DECISION DOCUMENT

Former Liberty Brass Site
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241178
November 2016

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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Liberty Brass Site
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241178
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Statement of Purpose and Basis

This document presents the remedy for the Former Liberty Brass Site 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 Former Liberty Brass Site 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

All on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. Approximately 15,000 cubic yards of soil will be removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) may be brought in, as required, to replace the excavated soil at the site.

The removal of all soils to a depth of 18 feet is anticipated to remove any potential sources of VOCs, SVOCS, and metals which may be impacting groundwater or soil vapor, thereby addressing those media, with one exception. A hot spot of residual TCE in soil in the southwestern portion of the site exceeds unrestricted SCOs to a depth of at least 20 ft. bgs. This area will be excavated until Track 1 UUSCOs are achieved, if possible.

3) Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to mitigate the migration of vapors into the building from soil and/or groundwater. The system and any vapor intrusion monitoring must no longer be needed within 5 years of the date of the Certificate of Completion or the remedy would not result in a Track 1 cleanup of the property.

4) Environmental Easement

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

a. 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);

b. allows the use and development of the controlled property for restricted commercial and industrial uses, and possibly residential or restricted residential use if those SCGs are achieved, 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 County DOH; and

d. requires compliance with the Department approved Site Management Plan.

5) 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 4 above.

Engineering Controls: The SSDS discussed in paragraph 3 above.

This plan include, but may not be limited to:

i. an Excavation Plan, if required, 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/or groundwater and/or surface water use restrictions;

iii. provisions for the management and inspection of the identified engineering controls;

iv. maintaining site access controls and Department notification; and

v. 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 vapor to assess the performance and effectiveness of the remedy;

- a schedule of monitoring and frequency of submittals to the Department;

- 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.

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

- procedures for operating and maintaining the system(s); and

- compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.

The intent of the soil removal is to achieve Track 1 unrestricted use, therefore no environmental easement and site management plan is anticipated. If Track 1 is not achieved, another track will be used which at a minimum will allow Track 4 commercial use of the property. If Track 4 cleanup is achieved, a site cover as described below will be required.

6) Site Cover

A site cover will be required to allow for commercial 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 one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial 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).

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.

November 1, 2016

Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Former Liberty Brass Site
Long Island City, Queens County
Site No. C241178
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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 Sunnyside Library
Attn: Joseph Schiavone
43-06 Greenpoint Avenue
Long Island City, NY 11104
Phone: 718-784-3033

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 site is located in an urban area in the Borough of Queens, Long Island City, New York. The site is approximately 0.52 acres and abuts both Queens Blvd and 38th Street.

Site Features: The site is currently vacant following the recent demolition of the on-site building. Concrete foundations, a 5000 gallon underground storage tank, and a 500 gallon underground storage tank remain on the site.

Current Zoning and Land Use: The site is zoned M1-4, a manufacturing district. Surrounding land use is commercial and manufacturing.

Past Use of the Site: The site has a long history of manufacturing brass hardware parts. From 1970 until 2006 manufacturing of screw machine products and hardware occurred on the site. The manufacture of the brass spray tops for perfume bottles and metal plating was conducted on the site from 1917 to approximately 1950. The site was vacant prior to 1915.

Site Geology and Hydrogeology: The site is at an elevation of approximately 65 feet above mean sea level. Site topography is generally flat, with a very slight slope to the west. Bedrock on this site is 200 feet below ground surface (bgs). Several impermeable clay layers are found within the underlying sediments, generally creating three distinct aquifers. Soil beneath the site consists of several feet of fill material followed by native fine to course sands with silt and gravel. Intermittent clay layers were noted in the boring logs.

Depth to groundwater is approximately 50 feet bgs and it flows to the northwest, toward the East River.

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, an alternative which allows for unrestricted use of the site was evaluated.

A comparison of the results of the Remedial Investigation (RI) against unrestricted use standards, criteria and guidance values (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 Volunteer(s) does/do not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

The Department will seek to identify any parties other than the Volunteer known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). The Department will bring an enforcement action against the PRPs. If an enforcement action cannot be brought, or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

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
- sub-slab 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:

trichloroethene (TCE)
arsenic
copper
lead
cis-1,2-dichloroethene
tetrachloroethene (PCE)
benzo(a)anthracene

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

- groundwater
- soil
- soil vapor intrusion

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 - VOC soil impacts were limited to TCE and cis 1'2 DCE, and PCE. 106 soil samples were analyzed for VOCs. 64 samples exceeded the unrestricted SCO of 0.47 parts per million (ppm) for TCE, and two exceeded the TCE commercial SCO of 200 ppm with a maximum concentration of 290 ppm. 8 samples exceeded the unrestricted SCO for cis 1'2-DCE of 0.25 ppm with a maximum concentration of 3 ppm. 1 sample exceeded the unrestricted SCO for tetrachloroethene of 1.3 ppm with a concentration of 1.6 ppm.

114 soil samples were analyzed for SVOCs. 11 SVOCs exceeded unrestricted SCOs in at least one sample, and 6 SVOCs exceeded commercial SVOCs in at least one location. For example, benzo(a)anthracene exceeded the unrestricted SCO of 1 ppm in 15 samples and the commercial SCO of 5.6 ppm in 6 samples, with a maximum concentration of 64 ppm.

53 soil samples were analyzed for pesticides/PCBs. 3 pesticides slightly exceeded unrestricted SCOs in at least one sample.

116 soil samples were analyzed for metals. 9 metals exceeded unrestricted SCOs in at least one sample, and 7 metals exceeded commercial SCOs in at least one sample. Arsenic exceeded the unrestricted SCO of 13 ppm in 12 samples and the commercial SCO of 16 ppm in 6 samples, with a maximum concentration of 50 ppm. Copper exceeded the unrestricted SCO of 50 ppm in 43 samples and the commercial SCO of 270 ppm in 7 samples, with a maximum concentration of 18,000 ppm. The second highest copper concentration was 1800 ppm. Lead exceeded the unrestricted SCO of 63 ppm in 43 samples and the commercial SCO of 1000 ppm in 3 samples, with a maximum concentration of 5100 ppm. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - TCE exceeded groundwater standards at concentrations up to 21 parts per billion (ppb), with the highest concentration being in the upgradient well. The groundwater standard for TCE is 5 ppb. Other VOC impacts are thought to be from a former gas station immediately upgradient. Elevated concentrations of multiple metals were found in unfiltered groundwater from all four wells. Data does not indicate any off-site impacts in groundwater related to this site.

Sub-slab Vapor - Five sub-slab soil vapor samples were collected during previous investigations. Detections were primarily TCE, with some related compounds (PCE, DCE) at much lower concentrations. Four of the five locations had detections of TCE in the 19,000 to 47,000 ug/m3 range, with the fifth location detecting a TCE concentration of 670,000 ug/m3. During the RI, three additional sub-slab vapor samples were taken. Elevated TCE vapor were detected at concentrations of 4,800, 8,200, and 188,000 ug/m3. All of these concentrations represent a concern for soil vapor intrusion with respect to on-site buildings, and possibly off-site buildings, as they fall under the mitigate category under NYSDOH soil vapor guidance.

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 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. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment. Further evaluation is recommended to determine whether soil vapor intrusion is a concern for off-site structures.

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 1: Unrestricted use remedy.

The selected remedy is referred to as the Excavation and Off-site Disposal remedy.

The elements of the selected 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;
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Imposition of an institutional control in the form of an environmental easement for the controlled property that:

a. 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);

b. allows the use and development of the controlled property for restricted commercial and industrial uses, and possibly residential or restricted residential use if those SCGs are achieved, 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 County DOH; and

d. requires compliance with the Department approved Site Management Plan.

5) 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 4 above.

Engineering Controls: The SSDS discussed in paragraph 3 above.

This plan include, but may not be limited to:

i. an Excavation Plan, if required, 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/or groundwater and/or surface water use restrictions;

iii. provisions for the management and inspection of the identified engineering controls;

iv. maintaining site access controls and Department notification; and

v. 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 vapor to assess the performance and effectiveness of the remedy;

- a schedule of monitoring and frequency of submittals to the Department;

- 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.

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

- procedures for operating and maintaining the system(s); and

- compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.

The intent of the soil removal is to achieve Track 1 unrestricted use, therefore no environmental easement and site management plan is anticipated. If Track 1 is not achieved, another track will be used which at a minimum will allow Track 4 commercial use of the property. If Track 4 cleanup is achieved, a site cover as described below will be required.

6) Site Cover

A site cover will be required to allow for commercial 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 one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial 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).

Figure 1 - Location Map: Former Liberty Brass (#C241178)

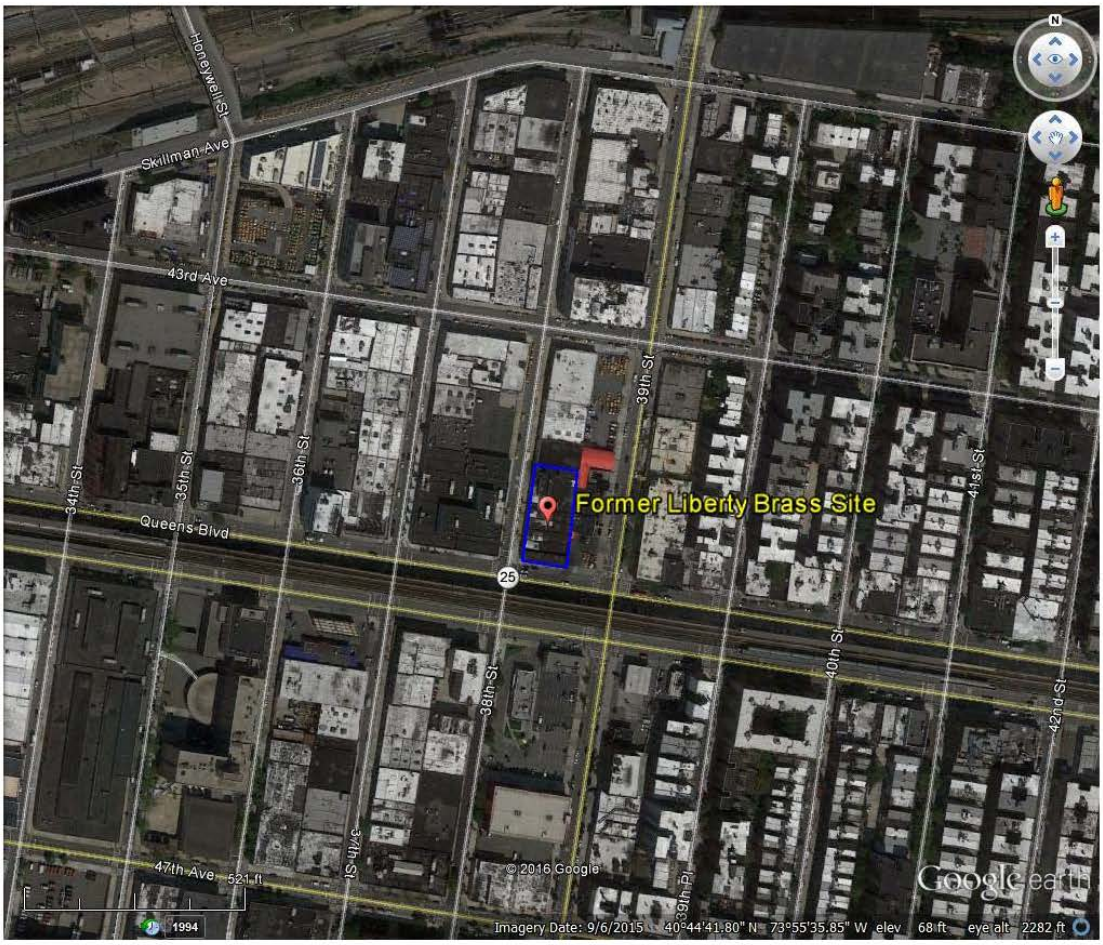

Figure 2 - Remedy: Former Liberty Brass Site (#C241178)