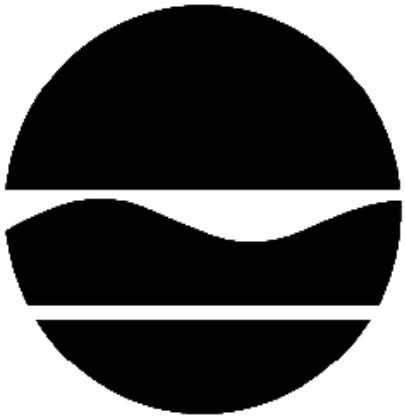
DECISION DOCUMENT

Former F&S Central Manufacturing Corp. Site
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224230
May 2016



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

DECLARATION STATEMENT - DECISION DOCUMENT

Former F&S Central Manufacturing Corp. Site
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224230
May 2016

Statement of Purpose and Basis

This document presents the remedy for the Former F&S Central Manufacturing Corp. 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 F&S Central Manufacturing Corp. 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

Excavation and off-site disposal of contaminant source areas, including:
•soil exceeding the USEPA and 6 NYCRR Part 371 hazardous criteria for lead;
•removal of any underground storage tanks (USTs) and underground piping; and
•soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

In addition, all on-site soils which exceed unrestricted use soil cleanup objectives (UUSCOs), as defined by 6 NYCRR Part 375-6.8 will be excavated and transported off-site for disposal. Approximately 7,400 cubic yards of contaminated soil will be removed from the site to achieve UUSCOs as follows:

- Excavation of approximately 6,000 cubic yards of historic fill to a minimum of 10 feet below ground surface (bgs) and is anticipated to be disposed as D008 hazardous lead soil;
- Excavation of an additional 1,400 cubic yards of soil to a depth of 13 feet bgs and is anticipated to be disposed of as non-hazardous waste; and
- Collection and analysis of confirmation samples to demonstrate achievement of the UUSCOs.

On-site soil which does not exceed the above excavation criteria may be used to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfill of the excavation and establish the designed grades at the site.

3. Vapor Intrusion Evaluation

As part of the track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

Contingent Track 1: The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no Environmental Easement (EE) or Site Management Plan (SMP) is anticipated. If the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then an SMP and EE will be required to address the SVI evaluation and implement actions as needed; if a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion.

If no EE or SMP is needed to acieve soil or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

In the event that Track 1 unrestricted use is not achieved, including achievement of soil, groundwater and soil vapor remedial objectives, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

Contingent Remedial Elements:

5. Institutional Controls

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, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws; and
- require 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 4 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;

-descriptions of the provisions of the environmental easement including any land use restrictions;

-a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

-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:

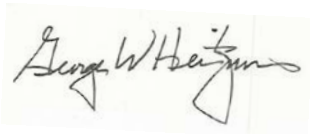
-monitoring of soil vapor to assess the performance and effectiveness of the remedy;

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

-monitoring for soil vapor intrusion as may be required by the Institutional and Engineering Control Plan discussed above.

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.



May 11, 2016

Date

George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

Former F&S Central Manufacturing Corp. Site
Brooklyn, Kings County
Site No. C224230
May 2016

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:

Brooklyn Public Library - Greenpoint Branch
107 Norman Street
Brooklyn, NY 11222
Phone:

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 Former F&S Central Manufacturing site is located at 103 North 13th Street, identified as Block 2279, Lot 34 in Greenpoint, Brooklyn, New York City.

Site Features:
The site is comprised of a single tax parcel totaling 12,500 square feet (0.29 acres), and is currently vacant. The exterior walls and concrete slab of a former one-story manufacturing building remain, with the slab approximately 3 feet above sidewalk grade. An underground storage tank is located in the southwest corner of the property.

Current Zoning and Land Use:
The site is zoned as a M1-2 district which allows both commercial and light industrial use. The surrounding parcels are used for a combination of commercial and light industrial. Prior to acceptance into the BCP, the site was used for commercial warehouse space. The nearest residential area is approximately 1000 feet to the south.

Past Use of the Site:
The Site was undeveloped prior to 1905. From 1916 to 1930, the Site was developed with three small one-story sheds/storage rooms and a portion of a single-story commercial building. The former one-story warehouse/manufacturing building was constructed in 1930. The building was used as an iron pipe warehouse (1940s – 1950s), a paper storage warehouse (1960s), metal pipe hanger manufacturing facility (1970s), contractor's storage facility (1990s) and a food storage warehouse (2000s).

Site Geography and Hydrogeology:
Bedrock in this area of Brooklyn is an igneous intrusive classified as the Ravenswood grano-diorite of middle Ordovician to middle Cambrian age. Unconsolidated sediments overlie the bedrock and consist of Pleistocene aged sand, gravel and silty clays, deposited by glacial-fluvial activity. Non-native fill materials consisting of dredge spoils, rubble and other materials have historically been used to reinforce and extend shoreline areas and to raise and improve the drainage of low lying areas.

Soil at the site is described as historic fill material to a depth as great as 13 feet below the existing building slab (10 feet below sidewalk grade), followed by a native grey (wet) sandy silt. Bedrock was not encountered at the site. The elevation of the site is approximately 14 feet above mean sea level and gradually slopes to the northwest.

The depth to groundwater beneath the site is approximately 7 feet below sidewalk grade. The

groundwater flows to the north-northwest.

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 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:

1,2,4-trimethylbenzene	chrysene
1,3,5-trimethylbenzene	dibenz[a,h]anthracene
benzene	indeno(1,2,3-CD)pyrene
ethylbenzene	arsenic
xylene (mixed)	chromium
benzo(a)anthracene	lead
benzo(a)pyrene	mercury
benzo(b)fluoranthene	1,1,1-trichloroethane
benzo[k]fluoranthene	trichloroethene (TCE)

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.

Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals and PCB/pesticides.

Based upon investigations conducted to date, the primary contaminants of concern include benzene, ethylbenzene, total xylene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benz(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, chromium, lead, arsenic and mercury in soil; and 1,1,1-trichloroethane and trichloroethene (TCE) in soil vapor.

Soil - The VOCs found in subsurface soils were predominantly in the shallower soils (0-5 feet bgs). Concentrations were found as high as 0.2 ppm for benzene; 7.1 ppm for ethylbenzene, and 31 ppm for total xylene. Both 1,2,4-trimethylbenzene (24 ppm) and 1,3,5-trimethylbenzene (23 ppm) were found in deeper soils at 7 to 11 feet bgs. Offsite investigations were not conducted as the adjacent properties are fully built out with existing structures.

The SVOCs were found in the shallower soils. These were found as high as 2.4 ppm for benz(a)anthracene; benzo(a)pyrene (1.7 ppm); benzo(k)fluoranthene (1.5 ppm); and chrysene (3.8 ppm). The exception to this was in the southwest corner of the site, where the same SVOC constituents were found at concentrations approximately 12 to 15 times higher at 12 to 16 feet bgs.

The metal constituents were also found mostly in the shallower soils. Chromium was found as high as 381 ppm; lead at 37,500 ppm; barium at 6,840 ppm; and mercury at 11.4 ppm. Hazardous levels of lead (as high as 14.9 mg/L TCLP) were found between 4 and 13 feet bgs in the western half of the site. All soil borings were drilled to 20 feet bgs, and there were no detections of any contaminant below 13 feet bgs. Bedrock was not encountered during the investigation.

Groundwater - Both lead and chromium were found to slightly exceed groundwater standards on-site, as well as naturally occurring metals including, sodium, manganese and iron. There were no VOC or SVOC constituents detected in groundwater.

Soil Vapor - Soil vapor was sampled at depths ranging from 5 to 6 feet below ground surface (bgs) and low levels of petroleum-related VOCs were noted. Also, TCE and 1,1,1-trichloroethane were detected as high as 173 micrograms per cubic meter (ug/m3) and 2,090 ug/m3 respectively, and are attributed to a suspected off-site source.

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.*

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not contaminated by the site.
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 the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Furthermore, environmental sampling indicates that site-related contamination does not pose a soil vapor 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.

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 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 Conditional Track 1 remedy.

The selected remedy is referred to as the Soil Excavation 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;
•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 exceeding the USEPA and 6 NYCRR Part 371 hazardous criteria for lead;
•removal of any underground storage tanks (USTs) and underground piping; and
•soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

In addition, all on-site soils which exceed unrestricted use soil cleanup objectives (UUSCOs), as defined by 6 NYCRR Part 375-6.8 will be excavated and transported off-site for disposal. Approximately 7,400 cubic yards of contaminated soil will be removed from the site to achieve UUSCOs as follows:

• Excavation of approximately 6,000 cubic yards of historic fill to a minimum of 10 feet below ground surface (bgs) and is anticipated to be disposed as D008 hazardous lead soil;
• Excavation of an additional 1,400 cubic yards of soil to a depth of 13 feet bgs and is anticipated to be disposed of as non-hazardous waste; and
• Collection and analysis of confirmation samples to demonstrate achievement of the UUSCOs.

On-site soil which does not exceed the above excavation criteria may be used to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfill of the excavation and establish the designed grades at the site.

3. Vapor Intrusion Evaluation

As part of the track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

Contingent Track 1: The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no Environmental Easement (EE) or Site Management Plan (SMP) is anticipated. If the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then an SMP and EE will be required to address the SVI evaluation and implement actions as needed; if a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion.

If no EE or SMP is needed to achieve soil or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

In the event that Track 1 unrestricted use is not achieved, including achievement of soil, groundwater and soil vapor remedial objectives, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

Contingent Remedial Elements:

5. Institutional Controls

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, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws; and
• require 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 4 above.

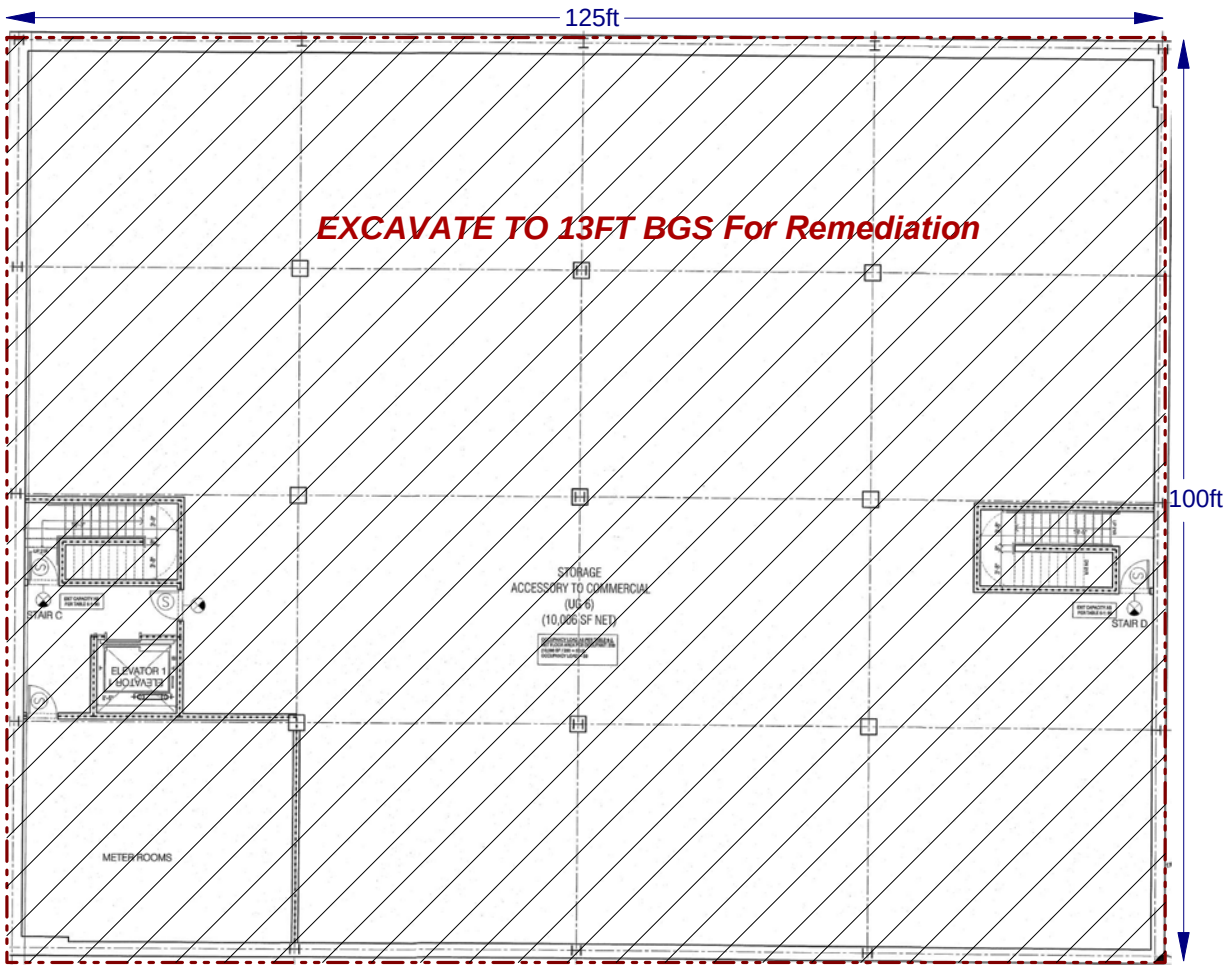
This plan includes, but may not be limited to:

-an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
-descriptions of the provisions of the environmental easement including any land use restrictions;
-a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
-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 soil vapor to assess the performance and effectiveness of the remedy;
-a schedule of monitoring and frequency of submittals to the Department; and
-monitoring for soil vapor intrusion as may be required by the Institutional and Engineering Control Plan discussed above.

Figure 1
Site Map

Former F&S Central Manufacturing Corporation
Brooklyn, NY
Site No. C224230



SIDEWALK

NORTH 13TH STREET

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
Phone 631.504.6000
Fax 631. 924 .2870

Figure No. 2

Site Name: FORMER F&S CENTRAL MANUFACTURING SITE

Site Address: 103 NORTH 13TH STREET, BROOKLYN, NY

Drawing Title: EXCAVATION PLAN