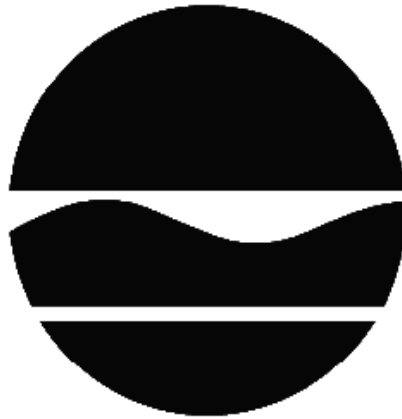


PROPOSED DECISION DOCUMENT

1676 Third Avenue
Brownfield Cleanup Program
New York, New York County
Site No. C231079
March 2013



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Decision Document (PDD). The disposal or release of contaminants at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all Proposed Decision Documents. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

The New York Public Library
Yorkville Library
222 East 79th Street
New York, NY 10021-1295
Phone: (212) 744-5824

A public comment period has been set from:

3/14/2013 to 4/29/2013

Written comments may be sent through 4/29/2013 to:

Shaun Bollers
NYS Department of Environmental Conservation
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101
snboller@gw.dec.state.ny.us

The proposed remedy may be modified based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Site Location:

The Site is located at 1676 Third Avenue in the City of New York, New York County and is identified as Block 1522, Lot 40 on the New York City Tax Map. The Site is approximately 930 square feet or 0.02 acres. It is located on the city block bordered by 94th Street to the north, Third Avenue to the east, 93rd Street to the south, and Lexington Avenue to the west.

Site Features:

The superstructure for a new five-story plus penthouse townhouse building is constructed, but construction stopped before completion of the core and shell work. Excavation for the basement extends to approximately 10 to 12 feet below grade surface (ft-bgs), but the basement slab has not yet been poured. The rest of the site consists of a paved lot.

Current Zoning/Use(s):

The Site is currently vacant and is located in a C2-8 commercial zoning district. District C2-8 is defined as a commercial district that is predominantly residential in character and is typical of areas mapped along major thoroughfares in medium- and higher-density areas of the city.

Past Use(s) of the Site:

The Site was historically used as a gasoline station with underground storage tanks (USTs)

between the 1930s and early 1990s at which time the seven on-site tanks were pumped out and removed. Excavation at the Site for development of the aforementioned townhouse began in October 2011. Petroleum contaminated soil was encountered during excavation and a spill was reported. Subsequent excavation revealed a 215-gallon tank located in the northwestern corner of the Site. There was no contamination in the surrounding soil.

Geology:

The generalized stratigraphy underlying the Site is composed of:

- Urban fill consisting of gray silt and clay with brick fragments in the upper ten feet of soil;
- Fine sand, trace fine gravel, from depths of 10 feet to 20 ft-bgs;
- Weathered schistose bedrock from a depth of 20 ft-bgs.

Hydrogeology:

Groundwater underlying the Site ranged from approximately 11 to 12.5 ft-bgs (el 44.7 ft to el 46 ft Borough of Manhattan Datum) and flows from west to east.

The basement subgrade of the development at 10 to 12 ft-bgs is located within native sand and is 1 to 2 feet above the groundwater table.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) are/is being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the Remedial Investigation (RI) Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

The Brownfield Cleanup Agreement was fully executed on November 27, 2012

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

ETHYLBENZENE
TOLUENE
1,3,5-Trimethylbenzene

1,2,4-TRIMETHYLBENZENE
XYLENE (MIXED)
NAPHTHALENE

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

A total of four borings were advanced on Site, one of which was converted into a groundwater monitoring well, and a total of nine soil samples (including five post excavation endpoint samples) and one groundwater sample were collected for laboratory analysis from the Site. Three soil borings were also completed off-site on the adjacent sidewalk and these were converted to groundwater monitoring wells. Three soil samples and three groundwater samples were also collected for laboratory analysis.

Soil:

Soil samples were collected from shallow fill material and/or from the groundwater interface. Site soil and groundwater have been impacted by a petroleum (gasoline) release related to former use as a gasoline filling station as evidenced by analytical data exceedances and observation of petroleum staining and odor. The majority of petroleum-impacted material on the Site was removed during excavation for the development basement to a depth of 10 to 12 ft-bgs. Residual on-site soil impacts are estimated to extend from basement grade to approximately 15 ft-bgs based on the post-ex soil samples. Unrestricted Use Soil Cleanup Objectives (UUSCOs) exceedances of volatile organic compounds (VOCs), typically associated with gasoline, included toluene (6.2 ppm), ethylbenzene (11 ppm), xylenes (64 ppm), 1,2,4-trimethylbenzene (53 ppm), 1,3,5-trimethylbenzene (17 ppm) and n-propylbenzene (7.5 ppm). Only one of these VOCs (1,2,4-trimethylbenzene) was present at concentrations exceeding the Restricted Residential Soil Cleanup Objective (RRUSCO). Soil samples taken at deeper intervals 16-18 and 20-22 ft-bgs exhibited no UUSCO exceedances.

Groundwater:

Elevated concentrations of VOCs associated with gasoline, including 1,2,4-trimethylbenzene (150 ppb), 1,3,5-trimethylbenzene (52 ppb), ethylbenzene (270 ppb), isopropylbenzene (40 ppb), n-butylbenzene (35 ppb), n-propylbenzene (120 ppb), toluene (47 ppb), and total xylenes (320 ppb) were detected at concentrations above groundwater standards. One SVOC (naphthalene at 49 ppb) was detected at a concentration exceeding groundwater standard.

Soil Vapor:

No soil vapor data was collected during the Remedial Investigation phase; however, for the purposes of designing the remedy the soil vapor is assumed to be impacted by the same VOCs identified in the Site soil and groundwater.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

The site is completely fenced, which restricts public access. However, persons who enter the site could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying 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. Because there is no on-site building, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

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

- Remove the source of ground or surface water contamination.

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.

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.

SECTION 7: ELEMENTS OF THE PROPOSED REMEDY

The alternatives developed for the site and evaluation of the remedial criteria are presented in the alternative analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The remedy proposed is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The proposed remedy is referred to as the Remediation of Petroleum Contaminated Soil and Groundwater remedy.

The elements of the proposed remedy, as shown in Figure 2, are as follows:

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 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. Excavation

Excavation and off-site disposal of contaminant source areas, including soil below the existing basement grade to the groundwater table where VOCs associated with petroleum contamination exceed the Protection of Groundwater SCOs. Approximately 50 cubic yards of soil will be removed from the site. Clean fill will be brought in to replace the excavated soil and to accommodate installation of a cover system as described in remedy element 4.

3. Groundwater Treatment

In-Situ Chemical Oxidation (ISCO) will be utilized to treat petroleum associated VOCs in groundwater. Sodium persulfate will be used to oxidize the contaminants. The byproducts of the ISCO process are non-toxic. Injection of sodium persulfate would be performed using an estimated five direct push temporary points. The alkaline activation of the persulfate would be performed by addition of ferrous iron into the subgrade. Prior to field implementation of this method of in-situ chemical oxidation, limited bench-scale testing would be conducted to more clearly define the design parameters. This would include tests to determine total soil oxidant demand (SOD) and the dosage requirement.

4. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Control

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

- requires 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);
- allows the use and development of the controlled property for restricted residential, commercial or industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- requires compliance with the Department approved Site Management Plan.

6. 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 5 above.

Engineering Controls: The soil cover discussed in Paragraph 4.

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;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed 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 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 to assess the performance and effectiveness of the remedy; and
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

EAST 94TH STREET

#1676 THIRD AVENUE
BLOCK 1522 LOT 40

THIRD AVENUE

EAST 94TH STREET

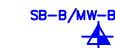
LEGEND:



SOIL BORING LOCATION
[JULY 2007 PHASE II ENVIRONMENTAL SITE INVESTIGATION
REPORT, PREPARED BY DVIRKA & BARTILUCCI CONSULTING
ENGINEERS]



ENDPOINT SOIL SAMPLE LOCATION
[FEBRUARY 2012 SOIL SAMPLE ANALYTICAL REPORT,
PREPARED BY ENVIRONMENTAL MAINTENANCE
CONTRACTORS (EMC)]



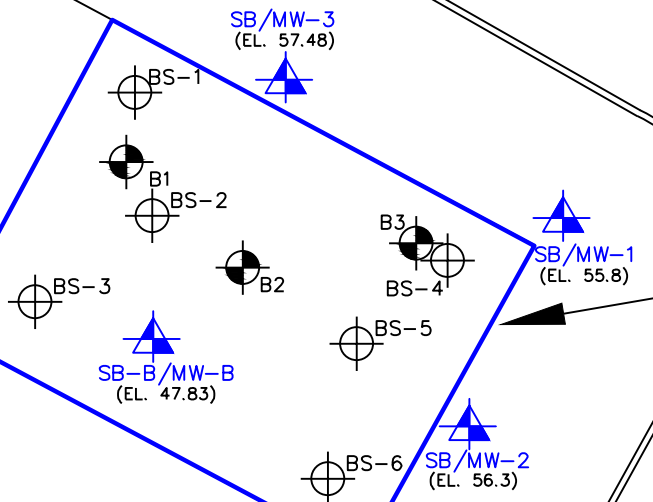
SOIL BORING/GROUNDWATER MONITORING WELL LOCATION
[APRIL 2012 SOIL AND GROUNDWATER SAMPLE ANALYTICAL
REPORT, PREPARED BY EMC]



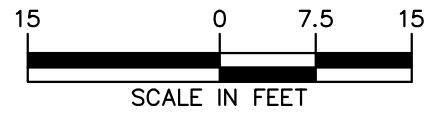
SITE BOUNDARY

NOTES:

1. BASE MAP OBTAINED FROM THE NEW YORK STATE OFFICE OF ENVIRONMENTAL REMEDIATION SEARCHABLE PROPERTY ENVIRONMENTAL E-DATABASE.
2. ELEVATIONS SHOWN ARE REFERENCED TO THE MANHATTAN BOROUGH DATUM.
3. ALL METAL MONITORING WELL COVERS ARE FLUSH WITH THE GROUND SURFACE.
4. SOIL BORING AND MONITORING WELL LOCATIONS ARE APPROXIMATE.



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NEW JERSEY PENNSYLVANIA NEW YORK CONNECTICUT FLORIDA NEVADA VIRGINIA CALIFORNIA
NJ Certificate of Authorization No: 24GA27996400

1676 THIRD AVENUE

SITE LAYOUT MAP

NEW YORK NEW YORK

Project No. 170206301	Date 11/13/2012	Scale 1"=15'	Figure 1
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EAST 94TH STREET



LEGEND:



SITE BOUNDARY



PROPOSED CHEMICAL OXIDATION INJECTION WELL LOCATION

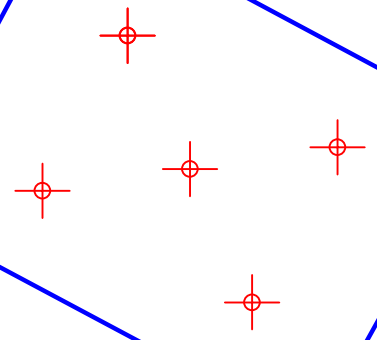
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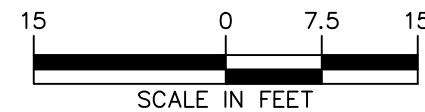
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THIRD AVENUE

EAST 94TH STREET



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1676 THIRD AVENUE

PROPOSED CHEMICAL OXIDATION
INJECTION WELL LOCATION MAP

NEW YORK

NEW YORK

Project No.
170206301

Date
11/13/2012

Scale
1" = 15'

Figure 2