



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
BCP Significant Threat Determination Report



9/5/2017

Site Code	C231093	Site Name	515 West 18th Street
City	New York	Town	New York City
Region	2	County	New York
Current Classification	A		
Estimated Size	1.0560	Allowable Use	Restricted Residential
Significant Threat:	Yes	Project Manager	Douglas Macneal

Summary of Approvals

Originator/Supervisor: Gardiner Cross **08/11/2017**

Regional Hazardous Waste Remedial Engineer: Jane O'Connell **08/18/2017**

BEEI of NYSDOH: **09/06/2017**

CO Bureau Director: George Heitzman, Director, Remedial Bureau **08/24/2017**
C:

09/05/2017

Assistant Division Director: Michael J. Ryan, P.E.:

Basis for Significant Threat Determination

The site is a significant threat to human health and the environment because of the presence of source material from the historic storage of coal gas. The site has contaminated groundwater and soil, and retains source material, in the form of both light and dense non-aqueous phase liquids.

Site Description - Last Review: 09/05/2017

Location: The 515 West 18th Street site is located in an urban area in the West Chelsea section of the Borough of Manhattan. The site is bounded by West 19th Street on the north, West 18th Street to the south, and 10th Avenue to the east.

Site Features: The site consists of two adjacent lots, designated as Lots 20 and 29. Lot 20 is currently improved with two 2-story buildings, with slab on grade foundations. The first building has the first floor utilized as a parking garage and the second floor as an art gallery. The other building is a residential space. Lot 29 is a paved parking lot. The High Line Park, an elevated and open recreational walkway, runs north to south over the western portion of Lot 29.

Current Zoning/Use: The site is zoned C6-4 for mixed commercial and residential use and is currently vacant.

Past Uses of the Site: Both lots were historically used to support the nearby Manufactured Gas



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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BCP Significant Threat Determination Report



9/5/2017

Site Code C231093

Site Name 515 West 18th Street

Plant (MGP) operations of the West 18th Street Gas Works. In approximately 1848, two gas holders were constructed on Lot 29 and used for storage of manufactured gas until the early 1900s. Lot 20 was used as a storage yard by the MGP from about 1870 until the early 1900s. The gas works produced gas using the coal carbonization process throughout its entire history. After the site was sold in 1919, a large garage was constructed on the 18th Street side of Lot 20 that included buried gasoline tanks. In 1947, a private garage was built on the 19th Street side of Lot 20 as well. On Lot 29, the gas holders were razed in 1914. After being sold in 1917, Lot 29 was used as a wagon yard, automobile parking lot, and commercial truck parking lot with several small structures and underground petroleum storage tanks. These properties were originally part of a Voluntary Cleanup Program project, subject to a legal agreement between Con Edison and the Department, for the Con Edison West 18th Street Gas Works site, site #V00530.

Site Geology and Hydrogeology: The site is underlain by a thick deposit of urban fill materials which was placed along the Hudson River shoreline to create additional land for development. The fill, 7 to 30 feet deep, consists of a variety of man-made materials such as bricks and ash, mixed with soil. The fill is underlain by sands, silts and glacial till, which extend to bedrock, found between 40 and 60 feet below the surface.

Groundwater occurs between 8 and 9 feet below grade. Regional groundwater flow is westerly towards the Hudson River; local groundwater flow is generally the same.

Contaminants of Concern (Including Materials Disposed)	Quantity Disposed
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OU 01

polycyclic aromatic hydrocarbons (PAHS), total	UNKNOWN
benzene, toluene, ethylbenzene and xylenes (BTEX)	UNKNOWN
arsenic	UNKNOWN
barium	UNKNOWN
lead	UNKNOWN
mercury	UNKNOWN

Analytical Data Available for : Groundwater, Soil

Applicable Standards Exceeded for: Groundwater, Soil

Site Environmental Assessment - Last Review: 09/05/2017

Nature and Extent of Contamination:

Over the course of nine studies conducted between April 2005 and June 2016, soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls, (PCBs), and pesticides. Based on these investigations, the primary contaminants of concern are: SVOCs (primarily polyaromatic hydrocarbons) associated with the former manufactured gas plant on the property, and VOCs



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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BCP Significant Threat Determination Report



9/5/2017

Site Code C231093

Site Name 515 West 18th Street

(primarily benzene, toluene, ethylbenzene, and xylenes) associated with both the manufactured gas plant (MGP) and with the buried tanks formerly used to store petroleum; and the metals lead, arsenic, mercury and barium associated with the fill materials used to create the site landmass. In addition to soil and groundwater contamination, separate phase coal tar was observed beneath Lot 29.

Soil:

Lot 29 contains the subsurface foundations of two former MGP gas holders, located immediately to the east of the High Line. The most concentrated contamination was found at the bottom of these structures, consisting of a few inches of visibly coal tar-contaminated soil at depths of roughly 20-22 feet. These impacts appear to be limited to the interior of the holders and were not observed below or outside either holder. These impacts exceed the restricted residential SCOs for SVOCs, with a maximum concentration of naphthalene at 22,000 parts per million (ppm), for metal, with a maximum concentration of lead at 1,740 ppm, and, for VOCs, with a maximum concentration of 230 ppm for xylenes.

Other portions of Lot 29 contain lower levels of contamination which exceed restricted residential SCOs. The sources of this contamination are less clear than in the gas holder foundations, but some appears to be related to petroleum storage tanks, and some appears to derive from the urban fill materials used to raise the ground surface elevation for past site development. The petroleum contamination is generally limited to the southern portion of the lot at a depth of 5-7 feet, with localized deeper impacts (9-11 feet) under the northern portion of Lot 29. These impacts exceed the restricted residential SCOs for metals, with a maximum concentration of lead for 636 ppm, for SVOCs, with a maximum concentration of benzo(a)anthracene of 2.7 ppm, and a maximum concentration of xylenes of 350 ppm.

On Lot 20, west of the High Line, there is soil contamination from metals, VOCs and SVOCs that also exceed the restricted residential SCOs, with a maximum concentration for VOCs, of xylene, at 160 ppm, a maximum concentration for SVOCS, of benzo(b)fluoranthene, at 8.7 ppm, and a maximum concentration for metals, of lead, at 708 ppm. Most of these impacts are found in the upper 15 feet with the highest levels found in the upper 8 feet. The mix of SVOCs, VOCs, and metals are indicative of historic fill. Samples also show elevated total petroleum hydrocarbons (a specific group of VOCs and SVOCs usually found in petroleum products like gasoline and diesel fuel) which is likely attributed to the past petroleum storage tanks on the lot. There were seven underground storage tanks located on the lot. Some of the seven were removed and some were abandoned in place. While contamination associated with historic fill material is present throughout this area, sampling data indicates that contamination in soil has not migrated from the site.



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
BCP Significant Threat Determination Report



9/5/2017

Site Code C231093

Site Name 515 West 18th Street

Groundwater:

Groundwater is contaminated with VOCs and SVOCs across the site, with the highest concentrations found along the southern edge of the site. The source of this contamination is likely the petroleum and MGP by-products on the site. Based on the results at the perimeter of the site, VOCs are likely migrating off-site in the groundwater.

Soil Vapor:

While soil vapor samples have not been collected, it is likely that the petroleum contamination is creating elevated levels of VOCs in the soil vapor above the groundwater. As part of the remedy, following the excavation of source materials, a soil vapor intrusion study will be completed to determine whether actions are needed to address exposures to contaminated soil vapor.

Site Health Assessment - Last Update: 08/08/2017

People may contact contaminated soil or groundwater if they dig below the ground surface. People are not drinking the contaminated groundwater since the area is served by a public water supply system that is not contaminated by the site. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings is referred to as soil vapor intrusion. The potential exists for people to inhale contaminants in indoor air due to soil vapor intrusion. An evaluation is needed to determine whether soil vapor intrusion is a concern for any off-site buildings.

	Start		End	
OU 01				
Agreement	6/11/15	ACT	7/2/15	ACT
Application Approval	4/15/15	ACT	6/11/15	ACT
Application Completion	4/3/15	ACT	4/15/15	ACT
OGC Docket - Eligibility Determination	4/15/15	ACT	6/11/15	ACT
Reclass Pkg.	8/11/17	ACT	9/5/17	ACT
Remedial Investigation	4/15/15	ACT	9/29/17	PLN

Remedy Description and Cost

Remedy Description for Operable Unit 01

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
BCP Significant Threat Determination Report



9/5/2017

Site Code C231093

Site Name 515 West 18th Street

remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Track 2 and Source Material Area Excavation

For the portions of the site where excavation is technically feasible, excavation and off-site disposal of all on-site soils which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8, in the upper 15 feet. In addition, excavation of all source material below 15 feet, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
 - non-aqueous phase liquids;
 - soil with visual waste material or non-aqueous phase liquid;
 - soil containing total SVOCs exceeding 500 ppm; and
 - soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.
- Approximately 8,100 cubic yards of soil exceeding restricted residential SCOs, and 14,400 cubic yards of source material and overlying soil will be removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

If a Track 2 restricted residential cleanup is achieved, a cover system will not be a required element of the remedy for this portion of the site.

3. Track 4 Areas Site Cover

For the portions of the site where deep excavation is not feasible due to adjacent buildings and the foundation piers for the High Line, all soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal to enable placement of a



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
BCP Significant Threat Determination Report



9/5/2017

Site Code C231093

Site Name 515 West 18th Street

site cover. Approximately 675 cubic yards of contaminated soils will be removed from these areas. In these areas a site cover will be required to allow for restricted residential use of the site. The site cover may consist of paved surface parking areas, sidewalks, or a soil cover.

Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). In areas where building foundations or building slabs preclude contact with the soil, the requirements for a site cover will be deferred until such time that they are removed.

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The site cover discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a provision 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.

The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
BCP Significant Threat Determination Report



9/5/2017

Site Code C231093

Site Name 515 West 18th Street

a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment;

- descriptions of the provisions of the environmental easement including any land use, groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater for site related contamination and also for indicators which will provide an understanding of the biological activity breaking down the contamination. (It is anticipated that groundwater contamination at the site boundary will decrease as a result of the excavation of source material from the site);
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Total Cost

N:\GIS\Projects\EA069_511525\W18_Related\CAD\Production Drawings\RAWP\Figure_4_5_6_previous_locs.dwg 5/3/2017 1:50:09 PM

- Site Boundary
- Monitoring Well/Soil Boring (Arcadis 2006-2007)
- Soil Boring (TRC 2005)
- Soil Boring (Arcadis 2006-2007)
- Monitoring Well/Soil Boring (Core 2012)
- Soil Boring (Core 2012)
- Test Pit (TRC 2005)

Sample ID	
Date	Part 375 Unrestricted Use SCOs*
Analyte	mg/kg
VOCs	0.02
1,2-Dichloroethane	0.12
2-Butanone	0.05
Acetone	0.06
Ethylbenzene	1
Methyl tert-butyl ether	0.93
Methylene Chloride	0.05
Toluene	0.7
Xylenes (total)	0.26
n-Propylbenzene	3.9

- Notes:
- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Muesser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
 - Sample locations are approximate.
 - * = 6 NYCRR Part 375-6.8(a) Unrestricted Use SCOs
 - Bold** and *Italicized* value indicates concentration exceeds Unrestricted SCOs
 - B = Analyte is found in the associated analysis batch blank
 - B-Dil = Detected in method blank(s) associated with sample analysis
 - J = Estimated value
 - NA = Not analyzed
 - ND = Not detected
 - D = The compound was found at a dilution factor

MW/SB-213	
Depth	8-9'
Date	2/10/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	ND
Ethylbenzene	0.0063
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	0.0018 J
Xylenes (total)	0.019
n-Propylbenzene	NA

SB-214	
Depth	11-13'
Date	1/21/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	0.056
Benzene	0.0021 J
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	NA

SB-MTP-3	
Depth	8-9'
Date	3/3/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	ND
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	0.0007 J
Xylenes (total)	ND
n-Propylbenzene	NA

SB-221	
Depth	2-4'
Date	1/20/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	ND
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	0.0017 J
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	NA

SB-14A	
Depth	4-5'
Date	9/11/2004
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	ND
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	NA

MW/SB-6	
Depth	10-0.5'
Date	1/26/2012
VOCs	mg/kg
1,2-Dichloroethane	NA
2-Butanone	NA
Acetone	NA
Benzene	NA
Ethylbenzene	0.011 J
Methyl tert-butyl ether	NA
Methylene Chloride	0.0062 B-Dil JB
Toluene	0.019 J
Xylenes (total)	0.028 J
n-Propylbenzene	0.12

MW/SB-5	
Depth	9-9.5'
Date	1/26/2012
VOCs	mg/kg
1,2-Dichloroethane	NA
2-Butanone	NA
Acetone	NA
Benzene	NA
Ethylbenzene	ND
Methyl tert-butyl ether	NA
Methylene Chloride	3.0 JB
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	7.1 J

MW/SB-4	
Depth	7-8'
Date	1/27/2012
VOCs	mg/kg
1,2-Dichloroethane	NA
2-Butanone	NA
Acetone	NA
Benzene	NA
Ethylbenzene	ND
Methyl tert-butyl ether	NA
Methylene Chloride	0.570 JB
Toluene	ND
Xylenes (total)	0.2 J
n-Propylbenzene	0.150 J

SB-7	
Depth	7-8'
Date	1/27/2012
VOCs	mg/kg
1,2-Dichloroethane	NA
2-Butanone	NA
Acetone	NA
Benzene	NA
Ethylbenzene	ND
Methyl tert-butyl ether	NA
Methylene Chloride	0.062 JB
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	ND

SB-8	
Depth	8-9'
Date	1/27/2012
VOCs	mg/kg
1,2-Dichloroethane	NA
2-Butanone	NA
Acetone	NA
Benzene	NA
Ethylbenzene	ND
Methyl tert-butyl ether	NA
Methylene Chloride	0.015 JB
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	ND

MW/SB-3	
Depth	6-6.5'
Date	1/25/2012
VOCs	mg/kg
1,2-Dichloroethane	NA
2-Butanone	NA
Acetone	NA
Benzene	NA
Ethylbenzene	7.4
Methyl tert-butyl ether	NA
Methylene Chloride	1.20 JB
Toluene	1.2 JB
Xylenes (total)	68
n-Propylbenzene	5.5

SB-254	
Depth	8-9'
Date	3/3/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	ND
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	0.0014 J
Xylenes (total)	0.0052 J
n-Propylbenzene	NA

SB-222	
Depth	1-3'
Date	1/21/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	0.39 J
Benzene	0.0021 J
Ethylbenzene	17
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	1.0 J
Xylenes (total)	160
n-Propylbenzene	NA

SB-MTP-1	
Depth	3-4'
Date	2/10/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	0.83 J
Acetone	ND
Benzene	0.29
Ethylbenzene	0.72
Methyl tert-butyl ether	0.17 J
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	3.8
n-Propylbenzene	NA

SB-11	
Depth	5-6'
Date	9/11/2004
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	0.0015
Ethylbenzene	0.31
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	2.02
n-Propylbenzene	NA

SB-209	
Depth	9.4-10'
Date	1/20/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	0.067
Benzene	0.0022 J
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	NA

SB-208	
Depth	2-3'
Date	2/10/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	0.025 J
Benzene	0.0006 J
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	0.0021 J
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	NA

SB-210	
Depth	7-9'
Date	12/16/2006
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	0.0011 J
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	ND
n-Propylbenzene	NA

SB-9	
Depth	4-5'
Date	9/12/2004
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	0.030 J
Benzene	ND
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	ND
Xylenes (total)	0.0044
n-Propylbenzene	NA

SB-MTP-2	
Depth	9-10'
Date	2/10/2007
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	0.0007 J
Ethylbenzene	ND
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	0.0008 J
Xylenes (total)	ND
n-Propylbenzene	NA

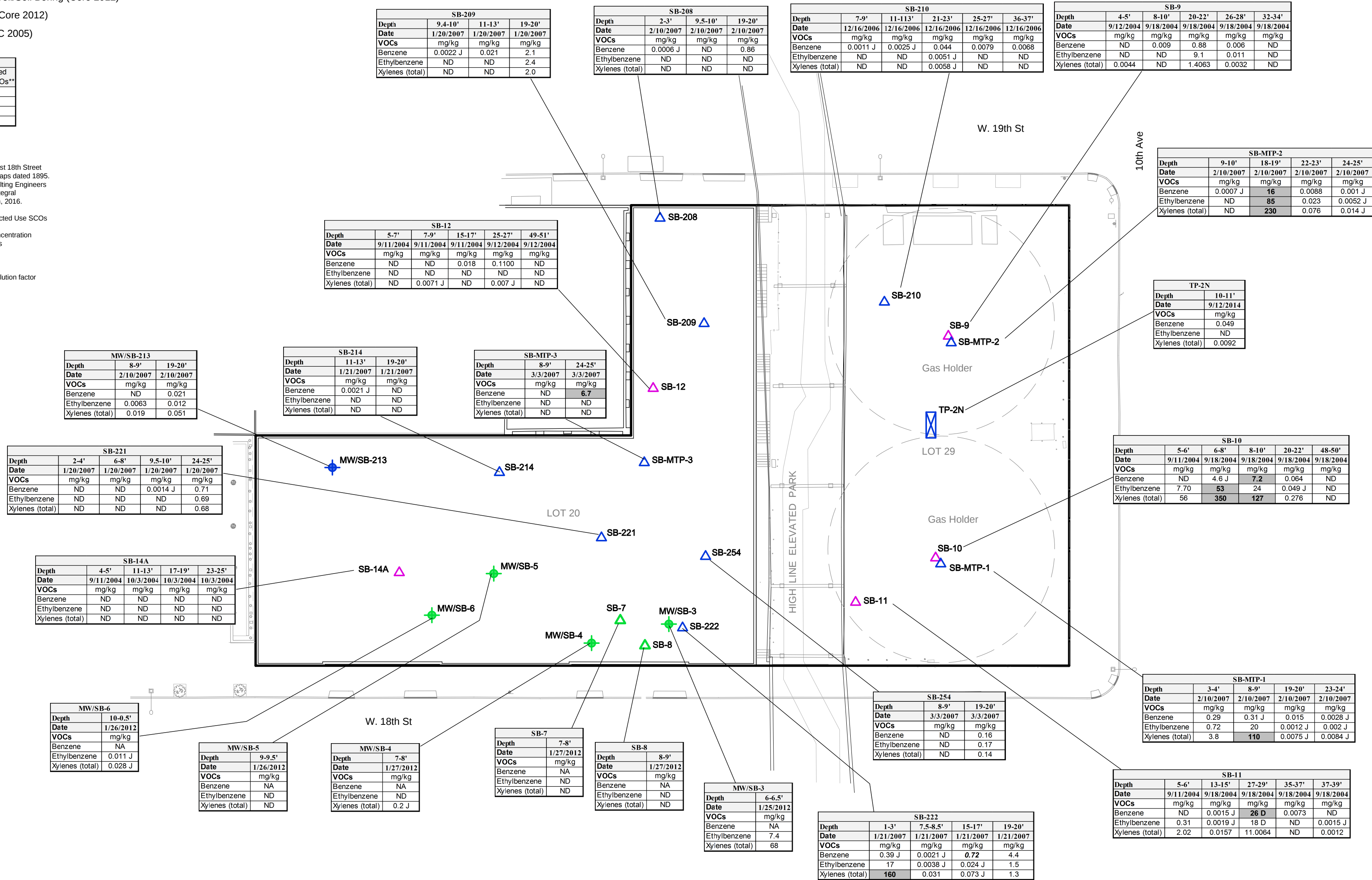
TP-2N	
Depth	10-11'
Date	9/12/2014
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	0.032 J
Benzene	0.049
Ethylbenzene	ND
Methyl tert-butyl ether	0.069 J
Methylene Chloride	ND
Toluene	0.0019 J
Xylenes (total)	0.0092
n-Propylbenzene	NA

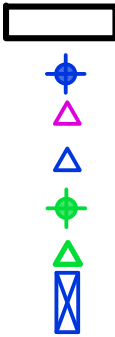
SB-10	
Depth	5-6'
Date	9/11/2004
VOCs	mg/kg
1,2-Dichloroethane	ND
2-Butanone	ND
Acetone	ND
Benzene	ND
Ethylbenzene	7.70
Methyl tert-butyl ether	ND
Methylene Chloride	ND
Toluene	2.6
Xylenes (total)	56
n-Propylbenzene	NA

- Site Boundary
- Monitoring Well/Soil Boring (Arcadis 2006-2007)
- Soil Boring (TRC 2005)
- Soil Boring (Arcadis 2006-2007)
- Monitoring Well/Soil Boring (Core 2012)
- Soil Boring (Core 2012)
- Test Pit (TRC 2005)

Sample ID	
Date	Part 375 Restricted Residential Use SCOs**
Analyte	mg/kg
VOCs	4.8
Benzene	41
Ethylbenzene	100
Xylenes (total)	

- Notes:
- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
 - Sample locations are approximate.
 - ** = 6 NYCRR Part 375-6.8(b) Restricted Use SCOs
 - Restricted-Residential**
 - and shaded** value indicates concentration exceeds Restricted Residential SCOs
 - J = Estimated value
 - NA = Not analyzed
 - ND = Not detected
 - D = The compound was found at a dilution factor





Site Boundary

Monitoring Well/Soil Boring (Arcadis 2006-2007)

Soil Boring (TRC 2005)

Soil Boring (Arcadis 2006-2007)

Monitoring Well/Soil Boring (Core 2012)

Soil Boring (Core 2012)

Test Pit (TRC 2005)

Sample ID	Part 375 Unrestricted
Date	Use SCOs*
Analyte	mg/kg
SVOcs	
Acenaphthene	20
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Dibenzofuran	7
Fluoranthene	100
Fluorene	30
Indeno(1,2,3-cd)pyrene	0.5
Naphthalene	12
Phenanthrene	100
Pyrene	100

Notes:

- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
- Sample locations are approximate.
- * = 6 NYCRR Part 375-6.8(a) Unrestricted Use SCOs
- Bold** and *Italicized* value indicates concentration exceeds Unrestricted SCOs
- B = Analyte is found in the associated analysis batch blank
- B-Dil = Detected in method blank(s) associated with sample analysis
- J = Estimated value
- NA = Not analyzed
- ND = Not detected
- D = The compound was found at a dilution factor

Depth	5-7'	7-9'	15-17'	25-27'	49-51'
Date	9/11/2004	9/11/2004	9/11/2004	9/12/2004	9/12/2004
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	ND	0.049 J	ND	ND	ND
Anthracene	0.035 J	0.150 J	ND	ND	ND
Benzo(a)anthracene	0.052 J	0.240 J	ND	ND	ND
Benzo(a)pyrene	0.052 J	0.220 J	ND	ND	ND
Benzo(b)fluoranthene	0.059 J	0.0240 J	ND	ND	ND
Benzo(k)fluoranthene	ND	0.093 J	ND	ND	ND
Chrysene	0.064 J	0.20 J	ND	ND	ND
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND
Dibenzofuran	ND	0.070 J	ND	ND	ND
Fluoranthene	0.120 J	0.57	ND	ND	ND
Fluorene	ND	0.110J	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ND	0.100 J	ND	ND	ND
Naphthalene	ND	0.048 J	ND	ND	ND
Phenanthrene	0.080J	0.56	ND	ND	ND
Pyrene	0.120J	0.43	ND	ND	ND

Depth	9.4-10'	11-13'	19-20'
Date	1/20/2007	1/20/2007	1/20/2007
SVOcs	mg/kg	mg/kg	mg/kg
Acenaphthene	ND	ND	0.071 J
Anthracene	ND	ND	0.12 J
Benzo(a)anthracene	ND	ND	0.12 J
Benzo(a)pyrene	ND	ND	0.14 J
Benzo(b)fluoranthene	ND	ND	0.14 J
Benzo(k)fluoranthene	ND	ND	0.15 J
Chrysene	ND	ND	0.12 J
Dibenzo(a,h)anthracene	ND	ND	0.12 J
Dibenzofuran	ND	ND	0.079 J
Fluoranthene	ND	ND	0.13 J
Fluorene	ND	ND	0.096 J
Indeno(1,2,3-cd)pyrene	ND	ND	0.13 J
Naphthalene	ND	ND	0.29 J
Phenanthrene	ND	ND	0.11 J
Pyrene	ND	ND	0.12 J

Depth	2-3'	9.5-10'	19-20'
Date	2/10/2007	2/10/2007	2/10/2007
SVOcs	mg/kg	mg/kg	mg/kg
Acenaphthene	0.24 J	ND	ND
Anthracene	0.44	0.071 J	ND
Benzo(a)anthracene	1.2	0.13 J	ND
Benzo(a)pyrene	1.3	0.14 J	ND
Benzo(b)fluoranthene	1.7	0.17 J	ND
Benzo(k)fluoranthene	0.60	ND	ND
Chrysene	1.2	0.13 J	ND
Dibenzo(a,h)anthracene	0.19 J	ND	ND
Dibenzofuran	0.17 J	ND	ND
Fluoranthene	3.1	0.30 J	ND
Fluorene	0.25 J	ND	ND
Indeno(1,2,3-cd)pyrene	0.88 J	0.089 J	ND
Naphthalene	0.15 J	ND	ND
Phenanthrene	2.5	0.31 J	ND
Pyrene	2.5	0.23 J	ND

Depth	7-9'	11-113'	21-23'	25-27'	36-37'
Date	12/16/2006	12/16/2006	12/16/2006	12/16/2006	12/16/2006
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	ND	0.17 J	ND	ND	ND
Anthracene	0.13 J	0.091 J	ND	ND	ND
Benzo(a)anthracene	0.44	ND	ND	ND	ND
Benzo(a)pyrene	0.50 J	ND	ND	ND	ND
Benzo(b)fluoranthene	0.60	ND	ND	ND	ND
Benzo(k)fluoranthene	0.55 J	ND	ND	ND	ND
Chrysene	0.51	ND	ND	ND	ND
Dibenzo(a,h)anthracene	0.15 J	ND	ND	ND	ND
Dibenzofuran	ND	ND	ND	ND	ND
Fluoranthene	0.72	ND	ND	ND	ND
Fluorene	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.27 J	ND	ND	ND	ND
Naphthalene	0.16 J	0.086 J	0.059 J	ND	ND
Phenanthrene	0.51	ND	ND	ND	ND
Pyrene	0.93 J	0.084 J	0.063 J	ND	ND

Depth	4-5'	8-10'	20-22'	26-28'	32-34'
Date	9/12/2004	9/18/2004	9/18/2004	9/18/2004	9/18/2004
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	0.078 J	0.039 J	2.50	0.038 J	ND
Anthracene	0.049 J	0.091 J	2.9 D	0.056 J	ND
Benzo(a)anthracene	0.190 J	0.29 J	2.90	0.039 J	ND
Benzo(a)pyrene	0.240 J	0.26 J	2.0	ND	ND
Benzo(b)fluoranthene	0.310 J	0.28 J	2.2	ND	ND
Benzo(k)fluoranthene	0.160 J	0.14 J	1.30 J	ND	ND
Chrysene	0.280 J	0.26 J	2.5	0.05 J	ND
Dibenzo(a,h)anthracene	ND	ND	0.095 J	ND	ND
Dibenzofuran	0.140 J	ND	2.6	ND	ND
Fluoranthene	0.740	0.53	5.7 D	0.1 J	ND
Fluorene	0.690	0.62	5.5 D	0.1 J	ND
Indeno(1,2,3-cd)pyrene	0.100 J	0.13 J	0.044	ND	ND
Naphthalene	ND	0.044 J	94 D	0.78	0.075 J
Phenanthrene	0.700	0.25 J	8.5 D	0.14 J	ND
Pyrene	0.69	0.620	5.5 D	0.1 J	ND

Depth	9-11'	18-19'	22-23'	24-25'
Date	2/10/2007	2/10/2007	2/10/2007	2/10/2007
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	0.060 J	74 J	0.31 J	0.089 J
Anthracene	0.11 J	81	0.15 J	0.082 J
Benzo(a)anthracene	0.18 J	46 J	ND	ND
Benzo(a)pyrene	0.19 J	35 J	ND	ND
Benzo(b)fluoranthene	0.21 J	26 J	ND	ND
Benzo(k)fluoranthene	0.15 J	35 J	ND	ND
Chrysene	0.25 J	47 J	ND	ND
Dibenzo(a,h)anthracene	0.11 J	ND	ND	ND
Dibenzofuran	ND	93	ND	ND
Fluoranthene	0.18 J	160	0.32 J	0.12 J
Fluorene	0.095 J	100	0.068 J	ND
Indeno(1,2,3-cd)pyrene	0.14 J	20 J	ND	ND
Naphthalene	0.52	22,000 D	0.72	0.54
Phenanthrene	0.37 J	300	ND	0.074 J
Pyrene	0.27 J	130	0.34 J	0.36 J

Depth	10-11'
Date	9/12/2014
SVOcs	mg/kg
Acenaphthene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Pyrene	ND

Depth	5-6'	6-8'	8-10'	20-22'	48-50'
Date	9/11/2004	9/18/2004	9/18/2004	9/18/2004	9/18/2004
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	0.99	0.47 J	ND	0.074 J	ND
Anthracene	1.8	1.1	ND	0.1 J	ND
Benzo(a)anthracene	2.7	1.6	ND	0.068 J	ND
Benzo(a)pyrene	2.4	1.2	ND	0.049 J	ND
Benzo(b)fluoranthene	2.7	1.4	0.5 J	0.056 J	ND
Benzo(k)fluoranthene	1.2 J	0.8 J	ND	ND	ND
Chrysene	2.3	1.2	ND	0.075 J	ND
Dibenzo(a,h)anthracene	0.12 J	ND	ND	ND	ND
Dibenzofuran	0.68 J	0.37 J	ND	0.089 J	ND
Fluoranthene	5.3	3.1	0.65 J	0.17 J	ND
Fluorene	6.8 D	3.6	0.79 J	0.17 J	ND
Indeno(1,2,3-cd)pyrene	0.75	0.21 J	ND	ND	ND
Naphthalene	9.1 D	9.2 D	4	5.6 D	ND
Phenanthrene	5.3	3.2	0.59 J	0.29 J	ND
Pyrene	6.8 D	3.6	0.79 J	0.17 J	ND

Depth	3-4'	8-9'	19-20'	23-24'
Date	2/10/2007	2/10/2007	2/10/2007	2/10/2007
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	0.085 J	0.17 J	1.2	ND
Anthracene	0.16 J	0.30 J	0.52	ND
Benzo(a)anthracene	0.49	0.39	0.48	ND
Benzo(a)pyrene	0.53	0.28 J	0.36 J	ND
Benzo(b)fluoranthene	0.57	0.31 J	0.43 J	ND
Benzo(k)fluoranthene	0.30 J	0.14 J	0.19 J	ND
Chrysene	0.49	0.34 J	0.43 J	ND
Dibenzo(a,h)anthracene	0.075 J	ND	ND	ND
Dibenzofuran	0.099 J	0.11 J	0.65	ND
Fluoranthene	0.96	0.98	1.5	ND
Fluorene	0.17 J	0.22 J	0.84	ND
Indeno(1,2,3-cd)pyrene	0.33 J	0.15 J	0.19 J	ND
Naphthalene	0.61	5.5	3.9	ND
Phenanthrene	0.76	1.1	2.1	ND
Pyrene	0.91	0.97	1.3	ND

Depth	5-6'	13-15'	27-29'	35-37'	37-39'
Date	9/11/2004	9/18/2004	9/18/2004	9/18/2004	9/18/2004
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	0.4	ND	12 D	ND	ND
Anthracene	1	ND	19 D	ND	ND
Benzo(a)anthracene	2	ND	16 D	ND	ND
Benzo(a)pyrene	1.7	ND	11 D	ND	ND
Benzo(b)fluoranthene	2.2	ND	12 D	ND	ND
Benzo(k)fluoranthene	0.83 J	ND	5.2	ND	ND
Chrysene	1.8	ND	13 D	ND	ND
Dibenzo(a,h)anthracene	0.12 J	ND	0.4 J	ND	ND
Dibenzofuran	0.88	ND	15 D	ND	ND
Fluoranthene	4.3 D	0.064 J	40 JD	ND	ND
Fluorene	4.3 D	0.073 J	32 D	ND	ND
Indeno(1,2,3-cd)pyrene	0.74	ND	1.9	ND	ND
Naphthalene	2.4	ND	1300 DJ	0.28 J	ND
Phenanthrene	4.5 D	0.089 J	63 D	ND	ND
Pyrene	4.3 D	0.073 J	32 D	ND	ND

Depth	8-9'	19-20'
Date	3/3/2007	3/3/2007
SVOcs	mg/kg	mg/kg
Acenaphthene	ND	ND
Anthracene	ND	ND
Benzo(a)anthracene	ND	ND
Benzo(a)pyrene	ND	ND
Benzo(b)fluoranthene	ND	ND
Benzo(k)fluoranthene	ND	ND
Chrysene	ND	ND
Dibenzo(a,h)anthracene	ND	ND
Dibenzofuran	ND	ND
Fluoranthene	ND	0.11 J
Fluorene	ND	ND
Indeno(1,2,3-cd)pyrene	ND	ND
Naphthalene	ND	0.13 J
Phenanthrene	ND	0.20 J
Pyrene	ND	0.11 J

Depth	1-3'	7.5-8.5'	15-17'	19-20'
Date	1/21/2007	1/21/2007	1/21/2007	1/21/2007
SVOcs	mg/kg	mg/kg	mg/kg	mg/kg
Acenaphthene	0.099 J	ND	1.1	ND
Anthracene	ND	ND	0.21 J	ND
Benzo(a)anthracene	ND	ND	0.59	ND
Benzo(a)pyrene	ND	ND	1.4	ND
Benzo(b)fluoranthene	ND	ND	1.3	ND
Benzo(k)fluoranthene	ND	ND	0.85	ND
Chrysene	ND	ND	0.73	ND
Dibenzo(a,h)anthracene	ND	ND	0.24 J	ND
Dibenzofuran	ND	ND	ND	ND
Fluoranthene	ND	ND	0.87	ND
Fluorene	0.20 J	ND	2.0	ND
Indeno(1,2,3-cd)pyrene	ND	ND	1.3	ND
Naphthalene	ND	ND	42 D	0.13 J
Phenanthrene	0.34 J	ND	3.8	ND
Pyrene	0.070 J	ND	1.3	ND

Depth	7-8'
Date	1/27/2012
SVOcs	mg/kg
Acenaphthene	ND
Anthracene	1.67 J
Benzo(a)anthracene	6.36
Benzo(a)pyrene	6.63
Benzo(b)fluoranthene	0.113 J
Benzo(k)fluoranthene	0.0854 J
Chrysene	0.0957 J
Dibenzo(a,h)anthracene	0.0907 J
Dibenzofuran	ND
Fluoranthene	9.58
Fluorene	ND
Indeno(1,2,3-cd)pyrene	1.960 J
Naphthalene	ND
Phenanthrene	NA
Pyrene	6.84

Depth	8-9'
Date	1/27/2012
SVOcs	mg/kg
Acenaphthene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	NA
Pyrene	ND

MW/SB-3	
Depth	6-6.5'
Date	1/25/2012
SVOCS	mg/kg
Acenaphthene	ND
Anthracene	ND
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Fluorene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	8.48
Phenanthrene	NA
Pyrene	ND

- Site Boundary
- Monitoring Well/Soil Boring (Arcadis 2006-2007)
- Soil Boring (TRC 2005)
- Soil Boring (Arcadis 2006-2007)
- Monitoring Well/Soil Boring (Core 2012)
- Soil Boring (Core 2012)
- Test Pit (TRC 2005)

Sample ID	
Date	Part 375 Restricted
Analyte	Residential Use SCOs**
SVOCs	
Benzo(a)anthracene	mg/kg
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	3.9
Chrysene	3.9
Dibenzo(a,h)anthracene	0.33
Dibenzofuran	59
Fluoranthene	100
Indeno(1,2,3-cd)pyrene	0.5
Naphthalene	100
Phenanthrene	100
Pyrene	100

- Notes:
- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
 - Sample locations are approximate.
 - ** = 6 NYCRR Part 375-6.8(b) Restricted Use SCOs
 - Restricted-Residential
 - Bold** and **shaded** value indicates concentration exceeds Restricted Residential SCOs
 - J = Estimated value
 - NA = Not analyzed
 - ND = Not detected
 - D = The compound was found at a dilution factor

MW/SB-213	
Depth	8-9'
Date	2/10/2007
SVOCs	mg/kg
Benzo(a)anthracene	1.2 J
Benzo(a)pyrene	1.1 J
Benzo(b)fluoranthene	2.0
Benzo(k)fluoranthene	1.0 J
Chrysene	1.8
Dibenzo(a,h)anthracene	0.23 J
Dibenzofuran	0.26 J
Fluoranthene	2.5
Indeno(1,2,3-cd)pyrene	1.0 J
Naphthalene	4.6
Phenanthrene	3.1
Pyrene	2.4

SB-214	
Depth	11-13'
Date	1/21/2007
SVOCs	mg/kg
Benzo(a)anthracene	3.76
Benzo(a)pyrene	0.16 J
Benzo(b)fluoranthene	0.23 J
Benzo(k)fluoranthene	ND
Chrysene	2.74
Dibenzo(a,h)anthracene	0.046 J
Dibenzofuran	0.58
Fluoranthene	1.1
Indeno(1,2,3-cd)pyrene	0.093 J
Naphthalene	ND
Phenanthrene	2.8
Pyrene	1.6

SB-MTP-3	
Depth	8-9'
Date	3/3/2007
SVOCs	mg/kg
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Pyrene	ND

SB-221	
Depth	2-4'
Date	1/20/2007
SVOCs	mg/kg
Benzo(a)anthracene	0.18 J
Benzo(a)pyrene	0.12 J
Benzo(b)fluoranthene	0.13 J
Benzo(k)fluoranthene	0.12 J
Chrysene	0.20 J
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	0.38
Indeno(1,2,3-cd)pyrene	0.12 J
Naphthalene	ND
Phenanthrene	0.34 J
Pyrene	0.41

SB-14A	
Depth	4-5'
Date	9/11/2004
SVOCs	mg/kg
Benzo(a)anthracene	1
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	1.4
Benzo(k)fluoranthene	ND
Chrysene	1.1
Dibenzo(a,h)anthracene	0.120 J
Dibenzofuran	0.41
Fluoranthene	1.5
Indeno(1,2,3-cd)pyrene	0.69
Naphthalene	0.52
Phenanthrene	1.4
Pyrene	1.6

MW/SB-6	
Depth	10-0.5'
Date	1/26/2012
SVOCs	mg/kg
Benzo(a)anthracene	2.33
Benzo(a)pyrene	2.66
Benzo(b)fluoranthene	1.49
Benzo(k)fluoranthene	1.81
Chrysene	1.75
Dibenzo(a,h)anthracene	0.283
Dibenzofuran	ND
Fluoranthene	1.88
Indeno(1,2,3-cd)pyrene	0.459
Naphthalene	0.116 J
Phenanthrene	NA
Pyrene	2.17

MW/SB-5	
Depth	9-9.5'
Date	1/26/2012
SVOCs	mg/kg
Benzo(a)anthracene	0.172 J
Benzo(a)pyrene	0.138 J
Benzo(b)fluoranthene	0.137 J
Benzo(k)fluoranthene	0.114 J
Chrysene	0.277
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	0.672
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	NA
Pyrene	0.652

MW/SB-4	
Depth	7-8'
Date	1/27/2012
SVOCs	mg/kg
Benzo(a)anthracene	0.0824 J
Benzo(a)pyrene	0.113 J
Benzo(b)fluoranthene	0.0854 J
Benzo(k)fluoranthene	0.0957 J
Chrysene	0.0907 J
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	NA
Pyrene	0.114 J

SB-7	
Depth	7-8'
Date	1/27/2012
SVOCs	mg/kg
Benzo(a)anthracene	6.36
Benzo(a)pyrene	6.63
Benzo(b)fluoranthene	5.26
Benzo(k)fluoranthene	5.15
Chrysene	5.69
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	9.58
Indeno(1,2,3-cd)pyrene	1.960 J
Naphthalene	ND
Phenanthrene	NA
Pyrene	6.84

SB-8	
Depth	8-9'
Date	1/27/2012
SVOCs	mg/kg
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	NA
Pyrene	ND

MW/SB-3	
Depth	6-6.5'
Date	1/25/2012
SVOCs	mg/kg
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Pyrene	ND

SB-254	
Depth	8-9'
Date	3/3/2007
SVOCs	mg/kg
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Pyrene	ND

SB-222	
Depth	1-3'
Date	1/21/2007
SVOCs	mg/kg
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Pyrene	ND

SB-208	
Depth	2-3'
Date	2/10/2007
SVOCs	mg/kg
Benzo(a)anthracene	1.2
Benzo(a)pyrene	1.3
Benzo(b)fluoranthene	1.7
Benzo(k)fluoranthene	0.60
Chrysene	1.2
Dibenzo(a,h)anthracene	0.19 J
Dibenzofuran	0.17 J
Fluoranthene	3.1
Indeno(1,2,3-cd)pyrene	0.88 J
Naphthalene	0.15 J
Phenanthrene	2.5
Pyrene	2.5

SB-210	
Depth	7-9'
Date	12/16/2006
SVOCs	mg/kg
Benzo(a)anthracene	0.44
Benzo(a)pyrene	0.50 J
Benzo(b)fluoranthene	0.60
Benzo(k)fluoranthene	0.55 J
Chrysene	0.51
Dibenzo(a,h)anthracene	0.15 J
Dibenzofuran	ND
Fluoranthene	0.72
Indeno(1,2,3-cd)pyrene	0.27 J
Naphthalene	0.16 J
Phenanthrene	0.51
Pyrene	0.93 J

SB-9	
Depth	4-5'
Date	9/12/2004
SVOCs	mg/kg
Benzo(a)anthracene	0.190 J
Benzo(a)pyrene	0.240 J
Benzo(b)fluoranthene	0.310 J
Benzo(k)fluoranthene	0.160 J
Chrysene	0.280 J
Dibenzo(a,h)anthracene	ND
Dibenzofuran	0.140 J
Fluoranthene	0.740
Indeno(1,2,3-cd)pyrene	0.100 J
Naphthalene	ND
Phenanthrene	0.700
Pyrene	0.69

SB-MTP-2	
Depth	9-10'
Date	2/10/2007
SVOCs	mg/kg
Benzo(a)anthracene	0.18 J
Benzo(a)pyrene	0.19 J
Benzo(b)fluoranthene	0.21 J
Benzo(k)fluoranthene	0.15 J
Chrysene	0.25 J
Dibenzo(a,h)anthracene	0.11 J
Dibenzofuran	ND
Fluoranthene	0.18 J
Indeno(1,2,3-cd)pyrene	0.14 J
Naphthalene	0.52
Phenanthrene	0.37 J
Pyrene	0.27 J

TP-2N	
Depth	10-11'
Date	9/12/2014
SVOCs	mg/kg
Benzo(a)anthracene	ND
Benzo(a)pyrene	ND
Benzo(b)fluoranthene	ND
Benzo(k)fluoranthene	ND
Chrysene	ND
Dibenzo(a,h)anthracene	ND
Dibenzofuran	ND
Fluoranthene	ND
Indeno(1,2,3-cd)pyrene	ND
Naphthalene	ND
Phenanthrene	ND
Pyrene	ND

SB-10	
Depth	5-6'
Date	9/11/2004
SVOCs	mg/kg
Benzo(a)anthracene	2.7
Benzo(a)pyrene	2.4
Benzo(b)fluoranthene	2.7
Benzo(k)fluoranthene	1.2 J
Chrysene	2.3
Dibenzo(a,h)anthracene	0.12 J
Dibenzofuran	0.68 J
Fluoranthene	5.3
Indeno(1,2,3-cd)pyrene	0.75
Naphthalene	9.1 D
Phenanthrene	5.3
Pyrene	6.8 D

SB-MTP-1	
Depth	3-4'
Date	2/10/2007
SVOCs	mg/kg
Benzo(a)anthracene	0.48
Benzo(a)pyrene	0.53
Benzo(b)fluoranthene	0.57
Benzo(k)fluoranthene	0.30 J
Chrysene	0.48
Dibenzo(a,h)anthracene	0.075 J
Dibenzofuran	0.099 J
Fluoranthene	0.96
Indeno(1,2,3-cd)pyrene	0.33 J
Naphthalene	0.61
Phenanthrene	0.76
Pyrene	0.91

SB-11	
Depth	5-6'
Date	9/11/2004
SVOCs	mg/kg
Benzo(a)anthracene	2
Benzo(a)pyrene	1.7
Benzo(b)fluoranthene	2.2
Benzo(k)fluoranthene	0.83 J
Chrysene	1.8
Dibenzo(a,h)anthracene	0.12 J
Dibenzofuran	0.68
Fluoranthene	4.3 D
Indeno(1,2,3-cd)pyrene	0.74
Naphthalene	2.4
Phenanthrene	4.5 D
Pyrene	4.3 D

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-  Site Boundary
-  Monitoring Well/Soil Boring (Arcadis 2006-2007)
-  Soil Boring (TRC 2005)
-  Soil Boring (Arcadis 2006-2007)

Sample ID	
Date	Part 375 Unrestricted Use SCOs*
Analyte	
Metals	mg/kg
Arsenic	13
Cadmium	2.5
Copper	50
Cyanide	27
Lead	63
Mercury	0.18
Zinc	109

Notes:

- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
- Sample locations are approximate.
- * = 6 NYCRR Part 375-6.8(a) Unrestricted Use SCOs
- Bold** and *Italicized* value indicates concentration exceeds Unrestricted SCOs
- B = Analyte is found in the associated analysis batch blank
- J = Estimated value
- R = Data rejected based on ARCADIS and TRC data validation
- NA = Not analyzed
- ND = Not detected
- NS = No standard

SB-214				
Depth	5-7'	9.5-10'	11-13'	19-20'
Date	1/21/2007	1/21/2007	1/21/2007	1/21/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.9	1.5	1.4	9.0
Cadmium	ND	ND	ND	ND
Copper	25.3	11.5	27.5	14.9
Cyanide	NA	ND	ND	NA
Lead	6.7	5.2	4.6	9.7
Mercury	0.019 B	ND	0.03 B	0.049
Zinc	22.6 J	14.5	19.4 J	59.6 J

SB-14A				
Depth	4-5'	11-13'	17-19'	23-25'
Date	9/11/2004	10/3/2004	10/3/2004	10/3/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	3.72 J	1.49	1.19	6.72
Cadmium	ND	ND	ND	ND
Copper	23.4	14.3	13.1	13.3
Cyanide	ND	0.58	0.57	0.73
Lead	184	8.21	5.34	8.72
Mercury	0.23 J	0.021 R	0.016 R	0.033 R
Zinc	35.5	20	18.8	52.8

SB-221				
Depth	2-4'	6-8'	9.5-10'	24-25'
Date	1/20/2007	1/20/2007	1/20/2007	1/20/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	4.2	2.9	2.6	10
Cadmium	ND	ND	ND	ND
Copper	29.9	17.5	16.3	16.8
Cyanide	ND	ND	NA	ND
Lead	94.4	52.5	9.5	10.3
Mercury	0.28	0.035 B	ND	0.035 B
Zinc	55.7 J	24.3 J	29.1 J	60.9 J

SB-222				
Depth	1-3'	7.5-8.5'	15-17'	19-20'
Date	1/21/2007	1/21/2007	1/21/2007	1/21/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	15.8	1.7	2.7	7.9
Cadmium	0.12 B	ND	ND	ND
Copper	109	18.3	15.1	14.4
Cyanide	0.32 B	ND	ND	NA
Lead	459	6.6	8.5	9.6
Mercury	0.47	ND	0.023 B	0.042 B
Zinc	88.3 J	20.4 J	24.7	59.9 J

SB-209			
Depth	9.4-10'	11-13'	19-20'
Date	1/20/2007	1/20/2007	1/20/2007
Metals	mg/kg	mg/kg	mg/kg
Arsenic	1.7	2.2	9.1
Cadmium	ND	ND	ND
Copper	14.2	19.5	13.9
Cyanide	NA	ND	NA
Lead	5.9	7.6	9.1
Mercury	0.023 B	0.024 B	0.043 B
Zinc	23 J	30.7 J	57.9 J

SB-12					
Depth	5-7'	7-9'	15-17'	25-27'	49-51'
Date	9/11/2004	9/11/2004	9/11/2004	9/12/2004	9/12/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.83 J	1.55 J	2.63 J	7.78 J	1.03 J
Cadmium	ND	ND	ND	ND	ND
Copper	6.29	7.27	17.9	14.6	16.1
Cyanide	1.24	ND	ND	ND	ND
Lead	54.3	68.6	13.6	18.1	2.63
Mercury	ND	ND	ND	ND	ND
Zinc	34.2	40	28.5	51.8	14.9

MW/SB-213		
Depth	8-9'	19-20'
Date	2/10/2007	2/10/2007
Metals	mg/kg	mg/kg
Arsenic	20 J	7.8 J
Cadmium	ND	ND
Copper	44.3 J	14.2 J
Cyanide	20.2	ND
Lead	172 J	9.5 J
Mercury	0.16 J	0.04 J
Zinc	65.9 J	52.1 J

SB-MTP-3		
Depth	8-9'	24-25'
Date	3/3/2007	3/3/2007
Metals	mg/kg	mg/kg
Arsenic	2.8	10
Cadmium	ND	ND
Copper	17.9	16.5
Cyanide	ND	ND
Lead	8.3 J	11 J
Mercury	0.036 B	0.048 B
Zinc	50.7	63.2

SB-208			
Depth	2-3'	9.5-10'	19-20'
Date	1/20/2007	1/20/2007	1/20/2007
Metals	mg/kg	mg/kg	mg/kg
Arsenic	4.8	2.7	9
Cadmium	0.41 B	ND	ND
Copper	41.8	20.5	15.7
Cyanide	1.0	ND	ND
Lead	708	31.9	10.1
Mercury	0.55	0.055	0.037 B
Zinc	399 J	43.6 J	58.5 J

SB-210					
Depth	7-9'	11-13'	21-23'	25-27'	36-37'
Date	12/16/2006	12/16/2006	12/16/2006	12/16/2006	12/16/2006
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	9.3 J	5.0 J	2.5 J	1.3 J	0.9 J
Cadmium	3.5	ND	0.0800B	ND	ND
Copper	176	17.5	24.6	5.6	10.9
Cyanide	2.5	2.3	3.5	1.9	0.49 B
Lead	535	15.1	85.2	6.6	6.4
Mercury	0.23 J	0.048 J	0.36 J	ND	ND
Zinc	282	50.6	61.2	15.6	22.6

SB-9				
Depth	4-5'	8-10'	26-28'	32-34'
Date	9/12/2004	9/18/2004	9/18/2004	9/18/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.94 J	1.79	1.7	1.53
Cadmium	ND	ND	ND	ND
Copper	16	18.1	16.1	9.37
Cyanide	ND	ND	ND	ND
Lead	21.9	14.5 J	88.6 J	4.31 J
Mercury	ND	0.11 J	0.01 J	ND
Zinc	32.1	39.1	30.9	11.6

SB-MTP-2				
Depth	9-10'	18-19'	22-23'	24-25'
Date	2/10/2007	2/10/2007	2/10/2007	2/10/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	5.0 J	9.4 J	0.55 J	0.63 J
Cadmium	0.36 B	ND	ND	ND
Copper	38.3 J	30.3 J	8.20 J	7.7 J
Cyanide	2.2	179	ND	ND
Lead	76.7 J	1,430 J	2.9 J	3.7 J
Mercury	0.14 J	0.46 J	0.021 J	0.02 J
Zinc	88.2 J	197 J	9.1 J	11.8 J

SB-10					
Depth	5-6'	6-8'	8-10'	20-22'	48-50'
Date	9/11/2004	9/18/2004	9/18/2004	9/18/2004	9/18/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.7 J	2.42	4.02	2.47	2.01
Cadmium	ND	ND	ND	ND	ND
Copper	19.3	26.5	26.5	6.65	18.3
Cyanide	ND	ND	ND	2.08	ND
Lead	53.6	55.3 J	40.4 J	21.6 J	7.51 J
Mercury	ND	0.09 J	0.07 J	ND	0.01 J
Zinc	41.5	50.5	50	11.3	33.9

SB-MTP-1				
Depth	3-4'	8-9'	19-20'	23-24'
Date	2/10/2007	2/10/2007	2/10/2007	2/10/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	2.2 J	1.2 J	4.8 J	3 J
Cadmium	ND	ND	ND	ND
Copper	18.8 J	14.7 J	18.1 J	26.1 J
Cyanide	ND	NA	NA	NA
Lead	178 J	11.5 J	12.4 J	14.1 J
Mercury	0.25 J	ND	0.039 J	ND
Zinc	123 J	28.6 J	68.1 J	41.1 J

SB-11				
Depth	5-6'	13-15'	27-29'	37-39'
Date	9/11/2004	9/18/2004	9/18/2004	9/18/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	3.15 J	1.56	3.85	0.295 J
Cadmium	ND	ND	ND	ND
Copper	20.3 J	15.2	20.2	5.42
Cyanide	ND	ND	45 R	ND
Lead	110 J	15.8 J	1740 J	5.1 J
Mercury	0.48 J	0.03 J	0.02 J	0.01 J
Zinc	59.5	30.2	69.4	10.1

SB-254		
Depth	8-9'	19-20'
Date	3/3/2007	3/3/2007
Metals	mg/kg	mg/kg
Arsenic	0.43 B	9.9
Cadmium	ND	ND
Copper	10.1	14.2
Cyanide	0	ND
Lead	3.8	9.4
Mercury	0.02 B	0.054
Zinc	11.2	57

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Site Boundary



Monitoring Well/Soil Boring (Arcadis 2006-2007)



Soil Boring (TRC 2005)



Soil Boring (Arcadis 2006-2007)

Sample ID	
Date	Part 375 Restricted
Analyte	Residential Use SCO's**
Metals	mg/kg
Arsenic	16
Cyanide	27
Lead	400

Notes:

- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
- Sample locations are approximate.
- ** = 6 NYCRR Part 375-6.8(b) Restricted Use SCO's Restricted-Residential
- Bold** and **shaded** value indicates concentration exceeds Restricted-Residential SCO's
- B = Analyte is found in the associated analysis batch blank
- J = Estimated value
- R = Data rejected based on ARCADIS and TRC data validation
- NA = Not analyzed
- ND = Not detected
- NS = No standard

SB-208			
Depth	2-3'	9.5-10'	19-20'
Date	1/20/2007	1/20/2007	1/20/2007
Metals	mg/kg	mg/kg	mg/kg
Arsenic	4.8	2.7	9
Cyanide	1.0	ND	NA
Lead	708	31.9	10.1

SB-209			
Depth	9.4-10'	11-13'	19-20'
Date	1/20/2007	1/20/2007	1/20/2007
Metals	mg/kg	mg/kg	mg/kg
Arsenic	1.7	2.2	9.1
Cyanide	NA	ND	NA
Lead	5.9	7.6	9.1

SB-12					
Depth	5-7'	7-9'	15-17'	25-27'	49-51'
Date	9/11/2004	9/11/2004	9/11/2004	9/12/2004	9/12/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.83 J	1.55 J	2.63 J	7.78 J	1.03 J
Cyanide	1.24	ND	ND	ND	ND
Lead	54.3	68.6	13.6	18.1	2.63

MW/SB-213		
Depth	8-9'	19-20'
Date	2/10/2007	2/10/2007
Metals	mg/kg	mg/kg
Arsenic	20 J	7.8 J
Cyanide	20.2	ND
Lead	172 J	9.5 J

SB-MTP-3		
Depth	8-9'	24-25'
Date	3/3/2007	3/3/2007
Metals	mg/kg	mg/kg
Arsenic	2.8	10
Cyanide	ND	ND
Lead	8.3 J	11 J

SB-210					
Depth	7-9'	11-13'	21-23'	25-27'	36-37'
Date	12/16/2006	12/16/2006	12/16/2006	12/16/2006	12/16/2006
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	9.3 J	5.0 J	2.5 J	1.3 J	0.9 J
Cyanide	2.5	2.3	3.5	1.9	0.49 B
Lead	535	15.1	85.2	6.6	6.4

SB-9				
Depth	4-5'	8-10'	26-28'	32-34'
Date	9/12/2004	9/18/2004	9/18/2004	9/18/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.94 J	1.79	1.7	1.53
Cyanide	ND	ND	ND	ND
Lead	21.9	14.5 J	88.6 J	4.31 J

SB-MTP-2				
Depth	9-10'	18-19'	22-23'	24-25'
Date	2/10/2007	2/10/2007	2/10/2007	2/10/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	5.0 J	9.4 J	0.55 J	0.63 J
Cyanide	2.2	179	ND	ND
Lead	76.7 J	1,430 J	2.9 J	3.7 J

SB-10					
Depth	5-6'	6-8'	8-10'	20-22'	48-50'
Date	9/11/2004	9/18/2004	9/18/2004	9/18/2004	9/18/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.7 J	2.42	4.02	2.47	2.01
Cyanide	ND	ND	ND	2.08	ND
Lead	53.6	55.3 J	40.4 J	21.6 J	7.51 J

SB-MTP-1				
Depth	3-4'	8-9'	19-20'	23-24'
Date	2/10/2007	2/10/2007	2/10/2007	2/10/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	2.2 J	1.2 J	4.8 J	3.0 J
Cyanide	ND	NA	NA	NA
Lead	178 J	11.5 J	12.4 J	14.1 J

SB-214				
Depth	5-7'	9.5-10'	11-13'	19-20'
Date	1/21/2007	1/21/2007	1/21/2007	1/21/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	1.9	1.5	1.4	9.0
Cyanide	NA	ND	ND	NA
Lead	6.7	5.2	4.6	9.7

SB-14A				
Depth	4-5'	11-13'	17-19'	23-25'
Date	9/11/2004	10/3/2004	10/3/2004	10/3/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	3.72 J	1.49	1.19	6.72
Cyanide	ND	0.58	0.57	0.73
Lead	184	8.21	5.34	8.72

SB-221				
Depth	2-4'	6-8'	9.5-10'	24-25'
Date	1/20/2007	1/20/2007	1/20/2007	1/20/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	4.2	2.9	2.6	10
Cyanide	ND	ND	NA	ND
Lead	94.4	52.5	9.5	10.3

SB-222				
Depth	1-3'	7.5-8.5'	15-17'	19-20'
Date	1/21/2007	1/21/2007	1/21/2007	1/21/2007
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	15.8	1.7	2.7	7.9
Cyanide	0.32 B	ND	ND	NA
Lead	459	6.6	8.5	9.6

SB-254		
Depth	8-9'	19-20'
Date	3/3/2007	3/3/2007
Metals	mg/kg	mg/kg
Arsenic	0.43 B	9.9
Cyanide	ND	ND
Lead	3.8	9.4

SB-11				
Depth	5-6'	13-15'	27-29'	37-39'
Date	9/11/2004	9/18/2004	9/18/2004	9/18/2004
Metals	mg/kg	mg/kg	mg/kg	mg/kg
Arsenic	3.15 J	1.56	3.85	0.295 J
Cyanide	ND	ND	45 R	ND
Lead	110 J	15.8 J	1740 J	5.1 J



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Figure 5f.
Metals in Historic Soil Samples Exceeding Part 375
Restricted Residential SCO's
Remedial Action Work Plan
515 West 18th Street
New York, New York 10011

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- Site Boundary
- Monitoring Well (TRC 2005)
- Monitoring Well/Soil Boring (Core 2012)

Sample ID	
Date	TOGS Class
Analyte	GA Standards*
VOCs	µg/L
Benzene	1
1,2,4-Trimethylbenzene	5
Ethylbenzene	5
Isopropylbenzene	5
Methylene Chloride	5
n-Propylbenzene	5
sec-Butylbenzene	5
o-Xylene	5
p-m Xylene	5
SVOCs	
Bis(2-ethylhexyl)phthalate	5

- Notes:
- Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
 - Sample locations are approximate.
 - * = NYSDCE Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. Class GA Ambient Water Quality Standards and Guidance Values
 - Bold and shaded** value indicates concentration exceedance of Class GA Standards
 - All values in µg/L
 - J = Estimated value
 - NA = Not analyzed
 - ND = Not detected
 - NS = No standard

MW-219	
Date	02/06/12 (CORE)
VOCs	Total
Benzene	ND
1,2,4-Trimethylbenzene	ND
Ethylbenzene	ND
Isopropylbenzene	ND
Methylene Chloride	ND
n-Propylbenzene	ND
sec-Butylbenzene	ND
o-Xylene	ND
p-m Xylene	ND
SVOCs	
2-Methylnaphthalene	ND
Bis(2-ethylhexyl)phthalate	ND

MW/SB-6	
Date	02/06/2012 (CORE)
VOCs	Total
Benzene	16
1,2,4-Trimethylbenzene	1.1 J
Ethylbenzene	2.2 J
Isopropylbenzene	11
Methylene Chloride	3.4 JB
n-Propylbenzene	10
sec-Butylbenzene	3.4 JB
o-Xylene	1.4
p-m Xylene	1.9
SVOCs	
Bis(2-ethylhexyl)phthalate	ND

MW-1	
Date	02/06/12 (CORE)
VOCs	Total
Benzene	50
1,2,4-Trimethylbenzene	ND
Ethylbenzene	ND
Isopropylbenzene	24 J
Methylene Chloride	44 JB
n-Propylbenzene	22 J
sec-Butylbenzene	ND
o-Xylene	ND
p-m Xylene	ND
SVOCs	
2-Methylnaphthalene	ND
Bis(2-ethylhexyl)phthalate	16

MW/SB-4	
Date	02/06/2012 (CORE)
VOCs	Total
Benzene	83
1,2,4-Trimethylbenzene	ND
Ethylbenzene	3.4 J
Isopropylbenzene	1.6
Methylene Chloride	4.3 JB
n-Propylbenzene	ND
sec-Butylbenzene	ND
o-Xylene	1.9 J
p-m Xylene	2.7 J
SVOCs	
Bis(2-ethylhexyl)phthalate	ND

MW-2	
Date	02/06/12 (CORE)
VOCs	Total
Benzene	350
1,2,4-Trimethylbenzene	0.94 J
Ethylbenzene	1.6 J
Isopropylbenzene	10
Methylene Chloride	4.3 JB
n-Propylbenzene	11
sec-Butylbenzene	1.8 J
o-Xylene	1.2 J
p-m Xylene	4.1 J
SVOCs	
2-Methylnaphthalene	ND
Bis(2-ethylhexyl)phthalate	634

MW/SB-3	
Date	02/06/2012 (CORE)
VOCs	Total
Benzene	120
1,2,4-Trimethylbenzene	8.2
Ethylbenzene	8
Isopropylbenzene	2 J
Methylene Chloride	4 JB
n-Propylbenzene	1.9 J
sec-Butylbenzene	ND
o-Xylene	7.9
p-m Xylene	17
SVOCs	
Bis(2-ethylhexyl)phthalate	ND

MW-224	
Date	02/06/12 (CORE)
VOCs	Total
Benzene	32
1,2,4-Trimethylbenzene	1.2 J
Ethylbenzene	ND
Isopropylbenzene	21
Methylene Chloride	2.3 JB
n-Propylbenzene	39
sec-Butylbenzene	5.2
o-Xylene	1.2 J
p-m Xylene	3.2 J
SVOCs	
2-Methylnaphthalene	17.8
Bis(2-ethylhexyl)phthalate	ND

LOT 20

LOT 29

Gas Holder

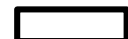
Gas Holder

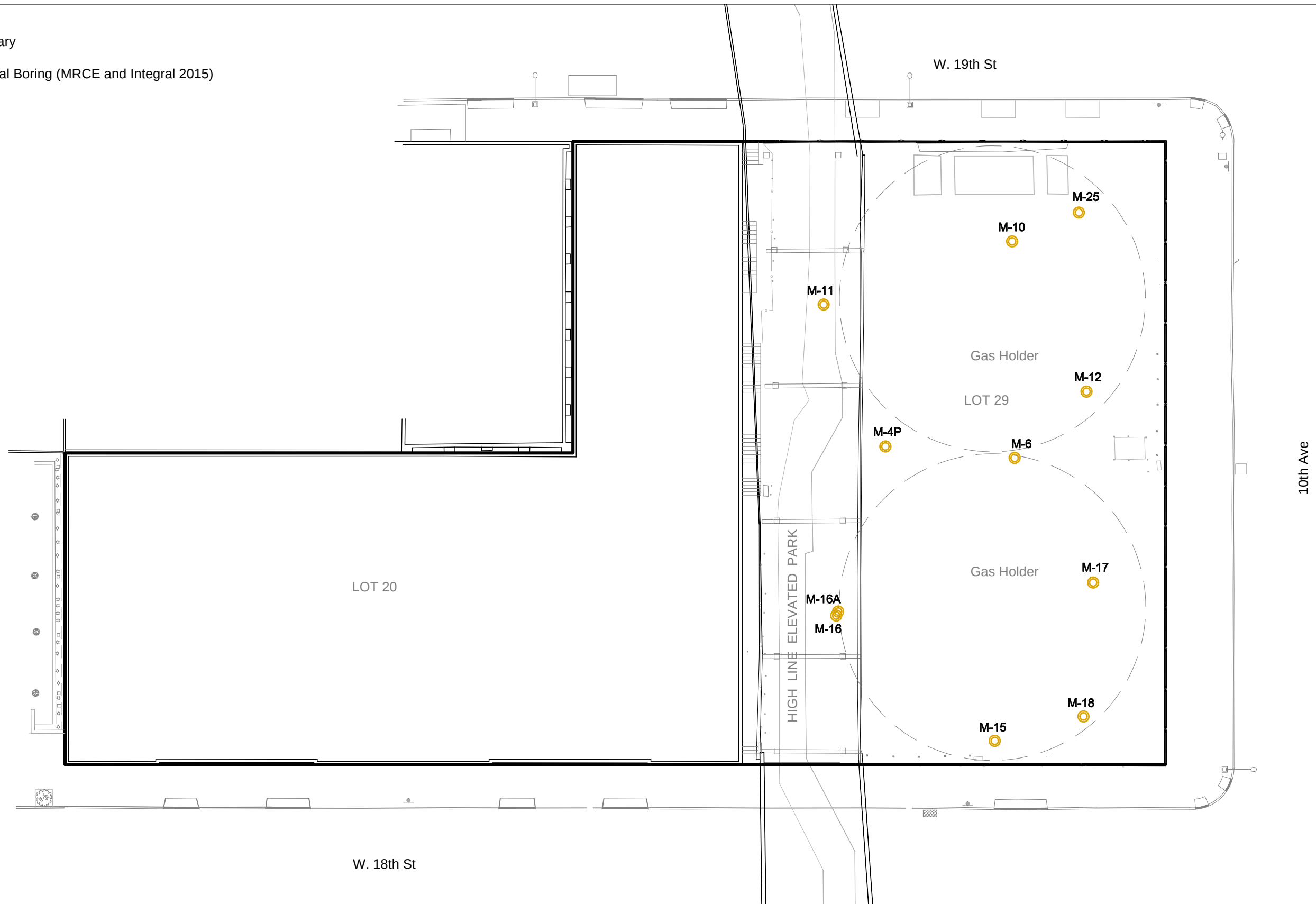
W. 19th St

10th Ave

W. 18th St

N:\GIS\Projects\E069_511525W18_Related\CAD\Production Drawings\RAWP\Figure_4_5_previous_locs.dwg 5/3/2017 1:50:09 PM

-  Site Boundary
-  Geotechnical Boring (MRCE and Integral 2015)



Notes:

1. Gas holders are from the Former West 18th Street Gas Works, as shown on Sanborn maps dated 1895. Revised per Mueser Rutledge Consulting Engineers Exploratory Test Pitting, 2016 and Integral Engineering Pre-Design Investigation, 2016.
2. Sample locations are approximate.

DRAFT

Figure 6.
Geotechnical and Visual Coal Tar Delineation Boring
Location Map, MRCE and Integral 2015
Remedial Action Work Plan
515 West 18th Street
New York, New York 10011



Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

September 6, 2017

George Heitzman, Director
Remedial Bureau C
Division of Environmental Remediation
NYS Dept. of Environmental Conservation
625 Broadway
Albany, NY 12233

RE: **Significant Threat Determination**
Site #C231093
515 West 18th Street
New York, New York County

Dear Mr. Heitzman:

At your Department's request, we have reviewed the available information, including the *Remedial Action Work Plan* dated December 2017 for the referenced site. Based on that review, I understand that soil and groundwater are contaminated with polycyclic aromatic hydrocarbons, benzene, toluene, ethylbenzene and xylenes due to past uses as manufactured gas plant. Additionally, site-related contamination is likely migrating from the site in groundwater and possibly soil vapor.

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. People may contact contaminated soil or groundwater if they dig below the ground surface. Environmental sampling indicates that additional investigation is needed to determine whether actions are needed to address exposures off-site.

Based on the information provided to date, and the potential for exposure to site-related contamination, I believe that this site represents a significant threat to public health. If you have any questions, or would like to discuss this site further, please contact me at (518) 402-7860.

Sincerely,

A handwritten signature in black ink, appearing to read "Justin H. Deming".

Justin H. Deming
Chief - Regions 2, 4, & 8
Bureau of Environmental Exposure Investigation

ec: K. Anders / D. Hettrick / e-File
C. Westerman – NYSDOH MARO
C. D'Andrea – NYC DOHMH
G. Cross / D. MacNeal – NYSDEC Central Office
J. O'Connell – NYSDEC Region 2