

# DECISION DOCUMENT

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GDC LIC Development  
Brownfield Cleanup Program  
Queens, Queens County  
Site No. C241172  
February 2016



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

# DECISION DOCUMENT

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Brownfield Cleanup Program  
Queens, Queens County  
Site No. C241172  
February 2016

## **Statement of Purpose and Basis**

This document presents the remedy for the GDC LIC Development site, a brownfield cleanup site. The remedial program was chosen in accordance with the 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 decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the GDC LIC Development site and the public's input to the proposed remedy presented by the Department.

## **Description of Selected Remedy**

The elements of the selected remedy 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

To achieve restricted residential soil cleanup objectives, excavation and off-site disposal at an appropriately permitted facility of contaminated soil from within the footprints of the proposed buildings to a depth of approximately 7 feet below surface grade (bsg). Additionally, excavation and off-site disposal of contaminated soils to depths of 10 to 17 feet to remove "source material", defined as soil which exceeds the protection of groundwater soil cleanup objectives (PGWSCOs) of 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards. In total, approximately 11,500 cubic yards of contaminated soil will be excavated and removed from this Site. Grossly-contaminated soil, if encountered, will be removed. On-site soil which does not exceed the PGWSCOs may be used below the cover system described in remedy element 6 to backfill the excavation and establish the designed grades at the site. Clean fill that meets the requirements of 6NYCRR Part 375-6.7(d) for restricted residential use will be brought in to complete the backfilling of the excavation. Following the completion of the excavation, confirmation soil samples will be collected and analyzed to ensure removal of all source areas and document site conditions.

## 3. Tank Removal and Backfilling

Removal of the existing above-ground storage tanks (ASTs) located at the southwest corner of Lot 20 and the existing underground storage tanks (USTs) located at the northern portion of Lot 13 are also part of the remedial action. If contaminated soil requiring removal from the vicinity of any tank is encountered, confirmatory soil samples will be collected and analyzed in conformance with NYSDEC DER-10 Section 5.4.

## 4. Groundwater Dewatering and Treatment

Dewatering at the site will be required to enable excavation. Contaminated groundwater from dewatering operations will be treated as necessary prior to approved discharge to the municipal sewer system or to the East River.

## 5. Chemical Oxidation

To address groundwater impacted primarily by benzene, toluene, ethylbenzene, and xylenes (BTEX) related compounds, Oxygen Release Compound (ORC) will be applied at the base of the hot-spot excavations followed by post-remediation groundwater monitoring at the perimeter of the site to restore groundwater to pre-disposal/pre-release conditions, to the extent practicable. Additional ORC treatment may be applied if necessary.

## 6. 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 soil of sufficient quality to maintain a vegetative layer. Any fill materials brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) and in DER-10, Appendix 5.

## 7. Institutional Control

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

- a. 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);
- b. allows 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;
- c. restricts 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
- d. requires compliance with the Department-approved Site Management Plan.

## 8. Site Management Plan

A Site Management Plan 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 7, above.

Engineering Controls: The soil cover system described in Paragraph 6 above.

This plan includes, but may not be limited to:

- i. an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- ii. descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- iii. 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;
- iv. provisions for the management and inspection of the identified engineering controls;
- v. maintaining site access controls and Department notification; and
- vi. 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 to assess the performance and effectiveness of the remedy;
- monitoring for vapor intrusion for any future buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above;
- a schedule of monitoring and frequency of submittals to the Department.

**Declaration**

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

February 16, 2016



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Date

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Robert Cozzy, Director  
Remedial Bureau B

# DECISION DOCUMENT

GDC LIC Development  
Queens, Queens County  
Site No. C241172  
February 2016

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## **SECTION 1: SUMMARY AND PURPOSE**

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected 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. The disposal or release of contaminants at this site, as more fully described in 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 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

## **SECTION 2: CITIZEN PARTICIPATION**

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Queens Library at Court Square  
Attn: Archives  
25-01 Jackson Avenue  
Long Island City, NY 11101  
Phone: 718-937-2790

### **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**

**Location:** The 50,000 square foot (1.15 acre) site is comprised of two tax parcels and is located in an urban area in the Hunters Point section of the Borough of Queens. The site is bordered by 45th Road, 11th Street, 46th Avenue Street and existing commercial structures to the east.

**Site Features:** The Site is currently vacant. Two commercial/manufacturing structures previously located on-site have been demolished. There are two known petroleum storage tanks within the site footprint. One is above ground and the other is below ground.

**Current Zoning/Use(s):** The site is zoned M1-4/R6A which allows mixed residential and commercial use. The site is currently vacant and not in use.

**Past Use of the Site:** The site has been utilized as a warehouse for various products and a manufacturing site for clothing, light fixtures, and paper coatings.

**Site Geology/Hydrogeology:** Fill material is present to depths up to 18 to 27 feet below ground surface (ft bgs). Silt and silty sand is present below the fill to top of bedrock at 30 to 40 feet bgs.

Groundwater is present at 9 to 10.5 feet below existing slab grades and flows to the northwest toward the East River.

A site location map is attached as Figure 1 and the Site boundary map is attached as Figure 2.

### **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) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) 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 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.

## **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
- soil vapor

#### **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:

benzene	lead
arsenic	toluene
benzo(a)anthracene	xylene (mixed)
cyclohexane	ethylbenzene
naphthalene	

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

- Soil
- Groundwater

### **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.

Nature and Extent of Contamination:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides.

Soil: A total of 69 soil samples were collected at depth ranging from 0 to 24 feet below ground surface (ft bgs). Two sample locations contained significantly elevated concentrations of benzene, toluene, ethylbenzene and toluene (BTEX) and related compounds exceeding restricted residential use soil cleanup objectives (RRUSCOs) at a depth of 15-16 ft bgs at the central portion of the site in lot 13, including total xylenes with a maximum concentration of 300 parts per million (ppm). Elevated levels of semi-volatile organic compounds (SVOCs) were detected in 22 of 69 samples, with the highest concentration of benzo(a)anthracene of 145 ppm and naphthalene of 1,290 ppm

at the northwest corner in lot 20, which exceed RRUSCOs. One or more metals were detected at levels above RRUSCOs in 14 samples including arsenic at concentrations of 1,030 ppm, and lead at 4,600 ppm mainly at the central portion in lot 13.

Groundwater: Fifteen groundwater samples were collected from nine groundwater monitoring wells. Volatile organic compounds (VOCs), SVOCs, and metals were found above their groundwater class GA standards. Significant VOC contamination, including total xylenes at 640 parts per billion (ppb), toluene at 310 ppb, and benzene at 170 ppb was detected above Ambient Water Quality Standards (AWQS) at the central portion of lot 13. High levels of SVOCs were detected at four locations with naphthalene detected at 622 ppb. Elevated levels of total and dissolved arsenic were found in groundwater at MW-4 and MW-4R of 1,010 ppb and 829 ppb in the total samples and 808 ppb and 691 ppb in the dissolved samples respectively, corresponding to a high arsenic concentration detected in soil in this area, indicating a source area.

Soil Vapor: Thirteen soil vapor samples were collected from thirteen temporary soil vapor probes. Highest soil vapor contamination was found at the southeastern portion of the Site, including high levels of total BTEX at 13,300 µg/m<sup>3</sup> and cyclohexane of 3,170 µg/m<sup>3</sup> on the east side in lot 13. VOC impacted vapor was generally limited to the central portion of the Site in lot 13.

Based on the available data, there is no evidence that contamination has migrated off-site in any environmental media.

#### **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*.

People are not drinking the contaminated groundwater because the area is served by a public water supply that obtains water from a different source not affected by this contamination. People who enter the site may come into contact with contaminants in soil. 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 are no occupied on-site buildings, 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. Soil vapor intrusion is not a concern for off-site buildings.

#### **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**

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

The alternatives developed for the site and the 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 selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the soil excavation, groundwater treatment and site cover.

The elements of the selected remedy, as shown in Figure 3, 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;

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

- a. 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);
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- d. requires compliance with the Department-approved Site Management Plan.

## 8. Site Management Plan

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- 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:

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Engineering Controls: The soil cover system described in Paragraph 6 above.

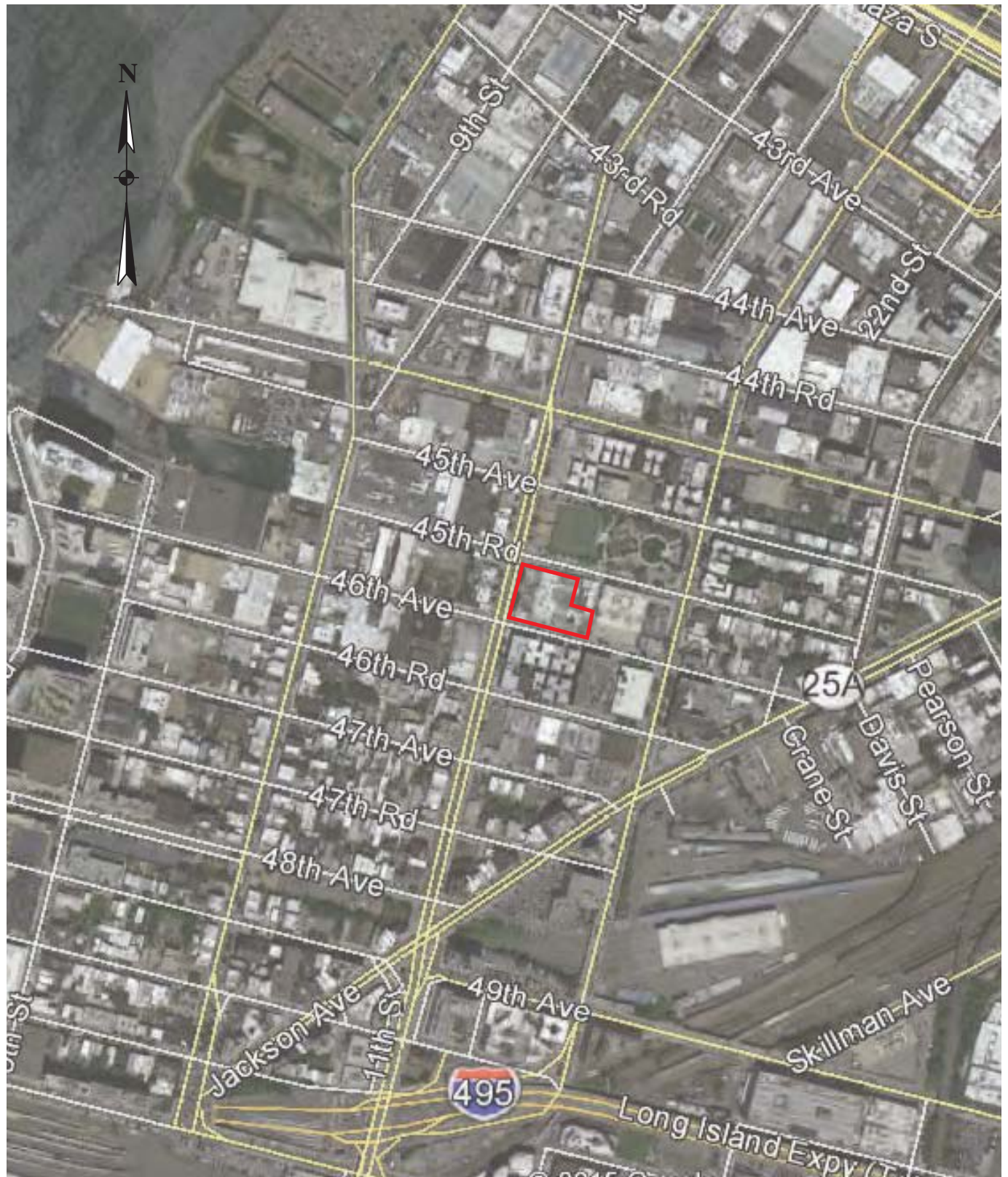
This plan includes, but may not be limited to:

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

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

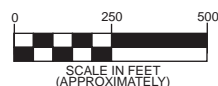


All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

**Figure 1 - Site Location Map**

GDC LIC Development  
 NYSDEC BCP Site: C241172  
 45-35 11th Street and 11-22 45th Road  
 Queens, New York

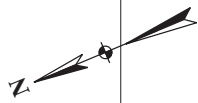
Legend:  
 subject property border



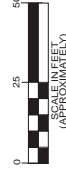
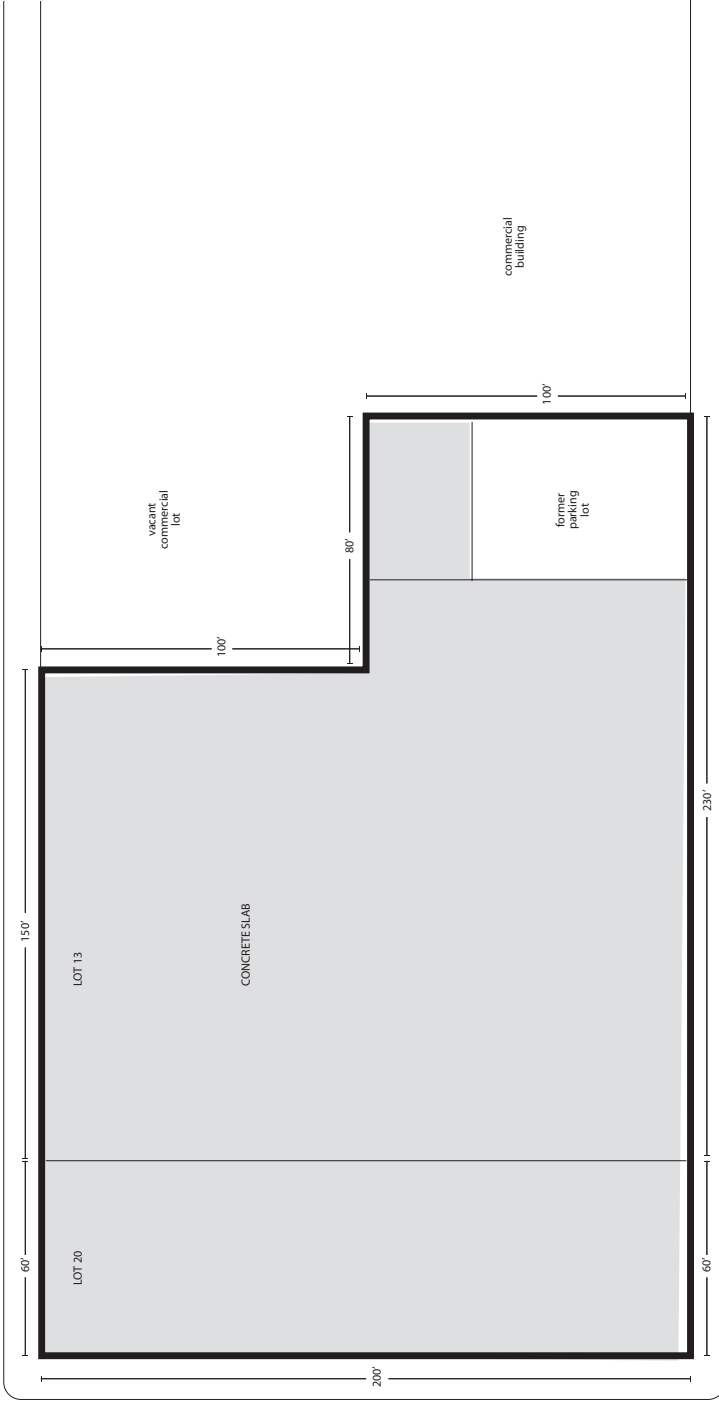
ESI File: GQ14076.50

December 2015

Appendix A



45TH ROAD



46TH AVENUE

Legend:  
 subject property border

**Figure 2 - Site Boundary Map**

GDC LIC Development  
 NYSDC BCP Site: C241172  
 45-35 11th Street and 11-22 45th Road  
 Queens, New York

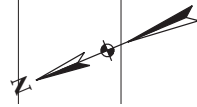
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Scale as shown

December 2015 Appendix A

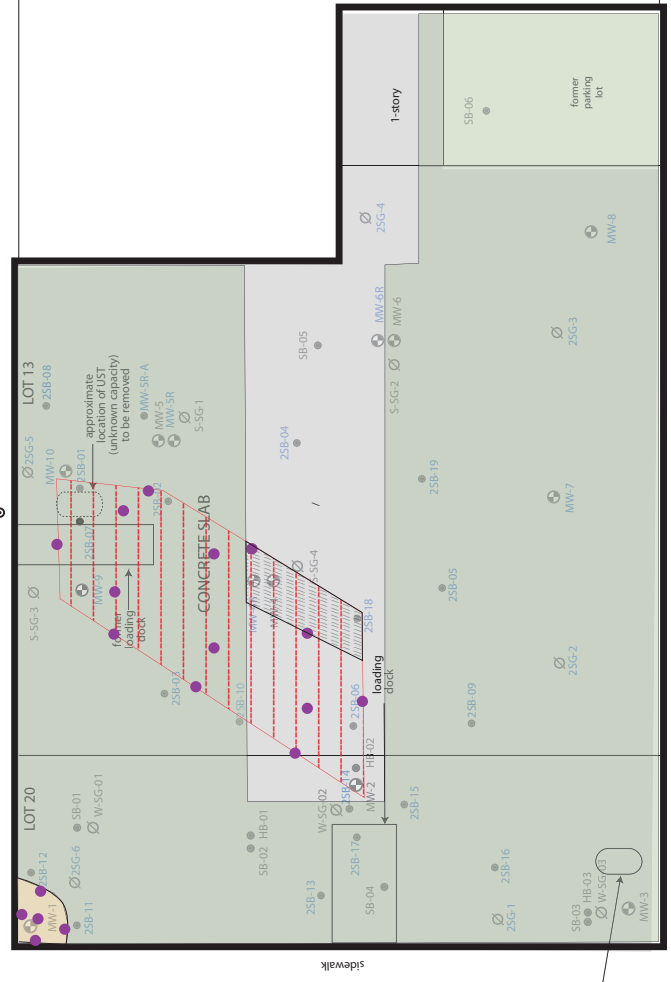
All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.





45TH ROAD

fill port



11TH STREET

sidewalk

2,500-gallon vaulted fuel-oil pit (one removed)

fill port

46TH AVENUE



**Legend:**

- subject property border
- soil boring location
- soil gas sampling location
- groundwater monitoring well location
- excavation to 7' below surface grade (bsg)
- Hot Spot #1: excavation to 10' bsg (approximately 2,200 cy)
- Hot Spot #2: excavation to at least 17' bsg (additional 200 cy)
- Hot Spot #3: excavation to 15' bsg (approximately 200 cy)
- no excavation (outside of Hot Spot #1)
- proposed end-point sample location

ESI Phase II Investigation (September - October 2014)  
BCP RI (October 2015)

**Figure 3 - Soil Excavation Plan**

GDC LIC Development NYSDEC BCP Site: C241172 45-35 11th Street and 11-22 45th Road Queens, New York	ESI File: GQ14076.50
Scale as shown	
December 2015	
Appendix A	

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.