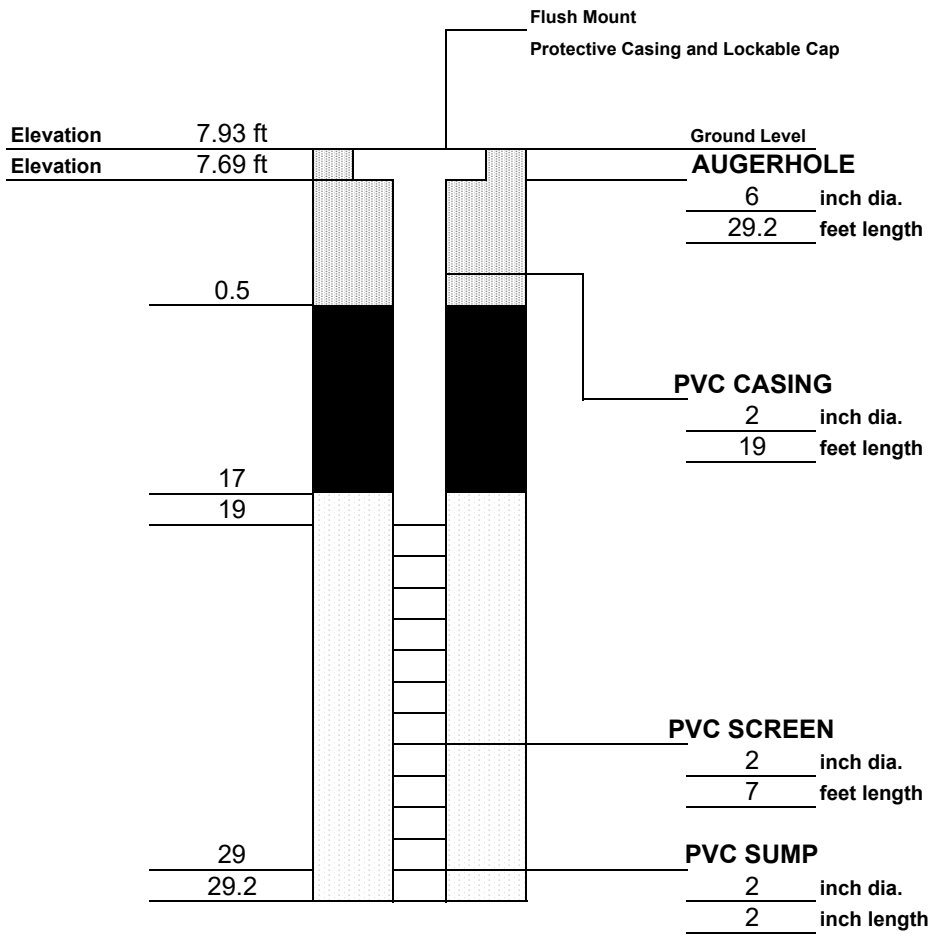
Rig Make/Model:
GeoProbe 7720

Date:
3/21/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 17' to 29.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 17'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-04**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

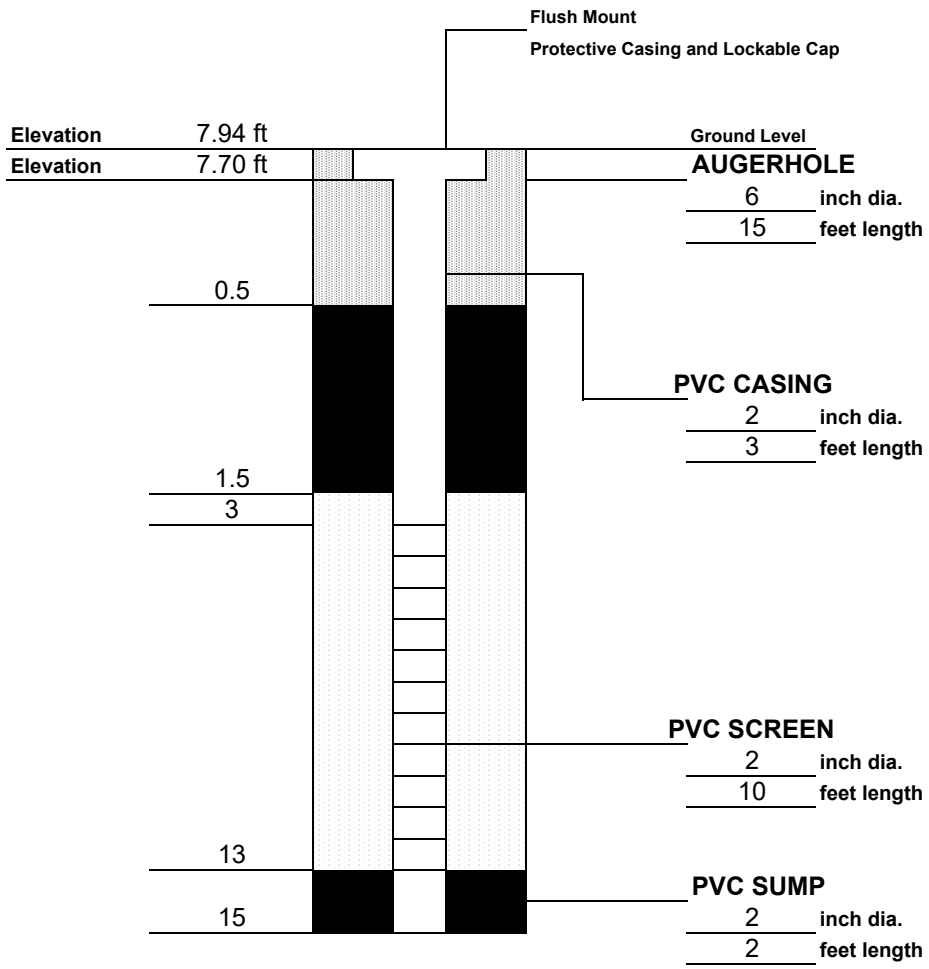
Rig Make/Model: GeoProbe 6620

Date: 3/17/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-05**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

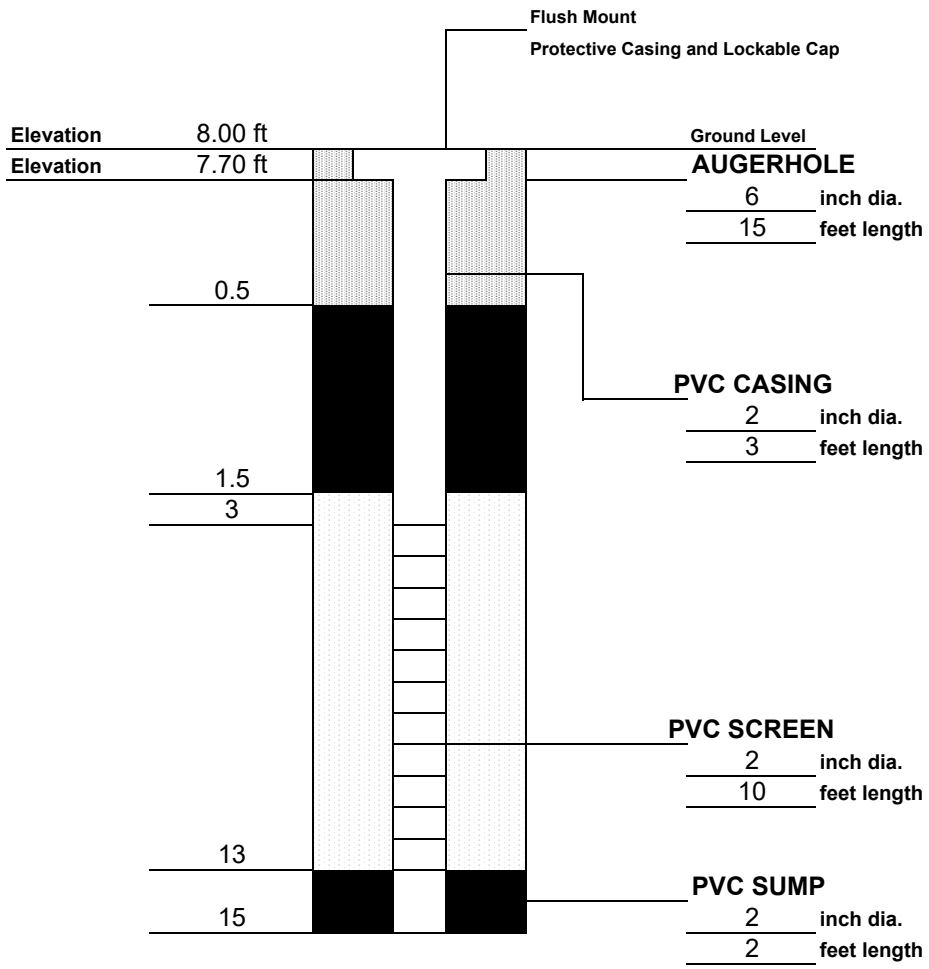
Rig Make/Model: GeoProbe 6620

Date: 3/17/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-06**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

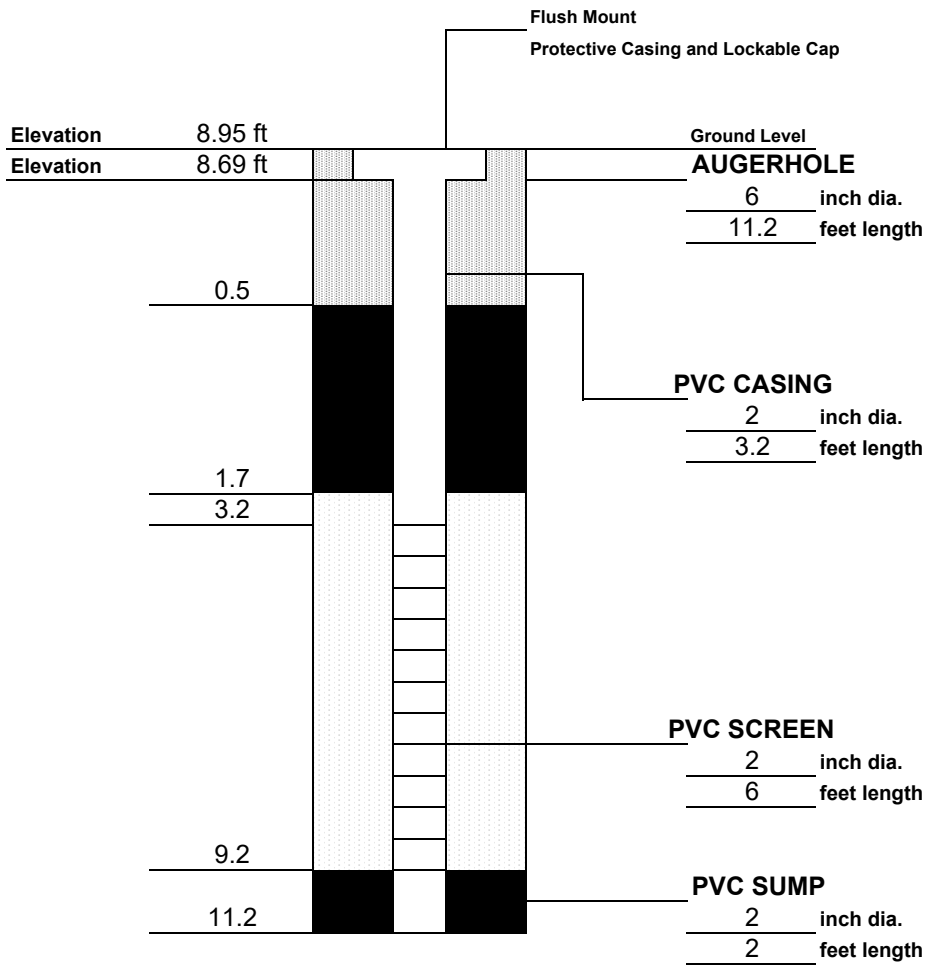
Rig Make/Model: GeoProbe 6620

Date: 3/16/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.7' to 9.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.7' and 9.2' to 11.2'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-07S**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

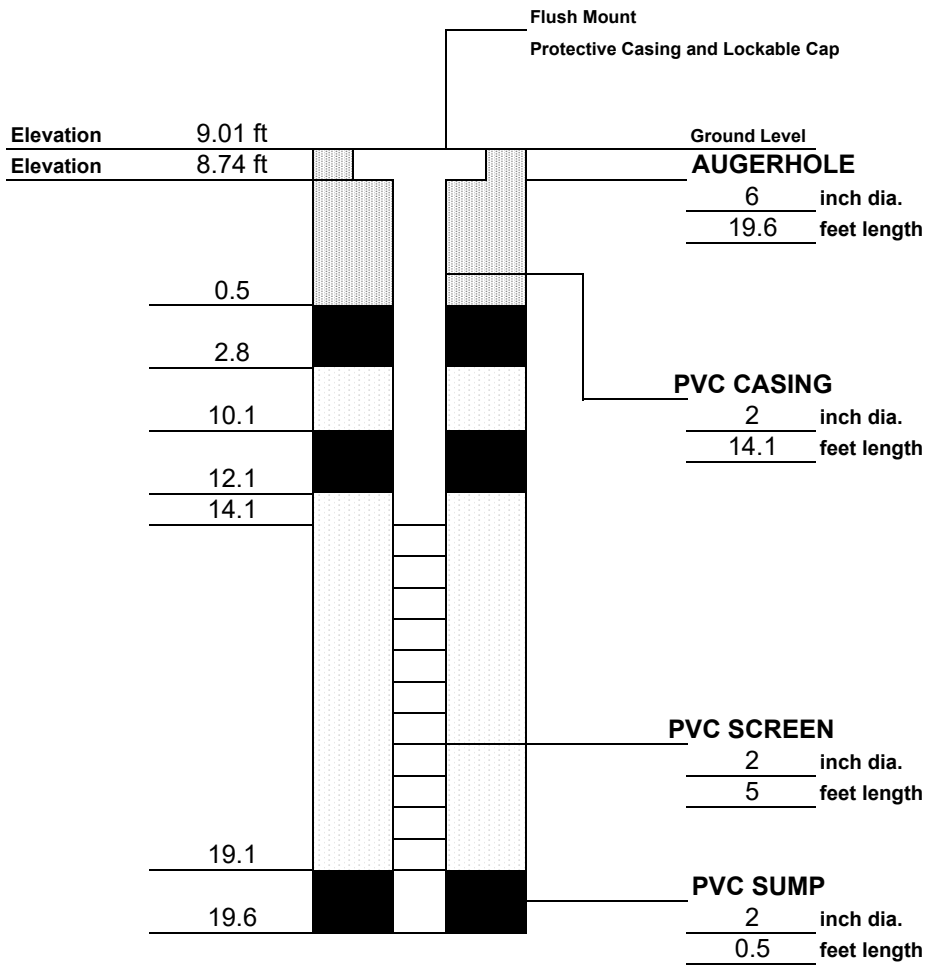
Rig Make/Model: GeoProbe 6620

Date: 3/15/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.7' to 9.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5'-2.8', 10.1'-12.1' and 19.1'-19.6'

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-07D**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

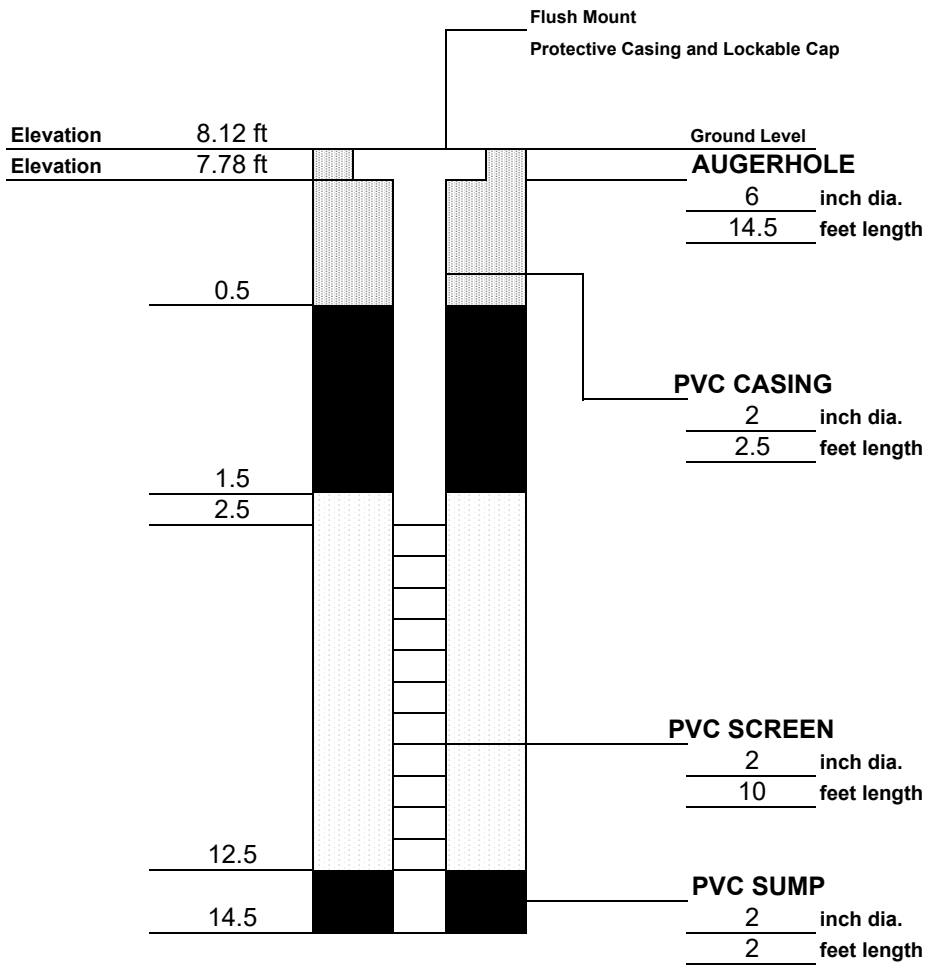
Rig Make/Model: GeoProbe 6620

Date: 3/18/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 12.5'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 12.5' to 14.5'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-08**

APPENDIX D

NYSDEC Correspondence for Block 2591/Lot 46

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9662 • **Fax:** (518) 402-9679
Website: www.dec.ny.gov

Joe Martens
Commissioner

August 22, 2011

Richard Rienzo
Project Manager
Remediation, EH&S
31-02 20th Avenue
Long Island City, NY 11105-2048

RE: East 138th Street Works Former MGP Site
Voluntary Cleanup Program Site No. V-00551
Paper Enterprises Building
Site Characterization

Dear Mr. Rienzo,

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have reviewed the data collected around and within the Paper Enterprises building portion of the East 138th Street Works Former MGP Site (E. 138th). At this time, no additional investigation is needed to characterize MGP wastes at the Paper Enterprises building as a part of ConEd's Site Characterization (SC).

The data indicates that no significant source of MGP contamination was found on the parcel. Contamination found at the Paper Enterprises property is associated with a number 4 fuel oil spill and historical fill. The number 4 fuel oil spill, Spill Number 0903483, will be addressed through the Department's Region 2 Spills Section.

The Paper Enterprises portion of the E. 138th site SC should be reported on within the E. 138th site SC report. A separate report for the Paper Enterprises portion is not needed.

If you have any questions concerning this matter, please contact me at (518) 402-9662.

Sincerely,

Randy Whitcher
Project Manager
Remedial Bureau C
Division of Environmental Remediation

Ec: G. Heitzman
R. Whitcher
C. Doroski - NYSDOH
eDocs

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9662 • **Fax:** (518) 402-9679
Website: www.dec.ny.gov

Joe Martens
Commissioner

September 20, 2011

Richard Rienzo
Project Manager
Remediation, EH&S
31-02 20th Avenue
Long Island City, NY 11105-2048

RE: East 138th Street Works Former MGP Site
Voluntary Cleanup Program Site No. V00551
Paper Enterprises Building
Site Characterization

Dear Mr. Rienzo,

The New York State Department of Environmental Conservation (Department) has reviewed the data collected around and within the Paper Enterprises building portion of the East 138th Street Works Former MGP Site (E. 138th). The data presented by Con Edison indicates that the subject property does not contain a significant quantity of wastes from the former manufactured gas plant. The Department will not require remedial action or an institutional control at this property to address MGP-related wastes. As noted in Randy Whitcher's August 22, 2011 letter, contamination found at the Paper Enterprises property appears to be associated with a number 4 fuel oil spill (DEC Spill Number 0903483) and historical fill. Actions may be necessary to properly close the open petroleum spill.

Because this parcel comprises only a portion of the larger MGP site, a Release and Covenant Not to Sue, as defined in the Voluntary Cleanup Agreement, will not be issued until the remainder of the site has been addressed. If you need further assistance with this matter, please contact me or Mr. Randy Whitcher at 518-402-9662.

Sincerely,

George W. Heitzman, P.E.
Chief, Remedial Section A
Remedial Bureau C
Division of Environmental Remediation

INTERNATIONAL YEAR OF FORESTS · 2011

ec: E. Louie, ConEd
M. Ryan
G. Heitzman
R. Whitcher

APPENDIX E

Excavation Work Plan

APPENDIX E

EXCAVATION WORK PLAN

EAST 138TH STREET WORKS FORMER MGP SITE
SITE # 203108
BRONX, NEW YORK

Prepared for:

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
31-01 20TH AVENUE – BUILDING 136
ASTORIA, NEW YORK 11105

Prepared by:

AECOM USA, Inc.
1 John James Audubon Parkway, Suite 210
Amherst, NY 14228

April 2023

E-1 NOTIFICATION

This Excavation Work Plan (EWP) applies to two of the eight parcels at the Site, as follows:

- Block 2590, Lot 51.
- Block 2598, Lot 1.

At least 15 days prior to the start of any activity that is anticipated to encounter remaining MGP-impacted materials, the site owner or their representative will notify Consolidated Edison Company of New York, Inc. (Con Edison) and the New York State Department of Environmental Conservation (NYSDEC). [Under emergency circumstances (e.g. work required to prevent loss of life or property; restoration of electrical and/or natural gas service) work may be conducted with no prior notification to the NYSDEC; the NYSDEC will be notified as soon as possible thereafter.] Table E-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B of this SMP.

Table E-1: Notifications*

NYSDEC Central Office	(518) 402-9662 derweb@dec.ny.gov
NYSDEC Region 2 Office	(718) 482-4900 r2.info@dec.ny.gov
Consolidated Edison	(877) 602-6633

*Note: Notifications are subject to change and will be updated as necessary

Notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact the engineering controls (e.g., cover system).
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern,

potential presence of grossly contaminated media, and plans for any pre-construction sampling;

- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the construction contractor's Health and Safety Plan (HASP), in electronic format, if it differs from the HASP provided in Appendix F of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required chemical testing results to meet 6 NYCRR Part 375 Table 375-6.8(b) Commercial Use.

In the event that work is performed near any existing natural gas pipelines, the following will be followed:

- The construction contractor will ensure that the identification of all active utilities and gas lines has been performed and marked out in the field, and Con Edison (and/or associated Utility Company) has been notified and has reviewed the planned intrusive work near gas lines;
- Any work to be performed near the gas pipeline will be in the presence of a Con Edison gas line representative.
- If there is a need to remove a gas pipeline as part of the work, Con Edison will need to be consulted so that an appropriate plan can be developed for that.
- The construction contractor is responsible for protecting the structural integrity of gas pipelines in and around their work areas.
- For any planned construction work that will occur within 25 feet of gas pipelines, the construction contractor will need to work with Con Edison to establish the safe protocol for working near the gas lines.

- Con Edison may require that the construction contractor place survey points on the pipe crown and monitor the pipe behavior during construction and throughout the duration of pipe exposure.

E-2 SOIL SCREENING METHODS

Visual, olfactory, and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potential MGP-impacted materials. Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the Certificate of Completion.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be re-used on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Sections E-6 and E-7 of this Appendix.

E-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters, and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and available for inspection by NYSDEC. Stockpiled material not being re-used will be scheduled for transportation to the appropriate disposal facility in a timely manner.

E-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of known utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation (NYSDOT) requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

E-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Truck transport routes will be identified and submitted to the NYSDEC for acceptance prior to use. All trucks loaded with site materials will exit the vicinity of the site using only these accepted truck routes. These appropriate routes take into account:

(a) Limiting transport through residential areas and past sensitive sites;

(b) Use of city mapped truck routes;

(c) Prohibiting off-site queuing of trucks entering the facility;

(d) Limiting total distance to major highways;

(e) Promoting safety in access to highways; and

(f) Overall safety in transport.

Trucks will minimize stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

E-6 MATERIALS DISPOSAL OFF SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility

if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include waste profiles, test results, facility acceptance letters, manifests, bills of lading, and facility receipts.

Non-hazardous historic fill and contaminated soils taken off site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

E-7 MATERIALS REUSE ON-SITE

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

E-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to excavation dewatering, decontamination waters, and groundwater monitoring well purge and development waters will be handled, transported, and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge, and development fluids will not be recharged back to the land surface or subsurface of the site but will be managed off-site at an approved facility.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream, or river) will be performed under a State Pollutant Discharge Elimination System (SPDES) permit.

E-9 COVER SYSTEM RESTORATION

After the completion of existing soil removal and any other invasive activities, the cover system will be properly restored in a manner that complies with the Remedial Action Work Plan (RAWP). The existing cover system is comprised of asphalt pavement, concrete covered sidewalks, and concrete buildings. If the type of cover system changes from that which currently exists prior to the excavation (e.g., a soil/gravel cover is replaced by concrete or asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the SMP.

E-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import to the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of five business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR Part 375 Table 375-6.8(b) for Commercial Use criteria. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight-fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust emissions.

E-11 STORMWATER POLLUTION PREVENTION

Smaller-scale soil disturbances for future utility maintenance and landscaping conducted after the completion of Site redevelopment are not anticipated to require coverage under the

general SPDES Permit or preparation of a Storm Water Pollution Prevention Plan (SWPPP). However, best management practices, such as the placement of silt fencing and hay bales at the perimeter of soil stockpiles and/or the use of polyethylene liners and covers, will be implemented during small-scale soil disturbance that have the potential to encounter MGP-impacted materials.

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and available for inspection by NYSDEC. All necessary repairs will be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor will be repaired quickly with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP will be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

E-12 EXCAVATION CONTINGENCY PLAN

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. The objectives during any emergency will be to protect human health and safety and then the environment. A qualified environmental professional will determine the best course of action for dealing with the emergency and possible follow-up requirements that may result from implementing those actions (e.g., erosion of cover due to severe weather conditions, injury to site inspection workers, discovery of an unknown source of contamination during future excavation activities that may require remediation).

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product and surrounding soils, etc., as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (Target Compound List [TCL] volatiles and semi-volatiles, Target Analyte List [TAL] metals, TCL pesticides and PCBs, and total Cyanide), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum will also be reported to the NYSDEC spills hotline. These findings will also be included in the Periodic Review Report.

E-13 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan (CAMP) will be consistent with the guidance provided in the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan obtained in Appendix 1A of DER-10. The locations of air sampling stations are based on generally prevailing wind conditions. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

E-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of odors on-site and off-site. Specific odor control methods are to be used as part of the Community Air Monitoring Plan (see Attachment 1) for excavations into known or potential MGP-impacted materials. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted, and the

source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on-site and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavation and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

E-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

E-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances.

APPENDIX F

Health and Safety Plan

APPENDIX F

HEALTH AND SAFETY PLAN AT A GLANCE

EAST 138TH STREET WORKS FORMER MGP SITE
SITE # 203108
BRONX, NEW YORK

Prepared for:

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
31-01 20TH AVENUE – BUILDING 136
ASTORIA, NEW YORK 11105

Prepared by:

AECOM USA, Inc.
One John James Audubon Parkway
Suite 210
Amherst, New York 14228

April 2023

HEALTH AND SAFETY PLAN AT A GLANCE

EAST 138TH STREET WORKS FORMER MGP SITE

		PHONE
AECOM Project Number:	60537238	
AECOM Project Manager:	Mike Gutmann	716-923-1120
AECOM Site Manager:	TBD	TBD
AECOM Site Safety Officer:	TBD	TBD
AECOM Plan Preparer:	Kevin J. McGovern, P.G., CHMM	716-923-1101
Preparation Date:	April 21, 2023	
Expiration Date:	April 21, 2024	

This Health and Safety Plan at a Glance presents the core elements of the *Location Specific Health and Safety Plan; East 138th Street Works Former MGP Site and East 137th Street Former Gas Holder Station Site* (URS, 2010). Its purpose is to provide necessary components for future Site/Task specific Health and Safety Plans.

SAFETY PLAN COMPLIANCE AGREEMENT

I have read the Health and Safety Plan for the project and I understand it, and agree to comply with all of its provisions. I understand that I could be prohibited from working on the project for violating any of the health and safety requirements specified in the Plan

Name	**Signature**	**Date**
AECOM Site Manager		
AECOM Site Safety Officer		
AECOM Site Personnel		
AECOM Site Personnel		
AECOM Site Personnel		
AECOM Site Personnel		

Subcontractors:

Company	**Signature**	**Date**

HEALTH AND SAFETY PLAN AT A GLANCE
TABLE OF CONTENTS

FIGURES

TABLES

ATTACHMENTS

HEALTH AND SAFETY PLAN SUMMARY SHEET

THIS SUMMARY SHEET IS PROVIDED AS A QUICK-REFERENCE/OVERVIEW ONLY. THE REMAINDER OF THIS SITE-SPECIFIC HEALTH AND SAFETY PLAN (HASP) IS INTEGRAL TO THE SAFE CONDUCT OF SITE OPERATIONS AND MUST BE APPLIED IN ITS ENTIRETY.

EMERGENCY INFORMATION

Ambulance:		**911**
Fire:		**911**
Police:		**911**
Hospital:	**Lincoln Hospital**	**718-579-5784**

Con Edison Project Manager:
Matthew Levinson, PE **646-385-1691**

AECOM Project Manager:
Mike Gutmann, PG **716-923-1120**

AECOM Health, Safety, and Environment Representative:
Kevin J. McGovern, PG. CHMM, STS **716-923-1101**

AECOM Regional Manager Health, Safety, and Environment:
Dale Wray, CSP, CHMM, STS **302-660-9178**

Con Edison Spill Response
National Response Center: **(800) 424-8802**

NYSDEC Project Contact: **TBD**

NYSDOH Project Contact **TBD**

HOSPITAL DIRECTIONS: Lincoln Hospital 718-579-5784

Start out going NORTHEAST on Locust Ave. toward E 138th St.
Turn LEFT onto E 138th St.
Turn LEFT onto Bruckner Blvd.
Bruckner Blvd. becomes E 135th St.
Merge onto I-87 N/Major Deegan Expy towards Albany
Take E 149th St exit, Exit 4, towards 145 St. Br.
Turn RIGHT onto E 149th St/Eugenio Maria De Hostos Blvd.
End at Lincoln Hospital

A map with the route to the hospital is shown on Figure 1.

CONSTITUENTS OF CONCERN

1. Polycyclic Aromatic Hydrocarbons (PAHs)
2. Volatile Organic Compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes (BTEX)
3. Cyanide
4. Heavy Metals

SCOPE OF WORK

Task 1: Mobilization of equipment, site reconnaissance, preparation of work areas, establish work zones, utility mark outs.
Task 2: Groundwater Sampling
Task 3: Monitoring Well Decommissioning
Task 4: Decontamination of Equipment
Task 5: Demobilization

PROJECT HAZARD ANALYSIS

Task	Chemical Hzds.	Heat/Cold Stress	Noise	Slip/Trip/ Fall	Lifting Hzds.	Mechanical Hzds.	Electrocution	Explosions
1.	Low	Low	Low	Med	Med	Low	N/A	N/A
2.	High	Med	Low	Med	Med	Low	Low	Low
3.	High	Med	High	High	Med	Med	Low	Low
4.	Low	Med	Low	Low	Low	Low	Low	Low
5.	Low	Low	Low	Med	Med	Low	N/A	N/A

High - Exposure likely more than 50% of the time
Low - Exposure likely less than 10% of the time
Med - Exposure likely 10 to 50% of the time
n/a – Exposure not anticipated

Additional information concerning project hazards and their control can be found in Table 1.

Task	Task Description	Minimum Protective Clothing/Equipment Requirements
1.	Set Up, Utility Mark-Outs	Steel-toed boots, safety glasses with attached side shields, hard hat (not "Con Edison blue" or white in color), reflective vests, and work gloves. Safety cones and/or channelized cones and poles for delineation of work areas. See Figure 2.
2.	Groundwater sampling.	Steel-toed boots, hard hat (not "Con Edison blue" or white in color), safety glasses with attached side shields, reflective vests, hearing protection and nitrile gloves for handling samples. Coated Tyvek® will be available for personnel to use in the event NAPL is encountered in the subsurface. Safety cones and/or channelized cones and poles for delineation of work areas.
3.	Monitoring Well Decommissioning	Steel-toed boots, hard hat (not "Con Edison blue" or white in color), safety glasses with attached side shields, reflective vests, hearing protection, work gloves, nitrile gloves when handling potentially contaminated materials. Coated Tyvek® will be available for personnel to use in the event NAPL is encountered in the subsurface. Safety cones and/or channelized cones and poles for delineation of work areas. Metatarsal protection when saw cutting or jack hammering.
4.	Decontamination of Equipment	Steel-toed boots, hard hat (not "Con Edison blue" or white in color), safety glasses with attached side shields, reflective vests, hearing protection, work gloves, nitrile gloves when handling potentially contaminated materials. Safety cones and/or channelized cones and poles for delineation of work areas. Metatarsal protection when pressure washing.
5.	Demobilization	Steel-toed boots, hard hat (See above.), safety glasses with attached side shields, reflective vests, and work gloves. Safety cones and/or channelized cones and poles for delineation of work areas.

ENGINEERING CONTROLS TO BE USED (as applicable)

- Barricades for delineation of work areas (exclusion zones)
- Water spray for dust suppression
- Natural wind forces to reduce exposure to airborne contaminants (stay upwind of drilling activities)
- Light-colored PPE to reduce solar load for heat stress control

INSTRUMENTATION THAT MAY BE USED

__ Organic Vapor Monitor (OVM), PID
__ Photovac Microtip PID w/10.6 eV lamp
_x_ MiniRAE PID w/ 10.6 eV lamp
_x_ Combustible Gas/O_2 Indicator/ H_2S (during drilling)
__ Foxboro Organic Vapor Analyzer (OVA) Flame Ionization Detector (FID)
_x_ Miniram Real-time Dust Monitor
_x_ Other - Cyanide monitor
_x_ Dräger Kit – or equivalent (benzene)
_x_ Noise Meter

PERSONAL EXPOSURE SAMPLING

___ Will be conducted
__x__ Will be conducted if PID readings require the use of respiratory protection as described in the Action Level Table (page 4)
____ Is not anticipated

HAZ-COM MATERIALS INVENTORY

Alconox (decontamination)

Citrisolve (decontamination) – manufactured by The Organic Dyestuffs Corp.

Isobutylene (calibration gas)

Nitric/Hydrochloric Acid (sample preservative)

Fuel (equipment fuel – diesel or gasoline)

ACTION LEVELS (for Photoionization Detector)

Analyzer Reading (above background)	Location	Duration	Action	Personal Protective Equipment
<(5) ppm	Point of Operations/ Release Source point	-----	Continued periodic monitoring.	Minimum site ensemble of steel-toed boots, safety glasses with attached side shields, hard hat (not "Con Edison blue" or white in color), reflective vests, and work gloves. Nitrile Outer Gloves, and Nitrile Inner gloves as necessary based upon contamination encountered. Coated Tyvek® will be available for personnel to use in the event NAPL is encountered in the subsurface.

Analyzer Reading (above background)	Location	Duration	Action	Personal Protective Equipment
1 – 5 ppm (1st Action Level)	OBZ	> 1 minute	Continuous monitoring and screen for benzene using Dräger or comparable real-time monitoring instrument	Minimum Site Ensemble, Nitrile Outer Gloves, and Nitrile Inner gloves, full-face APR with combo organic P-100 cartridge if benzene is detected above 1 ppm. Coated Tyvek® will be available for personnel to use in the event NAPL is encountered in the subsurface.
5-15 ppm (2nd Action Level)	Point of Operations/Release Source point	> 1 minute	Monitor OBZ to determine whether readings are sustained or intermittent. If intermittent then don protective clothing; establish work zones. If sustained, initiate PPE requirements for 3rd action level.	Minimum Site Ensemble, PLUS: Chemical-resistant boot covers, Nitrile Outer Gloves, and Nitrile Inner gloves. Assess the potential cause of the increase in PID readings (source). If NAPL is encountered, don polycoated Tyvek®.
15-50 ppm (3rd Action Level)	OBZ	> 1 minute	Stop work and provide respiratory protection; establish decon areas. Contact the RHSEM to initiate personal exposure monitoring.	Add full-face respirators with combination organic vapor cartridges P-100. Don polycoated Tyvek®. Notify the RHSEM of the need for respirators.

Analyzer Reading (above background)	Location	Duration	Action	Personal Protective Equipment
>(50)ppm (4th Action Level)	OBZ	>1 minute	Stop work; move upwind while vapors dissipate. If elevated levels remain, cover boring and cuttings, evacuate upwind, and notify RHSEM and PM.	As specified by RHSEM

* Substitute poly-coated Tyvek® if there is potential for contact with liquids (groundwater, mud, etc.).

OBZ = Operator's Breathing Zone ppm = parts per million

ACTION LEVELS (for the Combustible Gas Indicator)

LEL Reading	Location	Action
<10% LEL	Point of Operations/General Work Area	Continue site operations and continue periodic monitoring
10-20% LEL	Point of Operations/General Work Area	Continue site operations and perform continuous monitoring
>20% LEL	Point of Operations/General Work Area	Shutdown operations, evaluate source, ventilate work area

LEL = Lower Explosive Limit

ACTION LEVELS (for Cyanide Monitor)

Monitor Reading	Location	Action
>5ppm over 15 minute period. Instrument Alarm to be set at 5 ppm.	OBZ/General Work Area	Discontinue work and evacuate that area, contact RHSE Manager to assess conditions

ACTION LEVELS (for H_2S)

Monitor Reading	Location	Action
Instrument Alarm (Alarm to be set at 4.5 ppm)	OBZ/Work Area/Drilling Zone	Stop work, evacuate area, contact health and safety

ACTION LEVELS (for Particulates)

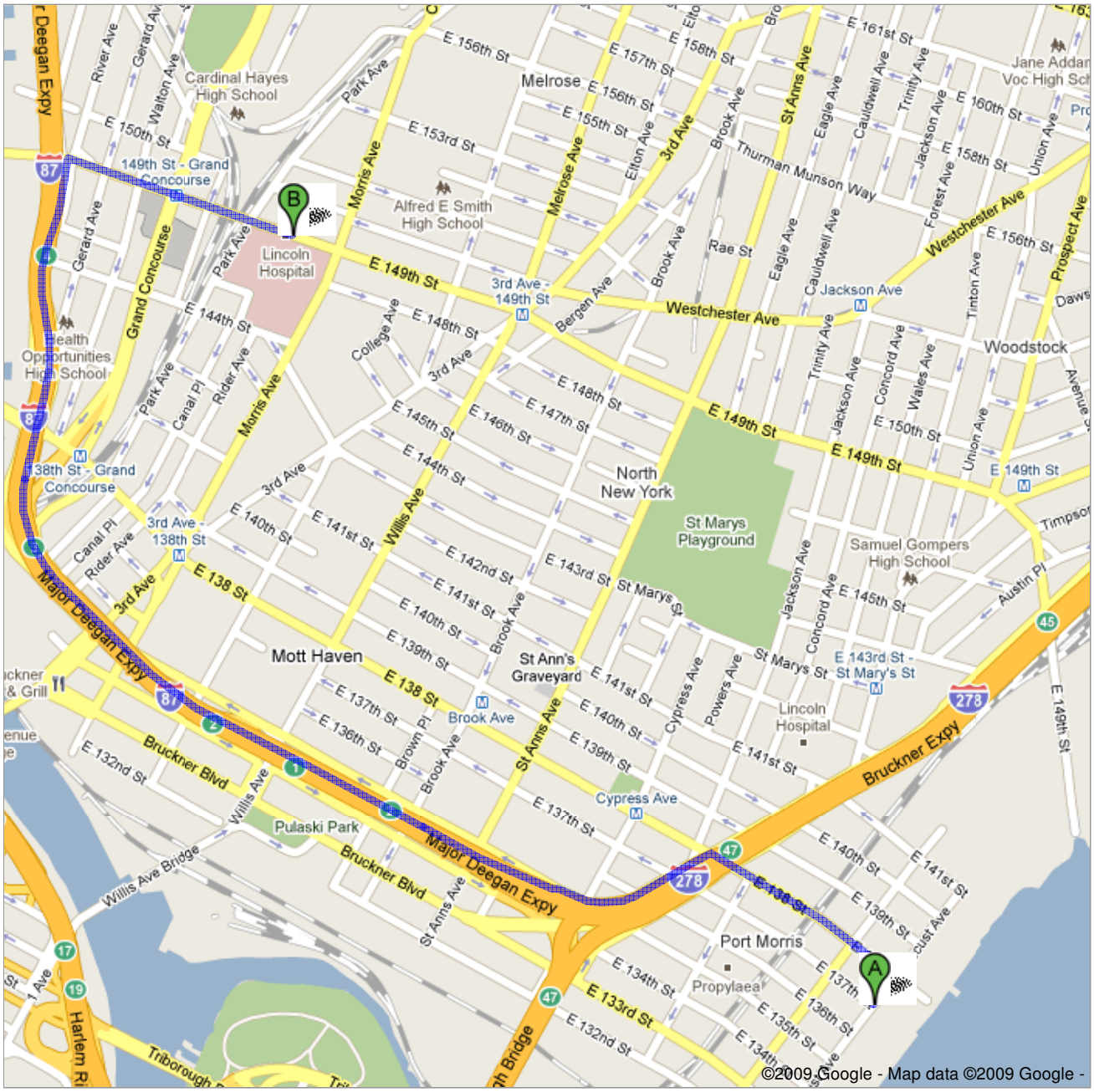
Monitor Reading	Location	Action
100 µg/m^3 above background	OBZ/Downwind Location	Employ dust suppression techniques.
150 µg/m^3 above background	OBZ/Downwind Location	Shutdown operations, re-evaluate activities and dust suppression techniques.

µg/m^3 = micrograms per cubic meter

FIGURE 1

Google maps

Directions to 234 E 149th St, Bronx, NY 10451
2.5 mi – about **5 mins**
ROUTE TO HOSPITAL MAP



E 137th St & Locust Ave, Bronx, NY 10454

	1. Head **northeast** on **Locust Ave** toward **E 138 St**	go 282 ft total 282 ft
	2. Turn **left** at **E 138 St** About 1 min	go 0.3 mi total 0.4 mi
	3. Turn **left** at **Bruckner Blvd** About 1 min	go 0.2 mi total 0.6 mi
	4. Merge onto **I-87 N** via the ramp on the **left** to **Albany** About 2 mins	go 1.4 mi total 2.0 mi
	5. Take exit **4** for **149 St E** toward **145 St Bridge**	go 0.1 mi total 2.1 mi
	6. Turn **right** at **E 149th St** Destination will be on the right About 1 min	go 0.3 mi total 2.5 mi

234 E 149th St, Bronx, NY 10451

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Figure 2
Utility Clearance Process During Intrusive Activities
E H & S – Remediation Group

10/08/03
Rev. 1

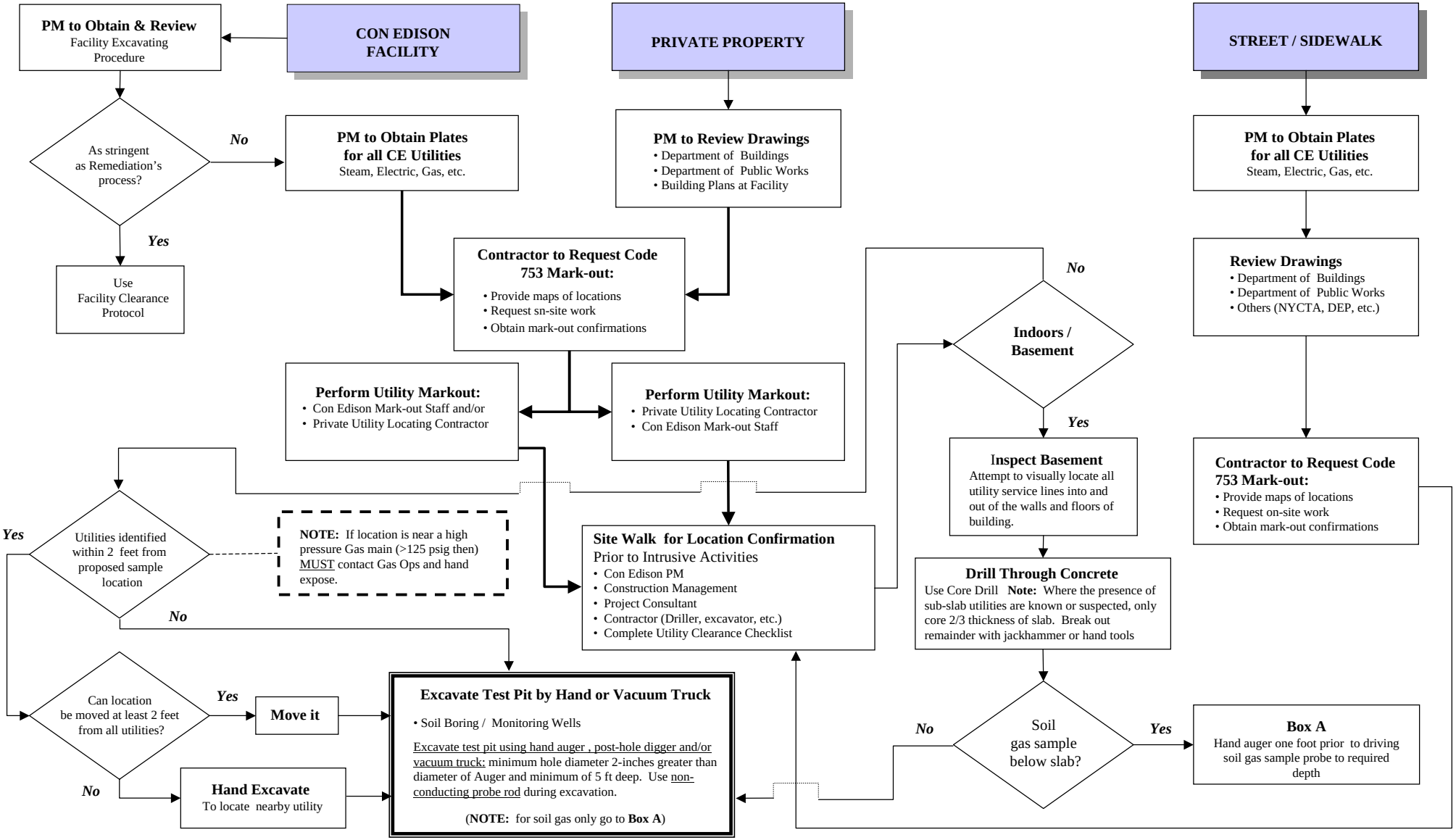


TABLE 1

JOB HAZARD ANALYSES

AECOM USA, Inc. **Con Edison - East** **138th Street Works** **Former MGP Site**	**DATE** **8/9/17**	☒ **NEW** ☐ **REVISED**	**PAGE 1 of 5**
WORK ACTIVITY (Description): **Mobilization of equipment, site reconnaissance, preparation of work areas, establish work zones, utility mark outs**			
DEVELOPMENT TEAM	POSITION/TITLE	REVIEWED BY:	POSITION/TITLE
Mike Gutmann	Project Manager	Kevin J. McGovern	HSE Representative
		Peter Gregory, CSP, MPH, STS	RHSEM
	Site Geologist (SSO)	TBD	SSO
MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)			
☒ REFLECTIVE VEST ☒ HARD HAT ☒ SAFETY GLASSES ☒ PPE CLOTHING Level D with long pants or as required by changing conditions as determined by SSO	☒ SAFETY SHOES Steel-toe ☐ HEARING PROTECTION Metatarsal protection for saw cutting, jack hammering, and pressure washing	☐ AIR PURIFYING RESPIRATOR required as specified in SSHP Addendum and determined by SSO	☒ GLOVES nitrile/leather as required by task-specific critical actions of JSA ☒ OTHER All PPE must be worn as specified in task-specific critical actions of JSA
JOB STEPS[1]	**POTENTIAL HAZARDS[2]**	**CRITICAL ACTIONS TO MITIGATE HAZARDS[3]**	
Mobilization, Equipment Lay Down, Boring/Well Markouts and Utility Clearance	Vehicular traffic	Reflective vests required	
		Use cones or other barricades as necessary	
		Be aware of traffic and site traffic patterns. Try and place borings away from heavy traffic routes.	
	Underground Utilities	Contact Dig-Safe	
		Mark utility locations in the field prior to drilling	
		Coordinate with Con Edison personnel and obtain approval for drilling locations	
	Adjacent Site Activities	Keep aware of any adjacent activities and traffic	
	Spray Paint	Keep can pointed away from face	
		Do not use damaged cans.	
		Wear gloves	
		Wear appropriate PPE (safety glasses/goggles) to prevent flying debris from causing eye or other injuries	

TABLE 1 (CONT.)

JOB HAZARD ANALYSES

AECOM USA, Inc. Con Edison - East 138th Street Works Former MGP Site	**DATE 8/9/17**	☒ **NEW** ☐ **REVISED**	**PAGE 2 of 5**
WORK ACTIVITY (Description): **Groundwater Sampling**			
DEVELOPMENT TEAM	POSITION/TITLE	REVIEWED BY:	POSITION/TITLE
Mike Gutmann	Project Manager	Kevin J. McGovern	HSE Representative
		Peter Gregory, CSP, MPH, STS	RHSEM
TBD	Site Geologist (SSO)	TBD	SSO
MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)			
☒ REFLECTIVE VEST ☒ HARD HAT ☒ SAFETY GLASSES ☒ PPE CLOTHING Level D with long pants or as required by changing conditions as determined by SSO	☒ SAFETY SHOES Steel-toe ☒ HEARING PROTECTION Metatarsal protection for saw cutting, jack hammering, and pressure washing	☒ AIR PURIFYING RESPIRATOR required as specified in SSHP Addendum and determined by SSO	☒ GLOVES nitrile/leather as required by task-specific critical actions of JSA ☒ OTHER All PPE must be worn as specified in task-specific critical actions of JSA
JOB STEPS[1]	**POTENTIAL HAZARDS[2]**	**CRITICAL ACTIONS TO MITIGATE HAZARDS[3]**	
Groundwater Sampling	Vehicular traffic	Reflective vests required	
		Use cones, caution tape, or other barricades as necessary	
		Be aware of traffic and site traffic patterns.	
	Chemical exposure to site contaminants (PAHs, PCBs, VOCs, CN, and H2S) (dermal and inhalation)	Use appropriate and calibrated monitoring equipment including: PID, H2S monitor, particulate monitors, O2 sensors, LEL	
		Wear nitrile gloves (inner and outer), Tyvek and other PPE as necessary.	
		Adhere to action limits as specified in HASP	
	Hot/Cold Weather Exposure	Wear appropriate clothing	
		Take frequent warming breaks	
		Drink cool/hot liquids	
	Potential Electrical Hazards	If using extension cords and powered sampling equipment, check cords and equipment before use.	
	Injury during lifting	Lift with knees	
		Ask for assistance with heavy objects	
		Keep back straight and do not twist	
	Manage contaminated purge water and materials	Keep generation of excess contaminated purge water and materials to a minimum and manage according to work plan.	

TABLE 1 (CONT.)

JOB HAZARD ANALYSES

AECOM USA, Inc. **Con Edison - East** **138th Street Works** **Former MGP Site**	**DATE** **8/9/17**	☒ **NEW** ☐ **REVISED**	**PAGE 3 of 5**
WORK ACTIVITY (Description): **Well Decommissioning**			
DEVELOPMENT TEAM	POSITION/TITLE	REVIEWED BY:	POSITION/TITLE
Mike Gutmann	Project Manager	Kevin J. McGovern	HSE Representative
		Peter Gregory, CSP, MPH, STS	RHSEM
	Site Geologist (SSO)	TBD	SSO
MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)			
☒ REFLECTIVE VEST ☒ HARD HAT ☒ SAFETY GLASSES ☒ PPE CLOTHING Level D with long pants or as required by changing conditions as determined by SSO	☒ SAFETY SHOES Steel-toe ☒ HEARING PROTECTION Metatarsal protection for saw cutting, jack hammering, and pressure washing	☒ AIR PURIFYING RESPIRATOR required as specified in SSHP Addendum and determined by SSO	☒ GLOVES nitrile/leather as required by task-specific critical actions of JSA ☒ OTHER All PPE must be worn as specified in task-specific critical actions of JSA

JOB STEPS[1]	**POTENTIAL HAZARDS[2]**	**CRITICAL ACTIONS TO MITIGATE HAZARDS[3]**
Drilling and Monitoring Well Decommissioning (may include sonic, air rotary, hollow stem auger, and/or direct push drilling techniques)	Vehicular traffic	Reflective vests required
		Use cones, caution tape, or other barricades as necessary
		Wear appropriate PPE, monitor particulates with appropriate and calibrated particulate monitors
	Particulates (airborne dust) and flying debris	Adhere to action limits as specified in the HASP. Implement dust suppression measures.
	Potential explosive/flammable or ignitable conditions	Use appropriate and calibrated monitoring equipment including: PID, H2S monitor, particulate monitors, O2 sensors, LEL
	Chemical exposure to site contaminants (PAHs, VOCs, CN, and H2S) (dermal and inhalation)	Wear nitrile gloves and other PPE as necessary.
		Adhere to action limits as specified in HASP
	Noise (>85 dB)	Hearing protection required.
	Heavy Equipment	Avoid blind spots designated by operator
		Check back-up alarms
		Reflective vests required.
		Wear appropriate PPE (hard hat safety glasses, steel-toed boots)
	Hot/ Cold Weather Exposure	Wear appropriate clothing
		Take frequent breaks
		Drink cool/hot liquids

TABLE 1 (CONT.)

JOB HAZARD ANALYSES

AECOM USA, Inc. Con Edison - East 138th Street Works Former MGP Site	DATE 8/9/17	☒ NEW ☐ REVISED	PAGE 4 of 5
WORK ACTIVITY (Description): **Decontamination of Equipment**			
DEVELOPMENT TEAM	POSITION/TITLE	**REVIEWED BY:**	**POSITION/TITLE**
Mike Gutmann	Project Manager	Kevin J. McGovern	HSE Representative
		Peter Gregory, CSP, MPH, STS	RHSEM
	Site Geologist (SSO)	TBD	SSO
MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)			
☒ REFLECTIVE VEST ☒ HARD HAT ☒ SAFETY GLASSES ☒ PPE CLOTHING Hooded chemical-resistant clothing (overalls and long-sleeved jacket; coveralls; one or two-piece chemical-splash suit; disposable chemical-resistant overalls). Tyvek® Saranex or equivalent.	☒ SAFETY SHOES Steel-toe ☐ HEARING PROTECTION ear plugs not required for personnel outside 30-ft safety zone or if operator's vehicle door and window is closed	☒ AIR PURIFYING RESPIRATOR required as specified in HASP Addendum and determined by SSO, OSHER or ASHEM	☒ GLOVES nitrile/leather as required by task-specific critical actions of JSA ☒ OTHER All PPE must be worn as specified in task-specific critical actions of JSA

JOB STEPS	POTENTIAL HAZARDS	CRITICAL ACTIONS TO MITIGATE HAZARDS
Decontamination of Equipment	Vehicular traffic	Set decontamination area away from traffic and coordinate with MTA personnel.
	Flying debris	Use safety glasses with a face shield and/or goggles
	Chemical Exposure	Wear appropriate PPE (nitrile inner gloves, chemical resistant outer gloves, coated Tyvek).
	Noise (>85 dB)	Hearing protection required.
	Particulates	Implement engineering controls (wetting) if high levels of particulates are created.
		Use PPE (polycoated Tyvek© coveralls, chemical-resistant overboots, nitrile outer gloves, and air purifying respirator) as directed by SSO.
	Hot water and steam	If pressure washer is used, use goggles and face shield, and gloves. Keep wand pointed away from hands and face and other people.
	Manage debris and wastewater appropriately	Keep debris generation to a minimum if possible. Manage in accordance with work plan.

AECOM USA, Inc. Con Edison - East 138th Street Works Former MGP Site	DATE 8/9/17	☒ NEW ☐ REVISED	PAGE 5 of 5
WORK ACTIVITY (Description): **Demobilization**			
DEVELOPMENT TEAM	POSITION/TITLE	REVIEWED BY:	POSITION/TITLE
Mike Gutmann	Project Manager	Kevin J. McGovern	HSE Representative
		Peter Gregory, CSP, MPH, STS	RHSEM
TBD	Site Geologist (SSO)	TBD	SSO
MINIMUM REQUIRED PERSONAL PROTECTIVE EQUIPMENT (SEE CRITICAL ACTIONS FOR TASK-SPECIFIC REQUIREMENTS)			
☒ REFLECTIVE VEST ☒ HARD HAT ☒ SAFETY GLASSES ☒ PPE CLOTHING Level D with long pants or as required by changing conditions as determined by SSO	☒ SAFETY SHOES Steel-toe ☐ HEARING PROTECTION Metatarsal protection for saw cutting, jack hammering, and pressure washing	☐ AIR PURIFYING RESPIRATOR required as specified in SSHP Addendum and determined by SSO	☒ GLOVES nitrile/leather as required by task-specific critical actions of JSA ☒ OTHER All PPE must be worn as specified in task-specific critical actions of JSA
JOB STEPS[1]	**POTENTIAL HAZARDS[2]**	**CRITICAL ACTIONS TO MITIGATE HAZARDS[3]**	
Demobilization	Vehicular traffic	Reflective vests required	
		Use cones or other barricades as necessary	
		Be aware of traffic and site traffic patterns. Try and place borings away from heavy traffic routes.	
	Hot/Cold Weather Exposure	Wear appropriate clothing	
		Take frequent warming breaks	
		Drink cool/hot liquids	
	Adjacent Site Activities	Keep aware of any adjacent activities and traffic	

TABLE 2

CHEMICAL CONTAMINANTS OF CONCERN

Specific Contaminant Known or Suspected	PEL, or TLV (ppm)	IDLH (ppm)	Acute Effects	Ionization Potential (eV)	Appropriate Monitoring Instrument
VOCs (CAS number)	0.5 TLV 1.0 OSHA PEL		Human Carcinogen		Dräger or other benzene-specific
Benzene (C) (71-43-2)	1	500	Irritation of eyes, nose, respiratory tract giddiness, headache, nausea, fatigue.	9.24	PID
Toluene (108-88-3)	100	500	Irritated eyes, nose, dizziness.	8.82	PID
Xylenes (p:106-42-3; m:108-38-3; o:95-47-6)	100	900	Irritated nose, eyes, dizziness.	8.56	PID
Ethylbenzene (100-41-4)	100	800	Eye, Mucous Membrane & Skin Irritant	8.76	PID
SVOCs (major components) Phenol (108-95-2)	5	250	Irritated eyes, nose, throat Anorexia, weight loss Skin burns, convulsions	8.5	PID
4-Methylphenol (106-44-5)	2.3	250	Irritated eyes, skin Mucous membrane Weakness, exhaustion Headache, drowsiness	9.0	PID

TABLE 2 (Continued)

Specific Contaminant Known or Suspected	PEL, or TLV (ppm)	IDLH (ppm)	Acute Effects	Ionization Potential (eV)	Appropriate Monitoring Instrument
Naphthalene (91-20-3)	10	250	Irritated eyes, skin Mucous membrane Confusion, excitement	8.12	PID
2-methyl phenol (95-48-7)	2.3	250	Irritated eyes, skin Mucous membrane CNS, skin burns	8.9	PID
2,4-dimethylphenol	NA	NA	Irritated eyes, skin Mucous membrane CNS, skin burns	NA	PID
Heavy Metals (major components) Lead (7439-92-1)	0.05 mg/m^3	100 mg/m^3	Lassitude, insomnia, Facial pallor, tremor	N/A	Particulate monitor
Mercury (7439-97-6)	0.025 TLV 0.10 PEL (Ceiling)	2 mg/m^3	vision, hearing disturbance; spasticity jerking limbs; dizziness; salivation	N/A	Jerome Hg monitor
Cyanide (143-33-9)	5 mg/m^3 (Ceiling) 10 ppm PEL	25 mg/m^3	Irritation eyes, skin; asphyxia, headache lassitude (weakness, exhaustion), confusion; nausea, vomiting	N/A	Cyanide monitor

TABLE 2 (Continued)

Specific Contaminant Known or Suspected	PEL, or TLV (ppm)	IDLH (ppm)	Acute Effects	Ionization Potential (eV)	Appropriate Monitoring Instrument
Hydrogen Sulfide	20 ppm (Ceiling) 50 ppm [10-minute maximum peak]	100 ppm	Irritation eyes, respiratory system; apnea, coma, convulsions; conjunctivitis, eye pain, lacrimation (discharge of tears), photophobia (abnormal visual intolerance to light), corneal vesiculation; dizziness, headache, lassitude, irritability, insomnia; gastrointestinal disturbance;	N/A	Hydrogen sulfide meter
Other Coal Tar Pitch Volatiles	0.2 mg/m^3	80 mg/m^3	Dermatitis, bronchitis	N/A	Benzene soluble fraction (BSF), polycyclic aromatic hydrocarbons (PAHs) of particulates (laboratory)

NOTES:

NS = No Standard
< = Less than
NIOSH = National Institute for Occupational Health and Safety
ppm = parts per million
eV = Electron Volt
H_2O = Water
PEL = Permissible Exposure Limit
REL = Regulatory Exposure Limit
TLV = Threshold Limit Value
IDLH = Immediately Dangerous to Life and Health
mg = milligrams
cu.m = cubic meters
NA = Not Applicable
C = Carcinogen
AC = Avoid contact with media

ATTACHMENT 1

RULES WE LIVE BY

RULES WE LIVE BY 2016

Hazard	Electric Operations	Central Operations	Gas Operations	Customer Operations	Utility Shared Services
Verify Dead/Lockout-Tag Out	Properly test or spear to ensure that electric equipment, cable, or wire is "dead" as required regardless of voltage, before beginning dead work activities.	Properly test or verify that equipment is de-energized, isolated and protected prior to initiating dead work activities.			Properly lock out/tag out equipment before beginning work on the equipment. (when not intentionally live and PPE is required)
Permits (Operating, D-faults)	Enter D-Fault tagged structures only when authorized by the operating authority to perform feeder processing, or to perform work after all D-faults have been identified and de-energized.	• Only perform work that is within the authorized scope of work as listed on the work permit. • Do not change the status of a piece of equipment that has a Stop Tag applied to it. • Follow the sequence of an operating order.		Do not enter a structure that has been classified and tagged as a D-fault.	Only perform work that is within the authorized scope of work as listed on the work permit
Atmospheric Testing	• Perform air monitoring and ventilate as required for entry and work in an enclosed space or a permit-required confined space. • For excavations greater than 4 feet in depth the atmosphere shall be tested prior to entry or when the excavation is not already occupied.	• Perform air monitoring and ventilate as required for entry and work in an enclosed space or a permit-required confined space. • For excavations greater than 4 feet in depth the atmosphere shall be tested prior to entry or when the excavation is not already occupied.	• Perform air monitoring and ventilate as required for entry and work in an enclosed space or a permit-required confined space. • For excavations greater than 4 feet in depth the atmosphere shall be tested prior to entry or when the excavation is not already occupied.	Perform air monitoring and ventilate as required for entry and work in an enclosed space or a permit-required confined space.	Perform air monitoring and ventilate as required for entry and work in an enclosed space or a permit-required confined space.
Rescue/Retrieval	Entrant and attendant are required to wear rescue harness when working in enclosed spaces.	Entrant and attendant are required to wear rescue harness when working in enclosed spaces.	Entrant and attendant working in enclosed spaces shall wear rescue harnesses, when required.	Entrant and attendant are required to wear rescue harness when working in enclosed spaces.	Entrant and attendant are required to wear rescue harness when working in enclosed spaces
High Hazard Energy PPE	• Use fall protection equipment as required. • Use appropriate rubber gloves with protective gauntlets, rubber sleeves, fire retardant clothing and eye/protection face shield as required for the electrical hazard.	• Use fall protection equipment as required. • Use appropriate rubber gloves, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for the electrical hazard. • In Steam Distribution, use appropriate water resistant coveralls and face shields before disconnecting any piping from the dead side of the trap valve up to and including the trap inlet valves and trap bypass valve. These coveralls and face shields must be worn until all piping is reconnected.	• Use fall protection equipment as required. • Wear airline respirator, FR coveralls, Fr hood & FR gloves or liners as required by IP-42	• Use fall protection equipment as required. • Use appropriate rubber gloves with protective gauntlets, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for electrical hazard. • Do not come into contact or move a downed or low hanging utility wire while performing Site Safety or Damage Assessment work.	• Use fall protection equipment as required • Use the appropriate rubber gloves, rubber sleeves, fire retardant clothing, and eye protection/face shield as required for the electrical hazard
Sheeting/Shoring		Ensure that excavations five feet or deeper are properly sheeted and shored before anyone enters.	Ensure that excavations five feet or deeper are properly sheeted and shored before anyone enters.		
Gas Piping Integrity Test			Perform an integrity test before a customer turn-on.	Perform an integrity test before a customer turn-on.	
Securing Loads					Reels over 5,000lbs (individually or when bundled together) are secured per NYS Metal Coil requirements

Please note: At The Learning Center, the RWLB associated with a given activity of an operating department apply.

APPENDIX G

Operation, Maintenance and Monitoring Plan

APPENDIX G

OPERATION, MAINTENANCE AND MONITORING PLAN

EAST 138TH STREET WORKS FORMER MGP SITE
SITE # 203108
BRONX, NEW YORK

Prepared for:

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
31-01 20TH AVENUE – BUILDING 136
ASTORIA, NEW YORK 11105

Prepared by:

AECOM USA, Inc.
One John James Audubon Parkway
Suite 210
Amherst, New York 14228

April 2023

TABLE OF CONTENTS

OPERATION, MAINTENANCE AND MONITORING PLAN

TABLES (FOLLOWING TEXT)

FIGURES (FOLLOWING TABLES)

ATTACHMENTS (FOLLOWING FIGURES)

1.0 INTRODUCTION

This Operation, Maintenance and Monitoring (OM&M) Plan was prepared to address annual groundwater sampling in monitoring wells in the vicinity of the East 138th Street Former MGP site located in Bronx, New York. The OM&M Plan is applicable for sites where the remedy includes any physical components. Since the only such systems for this site consist of monitoring wells, a relatively limited OM&M program is applicable.

The objective of this OM&M Plan is to describe the annual groundwater monitoring program and reporting requirements. The annual groundwater sampling frequency is subject to modification in the future based upon the sampling results (i.e., decrease or increase in frequency) in accordance with the provisions in *DER-10, Technical Guidance for Site Investigation and Remediation*, New York State Department of Environmental Investigation, May 2010.

2.0 SAMPLING AND ANALYSIS PLAN

The two major components of the Sampling and Analysis Plan are the Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP). The FSP is provided as Appendix H to the SMP. The QAPP is provided as Appendix J to the SMP. The discussions and provisions of those documents are not repeated in this OM&M Plan.

Some of the existing wells comprise the wells to be included in the annual groundwater monitoring. These are listed below and are shown on Figure 1:

MW–01	*MW–02*	*MW-03*	*MW-05*	*MW-06*	*MWMF-04*
MWMF-05	*MWMF-08*	*BW-01*	*BW-02*	*BW-03*	*BW-04*

Some of the existing wells are unnecessary for the monitoring program and are proposed for well decommissioning in accordance with NYSDEC CP-43 requirements. These are listed below and are shown on Figure 1:

MW-04	*MW-07-URS*	*MW-11*	*MWMF-01*	*MWMF-02*	*MWMF-03*
MWMF-06	*MWMF-07S*	*MWMF-07D*			

For a summary of the well construction information, refer to Table 1. For well construction logs, refer to Attachment 1.

3.0 REPORTING

The data collected during the implementation of this OM&M Plan will be described and evaluated in an Annual Groundwater Sampling Report.

3.1 Records Management

Standardized forms will be used to record the results of well purge/sampling/decommissioning and monitoring activities. These forms are provided with this OM&M Plan in Attachment 2.

3.2 Annual Reports

The Annual Groundwater Sampling Report will summarize analytical results from the annual sampling event, conclusions, and recommendations of the annual project evaluation. A copy of the laboratory data will be included in the appendix of the report. The Annual Groundwater Sampling Report will also include the following:

- The site name, municipality, county that the site is located in, and date of the report will appear on the cover;
- Text detailing the site activities completed over the given calendar year;
- Tables with groundwater elevation data and detected analytes in groundwater with applicable criteria;
- A Data Usability Summary Report;
- A Site Location Map;
- A Site map showing sampling and well locations;
- A map showing the shallow groundwater potentiometric surface;
- A map showing the deep groundwater potentiometric surface;
- A map showing detected analytes in groundwater with applicable criteria;
- Completed sampling forms;
- Comments, conclusions and recommendations based on an evaluation and resolution of problems identified; and
- Photographs.

3.3 Submittal Requirements

Annual reports will be submitted within 60 days of the final sampling event of the year. Two copies of all reports will be submitted to the NYSDEC. All reports will be bound reports or in an equivalent acceptable electronic format. Sample results will be provided to the property owners within 30 days after data validation is completed.

TABLES

Table 1
Monitoring Well Summary
East 138th Street Works Site

Monitoring Well ID	Install Date	Block/Lot	Northing	Easting	Ground Elevation (Ft AMSL)	PVC Elevation (Ft AMSL)	Steel Casing Elevation (Ft AMSL)	Screen Setting (Ft bgs)	Well Depth (Ft bgs)
MW-01	3/26/2010	Block 2591, Lot 46	232350.2	1009728.4	8.11	7.86	8.11	3.0 to 13.0	15.0
MW-02	4/30/2010	East 139th Street - Upgradient	232319.1	1009366.9	9.00	8.71	9.00	3.5 to 13.5	15.5
MW-03	4/19/2010	Block 2592, Lot 35	232521.2	1009930.3	8.43	8.12	8.43	4.0 to 14.0	16.0
MW-04	4/20/2010	Block 2598, Lot 62	232103.9	1010136.4	8.13	7.74	8.13	3.0 to 13.0	15.0
MW-05	5/4/2010	Block 2598, Lot 1	231695.8	1009773.4	9.48	9.08	9.48	3.0 to 20.5	20.8
MW-06	5/12/2010	Block 2598, Lot 1	231654.2	1009986.3	9.97	9.66	9.97	3.0 to 10.0	10.2
MW-07 (URS)	12/16/2011	Block 2597, Lot 1	231355.2	1010153.7	8.30	7.90	N/A	4.6 to 9.6	10.0
MW-11	1/19/2011	Block 2591, Lot 46	232284.3	1009815	8.05	7.82	8.05	3.0 to 13.0	15.0
MWMF-01	6/16/2011	Block 2598, Lot 46	232141.8	1010003.9	8.33	8.01	8.33	3.0 to 13.0	15.0
MWMF-02	3/15/2011	Block 2598, Lot 46	231854	1010105.9	9.39	9.04	9.39	3.0 to 13.0	15.0
MWMF-03	3/18/2011	Block 2598, Lot 46	231919.4	1009950.5	8.43	8.04	8.43	3.0 to 13.0	15.0
MWMF-04	3/21/2011	Block 2598, Lot 46	231967.9	1009879.8	7.93	7.69	7.93	19.0 to 29.0	29.2
MWMF-05	3/17/2011	Block 2598, Lot 46	232146.8	1009903.1	7.94	7.70	7.94	3.0 to 13.0	15.0
MWMF-06	3/17/2011	Block 2598, Lot 46	232075.2	1009848.8	8.00	7.70	8.00	3.0 to 13.0	15.0
MWMF-07S	3/16/2011	Block 2598, Lot 46	231992.1	1010198	8.95	8.69	8.95	3.2 to 9.2	11.2
MWMF-07D	3/15/2011	Block 2598, Lot 46	231986.4	1010206.1	9.01	8.74	9.01	14.1 to 19.1	19.6
MWMF-08	3/18/2011	Block 2598, Lot 46	231943.1	1009912.9	8.12	7.78	8.12	2.5 to 12.5	14.5
BW-01	2/3/2012	Block 2598, Lot 46	231866.5	1010013.6	8.89	8.59	8.89	22.0 to 32.0	34.0
BW-02	2/2/2012	Block 2598, Lot 46	231948.9	1009906.6	8.13	7.58	8.13	37.0 to 47.0	49.0
BW-03	2/2/2012	Block 2598, Lot 46	232140.8	1009898.2	8.01	7.46	8.01	46.0 to 56.0	58.0
BW-04	2/1/2012	Block 2598, Lot 46	232007.9	1010179.3	8.79	8.34	8.79	27.5 to 37.5	39.5

Ft AMSL - elevation in feet above mean sea level FT bgs - feet below ground surface

FIGURES

N

E 141st St

MW-03

BLOCK 2592
LOT 35

Rose Feiss Blvd

BLOCK 2598
LOT 66

BLOCK 2598
LOT 62

Locust Ave

MW-04

E 140th St

MW-01

MW-11

MWMF-01

BW-04

MWMF-07D

MWMF-07S

MWMF-05

BLOCK 2591
LOT 46

BW-03

BLOCK 2598
LOT 46

MWMF-06

MWMF-02

MWMF-08

MWMF-03

BW-01

MWMF-04

BW-02

MW-02

E 139th St

BLOCK 2590
LOT 51

BLOCK 2598
LOT 1

MW-06

BLOCK 2597
LOT 1

MW-05

MW-07-URS

E 138th St

EAST
RIVER

Legend

- MW-02 Existing Monitoring Well to be included in Annual Groundwater Monitoring
- MW-04 Proposed Monitoring Well to be Decommissioned
- BW-01 Existing Bedrock Monitoring Well - NAPL Measurements Only
- Block/Lot Boundary

100 0 100 Feet

EAST 138TH STREET WORKS SITE
ANNUAL GROUNDWATER MONITORING
PROGRAM WELLS

conEdison AECOM

FIGURE 1

\\na.aecomnet.com\LFS\AMER\Buffalo-USBUF1\DCS\Projects\111755538.00000\DB\GIS\Maps\138th RAWP Report\RAWP Figure 4-2.mxd 11/6/2018

ATTACHMENTS

ATTACHMENT 1

WELL CONSTRUCTION LOGS

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Peter Eichler

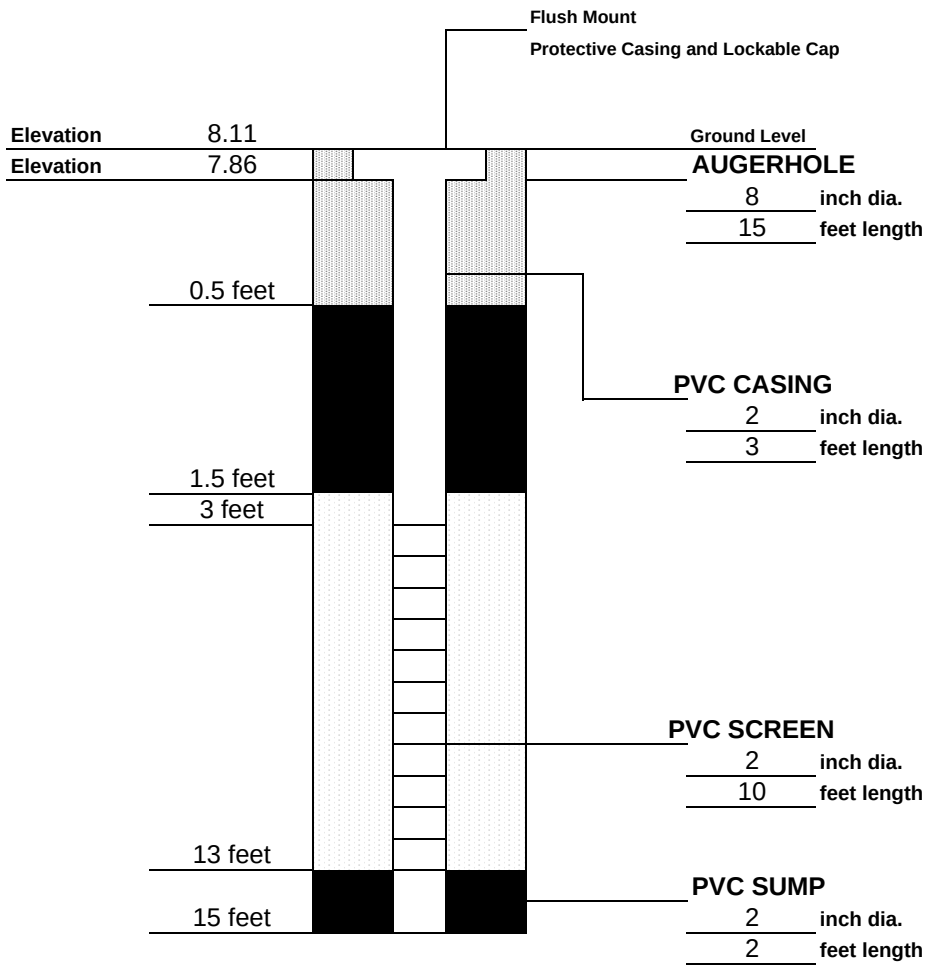
Rig Make/Model:
GeoProbe 6620

Date:
3/26/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-01**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Evan Moraitis

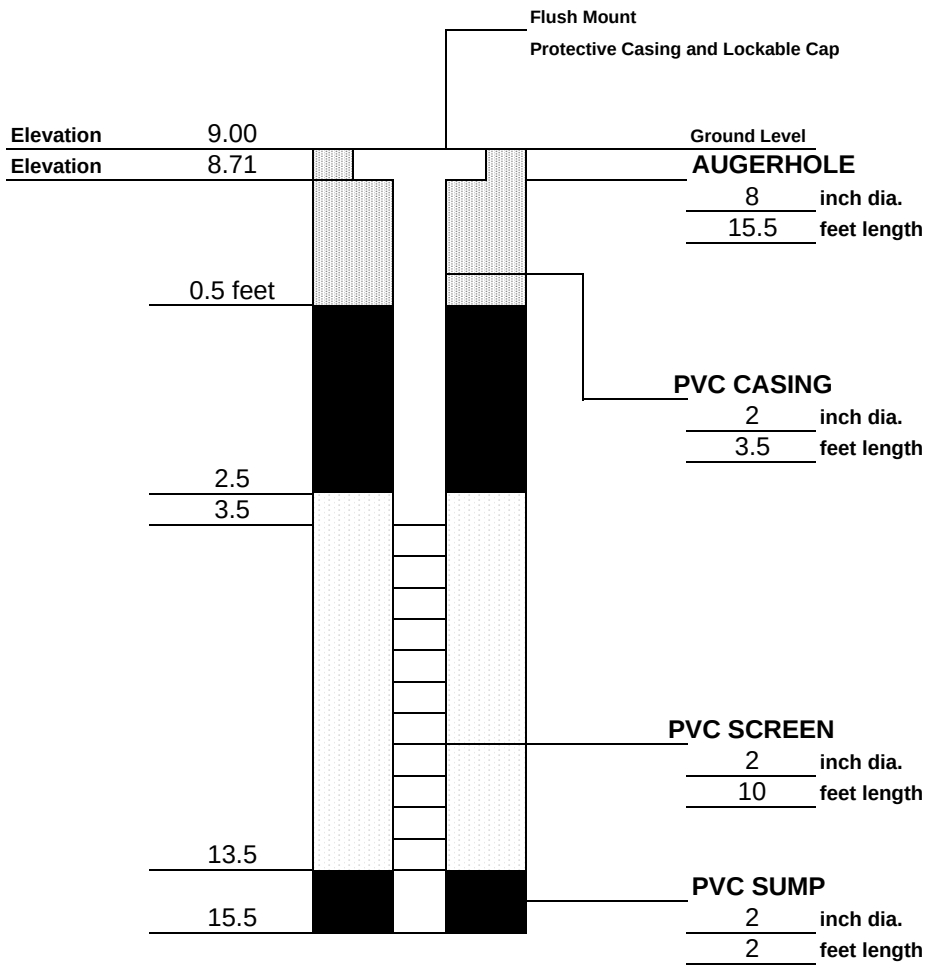
Rig Make/Model: GeoProbe 6620

Date: 4/30/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2.5' to 13.5'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2.5' and 13.5' to 15.5'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-02**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Evan Moraitis

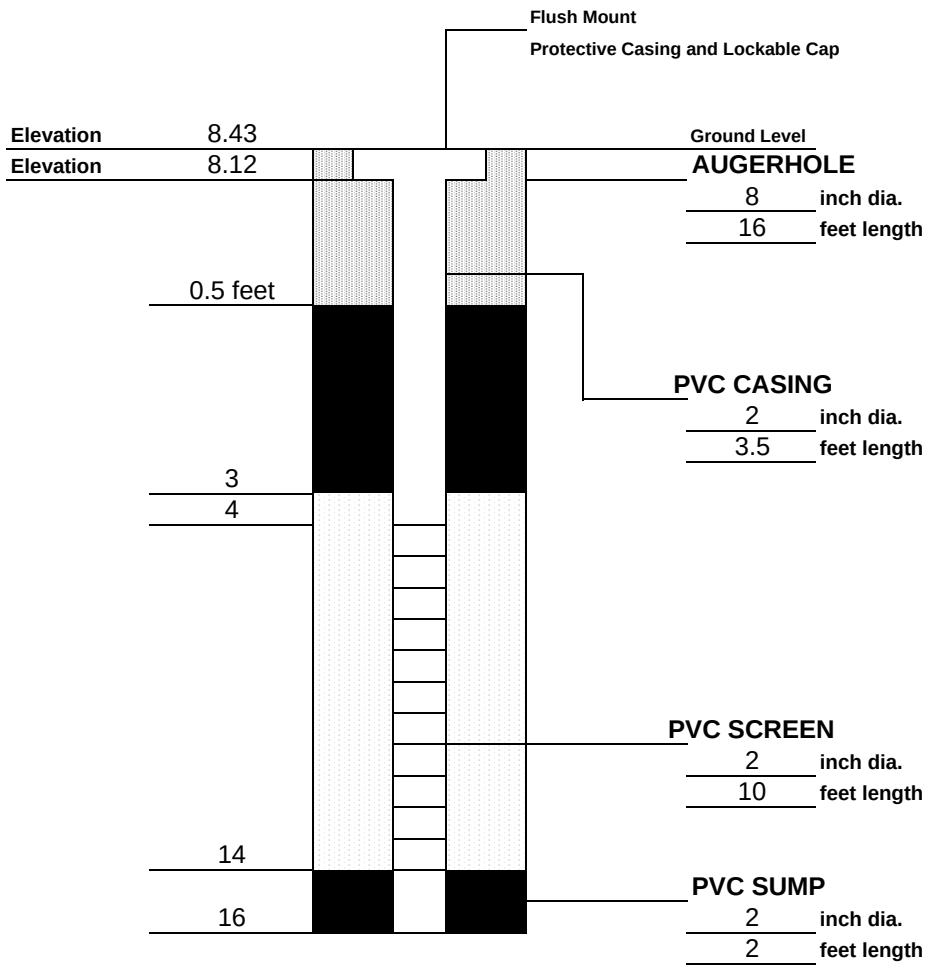
Rig Make/Model: GeoProbe 6620

Date: 4/19/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 3' to 14'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 3' and 14' to 16'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-03**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Evan Moraitis

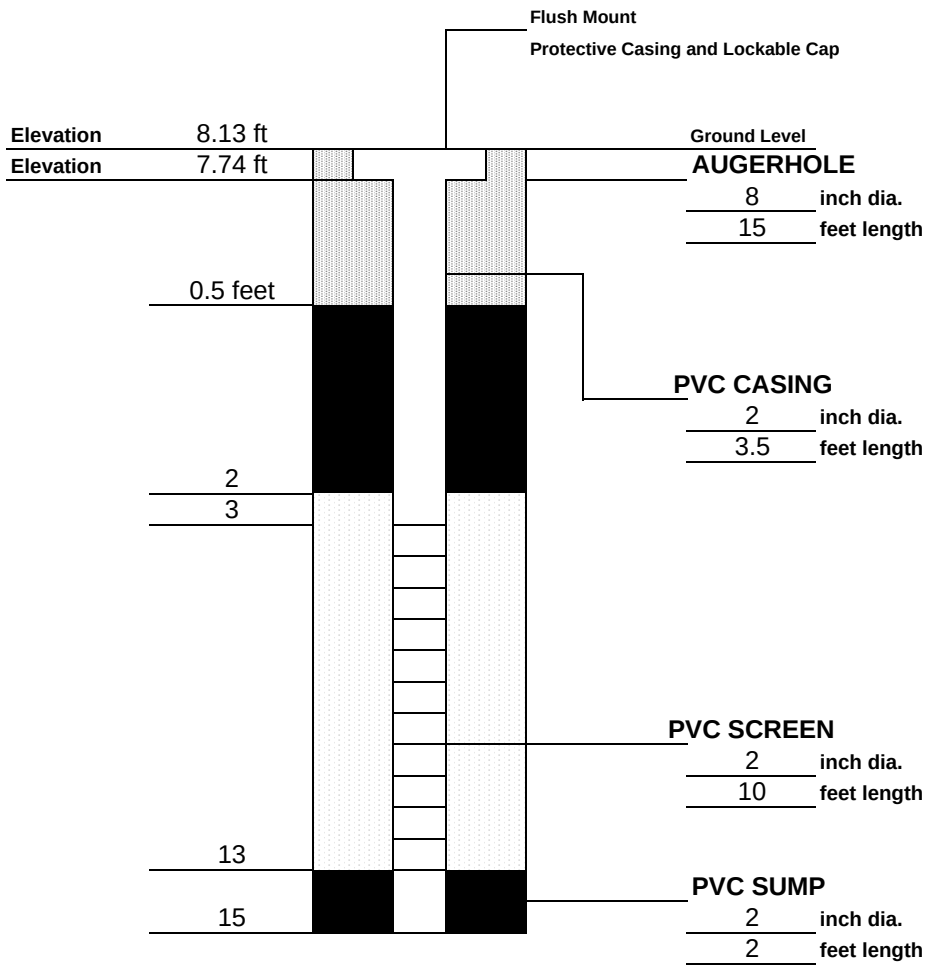
Rig Make/Model: GeoProbe 6620

Date: 4/20/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-04**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
John Diamond

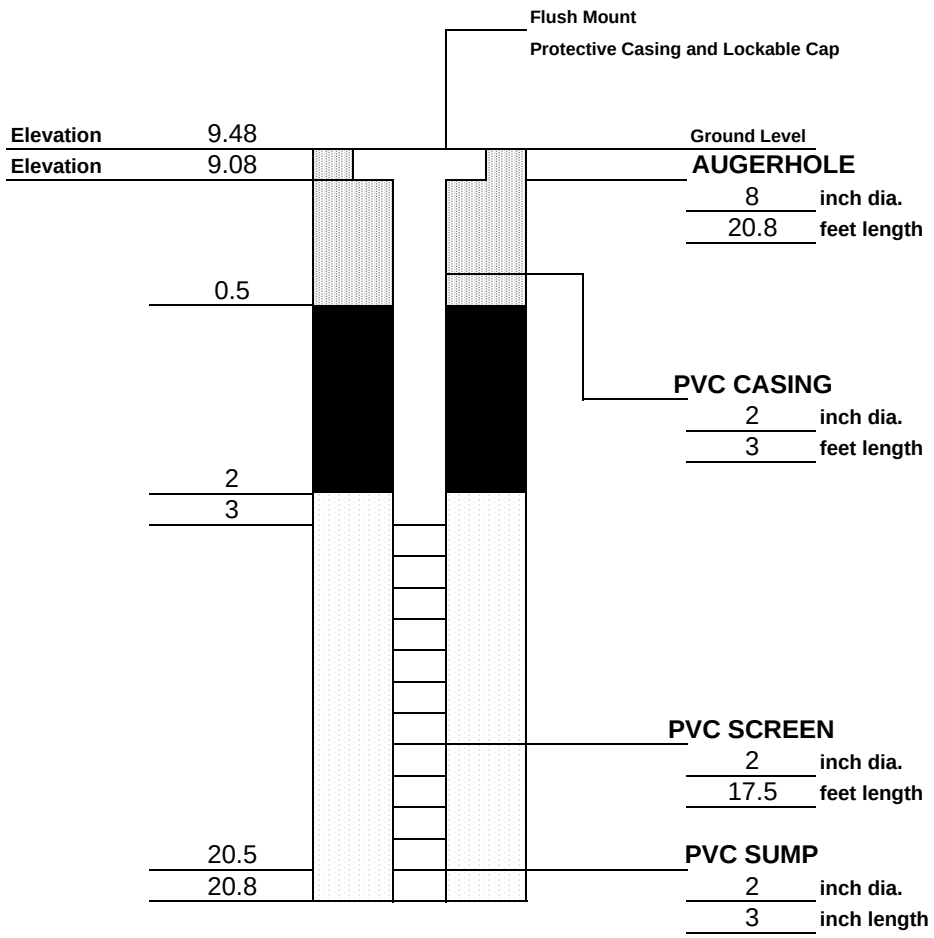
Rig Make/Model:
GeoProbe 6620

Date:
5/4/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2' to 20.8'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-05**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

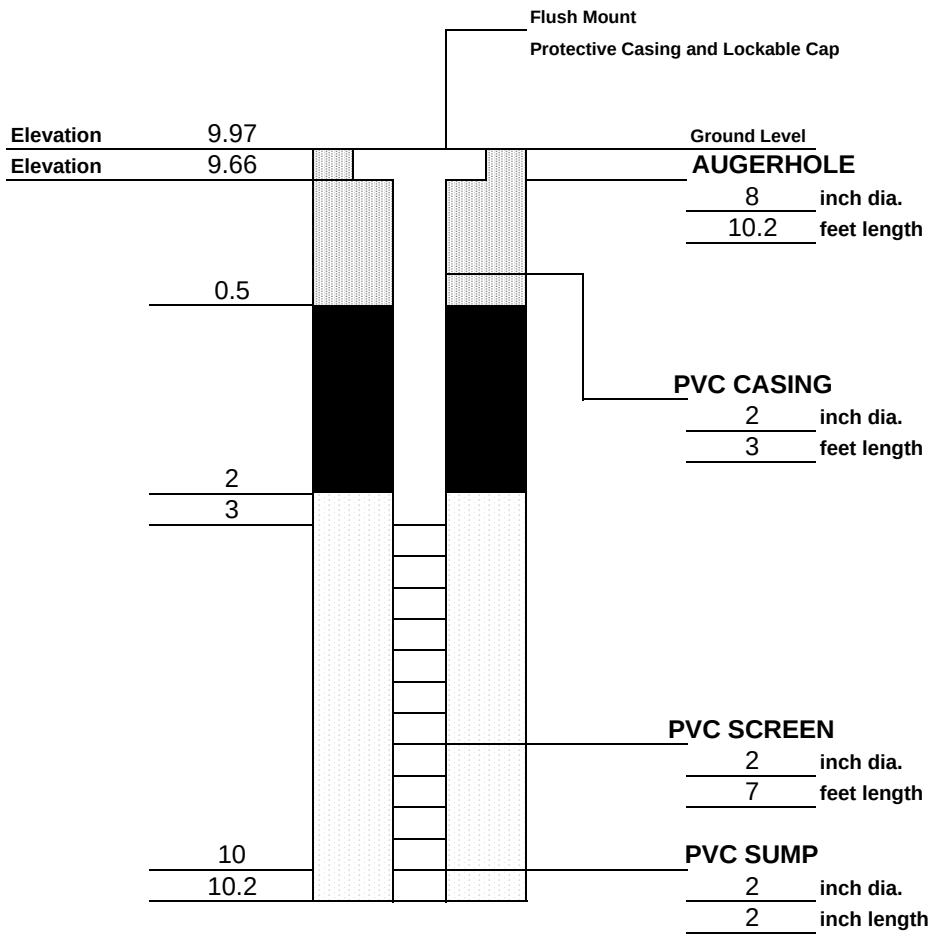
Rig Make/Model:
GeoProbe 7720

Date:
5/12/2010

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 2' to 10.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 2'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-06**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

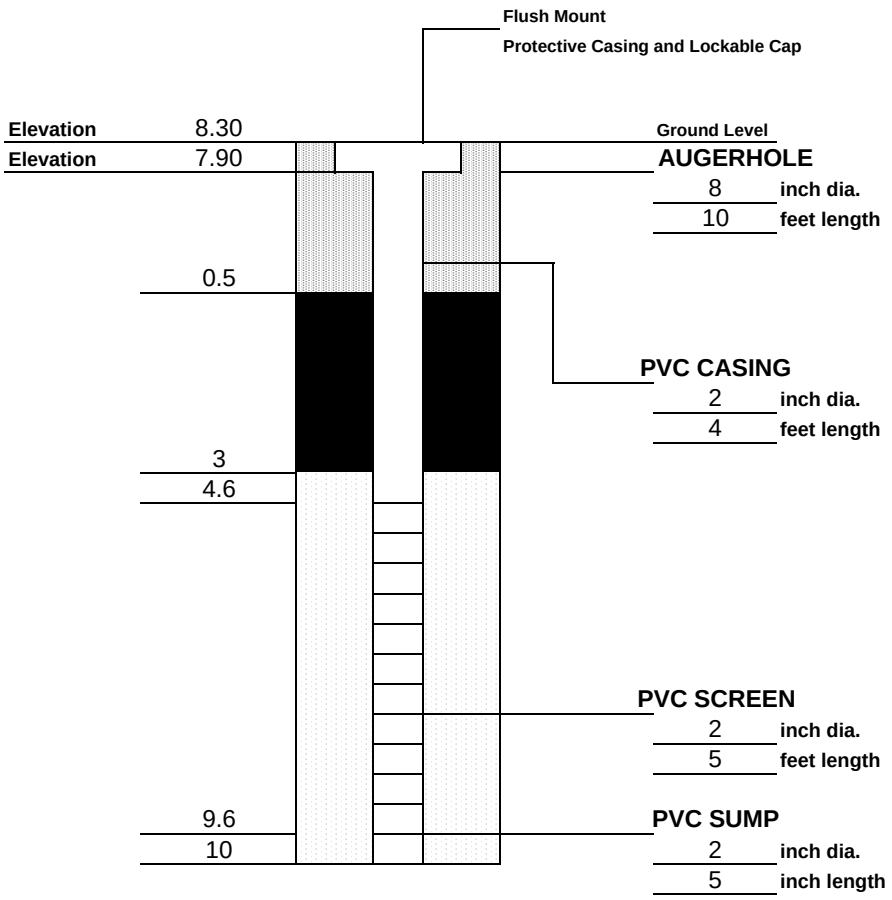
Rig Make/Model:
GeoProbe 6620

Date:
12/16/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL		*SCREEN MATERIAL*		*FILTER MATERIAL*
Surface:	Steel grade box	**Type:**	2" PVC	**Type:** #1 Sand 3' to 10' **Setting:**
Monitor:	2" PVC	**Slot Size:**	.010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 3'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-07**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Lukas Reiss

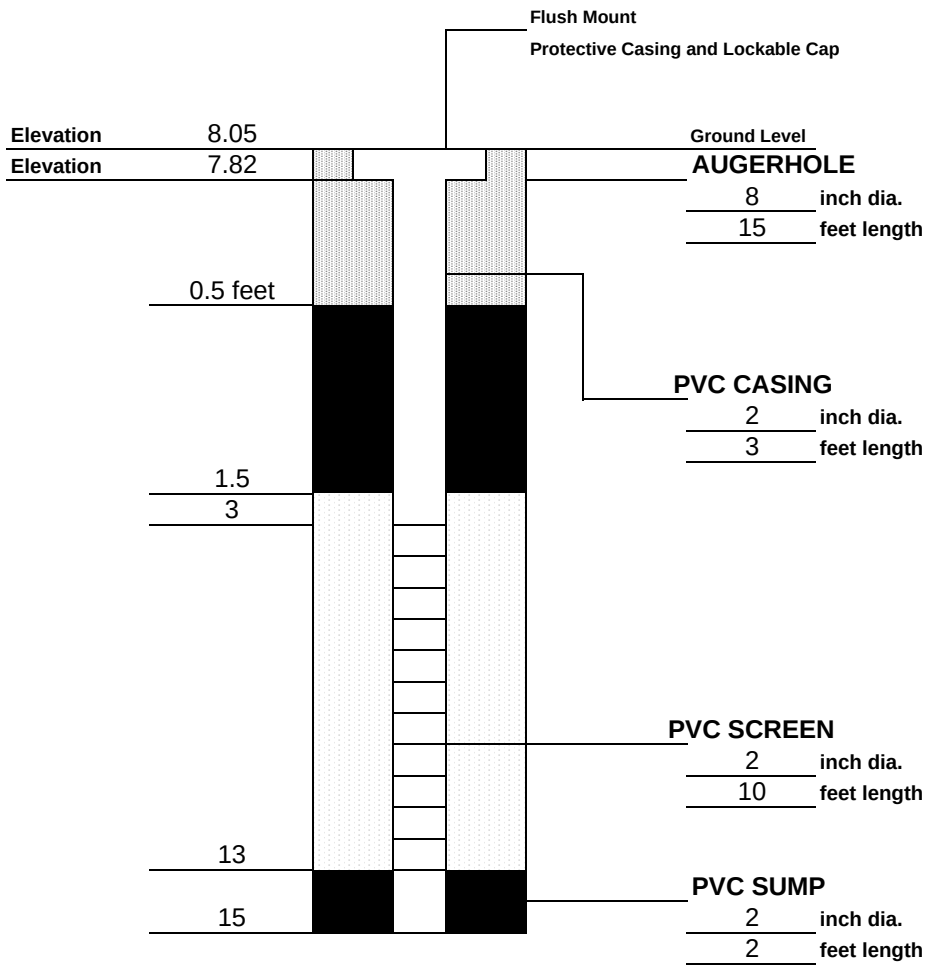
Rig Make/Model: GeoProbe 6620

Date: 1/19/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MW-11**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

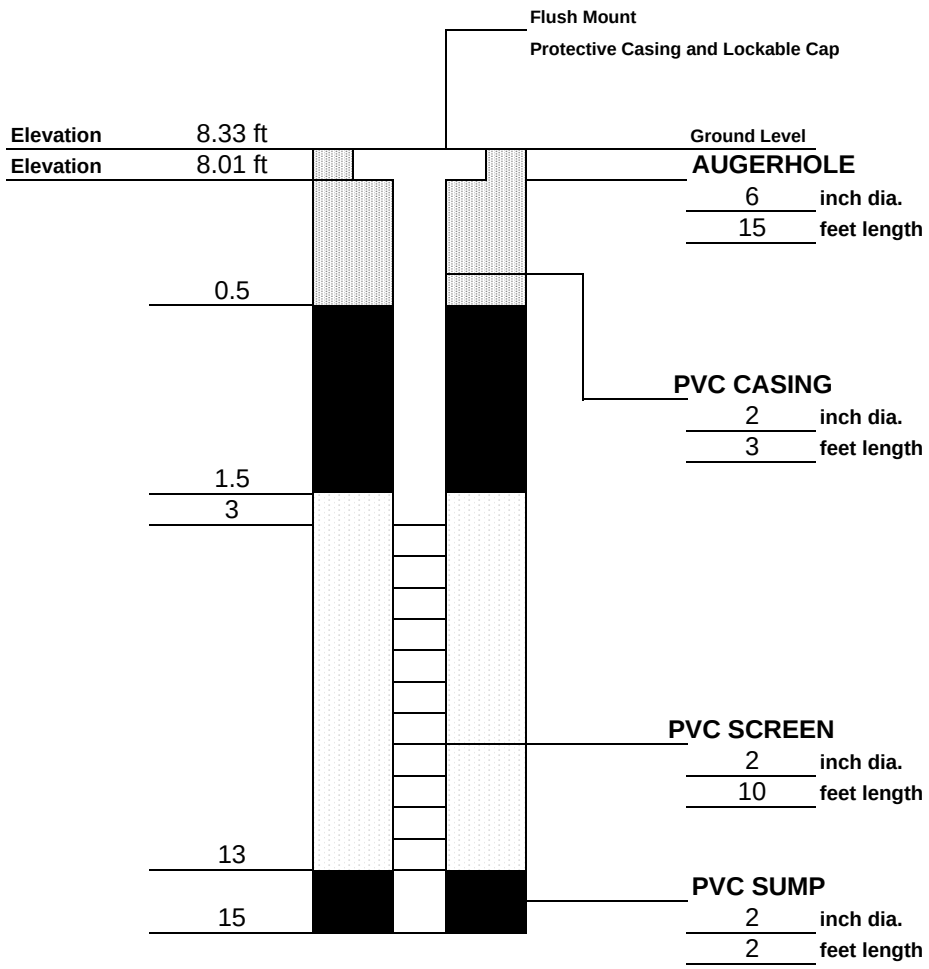
Rig Make/Model: GeoProbe 6620

Date: 3/16/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-01**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

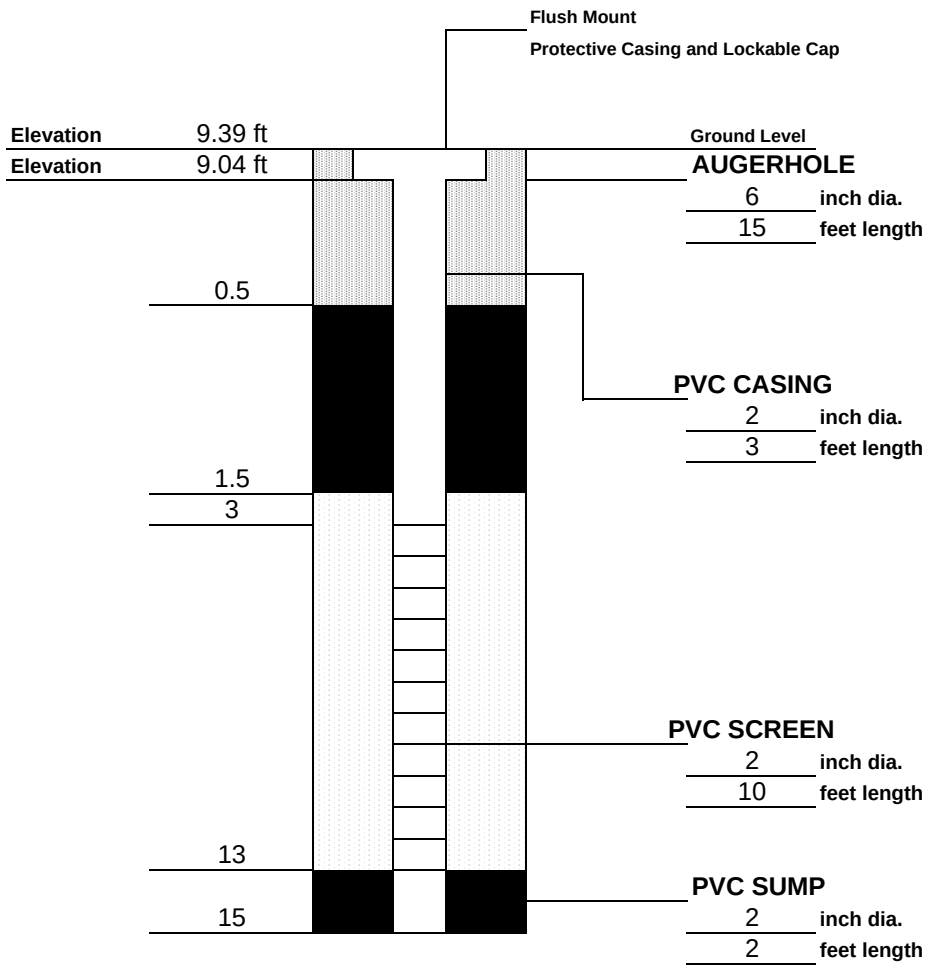
Rig Make/Model: GeoProbe 6620

Date: 3/15/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-02**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

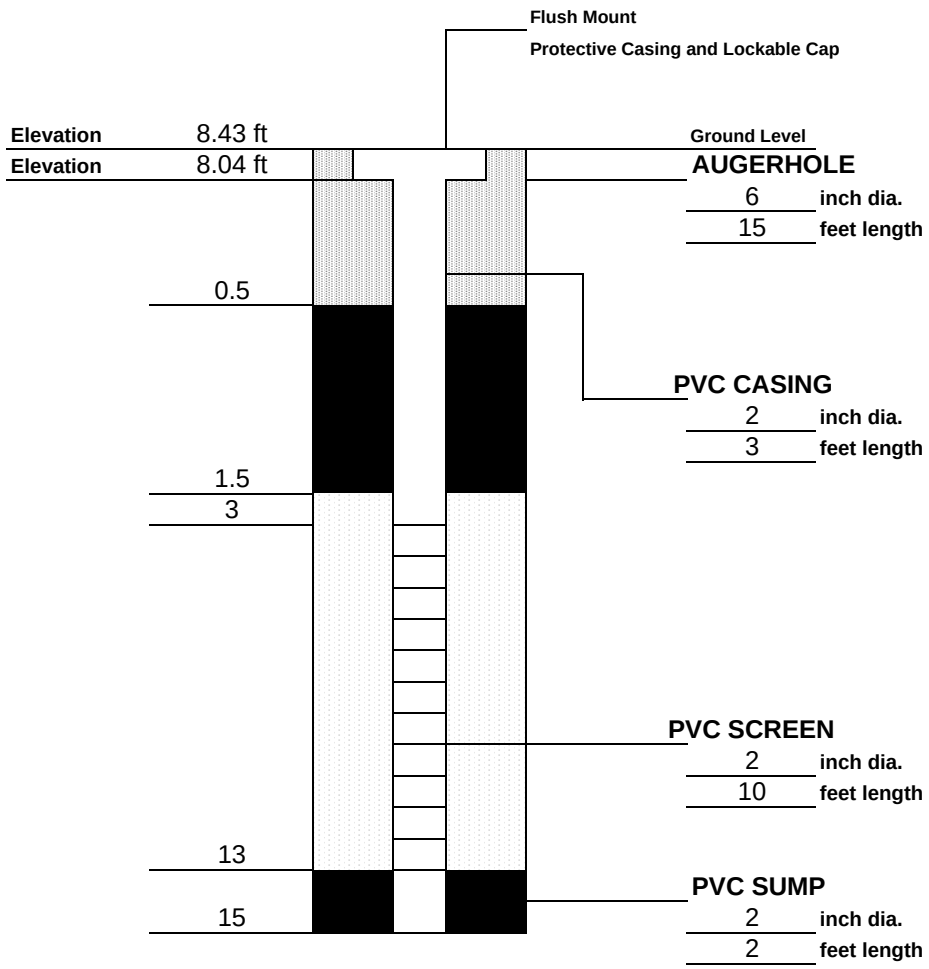
Rig Make/Model:
GeoProbe 6620

Date:
3/18/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-03**

DRILLING SUMMARY

Geologist:
John Boyd

Drilling Company:
Zebra Environmental Corp.

Driller:
Luke Caballero

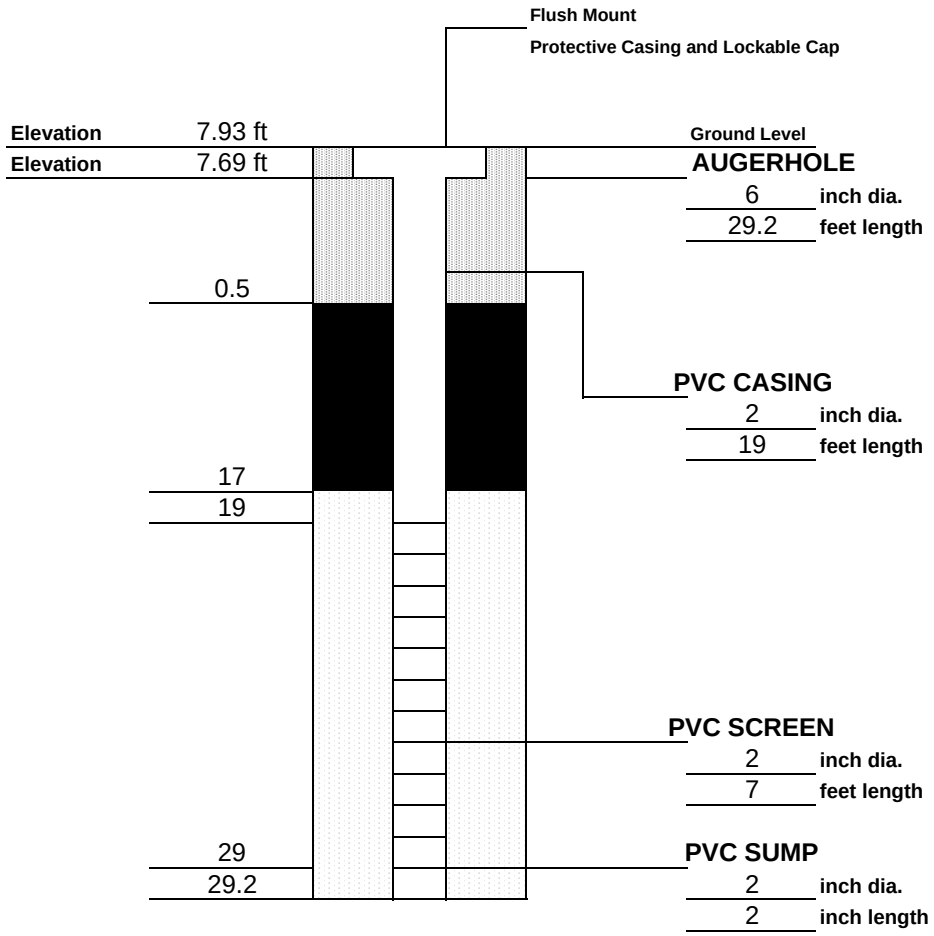
Rig Make/Model:
GeoProbe 7720

Date:
3/21/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 17' to 29.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 17'

COMMENTS:

LEGEND

- Concrete Pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 138th Street, Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-04**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

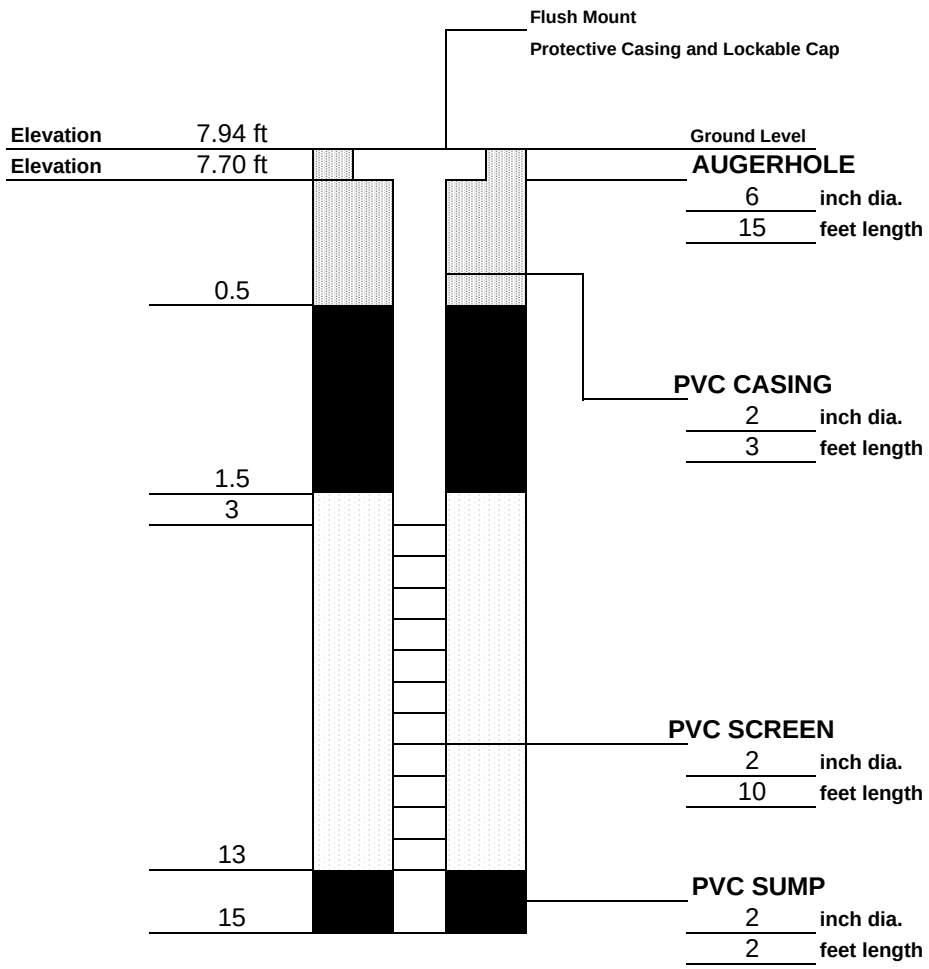
Rig Make/Model: GeoProbe 6620

Date: 3/17/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-05**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

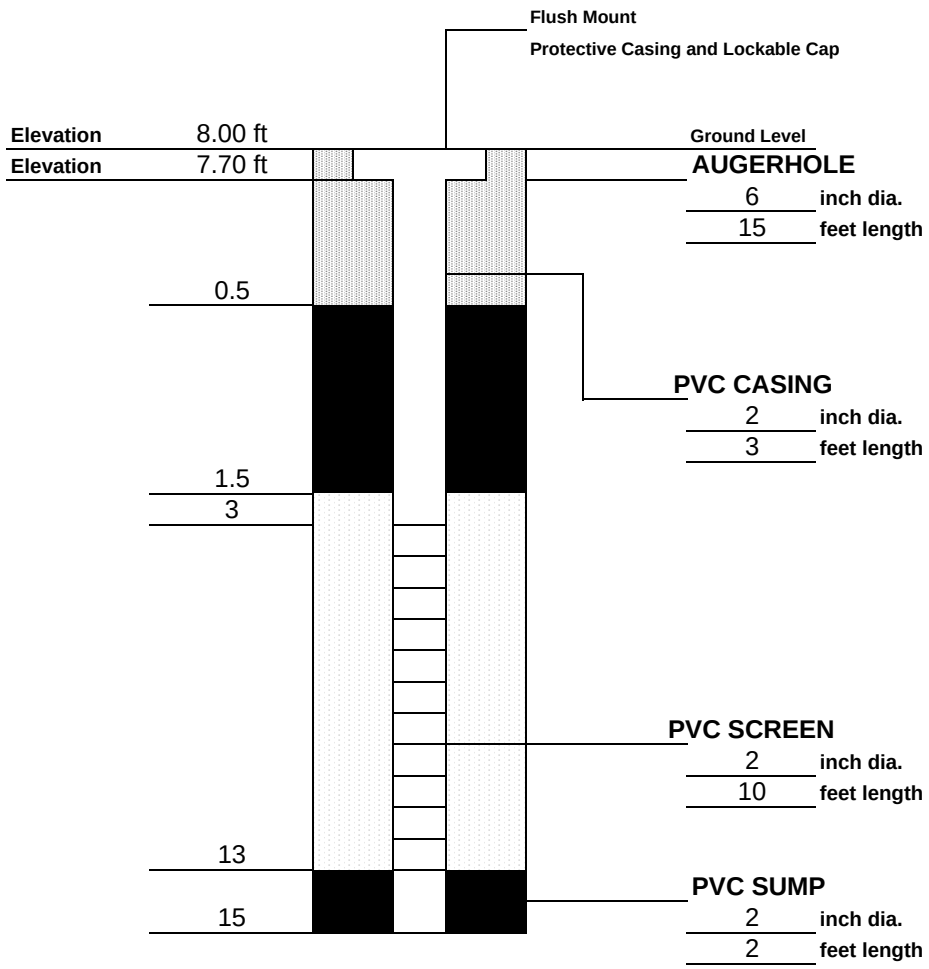
Rig Make/Model: GeoProbe 6620

Date: 3/17/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 13'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 13' to 15'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-06**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

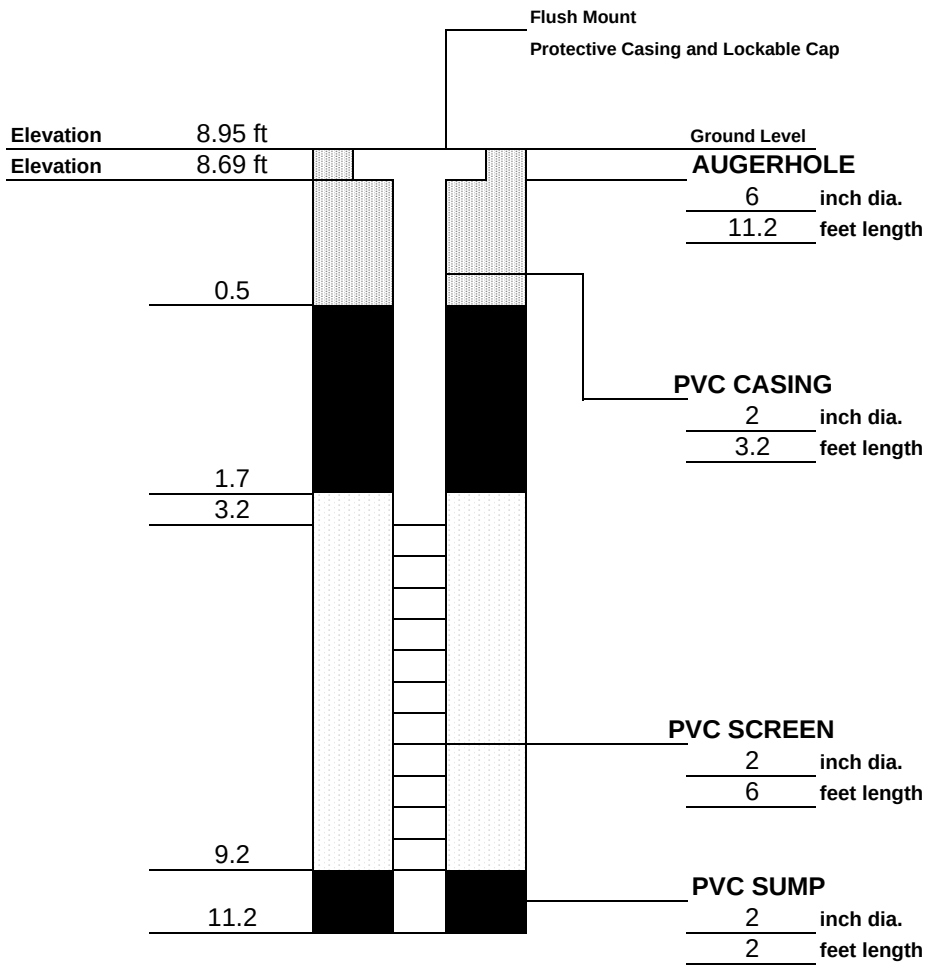
Rig Make/Model: GeoProbe 6620

Date: 3/16/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.7' to 9.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.7' and 9.2' to 11.2'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-07S**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

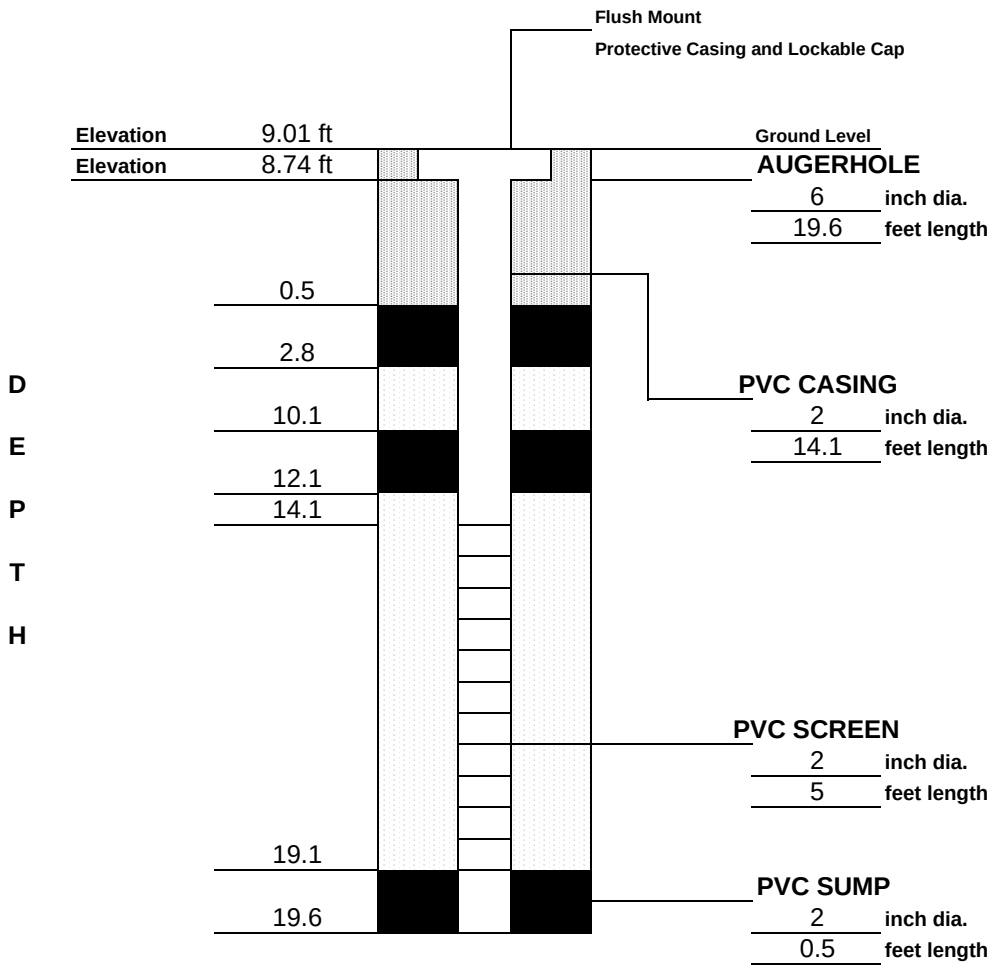
Rig Make/Model: GeoProbe 6620

Date: 3/15/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.7' to 9.2'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5'-2.8', 10.1'-12.1' and 19.1'-19.6'

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-07D**

DRILLING SUMMARY

Geologist: John Boyd

Drilling Company: Zebra Environmental Corp.

Driller: Luke Caballero

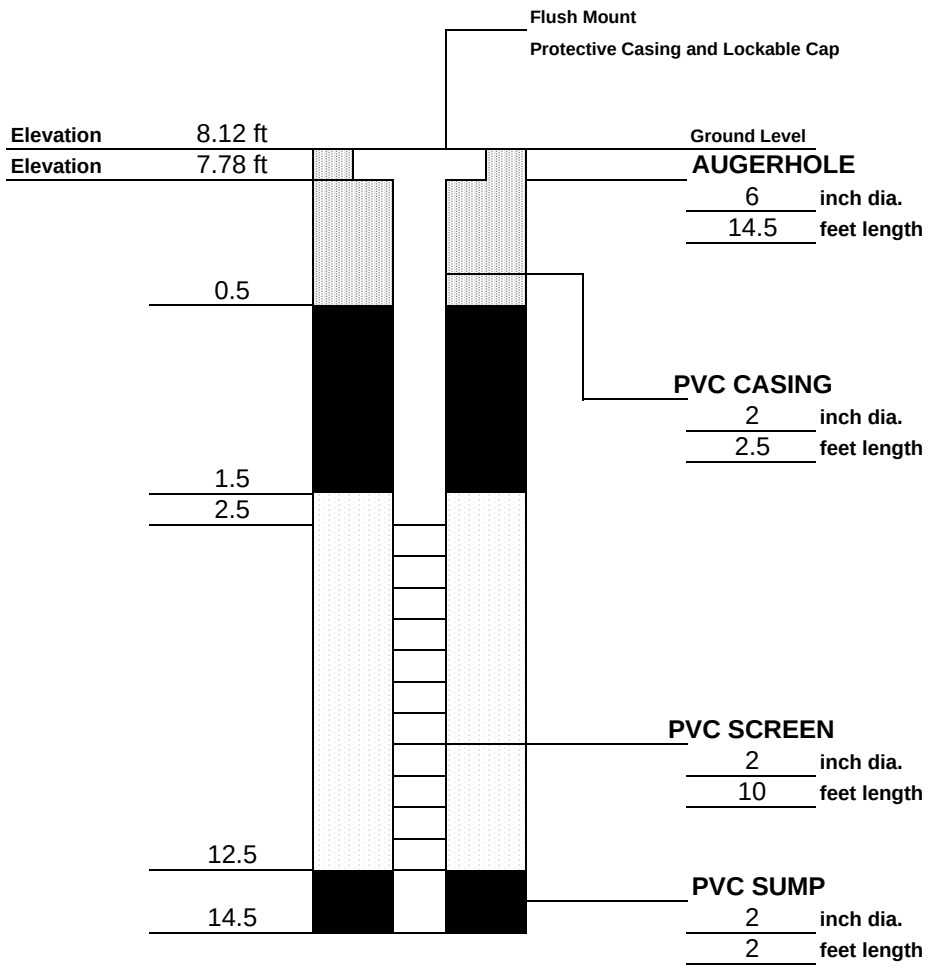
Rig Make/Model: GeoProbe 6620

Date: 3/18/2011

GEOLOGIC LOG

Depth(ft.)	Description
	See Well Log

DEPTH



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC	**Type:** #1 Sand **Setting:** 1.5' to 12.5'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 0.5' to 1.5' and 12.5' to 14.5'.

COMMENTS:

LEGEND

- Concrete pad
- Bentonite Seal
- Silica Sandpack

Client: Consolidated Edison of NY	**Location: 295 Locust Ave., Bronx, NY**	**Project No.: 11176431**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: MWMF-08**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

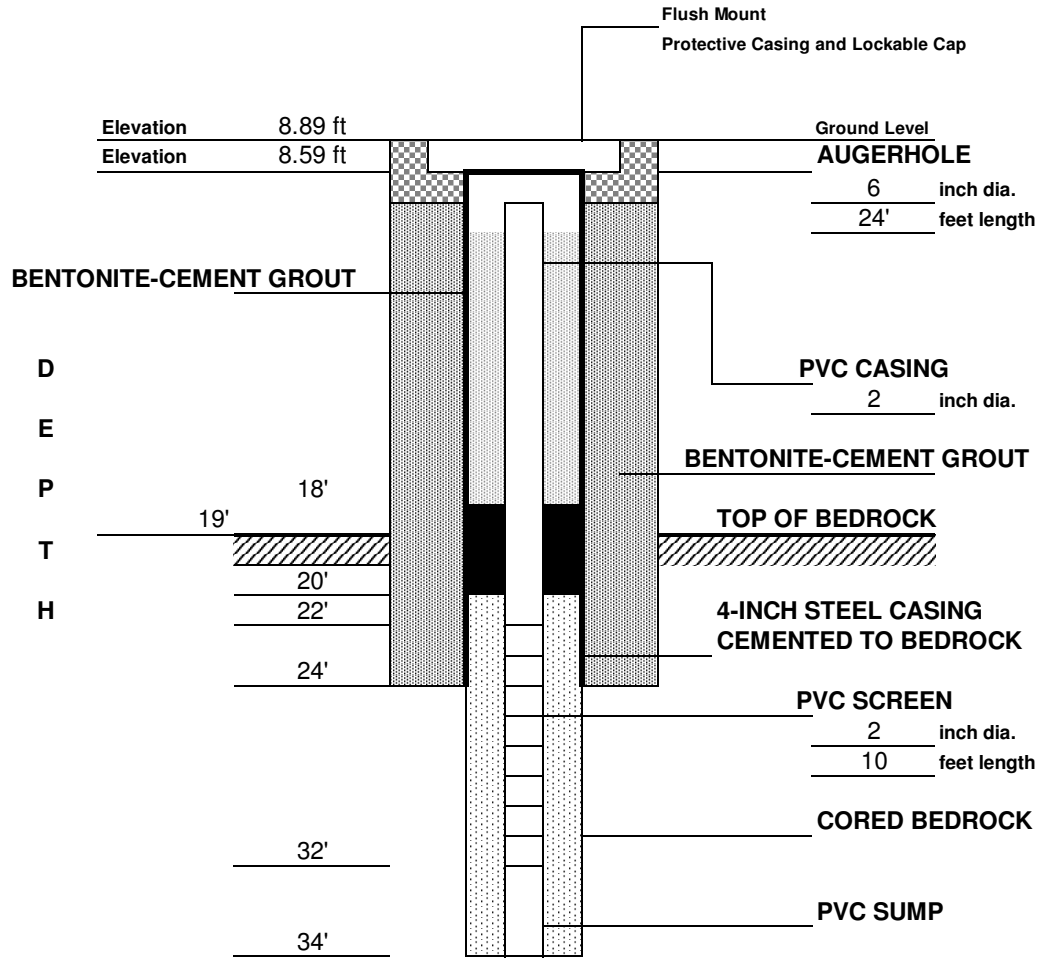
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/3/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for SBMF-06



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 22-32'	**Type:** #1 Sand **Setting:** 20-34'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 18-20'
		Type: Bentonite Cement Grout **Setting:** 1-18'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. A 5-feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-01**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

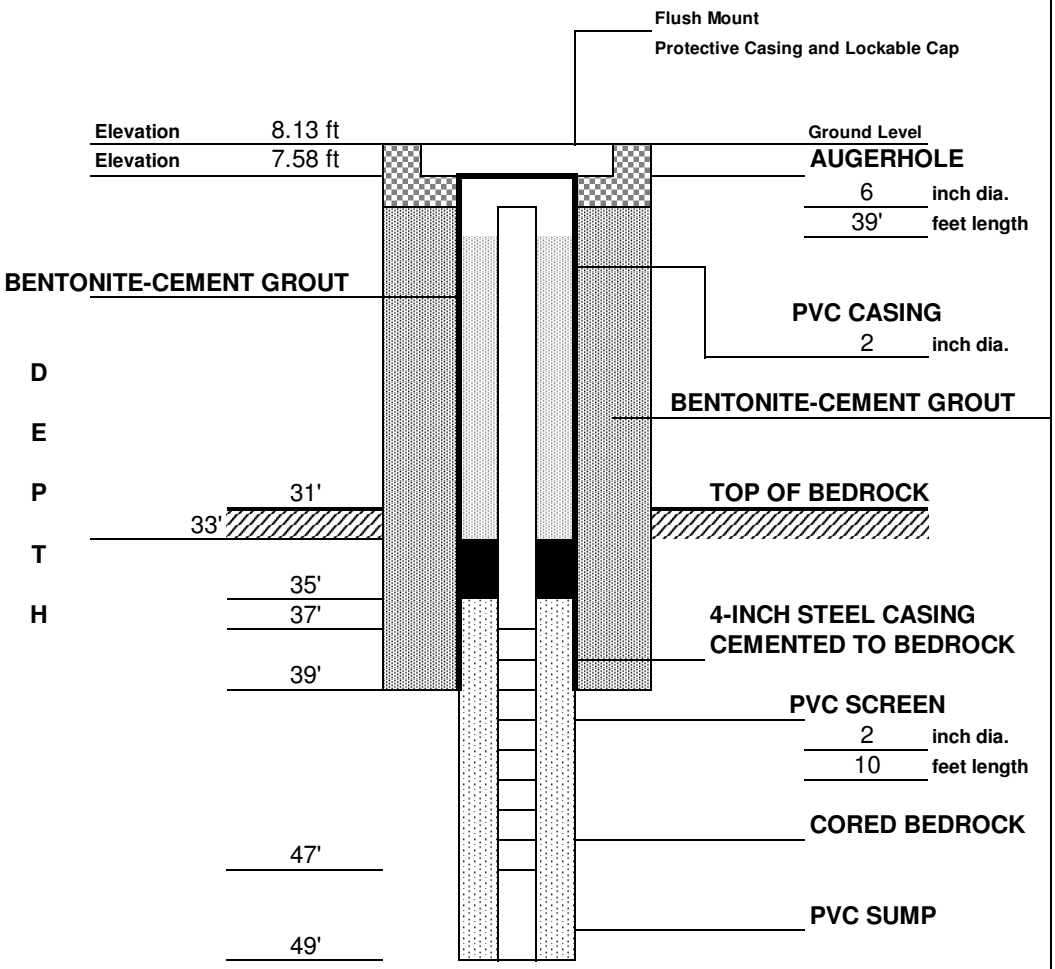
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/2/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for MWMF-04



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 37'-47'	**Type:** #1 Sand **Setting:** 35-49'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL***
		Type: Bentonite **Setting:** 33-35'
		Type: Bentonite Cement Grout **Setting:** 1-33'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. An 8 feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-02**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

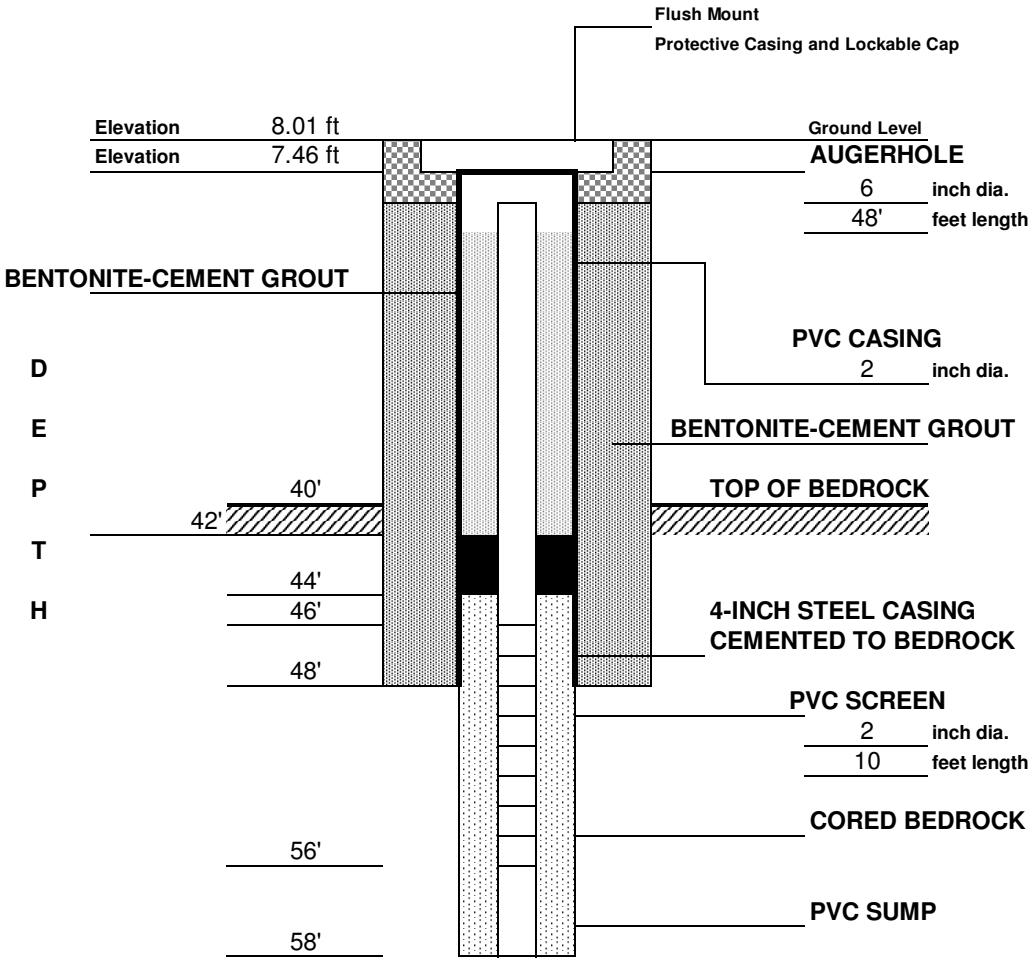
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/2/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for MWMF-05



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 46-56'	**Type:** #1 Sand **Setting:** 44-58'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL*** **Type:** Bentonite **Setting:** 42-44'
		Type: Bentonite Cement Grout **Setting:** 1-42'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. An 8 feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-03**

DRILLING SUMMARY

Geologist: J. Boyd

Drilling Company: Glacier Drilling LLC

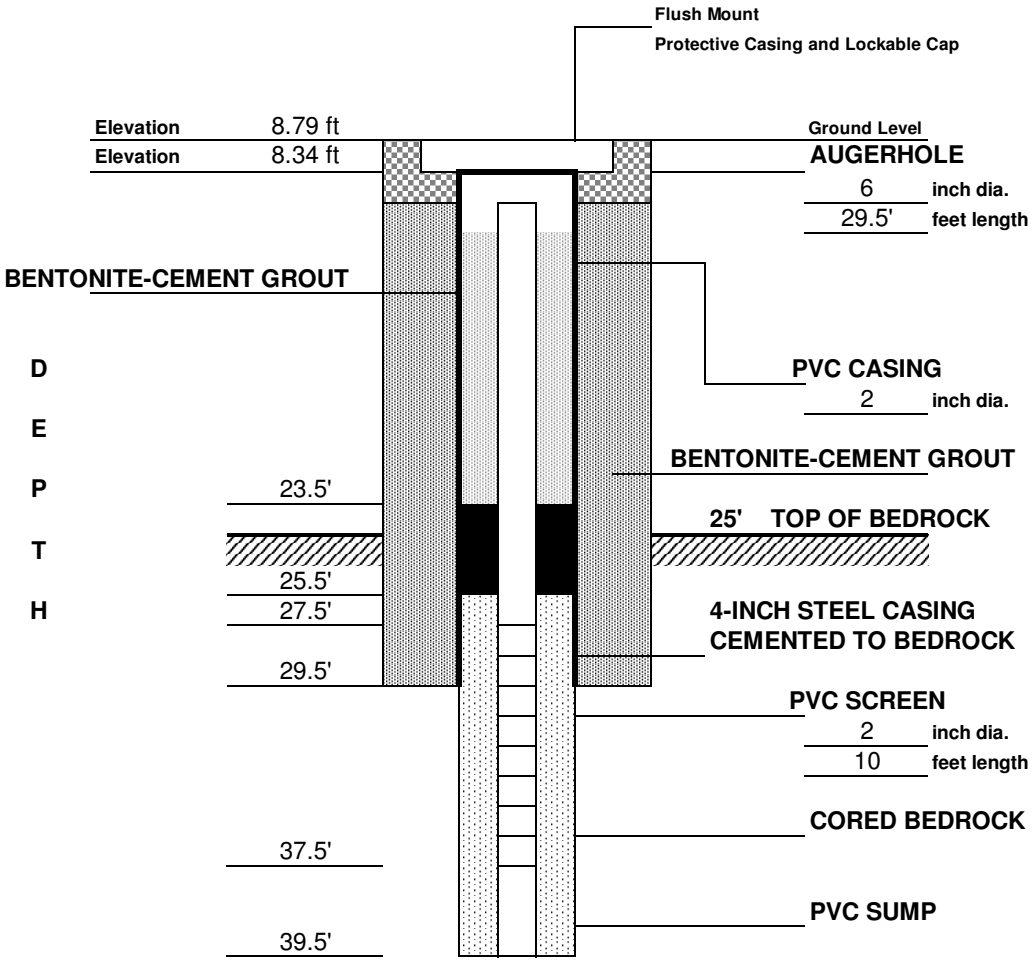
Driller: Allen Augustin

Rig Make/Model: CME

Date: 2/1/2012

GEOLOGIC LOG

Depth(ft.)	Description
	See geologic log for MWMF-07D



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Steel grade box	**Type:** 2" PVC 27.5'-37.5'	**Type:** #1 Sand **Setting:** 25.5'-39.5'
Monitor: 2" PVC	**Slot Size:** .010"	***SEAL MATERIAL***
		Type: Bentonite **Setting:** 23.5'-25.5'
		Type: Bentonite Cement Grout **Setting:** 1-23.5'

COMMENTS:

The well was constructed by first hammering 6 7/8-inch ID casing into the subsurface until it was firmly seated on bedrock. The casing was cleaned out using a rollerbit and clean water. A 4.5 feet long rock socket was then drilled into the bedrock using a 6-inch diameter core barrel inserted into the casing. Four-inch ID diameter steel casing was then lowered into the rock socket and tremie grouted in place as the 6-inch casing was removed from the ground. Ten feet of HQ core were then drilled by a core barrel inserted into the 4-inch casing. The well was completed using 2-inch diameter PVC screen and riser.

LEGEND

- Concrete
- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: Con Edison	**Location: Bronx, NY**	**Project No.: 11176159**
URS Corporation	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number: BW-04**

ATTACHMENT 2

FIELD ACTIVITY FORMS

ANNUAL SITE INSPECTION FORM

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE
COMPANY:

Inspected by: _____ Date: _____

SBL #	Current Site Owner	Current Property Use & Comments
Block 2590 Lot 51		
Block 2598 Lot 1		

MONITORING WELL INSPECTION FORM

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE

COMPANY:

SITE NAME: _____

JOB#: _____

DATE: _____

TIME: _____

WELL ID: _____

INSPECTOR (PRINT): _____

EXTERIOR INSPECTION CONDITION

PROTECTIVE CASING/ CURB BOX: _____

LOCK/HASP CONDITION: _____ LOCK KEY #: _____

HINGE/ LID: _____ GASKET/SEAL : _____

SECURITY BOLTS TYPE: _____

SECURITY BOLTS : _____ THREAD CONDITION: _____

WELL PAD: _____ BOLLARDS: _____

LABEL/ ID CONDITION: _____

MAINTENANCE PERFORMED (e.g., anti seize applied, re-tapping bolt holes, bolt replacement, gasket replacement, etc.)

INTERIOR INSPECTION CONDITION

WELL CASING INTERIOR: _____

WELL RISER: _____

ANNULAR SPACE: _____

J PLUG: _____

WATER LEVEL: _____ DEPTH TO BOTTOM: _____

HARD/SOFT BOTTOM: _____

MAINTENANCE PERFORMED (e.g., removed water, removed bentonite, sorbed sheen, replaced J plug, etc.)

ADDITIONAL COMMENTS: _____

INSPECTOR (SIGNATURE): _____

PROJECT MANAGER APPROVAL: _____

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE
COMPANY:

Project: _____ Site: _____ Well I.D.: _____

Date: _____ Sampling Personnel: _____ Company: _____

Purging/ Sampling Device: _____ Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: _____ Depth to Well Bottom: _____ Well Diameter: _____ Screen Length: _____

Casing Type: _____ Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): _____

Sample ID: _____ Sample Time: _____ QA/QC: _____

Sample Parameters: _____

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{yl} = \pi r^2 h$)

Remarks:

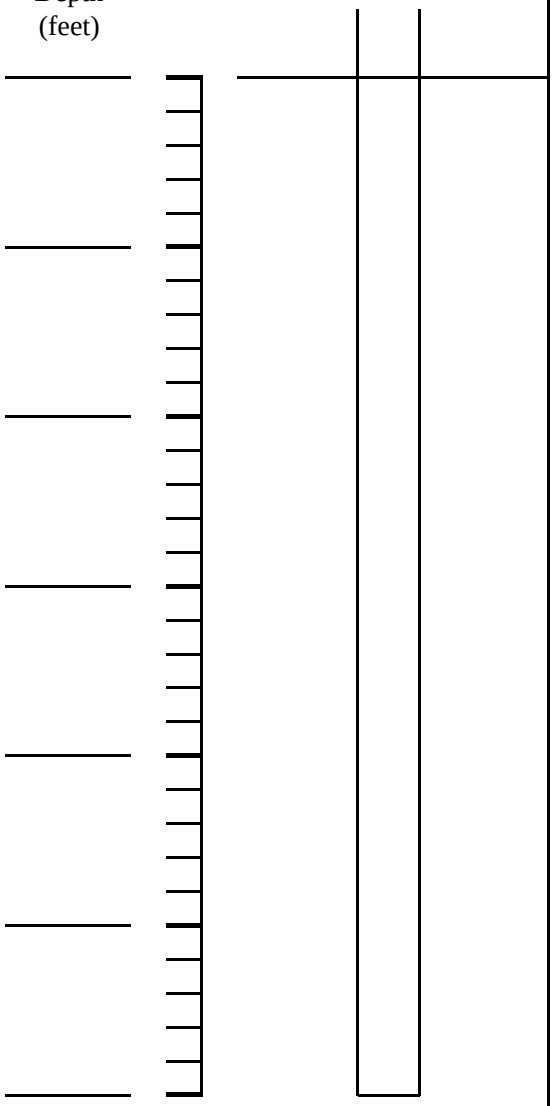
WELL DECOMMISSIONING RECORD

Site Name: Con Ed - East 138th St Works Former MGP Site	Well I.D.:
Site Location:	Driller:
Drilling Co.:	Inspector:
	Date:

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	

WELL SCHEMATIC*



COMMENTS:

* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

APPENDIX H

Field Sampling Plan

APPENDIX H

FIELD SAMPLING PLAN

EAST 138TH STREET WORKS FORMER MGP SITE
SITE # 203108
BRONX, NEW YORK

Prepared for:

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
31-01 20TH AVENUE – BUILDING 136
ASTORIA, NEW YORK 11105

Prepared by:

AECOM USA, Inc.
One John James Audubon Parkway
Suite 210
Amherst, New York 14228

April 2023

TABLE OF CONTENTS

FIELD SAMPLING PLAN

APPENDIX H
FIELD SAMPLING PLAN

TABLES (FOLLOWING TEXT)

FIGURES (FOLLOWING TABLES)

ATTACHMENTS (FOLLOWING FIGURES)

APPENDIX H
FIELD SAMPLING PLAN

1.0 INTRODUCTION

On behalf of the Consolidated Edison Company of New York, Inc. (Con Edison), AECOM USA, Inc. (AECOM), has prepared this *Field Sampling Plan (FSP)* for the Site Management Plan (SMP) at the East 138th Street Works former MGP site located in the Bronx, New York (Figure 1).

This FSP has eight sections. Section 2.0 includes a description of field procedures. Section 3.0 describes field documentation requirements and procedures. Section 4.0 describes surveying and mapping requirements. Section 5.0 describes sample shipping procedures. Section 6.0 discusses field sampling instrumentation. Section 7.0 describes sampling equipment decontamination procedures. Section 8.0 describes investigation-derived waste characterization and disposal procedures. A copy of Con Edison's Utility Clearance Process for Intrusive Activities (Revision 3) is provided in Attachment 1. Copies of field forms that will be used are provided in Attachment 2.

2.0 SITE INVESTIGATION ACTIVITIES

The following subsections describe the specific procedures that will be followed during site investigation activities.

2.1 Site Reconnaissance/Utility Markouts and Clearance/Geophysical Survey

Prior to conducting any intrusive activities, a survey will be conducted to identify and locate all subsurface utilities at the site, with focus on the areas where intrusive work will be performed and areas with the potential for preferential contaminant pathways. Utility clearance will be performed utilizing Con Edison's Utility Clearance Process for Intrusive Activities (Revision 3) and in compliance with New York State DOT (Department of Transportation) Dig Safely requirements. A copy of Con Edison's Utility Clearance Process for Intrusive Activities (Revision 3) is provided in Attachment 1 of this FSP. New York State law requires that utility clearance be performed at least two (2) days prior to initiating any subsurface work. The contractor shall contact Dig Safely New York (1-800-962-7333) to request a Code 753 mark-out by all utility companies with facilities within the work areas. These may include natural gas, electric, telephone, cable television, etc. Identified utilities will be physically marked with appropriate colored spray paint (e.g., orange for gas, red for electric, etc.). It is noted that New York City Department of Environmental Protection (NYCDEP) does not participate in the one-call system and shall be contacted directly as part of the clearance process. Following the utility markout, a site reconnaissance will be conducted and utility markouts will be reconciled with available utility plates, confirming the entrance point of all utilities identified by markouts and plates, and mapping the distribution of utilities inside the building and building perimeter.

Vehicle access routes to drilling and boring locations will be determined and cleared by the AECOM field representative prior to any field activities. The driller will be responsible for acquiring sidewalk-opening permits for the proposed sidewalk borings and monitoring well locations.

During the reconnaissance, a geophysical survey using ground penetrating radar (GPR) and/or other electromagnetic methods will be performed in efforts to trace underground utilities and locate subsurface utilities and structures associated with historical site operations. A 200 or 400 mega Hertz (MHz) transmitter/antenna will be used during the survey. The survey results will be logged by the on-board data logger and reviewed in the field. Any anomalies that are determined to potentially relate to

subsurface structures will be physically marked on the ground using paint in efforts to estimate their locations. Proposed boring locations will be modified based upon the results of this task, as necessary.

For locations outside of the building, prior to drilling, each proposed soil boring and monitoring well location will be pre-cleared to a depth of approximately 5 feet below ground surface (bgs). The pre-clearing effort will consist of removing pavement and/or concrete using a saw or jackhammer prior to removal in a 2-foot by 2-foot square. Following removal of the pavement and/or concrete, the subsurface soil will be removed to 5 feet bgs using hand (i.e., non-mechanical) methods such as a posthole digger, shovel, breaker bar, and/or an air knife in conjunction with vacuum extraction. After the location has been cleared for drilling, the hole will be backfilled flush with the sidewalk using the excavated spoils, unless there is evidence of contamination (sight, smell, elevated photoionization detector [PID] readings [> 100 ppm]), in which case the spoils will be disposed of as wastes and the excavation will backfilled with clean fill material (i.e., sand). If the boring will not be immediately advanced, it will be temporarily patched with blacktop patch or concrete.

Detailed plans and utility records are available for the inside of the building; therefore, hand clearing to a depth of 5 feet bgs will not be necessary. A modified boring clearing effort following the procedures described above will be conducted for intrusive activities within the building footprint, with the exception of hand clearing to 5 feet bgs, unless boring conditions warrant hand clearing at that location. A coring device will be used to cleanly core through the concrete floor at each boring location. Note that if potential utilities are identified beneath the slab in the vicinity of a particular boring, then the preferred approach will be to drill at an alternate location as long as no utilities are anticipated in that area and the location of the alternate boring satisfies the technical purpose of the original boring.

2.2 Surface Soil Sampling

Surface soil samples will not be collected, due to the highly developed nature of the site and surrounding environment and the general absence of exposed surface soil in this area of the Bronx.

2.3 Hollow-Stem Auger Drilling Procedures

Summary: A standard method of subsurface drilling which enables the recovery of representative subsurface samples for identification and laboratory testing utilized for borings outside the building only.

Procedures:

1) Hollow stem augers (HSAs), drill rods, and the drill rig will be thoroughly decontaminated using a high-pressure steam cleaner prior to advancing boreholes. `

2) The drill rig will be inspected for oil leaks and any leaks reported prior to starting drilling operations.

3) Advance the boring by rotating and advancing the appropriate size HSAs to the desired depth. The borings will be advanced incrementally to permit continuous subsurface soil sampling.

4) Remove center plug from the HSAs and collect a split-spoon sample at intervals stipulated by the project geologist.

Reference: American Society for Testing and Materials (ASTM) Standard Practice for Soil Investigation and Sampling by Auger Borings D1452-80, and Standard Method for Penetration Test and Split Barrel Sampling of Soils D1586-84.

2.4 Split-Spoon Sampling Procedures

Summary: Split-spoon sampling is a standard method of soil sampling to obtain representative samples for identification and laboratory testing as well as to serve as a measure of resistance of soil to sampler penetration. Split-spoon samples will be collected continuously through the entire boring.

Procedures: Measure the sampling equipment lengths to ensure that they conform to specifications. Confirm the weight of the hammer (140 pounds).

1) Clean out the HSAs to the bottom depth prior to sampling. Select additional components as required (i.e., leaf spring core retainer for clays or a sand trap for non-cohesive sands).

2) Lower the decontaminated 2-inch outside diameter (O.D.) split-spoon to the bottom of the HSAs and check the depth against length of the rods and the split-spoon.
3) Attach the drive head and hammer to the drill rods without the weight of the hammer resting on the rods.
4) Lower the weight and allow the split-spoon to settle up to 6 inches below the bottom of the HSAs. If it settles more, consider use of another type of sampler.
5) Mark four 6-inch intervals on the drill rods relative to a drive reference point on the rig. With the split-spoon resting on the bottom of the hole, drive the split-spoon with the 140-pound hammer falling freely over its 30-inch fall until 24 inches have been penetrated or 50 blows applied.
6) Record the number of blows required to drive the split-spoon 6 inches into the overburden. Determine the "N" value by adding the blows for the 6- to 12-inch and 12- to 18-inch interval of each sample attempt.
7) After penetration is complete, remove the split-spoon.
8) Open the split-spoon to determine the percent recovery, and describe the soil.
9) Split the sample lengthwise and screen the soil with a PID for volatile organic vapors.
10) Document all properties and sample locations in the field notebook, and later on the Boring Log form (Attachment 2).

Reference: ASTM Standard Method for Penetration Test and Split Barrel Sampling of Soils D1586-84, and USCS D2487-92.

2.5 Direct-Push Drilling Procedures

Summary: A standard method of subsurface drilling using hydraulically powered soil-probing equipment, utilized inside or outside of the building, which enables the recovery of representative subsurface samples for identification and laboratory testing.

Procedures:

1) Inspect the sampling equipment to ensure proper working condition.

2) Insert dedicated/disposable acetate liner into sampler and select additional components for the sampler as required (i.e., leaf spring core retainer for clays, or a sand trap for non-cohesive sands).

3) Lower the sampler to the ground surface, or bottom of the hole previously made by the sampler, and check the depth against length of the rods and the sampler.

4) Attach the drive head assembly to the sample rods.

5) Push the sampler in 4-foot increments into the subsurface up to the desired depth with a hydraulic press.

6) Rotate the sampling rods clockwise and remove the sampler.

7) Split the sample lengthwise and screen the soil with a PID for volatile organic vapors.

8) Document all properties and sample locations in the field notebook, and later on the Direct-Push Log form (Attachment 2).

9) Abandon the direct-push boring by backfilling with bentonite pellets and hydrate with potable water or use concrete patch in impervious areas.

Summary: To collect representative groundwater samples using a direct-push unit (if needed).

The direct-push groundwater samples will be labeled following procedures described in Section 2.7.6. Sample parameters and QA/QC requirements are provided in Table 1. A list of volume and preservation requirements is provided in Table 2.

Procedures:

1) A Screen Point Sampler 15 (SP15) groundwater sampler, or an equivalent unit, will be utilized to collect groundwater samples in direct-push borings that intercept the groundwater table.

2) To collect groundwater samples, a clean sampler will be threaded onto the leading end of the probe rod and lowered or driven to the desired sampling interval (approximately 1 foot below the top of the water table). While the sampler is driven to depth, O-ring seals at the drive head and expendable drive point will provide a watertight system.

3) Once at the desired sampling depth, chase rods will be sent down-hole until the leading rod contacts the bottom of the sampler screen. The tool string will then be retracted while the screen is held in place by the chase rods. As the tool string is retracted, the expendable point is released from the sampler sheath. An O-ring on the screen head maintains the seal at the top of the screen. As a result, any liquid entering the sampler during screen deployment must first pass through the screen.

4) The tool string and sheath may be retracted the full length of the screen or as little as a few inches if a small sampling interval is desired. The SP15 Sampler utilizes a screen with a standard slot size of 0.004 inches and an exposed length of 41 inches.

5) A minimum of 1 gallon of water will be purged from the sampler prior to sample collection with dedicated Teflon or polyethylene tubing of laboratory or food grade quality, and a check valve. The groundwater sample will be collected with dedicated Teflon or polyethylene tubing of laboratory or food grade quality, and a check valve.

6) Groundwater samples will be placed on ice and shipped to the laboratory under standard COC protocol for analysis by USEPA Method 8260B for TCL VOCs.

7) Upon the completion of the sampling, the sampler will be removed and the borehole will be backfilled with bentonite pellets and the surface will be repaired with similar material (i.e., concrete, asphalt or topsoil); and marked with spray paint.

2.6 Unified Soil Classification System

Soils are classified for engineering purposes according to the Unified Soil Classification System (USCS) adopted by the U.S. Army Corps of Engineers and U.S. Department of the Interior Bureau of Reclamation. Soil properties which form the basis for the USCS are:

- Percentage of gravel, sand, and fines;
- Shape of the grain-size distribution curve; and
- Plasticity and compressibility characteristics.

According to this system, all soils are divided into three major groups: coarse-grained; fine-grained; and highly-organic (peaty). The boundary between coarse-grained and fine-grained soils is taken to be the 200-mesh sieve (0.074 mm). In the field the distinction is based on whether the individual particles can be seen with the unaided eye. If more than 50% of the soil by weight is judged to consist of grains that can be distinguished separately, the soil is considered to be coarse-grained.

The coarse-grained soils are divided into gravelly (G) or sandy (S) soils, depending on whether more or less than 50% of the visible grains are larger than the No. 4 sieve (3/16 inch). They are each divided further into four groups:

W: Well graded; fairly clean (<5% finer than 0.074 mm)

P: Poorly graded (gap-graded); fairly clean (<5% finer than 0.074mm)

C: Clayey (>12% finer than 0.074mm); plastic (clayey) fines. Fine fraction above the A-line with plasticity index above 7.

M: Silty (>12% finer than 0.074 mm); non-plastic or silty fines. Fine fraction below the A- line and plasticity index below 4.

The soils are represented by symbols such as GW or SP. Borderline materials are represented by a double symbol, such as GW-GC.

The fine-grained soils are divided into three groups: inorganic silts (M), inorganic clays (C), and organic silts and clays (O). The soils are further divided into those having liquid limits lower than 50% (L), or higher than 50% (H).

The distinction between the inorganic clays (C), inorganic silts (M), and organic soils (O) is made on the basis of a modified plasticity chart. Soils CH and CL are represented by points above the A-line, whereas soils OH, OL, and MH correspond to positions below the A-line. Soils ML, except for a few clayey fine sands, are also represented by points below the A-line. The organic soils O are distinguished from the inorganic soils M and C by their characteristic odor and dark color.

Reference: ASTM Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) D2487-92.

2.6.1 Soil Sample Qualifiers

It is important that descriptive qualifiers are consistently used to characterize degree and nature of contaminant impacts and visual-manual soil classification. The following presents some examples of descriptive qualifiers.

- PID or FID used to screen all soil samples (headspace method) – maximum readings should be recorded and included on the logs. PID/FID to be calibrated daily at a minimum.
- Moisture terms are: Dry, Moist, and Wet.
- Color terms - use geotechnical color charts - colors may be combined (e.g., red-brown). Color terms should be used to describe the “natural color” of the sample as opposed to staining caused by contamination (see below).
- Representativeness – Soil logs should include particular notes if the field representative believes that there is a possibility the soil sample being described is not representative of the interval sampled.

- Intervals for Description – if using a 2-foot (split spoon) or 4-foot (Macro-core) long sampler – the field description should not necessarily be for the entire sample interval. It is important to look for, identify, and describe small-scale units and changes within each sample interval.

Visible Contamination Descriptors

- Sheen - iridescent petroleum-like sheen. Not to be used to describe a "bacterial sheen" which can be distinguished by its tendency to break up on the water surface at angles; whereas petroleum sheen will be continuous and will not break up. A field test for sheen is to put a soil sample in a jar of water and shake the sample (jar shake test), then observe the presence/absence of sheen on the surface of the water in the jar.

- Stained - used with color (i.e., black or brown stained) to indicate that the soil matrix is stained a color other than the natural (unimpacted) color of the soil.

- Coated - soil grains are coated with tar/free product – there is not sufficient free-phase material present to saturate the pore spaces.

- Blebs - observed discrete sphericals of tar/free product - but for the most part the soil matrix was not visibly contaminated or saturated. Typically this is residual product.

- Saturated - the entirety of the pore space for a sample is saturated with tar/free product. When using this term, care should be taken to ensure the observation is not water saturating the pore spaces. Depending on viscosity, tar/free-phase saturated materials may freely drain from a soil sample.

- Oil. Used to characterize free and/or residual product that exhibits a distinct fuel oil or diesel fuel like odor; distinctly different from MGP-related odors/impacts.

- Tar. Used to describe free and/or residual product that exhibits a distinct "coal tar" type odor (e.g., naphthalene-like odor). Colors of product can be brown, black, reddish-brown, or gold.

- Solid Tar. Used to describe product that is in either the solid or semi-solid phase. The magnitude of the observed solid tar should be described (e.g., discrete granules or a solid layer).

- Purifier Material. Purifier material is commonly brown/rust or blue/green wood chips or granular material. Other colors may be present. It is typically associated with a distinctive sulfur-like odor.

Olfactory Descriptors

- Use terms such as " tar-like odor" or "naphthalene-like odor" or "fuel oil-like odor" that provide a qualitative description (opinion) as to the possible source of the odor.

- Use modifiers such as strong, moderate, faint to indicate intensity of the observed odor.

DNAPL/LNAPL

- A jar shake test should be performed to identify and determine whether observed tar/free-phase product is either denser or lighter than water. In addition, MGP residues can include both light and dense phases. This test can help determine if both light and dense phase materials are present at a particular location.

Viscosity of Free-Phase Product

If free-phase product/tar is present, a qualitative description of viscosity should be made. Use descriptors such as:

- Highly viscous (e.g., taffy-like).

- Viscous (e.g., No. 6 fuel oil or bunker crude-like).

- Low viscosity (e.g., No. 2 fuel oil-like).

2.7 Monitoring Well Abandonment, Re-Development, and Sampling

Well abandoning will be performed in accordance with New York State Department of Environmental Conservation (NYSDEC) CP-43, using the following steps:

1) Each well will be tremie grouted from the bottom of the well to within five feet of the ground surface to ensure a continuous grout column. Grout slurry composition should be the following:

    a. 1.5 to 3.0 percent by weight - Bentonite (Quick Gel)

    b. 40 to 60 percent by weight - Cement (Portland Type I)

    c. 40 to 60 percent by weight - Water

2) The well casing will be removed at a depth of five feet below grade (if possible) and the outer protective casing "stick-up" and/or flush-mount curb box will be removed only after the well has been properly filled with grout.

3) The uppermost five feet of the borehole will be filled with approved/clean backfill or topsoil.

4) The surface of the borehole will be restored to the condition of the area surrounding the borehole (crushed stone, asphalt, etc.). If the surrounding surface is a concrete sidewalk flag that flag will be replaced in accordance with Section 3.29 of this plan.

5) The solid waste should be handled is accordance with Section 3.30 of this plan.

6) Document well construction details in the field notebook and transfer the data onto the Well Decommissioning Record form (Attachment 2).

Reference: NYSDEC CP-43: Groundwater Monitoring Well Decommissioning Policy, November 3, 2009.

2.7.2 Plugging/Abandoning Borehole and Grout Mixing Procedures

Summary: Boreholes that are not completed as monitoring wells, will be sealed (plugged) prior to abandonment to prevent downhole contamination. In addition, the annular space in monitoring wells need to be sealed after the installation of the sand pack and bentonite seal to prevent any downward migration of water from the surface into the well. Sealing can be achieved by backfilling the borehole with bentonite below the water table (hole plug or pellets) and/or with a cement/bentonite grout above

the water table. The backfill material will be introduced from bottom to top using either a tremie pipe or the drill rods. Shallow borings will be sealed with bentonite (hole plug or pellets) the entire length of the boring.

Procedures:

1) Determine the most suitable seal materials. Grout specifications generally have mixture ratios as follows:
   Grout Slurry Composition (Percent Weight)
   1.5 to 3.0 percent - Bentonite (Quick Gel)

   40 to 60 percent - Cement (Portland Type I)

   40 to 60 percent - Water
2) Calculate the volume of the borehole based on the bit or auger head diameter plus 10% and determine the volume of grout to be emplaced. Generally, the total mixed volume is the borehole volume plus 20%.
3) Identify the equipment to be used for preparing and mixing of the grout. Ensure the volume of the tanks to be used for mixing has been measured adequately. Document these volumes.
4) Identify the source of the water to be used for the grout and determine its suitability for use. In particular, water with high sulfate or chloride levels, or heated water, should not be used. These types of waters can cause operational difficulties or modify the set-up for the grout.
5) Identify the equipment to be used for emplacing the grout. Ensure that the pump to be used has adequate pressure to enable complete return to surface.
6) Identify the volumes to be pumped at each stage or in total if only one stage is to be used.
7) Prepare the borehole plugging plan and discuss the plan and activities with the drilling contractor prior to beginning any mixing activities.
8) Begin mixing the grout to be emplaced.
9) Record the type and amount of materials used during the mixing operation. Ensure that the ratios are within specification tolerance.

10) Begin pumping the grout through the return line bypass system to confirm that all pump and surface fittings are secure.

11) Initiate downhole pumping. Record the times and volumes emplaced on the form.

12) Document the borehole is completely filled with grout.

13) Clear and clean the surface near the borehole. Level the ground to about the pre-existing grade. Add grout or cement as necessary to the area near the borehole.

Note: On occasion, there may be some settling of the grout, which takes place over several days. If this settling occurs, the natural soil from the immediate vicinity is used to put the level at grade. A follow-up check at each site should be made within one week to 10 days of completion. Document the visit and describe any action taken.

2.7.3 Monitoring Well Re-Development Procedures

Summary: On occasion (e.g., due to excessive silt accumulation), it may be necessary to re-develop a monitoring well. Each well will be re-developed by surging and pumping until the discharged water is sediment free based on visual observations and the indicator parameters (pH, temperature, and specific conductivity) have reached a steady state. Re-developing the monitoring well not only removes any sediment, but also may improve the hydraulic properties of the formation. The effectiveness of the re-development measures will be closely monitored in order to keep the volume of discharged water to the minimum necessary to obtain sediment-free samples. A portable turbidimeter will be used to monitor the effectiveness of the re-development. A turbidity reading of < 50 Nephelometric Turbidity Units (NTU) and steady state pH, temperature, and specific conductivity readings will be used as a guide for discontinuing well re-development. The well will be re-developed as described below. Re-development water will be containerized in 55-gallon drums for off-site disposal.

Procedures:

1) An appropriate well re-development method should be selected, depending on water level depth, well productivity, and sediment content of water. Well re-development options include surging while manual pumping and powered suction-lift or hydrolift pumping.

2) Equipment should be assembled, decontaminated (if necessary), and installed in the well. Care should be taken not to introduce contaminants to the equipment during installation.

3) Well re-development should proceed by repeated surging and removal of water from the well until the discharged water is relatively sediment-free. The effectiveness of the re-development should be monitored at regular intervals using a portable turbidity meter. The volume of water removed and turbidity, pH, temperature, and conductivity measurements will be recorded on a Well Development Log (Attachment 2).

4) Well re-development will be discontinued when the turbidity of the discharged water is below 50 NTU.

Reference: ASTM Standard Practice for Design and Installation of Ground Water Monitoring Wells in Aquifers D5092-90.

2.7.4 Fluid Level Monitoring Procedures

Summary: Determination of presence and thickness of non-aqueous phase liquids (NAPLs), depth to groundwater and depth to bottom in monitoring wells. The depth to water is necessary to calculate required purge volumes prior to groundwater sampling and to make potentiometric surface maps. Water levels in wells scheduled to be sampled during the fieldwork will be measured using an electronic interface probe/water level indicator. Water levels to be used to generate potentiometric surface contour maps will be collected sequentially from all site wells during one continuous monitoring event. Water level measurement procedures are presented below.

Procedures:

1) Clean the water level probe and the lower portion of cable following standard decontamination procedures and test the water level meter to ensure that the batteries are charged.

2) Lower the probe slowly into the monitoring well, an intermittent audible alarm indicates the presence of free product (LNAPL). Record the depth to the top of the LNAPL (if present).

3) Read the depth to the nearest hundredth of a foot from the graduated cable using the V-notch on the riser pipe as a reference.

4) Slowly lower the probe into the well until the intermittent audible alarm becomes a solid alarm; this indicates the top of the water. Record the depth to the top of the water. Lower the probe to the bottom of the well and record the bottom depth of the well.

5) Repeat the measurement for confirmation and record the water level.

6) Lower the probe slowly to the bottom of the monitoring well. If the solid audible alarm becomes intermittent, this indicated the presence of DNAPL. Record the depth to the top of the DNAPL and record the bottom depth of the well.

7) Remove the probe from the well slowly, drying the cable and probe with a clean paper towel.

8) Replace the well cap and lock the protective cap in place.

9) Decontaminate the water level meter if additional measurements are to be taken.

Alternately, if the interface probe cannot detect the DNAPL due to its viscosity, a weighted cotton string will be lowered to the bottom of the well and the bottom portion of the string stained by DNAPL will be measured to determine the DNAPL thickness.

2.7.5 Monitoring Well Purging Procedures

Summary: To collect representative groundwater samples, monitoring wells must be adequately purged prior to sampling. Low volume sampling equipment and procedures will be used to purge the wells and retrieve groundwater samples. Purging will require the removal of one to three volumes of standing water by pumping at a rate of less than one liter per minute. Drawdown must not exceed 10% of the standing water column. Sampling should commence immediately after purging.

Procedures: Monitoring well purging will be completed using the low-flow purging technique as follows:

1) The well cover will be unlocked and carefully removed to avoid having any foreign material enter the well. The interior of the riser pipe will be monitored for organic vapors using a PID. If a reading of greater than 5 ppm is recorded, the well will be vented until levels are below 5 ppm before purging begins.

2) Using an electronic interface probe/water level detector, the water level below top of casing will be measured. The depth of the well will be measured to determine the volume of water in the well. The bottom of the well will also be checked for DNAPL using the interface probe/water level indicator. The end of the probe will be decontaminated between wells**.**

3) Calibrate field instruments (e.g., pH, specific conductance, PID, turbidity).

4) Purge the required water volume (i.e., until stabilization of pH, temperature, specific conductivity, and turbidity) using a low-flow pump (e.g., Solinst or Geopump) and dedicated HDPE tubing. New dedicated tubing will be used for each well.

5) Purge the well until the water quality parameters have stabilized. The stabilization criteria are: specific conductivity - 3% full-scale range; pH - 0.10 pH unit; dissolved oxygen – 10%; Turbidity – 10%; and oxidation/reduction (redox) potential - +/- 10 units.

6) Purging three well volumes is not necessary if the indicator parameters are stable. However, at least one well volume must be purged before sampling can begin. During purging, it is permissible to by-pass the flow cell until the groundwater has cleared.

7) Indicator parameters of pH, conductivity, dissolved oxygen, oxidation/reduction (redox) potential, turbidity, and temperature must be measured continuously using the flow cell.

8) Well purging data are to be recorded in the field notebook and on the Low-Flow Purge Log (Attachment 2).

2.7.6 Groundwater Sampling Procedures

Summary: The following groundwater sampling procedures will be used for monitoring well sampling after purging has been conducted:

Procedures:

1) After well purging is completed, a sample will be collected into the appropriate laboratory supplied containers.

2) Direct water flow toward the inside wall of the sample container to minimize volatilization. Fill volatile sample containers so no headspace (air bubbles) is present. If containers are pre-preserved, do not overfill sample containers. Note if effervescence is observed.

3) All sample bottles will be labeled in the field using a waterproof permanent marker.

4) Samples will be collected into sample bottles (Table 2) (containing required preservatives) and placed on ice in coolers for processing (preservation and packing) prior to shipment to the analytical laboratory. A Chain of Custody (COC) record will be initiated. The analytical laboratory will certify that the sample bottles are analyte-free prior to shipping.

5) Well sampling data are to be recorded in the field notebook and on the Low-Flow Purge Log.

6) Groundwater samples will be placed on ice and shipped overnight to the laboratory under COC control for the parameters indicated in Table 1. The volume of sample required, bottle type and required QA/QC may be found in Tables 1 and 2. Samples will be shipped the same day as collection.

Any observations of sheen, blebs, free-phase product/tar, staining or coating of the sampling equipment, odor, etc. that are made during sampling of groundwater are to be included in the Low-Flow Purge Log.

2.7.7 Sample Labeling

Summary: In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the following procedures will be used:

Procedures: Each sample will have the following information placed on the laboratory-supplied sample label:

1) Site name

2) Sample identification

3) Project number

4) Date/time

5) Sampler's initials

6) Analysis required.

The following terminology shall be used to identify samples:

Soil Sample

MW-xx- (SD – ED)

SB-xx- (SD – ED)

Where xx is the monitoring well or soil boring location ID; SD is the sample starting depth; and ED is the sample ending depth. For example, a soil sample collected from SB-01 from the 1.0 to 2.0 foot depth would be assigned the following sample ID: SB-01- (1.0-2.0)

Groundwater Sample

MW-xx (for monitoring well)

Where xx is the monitoring well location ID. Field duplicate and trip blank samples will be assigned a unique identification alphanumeric code that specifies the date of collection, the letters FD (for field duplicate) or the letters TB (for trip blank) and an ascending number that records the number of duplicate samples collected that day. For example, the first field duplicate or a trip blank collected on July 31, 2017 would be assigned the following sample number using the code shown below:

YYYYMMDD-FD-1 = 20170731-FD-1, or

YYYYMMDD-TB-1 = 20170731-TB-1.

Subsequent duplicates collected on the same day would be assigned FD-2, FD-3, etc. Field sampling crews will record the duplicate sample information on the logs (e.g., purge logs) and also in the field book.

2.7.8 Monitoring Well Inspection

Summary: Periodic inspection and maintenance of monitoring well protective casings are required to keep the wells in good condition. The following procedure should be followed whenever the monitoring wells are opened for gauging and sampling.

Procedure:

1. Use the Monitoring Well Inspection Form (Attachment 2) to record the conditions of the various components of the monitoring well and protective casing including lock/hasp, hinge/lid, J-plug, gasket seal, and security bolts.

2. Coat security bolts with never seize to prevent seizure in the cast iron flush mount curb boxes.

3. In wells, record depth to water, depth to bottom, and depths to the top and bottom of any LNAPL and DNAPL layers.

4. Record any maintenance performed on the well and stencil as needed.

5. All sections of the inspection form should be completed and photographs taken before and after inspection and maintenance.

3.0 FIELD DOCUMENTATION

Field notebooks will be used during all on-site work. A dedicated field notebook will be maintained by the field technician overseeing the site activities. In addition to the notebook, any and all original sampling forms, purge forms and notebooks used during field activities will be submitted as part of the final report.

The field sampling team will maintain a sample log sheet summarizing the following data:

1) Sample identification

2) Date and time of sample collection

3) Sampling depth

4) Identity of samplers

5) Sampling methods and devices

6) Purge volumes (groundwater)

7) Groundwater purge parameters

8) Chain of custody and shipping information.

Each subsurface boring will be logged in a bound field notebook during drilling by the supervising geologist. Field notes will include descriptions of subsurface materials encountered during drilling, sample numbers, and types of samples recovered from the borehole. Additionally, the geologist will note time and material expenditures for later verification of contractor invoices.

Upon completion of daily drilling activities, the geologist will complete the Daily Drilling Record form and initiate chain-of-custody on any samples recovered for chemical laboratory testing. Following completion of the drilling program, the geologist will transfer field notes onto standard forms for the Remedial Investigation Report.

On a weekly basis the geologist will submit a summary report to the project manager containing at a minimum the following:

1) a summary of the daily drilling records

2) a progress report on field activities

3) a record of site visitors.

The proper completion of the following forms/logs will be considered correct procedure for documentation during the drilling program:

1) Field Log Book - weather-proof hand-bound field book

2) Daily Drilling Records (Attachment 2)

3) Boring Logs (Attachment 2)

4) Overburden Monitoring Well Construction Detail Diagrams (Attachment 2).

4.0 SURVEYING AND MAPPING

Project surveying will provide data necessary to plot locations of soil borings, monitoring wells and air sample locations on a site base map. All surveying will be performed under the supervision of a New York State-licensed land surveyor. Horizontal datum will be referenced to the North American Datum of 1983 (NAD83), New York State Plane Coordinate System, Long Island Zone. Vertical datum will be referenced to the North American Vertical Datum 1988 (NAVD 1988).

5.0 SAMPLE SHIPPING

Summary: Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

The procedures used follow the chain-of-custody guidelines outlined in NEIC Policies and Procedures, prepared by the National Enforcement Investigations Center (NEIC) of the U.S. Environmental Protection Agency Office of Enforcement.

Procedures:

1) The COC record should be completely filled out with all relevant information.

2) The original COC goes with the samples. It should be placed in a Ziploc bag and placed inside the cooler/box containing the samples. The sampler should retain a copy of the COC.

3) Groundwater and soil samples should be shipped on ice in the laboratory-supplied coolers.

4) Place the lab address on top of the sample box/cooler. Affix numbered custody seals across box lid flaps and cooler lid. Cover seals with wide, clear tape.

5) Ship samples via overnight carrier the same day that they are collected. Shipping soil gas samples one day after collection is permitted, if required.

6.0 FIELD SAMPLING INSTRUMENTATION

AECOM-owned and rented field sampling equipment will require no maintenance beyond decontamination between sampling locations. Calibration procedures for electronic instruments can be found in the equipment operating manuals. Calibration and maintenance procedures for the common instrumentation that will be used during field investigations are discussed in the equipment operating manuals. A copy of the manufacturer's operating manual for each instrument will be kept with the instrument or the operator. All field sampling equipment will be calibrated as recommended by the manufacturer. The calibration procedures and results will be recorded in the field notebook.

6.1 Preventative Maintenance

In case of an emergency, the equipment rental vendor, other AECOM offices, and/or the instrument manufacturer will be contacted. Instrumentation rental vendors, which provide overnight UPS/Federal Express service, are listed below.

Vendor:

Pine Environmental Services, Inc.: Rochester, NY: 1-585-424-2140

Eco-Rental Solutions LLC: Rochester, NY: 1-585-625-2323

7.0 SAMPLING EQUIPMENT DECONTAMINATION PROCEDURES

Summary: To assure that no outside contamination will be introduced into the samples/data, thereby invalidating the samples/data, the following cleaning protocols will apply to all equipment used to collect samples/data during the field investigations.

Procedures:

1) Thoroughly clean equipment with laboratory-grade soap and water, until all visible contamination is gone.

2) Rinse with water, until all visible evidence of soap is removed.

3) For stainless steel trowels and bowls used for surface soil sampling, rinse equipment with nitric acid, then rinse with deionized water, and then rinse with methanol.

4) Rinse several times with deionized water.

5) Air dry before using.

6) If equipment will not be used immediately, wrap in aluminum foil.

All down-hole drilling equipment will be steam cleaned on a portable decontamination pad. Decontamination materials will be collected and placed in 55-gallon drums.

8.0 INVESTIGATION-DERIVED WASTE CHARACTERIZATION AND DISPOSAL

8.1 On-Site Staging

All soil cuttings, decontamination water, and development water will be contained in 55-gallon drums. If an on-site staging location is available, AECOM will make provisions to secure any investigation-derived wastes (IDW) while proper waste characterization analysis is being performed. The IDW will be secured either behind secure fencing with a lockable gate or within a rented storage container. AECOM will collect representative samples of the IDW for proper waste characterization (as determined by the disposal facility). A Con Edison-approved IDW subcontractor will be retained by AECOM for the transportation and disposal of all IDW. AECOM will complete appropriate waste profiles based upon the analytical data and provide appropriate waste documentation as necessary (i.e., bill of lading, non-hazardous waste shipping document or hazardous waste manifest) for Con Edison's review. An on-site Con Edison Construction Inspector will review and sign waste documentation. AECOM will provide a Certificate of Disposal (COD) to the Con Edison Project Manager for each waste shipment. The COD will document all phases of the waste disposal (e.g., landfilling, incineration, treatment, recycling, or other management).

8.2 Daily Pick-Up

If a temporary staging area is not available, the IDW will be picked up on a daily basis. AECOM will collect representative samples of the IDW for proper waste characterization (as determined by the disposal facility). The IDW subcontractor will be responsible for off-site storage of the containers of IDW in an approved manner either at the subcontractor's off-site facility or in an off-site storage container (e.g., CONEX box), pending approval for disposal. Based upon the analytical results provided by the IDW subcontractor, AECOM will complete appropriate waste profiles based upon the analytical data and provide appropriate waste documentation as necessary (i.e., bill of lading, non-hazardous waste shipping document or hazardous waste manifest) for Con Edison review. An on-site Con Edison Construction Inspector will review and sign waste documentation. AECOM will provide a COD to the Con Edison Project Manager for each waste shipment. The COD will document all phases of the water disposal (e.g., landfilling, incineration, treatment, recycling, or other management).

TABLES

Table 1

Summary of Samples and Analytical Parameters
East 138th Street Works Site
Bronx, NY

MATRIX/ANALYSIS	Analytical Method	Field Samples (1)	Matrix Spike (MS)	MS Duplicate or Matrix Duplicate	Field Duplicate	Equipment Blank (2)	Trip Blank (3)	Total Analyses
Aqueous Groundwater Samples								
TCL Volatile Organics	SW 846 8260C	8	1	1	1	1	1	13
TCL Semivolatile Organics	SW 846 8270D	8	1	1	1	1	-	12
TAL Metals	SW 846 6010C/7470A	8	1	1	1	1	-	12
Cyanide, total	SW 846 9012B	8	1	1	1	1	-	12

TCL - Target Compound List
TAL = Target Analyte List (23 Metals)
Notes
(1) MW-01, MW-02, MW-03, MW-05, MW-06, MWMF-04, MWMF-05, MWMF-08
(2) Equipment rinsate blank quantity will vary depending on ssampling equipment used; quantity may be greater or less than that shown. Equipment blank not required for dedicated, disposable equipment.
(3) One trip blank per sample shipment or one per day, whichever is less.

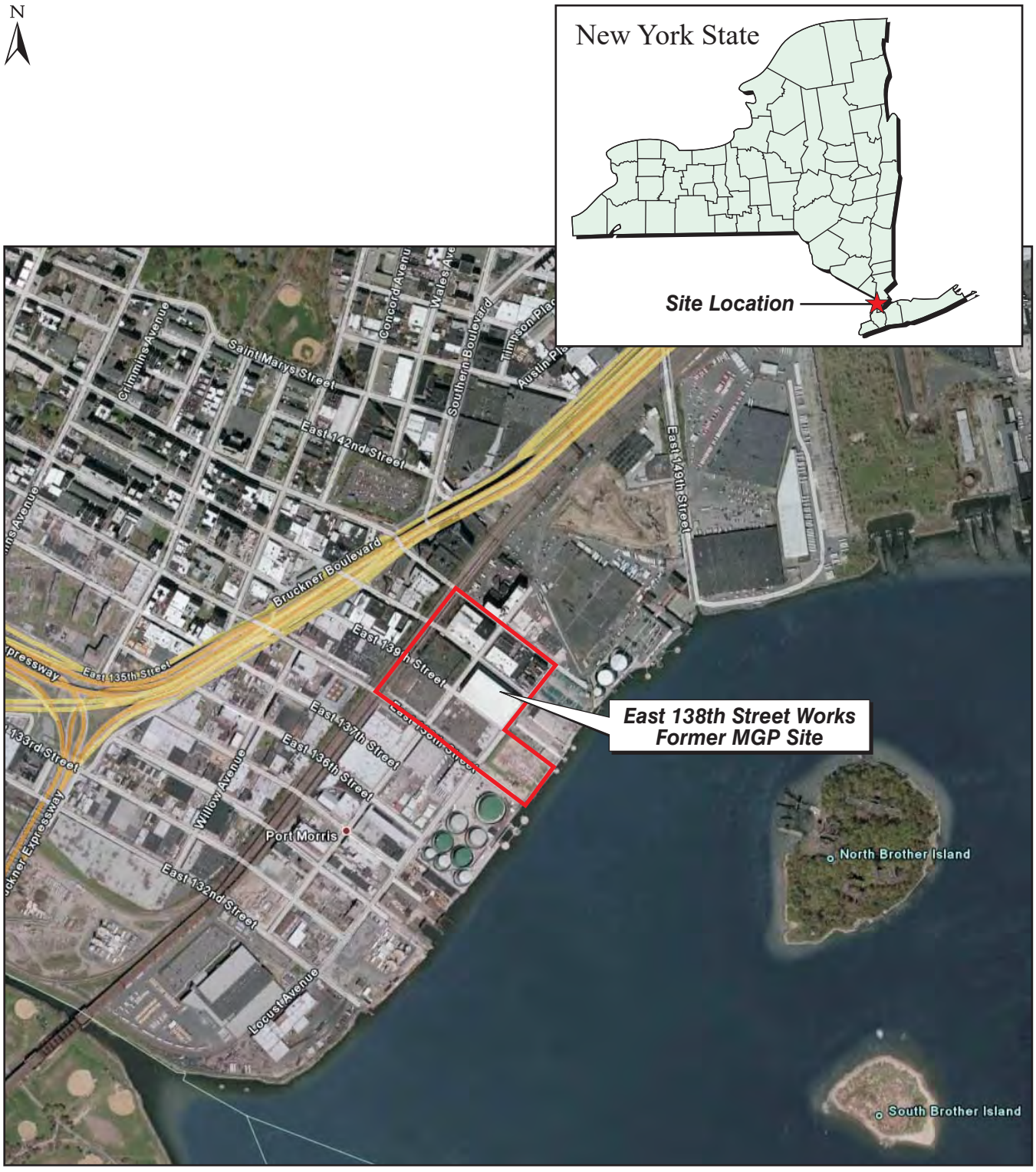
Table 2

Analytical Method, Sample Container and Preservation Requirements, and Analytical Holding Times
East 138th Street Works Site
Bronx, NY

MATRIX/ANALYSIS	Sample Prep Method [1]	Analytical Method [2]	Sample Bottles [3]				Minimum Vol Rqd	Preservation [4]	Holding Time [4,5]		Comment
			Mat'l	Size	Qty	Source			Extraction	Analysis	
Aqueous Samples											
TCL Volatile Organics	SW 846 5030C	SW 846 8260C	Glass	40 mL	2 or 3	Lab	40 mL	HCl to pH ≤ 2	NA	14 days	7 days if not preserved.
TCL Semivolatile Organics	SW 846 3510C/3520C/3535	SW 846 8270D	Glass	250 mL	2	Lab	250 mL	None	7 days	40 days	
TAL Metals (except mercury)	SW 846 3005A/3010A/3020A	SW 846 6010C	Plastic	250 mL	1	Lab	200 mL	HNO_3 to pH≤ 2	NA	180 days	180 days for TAL metals except Hg.
Mercury	SW 846 7470A	SW 846 7470A							NA	28 days	28 days for Hg.
Cyanide, total	SW 846 9012B	SW 846 9012B	Plastic	250 mL	1	Lab	400 mL	NaOH to pH ≥ 12	NA	14 days	

(1) Laboratory may propose alternate extraction/preparation methods, subject to AECOM approval.
(2) More recent versions of SW-846 methods may be used subject to AECOM approval.
(4) All samples for chemical analysis should be held at 4 degrees C in addition to any chemical preservation required.
(5) Holding time calculated from day of collection, unless noted as being from time of extraction. Laboratory holding times (ASP 2005, Exhibit I) are two days shorter to allow for field handling and shipping.
SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. USEPA SW-846. Complete through Update IV, March 2009.
TAL - Target Analyte List
TCL - Target Compound List

FIGURES



AG20003A-111755538-010416-GCM

conEdison AECOM

SITE LOCATION MAP
EAST 138TH STREET WORKS FORMER MGP
BRONX, NEW YORK

FIGURE 1

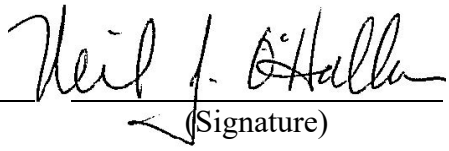
ATTACHMENT 1

CON EDISON'S UTILITY CLEARANCE PROCESS FOR INTRUSIVE ACTIVITIES (REVISION 3)

UTILITY CLEARANCE MANUAL FOR INTRUSIVE ACTIVITIES

EH&S REMEDIATION PROGRAM

Revision: 3 Date: May 22, 2020

Prepared by: Neil J. O'Halloran  Date: May 22, 2020
Section Manager – (Signature)
EH&S Remediation

Reviewed by: Kenneth J. Kaiser  Date: **May 26, 2020**
Department Manager - (Signature)
EH&S Remediation

Approved by: Anita Ma  Date: May 26,2020
Director - (Signature)
EH&S Remediation

Table of Contents

TABLES

ATTACHMENTS

APPENDICES

UTILITY CLEARANCE (UC) MANUAL FOR INTRUSIVE ACTIVITIES EH&S REMEDIATION PROGRAM

1.0 INTRODUCTION

This manual outlines a process to identify, locate, and clear subsurface utilities that are part of the Environment, Health and Safety (EH&S) Department's Remediation Section intrusive site investigations and related activities. The various activities that comprise this process are specified in efforts to eliminate or substantially reduce the risk of encountering a subsurface utility while performing intrusive activities. Where appropriate, reference is made to other Con Edison and industry safety procedures.

Due to the potential presence of subsurface utilities and the inherent variability of their size, depth, and layout, it is not possible to address all situations and circumstances that may be encountered during intrusive activities. Even so, adherence to the steps outlined here will minimize physical impacts to subsurface utilities and prevent associated health, safety, and environmental risks that can result from intrusive field investigation activities. Towards this goal all personnel directly participating in and/or supporting on-site field activities **must**:

1) Understand the terms of this process, including all revised or added provisions;

2) Review the provisions of reference documents listed in this document that apply to the intrusive activities being planned and utilities known to be present in the work area(s);

3) Develop an awareness and be mindful of the risks associated with utilities and other hazards at a site;

4) Become familiar with the location(s) and configuration(s) of all subsurface utilities at the site, *which include surrounding/adjacent facilities and buildings*, as marked out and as delineated on available drawings;

5) Develop an awareness and understanding of the uncertainties associated with utility locations as marked out;

6) Maintain vigilance while conducting intrusive fieldwork.

ALL FIELD PERSONNEL, including the Con Edison Project Manager (PM), Construction Inspector (CI), consultants, and contractors must be familiar with the fundamental provisions of this utility clearance process before engaging in any intrusive field activities. Specific roles and responsibilities of the Field Personnel are outlined in Section 4.0.

Consultant is responsible to ensure all their personnel and sub-contractors have reviewed and are trained in and are committed to following this process presented in this manual.

The remainder of this document describes the applicability of the process, provides a detailed description of the activities that comprise the utility clearance process, and provides a summary of changes from the previous version.

The document describes the utility clearance process through the three components: Process Narrative, *Utility Clearance Flow Chart*, and *Utility Clearance Checklist for Intrusive Fieldwork* ("Utility Clearance Checklist").

The approach presented entails obtaining and reviewing available site-specific utility information, field verification of the information, and selection and implementation of an appropriate clearance method for each intrusive sampling location. The process is designed to be applied in an integrated and iterative manner.

Process Narrative – The narrative provides detailed descriptions of the steps that must be taken before and during intrusive activities, to minimize the potential of encountering subsurface utilities and to document the specific clearance activities completed.

Utility Clearance Flow Chart – The Utility Clearance Flow Chart (**Attachment A**) provides a graphical overview of the key steps and decision points of the utility clearance process described in the Process Narrative. The flow chart serves as a guide and does not replace the narrative descriptions for developing an understanding of and implementing all actions in the utility clearance process.

Utility Clearance Checklist - A key component of this utility clearance process is the completion of the *Utility Clearance Checklist* and associated *Utility Clearance Summary Table*, *Daily Verification Form for Post Hand Cleared Locations* provided in **Attachment B**. The site-specific and background information sections must be completed by the Consultant prior to the initial site walk. The project field team, including the Con Edison PM, Con Edison on-site Construction Inspector, consultant, and contractor, must complete/execute/update and sign (as outlined below) the remainder of the checklist and table during the course of the work.

The intent of the checklist is to ensure that all appropriate process steps described in this document have been completed. The checklist will also be used to document that all reasonable steps were taken to prevent conditions that may be potentially harmful to the on-site workers and the surrounding community, and that might otherwise adversely impact the physical integrity of, or cause damage to, the utility(ies). The Con Edison PM or their designee must incorporate the completed checklist/table in the project files.

NOTE: This utility clearance process relies heavily on implementation of a robust series of integrated steps which entail frequent interaction and communication by and between the multiple parties that comprise the typical project team. In light of this, the utility clearance process is inherently susceptible to human performance factors. Towards minimizing potential human performance-based errors, best practices related to the intrusive field work have been identified and are summarized in the *EH&S Remediation – HASP Addendum Human Performance Improvement (HPI) Tools Error and Risk Mitigation and Control for Intrusive Work*, which is provided in **Appendix 1** of this manual. To augment and support the best practices, a *Human Performance (HP) Risk Analysis Worksheet* and a table that summarizes *Error Avoidance Tools* are also included in **Appendix 1**. **An HPI Risk Assessment must be completed as part of the**

project field planning and reviewed during the daily safety/scoping briefings and throughout all stages of the utility clearance process outlined herein and all aspects of the field program. The HPI Risk Assessment worksheet shall be maintained with the utility clearance records.

2.0 CHANGES FROM PREVIOUS VERSION

This version (**Revision 3**) modifies Revision 2 and adds provisions and guidance based on lessons learned for intrusive activities at various sites during implementation of the previous versions. The key topics that have been added or modified are listed below and described in greater detail in the referenced sections of this protocol.

- *Roles and responsibilities of project team members required to participate during the various stages of the utility clearance process.*

- *Clarifications throughout the narrative regarding when and how the specific steps that comprise the process shall be conducted.*

- *A revised Utility Clearance Process Checklist and Utility Clearance Summary Table that will be used to more effectively document completion of the site-specific utility clearance steps/activities undertaken and completed.*

- *A new table titled "Daily Verification Form for Post-Hand Cleared Locations" and Sign-Off for Proposed Drilling*.

- ***Table 1** has been updated to provide a list of current internal and external resources that may be required and/or useful during the planning and or implementation of the utility clearance. This table outlines the approach to obtaining information from the various resources and includes contact information, etc.*

- ***Attachment D** has been added to provide a copy of the NYSDOT Code 753 One-Call process. Also included in this appendix is the "User's Guide to Safe Excavation Practices in New York State".*

- ***Attachment E** has been added to provide a copy of the Survey Request Form for Con Edison's Survey Services group. This form is used to request an M-scope survey.*

- ***Attachment F** has been added to provide copies of reference documents that summarize considerations when working around gas and electric lines.*

- ***Attachment G** has been added to provide a copy of "NYC Underground Utility Reference Figure".*

- ***Attachment H** has been added to present photographs showing typical post hand-clearing marking for intrusive locations as described in the narrative.*

- ***Appendix 1*** *has been added provides references to human performance considerations and includes EH&S Remediation – HASP Addendum Human Performance Improvement (HPI) Tools, Error and Risk Mitigation and Control for Intrusive Work; Human Performance (HP) Risk Analysis Worksheet and Error Avoidance Tools.*

3.0 APPLICABILITY

The utility clearance process shall be performed before and during these intrusive site investigation activities.

- Soil Boring Excavation
- Monitoring Well Installation
- Soil Gas Sampling Probe Point Installation
- Exploratory Test Pit/Trenches Excavation
- Remedial Action Intrusive activities

4.0 ROLES AND RESPONSIBILITIES

The key parties required to participate in the UC process and their roles and responsibilities are described below.

EH&S Remediation Project Manager

The Con Edison Project Manager (Con Edison PM) is responsible for all aspects of a project, including ensuring that all EH&S protocols, such as the utility clearance process described in this manual, are effectively implemented. In this role, the Con Edison PM will:

- Obtain Con Edison project-specific documents including the work plan, Health and Safety Plan (HASP), and utility plates and drawings.
- Submit a **Work Request Form** to Construction Management.
- Obtain, or work with the Consultant to obtain, drawings from non-Con Edison utilities, such as New York City Department of Environmental Protection (DEP), NYC Metropolitan Transit Authority (MTA), Metro North Railroad (MNRR), and NYC and NYS Departments of Transportation (DOT).
- Coordinate with other Con Edison organizations and personnel, such as Construction Services (CS), Transmission Operations (TO), Gas Operations, and Survey Group determined to be necessary to support effective implementation of the utility clearance process. Such support may be especially relevant at sites with complex or high-density subsurface utilities. Support activities from these organizations are described in **Section 5.2.1**.

- Be on-site during the initial utility clearance activities, including site reconnaissance to reconcile utility plates with Code 753 mark-outs and geophysical survey, and site walks with the field team and representatives from outside organizations, such as MTA and DEP.
- Initial and/or sign (as indicated) the *Utility Clearance Checklist*, *Utility Clearance Summary Table* and *Daily Verification Form for Post-Hand Cleared Locations* completed during the site walk(s) to document that all pre-intrusive work utility clearance activities have been completed.

Construction Management - Chief Construction Inspector

The Con Edison Chief Construction Inspector (CCI) will:

- Review the Work Request Form and interface directly with the Con Edison PM to ensure that all project-specific documents and information are obtained and provided.
- Assign the project to a trained and qualified Construction Inspector (CI).
- Work with the Con Edison PM and CI to schedule the utility clearance and other project-related fieldwork.

Construction Management - Construction Inspector

The Con Edison Construction Inspector (CI) will:

- Review and become familiar with the project documents, including the work scope, HASP, permits (e.g., facility, road closing, etc.), and utility design drawings and plates.
- Serve as the Con Edison on-site representative during implementation of all intrusive field activities, including site set-up and utility clearance.
- Participate in the on-site initial utility clearance activities, including site reconnaissance to reconcile utility plates with Code 753 mark-outs and geophysical survey, and site walks with the field team and representatives from outside organizations, such as MTA and DEP. Serve as the on-site interface to outside parties (e.g., DOT, DEP, and MTA),
- Oversee and ensure that all EH&S procedures and protocols are implemented in accordance with the HASP
- Oversee and work with the Consultant Field Manager to ensure the site/location-specific UC steps identified during the site walk are effectively implemented.
- Document all field activities including the UC activities in the CI field log book.
- Initial and/or sign (as indicated) the *Utility Clearance Checklist*, *Utility Clearance Summary Table* and *Daily Verification Form for Post-Hand Cleared Locations* completed during the site walk(s) to document that all pre-intrusive work utility clearance activities have been completed.

Environmental Consultant / Engineer – Project Manager

The Consultant Project Manager (Consultant PM) will:

- Interface directly with the Con Edison PM on all aspects of the utility clearance and related fieldwork.
- Provide all necessary project-specific documents and information to the PM.

- Ensure all their personnel and sub-contractors are trained in and follow this process.
- Coordinate with the contractor performing the intrusive work (e.g., driller, excavator, etc.) for permits, Code 753, etc.
- Assign the project to a properly trained and qualified Field Manager
- Work with the Con Edison PM and CI to schedule the utility clearance and all project fieldwork.
- Participate in all initial UC field activities and initial/sign the pertinent sections of the appropriate forms described later in this document.

Environmental Consultant / Engineer – Field Manager

The Consultant Field Manager (Consultant FM) will:

- Compile all documents (e.g., SIWP and HASP) and information (e.g., NYC DOT permits, Code 753 confirmation notices, and contractor certifications) required to be on-site during the fieldwork.
- Participate in all on-site pre-intrusive activity utility clearance activities and direct and oversee the contractor performing utility clearance activities.
- Populate the *Checklist for Intrusive Fieldwork* and associated summary table ***before*** coming to the field for the utility clearance site walk/reconnaissance. These forms and information must be completed and signed during the utility clearance site walk(s).
- Finalize the summary table as work proceeds and the utility clearance activities specified for each location are completed.
- Initial and/or sign (as indicated) the *Utility Clearance Checklist*, *Utility Clearance Summary Table* and *Daily Verification Form for Post-Hand Cleared Locations* completed during the site walk(s) to document that all pre-intrusive work utility clearance activities have been completed.

Environmental Consultant / Engineer – Field Support Staff

The Consultant Field Personnel will:

- Work under the direction of the Consultant PM and FM.
- Become familiar with and understand the scope of work and all utility clearance considerations for each intrusive sampling location.
- Participate in the on-site initial utility clearance activities, including site reconnaissance to reconcile utility plates with Code 753 mark-outs and geophysical survey, and site walks with the field team and representatives from outside organizations, such as MTA and DEP.
- Document utility clearance actions and investigation-related field activities.

Contractor / Subcontractor Performing Intrusive Activities

The Contractor(s) performing the intrusive activities, such as drillers and excavators, will:

- Initiate the Code 753 process in advance of the field activities and provide certification notices received from the participating utility companies.

- Obtain required permits, such as DOT street opening and sidewalk-opening permits.
- Become familiar with the relevant UC risks, preventative measures, and considerations.
- Participate in the on-site initial utility clearance activities, including site reconnaissance to reconcile utility plates with Code 753 mark-outs and geophysical survey, and site walks with the field team and representatives from outside organizations, such as MTA and DEP.
- Initial and/or sign (as indicated) the *Utility Clearance Checklist*, *Utility Clearance Summary Table* and *Daily Verification Form for Post-Hand Cleared Locations* completed during the site walk(s) to document that all pre-intrusive work utility clearance activities have been completed.

Geophysical Survey Contractor

The contractor performing the geophysical survey Contractor will:

- Review the scope of work for all planned site intrusive activities.
- Review site-specific utility drawings/plates and determine which geophysical survey methods to deploy.
- Conduct scans/surveys and save each field scan electronically for future viewing and reference by the project team.
- Create electronic or hand-drawn (at a minimum) map(s) showing the relative locations of subsurface utilities in the vicinity of each planned sampling location, as identified during the survey.
- Provide electronic copies to the Consultant FM and Con Edison PM, which will be saved for future reference.

Other Parties

In some instances, other parties may be required to participate or support the field utility clearance process. These may include DEP, MTA, and DOT. Based on previous experience, these parties generally will not sign or initial the *Utility Clearance Checklist* or related documents. In this case, the CI, Consultant PM, and/or FM will record in the field notebook and on the respective UC checklist documentation the:

- Date/time of the field visit,
- Full name, title, organization name and name of internal group (if applicable),
- Contact information (including mailing address, phone, and e-mail), and
- Comments offered relative to the utility clearance process.

In some instances, the third party may not show up or decline to participate at the site walk. In this case the PM shall provide the name, contact information, corporate affiliation (if any) and details of the correspondence to the CI and Consultant field for inclusion in the respective field log books/notes.

5.0 SUBSURFACE UTILITY CLEARANCE PROCESS

The key activities that comprise the process are listed below and a detailed description of each is provided in the remainder of this section in the general order in which they should be completed (as shown in the *Utility Clearance Flow Chart* in **Attachment A**). Specific subsections for each activity below are shown in parentheses.

- Obtain Plates, Drawings, and Maps (**Section 5.1**)
- Utility Mark-Outs (**Section 5.2**)
- Field Reconciliation - Mark-Outs / Sample Locations (**Section 5.3**)
- Utility Clearance – Sample / Utility Location Confirmations (**Section 5.4**)

The results and outcomes for each of these steps must be documented in the pertinent parts of the *Utility Clearance Checklist* and related tables/forms provided in **Attachment B**, the Consultant field notebook and field forms, and in the CI field notebook.

In brief, the *Utility Clearance Checklist* includes a site/project background summary section followed by four additional sections that correspond to each step of the Utility Clearance Process. The background section must be completed by the consultant and reviewed and approved by the Con Edison PM at the onset of the project. The timing and requirements for completing the remaining *Utility Clearance Checklist* sections are described in the subsections below and as noted above in parentheses for each of the activities.

Depending on site-specific activities, some steps may not be warranted. The process is designed to be flexible and, thus, allows the Con Edison PM, in consultation with the project team, to incorporate those utility clearance activities that are appropriate based on site-specific conditions, site knowledge, and previous site work. Exceptions are summarized in **Section 7.0** of this document. The key premise is that any deviations and the rationale for each deviation are well documented and reflect sound judgment by the Con Edison PM and project team.

NOTE: All users of this manual should reference the general depth hierarchy and configuration of utilities in New York City, as depicted graphically in **Attachment G**.

5.1 Obtain Plates, Drawings and Maps

NOTE: At the completion of this step, **Section 2** of the *Utility Clearance Checklist* (**Attachment B**) must be completed.

The source of drawings, plates, and drawing packages will vary depending on whether the site is a Con Edison facility, private or public property, or extends into a public street or sidewalk. The various sources for utility drawings are discussed below and listed in **Table 1**. The resources

included in Table 1 are considered as a starting point and other sources may be necessary to obtain the desired drawings. Drawings for private properties and facilities, such as schools, places of worship, residences and places of business can typically be reviewed at, or obtained from, the property or facility manager, or the Department of Public Works or Department of Buildings in the municipality where the property is located.

NOTE: Requests for drawing packages for electric, gas and/or steam should be submitted to the contacts for each of these organizations as listed in Table 1 with copy to Anthony McFadden (Central Engineering). In the request provide a link for a *Shared Folder* with read/write access to each of the groups. This way the drawings can be uploaded instead of sent in bulky e-mails.

Hard copies of available utility plates, drawings and maps should be obtained by the Con Edison PM *or their designee.* Drawings, plates, and similar information should be reviewed as a preliminary step to determine the type and approximate size and location of utilities near the work site. **Copies of all drawings obtained during this step must be available at the site during all site walks and inspections and at all times during subsequent intrusive activities. The drawings must be reviewed immediately before implementing intrusive activities at each new site location.**

NOTE: When working at, adjacent to, or in the immediate vicinity of a Con Edison facility, such as substation or gas regulator station, the Con Edison PM or their designee shall also obtain and review the Facility-specific plates and drawing package that encompass the work area. These must include all utilities (both Con Edison and non-Con Edison) on and entering or leaving the Facility. Regardless of who obtains the requisite utility plates and drawings, the Con Edison PM shall ensure that the job package includes ALL required drawings and plates necessary to develop a working understanding of sub-surface facilities in the area of intrusive activity, such as excavation or drilling.

NOTE: Fiber optics and other data- and communications-related utilities (collectively "non-energy utilities") at Con Edison facilities are not routinely identified on utility drawings or plates. Therefore, when conducting intrusive work at Con Edison facilities where such utilities are known or suspected to exist, the Con Edison PM and Facility Manager and or Survey Group must be contacted in advance of the site walk to determine if fiber optic cables are known to be present and, if so, request drawings or input from the Facility Engineer about the fiber optic layout and other non-energy related utilities at the facility. Because fiber optic lines generally cannot be detected using routine geophysical methods, at sites with known fiber optics, every effort must be made to determine their location or confirm their absence in the work area.

5.1.1 Drawings for Company Properties and Utilities

Electric, gas, and steam utility plates and drawings for most routine intrusive work are available to Con Edison personnel on Con Edison's intranet by searching for "maps" or accessing the ***Advanced Mapping System*** website at: *http://maps/AdvancedMappingHomePage.htm*

NOTE: Index maps for gas and electric (by borough) and steam plates are available to all of the EH&S Remediation PMs at:

I:\Projects_&_Programs\MGPStatus\Utility_Clearance\M &S Index Sheets

Alternatively, an interactive index for all Company utilities, except Transmission Feeders, is available at:

http://ssawebn/seamlessmsplates/

NOTE: Cross referencing a nearby intersection can also be used to identify the plate(s) that cover the work area(s) using the above link and the "Plate Cross Street Reference" option in the upper right hand corner.

NOTE: Con Edison's Steam System is only located in Manhattan south of 96th Street west of Central Park and to East 80th Street east of the park. Accordingly, steam will not need to be considered except at work in areas containing transmission and or distribution steam lines.

For intrusive activities at most sites managed by EH&S Remediation, the drawings available through *Advanced Mapping System* and the other links and sources listed should suffice. Accordingly, **AFTER** accessing the appropriate websites noted above and obtaining the required drawings, the appropriate parties listed in **Table 1** may be contacted with inquiries regarding additional drawings or drawing packages. As noted above in **Section 5.1**, initial request for drawings/drawing packages should be submitted to Design Engineering. The resources noted in **Table 1** can also serve as points of contact regarding questions on the routine electric, gas, and steam plates.

The plates and drawings from the *Advanced Mapping System* can be printed and saved as a PDF. Regarding printing of plates, follow the instruction noted in the system to ensure the required paper size and scale is retained during printing and plotting. The Survey Group plotter is available to print large scale plates/drawings can be used. This plotter also has large format copying and scanning capabilities. The name of the Survey Group plotter is:

Survey: Q130-136-2-2-P1-399

5.1.2 Sewer and Water

Drawings showing water and sewer utilities for sites located in the five boroughs should be obtained from the DEP. Drawings can be requested from the DEP by completing the Records Request Form, which is accessible at the link below, and submitting it by e-mail as noted in the form. A copy of the form is provided in **Attachment C**.

https://www1.nyc.gov/assets/dep/downloads/pdf/about/water-and-sewer-forms/water-sewer-request-records-form.pdf

Contact DEP personnel with any questions at the telephone number listed in **Table 1**.

Also, it may be useful to visit the DEP regional offices at the address listed below.

Bronx:	1932 Arthur Avenue, Room 607
Brooklyn:	250 Livingston Street, 8th Floor
Manhattan:	100 Church Street, 10th Floor
Queens:	120-55 Queens Blvd, 1st Floor
Staten Island:	60 Bay Street, Staten Island, NY 10301

Water and sewer drawings for work in Westchester should be obtained from the local authorities, such as the Department of Public Works (DPW) or Department of Buildings (DOB) for local municipality. This is often best achieved by visiting the local City Hall.

5.1.3 Subterranean Tunnels

Drawings showing locations and depths of tunnels, including subways, automotive vehicle tunnels, and related subsurface infrastructure should be obtained by contacting the MTA (for subways) and NYC DOT (for road tunnels), as listed in **Table 1**. If intrusive activities will be performed in the immediate vicinity of subsurface MTA structures, such as a subway, the MTA may require a letter requesting a work permit. The letter should include a brief summary of the work, relevant maps and drawings, anticipated schedule, request an MTA representation participate in initial and subsequent site walks and access to inspect the inside of the tunnel in the vicinity of the intrusive work. Submit the letter to:

Outside Projects
New York City Transit
2 Broadway, 7th Floor
New York, New York 10004

5.1.4 Fiber Optics

As noted above, fiber optic lines are typically not shown on Con Edison's utility drawings for a Company facility (e.g., substation or workout yard). Accordingly, the Facility Manager, Survey Group and/or Central Engineering must be consulted regarding the potential presence and location of fiber optic lines, as discussed above. For street work and non-Con Edison properties, fiber optics, data cables and phone lines etc. should be marked out by the Code 753 participating companies. If present in the work area, drawings for these lines may be requested from the utility if necessary using the contact information on the Code 753 confirmation notice.

5.1.5 Traffic Control Cables

Drawings and plates for subsurface traffic control facilities should be requested from the state, local and/or municipal departments of transportation or public works. During site reconnaissance, efforts must be made to identify the presence of junction boxes for traffic control cables. These boxes are often identified as rectangular boxes with cover marked as "Traffic Control."

5.1.6 Miscellaneous

Con Edison generally does not maintain plates and drawings showing detailed information of utility distribution on private property. However, as discussed above, facility managers, property owners, departments of public works, sewer and water, and buildings of the municipality where the site is located, should be contacted to obtain available utility drawings for the facility. Contact information (e.g., telephone numbers and e-mail addresses) for municipalities can typically be obtained by accessing the municipality's website. As noted previously, this is often best achieved by visiting the local municipal building (e.g., City Hall). The name, address, and telephone numbers for the New York City Department of Buildings are listed in **Table 1**.

5.2 Utility Mark-Outs

NOTE: At the completion of this step, **Section 3** of the *Utility Clearance Checklist* and the associated summary table (**Attachment B**) must be completed.

Conducting thorough and complete mark-outs is critical to the success of the utility clearance process. Accordingly, attention must be given to developing a working knowledge and understanding of all subsurface utilities in the site investigation area. As noted previously, despite all diligence, there is no guarantee that unidentified utilities will not be present or encountered. However, the acquisition of readily-accessible pertinent drawings coupled with thorough mark-outs serve to document that all reasonable steps were undertaken to identify and avoid encountering/damaging subsurface utilities in the work area.

New York State DOT requires Code 753 utility mark out request for all intrusive activities at all properties, including Con Edison's active and inactive properties. Any questions regarding mark-outs that were completed and responses to one-call tickets are to be resolved by excavator, but Con Edison's internal Facilities Protection Group (Code 753) can also assist in resolving issues related to Con Edison mark-outs.

For Company locations, a Magnetometer (M-scope) survey by Con Edison's Survey Group is also required. In addition, due to the diversity of sites investigated by the EH&S Remediation Group and the associated potential complexity of utilities, an effective mark out may also necessitate a more detailed subsurface utility survey be performed by a private utility-locating (geophysical survey) contractor. Surveys performed by a private contractor help identify and assess potential unmapped utilities and other subsurface features at the site and near each sampling location. A

thorough mark out provides key information towards reconciling the utility plates/drawings with the Code 753 and/or M-scope markings. The applicability of each of these surveys is discussed in **Section 5.2.2**, below.

NOTE: Prior to conducting mark-outs, all planned sample locations shall be clearly marked in the field using paint (on all surface paved with asphalt, concrete, etc.), or stake or pin flag in non-paved surfaces. In all instances the sample location marking shall be consistent such that all locations on paved surfaces at a particular project site shall use similar colored paint, information (boring number and date of placement) and symbol. Similarly, if stake or pin flag is used it must be firmly installed in the ground so that it cannot readily be displaced. Either wooden or steel stakes (short section of rebar) may be used. For all stakes, flagging tape shall be affixed to the top of the stake. Markings of the pertinent information noted above shall written with permanent marker (e.g., Sharpie™) directly on the wooden stake or on the flagging/flag if steel stake or pin flag is used.

NOTE: It may be necessary to engage other support to help facilitate the mark outs. Key resources for such support are summarized in the **Section 5.2.1**.

5.2.1 Resources to Support Mark-Outs

At some locations, it may be necessary to solicit support from other organizations to allow for a thorough inspection of structures (e.g., manholes and regulators) and to facilitate geophysical surveys. This may entail providing access to manholes for visual inspection of the utilities in the structure, removing standing water to allow visual inspection of infrastructure, and installing temporary signal generators to allow certain geophysical tools to be used. Geophysical tools that may require installation of signal generators include Radio Frequency Induction (RFI) and Electromagnetic Induction (EMI). Various Con Edison resources to provide this support are briefly described below, and contact names and information for each are listed in **Table 1**.

NOTE: If it is anticipated that manholes will need to be opened, CS or TO shall be contacted prior to conducting the site walk and/or to implement a utility clearance survey using a private locator.

Construction Services

The Construction Services (CS) group will coordinate with other groups to facilitate opening manholes to allow inspection and pumping out of manholes, if necessary. Before opening manholes, they will implement requisite stray voltage and air testing. Pumping of manholes is arranged by CS and performed by the Flush groups. Neither of these groups will enter the manhole to allow "clamping on" of any temporary signal generators.

Transmission Operations

This group can also arrange for access to manholes and enter the manholes to allow attachment and "clamping-on" of temporary signal generators, if required by the geophysical survey contractor.

Gas Operations and Steam Operations: For field support in the event gas and steam underground facilities contacts for these commodities noted in **Table 1**.

5.2.2 Overview of Utility Mark-Out Methods

As noted in **Section 5.2**, surveys to facilitate utility mark-outs are completed using multiple methods that include: One-Call System (Code 753), M-scope by Con Edison's Survey Group, and private utility locating contractor (Comprehensive Geophysical Survey). The applicability of each are described below.

Code 753

The Con Edison PM should instruct their consultant or contractor to contact the one-call system and request a Code 753 utility mark out under New York State's code of rules and regulations (16 NYCRR Part 753). An overview of the NYS Code 753 provisions is provided in **Attachment D**. Consistent with the One-Call (also called Dig Safe New York) criteria, the request must be made at least 72 hours before beginning fieldwork. The One-Call system telephone numbers are listed by region below.

New York City and Long Island:	(800) 272-4480
Westchester County:	(800) 962-7962
Other Counties:	811

Confirmation that mark outs completed under Code 753, and as received by e-mail or telephone from the participating utility companies, should be documented in the appropriate section of the *Utility Clearance Checklist* (**Attachment B**). It is noted that positive confirmations must be received from the participating utility whether or not they have any facilities in the area. The mark-outs should be maintained by the Consultant in concert with the contractor conducting the intrusive work, such as drilling subcontractor, excavator, etc. If the physical markings on the street or sidewalk become faint or obscure, they must be refreshed by over-painting with new paint. When the utility mark-outs are being refreshed, typically by consultant or other project personnel, a Con Edison representative or their designee **MUST** be present and observe this activity. Refreshing of the markings must be documented in the field log books by both the Consultant Field Manager and CI.

Specific criteria for refreshing and or having the marking redone are listed below. A list of the key provisions are listed below and a full description is provided in **Attachment D**.

- Work must commence within 10 days of mark-outs being completed.

- Refresh marking after every 10 days. This means re-requesting or physically refreshing the existing marks. ***It is noted that, unless the intrusive work locations is adjacent to the property line, re-requesting a Code 753 mark-out is not required when working inside Con Edison property.***
- If work does not start within 10 days after the mark-outs are completed by the participating utility companies, then a new Code 753 mark-out request is required.
- If work substantially deviates outside the original areas cleared by the original Code 753 request, then a new Code 753 mark out must be requested for the new/expanded work area.

Con Edison M-Scope Survey

The Con Edison PM must submit a completed *Survey Request Form* (**Attachment E**) along with all supporting documentation to Con Edison's Survey group to request an "M-Scope" survey. Such surveys are required at all active and inactive Con Edison facilities and or former facilities. The Survey group will schedule the survey as their schedule permits. Prior to the surveying, the locations of all sampling and other planned intrusive activities must be clearly marked and identified at the facility.

This M-Scope tool uses the magnetic susceptibility of subsurface features, such as electrical conduits, electric cables, and pipes. Because this tool measures magnetic fields, it can be subject to interference by other conductive bodies (at grade or in the subsurface) unrelated to the utilities, such as buried pieces of metal, rebar in concrete, and iron-rich soil, and may be ineffective or produce misleading results in these types of conditions.

Private Utility Contractor (Comprehensive Geophysical Survey)

Before mobilizing to the site, the following information from the Private Utility Contractor MUST be provided to and reviewed by the Con Edison PM:

- Name of the contractor;
- Name and qualifications of the operator and/or technician(s) who will perform the utility surveys;
- Qualifications should include a summary of experience with conducting surveys in a setting similar to the site (e.g., urban, inside buildings, public roadway, etc.); and a summary of experience and training with the use of each instrument.

When using a private utility location contractor, the Con Edison PM shall diligently attempt to arrange for the facility or property manager and/or engineer who is most familiar with the utility layout and distribution in the building or on the property, to participate on the site walk with the private utility locating contractor on the first day of conducting the on-site utility survey.

Private utility contractors employ a variety of utility detection and location techniques, including:

- Ground Penetrating Radar (GPR)

- Magnetometer *(M-Scope) [for locating metallic **and** non-metallic pipes and cables]*
- Radio Frequency Induction (RFI) *[for locating non-metallic pipes and cables]*
- Electrical Conductivity
- Electrical Resistance

Use of multiple methods helps the detection and surveying of conductive and non-conductive buried utilities.

The utility location contractor **MUST** specify which utility detection tool or techniques they plan to bring **AND** use at the site. In addition, they **MUST** bring **ALL** support tools and equipment necessary to access vaults, circuit boxes, pipe clean-outs or similar structures.

NOTE: Con Edison PM and the assigned CI will coordinate opening of structures (e.g., manholes) with the appropriate operating group or internal support group, such as CS and TO. Access to non-Company structures (e.g., manholes and service boxes) must be coordinated by the Con Edison PM, CI, or Consultant with the owner or operator of those structures. Non-Company structures include DEP, Verizon, Empire City Subway, or similar structures.

At the beginning of a utility survey using a Private Utility Location Contractor, **AND** before they deploy any survey equipment, the utility location contractor **MUST***, in cooperation with the Con Edison PM and or their designee:*

- Review ALL utility drawings.
- Reconcile ALL drawings with mark-outs identified by the Code 753 survey at the property perimeter.
- Inspect the site to identify and *reconcile* where ALL utility service(s) enters and or leaves the property and or building. If access is gained to a building, a thorough inspection must be conducted of the building basements; boiler and machine rooms; externally-exposed utility infrastructure (e.g., manholes, vaults, electrical, gas, and water valves and meters), etc.
- Determine presence, type, and nature of sub-slab utilities and diligently attempt to confirm their configuration during the utility survey.
- Conduct the site walk and review the facilities drawings with key Facility Management personnel, for work at or adjacent to Con Edison Facilities.
- Visually identify, open, and inspect ALL relevant utility access-ways as needed to facility a complete survey and develop an understanding of the utility layout in the work area.

Such access-ways may including manholes, vaults, gas and water valves boxes, and telephone, *fiber optic* cable, *traffic control lines,* and communication boxes.

NOTE: If it is anticipated that manholes will need to be opened, CS or TO must be contacted before conducting the site walk or implementing a utility clearance survey using a private locator. If a manhole is determined to contain water at a level that obscures any of the feeders or other utilities known to be contained therein, the water must be pumped down to expose all feeders / utilities.

- Identify and document **ALL** uncertainties such as manholes containing service lines that apparently go to the building or property but that cannot be located within the basement of the building or on site.

NOTE: In **ALL** cases, the private utility contractor must diligently attempt to 'hook-onto' or 'tone' each conducting conduit source (e.g., pertinent electrical conduits in basement, water and gas valves in valve box, gas tracer wires, sewer and or drain pipes, distribution lines in manhole, and telecommunication lines). This may require opening manholes circuit electrical distribution 'trunk' boxes, moving equipment or stored materials at the facility or property to allow access. No project personnel shall enter a manhole or vault.

In some situations, multiple metallic conduits may be in direct contact in the subsurface. In these circumstances, the signal of the locating tool may be transferred from the conduit being 'toned' to an adjacent conduit(s) and may produce a 'secondary' signal. The onsite Private Utility Contractor should be familiar with and be able to identify this occurrence. To understand and identify this occurrence, the location of each apparent signal shall be marked using pieces of tape, paint, or similar method. The sources being 'toned' shall be numbered and the corresponding signals associated with each signal source shall be marked with the corresponding number at each location where the signals from each source is detected. Accordingly, the resulting mark outs will show multiple conduits for a single source.

After the utility survey using a Private Utility Location Contractor has been completed, the findings marking, etc. shall be reviewed with the project field team. Subsequently, the Private Utility Location Contractor will provide documentation of field measurements, sketches, etc., as requested by the Consultant PM. This documentation shall be reviewed in conjunction with all other utility documentation and information during the Field Reconciliation (**Section 5.3**).

5.2.3 Applicability of Utility Clearance Resources

The use of the various utility mark-out resources that may be deployed at various sites is summarized below. As noted above, Code 753 mark-outs are required in advance of intrusive work at any property, whether owned by Con Edison, third party or public right-of-way.

Con Edison Facility

Utility mark-outs at Con Edison facilities should be coordinated by the Con Edison PM with support from the CI assigned to the project and *key Facility Management personnel*, as appropriate. At a minimum, an M-Scope survey should be completed. In some circumstances, an independent private utility locating contractor should also be used. The decision to use a utility contractor will be made by the Con Edison PM. The use of an independent private utility mark-out contractor is strongly recommended at sites where a variety of utilities are known or suspected to be present and which may not be readily identified or mapped using only M-Scope. A benefit of using a utility locator contractor is that, as described above, they can provide a greater array of tools to locate a variety of subsurface utilities that are non-conductive, such as concrete sewer lines and PVC pipes in addition to identifying and confirming the presence and location of conductive utilities.

Private Property (including Soil Gas Sampling Probes)

An Private Utility Contractor should be used for utility mark-outs on private properties. It is noted that utility mark-outs in basements or slab-on-grade constructed buildings may be inconclusive due to the presence of rebar or welders-mesh commonly used as reinforcement in concrete. Accordingly, an inspection of the basement floor and walls must be performed to identify where utilities enter and leave the building and how the utility (e.g., electric, water gas, and steam) are distributed near the sample locations. Sub- or in-floor utilities often enter along the perimeter of the floor, at support columns, or along dividing walls. The observation of utilities entering the floor may indicate utilities that lie within or immediately beneath the concrete basement slab. If the location of the utility layout of any such sub- or in-floor utility cannot be effectively determined, then any intrusive work must be discussed with the Con Edison PM and may require that no intrusive activities be performed at that location. *However, this action should only be considered after all applicable survey tools and methods have been diligently deployed and implemented.*

Public Street and Sidewalks

As described above, an independent utility location contractor MUST be deployed for intrusive activities in public access rights-of-way, such as roadways and sidewalks. The survey will be conducted across the entire work area and detailed survey conducted within a 5- to 10-foot radius from each location where intrusive activities are planned. These surveys verify the Code 753 mark-outs and identify potential unmapped and/or undocumented utilities and facilities.

A combination of Con Edison utility survey staff and independent utility locator contractors may be used for work areas located in and along roadways. Since Con Edison maintains utilities in streets and along sidewalks, in addition to the mark outs performed through the Code 753 survey, an M-scope survey may also be requested within a 10-foot radius of each proposed sample location.

NOTE: Due to workload and other commitments of the M-Scope survey staff, this option may not always be available or practicable and should be considered optional.

5.3 Field Reconciliation - Mark-Outs / Sample Locations

NOTE: During this step, **Section 4** of the *Utility Clearance Checklist* must be completed and initial information entered into the associated *Utility Clearance Summary Table* (**Attachment B**). This step insures not only proper documentation, but also facilitates proper turnover for field crew members (both CI to CI and/or consultant to consultant and/or contractor to contractor)

After completion of the activities described above, a site walk must be conducted by the project team, which at a minimum must include the Con Edison PM, CI, Consultants and the contractors performing the intrusive work (e.g., drillers, soil gas, excavators, etc.). Other participants may include Con Edison *Facility Managers,* NYSDEC (as deemed appropriate by the Con Edison PM), private facility managers/property owners *and or owners/operators/representatives of private utilities, such as NYCDOT, municipal DPWs, Westchester Department of Sewer, and Westchester County Department of Health.* The Con Edison PM must maintain a list of the names and phone numbers of each site walk participant. The key objectives of the site walk are to:

- Review all planned locations where intrusive activities will be performed,

- Adjust the positions of the planned sample locations away from utilities as marked out (as necessary)

- Determine the appropriate utility clearance activities (e.g., test pits to verify absence of utilities, and expose and physically verify the precise location and depth of nearby utilities) that will be performed at each location (see following **Note**) and document all decisions and concerns using the *Utility Clearance Checklist* and associated *Utility Clearance Summary Table* (as described in **Section 5.0**).

NOTE: Specific clearance activities to be considered at each sample location are listed below and described in greater detail in **Section 5.4**:

1) Moving the location to increase separation between the sample location and nearby utility;
2) Excavating a test pit to verify the **absence** of utilities at the discrete sampling location;
3) Excavating a test pit to expose and physically verify the exact location and configuration of nearby utilities.

As noted above, during this step the *Utility Clearance Checklist form* must be completed and initial information entered into the associated *Utility Clearance Summary Table* (**Attachment B**). This information includes all final locations, altered locations, planned hand clearance depths and any pertinent notes should be recorded at this point on the field checklist.

Other site conditions and project issues assessed during the site walk include:

- Presence and location of **OVERHEAD UTILITIES** and obstructions that might prevent the safe operation of drilling or excavating equipment;

- Presence of, or need for, appropriate grounding for electrical equipment at the site;
- Site access to equipment;
- Storage of equipment/supplies overnight (e.g., establish a staging area);
- Storage and management of investigative derived waste (IDW);
- Hours of on-site work;
- Permits needed, if any;
- Review roles and responsibilities of all project personnel who will be onsite;
- Review site and emergency contacts; and
- Review anticipated schedule of work *and contingency action as deemed appropriate.*

5.4 Utility Clearance – Sample / Utility Location Confirmation

NOTE: At the completion of this step **Section 4B** of the *Utility Clearance Checklist* (**Attachment B1**) and associated *Utility Clearance Summary Table* (**Attachment B2**) shall be completed.

The utility clearance actions necessary to confirm the location or absence of utilities, which are agreed to by the project team during the site walk and as documented in the *Utility Clearance Checklist* and associated *Utility Clearance Summary Table* will be implemented at each sample location during the investigation. As discussed above, and as shown the *Utility Clearance Process Flow Chart*, the actions will generally include one or more of the following:

- Moving the location to outside the **tolerance zone**, if possible. See **Section 5.4.1**, below. If such a move is not possible then moving to the extent feasible to create greater separation between intrusive location and nearby utility. If no ***tolerance zone*** is marked out during the utility survey (i.e., only a utility center line is marked), the **tolerance zone** may be defined in the field as: **the distance of one-half of the known diameter of the utility plus two feet on either side of the centerline as marked out.**

  NOTE: Information about tolerance zones and working around gas and electric utilities is provided in **Attachment F.**

  NOTE: In all locations that are within the tolerance zone, and the precise location of the utility is not known, then hand excavation to physically identify the alignment and depth of the utility is required.

- Excavating a utility clearance test pit using non-mechanical means at each location where intrusive work will be performed to verify the absence of utilities.

- Excavating a utility clearance test pit using non-mechanical means to expose and physically verify the exact location and configuration of all nearby utilities.

In addition to the routine action discussed above, for sites where exploratory test pits are specified or required as part of the intrusive work scope (e.g., at MGP sites):

- Excavating an Exploratory Test Pit/Trench using non-mechanical means at each location where intrusive work will be performed to verify the absence of utilities.

Brief descriptions of these activities that will be completed during the various investigation activities are discussed below.

5.4.1 Moving Sample Locations

All locations within the tolerance zone should be moved outside the zone, if possible. After moving the location, a utility clearance test pit should be excavated to a minimum of 5-feet below ground surface using non-mechanical methods, such as hand auger, post-hole digger and vacuum excavation. The diameter of the test pit should be at least four inches wider than the outer diameter (OD) if using direct push (e.g., GeoProbe) and Sonic drilling equipment and at least one foot if using hollow-stem auger drilling methods. These are nominal widths and may need to be increased based on the site-specific considerations. The 5-foot depth is consistent with the concept that most utilities are typically installed within the top five feet of the subsurface. See **Section 5.4.2** below regarding other considerations on depth of hand excavated utility clearance test pits.

NOTE: All changes made to sampling locations shall be documented in the *Utility Clearance Checklist*, the log book and field forms by the Consultant Field Manager and by the CI in the field notebook. Changes should also be reflected on the utility clearance checklist and in the CI and Field Manager's site record sample location drawing. That record should/would then be available to all members of the field team to review.

NOTE: Information about tolerance zones and working around gas and electric utilities are summarized in **Attachment F.**

NOTE: When working within 25 feet of high-pressure gas lines (i.e., 125 psig or greater), *Gas Emergency Response Center (GERC)* shall be contacted *[718-319-2330] and notified of the planned activities at least two days before beginning intrusive work. If working within 5 feet of a transmission main or within 10 feet of the tolerance zone of a main,* the gas line will be carefully excavated by hand in accordance with the Gas Operations Standard G-11863, titled "Inspection and Maintenance Requirements Associated with the Excavation Activities Near Gas Pipelines Operating at 125 psig and Above."

5.4.2 Excavation of a test Pit at Each Sample Location

At each location where soil borings or monitoring wells will be installed, a utility clearance test pit must be excavated to a minimum of 5-feet below ground surface using non-mechanical methods, such as hand auger, post-hole digger or vacuum, in tandem with a non-conductive probe rod. The diameter of the test pit should be at least four inches wider than the outer diameter (OD) if using direct push (e.g., GeoProbe) and Sonic drilling equipment and at least one foot if using hollow-stem auger drilling methods. These are nominal widths and may need to be increased based on site-specific considerations. The 5-foot depth is consistent with the concept that most utilities are typically installed within the top five feet of the subsurface. This hand clearance depth should be modified to be deeper, if necessary, based on review of ground elevations and utility depth information available to the field team. The basis for any changes in planned excavation depth shall be documented on the field checklist, CI log book and Consultant field notebook.

NOTE: Utilities may be deeper than five feet due to buildup of surface grade on properties, streets, or rights-of-way. Although the original depth of utilities is anticipated to be within the upper five feet, utilities that are buried in areas that have been built up will presently be deeper by the thickness of the built-up material. Changes should also be reflected on the utility clearance checklist and in the CI and Field Manager's site record sample location drawing. That record should/would then be available to all members of the field team to review.

NOTE: The use of a jack-hammer to loosen compact soil during hand excavating a utility clearance test pit is strictly prohibited.

Upon completion of the utility clearance excavation test pit at each sampling location, the location of the completed excavation shall be measured relative to three nearby permanent structures, such as curb line, building face, tree, other readily identifiable and permanent feature. The specific reference will be marked with paint, flagging, or similar marking. These measurements will be used immediately prior to start of drilling to verify the exact location by triangulation. Two photographs must be taken of each sample location; one to show hand clearance to minimum depth of five feet and one after backfilling and placement of temporary patching to area and location markings. See photographs in **Attachment H** for reference. A simple sketch of each sample location and showing the referenced structures and associated measurements shall be completed. A brief description of the measurements and reference structures, as well as the sketch shall be documented by the Consultant Field Manager in the log book and field forms and by the CI in the field notebook

In addition to the sample location mapping described above, at sites where the ground surface is not covered in pavement, asphalt or other permanent surface cover and/or there are no clear stationary references, it is necessary to map the exact cleared sample-locations using GPS for sites. The location coordinates measured using GPS will be recorded in the CI log book and the Consultant field notebook, as well as the make and model of the GPS unit used. The applicability of mapping using GPS will be assessed by the Con Edison PM in consultation with the CCI during the scoping of the work and planning stages of a project.

Utility clearance test pits must also be excavated for all intrusive sampling activities performed inside a building basement and or concrete foundation slab.

Prior to installing a soil boring, monitoring well or soil gas sample probe point in the concrete slab of a basement, and after identifying that no utilities are present in the floor of the basement or foundation slab (as per **Section 5.2.3**), use an electric powered diamond core drill, concrete saw, or jack hammer to advance through the concrete and expose the underlying soil. If sub-slab utilities are suspected of being present, but not confirmed during the utility location survey, core or saw cut the concrete to an estimated depth of approximately 2/3 the thickness of the concrete (if known). If the thickness of the concrete thickness is not known, assume it is 8-inches thick. Continue coring at 1-inch increments, with the removal of each 1-inch concrete plug and visual inspection of the core hole to verify the absence of utilities. Break the remaining 1/3 of the concrete using electric jackhammer, hammer drill, or hand tools.

A hand excavated test pit will then be advanced to a depth of five feet below the bottom of concrete slab. This test pit must be excavated using hand auger, post-hole digger, or vacuum in tandem with a non-conductive probe rod, which can be used to confirm the absence of utilities to a depth of five feet below the bottom of the concrete slab.

At soil gas sample locations inside buildings, excavate test pits to one foot below grade or below the bottom of a concrete floor, if present, before installation of soil gas sample probes points. The one-foot depth specified is consistent with the concept that most utilities that could be impacted by the advancement and emplacement of the probe points, such as telephone lines, local electric (e.g., for outdoor lighting), cable television, and in-ground sprinkler lines, are typically installed from grade to a depth of one foot.

5.4.3 Excavation to Expose Nearby Utilities

For intrusive investigation locations where physical space prohibits the relocation of proposed sample locations outside the tolerance zone, expose the adjacent utilities by excavating using non-mechanical methods to visually confirm its physical location, alignment, and depth. This confirmatory excavation will be completed in addition, a 5-foot excavation at the specific location being investigated (e.g., soil boring, monitoring well boring, etc.), as described above.

NOTE: Hand exposure of gas transmission mains requires notification to Gas Operations in advance of the fieldwork. Exposure may require a costly replacement of the outer anti-corrosion protective coating.

NOTE: The use of a jack-hammer to loosen compact soil during hand excavating a utility clearance test pit is strictly prohibited, except as noted above.

5.4.4 Utility Clearance for Exploratory Test Pit/Trench

Exploratory test pits or trenches will be performed to identify the presence or absence of subsurface structures related to former operating facilities at the site, such as gas holder foundations at former manufactured gas plant (MGP) sites and should not be confused with **utility clearance test pits** discussed above. The **exploratory test pits** or **trenches** will typically have dimensions of approximately 5 feet wide by 10 feet deep by 10 to 20 feet long. Accordingly, excavating them by hand is impracticable. The excavation of **exploratory test pits or trenches** must be approached with heightened awareness, because the potential for damaging any present subsurface utilities is significant.

In efforts to develop a reasonable degree of confidence that utilities will not be encountered during excavation of **exploratory test pits or trenches**, a focused utility survey must be conducted in the area immediately surrounding the test pit or the area defined by a boundary established by measuring two feet perpendicular from all sides of the proposed exploratory test pit boundaries. For example, if the surface dimensions of the exploratory test pit are 10 feet long by 5 feet wide, the surrounding area of the focused utility survey will have dimensions 14 feet long by nine (9) feet wide. The focused utility survey should be completed after all other on-site surveys have been completed. This will allow the surveyors to develop a better understanding of the site-wide subsurface utility configuration.

Following completion of the focused utility survey, **utility clearance test pits** will be excavated by hand to confirm the presence of all utilities identified within five feet from the exploratory test pit or trench. After exposing the utilities, the excavator can proceed to excavate the **exploratory test pit/trench**, however, the operator must be experienced with digging in areas where underground utilities may be present and should use the utmost care when performing the excavation. Excavation should proceed slowly enough so that any obstruction or structure encountered can be evaluated and to confirm that the structure is not a utility.

A dedicated spotter in direct communication with the excavator operator **MUST** be used during excavation of all exploratory test pits or trenches. The spotter shall directly observe the excavator bucket and guide the operator and identify any potential hazards in the excavation and immediately communicate these to the operator. The appropriate mode of communication between the spotter and the operator will be established and tested before excavating begins.

5.5 Checklist Completion

The drawing title, most recent revision date shown on the drawings, approximate scale and source shall be documented in the appropriate spaces on the *Utility Clearance Checklist* (**Attachment B**).

Section 1: Site-Specific Information
Section 2: Obtain Plates, Drawings and Maps (Section 5.1)
Section 3: Complete Utility Mark-Outs (Section 5.2)
Section 4: Site Walk – Mark-Out Reconciliation (Sections 5.3 and 5.4)
Section 5: Utility Clearance – Sample / Utility Location Confirmations

The *Utility Clearance Checklist* and associated *Utility Clearance Summary Table* (**Attachment B**), and the overall **Utility Clearance Process** to locate and clear utilities was designed to be dynamic. Accordingly, the Utility Clearance Checklist must be updated by the Consultant in consultation with and concurrence from the CI throughout the process as each utility clearance activity is completed. During the site walk and after all utility-related issues at each location have been identified and addressed to the satisfaction of all project personnel, the relevant portions of the Utility Clearance Checklist must be completed by the Consultant and endorsed by the on-site Con Edison PM, CI, Consultant and Contractor.

NOTE: The *Utility Clearance Checklist* will be considered complete only after all proposed utility clearance actions identified during the site walk have been successfully implemented and all pertinent information and activities have been documented and acknowledged by the appropriate field team personnel.

NOTE: All changes made to sampling locations shall be documented in the *Utility Clearance Checklist*, the log book and field forms by the Consultant Field Manager and by the CI in the field notebook.

6.0 IMPLEMENTING INTRUSIVE FIELD WORK

At the beginning of each day **BEFORE** intrusive sampling activities at **each location where work is planned for that day**, the field team, including the Con Edison CI, Consultant and contractor (e.g., driller, excavator), **MUST** review the completed *Utility Clearance Checklist* (**Attachment B**) *Utility Clearance Summary Table* (**Attachment B1**), corresponding field notes, measurements, and sketches in the Consultant logbook/forms and CI field book and verify the location relative to the reference point. During this review process AND before conducting any intrusive work (e.g., drilling, etc.) the *Daily Verification Log* (**Attachment B2**) must be completed and endorsed.

7.0 EXCEPTIONS TO REQUIREMENTS OF THE UTILITY CLEARANCE PROCESS

Due to the inherent diversity of and conditions present at project sites, some general exceptions to the utility clearance process are identified below.

- Sites where extensive utility mapping has been completed and/or where extensive intrusive activities have already been performed.
- Locations where facility layout is well documented and understood.
- Sites or portions of large sites (e.g., Astoria facility) where utilities are known not to exist currently or to not have ever existed throughout the life of the facility, property, or site.
- Sites where utility cutoff has already occurred and cutoff cards/letters are available to document no live utility services exist at or to the site (e.g., building demolition site).

All circumstances where one or more steps of this process are not being implemented must be discussed with and agreed to by all field team members and must be duly documented. Regardless of whether or not exceptions are made during the utility clearance process, a *Utility Clearance Checklist* shall always be completed for each site, in accordance with the terms outlined in this document.

8.0 DOCUMENT MANAGEMENT

This Utility Clearance Process document shall be subject to annual review which will commence in April of each calendar year. The review will entail solicitation for input from the users. Comments received will be addressed and the document revised (as appropriate), finalized, approved and re-issued by June 15 of each year.

If a risk is identified at any time outside the annual review cycle that requires an immediate change to the utility clearance process outlined herein, then an amendment to the process will distributed to all users. Such amendments will also be amended to Health and Safety Plans. The amended change will ultimately be incorporated into this *Utility Clearance Manual* during its annual review.

Table 1

Summary Table of Resources for Obtaining Subsurface Utility Plates and Drawing Packages

Table 1 - Summary Table of Resources for Obtaining Subsurface Utility Plates and Drawing Packages

Utility Type	County	Company	Organization	Name / Email	Phone #	Notes
General		Con Edison	Central Engineering / Design Engineering	Anthony McFadden / mcfaddena@coned.com	212-460-4552	Initial Inquiries/requests for drawings/drawing packages should be submitted by
Electric	All	Con Edison		http://maps/AdvancedMappingHomePage.htm		
			For Question contact:	Peter Misiewicz / MISIEWICZP@coned.com	212-780-6408	Transmission Feeders and Civil Structures
Electric - Distribution Feeders	Manhattan	Con Edison		Michelle DeMascio / demasciom@coned.com	212-460-6799	
	Bronx / Westchester			Rogers Canoville / canoviller@coned.com	914-925-6125	
	Brooklyn / Queens			Stephen Maikisch / maikischs@coned.com	718-802-5401	
	Staten Island			Joseph Lenge / lengej@coned.com	718-802-5301	
Gas	All	Con Edison	Gas Engineering	http://maps/AdvancedMappingHomePage.htm		
			For Question contact:	Thomas Rivielo / rivielot@coned.com	718-839-1784	
	Brooklyn / Queens	Con Edison	Regional Engineering	O'Neil Wright / wrighto@coned.com	212-460-3870	Corporate laision to ***National Grid.***
Steam	All	Con Edison	Steam Engineering	http://maps/AdvancedMappingHomePage.htm		
			For Question contact:	Ron Pietrowski / pietrowskir@coned.com	212-460-4562	
				Steam Desk (Steam Dispatcher)	212-894-9540	Contact when planning working in the vicinity of steam mains
Sewer/Water	NYC	Con Edison	Regional Engineering	O'Neil Wright / wrighto@coned.com	212-460-3870	Corporate laision to ***NYC DEP***
		NYC DEP	Bureau of Water and Sewer Operations	Vincent Soriano	718-595-5330	
Tunnels	Subway	MTA	Outside Projects - Adjacent Work	Vasanth Battu /	646-252-4473	
	Crossing the East River			Rajen Ydeshi	646-252-3641	If drilling in immediate vincinity of MTA structure, e.g., subway tunnel, car tunnel, etc., you will need to submit a letter and plan drawing(s) to Mr. Ydeshi]
Field Support	All	Con Edison	Construction Services	Michael Pillig / pilligm@coned.com	718-839-1237	For assistance with coordination of opening manholes and manhole pump-outs.
Entering Manholes	All	Con Edison	Transmission Operations	Mark Bauer / bauerm@coned.com	718-204-4465	To coordinate entering and inspecting manholes, attaching clamps for Geophysical Contractor to tone lines, etc.
				Vernon Schaefer / schaeferv@coned.com	718-204-4476	

http://maps/AdvancedMappingHomePage.htm
* website accessible on the Con Edison Intranet

ATTACHMENT A

Utility Clearance Process Flow Chart

Utility Clearance Process During Intrusive Activities
E H & S – Remediation Group

4/10/2020

Rev. 3

CON EDISON FACILITY

PM to Obtain & Review
Facility Excavating Procedure

As stringent as Remediation's process?

Yes

Use Facility Clearance Protocol

No

PM to Obtain Plates for all CE Utilities
Steam, Electric, Gas, etc.

PRIVATE PROPERTY

PM to Review Drawings
- Department of Buildings
- Department of Public Works
- Building Plans at Facility

STREET / SIDEWALK

PM to Obtain Plates for all CE Utilities
Steam, Electric, Gas, etc.

Review Drawings
- Department of Buildings
- Department of Public Works
- Others (NYCTA, DEP, etc.)

Contractor to Request Code 753 Mark-out:
- Provide maps of locations
- Request sn-site work
- Obtain mark-out confirmations

Perform Utility Markout:
- Con Edison Mark-out Staff and/or
- Private Utility Locating Contractor

Perform Utility Markout:
- Private Utility Locating Contractor
- Con Edison Mark-out Staff

Contractor to Request Code 753 Mark-out:
- Provide maps of locations
- Request on-site work
- Obtain mark-out confirmations

Perform Utility Markout:
- Con Edison Mark-out Staff and/or
- Private Utility Locating Contractor

No

Indoors / Basement

Yes

Inspect Basement
Attempt to visually locate all utility service lines into and out of the walls and floors of building.

Drill Through Concrete
Use Core Drill **Note:** Where the presence of sub-slab utilities are known or suspected, only core 2/3 thickness of slab. Break out remainder with jackhammer or hand tools

Soil gas sample below slab?

No

Yes

Box A
Hand auger one foot prior to driving soil gas sample probe to required depth

Site Walk for Location Confirmation
Prior to Intrusive Activities
- Con Edison PM
- Construction Management
- Project Consultant
- Contractor (Driller, excavator, etc.)
- Complete Utility Clearance Checklist

Utilities identified within 2 feet from proposed sample location

Yes

No

NOTE: If location is near a high pressure Gas main (>125 psig then) MUST contact Gas Ops and hand expose.

Can location be moved at least 2 feet from all utilities?

Yes

Move it

No

Hand Excavate
To locate nearby utility

Excavate Test Pit by Hand or Vacuum Truck

- Soil Boring / Monitoring Wells

Excavate test pit using hand auger , post-hole digger and/or vacuum truck: minimum hole diameter 2-inches greater than diameter of Auger and minimum of 5 ft deep. Use non-conducting probe rod during excavation.

(**NOTE:** for soil gas only go to **Box A**)

ATTACHMENT B

Attachment B1: Utility Clearance Checklist for Intrusive Fieldwork

Attachment B2: Utility Clearance Summary Table

Attachment B3: Daily Verification Form for Post-Hand Cleared Locations and Sign-Off for Proposed Drilling

Attachment B1: Utility Clearance Checklist for Intrusive Fieldwork

UTILITY CLEARANCE CHECKLIST FOR INTRUSIVE FIELDWORK

SECTION 1: PROJECT BACKGROUND INFORMATION

Site Name: _____ **Job No.** _____

Site Address:

	Include staff name / company name	**Phone Number:**
Con Edison Project Manager:		
Con Edison Construction Inspector:		
Con Edison Construction Inspector:		
Consultant Project Manager:		
Consultant Field Manager:		
Consultant Field Staff A		
Consultant Field Staff B		
Subcontractor - Hand Clearance		
Subcontractor - Driller:		
Subcontractor - Excavator:		
Subcontractor - Geophysical Surveyor		
Subcontractor - Other ( )		
Subcontractor's Contact Person:		

Meeting / Start Date: _____ **Time:** _____

Summary of Intrusive Activities:

Conduct Site Investigation of ***NAME/DESCRIPTION OF SPILL*** per approved work plan. Work entails advancing ***NO OF SOIL BORINGS*** , excavation of ***NO OF TEST PITS*** , Installation of ***NUMBER OF WELLS*** , The names soil borings, test pits and wells are listed in attached ***Table XX***

All planned sampling/intrusive locations marked in the field piror to mark-out requests? (Y/N): _____

Locations Marked by:? _____ Date Locations Marked: _____

UTILITY CLEARANCE CHECKLIST FOR INTRUSIVE FIELDWORK

SECTION 2: PLATES, DRAWINGS & MAPS *(Attach copies)*

	Drawing Type (A)	Source	Drawing No.	Notes
Sample Location				
Electric:				
Gas:				
Steam:				
Sewer:				
Water:				
Other:				

UTILITY CLEARANCE CHECKLIST FOR INTRUSIVE FIELDWORK

SECTION 3: UTILITY MARK-OUTS

SECTION 3A: CODE 753 MARK-OUTS

Requested by: _____ **Initials:** _____ **Organization:** _____

Date Requested: _____

Reference No(s). _____

Date Confirmation Notification Received from One Call: _____

Utilities Identified at the Site by One-Call System

	Date Confirmation Received	Date Markout Completed	Date for Marking to be Refreshed	Date Marking are Refreshed	Owner Phone No.	Notes / Special Stipulations
Electric:						
Gas:						
Steam:						
Communications:						
Transportation:						

SECTION 3B: GEOPHYSICAL SURVEYS

Is intrusive work on Company Property (Y/N): _____

(If YES complete all sections below - If NO complete Private Geophysical Survey section only)

M-SCOPE SURVEY

Date Survey Request Submitted	Date(s) Suvey / Mark-Outs Completed	Drawing(s) Showing Findings Received from Survey Group (Y/N)	Notes / Comments

PRIVATE GEOPHYSICAL SURVEY

Name of Contractor: _____ **Address:** _____

Operator Name: _____ **Telephone No. :** _____

Operator Title: _____

SECTION 3B: GEOPHYSICAL SURVEYS *(CONTINUED)*

UTILITY CLEARANCE CHECKLIST FOR INTRUSIVE FIELDWORK

Geophysical Equipment Used

Method	Instrument Model	Operation Mode	Antenna(s)	Notes
GPR				
RFI				
EMI				
Other				

Description of any anomolies / unknown utilities identified during surveys.

_____

_____

INTRUSIVE SAMPLING LOCATIONS MARKED AND SURVEYED? Y/N

SECTION 4: FIELD RECONCILIATION - MARK-OUTS / SAMPLE LOCATIONS

Site Name / Location: _____

The parties listed in the table below participated in a site walk on _____

The objectives of the site walk were:

A) Reconcile utility plates/drawings with all mark-outs; and

B) Review utilities in the immediate vicinity of each intrusive sampleing location to determine the need of special clearance activities.

The outcomes for each of these reconnaissance objectives are documented in the Sections 4A and 4B below and the Sampling Locaiton / Utility Clearance Summary Table

Finally, the signatures in the table below verifiy that the signator: 1) the participated on the site walk; 2) concur that the utilities summarized in Section 4A (below) as identified through all various means are the known utilities at and in the vicinity of the work site; and 3) concurs with the utility clearance activity selected for each intrusive sampling location, as specified in the attached Summary Table.

Reconciliation Sign-In Sheet **Date of Utility Reconciliation:** _____

Name	Signature	Role / Organization	Phone No.

SECTION 4A: UTILITY RECONCILIATION

UTILITY CLEARANCE CHECKLIST FOR INTRUSIVE FIELDWORK

A) Based on the field review of all drawings; Code 753, M-scope, and private geophysical survey mark-outs; and direct field observations and reconnaissance, the utilities marked witih and **'X'** below are determined to be present at the site and witihin the work area.

Electric		**Gas**		**Steam**	
Sewer		**Water**		**Other**	
Communication				**Tunnels**	

B) With the exception of the utilities identified above flagged with an **'N'**, the locations and alignment for all other subsurface utilites determined to be present at the site and in the work area (as listed above) were reconciled by comparison of all lines of evidence (i.e., all drawings; Code 753, m-scope and private geophysical survey markouts; and direct field observations).

SECTION 4B: UTILITY CLEARANCE - SAMPLE / UTILITY LOCATIONS CONFIRMATION

C) Is relocation / special utility clearance required at any of the intrusive work locations? (Y/N) _____

D) Required relocation / special utility clearance actions for all affected sampling locations have been documented on the **Required UC Actions - Summary Table**? (Y/N) _____

Conduct Site Walk and Complete Site Walk Table

Attachment B2: Utility Clearance Summary Table

Utility Clearance Summary Table

Sampling Location	Nearest Utility		Depth to Top of Utility (Approx.)	Clearance Required (Y/N)	Clearance Method Specified	Actual Depth Cleared (ft bgs)	Utility Cleared		Approved By (Initial)			Notes
	Distance	Type					Date	Time	Con Ed CI	Consultant FM / PM	Other (specify)	

Name of Remediation Project Manager (PM): _____

Name of Construction Inspector (CI): _____

Name of Consultant Project Manager (PM): _____

Name of Consultant Field Manager (FM): _____

Name of Drilling / Excavation Contractor Operator: _____

Attachment B3: Daily Verification Form for Post-Hand Cleared Locations and Sign-Off for Proposed Drilling

DAILY VERIFICATION FORM FOR POST-HAND CLEARED LOCATIONS AND SIGN-OFF FOR PROPOSED DRILLING

Form Preparer: _____ **Date:** _____

Location ID / Area	Confirmed Triangulation Description	GPS Coordinates	Date Hand Cleared (5' depth)	Consultant Field Team Approval	Drilling Subcontractor Approval	Con Edison CI Approval	Comments

(This document to be included with the Con Edison Utility Clearance Checklist)

ATTACHMENT C

Instructions for Obtaining Drawings for Sewer and Water Utilities

From the NYC DEP

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OPERATIONS
REQUEST FOR RECORDS FORM

RECORDS REQUEST

About this form
- Use this form to request water and sewer records. Please be specific and complete all required (*) fields.

How to complete this form
- This form must be completed electronically (typed) for accuracy.
- For your convenience, this form has been designed to be filled out electronically at our website and then printed.
- Professional Engineers, Registered Architects, Land Surveyors, and Licensed Master Plumbers, be sure to provide your license number below.

Please Note: The work type and description will determine the documents you receive from the Records Central Office. Therefore, you must provide an accurate, detailed work description and check the appropriate Type of Work box below.

Submit your completed form to the following email address:

WSRecordsCentral@dep.nyc.gov

Click here for more information on how to submit your request.

REQUESTS ARE SUBJECT TO REVIEW UNDER DEP SECURITY PROTOCOL FOR RECORDS RELEASE. REQUESTS WILL NOT BE PROCESSED WITHOUT THE APPROPRIATE INFORMATION BELOW.

*** = required field**

REQUESTOR INFORMATION

* Name _____ * Email _____ * Phone _____

* Firm/Agency _____ * Address _____ * City _____ * State _____ * Zip Code _____

License Type _____ License Number _____ * Date _____

IF APPLICABLE, INDICATE CITY, STATE, OR FEDERAL AGENCY RETAINED BY AND CONTRACT No. (e.g. BED100 FOR DDC). IF NONE, INDICATE N/A

* Agency Name _____ * Contract Number _____

IF RETAINED BY A PRIVATE FIRM OR INDIVIDUAL (NONGOVERNMENTAL) PLEASE PROVIDE THE FOLLOWING. IF NONE, INDICATE N/A

* Name _____ * Email _____ * Company _____ * Phone _____

USE OF RECORD (PLEASE BE SPECIFIC)

****TYPE OF WORK BEING DONE** (ONLY CHECK ONE)*

☐ TAP CARD ☐ SEWER CARD ☐ MS4 ☐ GEOTHERMAL WELL ☐ STREET DEMAPPING/RECONSTRUCTION ☐ SIDEWALK CAFE APPLICATION

☐ PLANNING/ANALYSIS SPECIFY _____ ☐ SITE/HOUSE CONNECTION PROPOSAL ☐ DRILLING/BORING/EXCAVATION

☐ DEWATERING PERMIT APPLICATION ☐ ULURP ☐ SURVEY ☐ OTHER SPECIFY _____

***TYPE OF DESIGN** (CHECK IF APPLICABLE)*

☐ WATER SERVICE/BACKFLOW PREVENTER ☐ NEW WATER MAIN ☐ NEW SEWER MAIN ☐ SEWER CONNECTION

☐ OTHER SPECIFY _____

*PROVIDE BRIEF DESCRIPTION OF THE PROJECT YOU ARE WORKING ON THAT REQUIRES THE ABOVE INFORMATION. YOU MUST STATE WHY THE INFORMATION IS REQUIRED.

LOCATION WHERE WORK IS BEING DONE

MUST PROVIDE STREET AND CROSS STREET INFORMATION (NOTE: FOR TAP/SEWER CARD REQUESTS ONLY, YOU MUST PROVIDE ADDRESS AND BLOCK/LOT)

* BOROUGH _____

STREET NAME OR ADDRESS	FROM STREET OR BLOCK NUMBER	TO STREET OR LOT NUMBER

DISCLAIMER: Maps are intended to be a schematic representation of the water/sewer system and are not warranted to be accurate for construction and/or surveying purposes and are based on the best information available at the time of map creation. GIS data is not warranted to be accurate for construction and/or surveying purposes and is based on the best information available. All damages arising out of use of the data and/or maps are expressly disclaimed. Maps, documents and data are not for public dissemination and may not be copied nor distributed by the recipient. All records and data are expressly owned by the NYC Department of Environmental Protection.

☐ *I have read and agree with the terms and conditions stated in the disclaimer. ***Requests will not be processed if box is left unchecked.***

BWSO Records Request Service Level Agreement

REQUEST TYPE	SLA RESPONSE TIME	NOTES
Map Requests	3-5 NYC BUSINESS DAYS	* REQUESTS RECEIVED AFTER 12 NOON WILL BE ENTERED AS BEING RECEIVED THE NEXT BUSINESS DAY * IF RETAINED BY A GOVERNMENT AGENCY, A LETTER STATING THE CONTRACT NUMBER AND THE ROLE OF THE REQUESTOR IN THE PROJECT MUST BE PROVIDED * ALL RECORDS ARE SUBJECT TO AVAILABILITY * ALL REQUESTS FOR MAPS OR DRAWINGS MUST INCLUDE A SITE MAP OR PLAN * RECORDS CENTRAL WILL CONTACT ALL GIS DATA REQUESTORS TO SIGN AN MOU AND PROVIDE A LIST OF USERS ON AGENCY OR COMPANY LETTERHEAD BEFORE THE DATA REQUEST IS PROCESSED
Map Requests (large areas)	A MINIMUM OF 10 BUSINESS DAYS	
Drainage Plans and/or Sewer As-Builts	4-6 NYC BUSINESS DAYS	
Drainage Plans and/or Sewer As-Builts (large areas)	A MINIMUM OF 10 BUSINESS DAYS	
Tap/Sewer Cards	1-2 NYC BUSINESS DAYS	
Tap/Sewer Cards (10 or more locations)	CASE-BY-CASE BASIS	
GIS Data (large areas)	CASE-BY-CASE BASIS	

REQUESTOR PROJECT TYPE	DOCUMENTS REQUESTOR MUST PROVIDE	DOCUMENTS REQUESTOR CAN EXPECT TO RECEIVE
MS4	Electronically completed Request for Information form; Site map or plan	Sewer maps (PDF or GIS data)
Geothermal Well	Electronically completed Request for Information form; Site map or plan	Water maps (requestor cannot excavate until clearance is provided by Distribution Division)
Street Demapping	Electronically completed Request for Information form; Site map or plan	Water maps; Sewer maps; Drainage plans
Street Reconstruction	Electronically completed Request for Information form; Site map or plan	Water maps; Sewer maps
Sidewalk Cafe Permit Application	Electronically completed Request for Information form; Site map or plan	Water maps
Planning / Analysis	Electronically completed Request for Information form; Site map or plan	Water maps; Sewer maps; Drainage plans
Site / House Connection Proposal	Electronically completed Request for Information form; Site map or plan; DEP engineering letter	Tap cards/Sewer cards, if available; Drainage plans; Sewer as-built drawings (or sewer maps if as-built is not available)
Drilling / Boring / Excavation	Electronically completed Request for Information form; Site map or plan	Water maps; Sewer as-built drawings (or sewer maps if as-built is not available)
Dewatering Permit Application	Electronically completed Request for Information form; Site map or plan	Sewer maps; Sewer as-built drawings
ULURP	Electronically completed Request for Information form; Site map or plan	Water maps; Sewer maps; Drainage plans
Survey	Electronically completed Request for Information form; Site map or plan	Water maps; Sewer maps
Water Service Design	Electronically completed Request for Information form; Site map or plan; DEP engineering letter	Water maps; Tap cards
Backflow Preventer Application	Electronically completed Request for Information form; Site map or plan; DEP engineering letter	Water maps; Tap cards
New Water Main Design	Electronically completed Request for Information form; Site map or plan	Water maps
New Sewer Design / Connection	Electronically completed Request for Information form; Site map or plan	Drainage plans; Sewer as-built drawings (or sewer maps if as-built is not available)

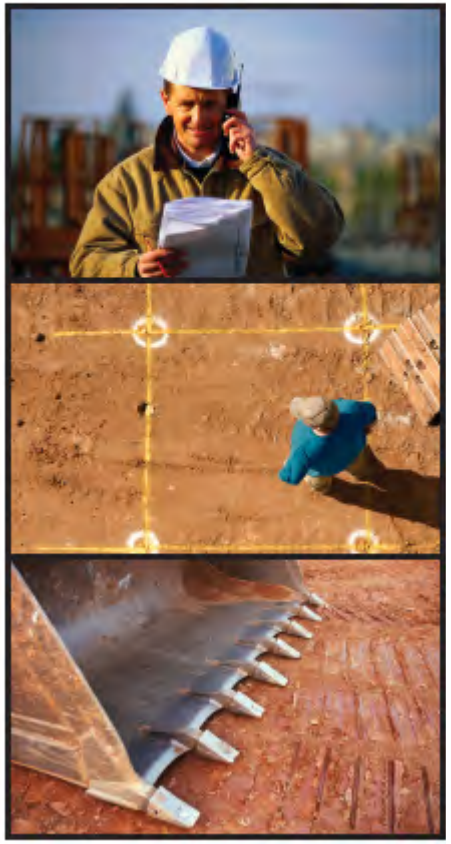
ATTACHMENT D

Attachment D1: Code 753 Information

Attachment D2: Excavator Safety Manual New York 811

Attachment D1: Code 753 Information

Protection of Underground Facilities



16 NYCRR Part 753
Adopted Feb. 5, 1997
Amended July 10, 2002
Amended January 4, 2012

GBS March 29, 2013 Update

State of New York
Department of Public Service

Call the One-Call Center

See back cover for appropriate 1-800 number. Call 2 to 10 days in advance of start date, not counting date of call. Make note of ticket reference number and names of operators notice will be transmitted to.

Wait the Required Time

Do not start before your stated commencement date, unless you have been notified by EVERY operator that they have NO FACILITIES in your work area.

Confirm Utility Response

Check that each notified operator has either marked your work site or given an "all clear".

Respect the Markings

Preserve the paint/flags until no longer needed for safe excavation. It is recommended that you remove them to the best of your ability once your excavation work is complete.

Dig with Care

See "Verifying Locations/Tolerance Zone" below. Maintain minimum 4" clearance from utilities after verifying locations. Support long spans of exposed facilities to prevent collapse or sagging. Backfill carefully to prevent damage to facilities and their coatings, and to provide support beneath exposed facilities.

Verify locations/Tolerance Zone (See 753-1.2 (k) & (i), 753-3.6 and 753-3.7)

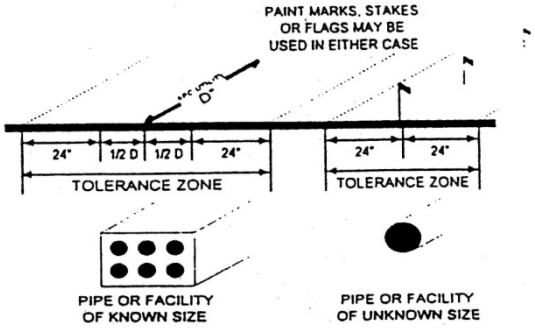
Before using powered equipment within the tolerance zone, the locations of gas and liquid petroleum lines MUST be verified by means of hand-dug test holes. Locations of other utilities may be verified in this manner, or by other means mutually agreed to with the operator. Powered equipment may be used for removal of pavement, ONLY to the depth of pavement. If the facility cannot be located after diligent search at a reasonable depth, notify the operator.

Pre-marking with White Paint

(See 753-3.2(b))

The use of White Paint to delineate a work area is encouraged. It is required when necessary to adequately identify the work site (i.e. the exact location, dimensions, etc. cannot be verbalized). This practice helps locators avoid marking where not necessary while assuring the excavation site does get marked properly. White is the industry standard for this purpose and is used to avoid confusion with other underground facility designations. Chalk based paint is advised since it will dissipate quicker with rain, etc. Take care that the white marks will not be confused with traffic or pedestrian control marks. For a small or single (ex: tree planting) excavation of known dimensions, delineate the exact area with dots, dashes, a continuous line, or white stake(s). For larger excavations, use intervals whereby each mark can be seen from the previous one.

As a courtesy and where practical, alerting the property owner to the reason for the white marks can save calls to the utilities and One-Call Center asking: "who put this paint here and why?"



16 NYCRR PART 753 - PROTECTION OF UNDERGROUND FACILITIES

Statutory Authority
Public Service Law §119-b and
General Business Law Article 36

Table of Contents

SUBPART 753-1
GENERAL REQUIREMENTS

753-1.1 Purpose. The purpose of these rules is to establish procedures for the protection of underground facilities in order to assure public safety and to prevent damage to public and private property, as required by General Business Law Article 36 and Public Service Law Section 119-b. This Part may be cited as Industrial Code 53 or Code Rule 53, in addition to its designation as Part 753.

753-1.2 Definitions. When used in this Part, unless the context otherwise requires, the following terms shall have the following meanings.

(a) **Automated Positive Response (APR) system**: a system established by the one-call notification system to furnish a single point of contact between member operators and excavators for the purpose of communicating the status of an excavation location request as provided by the member operators.

(b) **Commission**: The Public Service Commission

(c) **Contact**: Any defacing, scraping, impact upon an underground facility or its protective coating, housing or other protective device.

(d) **Damage:** Any destruction or severance of any underground facility or its protective coating, housing or other protective device or any displacement of or removal of support from any underground facility which would necessitate repair of such facility.

(e) **Department**: The Department of Public Service.

(f) **Demolition:** The total or partial wrecking, razing, rending, moving or removal of any structure.

(g) **Enforcement proceeding:** A proceeding by the Commission to determine a penalty under the

authority of §119-(b)(8) of the Public Service Law.

(h) **Emergency:** Any abnormal condition which presents an immediate danger to life or property including the discontinuance of a vital utility service necessary for the maintenance of public health, safety and welfare.

(i) **Excavation:** Any operation for the purpose of movement or removal of earth, rock, pavement or other materials in or on the ground by use of mechanized equipment or by blasting, including but not limited to, digging, auguring, backfilling, boring, drilling, grading, plowing in, pulling in, fence post or pile driving, tree root removal, saw cutting, jack hammering, trenching and tunneling; provided, however, that the following shall not be deemed excavation:

(1) movement of earth by tools manipulated only by human or animal power;

(2) the tilling of soil for agricultural purposes;

(3) vacuum excavation; and

(4) saw cutting and jack hammering in connection with pavement restoration of a previous excavation where only the pavement is involved.

(j) **Excavator:** Any person who is engaged in a trade or business which includes the carrying out of excavation or demolition; provided, however, that an individual employed by an excavator and having no supervisory authority other than the routine direction of employees over an excavation or demolition, shall not be deemed an excavator for the purpose of this Part. The act of any employee or agent of any excavator acting within the scope of his or her official duties or employment shall be deemed to be the act of such excavator.

(k) **Field Citation:** A written statement issued pursuant to subdivision 753-6.2 of this Part by an employee of the Department informing a Respondent that, in the judgment of the employee, a violation has occurred and setting forth the specific provisions allegedly violated by Respondent.

(l) **Hand dug test holes:** Excavations performed for designating, testing or verification purposes which are dug by the use of hand-held tools utilizing only human power. The use of vacuum excavation techniques are acceptable means of exposing underground facilities.

(m) **Local governing body:** A town, village or city outside the city of New York or a county within the city of New York.

(n) **Near:** An area within 15 feet of the outside perimeter or diameter of an underground facility or its encasement.

(o) **Notice of probable violation (NOPV):** A written statement or letter from the Department, containing the items specified by subdivision 753-6.4(b) of this Part, to a Respondent informing him or her that an enforcement proceeding is being initiated.

(p) **One-call notification system:** Any organization among whose purposes is establishing and carrying out procedures to protect underground facilities from damage due to excavation and demolition, including but not limited to, receiving notices of intent to perform excavation and demolition and transmitting the notices to one or more member operators of underground facilities in the specified area.

(q) **Operator:** Any person who operates an underground facility to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or telegraph communications, cable television, sewage removal, traffic control systems, or water.

(r) **Person:** Any individual, firm, corporation, association or partnership, cooperative association, joint venture, joint stock association, business trust, their lessees, trustees or receivers, municipality, governmental unit or public authority whether or not incorporated.

(s) **Powered equipment:** Any equipment energized by an engine or motor and used in excavation or demolition work.

(t) **Respondent:** A person who the Department has served a field citation, warning letter or Notice of Probable Violation.

(u) **Tolerance zone:** If the diameter of the underground facility is known, the distance of one-half of the known diameter plus two feet, on either side of the designated center line or, if the diameter of the underground facility is not known, two feet on either side of the designated center line.

(v) **Underground facility:** A facility and its attachments located underground and installed by an operator to furnish its services or materials, including but not limited to, pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels and any encasement containing such facilities. Such term shall not include oil and gas production and gathering pipeline systems used primarily to collect oil or gas production from wells.

(w) **Warning Letter:** A written letter from the Department to a Respondent, pursuant to subdivision 753-6.3 of this Part, informing a Respondent that an alleged violation of a specific provision(s) of Part 753 has occurred or is continuing, advising the Respondent to correct it, if it is correctable, and to comply henceforth or be subject to enforcement proceedings under this Part.

(x) **Work area:** The area of the ground or equivalent surface which will be disturbed or removed by excavation work or affected by demolition work.

(y) **Working days:** Mondays through Fridays, exclusive of public holidays. The public holidays observed by the State of New York are as follows:

New Years Day	January 1
Martin Luther King Day	3rd Monday in January
President's Day	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	1st Monday in September
Columbus Day	2nd Monday in October
Veteran's Day	November 11
Thanksgiving Day	4th Thursday in November
Christmas Day	December 25

If the holiday occurs on a Saturday, it will be observed the Friday before. If the holiday occurs on a Sunday, it will be observed the Monday after.

SUBPART 753-2
DUTIES OF LOCAL GOVERNING BODIES

753-2.1 Provision and Display of Notice. Any local governing body that issues permits for excavation and demolition shall provide a notice to applicants for permits that informs them about their responsibilities under state law to protect underground facilities and the existence, operation, programs and telephone number of the one-call notification system. Every such local governing body shall continuously display such notice in a conspicuous location in the office or agency it designates.

SUBPART 753-3
DUTIES OF EXCAVATORS

753-3.1 Timing of notice for excavation or demolition.

(a)(1) Before commencing or engaging in any non-emergency excavation or demolition, each excavator shall provide notice of the location and date of the planned excavation or demolition to the one-call notification system serving the vicinity in which the excavation or demolition is to take place.

(2) Such notice shall be served at least two but not more than ten working days, not including the date of the call, before the commencement date of the excavation or demolition.

(b) Excavation or demolition which is required to be performed promptly as a result of an emergency, disaster or to correct an immediate hazard may proceed immediately without prior notification to operators, if the situation is so serious that the excavation or demolition cannot reasonably be delayed. However, excavators shall notify the one-call notification system as soon as possible that such excavation or demolition is commencing or is underway. Extreme caution shall be employed by the excavator to prevent damage to existing underground facilities and to avoid endangering persons and property.

(c) At least seven working days in advance of the commencement date of a demolition, the excavator shall request a pre-demolition conference, through the one-call notification system, with all member operators who have underground facilities at or near the demolition area. A pre-demolition conference may encompass one or more demolition(s) in the project area. A request for a pre-demolition conference is not a substitute for the notice of intent to perform demolition work required by Section 753-3.1 of this Part.

(d) Whenever an excavator cancels an excavation or demolition, he or she shall

promptly communicate the cancellation to facility operators utilizing the one-call notification system.

(1) Whenever an excavator postpones the commencement date for ten or less working days, no call to the one-call notification system or operators is required.

(2) Whenever an excavator postpones an excavation or demolition more than ten working days, the same requirements for notice shall pertain to the revised commencement date as listed in subdivisions 753-3.1(a).

(e)Information requested from an operator for design purposes shall not be a substitute for the notice of intent to perform excavation or demolition as required by this Subpart.

753-3.2 Detailed notice requirements.

(a) Every notice provided by an excavator to the one-call notification system concerning planned excavation or demolition shall contain at least the following information:

(1) Name of the person serving such notice;

(2) Name, address and telephone number of the excavator or excavator's company;

(3) Excavator's field telephone number, if one is available;

(4) Name of the field contact person, if any;

(5) Address and exact location as well as the approximate extent and dimensions of the planned work area;

(6) Means of excavation or demolition and whether or not explosives are to be used;

(7) Brief description of the planned excavation or demolition;

(8) Date and time the excavation or demolition is planned to commence.

(b) When necessary for adequate identification, or as determined by mutual agreement of the operator and excavator, the excavator shall delineate the work area with white paint, white stakes or other white suitable markings.

753-3.3 Commencement of excavation or demolition.

(a) The excavator may proceed with excavation or demolition on the stated date of commencement if, prior thereto, he or she has received notification from each and every operator notified by the one-call notification system that:

(1) Such operator has no underground facility located in or within 15 feet of the work area; or

(2) That any underground facility located in or within 15 feet of the work area has been staked, marked or otherwise designated in accordance with the provisions of Subpart 753-4 of this Part.

(b) The excavator shall not commence the excavation or demolition on the stated commencement date if he or she has been notified by an operator that the staking, marking or other designations of an underground facility located in or within 15 feet of the proposed work area will not be completed on the stated commencement date. In such case, the operator is required promptly to report such fact to the excavator and to inform the excavator of a prompt and practicable completion date, which in no case shall be more than two working days after the excavator's stated commencement date, unless a longer period is agreed to by both parties.

(c) The excavator may proceed with excavation or demolition prior to the stated date of commencement once he or she has received notification from each and every operator notified by the one-call notification system that each operator has no underground facilities located in or within 15 feet of the work area.

(d) Where available through the one-call notification system, the excavator shall utilize the Automated Positive Response (APR) system in order to obtain the response(s) of the operators that were notified by the one-call notification system.

753-3.4 Staking, marking or other designation.

(a) Every excavator shall be familiar with the provisions of this Part, especially those relating to size and depth indications, color coding, center line or offset staking or marking and the location of underground facilities by designations other than staking or marking.

(b) Whenever the excavator determines that a review of the staking, marking or other designation is necessary or that additional information is required, he or she shall so notify the operator or the one-call notification system.

753-3.5 Preservation of stakes, markings or other designations. Starting on the stated commencement date given in the excavator's notice to the one-call notification system, the excavator shall be responsible for protecting and preserving the staking, marking or other designation until no longer required for proper and safe excavation or demolition work at or near the underground facility.

753-3.6 Verification of underground facilities.

Where an underground facility has been staked, marked or otherwise designated by the operator and the tolerance zone overlaps with any part of the work area, or the projected line of a bore/directional drill intersects the tolerance zone, the excavator shall verify the precise location, type, size, direction of run and depth of such underground facility or its encasement. Verification shall be completed before the excavation or demolition is commenced or shall be performed as the work progresses.

(a) Powered or mechanized equipment may be used within the tolerance zone for removal of pavement or masonry but only to the depth of such pavement or masonry.

(1) Below the depth of pavement or masonry, powered equipment may be used in the tolerance zone prior to the verification of the location of facilities when agreed to in writing by the affected operator(s).

(2) Operators, or their agents and contractors working under their direction, may use powered equipment to locate their own facilities within the tolerance zone.

(b) The verification of underground facilities furnishing gas or liquid petroleum products shall be accomplished by the excavator by exposing the underground facility or its encasement to view by means of hand dug test holes at one or more points where the work area and tolerance zone overlap, or more points as designated by the operators of such facilities.

(c) The verification of underground facilities other than those furnishing gas or liquid petroleum products shall be performed at one or more points for each such underground facility as may be required by the operator. Verification shall be accomplished by exposing the underground facility or its encasement to view by hand dug test holes or by other means mutually agreed to by the excavator and operator.

753-3.7 Unverifiable underground facilities. If the precise location of an underground facility cannot be verified by the excavator after diligent search at a reasonable depth within the tolerance zone as staked, marked or otherwise designated by the operator, the excavator shall so notify such operator as soon as possible. The operator shall respond in accordance with subdivision 753-4.10 of this Part.

753-3.8 Powered excavating equipment limitations. After verifying the location of an underground facility, the excavator shall not employ powered or mechanical excavating equipment closer than four inches in any direction from the staked, marked or otherwise designated or known outside diameter or perimeter of such facility or its protective coating unless agreed to in writing by the operator of the affected underground facility. Any such written agreement shall be furnished to the excavator by the operator, upon request.

753-3.9 Discovery of unknown underground facilities. Where an undesignated or otherwise unknown underground facility is discovered within a work area, the excavator shall report such discovery as follows:

(a) If the identity of the operator of the discovered underground facility is known or is obvious, the excavator shall report the discovery to such operator. The operator shall respond immediately and, in accordance with subdivision 753-4.9(d) of this Part, take any necessary action and advise the excavator as to whether he or she may proceed in the immediate area.

(b)(1) If the identity of the operator of the discovered underground facility is not known or obvious, the excavator shall report the discovery to the one-call notification system and each operator notified by the one-call notification system shall respond immediately and, in accordance with subdivision 753-4.9 of this Part, determine whether or not such discovered facility is his or hers.

(2) While awaiting a determination of ownership, the excavator may proceed with the excavation or demolition taking reasonable care to protect and prevent damage to such underground facility.

753-3.10 Requirements concerning contact and damage to underground facilities.

(a) Excavators shall take all reasonable precautions to prevent contact or damage to underground facilities and their protective coatings, including but not limited to, compliance with any reasonable directions or accepted engineering practices given by affected underground facility operators.

(b) In the event of contact with or damage to an underground facility, the excavator shall immediately notify the operator of the facility.

(c) All excavation or demolition in the immediate vicinity of the contacted or damaged portion of the underground facility shall be

suspended until such portion is repaired and the operator advises the excavator that excavation or demolition may proceed.

(d) No backfilling shall be done by the excavator in the vicinity of the contact or damage until the operator conducts an inspection and makes any necessary repairs; and, the excavator shall undertake no repairs unless and until authorized by the operator.

753-3.11 Requirements concerning underground facilities in danger of failing.

(a) An excavator who by removing the surrounding materials exposes an underground facility which in his or her judgment appears to have failed or to be in potential danger of failing from corrosion or other causes shall immediately report such condition to the operator of such underground facility.

(b) The excavator shall delay any further work in the immediate vicinity of such underground facility which could jeopardize it but may proceed in areas not affecting the questionable facility.

(c) The excavator may proceed in such immediate vicinity after the operator responds and takes necessary action in regard thereto and advises the excavator that he or she may proceed.

753-3.12 Required support and protection for underground facilities.

(a) An excavator shall provide prompt and adequate support and protection for every underground facility located in the work area as is reasonably specified by the operator of any such facility.

(b) In the absence of any specifications by the operator, the excavator shall provide support and protection in accordance with generally accepted engineering practice, including but not limited to shoring and bracing.

(c) Support shall be at least equivalent to the previously existing support and shall protect the underground facility against freezing and against traffic and other loads.

(d) Support shall be maintained during excavation, during backfilling and, if necessary, after backfilling is completed.

(e) The operator may, in agreement with the excavator, provide such support.

753-3.13 Backfilling requirements.

(a) An excavator performing excavation or demolition at an underground facility shall backfill such excavation with materials and in such manner as specified by the operator or, in the absence of such specifications, with suitable materials and in such manner as will avoid damage to, and provide proper support for, such underground facility and its protective coating both during and after backfilling operations.

(b) The excavator shall not place large rock, frozen earth, rubble, debris or other heavy or sharp materials or objects which could cause damage to or scraping against any underground facility.

(c) The backfill beneath and around any underground facility shall be properly compacted in accordance with generally accepted engineering practice.

(d) Heavy loads and excessive forces shall not be imposed on any exposed underground facility at any time during backfilling operations.

753-3.14 Emergency requirements. In the event of an emergency involving danger to life, health or property as a result of damage to an underground facility containing gas or liquid petroleum products or as a result of an electrical short or escape of gas or hazardous fluids, the excavator shall:

(a) Proceed to evacuate his or her employees and all other endangered persons from the immediate vicinity to the best of his or her ability;

(b) Immediately notify 911 and the operator of the affected facility of the exact location, nature of the emergency and of the underground facility which is affected.

753-3.15 Responsibility to employees. Every excavator subject to the provisions of this Part shall make certain that all of his or her employees directly involved in excavation or demolition are thoroughly familiar with the applicable provisions of this Part and especially the provisions of this Subpart relating to their safety

SUBPART 753-4
DUTIES OF OPERATORS

753-4.1 Participation of operators

(a) Every operator of an underground facility shall participate in a one-call notification system within whose geographical jurisdiction or boundaries such underground facility is located.

(b) Every operator who is not a member of the one-call notification system and installs, has installed for him or her, or otherwise acquires, an underground facility, shall participate in a one-call notification system within 10 days after commencement of the installation or after the acquisition.

753-4.2 Removal of underground facilities. Any operator who removes or transfers ownership of all of his or her underground facilities from within the boundaries of any one-call notification system shall promptly notify the system.

753-4.3 Operator furnished information.

(a) Every operator shall provide the one-call notification system at least the following information:

(1) Corporate or other name and address of such operator;

(2) Department, agency, office or individual designated by the operator to be notified by the one-call notification system or excavators and the local address and telephone number of such department, agency, office or individual.

(b) Whenever such information is revised, changed or found to be incomplete or incorrect, the operator shall provide corrected information to each one-call notification system in which he or she participates.

753-4.4 Receiving notices. Each operator shall establish a means of receiving notices of planned excavation or demolition from the one-call notification system in accordance with the procedures of the system.

753-4.5 Operator's response to notice.

(a) Prior to the stated commencement date of the excavation or demolition work as stated in the recorded notice, the operator shall make a reasonable attempt to inform the excavator, by means of an Automated Positive Response (APR) system, where available, or by means of direct communications with the excavator, where APR is not available, that either:

(1) The operator has no underground facility in or within 15 feet of the work area; or

(2) Every underground facility belonging to him or her which is located in or within 15 feet of the work area has been staked, marked or otherwise designated in accordance with the provisions of this Subpart.

(b) Where an operator cannot complete the staking, marking or other designation of an underground facility prior to the stated commencement date and time of the excavation or demolition, the operator shall promptly report such fact to the excavator and shall inform the excavator of a prompt and practicable completion date which in no case shall be more than two working days after the excavator's stated commencement date, unless a longer period is agreed to by both parties.

(c) Whenever an excavator requests a review of any staking, marking or other designation, the operator shall comply with such request as soon as possible.

753-4.6 Locating underground facilities.

(a) Whenever an operator's underground facilities are in or within 15 feet of a work area, such facility shall be located, accurately and with due care, by means of staking, marking or other

designation in accordance with the provisions of this Subpart.

(b) The following staking and marking requirements shall apply:

(1) Stakes or surface markings shall be provided preferably at the center line of the underground facility and at such sufficient intervals as is necessary to indicate clearly the location and direction of run of such underground facility.

(2) All stakes and surface markings shall be color coded in accordance with the provisions of this Subpart in order to identify the type of underground facility so staked or marked.

(3) Stakes and surface markings shall indicate in inches the size or diameter of the underground facility or its encasement, if known.

(4) Each stake and surface marking shall indicate in inches the depth of the underground facility at that point, if known.

(5) Surface markings shall consist of paint, dye or equivalent material which is color coded in accordance with the provisions of this Subpart and which contrasts with the ground or equivalent surface.

(6) Where conditions exist so as to render center line staking or marking impractical or confusing, the operator may indicate the location of an underground facility by means of offset staking or remote tie-in markings which will clearly indicate the location and direction of run of the facility.

(c) If staking or marking are not used to indicate the location of an underground facility, the operator shall designate such location in accordance with the following:

(1) By exposing the underground facility or its encasement to view within the work area in a manner sufficient to allow the excavator to verify the type, size, direction of run and depth of the facility;

(2) By providing field representation and instruction to the excavator in the work area; or

(3) By any other means as mutually agreed to by the operator and excavator, including but not limited to written descriptions, photographs or verbal instructions. Such agreement shall be provided in writing to the excavator upon his or her request

(d) An operator, or its agents or contractors, performing excavation or demolition work at or near his or her own underground facility shall not be required to stake, mark or otherwise designate such underground facility.

753-4.7 Uniform color code. The following uniform color code shall be utilized for staking and marking used to designate the location of underground facilities and excavation sites:

(a) Yellow - Gas, oil, petroleum products, steam, compressed air, compressed gases and all other hazardous liquid or gaseous materials except water.

(b) Red - Electric power lines or conduits.

(c) Orange - Communication lines or cables, including but not limited to telephone, telegraph, fire signals, cable television, civil defense, data systems, electronic controls and other instrumentation.

(d) Blue - Water.

(e) Green - Storm and sanitary sewers including force mains and other non-hazardous materials.

(f) Purple - Radioactive materials, reclaimed water, irrigation and slurry line.

(g) White - Excavation site.

(h) Pink - Survey markings.

753-4.8 Uniform identification letters. All staking and marking utilized for the location of underground facilities shall contain letter designations which will clearly identify the type of underground facility so staked or marked. Such letters shall comply with the following code:

(a) C - Communication facilities (other than telephone service).

(b) CH - Chemicals.

(c) CTV - Cable television.

(d) E - Electrical power.

(e) FS - Fire signals.

(f) G - Gas.

(g) HPW - High-pressure water (100 psig or more).

(h) P - Petroleum.

(I) PP - Petroleum products (naphtha, gasoline, kerosine and similar products).

(j) S - Sewer.

(k) ST - Steam.

(l) T - Telephone company services.

(m) TC - Traffic control signals.

(n) W - Water.

(o) O - All other facilities.

753-4.9 Operator's response to notices of contact or damage, facilities in danger of failing and discovery of unknown underground facilities.

(a) Upon receipt of a notice from an excavator or a one-call notification system reporting contact or damage to an underground facility, the operator shall immediately inspect such facility and make the necessary repairs or shall advise the excavator that the excavation work may proceed.

(b) Such repairs may be performed by the operator or by others authorized by him or her, including the excavator.

(c) Upon receipt of a notice from an excavator or a one-call notification system of the discovery of an underground facility in danger of failing, the operator shall respond immediately and take any necessary action in regard thereto, and advise the excavator as to whether he or she may proceed in the immediate area.

(d) When an operator has been notified by an excavator or a one-call notification system that an unknown underground facility has been discovered in the course of the excavator's work, such operator shall immediately determine whether or not such discovered facility is his or hers by means of records, on-site inspection or otherwise, and as soon as practicable either:

(1) Advise the excavator that the unknown facility is not his or hers; or

(2) If such facility does belong to him or her, advise the excavator on how to proceed and of any special requirements the operator deems necessary.

753-4.10 Unverifiable underground facilities. If an excavator notifies an operator that, after diligent search at a reasonable depth within the tolerance zone as staked, marked or otherwise designated by the operator, that he or she cannot verify the location of an underground facility, the operator shall verify such location as soon as possible or shall provide the excavator with prompt field assistance or use other means mutually agreed to by the excavator and operator. Such agreement shall be provided to the excavator upon his or her request.

753-4.11 Emergency service requirements.

(a) Each operator of an underground facility containing gas or liquid petroleum products shall provide means for accepting emergency calls and prompt field assistance to such calls on a 24 hour-per-day basis.

753-4.12 Requirements concerning demolition. In addition to responding in accordance with subdivision 753-4.6(a), the operator shall attend a pre-demolition conference with the excavator upon the excavators request.

753-4.13 Support and backfilling requirements. Where an underground facility will be disturbed or uncovered by excavation or demolition, the operator of such facility shall indicate to the excavator any preferred means of support or protection required for such facility and any special backfilling requirements or provide any other guidance for protection of an underground facility. Such information shall be furnished to the excavator before the stated date of commencement of the work, if practical.

753-4.14 Information for design purposes. Each operator shall provide a means by which information regarding the location of underground facilities can be obtained for design purposes. Such means may include, but are not limited to, provision of maps, meetings, or marking in accordance with Section 753-4.6 and shall be performed within mutually agreed to time frames.

753-4.15 Consumer Education program: Each operator of an underground gas pipeline or hazardous liquid petroleum facility shall on its own initiative or through a one-call notification system conduct a program to educate the public on the possible hazards associated with damage to facilities and on the importance of reporting gas odors and leaks. The one-call notification system may develop materials suitable for use in such programs.

SUBPART 753-5
ONE-CALL NOTIFICATION SYSTEMS

753-5.1 Qualifications.

(a) The total extent of one-call notification systems shall be such in numbers and locations as to provide protection of underground facilities throughout all areas of the state with no geographic overlap of areas served.

(b) Every one-call notification system shall be governed by a not-for-profit corporation in accordance with the minimum requirements contained in the law and in this Part.

753-5.2 Notice procedures. Every one-call notification system shall:

(a) Establish an effective notification service for receipt of notices from excavators, including a toll-free telephone number, and for transmission of such notices to every member operator who has underground facilities in or within 15 feet of the work area. Such notices may include

(1) notice of a planned excavation or demolition;

(2) a request for a pre-construction or pre-demolition conference relating to excavation or demolition work at or near underground facilities; or

(3) a notice of the discovery of an unknown underground facility.

(b) Provide a direct means of communication between the one-call notification system and each operator who is a member of the system.

(c) Use a standardized format to record all incoming notices or requests from excavators, including at least the following information:

(1) Date and time of receipt of a notice or request;

(2) Name of the person serving such notice or making such request;

(3) Name, address and telephone number of the excavator or excavator's company;

(4) Excavator's field telephone number, if one is available;

(5) Name of the excavator's field contact person, if any;

(6) Address and exact location as well as the approximate extent and dimensions of the work area;

(7) Means of excavation or demolition and plans for use of explosives;

(8) Brief description of the planned excavation or demolition;

(9) Date and time the work is to commence;

(10) Name of the person receiving such notice;

(11) Name of the notification system.

(d) Assign a unique serial number to each incoming notice from excavators and provide the number to the excavator.

(e) Give persons providing notice of an intent to engage in an excavation or demolition activity the names of member operators of underground facilities to whom the notice will be transmitted.

(f) Furnish a copy of such notice record to the excavator, upon his or her request. The mailing of such copies of the notice record shall be construed to be in compliance with this Part.

(g) Keep on file a copy of each such notice record for a period of at least four years from the date of such notice.

753-5.3 System duties. Each one-call notification system shall perform the following duties:

(a) Provide highest priority to notices concerning the discovery of underground facilities that have unknown operators or are in danger of failing;

(b) Conduct a continuing program to:

(1) Inform excavators of the one-call notification system's existence and purpose and their responsibility to notify the one-call notification system of planned excavation and demolition and to protect underground facilities;

(2) Inform operators of the responsibility to participate in the one-call notification system,

to respond to a notice relating to a planned excavation and demolition and to designate and mark facilities according to the provisions of this Part.

(c) Provide a means by which contact information provided by the member operators can be obtained for the purpose of learning the location of underground facilities for design purposes.

(d) Provide an Automated Positive Response (APR) system for mandatory use by excavators and member operators, where determined by the one-call notification system to be technologically and economically practical.

SUBPART 753-6
ENFORCEMENT PROCEDURES

753-6.1 Scope: This Subpart describes the enforcement authority and sanctions of the Public Service Commission for achieving and maintaining compliance with 16 NYCRR Part 753. It also describes the procedures governing the exercise of that authority and the imposition of those sanctions.

753-6.2 Field citation: Upon determining that a probable violation of a provision of Part 753 has occurred, the Department may issue a field citation to a Respondent, identifying specific provisions alleged to have been violated.

753-6.3 Warning letter: Upon determining that a probable violation(s) of a provision of Part 753 has occurred or is continuing, the Department may issue a warning letter notifying the Respondent of the probable violation and advising him or her to correct it, if it is correctable, and comply henceforth, or be subject to enforcement procedures under this Part.

753-6.4 Notice of Probable Violation

(a) If the Department has reason to believe that a violation of Part 753 has occurred or is continuing, the Department may commence an enforcement proceeding by issuing a Notice of Probable Violation (NOPV).

(b) The NOPV shall include:

(1) A listing of the regulations which the Respondent is alleged to have violated, a description of the evidence on which the allegations are based and a copy of the field citation(s), if applicable;

(2) Notice of the response options available to the Respondent under Section 753-6.5 of this Subpart;

(3) If a penalty is proposed, the amount of the proposed penalty and the maximum penalty for which the Respondent may be liable; and

(4) A proposed Consent Order pursuant to Section 753-6.7 this Subpart.

(c) A NOPV may be amended at any time prior to issuance of a final order. If an amendment includes any new material allegations of fact or proposes an increased penalty, the Respondent shall have another opportunity to respond under Section 753-6.5 of this Subpart.

753-6.5 Respondent's options:

Within 30 days after issuance of a NOPV the Respondent shall respond in one of the following ways:

(a) Sign the Consent Order and return it with payment of any proposed penalty.

(b) Submit a written explanation, information or other material in response to the allegations; or

(c) Request an informal conference with Department Staff.

(d) Failure of the Respondent to respond in accordance with subdivision (a),(b) or (c) shall constitute a waiver of its right to contest the allegations in the NOPV and authorizes the Commission, without further notice to the Respondent, to find the facts to be as alleged in

the NOPV and to issue a final order under Section 753-6.8 of this Subpart.

753-6.6 Commission Proceeding:

(a) If the Respondent requests an informal conference, such conference will be conducted by Department Staff. The Respondent shall have the right to be represented by an attorney or other person, and shall have the right to present relevant evidence. Any evidence that Department Staff may have which indicates that the Respondent may have violated Part 753 shall be made available to the Respondent, who shall have the opportunity to rebut this evidence, either at the informal conference, in writing within thirty days following the conference,, or by other mutually agreed to arrangements.

(b) Following its review of any material submitted in writing or at an informal conference, the Department will compile a case file, which will be the basis for a final order. The case file of an enforcement proceeding shall include:

(1) The field citations, inspection reports and any other evidence of alleged violations;

(2) A copy of the NOPV issued under Section 753-6.4 of this Subpart.

(3) Any material submitted by the Respondent in response to the NOPV or at an informal conference; and

(4) A written evaluation and recommendation for a final order.

753-6.7 Consent Orders

(a) Notwithstanding any other provision to the contrary, the Commission may at any time resolve an outstanding NOPV with a consent order. A consent order shall be signed by the Respondent to whom it is issued, or a duly authorized representative, and shall indicate agreement with the terms thereof. A consent order need not constitute an admission that the Respondent committed the violation.

(b) A consent order is a final order of the Commission having the same force and effect as a final order issued pursuant to Section 753-6.8 of this Subpart.

(c) A consent order shall not be appealable and shall include an express waiver of appeal or judicial review rights that might otherwise attach to a final order of the Commission.

753-6.8 Final Order: Based upon the review of a case file, consideration of the nature, circumstances and gravity of the violation, history of prior violations, effects on public health, safety or welfare and such other matters as may be required, the Commission will issue a final order that includes:

(a) A statement of findings and determinations on all material issues;

(b) If a penalty is assessed, the amount of the penalty and the procedures for payment of the penalty;

753-6.9 Payment of penalties:

(a) Payment of a penalty under this subpart must be made by certified check or money order to the “Department of Public Service” and sent to the Secretary to the Commission, Three Empire State Plaza, Albany, New York 12223-1350.

(b) If a Respondent fails to pay the full amount of a penalty assessed in a final order within thirty days after receipt of the final order, the Commission may refer the case to the Attorney General with a
request that an action to collect the assessed penalty be brought in any court of competent jurisdiction.

EXCERPT FROM
PUBLIC SERVICE LAW

§119-b. Protection of underground facilities.

2. The commission shall adopt rules and regulations to implement and carry out the requirements of article thirty-six of the general business law established for the protection of underground facilities. Such rules and regulations shall include, but not be limited to, requirements for notice, one-call notification systems, participation of operators in such systems, designation and marking of the location of underground facilities and the verification of the designated or marked location of underground facilities, support for underground facilities and obligations of excavators to protect underground facilities under such article, including the use of hand-dug test holes at underground facilities furnishing gas or liquid petroleum products and such other matters as may be appropriate for the protection and security of property, life or public health, safety or welfare.

6. The commission shall have power, through the inspectors or duly authorized employees of the department, to examine and inspect excavation and demolition methods used by any person within fifteen feet in any direction of any underground pipeline used for conveying natural gas or of any underground telephone, electric, steam or water facility used for providing service and to order compliance with the standards for excavation and demolition near underground facilities contained in regulations adopted by the commission to implement and carry out the requirements of article thirty-six of the general business law established for the protection of underground facilities.

7. Notwithstanding any inconsistent provisions of this chapter, the enforcement procedure for rules and regulations adopted by the commission shall be as follows:

a. any violation of any provisions of such rules and regulations is a violation of the provisions of article thirty-six of the general business law and the attorney general may bring and prosecute an action to recover penalties for such violations as provided in paragraph c of subdivision one of section seven hundred sixty-five of such law;

b. any penalties, fines and financial liability resulting from violations of such rules and regulations shall be those specified in section seven hundred sixty-five of the general business law.

8. In the event a violation of such rules and regulations occurs and such violation is subject to a civil penalty pursuant to article thirty-six of the general business law, the commission shall determine the amount of the penalty after consideration of the nature, circumstances and gravity of the violation, history of prior violations, effect on public health, safety or welfare, and such other matters as may be required and shall send a copy of its determination to the excavator, operator, commissioner of labor and attorney general. Upon receipt of such determination, the attorney general may commence an action to recover such penalty.

EXCERPT FROM
GENERAL BUSINESS LAW

ARTICLE 36 - CONSTRUCTION AND EXCAVATION NEAR UNDERGROUND FACILITIES.

§765. Penalties and liabilities.

1. Civil penalties.

a. Failure to comply with any provision of this article shall subject an excavator or an operator to a civil penalty of up to two thousand five hundred dollars for the first violation and up to an additional ten thousand dollars for each succeeding violation that occurs within a twelve month period.

b. The penalties provided for by this article shall not apply to an excavator who damages an underground facility due to the failure of the operator to comply with any of the provisions of this article nor shall in such instance the excavator be liable for repairs as prescribed in subdivision four of this section.

c. An action to recover a penalty under this article may be brought in the supreme court in the judicial district in which the violation was alleged to have occurred which shall be commenced and prosecuted by the attorney general. The public service commission shall, pursuant to section one hundred nineteen-b of the public service law, forward to the attorney general its determination of the amount of the penalty for violations of rules and regulations adopted to implement the requirements of this article. Upon receipt of such determination, the attorney general may commence an action to recover such penalty. All moneys recovered in any such action, together with the costs thereof, and all moneys recovered as the result of any such public service commission shall be paid into the underground facilities safety training account established pursuant to section ninety-seven-www of the state finance law.

2. Except as otherwise provided in this subdivision, nothing in this article shall impair, limit or reduce the statutory, common law or contractual duties or tort or other liability of any excavator excavating or demolishing in the vicinity of underground facilities.

3. Any excavator engaging in or proposing to engage in excavation or demolition in a negligent or unsafe manner, which has resulted in or is likely to result in damage to underground facilities in such a manner that life, property or the continuation of operator service is endangered, may be enjoined from such excavation or demolition or any aspect thereof upon application of the operator owning the facilities or the attorney general made in supreme court having jurisdiction in the county wherein the excavation or demolition or proposed excavation or demolition is to take place. Three or more instances of damage by an excavator to underground facilities in the course of the entire self-same excavation or demolition activity shall be prima facie grounds for enjoining the excavator from further performance of the excavation or demolition activity.

4. In the event that, as a result of a violation of any of the provisions of this article by an excavator, it is necessary that an operator make any repair to or provide new support to an underground facility, the excavator shall be liable to the operator for reasonable costs so incurred.

If you excavate anywhere in NYS
(except NYC or Long Island) call

Dig Safely. New York
Call 811
before you dig

www.digsafelynewyork.com

- **CALL** Before You Dig
- **WAIT** the Required Time
- **CONFIRM** Utility Response
- **RESPECT** the Marks
- **DIG** With Care

If you excavate in NYC or Long Island, call

New York 811
Know what's below. Call before you dig.

800-272-4480|811

www.newyork-811.com

Attachment D2: Excavator Safety Manual New York 811

New York 811

Know what's below. Call before you dig.

EXCAVATOR MANUAL

A User's Guide to Safe Excavation Practices in New York State

Know what's below.
Call 811 before you dig.

- **Wait the Required Time**
- **Confirm Utility Response**
- **Respect the Marks**
- **Dig with Care**

In N.Y.C. & L.I. call **811** or

800-272-4480

www.newyork-811.com

Outside N.Y.C. & L.I. call **811** or

800-962-7962

Preface

The purpose of this document is to provide a basic understanding of your responsibilities under 16 NYCRR Part 753, (also cited as Industrial Code 53 or Code Rule 53) concerning safe excavation practices and the protection of underground facilities in New York State.

This document is not intended as a legal reference, and does not contain the complete text of 16 NYCRR Part 753.

A complete copy of 16 NYCRR Part 753 is available from:

- **New York State Public Service Commission**
  3 Empire State Plaza
  Albany, NY 12223-1350
  Administration: (518) 474-5453

- **New York 811**
  60 Knickerbocker Ave
  Bohemia, New York 11716
  Administration: (800) 524-7603
  www.newyork-811.com

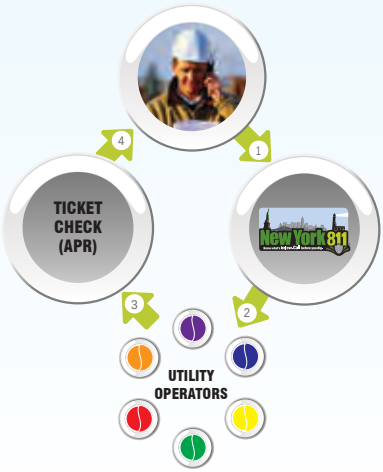
- **Dig Safely New York, Inc.**
  5063 Brittonfield Parkway
  East Syracuse, NY 13057
  Administration: (315) 437-7394
  www.digsafelynewyork.com

For information on Pipeline Safety, contact:

National Pipeline Mapping System

- For more information about the pipelines and pipeline operators that might be located in your community, you can contact the National Pipeline Mapping System at:
  www.npms.rspa.dot.gov

Table of Contents



Your One-Call Center

Why Do I Need To Call Before I Dig?

It's the law in the State of New York, and it is also a necessary part of planning your work. Reviewing your work and your work area prior to the actual excavation can help save you and your company from unexpected downtime, loss of revenue and injury.

A safe excavation can be achieved by following the suggestions and processes outlined in this manual.

Who We Are...

New York 811 (serving only NYC and Long Island) and Dig Safely New York, Inc. (serving all of New York State excluding NYC and Long Island) are the One-Call centers serving as a link between you - the excavator, and the utility owner operators. We take your calls and transfer the information to the utility operators.

New York 811 & Dig Safely New York, Inc. do not mark lines!

Call Center Hours

Both centers take location request calls, 24 hours a day, 7 days a week.

Call Center Operation

After you have given all of the appropriate information to the one-call operator, (Customer Service Representative), this is what happens...

- The Customer Service Representative will read all the information back to you.
- Listen carefully and verify for accuracy.
- You will be given a list of member utility owners the One-Call Center will notify.
- You will also be given a location request number as proof of your call and a reference. Write down that number and retain it for your future records. This can be used to check real time status of your responses at www.newyork-811.com through our Ticket Check (APR) system.
- Remember, not all utilities and municipalities are members of the one call system. If you are aware of any other underground facilities, you should contact that operator directly.

Call Before You Dig!

New York 811
(serving only NYC and Long Island)
800-272-4480
www.newyork-811.com

Dig Safely New York, Inc.
(serving all of New York excluding NYC and Long Island)
800-962-7962
www.digsafelynewyork.com

1. You must call for a location request at least 2 working days but not more than 10 working days before any excavation starts. (Excluding holidays & weekends).
2. You must call regardless of where the excavation is located. Even if it is on private property, out in the middle of a field, or on a street that has no name...you must call.
3. You must call even if you are only excavating a few inches or just surface grading. If you move material... you must call.
4. You must call even if the property owner tells you the site has no buried facilities, or they know where buried facilities are located.
5. Make sure you have a proper location request, don't rely on old marks, or another excavator's marks or stake out request. No piggybacking.
6. Mark out the area you plan to excavate with white paint, flags, or stakes. (See page 5 for details.)
7. When investigators from the Public Service Commission (P.S.C.) inspect an excavation site or investigate damage, they will check to see if you have a proper location request.
8. Review the Location Request Information Sheet so you will know what you need when you call (see page 4).
9. Part 753 defines an emergency as: Any abnormal condition which presents immediate danger to life or property including discontinuance of a vital utility service necessary for the maintenance of public health, safety and welfare.
10. **For emergency excavations notify your one call center with the location of the emergency excavation as soon as possible! To constitute an Energency, you must be on site or on the way to the site to do the work.**

Excavation

An excavation is defined as any operation for the purpose of movement or removal of earth, rock or other materials in or on the ground by use of mechanized equipment or by blasting...

Excavations include, but are not limited to:

- **Demolition of Structures**
- **Cable or Pipe Plowing or Driving**
- **Setting Poles**
- **Driving Survey Pins**
- **Installing Sign Poles**
- **Boring Holes for Percolation Tests**
- **Ditching**
- **Auguring**
- **Moving Earth**
- **Backfilling**
- **Pulling**
- **Fence Post**
- **Tree Root Removal/Stump grinding**
- **Drilling**
- **Grading**
- **Trenching**
- **Digging**
- **Scraping**
- **Razing**
- **Dredging**
- **Tunneling**
- **Wrecking**
- **Saw Cutting**
- **Jackhammering**
- **Milling**
- **Pile Driving**

Stake-out Request Information Sheet

When you call your One-Call Center you will need to provide the following information. Copies of this form in pads are available from your One-Call Center for field use.

Ticket No. _____ **Today's Date:** _____

Excavating Company: _____

Caller's Name: _____

Excavator's Address: _____

City: _____ **State:** _____ **Zip:** _____

Fax: (____) _____ **Phone: (____)** _____ **Ext:** _____

Field Contact (Name): _____

Cellular or Field Office#: (____) _____

Work Being Done For (if Applicable): _____

Work Date: _____ **Time:** _____

(NYS law requires at least 2 full working days notice, not including the day you call.)

Excavation: State: _____ **County:** _____

Name of City, Town, or Village: _____

Street Address of Work Site: _____

Between What Two Streets: _____

Other pertinent details / additional site information: _____

_____

_____

_____

Type of Work: _____

Means of Excavation: _____ **Are You Blasting** ❑ **Yes** ❑ **No**

Members Contacted (Facility Operators)

❑ _____ ❑ _____

❑ _____ ❑ _____

❑ _____ ❑ _____

❑ _____ ❑ _____

New York 811
800-272-4480 www.newyork-811.com

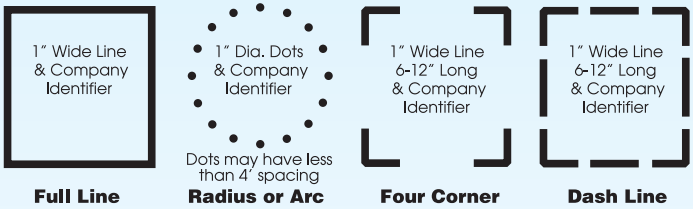
Dig Safely New York
800-962-7962 www.digsafelynewyork.com

Guidelines for Marking Proposed Excavations

The following is only a guideline. Refer to the current Common Ground Alliance (CGA) Best Practices for complete details ***(www.commongroundalliance.com).***

These illustrations are examples of how excavators should mark the area of proposed excavation. Use white marking products (paint, flags, stakes, whiskers or combination) to identify the excavation site.

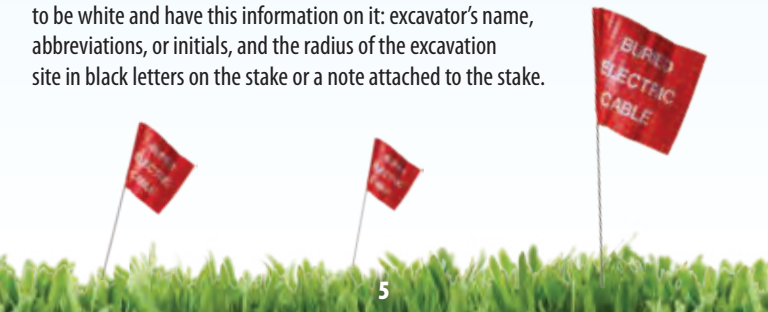
Single Point Excavations Markings



Mark with white paint the proposed area of excavation by using: a continuous line, dots marking a radius or arc, dashes marking the four corners of a project or dashes outlining the excavation project. Make the dash about 6" to 12" in length and 1" in width. Space them between 4' to 50' apart. Make the marks close together enough to be seen by the Operator's locators. Dots of about 1" in diameter are typically used to define arcs or radii and can be placed at closer intervals instead of dashes.

Using A Single Stake To Mark The Center Point of Excavation Site

When an excavation site is contained within a 50' radius, or less, you can mark it with a single stake positioned at the center of the proposed excavation. If you choose this way of marking, you must tell the One-Call Center you have marked the excavation site with a single stake at the center and include the radius of the site. The stake has to be white and have this information on it: excavator's name, abbreviations, or initials, and the radius of the excavation site in black letters on the stake or a note attached to the stake.



Wait The Required Time

1. Before you begin any non-emergency excavation you must call your One-Call Center and make a location request, at least two but not more than ten working days, before your excavation begins (not including the date of your call).
2. Do not start excavating before your stated commencement date and time!
3. Weekends and holidays are not working days and are not counted in the 2 to 10 days between the date of your location request and your commencement date (See Holidays below).
4. If your excavation has not started within 10 working days of the stated commencement date, your location request will no longer be valid, and a new location request is necessary.
5. If the excavation work is completely cancelled, that must be reported to the One-Call Center.
6. Once excavation has begun, the location request is good for the life of the excavation. The excavator is responsible for maintaining the marks from the stated commencement date. (See page 8)

Holidays:

New Year's Day	January 1st
Martin Luther King Day	3rd Monday in January
President's Day	3rd Monday in February
Memorial Day	Last Monday in May
Independence Day	4th of July
Labor Day	1st Monday in September
Columbus Day	2nd Monday in October
Veteran's Day	November 11th
Thanksgiving Day	4th Thursday in November
Christmas Day	December 25th

Confirm The Utility Response

1. Remember, facility operators will only mark out facilities for which they are responsible.
2. Facility operators owe you a positive response through APR, and you are responsible for making sure each operator on your ticket has responded.

Ticket Check (APR)

(a) Ticket Check (APR) system: a system established by the one-call notification system to furnish a single point of contact between member operators and excavators for the purpose of communicating the status of an excavation location request as provided by the member operators.

3. By law, a facility operator can delay marking out your excavation site a maximum of two (2) working days. However, any delay of more than two (2) working days will require your consent.
4. If you do not hear from a facility operator identified on your location request before your stated commencement date, call the facility operator's contact number. Do not begin excavation! If you do not have the contact number, please call your One-Call Center, OR utilize the Ticket Check (APR) system to verify responses and contact information at www.newyork-811.com/ticket-check
5. It is important you provide accurate field contact numbers when you call the One-Call Center for a Location Request; this is the number facility operators will call if they need to contact you regarding your location request.

Respect The Marks

1. You are responsible for maintaining the marks set down by facility operators at your site.
2. Before you begin your excavation, walk-through the site to familiarize yourself with the markings and the locations of buried utilities. It is a good practice to photograph, videotape or make a sketch of the marks.
3. Pay special attention to any changes in the direction of the underground facilities.
4. If your excavation will cause the removal or disturbance of markings, establish offset marks in order to maintain a reference point for those underground facilities.
5. Make sure everyone involved in your excavation is aware of any established offsets, any compromised marks, or any other information regarding facility locations.
6. Don't put spoil piles over markings. Avoid driving machinery over stakes and flags. Paved areas should be swept periodically so painted marks remain visible.
7. If marks have faded or been compromised to the point where proper and safe excavation is no longer possible, call your One-Call Center and make a request for a re-mark.
8. If your project is interrupted for more than 10 working days, call your One-Call Center and make a request for a re-mark.
9. If you refresh the markings at your site, make sure you use the uniform color code and identification letters to avoid any confusion. Make a note of the date and actions taken to refresh the marks.
10. Once the project is complete, it is recommended you remove any marks as best you can. This will reduce the likelihood future excavators will mistake them for marks provided in response to their own excavation notice, or assume they do not need to provide notice of intent to excavate.

Guide To Marks

The following is only a guideline. Refer to the current Common Ground Alliance (CGA) Best Practices for complete details. ***www.commongroundalliance.com***

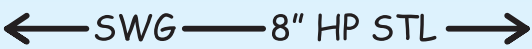
1. Utility lines must be indicated by markings using current APWA uniform color codes. Markings should be 12"18" in length and 1" wide.
2. The owner of a facility should be indicated by initials or by name in letters 6" high at the beginning and end of the locate. On long locates, the facility owner should be indicated every 100'.
3. For operators with multiple facilities within an excavation area, for example bundled or stacked facilities, the total number of lines within the ground should be indicated when known.
4. If a facility is known to be present but the total number of lines for a facility cannot be determined a corridor marker may be used indicating the approximate width of the facility.
5. When known, the size of the line being located should be indicated. Line size should indicate the outside diameter of the pipe or structure.
6. Conduit or duct structures, whether single or multiple conduits or ducts, should be indicated by the conduit symbol indicating the approximate depth of the structure.
7. When known, the pressure of a gas facility should be indicated.
8. When known, termination points, dead ends and stub outs should be indicated.
9. Offset markings should be used when there is a strong likelihood that marks may be destroyed, (if placed directly over the facility).

Continued on next page...

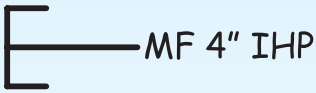
Guide To Marks

The following is only a guideline. Refer to the current Common Ground Alliance (CGA) Best Practices for complete details. ***www.commongroundalliance.com***

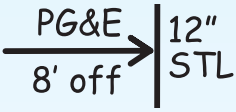
Marking Gas Lines ~ High Pressure



Marking Transmission Point, Dead End, Stub Outs



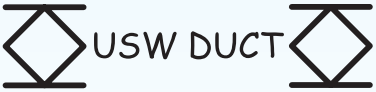
Marking Offsets
Indicate ~ Facility owner, direction to facility & distance to facility



No Conflict
(No facilities within the requested area)

NO/MCI NO/EPG

Conduit Or Duct Markings

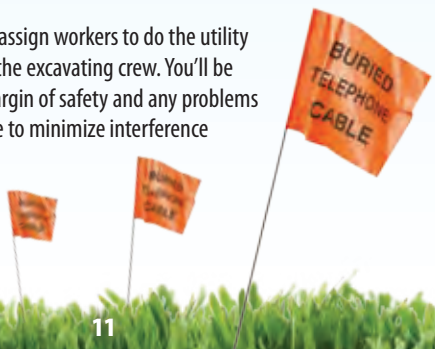


Marking Buried Splices, Valves, Manholes

Corridor Marking
Identification when number of facilities is not readily known

Dig With Care

1. Before you use powered equipment within the tolerance zone (see page 13), you must:
   - Verify the location, type, size, direction-of-run and depth of the facility.
   - For gas and liquid petroleum lines, verification must be by means of hand-dug test holes.
   - The location of other utilities must also be verified by means of hand-dug test holes unless otherwise agreed upon with the facility operator.
2. Do not assume that buried facilities will be at a certain depth.
   - Facilities may have been originally installed at a prescribed depth, but later erosion or grade changes cause them to now have shallow or deep cover.
3. Verification by a hand-dug test hole requires the facility to be exposed to view.
   - If after a diligent search the facility cannot be verified in this manner, notify the facility operator, or your one call center (do not assume clearance).
4. Vacuum excavation is an accepted means of verifying the location of marked facilities.
5. Powered equipment may be used for removing pavement, but only to the depth of the pavement.
   - Care and good judgment should be used when removing pavement.
   - Avoid starting the pavement break directly over the marked facility.
   - Wherever possible, start a few feet away from the marks and attempt to 'peel' off the pavement or break it into small chunks for removal.
6. Verify the location of utilities before you excavate up to the edge of the tolerance zone.
   - It is a good practice to assign workers to do the utility verifications ahead of the excavating crew. You'll be providing a greater margin of safety and any problems can be resolved in time to minimize interference with the excavation.



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Dig With Care (continued...)

7. If the excavation is going to cross a tolerance zone, dig a test hole to expose the facility at the point of crossing.
8. If your excavation is going to parallel a utility, you should dig test holes at any marked change of direction, elevation and at branch connection.
9. For relatively straight excavations parallel to a utility, a test-hole should be dug approximately every 20 to 25 feet or as requested by the facility operator.
10. If you find an unmarked or unknown facility, and you can tell who the facility owner is, notify them. Otherwise, notify the One-Call Center.

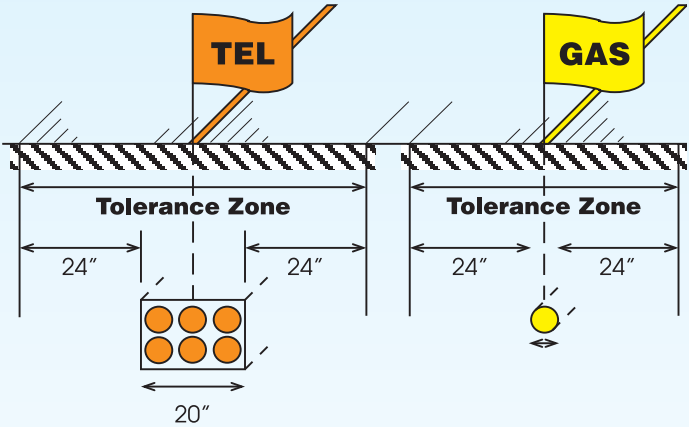
Tolerance Zone

The tolerance zone is defined as:

- 2 feet on either side of the designated center line of the facility if the diameter is not provided.
- Or, 2 feet from each outside edge if the diameter is provided.

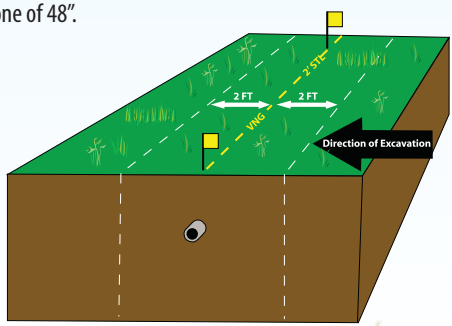
For example:

Measuring The Tolerance Zone



The facility at left is marked as being 20- inches wide. So, 24″ on each side, plus the width of the facility, gives us a Tolerance Zone of 68″.

The facility at right is marked with its location, but shows no width. So, 24″ on each side, gives us a Tolerance Zone of 48″.



{Example of the tolerance zone)

Excavation After Verification

1. When excavating close to an underground facility, it is a good practice to have a spotter assist and guide the machine operator.
2. After you have verified the location of a facility, (by hand digging), you must maintain a minimum clearance of 4 inches between the facility and any mechanized equipment.
3. If the excavation work requires significant spans of the facility to be exposed, support them to prevent sagging or collapse.
4. Take care not to damage the protective coating of a facility. If you do, leave the damaged facility exposed and immediately call the facility operator.

If a Facility is Contacted or Damaged

1. If you damage a facility you must immediately call the operator whose facilities have been damaged, even if you only scrape the protective coating. Left untreated this type of damage can lead to a catastrophic failure.
2. You should keep the emergency number of your local facility operators readily available. (See page 19)
3. If you are in doubt about whose facility it is, call your One-Call Center. They will transmit a notice to all facility owners in the area.

If You Break a Natural Gas, Petroleum or Propane Line, Follow These Steps:

1. Stop work and evacuate the site.
2. Call 911. (NYS Law)
3. Call the appropriate facility operator.
4. Don't do anything that could cause a spark.
5. Alert everyone on the premises.
6. Keep the public and traffic away.
7. Tape, rope or place cones around the area.
8. Stay upwind of blowing gas.
9. Do not try to fix a damaged pipe.
10. Do not try to extinguish a gas burning fire, unless there is a threat to life.

Leak Recognition and Response

A gas leak is usually recognized by smell, sight, or sound.

- **Smell:** Natural gas is colorless and odorless. A distinctive, pungent odor is usually added so you'll recognize it quickly.
- **Sight:** You may see a white cloud, mist, fog, bubbles in standing water, or vegetation that appears to be dead or dying for no apparent reason.
- **Sound:** You may hear an unusual noise like roaring, hissing, or whistling.

What to do if you suspect a leak

- **Move** to a safe environment.
- **Call** the pipeline operator (see page 19) – they are available 24 hours a day, 7 days a week. Provide the exact location, including cross streets. Let them know if sewer construction or digging activities are going on in the area.
- **Do not** smoke or operate electrical switches or appliances.
- **Do not** assume someone else will report the condition.

Reporting Emergencies

Part 753 Emergency Requirements: In the event of an emergency involving danger to life, health or property as a result of damage to an underground facility containing gas or liquid petroleum products or as a result of an electrical short or escape of gas or hazardous fluids, the excavator must:

A) Proceed to evacuate their employees and all other endangered persons from the immediate vicinity to the best of their ability and;

B) Immediately notify 911 and the operator of the affected facility of the exact location, nature of the emergency and of the underground facility which is affected.

Pipeline Purpose and Reliability

Natural gas, propane and petroleum pipelines quietly, reliably, and efficiently deliver a product for residential, commercial, and industrial use.

The pipeline industries work very closely with government agencies and stay abreast of new security methods and technologies to ensure the highest levels of security. Individual companies evaluate their security procedures on a regular basis and continually enhance security programs as needed.

Hazard Awareness & Prevention Measures

Like all forms of energy, natural gas, propane and petroleum must be handled properly. Despite an excellent safety record, a leak caused by damage to a pipeline may pose a hazard and has the potential to ignite. The pipeline industry works diligently to ensure pipeline safety through a variety of measures including...

- Coordination with One-Call Centers
- Inspection programs
- Design and construction practices
- Workforce qualifications
- Industry safety practices & government oversight
- Pipeline markers and facility mapping
- Public education programs

Pipeline Locations

Since pipelines are underground, line markers are sometimes used to indicate their approximate location along their route. The markers display the material transported in the line, the name of the pipeline operator, and the telephone number where the operator can be reached in the event of an emergency. Markers only indicate the general location of a pipeline and cannot be relied upon to indicate the exact position. The presence of markers does not negate the requirement to notify the One-Call Center prior to excavation.

Suggestions & Reminders

DOs

- **Do,** as required by NYS Law, report immediately (to 911 and facility operator) any damage to underground facilities resulting in escaping flammable, corrosive, explosive, toxic liquids, gas, or electrical short.
- **Do** follow the special instructions from facility owners regarding their lines.
- **Do** keep a minimum of 4" clearance between any safely exposed underground facility and any powered equipment.
- **Do** protect and preserve the color-coded markings until those markings are no longer needed for a proper and safe excavation.
- **Do** call for a re-mark if the markings are destroyed, or removed before excavation is complete, and allow two working days to re-mark the site.
- **Do** be sure that someone other than the equipment operator, (i.e. the spotter), is there to look for any sign of an underground facility.
- **Do** conduct the excavation near the underground facility carefully. Excavate by hand to be able to tell the exact location of the line and to prevent damage.
- **Do** report any damage to the facility operator. For example, cracked conduit, gouges, dents or breaks to the coatings, cable sheathes and cathodic protection anodes or wiring that may pose problems now or in the future. Allow the underground facility operators time to make repairs.

DON'Ts

- **Don't** call in a location request unless you are prepared to start on the stated commencement date or ten working days thereafter.
- **Don't** assume a pipeline or cable runs straight, or is centered between permanent marker posts.
- **Don't** assume the depth of a utility. Never assume an underground facility is at the same depth throughout the entire route of an excavation.
- **Don't** excavate within the tolerance zone with mechanized equipment prior to verification.
- **Don't** phone in emergency locates that are not really emergencies (crews should be on site or in route.)
- **Don't** work under anyone else's location request.

ITIC

An **ITIC** is a location request created and entered into your One Call Center's database through the internet by an excavator at a remote location. An **ITIC** will satisfy all the requirements of a 'dig notification' as mandated in N.Y. State Code Rule 753. Only regular location requests (two to ten full working days of notification) can be entered via the internet as an **ITIC**.

All You Need:

- Access to the internet.
- An e-mail account.
- An assigned username and password.

Entering an ITIC:

When you enter an **ITIC** over the internet you'll need the same information you give your One-Call Center when you call.

Once the **ITIC** has been completed, a chance to review the location request and make additions, changes or corrections is available prior to confirming the data is correct. Upon review, the **ITIC** is transmitted into the system for distribution to the facility operators with underground facilities in the dig site area.

Advantages of an ITIC:

Excavators can now create their own location request on the internet at their One-Call Center's website (see inside cover).

- This service is available 24 hrs. a day, 7 days a week, 365 days a year!
- A printed copy of the **ITIC** for the excavation is available for your records. It lists the facility operators, (including telephone contacts when available) who have been notified of the location request.
- After you have completed your first **ITIC**, all of your significant company information will be automatically entered on each subsequent **ITIC**, saving time.
- No waiting on the telephone during peak periods.
- Electronic maps are available to pinpoint dig sites.
- Verbal transcription errors can be eliminated.
- Excavator's copy of **ITIC** can be e-mailed to remote sites.
- Site training is available on request at your facility.
- The **ITIC** service is FREE!

To Sign Up:

visit www.newyork-811.com

Emergency Numbers

Please take the time to write down the numbers of emergency services and facility operators you may need in the field.

Police: _____

Fire Department: _____

Gas: _____

Electric: _____

Operator:	**Phone Number:**
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____
_____	_____ / _____

The Perfect Excavation

Does it exist? We think it does... in fact it happens all the time! Here are ten simple steps to the perfect excavation:

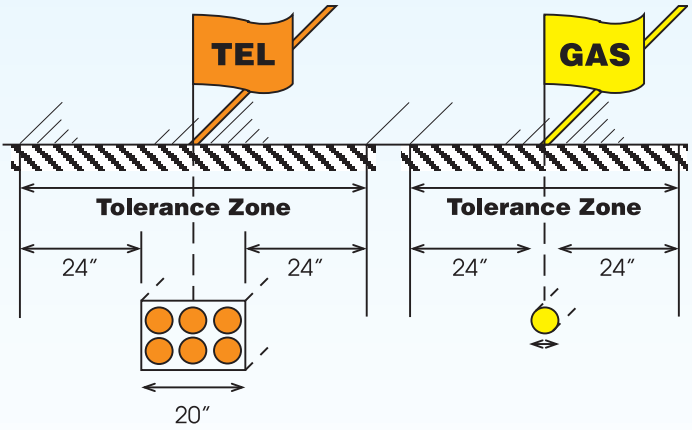
1. The excavator visits the site, and marks out every place he may be excavating with white paint, flags, or stakes.
2. The excavator fills out all the information about the excavation on a One-Call Center Location Request Information Sheet, (see page 4), then calls in the location request to the One-Call Center.
3. The One-Call Center Customer Service Representative takes the information, and gives the excavator a File Reference Number and a list of members (facility operators) notified. The excavator writes these down on the Location Request Information Sheet for later reference.
4. The excavator then notifies any nonmember facility operators if known, (nonmember facility operators are not contacted by the One-Call Center).
5. Each member facility operator either marks out their facilities at the work site, or determines the site is clear, then responds to the Ticket Check (APR) System.
6. The excavator verifies that they have received responses from all utilities through the Ticket Check (APR) System.
7. The excavator begins work on the scheduled work date and time, (if all the facility operators have responded), taking care to find and preserve any markings the locators have made.
8. When digging near a buried facility, the excavator observes the tolerance zone around that facility.
9. If exposing a facility, the excavator provides proper support and protection for it so the facility will not be damaged.
10. When the excavation is complete, the excavator provides proper backfill for any facilities having been exposed, and removes all utility markings.

APWA Uniform Color Codes

For Marking Underground Utility Lines

White	Proposed Excavation
Pink	Temporary Survey Markings
Red	**Electric** Power Lines, Cables, Conduit & Lighting Cables
Yellow	**Gas,** Oil, Steam, Petroleum & Gaseous Material
Orange	**Communications,** Alarm, Signal Lines, Cables or Conduit
Blue	**Potable Water**
Purple	Reclaimed Water, Irrigation & **Slurry Lines,** Radioactive Material
Green	**Sewers** & Drain Lines

Measuring the Tolerance Zone



ATTACHMENT E

Survey Request Form

SURVEYING SERVICES
SURVEY REQUEST FORM

Date:

TYPE OF WORK REQUESTED

- ☐ Surveying
- ☐ Mapping
- ☐ Field Engineering
- ☐ Records Research

Requested by: Bureau:

Address: Company Mail Code:

Telephone No: Fax No:

Survey Vendor Selected:

Location of Project:

Official Project Title:

Project No: Budget Reference No:

Field Contact:

Account No: Estimated Cost:

Work to be started by: Work to be completed by:

Request approved by: Telephone No:

Reference Drawings:

NOTE: THIS REQUEST WILL NOT BE ACCEPTED UNTIL WE RECEIVE THE ABOVE DRAWINGS AND REVIEW THE REQUEST, INCLUDING FIELD VISITS IF NECESSARY. (REF. PARA. 4.3, COP #3-2-6).

SURVEY SCOPE OF WORK (Check all items that apply)

☐ Emergency Support	☐ Overhead transmission	☐ Topographic	☐ Line & Grade
☐ Litigation	☐ Underground Transmission	☐ As Built Survey	☐ GPS
☐ Real Estate	☐ Transmission Route	☐ Verify Dimensions	☐ Rock
☐ Photogrammetric	☐ Cable Cutting Length	☐ Interference	☐ Final C of O
☐ Hydrographic	☐ Stability	☐ Test Pit	☐ Volume
☐ Submarine Crossing	☐ Settlement	☐ M Scope	☐ Conveyance
☐ Tunnel	☐ Property Line	☐ Rock Survey	☐ Easement
☐ Subdivision	☐ Record Search	☐ Ground Water Test Well	☐ Freeze Pits
☐ Axis & BM's for Const.	☐ Filed Map	☐ Soil Samples	☐ Lay out Manhole
☐ Survey Control Diag.	☐ Environmental	☐ Core Borings	☐ Invert Elevations

ATTACHMENT F

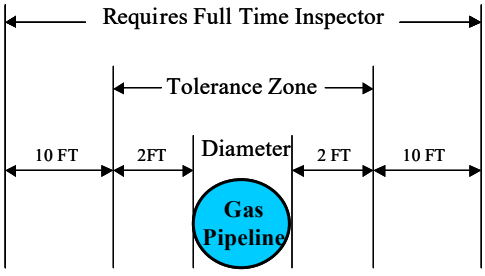
Working Around Gas and Electric

The Process For Digging Near A Gas Transmission Main

1. **NOTIFY THE GAS EMERGENCY RESPONSE CENTER (ERC) AT 718-319-2330.**
   - Notify the Gas ERC at least **two working days** (if known) before commencing **any construction activities** within **twenty-five (25')** of a Gas Transmission Main (or as soon as possible in the case of **emergency work**).
   - **Ensure a contingency for the work location has been issued.** The contingency should be reviewed by the CR/Inspector prior to commencing work in the field for accuracy of the following information: CR/Inspector contact name, number, and location of work. In addition, **CR/Inspector shall review contingency for any "special" instructions.**
   - **CR/Inspector shall give the contractor work crew a job briefing prior to starting the work, and this job briefing shall discuss the contingency.**
   - A copy of the contingency will be on location as needed.

2. **HOLD A FIELD MEETING WITH THE EXCAVATOR BEFORE BEGINNING WORK.**
   - Prior to commencing excavation, CR/Inspector **MUST** meet with excavator at field site to **discuss project limits and methods and procedures to support / protect Con Edison's facilities.** In addition, CR/Inspector shall review w/ excavator the physical properties of Con Edison's facilities such as size, operating pressure, depth of cover and presence of special facilities or appurtenances **(e.g Regulator stations).**
   - As required, **hand-excavated test pit(s)** shall be performed as soon as possible to verify the actual location of transmission mains.
   - Copies of the **most current facility plates shall be on location for review.**

3. **MAKE AND DOCUMENT (ON APPENDIX B TO SPEC G-11863) DAILY INSPECTION OF ALL EXCAVATION WORK WITHIN TWENTY-FIVE FEET (25') OF GAS TRANSMISSION MAIN.**
   - Ensure Code 753 markings are renewed (as required) throughout duration of excavation activities.



4. **INSPECTOR IS ASSIGNED FULL-TIME TO JOB WHEN WORK IS WITHIN TEN FEET (10') OF TOLERANCE ZONE.**
   - When excavation activity is within ten feet (10') of the tolerance zone (one-half of the pipe diameter plus two feet – see diagram at right), CR/Inspector shall be assigned to the location full-time.

5. **INFORM GAS ERC WHEN MECHANIZED EQUIPMENT WILL BE USED WITHIN FIVE FEET (5') OF TRANSMISSION MAIN.**
   - Call Gas ERC when excavator is going to use mechanical excavation equipment within five feet (5') of a gas transmission main so that they can arrange for appropriate valves to be manned.

SUMMARIZED FROM G-11863 ON 8/12/03. NOTE: ALWAYS REFERENCE THE MOST CURRENT VERSION OF THE SPEC ON OUTLOOK FOR THE MOST UP-TO-DATE AND ACCURATE INFORMATION!

6. **MAINTAIN COMMUNICATION WITH ERC AT BEGINNING, DURING AND AT END OF WORK DAY WHENEVER CREWS ARE MANNING VALVES.**
    - Maintain contact with ERC at beginning, during and at end of workday so that crews manning valves may be dispatched to and released from valve locations as required.

7. **ENSURE CONTRACTOR USES HAND EXCAVATION WITHIN TOLERANCE ZONE.**
    - As required under Code 753, excavator must hand excavate until the exact location of the gas pipeline is determined.

8. **INFORM GAS ERC WHENEVER A TRANSMISSION MAIN (OR ITS COATING) HAS BEEN EXPOSED OR DAMAGED.**
    - Call ERC whenever a transmission main or its coating has been exposed or damaged so that they can arrange for an inspection by Corrosion Operations and/or Gas Engineering.

9. **WITNESS AND DOCUMENT BACKFILLING (ON APPENDIX B TO SPEC G-11863).**
    - **CR/Inspector MUST witness backfilling** to ensure adequate support and to prevent excavator from placing large rocks or other harmful debris in contact with the transmission main. CR/Inspector must document that he/she has witnessed the backfilling operation by filling out the Damage Prevention Checklist (Appendix B of G-11863, see reverse side) and **fax a copy of this document to Gas Engineering – Pipeline Integrity after excavation work has been completed at 718-923-7052.**

10. **NOTIFY GAS ERC WHEN JOB HAS BEEN COMPLETED.**
    - After the pipe coating is inspected and is free from defects, CR/Inspector shall ensure that sand is used as backfill material around transmission mains.
    - **Call Gas ERC when job has been completed** (i.e. backfilled and paved) so that the contingency can be closed out and the job can be removed from their records.

APPENDIX B

DAMAGE PREVENTION CHECKLIST (EXCAVATOR WITHIN 25')

Location: _____

Work Description: _____

_____

Code 753 Ticket Number: _____

Contractor's Name: _____

Contractor's Address: _____

Call In Date: _____ **Call Received By (Name):** _____

Project Start Date: _____ **Project Completion Date:** _____

Inspector's Name: _____ **Employee Number:** _____

Date Completed: _____

Item	Yes	No	Remarks
Was location monitored daily and markings renewed as required until start of excavation?			
Did inspector meet with excavator to discuss physical attributes of pipe (size, pressure, cover, etc.)?			
Did inspector review methods of excavation and techniques for supporting and protecting pipe with the excavator?			
Will the excavation be within 10' of the tolerance zone?			
If within 10' of tolerance zone, did the inspector remain on location throughout the excavation activities?			
If within 10' of tolerance zone, did the inspector maintain a written record of all activities observed?			
Did Gas Operations standby the valves during excavation work within 5' of the pipe?			
If the pipe was exposed, did the inspector notify ERC (718-319-2310)?			
Did the inspector witness the backfilling operation to insure no large rocks or other injurious material were placed against the pipe?			
Did the excavator damage the pipe and coating? If yes, was the ERC notified?			

Additional Remarks: _____

_____

_____

_____

Field Guide for Working around Electric Transmission Lines

FEEDER TYPES

HIGH PRESSURE FLUID FILLED (HPFF) FEEDERS

HPFF feeder pipes ("Oil-o-static" a trade name) are installed with anywhere from one to eight pipes and may include oil return line(s), and may have cables and dielectric fluid inside. ***See Figure 1.***

Figure 1: HPFF

Sometimes oil return lines are not located in the same trench or on the same street as the conductors. Refer to the appropriate maps and plates for their exact location. When found in the same trench they are usually located above and offset from the feeder pipes but interference with other utilities may have required them to be installed in between or on the side of the feeder pipes.

SOLID DIELECTRIC (SD) FEEDERS

SD feeders are a newer type of feeder and do not have dielectric fluid in them or oil return lines. SD feeders usually are housed fiber-reinforced Epoxy (FRE) with concrete around the duct bank, but may also be housed in pipe or concrete duct. ***See Figure 2 & 3***. SD feeders may also be direct buried, especially near/within substations.

Figure 2: FRE

GAS FILLED FEEDERS

Some transmission feeders consist of pipes that are filled with nitrogen gas; they are called gas-filled feeders. Their pipes are similar in construction as the HPFF feeders.

LOW PRESSURE AND MEDIUM PRESSURE

There are low pressure and medium pressure transmission feeders as well which may be installed in ducts, or in some cases, may be direct buried. With these systems, the cable is impregnated with oil as well.

Figure 3: FRE

GENERAL INFORMATION

Transmission feeder cables exists at voltages of 69KV, 138KV OR 345KV ("Feeders").

Information on transmission feeders can be found on a Composite maps (by borough/county) or individual feeder maps, conduit plates, and sub-surface drawings ("10 scales").

Most newly installed HPFF pipes and SD feeders have communication control lines associated with them; the majority of the feeders do not.

Detail drawings of Bridge crossing are available through the Public Improvement Engineering Group. Some transmission feeders were installed directly in the concrete on bridge crossings without steel protection plates over them, so caution must be taken working on bridges.

The backfill used around electric transmission lines is typically sand (either Type 3/8 or thermal sand).

Coatings on feeder pipes and oil return lines may be coal tar and should always be assumed to contain PCBs and ACM unless tested otherwise.

Figure 4: Test Station

At some locations, the feeder pipes or duct bank can be installed through a sleeve to pass around or under adjacent facilities. The sleeve will be larger than the pipe running through it. Generally, this sleeve will be bare steel and will be in line with the Code 753 markings.

Transmission manholes almost always have dual openings (i.e. two manhole covers). Transmission manholes also almost always have "gas valve box covers" associated with the manhole, which contain cathodic protection test stations. **See Figure 4.**

If oil or fluid is in the soil or if the pipe is leaking, notify #9, your supervisor and EH&S immediately (follow GEI 2.01 Spill Reporting). Utilize spill kits as required and once the spill has been properly reported, call Transmission Operations (718) 204-4488 or 4489 to inspect and repair the leak.

#9 PHONE NUMBERS: Manhattan: 212-780-3733 or 3743 Brooklyn/Queens: 718-802-5150 or 5151 Staten Island: 718-390-6207 or 2267 Bronx: 914-925-6205 Westchester: 914-925-6221 or 914-921-3722

Last Review Aug 2011. Presented at Dielectric Leak Prevention Committee April 2009. Document origination: June 13, 2006.

Field Guide for Working around Electric Transmission Lines

BEFORE EXCAVATING

Refer to the most current version of the M&S, Conduit, and C&DO plates as well as the Composite Feeder Maps. The feeder maps are available from Transmission Engineering (212-460-2914 or 212-460-4189).

Ensure that Code 753 markings have been made. Note – the Transmission Lines will be marked "Oil-O", "HPP", "Trans-FRE", or "Trans-STL." Renew markings as required throughout duration of excavation activities.

If marks are not accurate or missing, contract the area FPG CCI or PI Operating Supervisor (Staten Island):
Manhattan: 917-939-7912 Bronx: 347-234-0125 Brooklyn: 646-584-7333 Queens: 917-559-3593 Westchester: 347-672-8180
Staten Island: 646-879-2729

Hold a field meeting with the excavator before work begins. Supervisors/Mechanics/CR/Inspector must review project limits, methods and procedures to support, protect and maintain Con Edison facilities.

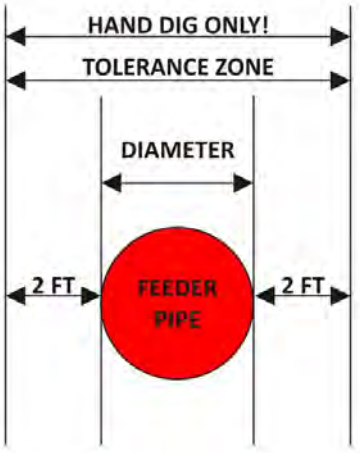
Ensure that the most current facility plates and maps are on site.

SAW CUTTING AND MACHINE USE

NO SAW CUTTING of the pavement is permitted directly crossing over feeders or oil return lines that have been identified in the work area, regardless of whether facility is noted shallow cover or not.

Except for removal of asphalt and concrete base, there shall be no mechanical excavation within the tolerance zone of feeders until the location of the facility and any associated piping has been found. HAND DIG ONLY.

TEST PITS



Hand excavated test pits shall be performed to verify the markouts and location of all critical facilities within the work zone as per Code 753 requirements. In addition, critical facilities within 5' of a work zone, that crosses and run parallel to the work zone, shall be located before beginning any intended excavation with hand excavated test pits. Test pitting shall also be performed as required, to verify the location of critical facilities for extended trenches and excavations. If test pits are to be used to confirm the exact location of the feeders and associated piping and comply with standard excavating requirements by hand and machine.

FEEDER PIPE INSPECTION

If the feeder pipes are exposed, NOTIFY CORROSION OPERATIONS TO INSPECT THE PIPES. If the coating needs repair or removal, the Corrosion Group will notify Underground Transmission to arrange for Company forces or a contractor to do this work. If for some reason Gas Corrosion cannot respond, notify Transmission Operations directly and they will send someone to do the inspection.

CORROSION OPERATIONS PHONE NUMBERS: 718-579-1498 or 718-579-1216. Inform them of the Feeder number and location.
UNDERGROUND TRANSMISSION PHONE NUMBERS: 718-204-4489 or 718-204-4488. 24-hr phone number (718)393-8999

RESTORATION

When pipes pass within 2' of a water main/service, a Con Edison approved ½" thick rubber sheet (class & stock #059-5306) shall be installed between the pipe(s) and the water main/service. There shall be an overlap of 6" between sheets if more than one sheet is required. The rubber sheet(s) shall overhang the water main/service by 18". The rubber sheet should never be wrapped around the feeder pipe.

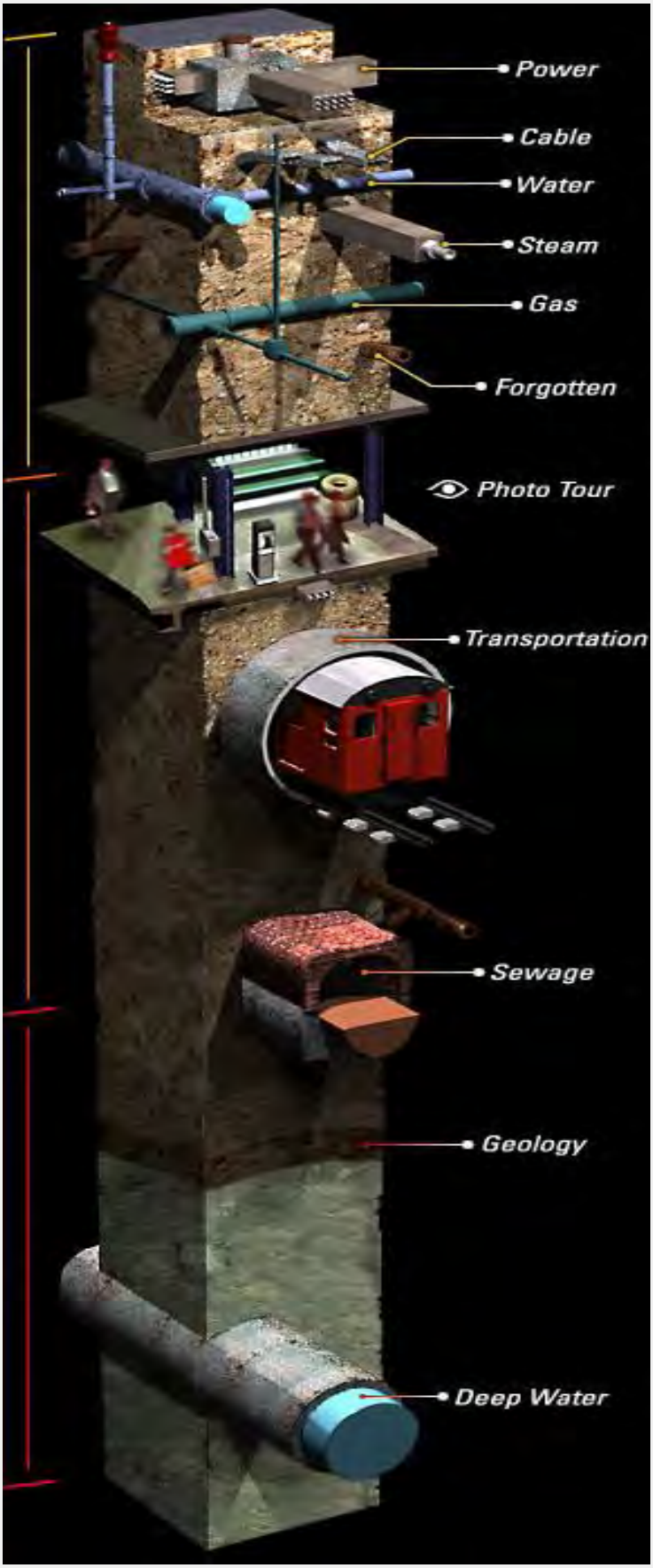
All backfill around transmission feeder pipes and oil lines MUST conform to company specifications. Refer to Specification EO-1173-5 "Specification for Controlled Backfill for HP Cable Pipe Installations" for requirements.

For additional information on restoration, please refer to CE-TS-3352 ("General Specification for installation of High Pressure Pipe for 69KV, 138KV and 345KV Cable Systems, Section 1 – General Requirements"), which can be found on the Central Engineering Website (http://ceng/ceng).

Last Review Aug 2011. Presented at Dielectric Leak Prevention Committee April 2009. Document origination: June 13, 2006.

ATTACHMENT G

NYC Underground Utility Reference Figure



Level 1
Street to 30 Feet

Level 2
30 to 200 Feet

Level 3
200 to 800 Feet

ATTACHMENT H

Photos of Sample Locations Markings for Post Hand Clearance

The below photos depict typical hand cleared locations with asphalt patch, top of PVC guide pipe or collar with threaded cap and secured ID tag.

Typical Hand Cleared Location

Typical Top of PVC Guide Pipe/Collar

APPENDIX 1

Appendix 1a: EH&S Remediation – HASP Addendum Human Performance Improvement (HPI) Tools Error and Risk Mitigation and Control for Intrusive Work.

Appendix 1b: Human Performance (HP) Risk Analysis Worksheet

Appendix 1b: Error Avoidance Tools.

Appendix 1a:

EH&S Remediation – HASP Addendum
Human Performance Improvement (HPI) Tools Error and Risk Mitigation and Control for Intrusive Work.

EH&S Remediation – HASP Addendum:

Human Performance Improvement (HPI) Tools
Error and Risk Mitigation and Control for Intrusive Work

May 20, 2020

For all intrusive work activities, the contractor must conduct a Human Performance assessment for error mitigation using the attached blank *Human Performance Risk Analysis Work Sheet* and *Error Avoidance Tools* matrix. This assessment is in addition to following Con Edison's *Utility Clearance Manual*.

The HPI Matrix must include the tasks with the work scope, associated hazards, and error avoidance tools. The contractor must develop the HPI Matrix in conjunction with Con Edison personnel and include the HPI Matrix in the site specific eHASP for Con Edison's review and approval.

The consultant must submit all changes or deviations in the HPI Matrix and risk mitigation tools to Con Edison for review and approval and update the HPI Matrix accordingly.

The following are the HPI Tools for error mitigation. Descriptions for each of these tools are presented in the attached *Error Avoidance Tools* matrix.

1. Pre-Job Briefing
2. Two Minute Rule
3. Three Way Communication
4. Phonetic Alphabet
5. Procedure Use & Adherence
6. Place Keeping
7. Flagging / Operational Barriers
8. Touch STAR (Stop – Think – Act – Review)
9. Independent Verification
10. Concurrent Verification
11. First Check
12. STOP When Unsure
13. Peer Check
14. Post Job Review
15. Other: Training, Questioning Attitude, Clear Communication, Turnover, and Management Oversight

At all work locations intended for drilling where hand clearance has successfully been completed, the below practices must also be followed:

1. Job Briefing:
    a. Include a discussion on safety hazards associated with tasks and work scope for the day. Additional briefings may be needed if there are changes in personnel or field conditions, including revisiting the site walk.
    b. On the day of and before intrusive work begins, all onsite personnel (e.g., Con Edison, consultant, all sub-contractors - including driller) must conduct a field walk to review and visit all intended work locations.
    c. Complete and sign-off of the *Daily Field Verification Form*.

2. Redundancy in Location Identification:
    a. All locations must be identified and documented in multiple ways to allow independent and concurrent verification of changes in project personnel or field conditions.
    b. Consistent process to identify all locations by using several labeling, tagging, marking, identification (e.g., including spray paint, and stakes) photographs, and fixed point measurements. This process should also allow for a designation on status (e.g. successful hand cleared, primary and alternate locations) and a visual difference in the field between the two. The site-specific methods to identifying sample locations will determined in advance of mobilization to by the field team and be outlined in the eHASP.
    c. All successfully hand cleared locations ready for drilling shall be measured from at least three fixed reference points
    d. Other technologies, such as GPS and RFID, may also be used to locate exact successful hand cleared locations
    e. A physical marker must be placed at successfully hand cleared locations in both paved and unpaved areas in addition to spray paint washes and/or stakes/flags so the location can still be determined.
        i. Examples include use of asphalt in hand cleared unpaved areas, PVC ring with location identification (e.g., SB-01) written/tagged inside, or plywood with location identification written on beneath temporary asphalt (for paved and unpaved areas). Use of PVC guide pipe in hand cleared location
    f. All locations successfully hand cleared for drilling must be documented and photographed showing the location identification and visual reference points.
    g. Any physical markers used must be installed safely and in a manner that does not create a safety hazard.
    h. All information and documentation related to locations, field walks, forms, photos, etc. must be kept on site and made accessible to all field personnel for the duration of the work
    i. NOTE: The identification redundancy steps included in this addendum are best practices and deviation from these steps may be necessary based on site specific

considerations. Any suggested deviations from the process, including these identification steps must be presented to Con Edison for review and approval before beginning field activities.

3. Communication and Training:
    a. The consultant must communicate, document, and train their personnel and sub-contractors on the utility clearance process described in the *Utility Clearance Manual* and use of *HPI Error Mitigation Tools* to promote an awareness of the best practices and reduce risk.
    b. At a minimum, the training should entail reviews of the referenced documents by the consultant personnel and subcontractors.
    c. The consultant must provide Con Edison with documentation and proof of training to its personnel and sub-contractors.

Appendix 1b:

Human Performance (HP) Risk Analysis Worksheet

Human Performance Risk Analysis					
Project Number/ PO		**Project Description**			
Pre-Outage Construction Activity	**Error Trap / Land mine**	**Task Hazards**	**Error Avoidance Tools**	**Relevant RWLB**	**Applicable Procedures**

Appendix 1b:

Error Avoidance Tools

ERROR AVOIDANCE TOOLS

RIGOROUS ADHERENCE TO POLICIES & PROCEDURES	*PROCEDURES HELP USERS TO PERFORM ACTIVITIES CORRECTLY, SAFELY, CONSISTENTLY, AND IN ACCORDANCE WITH DESIGN REQUIREMENTS. PROCEDURES DIRECT PEOPLE'S ACTIONS IN A PROPER SEQUENCE AND MINIMIZE RELIANCE ON ONE'S MEMORY AND THE CHOICES MADE IN THE FIELD.*
MAINTAINING A QUESTIONING ATTITUDE	*WHEN UNSURE OF HOW TO PROCEED WITH A SPECIFIC TASK, ASK SOMEBODY WITH MORE EXPERIENCE.*
PLACE KEEPING	*PLACE KEEPING IS USED TO MARK THE STEPS IN A PROCEDURE OR WORK DOCUMENT THAT HAVE BEEN COMPLETED OR THAT ARE NOT APPLICABLE, SO THAT STEPS ARE NOT ACCIDENTALLY OMITTED OR REPEATED.*
EFFECTIVE JOB BRIEFING	*THE PRE-JOB BRIEF IS A HUMAN PERFORMANCE TOOL THAT ALLOWS THE WORKER TO THINK THROUGH A JOB AND USE HIS/HER KNOWLEDGE TO MAKE THE JOB AS SAFE AND EFFICIENT AS POSSIBLE. WORKERS ACTUALLY INVOLVED WITH PERFORMING THE WORK SHOULD PREPARE AND LEAD PRE-JOB BRIEFS.*
TWO MINUTE RULE	*RECOGNIZING ABNORMAL CONDITIONS AND IDENTIFYING SAFETY HAZARDS IS THE FIRST STEP TO ERROR-FREE AND EVENT-FREE PERFORMANCE. THE TWO-MINUTE RULE REQUIRES WORKERS TO SIMPLY TAKE TIME BEFORE STARTING A JOB TO BECOME AWARE OF THE IMMEDIATE WORK ENVIRONMENT, TO DETECT CONDITIONS UNANTICIPATED BY WORK PLANNING AND THE PRE-JOB BRIEFING, AND TO CONFIRM THOSE THAT WERE ANTICIPATED.*
THREE WAY COMMUNICATION	*EACH MESSAGE THAT IS DIRECTIVE IN NATURE MUST USE THREE-WAY COMMUNICATION AND BEGINS WHEN (1ST) THE SENDER GETS THE ATTENTION OF THE INTENDED RECEIVER, USING THE PERSON'S NAME, AND SPEAKS THE MESSAGE. THEN (2ND), THE RECEIVER REPEATS THE MESSAGE IN A PARAPHRASED FORM, WHICH HELPS THE SENDER VERIFY THAT THE RECEIVER UNDERSTANDS THE INTENDED MESSAGE. FINALLY (3RD), THE SENDER ACKNOWLEDGES THAT THE RECEIVER HEARD AND UNDERSTOOD THE MESSAGE.*
PHONETIC ALPHABET	*WHEN THE ONLY DISTINGUISHING DIFFERENCE BETWEEN TWO COMPONENT DESIGNATORS IS A SINGLE LETTER, THEN THE PHONETIC ALPHABET FORM OF THE LETTER SHOULD BE SUBSTITUTED FOR THE DISTINGUISHING CHARACTER.*
FLAGGING / OPERATIONAL BARRIERS	*FLAGGING INVOLVES HIGHLIGHTING A COMPONENT IN SUCH A WAY TO IMPROVE THE CHANCES OF PERFORMING ACTIONS ON THE CORRECT COMPONENT. OPERATIONAL BARRIERS ARE USED TO MARK OR COVER COMPONENTS THAT ARE NOT TO BE WORKED OR MANIPULATED DURING AN EVOLUTION.*
STAR	***STOP*** *– PAUSE BEFORE PERFORMING THE OPERATION/MANIPULATION, ESPECIALLY AT CRITICAL STEPS, DECISION POINTS, OR TOUCH POINTS (DCS). ELIMINATE DISTRACTIONS, IF NECESSARY.* ***THINK*** *– FOCUS ATTENTION ON THE STEP TO BE PERFORMED. VERIFY THE ACTION IS APPROPRIATE FOR EQUIPMENT/SYSTEM STATUS. ANTICIPATE EXPECTED RESULT(S) OF THE ACTION AND ITS INDICATIONS.* ***ACT*** *– WITHOUT LOSING PHYSICAL CONTACT: COMPARE COMPONENT LABEL, ETC., WITH CHECKLIST, PROCEDURE STEP, OR DRAWING.* ***REVIEW*** *– VERIFY ANTICIPATED RESULT OBTAINED. PERFORM CONTINGENCY, IF EXPECTED RESULT DOES NOT OCCUR.*
PEER CHECK	*PEER CHECKING IS AN ERROR-PREVENTION TECHNIQUE INVOLVING A VERBAL AGREEMENT BETWEEN TWO INDIVIDUALS PRIOR TO A SPECIFIC ACTION AND/OR TASK, SUCH THAT ONE WILL OBSERVE OR CHECK THE BEHAVIOR OF THE OTHER TO PREVENT AN ERROR BY THE PERFORMER.*
INDEPENDENT VERIFICATION	*INDEPENDENT VERIFICATION IS THE ACT OF VERIFYING THE CONDITION OF A COMPONENT, SYSTEM, OR DOCUMENT, ETC., INDEPENDENT FROM THE ORIGINAL ACT THAT PLACED IT IN THAT CONDITION, TO FIND ERRORS BY THE PERFORMER. IT IS AN ACT OF CHECKING A COMPONENT'S OR PRODUCT'S STATUS OR QUALITY INDEPENDENT OF THE PERSON THAT ESTABLISHED ITS PRESENT STATE.*
CONCURRENT VERIFICATION	*CONCURRENT VERIFICATION IS USED TO PREVENT AN ERROR BY THE WORKER WHEN CHANGING THE CONDITION OR STATUS OF A COMPONENT. CONCURRENT VERIFICATION FOCUSES ON THE PROPER "VERIFICATION" OF THE CORRECT DEVICE, THE EXPECTED OPERATION, AND THE ABILITIES OF THE PERSON MAKING THE VERIFICATION. CONCURRENT VERIFICATION IS INTENDED TO ADDRESS EVERY ASPECT OF THE TASK BEFORE ANY MANIPULATION OF THE DEVICE IS MADE.*
FIRST CHECK	*FIRST CHECK CAN BE THOUGHT OF AS A REMOTE PEER CHECK AND IS USED TO ENSURE THE FIRST COMPONENT MANIPULATION FOR A SPECIFIC TASK IS PERFORMED ON THE PROPER UNIT / CHANNEL / COMPONENT. SIMPLY PUT, FIRST CHECK IS USED TO VALIDATE YOU ARE IN THE RIGHT PLACE BEFORE YOU BEGIN WORKING ALONE.*
STOP WHEN UNSURE	*WHEN CONFRONTED WITH A SITUATION THAT CREATES A QUESTION OR A PERSON IS IN UNFAMILIAR TERRITORY, OR WHENEVER A QUESTION IS ENCOUNTERED AND WHAT TO DO ABOUT IT IS UNCERTAIN, STOP AND GET HELP.*
POST JOB REVIEW	*POST-JOB REVIEWS GIVE EMPLOYEES THAT WERE INVOLVED IN THE WORK ACTIVITY TO PROVIDE FEEDBACK. A POST-JOB REVIEW IS CONDUCTED FOR HIGH HAZARD JOBS TO DETERMINE IF PLANNING AND BRIEFINGS WERE EFFECTIVE.*
TURNOVER	*TURNOVER IS THE ORDERLY TRANSFER OF WORK-RELATED INFORMATION, TASKS, AND RESPONSIBILITIES BETWEEN INDIVIDUALS OR CREWS. IT PROVIDES TIME TO ESTABLISH AN ACCURATE MENTAL MODEL OF THE ACTIVITIES (SITUATIONAL AWARENESS) IT ALLOWS INDIVIDUALS TO UNDERSTAND WHERE THINGS STAND AND WHAT IS EXPECTED TO OCCUR DURING THEIR INVOLVEMENT OR SHIFT.*

ATTACHMENT A

Utility Clearance Process Flow Chart

ATTACHMENT B

Utility Clearance Process Checklist

ATTACHMENT C

Instructions for Obtaining Drawings for Sewer and Water Utilities

From the NYC DEP

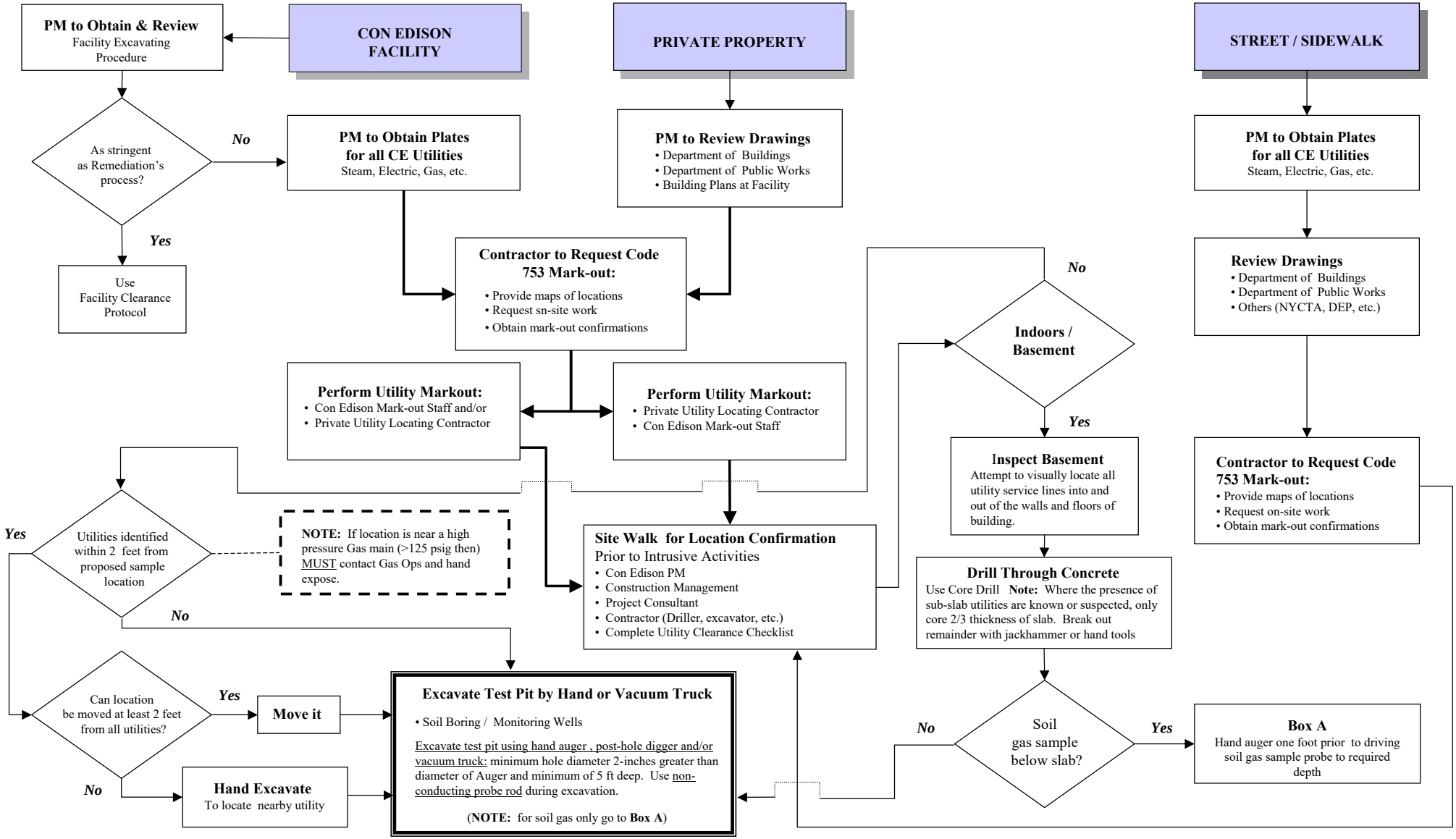
Table 1 - Summary Table of Resources for Obtaining Subsurface Utility Plates and Drawings

Utility Type	County	Company	Organization	Name	Telephone Number
Electric	All	Con Edison	Electric Engineering	http://maps/AdvancedMappingSystem.htm(1)	
			For Questions contact:	John Ensemplare (Mgr. – B&Q)	(718) 802-5540
				Mike Mitchell (Mgr. – Manhattan)	(212) 460-1119
				Richard Mariani (Mgr. – Westchester)	(914) 925-6026
Gas	All	Con Edison	Gas Engineering	http://maps/steam.htm(1)	--
			For Questions contact:	Mike Verlizzo (Mgr.)	(718) 319-2357
Steam	All	Con Edison	Steam Engineering	http://maps/steam.htm(1)	--
			For Questions contact:	Tony Barbera	(212) 460-4843
Sewer /Water	NYC	NYC DEP /	Bureau of Water and Sewer Operations	Vincent Soriano/ Doug Greely	(718) 595-5330
Tunnels	Subway Crossing the East River	MTA	Outside Projects – Adjacent Work	Vasanth Battu/ Rajen Ydeshi / [If drilling in immediate vicinity of MTA structure, e.g., subway tunnel, car tunnel, etc., you will need submit a letter and plan drawing(s) to Mr. Ydeshi]	(646) 252-4473 (646) 252-3641
	Crossing the Hudson River	Port Authority of NY/NJ	Surveying	Richard Danko (rdanko@panynj.gov) Bill Kane (wkane@panynj.gov)	(201) 595-4841 (201) 595-4842

(1) "Maps" website listed is accessible on the Con Edison Intranet.

Utility Clearance Process During Intrusive Activities
E H & S – Remediation Group

10/08/03
Rev. 1



CHECKLIST FOR INTRUSIVE FIELDWORK

PROJECT BACKGROUND INFORMATION

Site Name: _____ **Job No.** _____

Site Address: _____

Con Edison Project Manager: _____ **Phone:** _____

Con Edison Site Manager: _____ _____

Consultant Project Manager: _____ **Phone:** _____

Consultant Site Manager _____ **Phone:** _____

Subcontractor (driller, excavation, etc): _____

Subcontractor's Contact Person: _____ **Phone** _____

Meeting / Start Date _____ **Time** _____

HEALTH AND SAFETY PLAN REVIEW

Name: _____ **Organization:** _____ **Date:** _____

Name: _____ **Organization:** _____ **Date:** _____

Name: _____ **Organization:** _____ **Date:** _____

Health and Safety Form Completed: _____ **Date** _____

Site Drawings (yes/no/NA): _____ **(Attach site figure with proposed boring locations)**

CODE 753 UTILITY MARK-OUT REQUESTED? Y / N

Called by: _____ **Organization:** _____

Date: _____ **Time** _____ **Initials** _____

Reference # _____

Utility Drawings Received: _____ (Attach copy of utility maps)

UTILITY INVENTORY

Above Ground Services:

Utility	Utility Company Name	Depth (ft)	Phone	Date Notified	Notification Method	Marked
Electric		NA				Y / N
Telephone		NA				Y / N
Cable		NA				Y / N
Overhead Supports		NA				Y / N
Traffic light cables		NA				Y / N

Drawings/Plates Obtained (List) _____

Notes: _____

CHECKLIST FOR INTRUSIVE FIELDWORK

UTILITY INVENTORY (continued)

Below Ground Services:

Drawings/Plates Obtained (List) _____

Utility	Utility Company Name	Depth (ft)	Phone	Date Notified	Notification Method	Marked
Electric						Y / N
Telephone						Y / N
Cable						Y / N
Gas						Y / N
Water						Y / N
UST System						Y / N
Storm						Y / N
Sanitary						Y / N
Steam						Y / N
Pipeline Companies						Y / N
Other (Tunnels, etc.)						Y / N

PRIVATE UTILITY LOCATING SERVICE RETAINED? Y / N

Date _____ **Time** _____ **Initials** _____

Name of Locating Service: _____

Telephone #/ contact: _____

Name of Operator(s)/Type of sensing equipment used _____

METAL DETECTOR SURVEY

Drilling location cleared by _____ **(Consultant/Contractor) with a metal detecto**

Consultant / Contractor Name _____ **By (initials):** _____ **Date:** _____

INTRUSIVE SAMPLING LOCATIONS MARKED, M-SCOPED AND CLEARED

Locations Marked by: _____ Date(s): _____

_____ Date(s): _____

M-Scope performed by: _____ Date: _____

Conduct Site Walk and Complete Site Walk Table

ACKNOWLEDGEMENT

The parties listed on the attached Site Walk Sign-In Sheet have participated in a site walk at _____ to review proposed intrusive sampling locations and to evaluate the presence, configuration and identification of utilities at this site, as marked out. The parties have agreed with the proposed activities that will be completed prior to conducting intrusive work. The utility clearance activities will be completed as summarized in Table A (attached).

ADDITIONAL COMMENTS / NOTES: _____

CHECKLIST FOR INTRUSIVE FIELDWORK

Site Walk Sign-In Sheet

Project Name: _____

Date of Site Walk: _____

Name:	Organization:	Phone No.

ATTACHMENT 2

FIELD ACTIVITY FORMS

AECOM

Americas

Task Hazard Assessment

S3AM-209-FM6

Date:	**Project Name / Location:**
Permit / Job Number:	**Project Number:**
Description of Task:	

Do you have a pre-job hazard assessment (JHA) specific to this task in your hands?

- ○ **Yes** – review the steps, hazards, and precautions. Attach and reference JHA in the form below. Add any additional steps, hazards, and precautions to this form otherwise unidentified on JHA.
- ○ **No** – list all steps, hazards, and precautions associated with the task in the form below.

Basic Task Steps (explain in order how the task will be carried out)	**Hazards** (identify all hazards & potential hazards of each step)	**Risk** (before)	**Control Measures / Precautions** (describe how that hazard will be controlled)	**Risk** (after)	**Revised?** (yes – record time)
			Highest Risk Index		

The Task Hazard Assessment is to be completed at the worksite by the individual(s) who is intended to conduct the task immediately prior to initiating the associated task. Number and attach additional pages if necessary.

Worker/Visitor acknowledgement and review of this content on back of this document. Originator to also sign Worker acknowledgement section.

Originator

Print Name	Signature

Supervisor

Print Name	Signature

Risk Matrix on Reverse

THIS FORM IS TO BE KEPT ON JOB SITE.

AECOM

WORKER SIGN ON

NAME (Please Print) TIME SIGNATURE

I participated in the development and understand the content of this Task Hazard Assessment.

Task Hazard Assessment Follow-Up/Review

Initials/Time	Initials/Time	Initials/Time

Instructions:
Identify basic steps of the task and associated hazards. Calculate the initial risk rating. Identify control measure to eliminate or reduce the hazard's risk and calculate the residual risk rating. If the risk rating (after controls are implemented) cannot be reduced to 4 or lower, additional approvals are needed before the activity can begin.

Employees shall monitor the activities for compliance with this document. Workers should **STOP WORK** on a task if conditions change from the planned and agreed approach to the work.

This document should be updated to reflect new conditions or changes in task methods.

VISITOR SIGN ON

I have read and understand the content of this Task Hazard Assessment.

Emergency Meeting / Assembly Area

Emergency Contact #

Method of Communication

Risk Rating Matrix

Probability	Severity				
	5 - Catastrophic	4 – Critical	3 – Major	2 – Moderate	1 - Minor
5 – Frequent	25	20	15	10	5
4 – Probable	20	16	12	8	4
3 – Occasional	15	12	9	6	3
2 – Remote	10	8	6	4	2
1 - Improbable	5	4	3	2	1

Risk Rating (Probability x Severity)	Risk Acceptance Authority
1 to 4 (Low)	Risk is tolerable, manage at local level
5 to 9 (Medium)	Risk requires approval by Operations Lead/Supervisor & SH&E Manager
10 to 25 (High)	Risk requires the approval of the Operations Manager & SH&E Director

Severity – Potential Consequences				
	People	Property Damage	Environmental Impact	Public Image/Reputation
Catastrophic	Fatality, Multiple Major Incidents	>$1M USD, Structural collapse	Offsite impact requiring remediation	Government intervention
Critical	Permanent impairment, Long term injury/illness	>$250K to $1M USD	Onsite impact requiring remediation	Media intervention
Major	Lost/Restricted Work	> $10K to $250K USD	Release at/above reportable limit	Owner intervention
Moderate	Medical Treatment	> $1K to $10K USD	Release below reportable limit	Community or local attention
Minor	First Aid	</=$1K USD	Small chemical release contained onsite	Individual complaint

Probability		
Frequent	Expected to occur during task/activity	9/10
Probable	Likely to occur during task/activity	1/10
Occasional	May occur during the task/activity	1/100
Remote	Unlikely to occur during task/activity	1/1,000
Improbable	Highly unlikely to occur, but possible during task/activity	1/10,000

CHAIN OF CUSTODY RECORD

AECOM

PROJECT NO. | SITE NAME

SAMPLERS (PRINT/SIGNATURE)

LAB _____

COOLER _____ of _____

PAGE _____ of _____

DELIVERY SERVICE: _____ AIRBILL NO.: _____

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO. # OF CONTAINERS	TESTS / BOTTLE TYPE AND PRESERVATIVE	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (IRPIMS ONLY)

MATRIX CODES

AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES

TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# - FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE

(# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS

Distribution: Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/CofCR/GCM

AECOM

DAILY DRILLING RECORD

PROJECT TITLE: _____ DATE: _____

CLIENT: _____ CONTRACTOR: _____

FROM	TO	PRODUCTIVE HOURS	ACTIVITIES/COMMENTS
TOTAL PRODUCTIVE HOURS			LEVEL B / LEVEL C / LEVEL D (CIRCLE ONE SELCTION)

LABOR:		MATERIALS / SUPPLIES:	
UNITS		UNITS	

WEATHER:

_____ AECOM ONSITE COORDINATOR	_____ CONTRACTOR REPRESENTATIVE

AECOM

TEST BORING LOG

BORING NO:

PROJECT: | SHEET: 1 of

CLIENT: | JOB NO.:

BORING CONTRACTOR: | BORING LOCATION:

GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION:
DATE	TIME	LEVEL	TYPE	TYPE					DATE STARTED:
				DIA.					DATE FINISHED:
				WT.					DRILLER:
				FALL					GEOLOGIST:
				* POCKET PENETROMETER READING					REVIEWED BY:

	SAMPLE						DESCRIPTION				REMARKS
DEPTH FEET	STRATA SYMBOL	"S" NO.	"N" NO.	BLOWS PER 6"		REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	MOISTURE PID
5											
10											
15											
20											
25											
30											

COMMENTS: | PROJECT NO.

BORING NO.

AECOM

TEST BORING LOG

BORING NO:

PROJECT:

SHEET:

CLIENT:

JOB NO.:

DEPTH FEET	SAMPLE STRATA	NO.	TYPE	BLOWS PER 6"	REC% ROD%	DESCRIPTION COLOR	CONSIST HARD	MATERIAL DESCRIPTION	USCS	REMARKS PID	
40											
45											
50											
55											
60											
65											
70											
75											

Comments:

PROJECT NO.

BORING NO.

WELL DECOMMISSIONING RECORD

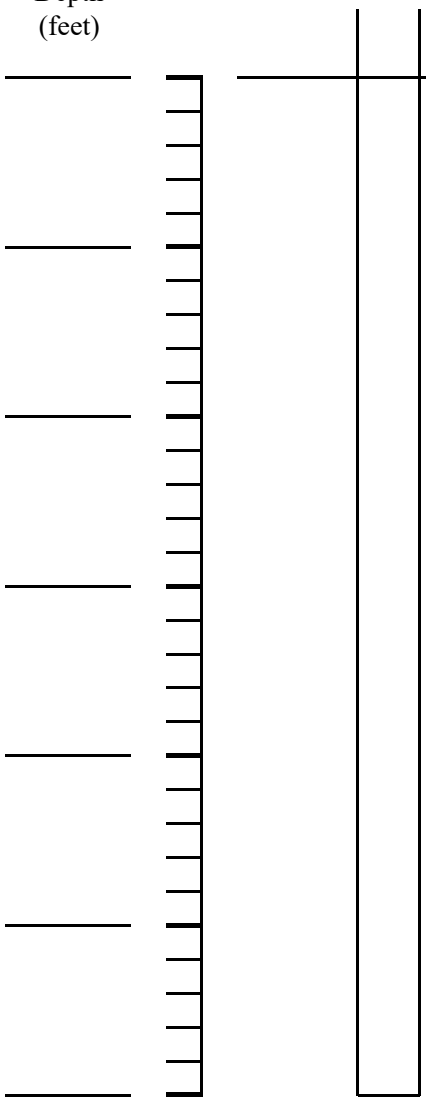
Site Name: Con Ed - East 138th St Works Former MGP Site	Well I.D.:
Site Location:	Driller:
Drilling Co.:	Inspector:
	Date:

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	

COMMENTS:

WELL SCHEMATIC*



* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

DRILLING SUMMARY

Geologist:

Drilling Company:

Driller:

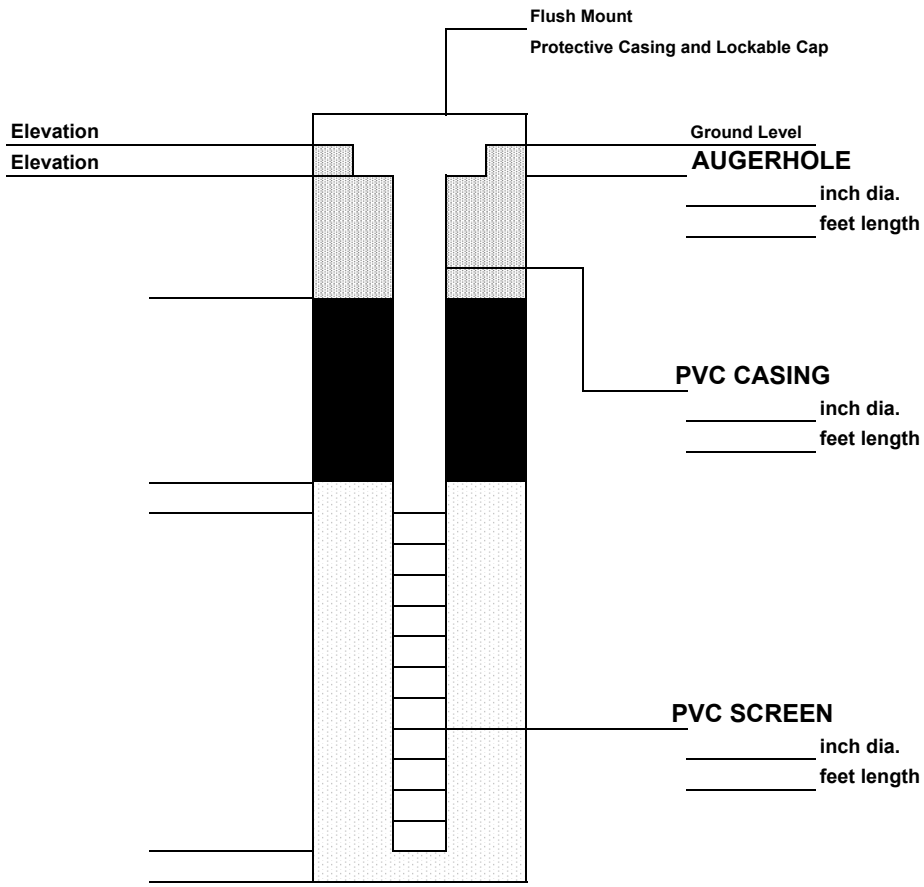
Rig Make/Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description

D
E
P
T
H



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface:	**Type:**	**Type:** **Setting:**
		SEAL MATERIAL
Monitor:	**Slot Size:**	**Type:** Bentonite **Setting:**

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client:	**Location:**	**Project No.:**
AECOM	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:**

DRILLING SUMMARY

Geologist:

Drilling Company:

Driller:

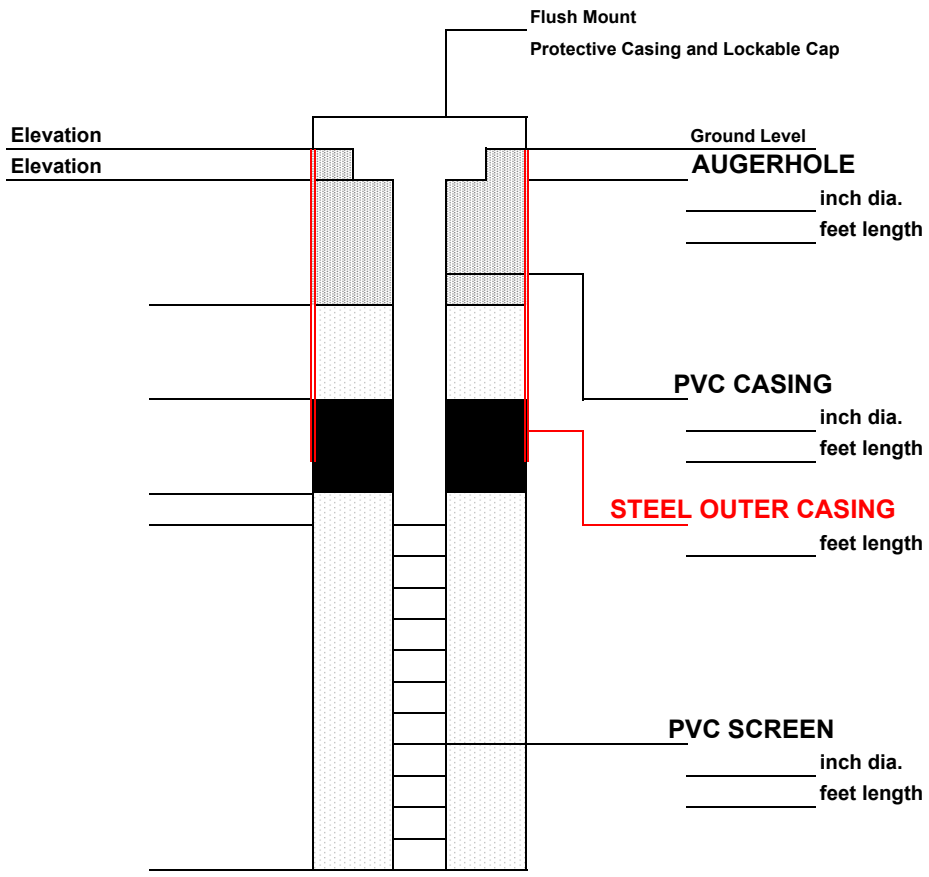
Rig Make/Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description
	See boring log for lithologic description.

D
E
P
T
H



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface:	**Type:**	**Type:** **Setting:**
Monitor:	**Slot Size:**	***SEAL MATERIAL*** **Type:** Bentonite **Setting:**

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: ConEd	**Location:**	**Project No.:**
AECOM	**BEDROCK MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:** MW-08

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=		1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=		2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	0.0	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.0	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	0	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=		8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS											
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE
COMPANY:

Project: _____ Site: _____ Well I.D.: _____

Date: _____ Sampling Personnel: _____ Company: _____

Purging/ Sampling Device: _____ Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: _____ Depth to Well Bottom: _____ Well Diameter: _____ Screen Length: _____

Casing Type: _____ Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): _____

Sample ID: _____ Sample Time: _____ QA/QC: _____

Sample Parameters: _____

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{yl} = \pi r^2 h$)

Remarks:

MONITORING WELL INSPECTION FORM

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE

COMPANY:

SITE NAME:

JOB#:

DATE:

TIME:

WELL ID:

INSPECTOR (PRINT):

EXTERIOR INSPECTION CONDITION

PROTECTIVE CASING/ CURB BOX:

LOCK/HASP CONDITION: LOCK KEY #:

HINGE/ LID: GASKET/SEAL :

SECURITY BOLTS TYPE:

SECURITY BOLTS : THREAD CONDITION:

WELL PAD: BOLLARDS:

LABEL/ ID CONDITION:

MAINTENANCE PERFORMED (e.g., anti seize applied, re-tapping bolt holes, bolt replacement, gasket replacement, etc.)

INTERIOR INSPECTION CONDITION

WELL CASING INTERIOR:

WELL RISER:

ANNULAR SPACE:

J PLUG:

WATER LEVEL: DEPTH TO BOTTOM:

HARD/SOFT BOTTOM:

MAINTENANCE PERFORMED (e.g., removed water, removed bentonite, sorbed sheen, replaced J plug, etc.)

ADDITIONAL COMMENTS:

INSPECTOR (SIGNATURE):

PROJECT MANAGER APPROVAL:

APPENDIX I

Site Management Forms

AECOM

Americas

Task Hazard Assessment

S3AM-209-FM6

Date:	**Project Name / Location:**
Permit / Job Number:	**Project Number:**
Description of Task:	

Do you have a pre-job hazard assessment (JHA) specific to this task in your hands?

- ○ **Yes** – review the steps, hazards, and precautions. Attach and reference JHA in the form below. Add any additional steps, hazards, and precautions to this form otherwise unidentified on JHA.
- ○ **No** – list all steps, hazards, and precautions associated with the task in the form below.

Basic Task Steps (explain in order how the task will be carried out)	**Hazards** (identify all hazards & potential hazards of each step)	**Risk** (before)	**Control Measures / Precautions** (describe how that hazard will be controlled)	**Risk** (after)	**Revised?** (yes – record time)
			Highest Risk Index		

The Task Hazard Assessment is to be completed at the worksite by the individual(s) who is intended to conduct the task immediately prior to initiating the associated task. Number and attach additional pages if necessary.

Worker/Visitor acknowledgement and review of this content on back of this document. Originator to also sign Worker acknowledgement section.

Originator

_____ **Print Name** _____ **Signature**

Supervisor

_____ **Print Name** _____ **Signature**

Risk Matrix on Reverse

THIS FORM IS TO BE KEPT ON JOB SITE.

AECOM

WORKER SIGN ON

NAME (Please Print) TIME SIGNATURE

I participated in the development and understand the content of this Task Hazard Assessment.

Task Hazard Assessment Follow-Up/Review

Initials/Time	Initials/Time	Initials/Time

Instructions:
Identify basic steps of the task and associated hazards. Calculate the initial risk rating. Identify control measure to eliminate or reduce the hazard's risk and calculate the residual risk rating. If the risk rating (after controls are implemented) cannot be reduced to 4 or lower, additional approvals are needed before the activity can begin.

Employees shall monitor the activities for compliance with this document. Workers should **STOP WORK** on a task if conditions change from the planned and agreed approach to the work.

This document should be updated to reflect new conditions or changes in task methods.

VISITOR SIGN ON

I have read and understand the content of this Task Hazard Assessment.

Emergency Meeting / Assembly Area

Emergency Contact #

Method of Communication

Risk Rating Matrix

Probability	Severity				
	5 - Catastrophic	4 – Critical	3 – Major	2 – Moderate	1 - Minor
5 – Frequent	25	20	15	10	5
4 – Probable	20	16	12	8	4
3 – Occasional	15	12	9	6	3
2 – Remote	10	8	6	4	2
1 - Improbable	5	4	3	2	1

Risk Rating (Probability x Severity)	Risk Acceptance Authority
1 to 4 (Low)	Risk is tolerable, manage at local level
5 to 9 (Medium)	Risk requires approval by Operations Lead/Supervisor & SH&E Manager
10 to 25 (High)	Risk requires the approval of the Operations Manager & SH&E Director

Severity – Potential Consequences				
	People	Property Damage	Environmental Impact	Public Image/Reputation
Catastrophic	Fatality, Multiple Major Incidents	>$1M USD, Structural collapse	Offsite impact requiring remediation	Government intervention
Critical	Permanent impairment, Long term injury/illness	>$250K to $1M USD	Onsite impact requiring remediation	Media intervention
Major	Lost/Restricted Work	> $10K to $250K USD	Release at/above reportable limit	Owner intervention
Moderate	Medical Treatment	> $1K to $10K USD	Release below reportable limit	Community or local attention
Minor	First Aid	</=$1K USD	Small chemical release contained onsite	Individual complaint

Probability		
Frequent	Expected to occur during task/activity	9/10
Probable	Likely to occur during task/activity	1/10
Occasional	May occur during the task/activity	1/100
Remote	Unlikely to occur during task/activity	1/1,000
Improbable	Highly unlikely to occur, but possible during task/activity	1/10,000

CHAIN OF CUSTODY RECORD

AECOM

PROJECT NO. | SITE NAME

SAMPLERS (PRINT/SIGNATURE)

LAB _____

COOLER _____ of _____

PAGE _____ of _____

DELIVERY SERVICE: _____ AIRBILL NO.: _____

TESTS

BOTTLE TYPE AND PRESERVATIVE

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO. # OF CONTAINERS	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO.# (IRPIMS ONLY)

MATRIX CODES

AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES

TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# - FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE

(# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS

Distribution: Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/CofCR/GCM

DAILY DRILLING RECORD

AECOM

PROJECT TITLE: _____ DATE: _____

CLIENT: _____ CONTRACTOR: _____

FROM	TO	PRODUCTIVE HOURS	ACTIVITIES/COMMENTS
TOTAL PRODUCTIVE HOURS			LEVEL B / LEVEL C / LEVEL D (CIRCLE ONE SELCTION)

LABOR:		MATERIALS / SUPPLIES:	
UNITS		UNITS	

WEATHER:

_____ AECOM ONSITE COORDINATOR	_____ CONTRACTOR REPRESENTATIVE

AECOM

TEST BORING LOG

PROJECT:									BORING NO:
CLIENT:									SHEET: 1 of
BORING CONTRACTOR:									JOB NO.:
GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE	BORING LOCATION:
DATE	TIME	LEVEL	TYPE	TYPE					GROUND ELEVATION:
				DIA.					DATE STARTED:
				WT.					DATE FINISHED:
				FALL					DRILLER:
				* POCKET PENETROMETER READING					GEOLOGIST:
									REVIEWED BY:

	SAMPLE						DESCRIPTION				REMARKS
DEPTH FEET	STRATA SYMBOL	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%		COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	USCS	MOISTURE PID
5											
10											
15											
20											
25											
30											

COMMENTS:	PROJECT NO.
	BORING NO.

AECOM

TEST BORING LOG

BORING NO:

PROJECT:

SHEET:

CLIENT:

JOB NO.:

DEPTH FEET	SAMPLE STRATA	NO.	TYPE	BLOWS PER 6"	REC% ROD%	DESCRIPTION COLOR	CONSIST HARD	MATERIAL DESCRIPTION	USCS	REMARKS PID	
40											
45											
50											
55											
60											
65											
70											
75											

Comments:

PROJECT NO.

BORING NO.

WELL DECOMMISSIONING RECORD

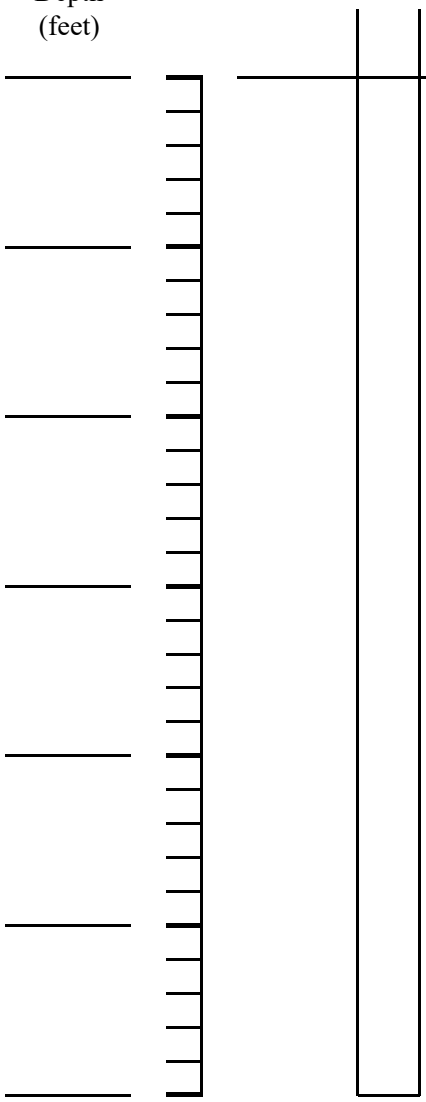
Site Name: Con Ed - East 138th St Works Former MGP Site	Well I.D.:
Site Location:	Driller:
Drilling Co.:	Inspector:
	Date:

DECOMMISSIONING DATA
(Fill in all that apply)

OVERDRILLING	
Interval Drilled	
Drilling Method(s)	
Borehole Dia. (in.)	
Temporary Casing Installed? (y/n)	
Depth temporary casing installed	
Casing type/dia. (in.)	
Method of installing	
CASING PULLING	
Method employed	
Casing retrieved (feet)	
Casing type/dia. (in)	
CASING PERFORATING	
Equipment used	
Number of perforations/foot	
Size of perforations	
Interval perforated	
GROUTING	
Interval grouted (FBLS)	
# of batches prepared	
For each batch record:	
Quantity of water used (gal.)	
Quantity of cement used (lbs.)	
Cement type	
Quantity of bentonite used (lbs.)	
Quantity of calcium chloride used (lbs.)	
Volume of grout prepared (gal.)	
Volume of grout used (gal.)	

COMMENTS:

WELL SCHEMATIC*



* Sketch in all relevant decommissioning data, including: interval overdrilled, interval grouted, casing left in hole, well stickup, etc.

Drilling Contractor

Department Representative

DRILLING SUMMARY

Geologist:

Drilling Company:

Driller:

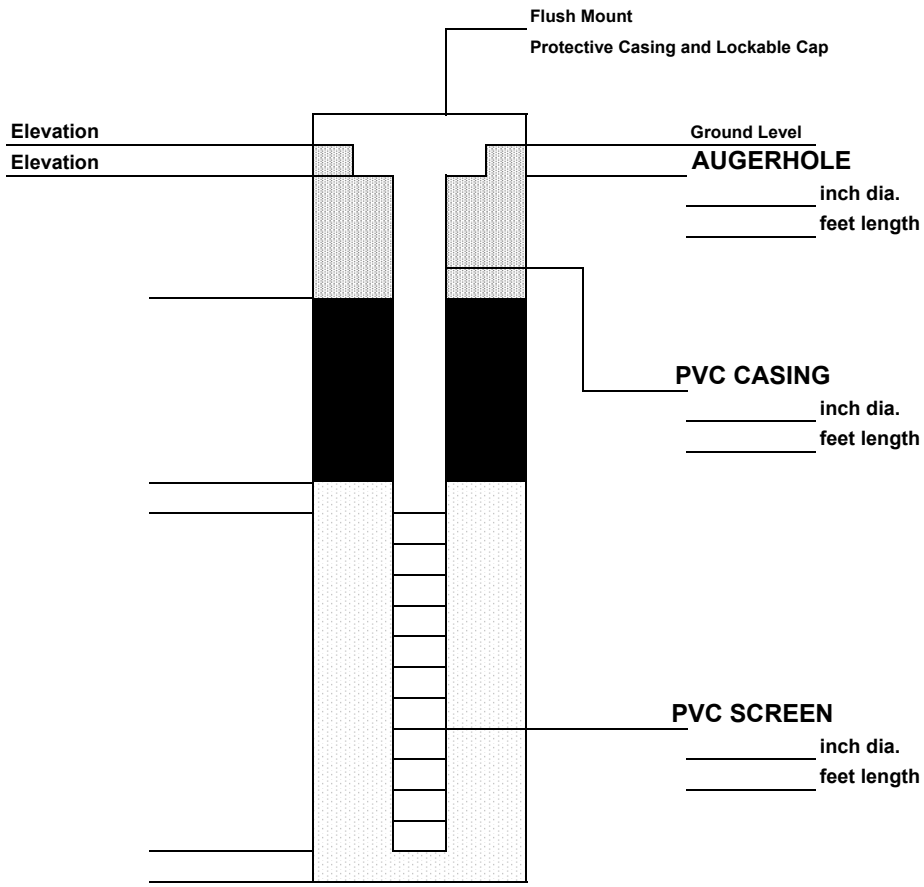
Rig Make/Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description

D
E
P
T
H



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface:	**Type:**	**Type:** **Setting:**
		SEAL MATERIAL
Monitor:	**Slot Size:**	**Type:** Bentonite **Setting:**

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client:	**Location:**	**Project No.:**
AECOM	**MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:**

DRILLING SUMMARY

Geologist:

Drilling Company:

Driller:

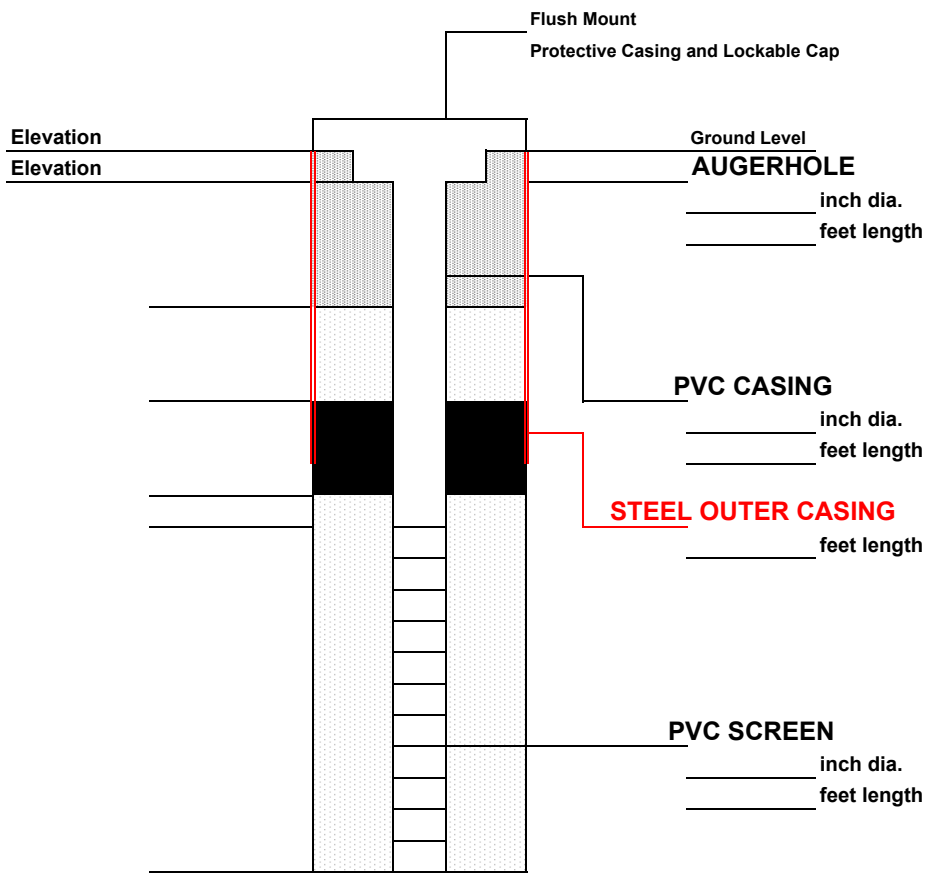
Rig Make/Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description
	See boring log for lithologic description.

D
E
P
T
H



WELL DESIGN

CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface:	**Type:**	**Type:** **Setting:**
Monitor:	**Slot Size:**	***SEAL MATERIAL*** **Type:** Bentonite **Setting:**

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: ConEd	**Location:**	**Project No.:**
AECOM	**BEDROCK MONITORING WELL CONSTRUCTION DETAILS**	**Well Number:**

WELL DEVELOPMENT LOG

AECOM

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=		1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=		2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	0.0	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.0	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	0	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=		8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS											
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE
COMPANY:

Project: _____ Site: _____ Well I.D.: _____

Date: _____ Sampling Personnel: _____ Company: _____

Purging/ Sampling Device: _____ Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: _____ Depth to Well Bottom: _____ Well Diameter: _____ Screen Length: _____

Casing Type: _____ Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): _____

Sample ID: _____ Sample Time: _____ QA/QC: _____

Sample Parameters: _____

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{yl} = \pi r^2 h$)

Remarks:

MONITORING WELL INSPECTION FORM

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE

COMPANY:

SITE NAME:

JOB#:

DATE:

TIME:

WELL ID:

INSPECTOR (PRINT):

EXTERIOR INSPECTION CONDITION

PROTECTIVE CASING/ CURB BOX:

LOCK/HASP CONDITION: LOCK KEY #:

HINGE/ LID: GASKET/SEAL :

SECURITY BOLTS TYPE:

SECURITY BOLTS : THREAD CONDITION:

WELL PAD: BOLLARDS:

LABEL/ ID CONDITION:

MAINTENANCE PERFORMED (e.g., anti seize applied, re-tapping bolt holes, bolt replacement, gasket replacement, etc.)

INTERIOR INSPECTION CONDITION

WELL CASING INTERIOR:

WELL RISER:

ANNULAR SPACE:

J PLUG:

WATER LEVEL: DEPTH TO BOTTOM:

HARD/SOFT BOTTOM:

MAINTENANCE PERFORMED (e.g., removed water, removed bentonite, sorbed sheen, replaced J plug, etc.)

ADDITIONAL COMMENTS:

INSPECTOR (SIGNATURE):

PROJECT MANAGER APPROVAL:

ANNUAL SITE INSPECTION FORM

SITE: CONSOLIDATED EDISON COMPANY - EAST 138TH STREET WORKS FORMER MGP SITE
COMPANY:

Inspected by: _____ Date: _____

SBL #	Current Site Owner	Current Property Use & Comments
Block 2590 Lot 51		
Block 2598 Lot 1		

APPENDIX J

Quality Assurance Project Plan

APPENDIX J

QUALITY ASSURANCE PROJECT PLAN

EAST 138TH STREET WORKS FORMER MGP SITE
SITE # 203108
BRONX, NEW YORK

Prepared for:

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
31-01 20TH AVENUE – BUILDING 136
ASTORIA, NEW YORK 11105

Prepared by:

AECOM USA, Inc.
1 John James Audubon Parkway
Suite 210
Amherst, NY 14228

April 2023

TABLE OF CONTENTS

QUALITY ASSURANCE PROJECT PLAN

TABLES (FOLLOWING TEXT)

FIGURES (FOLLOWING TABLES)

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) was prepared to, along with the Field Sampling Plan (FSP), address annual groundwater sampling in monitoring wells in the vicinity of the East 138th Street Works Former MGP Site located in Bronx, New York.

The objective of this QAPP is to produce reliable data generated by the field investigations. The annual groundwater sampling frequency is subject to modification in the future based upon the sampling results (i.e., decrease or increase in frequency) in accordance with the provisions in *DER-10, Technical Guidance for Site Investigation and Remediation*, New York State Department of Environmental Investigation, May 2010.

2.0 SAMPLING AND ANALYSIS PLAN

The two major components of the Sampling and Analysis Plan are the Field Sampling Plan (FSP) and this Quality Assurance Project Plan (QAPP). The FSP is provided as Appendix H to this SMP.

3.0 QUALITY ASSURANCE PROJECT PLAN

3.1 Quality Assurance Project Plan Objective

The objective of the QAPP is to produce reliable data generated by the field investigation by:

- Ensuring the validity and integrity of the data;
- Ensuring and providing mechanisms for on-going control of data quality;
- Evaluating data in terms of quality objectives; and
- Providing useable, quantitative data for analysis, assessment, and decision making to meet project data quality objectives (DQOs).

Some of the existing wells comprise the wells to be included in the annual groundwater monitoring. These denote the sampling locations. The subject wells are listed below and are shown on Figure 1:

- MW-01
- MW–02
- MW-03
- MW–05
- MW–06
- MWMF–04
- MWMF–05
- MWMF–08

The sampling locations are depicted in Figure 1 and the analytical parameters are listed in Table 1. The analytical parameters have been established by the NYSDEC during the RAWP phase.

The field QC samples were also described in the FSP.

The analytical program will be in general compliance with the most recent version of NYSDEC's Analytical Services Protocol (NYSDEC, 2005).

3.1.1 Project Organization

The project organization for this effort is as follows:

- Project Director: Matthew Levinson, PE
- AECOM Project Manager: Mike Gutmann, PG
- AECOM Quality Assurance Officer: Jim Kaczor, PG
- AECOM Health and Safety Officer: Dale Wray, CSP, CHMM, STS

The analytical laboratory and other subcontractors have not yet been selected. Field personnel will not be assigned until SMP approval is received.

3.1.2 Measurement Quality Assurance Objectives

Measurement DQOs for this project will be addressed in terms of precision, accuracy, representativeness, completeness, comparability, and sensitivity.

Precision is the degree of agreement among repeated measurements of the same parameter under the same or similar conditions. Field precision will be assessed through the collection and analysis of duplicate samples. Laboratory precision will be based upon the relative percent difference between the MS/MSD analyses and laboratory replicates where required.

Accuracy is the extent of agreement between a measured value and the accepted or true value of the parameter being measured. The percent recovery of the laboratory control sample (LCS) and MS/MSD sample will be utilized to evaluate laboratory accuracy.

Representativeness is a qualitative term that describes the extent to which the sampling design adequately reflects the environmental conditions. At this Site, this refers to the ability of the selected sampling locations to reflect actual Site conditions. Representativeness of soil and

groundwater samples will be assured by the collection of a sufficient number of these samples to reduce the uncertainty in determining the extent of contamination. In addition, the field testing for stabilization parameters during purging will assure that representative groundwater samples are collected. Representativeness of laboratory data will also be assessed by evaluating adherence to prescribed analytical methods and procedures, including holding times, blanks, and duplicates. Trip blanks will be analyzed during the investigation in order to assess potential problems as they might occur during sample handling. A trip blank (laboratory-prepared sample of reagent-grade water) will accompany each cooler and be subjected to the same handling procedures as the groundwater samples. Since dedicated disposable sampling equipment will be used, field blanks, or equipment blanks, will not be necessary, unless the proposed sampling procedures change.

Completeness is the measure of the valid data obtained compared to the quantity expected. Both field completeness (i.e., collecting all the necessary samples and getting them to the laboratory) and laboratory completeness (i.e., all samples analyzed and all data considered useable) are critical parameters.

Comparability refers to the confidence with which one data set can be compared to another. Consistency in field sampling and analytical protocols will be used to ensure comparability. In the laboratory, data are comparable when the analysis is done with the same standard method and reporting limits. Once a laboratory is selected, their standard operating procedures will be appended to this QAPP.

The sensitivity objective refers to the ability of the laboratory to achieve quantitation limits that are lower than the cleanup levels established for the Site. The selection of the analytical laboratory will be based, in part, on their demonstration that these limits can be routinely achieved.

3.1.3 Laboratory Quality Control Requirements

The laboratory will be required to maintain accuracy and precision in accordance with this QAPP. Once the laboratory is selected, the laboratory will provide precision and accuracy control limits for the designated analytes. These control limits, once received, will be appended to this QAPP.

The chemicals to be analyzed in groundwater are listed in Tables 1 and 2. Table 2 also includes the selected analytical method, container, preservation, and holding time requirements.

3.1.4 Data Assessment and Evaluation

All sampling, handling, and fixed laboratory data will be reviewed by an AECOM chemist. The review procedure will include verification of all quality control measures used in both the field and the laboratory. The review will include the following topics:

- Sample receipt and handling according to method requirements;
- An analysis of holding time criteria;
- An evaluation of blank data (trip blanks, laboratory method blanks);
- An evaluation of accuracy using the laboratory control sample (LCS), surrogate recoveries, and the MS/MSD samples;
- An evaluation of precision using field and laboratory duplicate samples; and
- An evaluation of sensitivity with respect to required quantitation limits.

The most current applicable USEPA Region II validation guidelines will be used for data qualification.

A data usability summary report (DUSR) will be generated for each annual sampling event. If any data are not useable to support the required decision, the data review will address resolution of this problem and the potential need for resampling.

4.0 REPORTING

The data collected during the implementation of this QAPP will be described and evaluated in an Annual Groundwater Sampling Report.

The Annual Groundwater Sampling Report will summarize analytical results from the annual sampling event, conclusions, and recommendations of the annual project evaluation. A copy of the laboratory data will be included in the appendix of the report. The Annual Groundwater Sampling Report will also include the following:

- The site name, municipality, county that the site is located in, and date of the report will appear on the cover;
- Text detailing the site activities completed over the given calendar year;
- Tables with groundwater elevation data and detected analytes in groundwater with applicable criteria;
- A Data Usability Summary Report;
- A Site Location Map;
- A Site map showing sampling and well locations;
- A map showing the shallow groundwater potentiometric surface;
- A map showing the deep groundwater potentiometric surface;
- A map showing detected analytes in groundwater with applicable criteria;
- Completed sampling forms;
- Comments, conclusions and recommendations based on an evaluation and resolution of problems identified; and
- Photographs.

4.1 Submittal Requirements

Annual reports will be submitted within 60 days of the final sampling event of the year. Two copies of all reports will be submitted to the NYSDEC. All reports will be bound reports or in an equivalent acceptable electronic format. Sample results will be provided to the property owners within 30 days after data validation is completed.

5.0 REFERENCES

New York State Department of Environmental Conservation (NYSDEC), 2005. *Analytical Services Protocol;* July.

NYSDEC, 2010. *DER-10, Technical Guidance for Site Investigation and Remediation*; Final. May.

TABLES

Table 1

Summary of Samples and Analytical Parameters
East 138th Street Works Site
Bronx, NY

MATRIX/ANALYSIS	Analytical Method	Field Samples (1)	Matrix Spike (MS)	MS Duplicate or Matrix Duplicate	Field Duplicate	Equipment Blank (2)	Trip Blank (3)	Total Analyses
Aqueous Groundwater Samples								
TCL Volatile Organics	SW 846 8260C	8	1	1	1	1	1	13
TCL Semivolatile Organics	SW 846 8270D	8	1	1	1	1	-	12
TAL Metals	SW 846 6010C/7470A	8	1	1	1	1	-	12
Cyanide, total	SW 846 9012B	8	1	1	1	1	-	12

TCL - Target Compound List
TAL = Target Analyte List (23 Metals)
Notes
(1) MW-01, MW-02, MW-03, MW-05, MW-06, MWMF-04, MWMF-05, MWMF-08
(2) Equipment rinsate blank quantity will vary depending on ssampling equipment used; quantity may be greater or less than that shown. Equipment blank not required for dedicated, disposable equipment.
(3) One trip blank per sample shipment or one per day, whichever is less.

Table 2

Analytical Method, Sample Container and Preservation Requirements, and Analytical Holding Times
East 138th Street Works Site
Bronx, NY

MATRIX/ANALYSIS	Sample Prep Method (1)	Analytical Method (2)	Sample Bottles (3) Mat'l	Size	Qty	Source	Minimum Vol Rqd	Preservation (4)	Holding Time (4,5) Extraction	Analysis	Comment
Aqueous Samples											
TCL Volatile Organics	SW 846 5030C	SW 846 8260C	Glass	40 mL	2 or 3	Lab	40 mL	HCl to pH ≤ 2	NA	14 days	7 days if not preserved.
TCL Semivolatile Organics	SW 846 3510C/3520C/3535	SW 846 8270D	Glass	250 mL	2	Lab	250 mL	None	7 days	40 days	
TAL Metals (except mercury)	SW 846 3005A/3010A/3020A	SW 846 6010C	Plastic	250 mL	1	Lab	200 mL	HNO_3 to pH≤ 2	NA	180 days	180 days for TAL metals except Hg.
Mercury	SW 846 7470A	SW 846 7470A							NA	28 days	28 days for Hg.
Cyanide, total	SW 846 9012B	SW 846 9012B	Plastic	250 mL	1	Lab	400 mL	NaOH to pH ≥ 12	NA	14 days	

(1) Laboratory may propose alternate extraction/preparation methods, subject to AECOM approval.
(2) More recent versions of SW-846 methods may be used subject to AECOM approval.
(4) All samples for chemical analysis should be held at 4 degrees C in addition to any chemical preservation required.
(5) Holding time calculated from day of collection, unless noted as being from time of extraction. Laboratory holding times (ASP 2005, Exhibit I) are two days shorter to allow for field handling and shipping.
SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. USEPA SW-846. Complete through Update IV, March 2009.
TAL - Target Analyte List
TCL - Target Compound List

FIGURES

N

E 141st St

MW-03

BLOCK 2592
LOT 35

Rose Feiss Blvd

BLOCK 2598
LOT 66

BLOCK 2598
LOT 62

Locust Ave

MW-04

E 140th St

MW-01

MW-11

MWMF-01

BW-04

MWMF-07D

MWMF-07S

MWMF-05

BLOCK 2591
LOT 46

BW-03

BLOCK 2598
LOT 46

MWMF-06

MWMF-02

MWMF-08

MWMF-03

BW-01

MWMF-04

BW-02

MW-02

E 139th St

BLOCK 2590
LOT 51

BLOCK 2598
LOT 1

MW-06

BLOCK 2597
LOT 1

MW-05

MW-07-URS

E 138th St

EAST
RIVER

Legend

- MW-02 Existing Monitoring Well to be included in Annual Groundwater Monitoring
- MW-04 Proposed Monitoring Well to be Decommissioned
- BW-01 Existing Bedrock Monitoring Well - NAPL Measurements Only
- Block/Lot Boundary

100 0 100 Feet

EAST 138TH STREET WORKS SITE
ANNUAL GROUNDWATER MONITORING
PROGRAM WELLS

conEdison AECOM

FIGURE 1

\\na.aecomnet.com\LFS\AMER\Buffalo-USBUF1\DCS\Projects\111755538.00000\DB\GIS\Maps\138th RAWP Report\RAWP Figure 4-2.mxd 11/6/2018

APPENDIX K

Responsibilities of Owner and Remedial Party

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the portions of the East 138th Street Works Former MGP site (the "site"), number 203108, to which the SMP is applicable are divided between the site owner(s) and a Remedial Party, as defined below. The owners are currently listed as:

- Block 2598, Lot 1: 885 East 138th Street, L.L.C., 1536 Third Ave., 3rd Floor, New York, New York 10028
- Block 2590, Lot 51: Walcott Shoe, LLC, 1536 Third Ave., 3rd Floor, New York, New York 10028 (the "owner(s)").

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is: Consolidated Edison Company of New York, Inc., 31-01 20th Avenue – Building 136, Astoria, New York 11105.

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.

2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in an Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.

3) In the event the site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.

4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3 - Notifications.

6) In the event some action or inaction by the owner adversely impacts the site, the owner must (i) notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3- Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.

7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site properties. 6 NYCRR Parts 375-1.11(d) and 375 1-9(f) contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 1.3 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) The owner will maintain the site cover.

9) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC, and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

6) The RP will maintain the monitoring wells.

7) The RP shall notify the NYSDEC of any damage to or modification of the Engineering Controls (i.e. site cover) as required under Section 1.3 of the SMP.

8) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

9) Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.