

DECISION DOCUMENT

Teitelbaum Dry Cleaning Inc.
Brownfield Cleanup Program
Astoria, Queens County
Site No. C241149
March 2021



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

Teitelbaum Dry Cleaning Inc.
Brownfield Cleanup Program
Astoria, Queens County
Site No. C241149
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Statement of Purpose and Basis

This document presents the remedy for the Teitelbaum Dry Cleaning Inc. 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 Teitelbaum Dry Cleaning Inc. 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at

a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Soil Vapor Extraction

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface and to prevent off-site migration of contaminated vapor from the source area. VOCs will be physically removed from the soil by applying a vacuum to wells that will be installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

A pilot study will be completed to determine design parameters for the system, including the final number and locations of the vertical extraction wells. An SVE design document will be submitted under separate cover to NYSDEC for approval. Air samples will be collected following the system installation to confirm compliance with New York State short term and annual air quality standards.

4. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants in the source area located in the north-western portion of the site, as well as off-site to the south-west of the building where the concentration of chlorinated solvents was elevated. The method and depth of injection will be determined during the remedial design. A pilot study will be completed to determine design considerations including the chemical to be used, and final number and locations of the injection points. An ISCO design document will be submitted under separate cover to NYSDEC for approval.

5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from soil and/or groundwater. Pressure field extension testing will be performed to determine the design parameters of the SSDS. An SSDS design document will be submitted under separate cover to NYSDEC for approval.

To address the off-site soil vapor impacts, an active SSDS will be installed within the new mixed-use development located on the south adjoining property at 35-01 36th Avenue.

6. Institutional Control

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

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

7. 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 6 above.
 - Engineering Controls: The site cover discussed in Paragraph 2, SVE system discussed in Paragraph 3, ISCO injections discussed in Paragraph 4, and vapor mitigation system discussed in Paragraph 5 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;
- provision for demolition of the existing building if and when it becomes unsafe or inactive or vacant;
- a provision for removal or treatment of the source area located under the on-site building if/when the building is demolished or becomes vacant;
- descriptions of the provisions of the environmental easement including any land use, and groundwater water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site if the vapor mitigation system is discontinued, and off-site locations including locations that previously did not respond to sampling offers, and provisions for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- monitoring of soil vapor and groundwater 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 buildings 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:
- procedures for operating and maintaining the remedy;
 - 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.

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.

March 29, 2021

Date



Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

Teitelbaum Dry Cleaning Inc.
Astoria, Queens County
Site No. C241149
March 2021

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 repositories:

DECInfo Locator - Web Application
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C241149>

Queens Library - Broadway Branch
4020 Broadway
Long Island City, NY 11103
Phone: 718-721-2462

Queens Community Board 1
45-02 Ditmars Boulevard

Astoria, NY 11105
Phone: 718-626-1021

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 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 Astoria section of Queens, NY specifically at 35-45 35th street. The site is bordered by 35th Street and residential buildings to the west, by a 2-story commercial/industrial building to the north, by a parking lot to the east, by a religious center to the southeast, and by a 2-story commercial/industrial building to the south.

Site Features: The site is currently improved with a commercial/manufacturing building that covers the entire site footprint, with an area of 10,000 square feet (0.23 acres). The ground floor is currently utilized for dry cleaning operations and a portion of the building contains a second floor for office space and storage. There is a small sub-grade boiler room (measuring approximately 3 ft x 5 ft) located in the northernmost corner of the property containing a fuel oil fired steam boiler, condensate tank, and sump.

Current Zoning and Land Use: The site is zoned M1-5 (manufacturing and light industrial) and is surrounded by industrial, commercial and residential uses.

Past Use of the Site: The site has been a commercial dry cleaner operating under various names and ownership since at least 1965 and possibly as far back as 1952.

Site Geology/Hydrogeology: The site is generally level and the surrounding area slopes downward from north to south. The geology of Queens County consists of unconsolidated glacial deposits overlying crystalline bedrock at about 80 feet below ground surface (ft-bgs). The site is covered by two to five feet of surface fill material containing brown sandy silt with some gravel, underlain by fine to medium-grained sand with some silt. There is a minor clayey sand lens present within the first six feet in the southern portion of the property. Bedrock was not encountered during the remedial investigation. Groundwater was encountered at approximately 17 ft-bgs to 23 ft-bgs and generally flows to the south towards Newtown Creek.

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 commercial use (which allows for 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 under the Brownfield Cleanup Agreement is a Participant. The Applicant has an obligation to address on-site and off-site contamination. 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
- indoor air
- 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:

tetrachloroethene (PCE)	1,2,4-TMB
trichloroethene (TCE)	1,3,5-trimethylbenzene
toluene	cis-1,2-dichloroethene
xylene (mixed)	

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

- groundwater
- soil
- soil/sub-slab vapor

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:

As part of the Remedial Investigation (RI) soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Groundwater was also analyzed for emerging contaminants (ECs). Soil vapor, sub-slab soil vapor and indoor air were analyzed for VOCs. Based upon the results of the RI, the primary contaminants of concern for the site include tetrachloroethene (PCE) and its breakdown products.

Soil - Highly elevated concentrations of chlorinated VOCs (CVOCs) compared to applicable Protection of Groundwater Soil Cleanup Objectives (PGSCO) or the Unrestricted Use SCO (UUSCO) were found in soils collected from the northwestern portion of the site in proximity to an abandoned underground storage tank (UST). Concentrations of CVOCs ranged from 360 to 1100 parts per million (ppm) with PCE ranging from 2 to 1,100 ppm (PGSCO is 1.3 ppm), TCE concentrations ranging from 2.4 to 21 ppm (PGSCO is 0.47 ppm), and cis-1,2-DCE concentrations ranging from 0.46 to 6.4 ppm (PGSCO is 0.25 ppm). There were also minor petroleum-related impacts in this area, which were likely the result of minor spills associated with typical UST operations, including naphthalene at 26 ppm (UUSCO is 12 ppm), xylenes ranging from 1.3 to 2.1 ppm (UUSCO is 0.26 ppm), toluene ranging from 0.78 to 0.85 ppm (UUSCO is 0.07 ppm), 1,2,4 trimethylbenzene (TMB) at 3.8 to 11 ppm (UUSCO is 3.6 ppm) and 1,3,5 TMB at 9.6 ppm (UUSCO is 8.4 ppm). The UST grave likely created a depression in the subsurface resulting in a preferential pathway for CVOCs contamination to collect. This area is considered to be the source of CVOCs contamination in groundwater and soil vapor on- and off-site. CVOC impacts in this area extend vertically from approximately 5 to 20 ft-bgs and are limited to a radius of approximately 15 to 20 feet. CVOC concentrations decrease significantly in soil outside of this radius and are generally not detected above UUSCOs outside of a 30-foot radius. Data doesn't indicate any off-site impacts in soil related to this site.

Groundwater - Groundwater results from the RI indicate that elevated concentrations of CVOCs compared to ambient water quality standards (AWQS) are present throughout the site and are migrating off-site. The most recent sampling results revealed that the on-site concentrations which exceeded AWQS for PCE ranged from 6.9 parts per billion (ppb) to a maximum to 120 ppb (AWQS is 5 ppb) in the source area mentioned above. The corresponding TCE (AWQS of 5 ppb) concentrations revealed one exceedance at 14 ppb, and cis-1,2-DCE (AWQS of 5 ppb) concentrations also revealed one exceedance of 70 ppb. CVOC contamination is consistent with current and former site operations.

Off-site concentrations of site-related CVOCs include maximum concentrations of 130 ppb, 62 ppb and 860 ppb for PCE, TCE and cis-1,2-DCE respectively. PCE concentrations which exceeded AWQS ranged from 8.6 ppb to 130 ppb, TCE had one exceedance at 62 ppb and cis-1,2-DCE exceedances ranged from 8 ppb to 860 ppb. The contaminant plume extends from the NW corner of the site where the aforementioned source is located across 35th street to 36th avenue.

Levels of perfluorooctanesulfonic acid (PFOS) and/or perfluorooctanoic acid (PFOA) were detected at concentrations above the NYSDEC screening level of 10 ppt in all three EC groundwater samples with PFOS at a maximum concentration of 41.5 parts per trillion (ppt) and PFOA at 55.4 ppt. 1,4-dioxane was not detected in any sample. Data does not indicate that the site is a likely source of PFOS or PFOA contamination.

Soil Vapor, Sub-Slab Soil Vapor and Indoor Air - The results of the RI showed PCE and TCE to be present in all eleven sub-slab vapor samples collected beneath the on-site building, as well as all indoor air samples. PCE ranged from 50.4 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 328,000 $\mu\text{g}/\text{m}^3$ in sub-slab soil vapor and ranged from 10.3 $\mu\text{g}/\text{m}^3$ to 425 $\mu\text{g}/\text{m}^3$ in the indoor air samples. TCE ranged from 5.86 $\mu\text{g}/\text{m}^3$ to 14,500 $\mu\text{g}/\text{m}^3$ in sub-slab vapor and ranged from 2.1 $\mu\text{g}/\text{m}^3$ to 105 $\mu\text{g}/\text{m}^3$ in the indoor air samples.

The soil vapor contamination extends off-site to the west, north and south where soil vapor sampling was done at seven locations in surrounding sidewalks along 35th street and 36th Avenue. PCE concentrations ranged from 274 $\mu\text{g}/\text{m}^3$ to 2,860 $\mu\text{g}/\text{m}^3$ and TCE concentrations ranged from 19.1 $\mu\text{g}/\text{m}^3$ to 47.2 $\mu\text{g}/\text{m}^3$. Based on this information, the NYSDEC and NYSDOH determined that the site poses a significant threat to human health. As a result, off-site soil vapor intrusion sampling was offered to several nearby buildings. Access for sampling was only obtained in one nearby residence. Results of that sampling indicated that no actions were necessary to address potential exposures. More recently the new owner of the property which abuts the site to the south, although denying access, provided copies of Phase II Environmental Site Investigations performed in August 2017 and September 2020. Sub-slab vapor sampling at one location indicated levels of chlorinated VOC contamination that requires mitigation.

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 dig below the ground surface may come into contact with contaminants in subsurface soil and groundwater. 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 soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Soil vapor intrusion is an identified concern for the onsite building and access was only granted for one offsite building for which sampling indicates soil vapor intrusion is not a concern. The potential exists for the inhalation of site contaminants in other offsite structures where access was not granted to evaluate for soil vapor intrusion.

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 or off-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 Vapor Extraction, Groundwater Treatment and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figures 2-5, 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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- 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

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A pilot study will be completed to determine design parameters for the system, including the final number and locations of the vertical extraction wells. An SVE design document will be submitted under separate cover to NYSDEC for approval. Air samples will be collected

following the system installation to confirm compliance with New York State short term and annual air quality standards.

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To address the off-site soil vapor impacts, an active SSDS will be installed within the new mixed-use development located on the south adjoining property at 35-01 36th Avenue.

6. Institutional Control

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

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

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This plan includes, but may not be limited to:

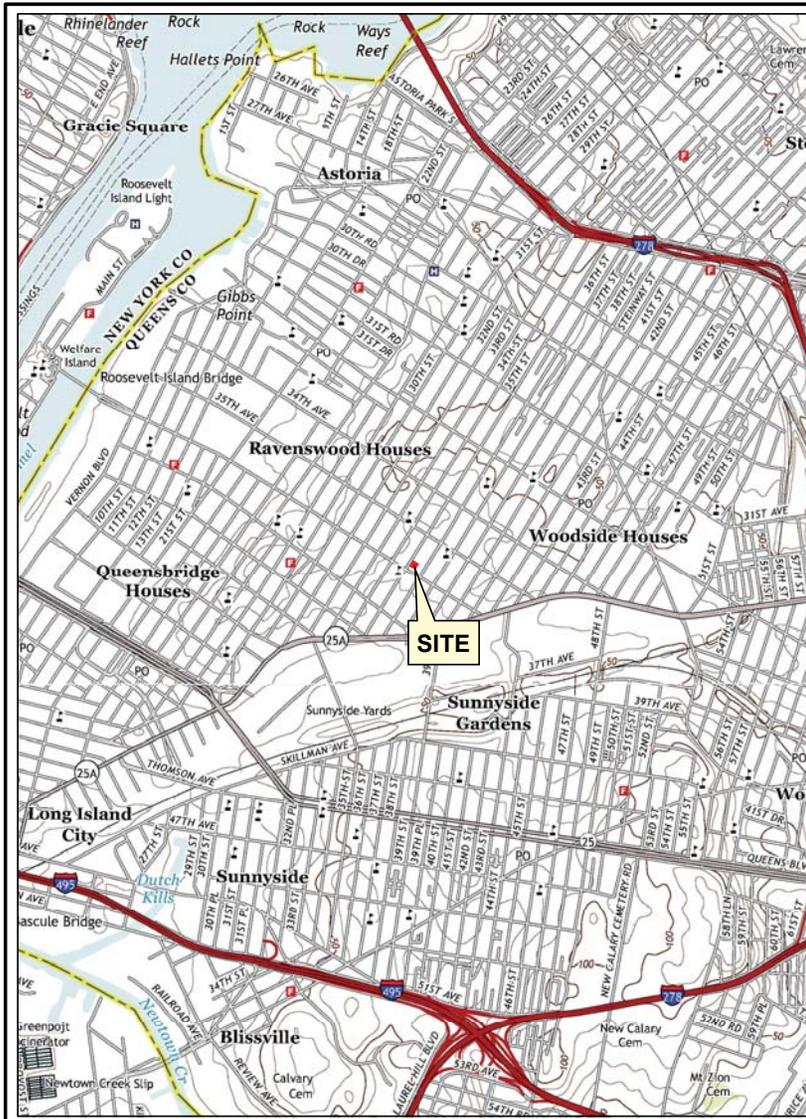
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- provision for demolition of the existing building if and when it becomes unsafe or inactive or vacant;
- a provision for removal or treatment of the source area located under the on-site building if/when the building is demolished or becomes vacant;
- descriptions of the provisions of the environmental easement including any land use, and groundwater water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site if the vapor mitigation system is discontinued, and off-site locations including locations that previously did not respond to sampling offers, and provisions for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
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- 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 and groundwater 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 buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

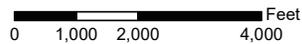
c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- procedures for operating and maintaining the remedy;
- 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.



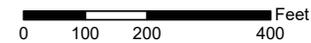
Basemap: USGS Central Park - NY & Brooklyn - NY Quadrangles, 2013
<http://www.usgs.gov>

Site Location



<http://gis.nyc.gov/taxmap/map.htm>

Department of Finance Digital Tax Map



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 NYC Department of City Planning, Information Technology Division

Department of City Planning MapPLUTO - 2017 v1



Remedial Action Work Plan
 Teitelbaum Dry Cleaning, Inc.
 35-45 35th Street
 Astoria, New York

Site

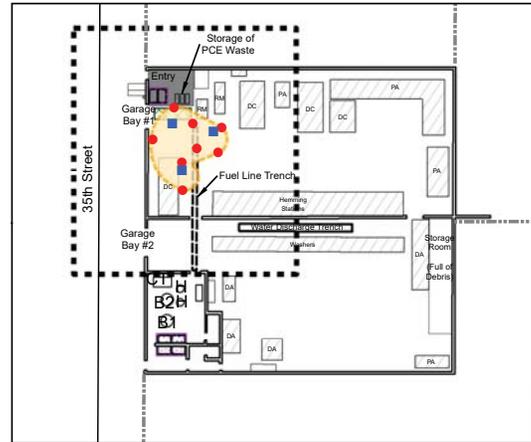
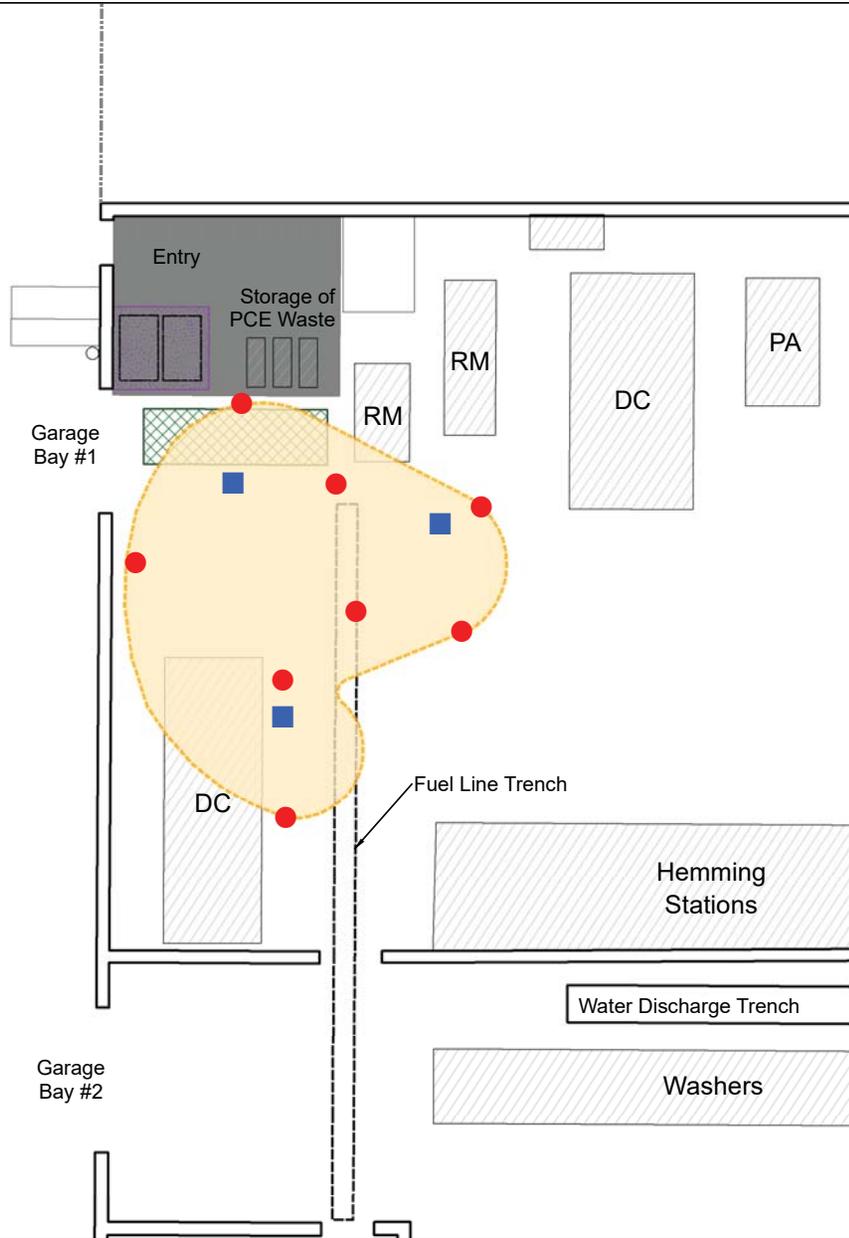
Site Location Map

Figure 1

Drawing Title

Drawing No

35th Street



Inset Map

Legend

- Coupled Soil Vapor Extraction Wells (deep and shallow)
- Soil Vapor Extraction Monitoring Points
- PCE Treatment Area
- Concrete Block Enclosed 275-Gallon Fuel Oil ASTs
- Inaccessible
- Partial Cellar
- Abandoned 1,500 Gallon UST
- DC Dry Cleaning Machine
- PA Pressing Area
- DA Dryer Area
- RM PCE Recycling
- ⓑ Boiler
- ⓓ Hot Water Heater
- CT Condensate Tank

Notes:

1. Placement and size of equipment is approximate.
2. Dashed line indicates inferred contour
3. Shallow SVE Wells are screened 8-13 feet below grade.
4. Deep SVE Wells are screened 13-18 feet below grade.
5. Treatment area consists of soil with PCE concentrations in excess of Protection of Groundwater Soil Cleanup Objectives.



Source:
Integral Engineering, P.C., 34-45 35th St., Astoria, NY, RIR, Fig.3
gis.nyc.gov/taxmap.htm

Remedial Action Work Plan
Teitelbaum Dry Cleaning, Inc.
35-45 35th Street
Astoria, New York

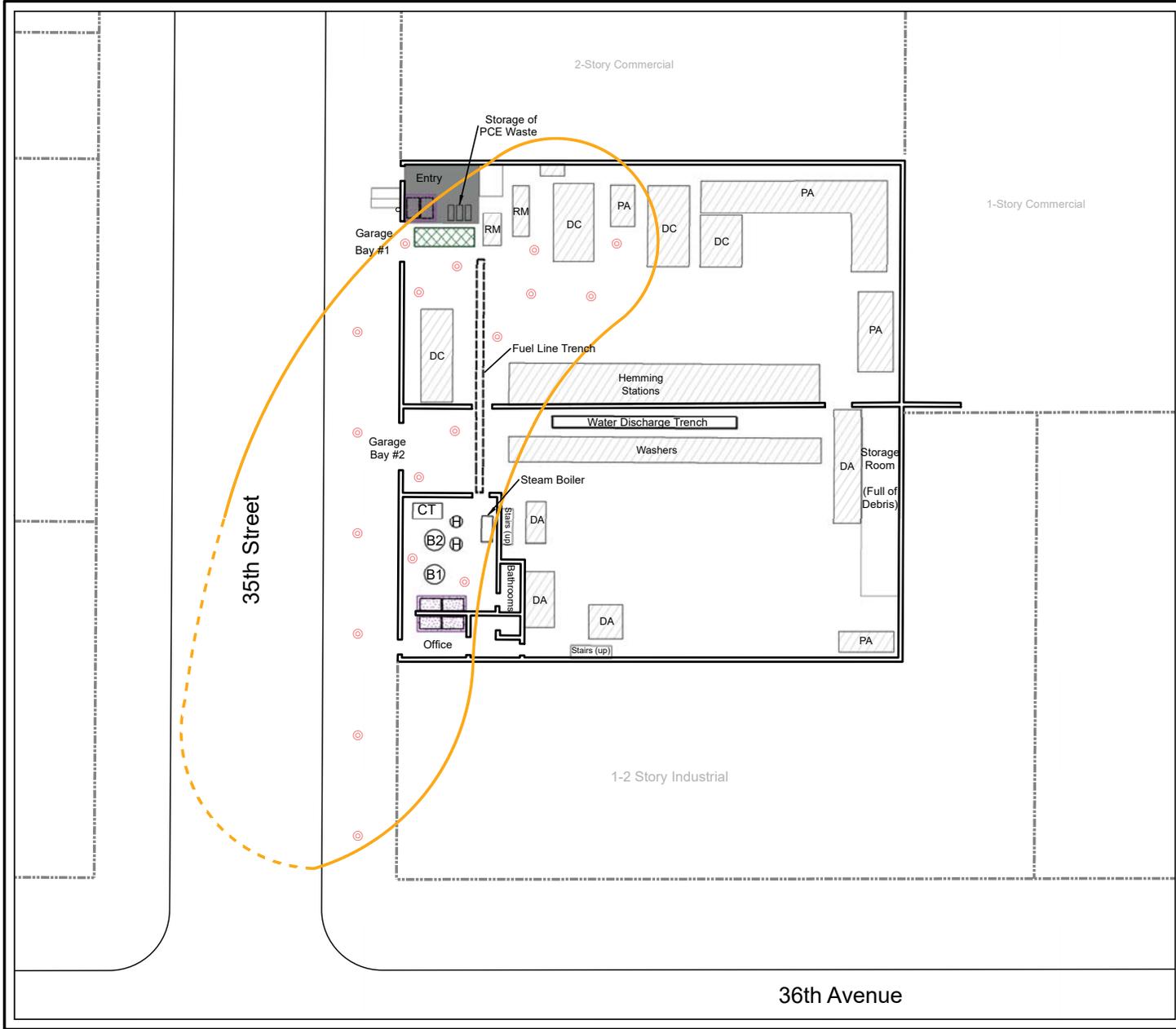
Site

Conceptual SVE
Layout Basemap

Figure 2

Drawing Title

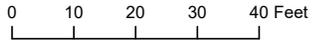
Drawing No



- Legend**
- ⊙ Injection Wells
 - PCE Concentration Contours**
 - 50 ug/L
 - Concrete Block Enclosed 275-Gallon Fuel Oil ASTs
 - Inaccessible
 - Partial Cellar
 - Abandoned 1,500 Gallon UST
 - DC Dry Cleaning Machine
 - PA Pressing Area
 - DA Dryer Area
 - RM PCE Recycling
 - ⊙ Boiler
 - ⊙ Hot Water Heater
 - CT Condensate Tank

Notes:

1. Placement and size of equipment is approximate.
2. Dashed line indicates inferred contour



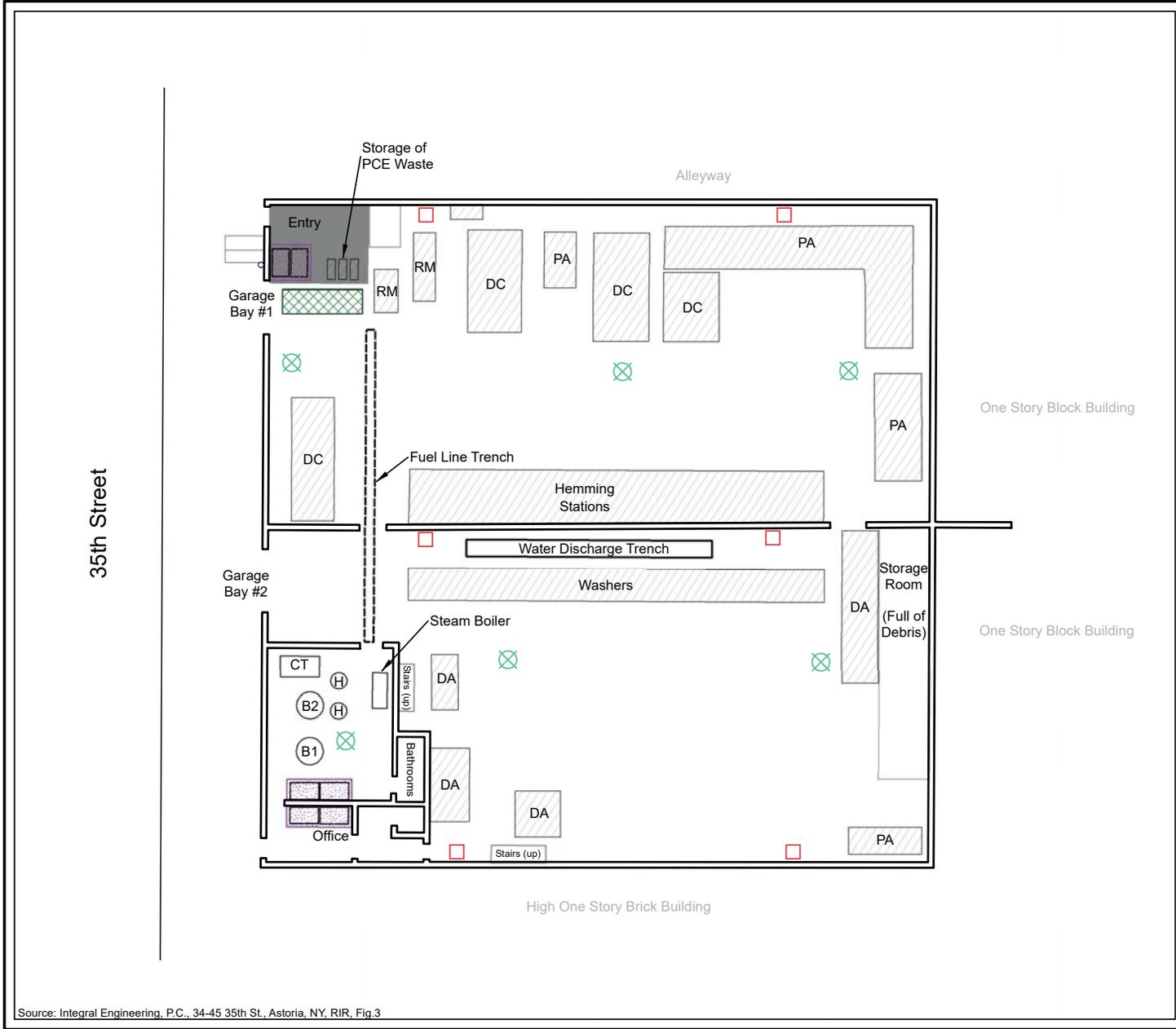
Remedial Action Work Plan
Teitelbaum Dry Cleaning, Inc.
35-45 35th Street
Astoria, New York

Conceptual Groundwater
Remedy (ISCO)

Figure 3

Drawing Title

Drawing No



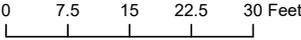
Source: Integral Engineering, P.C., 34-45 35th St., Astoria, NY, RIR, Fig.3



Legend

- Pressure Monitoring Point
- Suction Pit
- Concrete Block Enclosed 275-Gallon Fuel Oil ASTs
- Inaccessible
- Partial Cellar
- Abandoned 1,500 Gallon UST
- DC Dry Cleaning Machine
- PA Pressing Area
- DA Dryer Area
- RM PCE Recycling
- (B) Boiler
- (H) Hot Water Heater
- (CT) Condensate Tank

- Notes:
1. Placement and size of equipment is approximate.
 2. SSDS design is conceptual and will be finalized upon completion of a pilot test.



Remedial Action Work Plan
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 35-45 35th Street
 Astoria, New York

SSDS Sub-Slab Layout & Pressure Test Locations

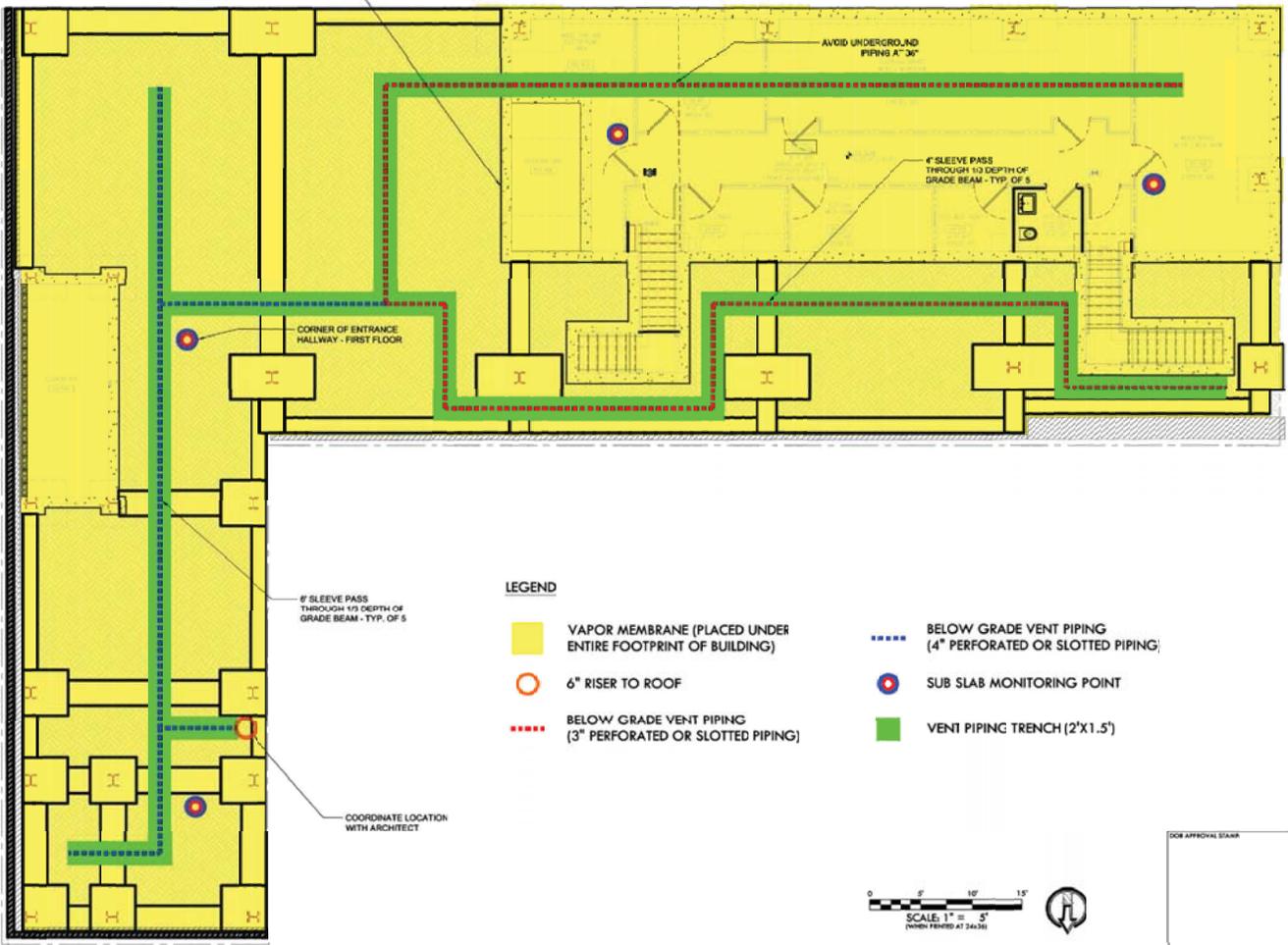
Figure 4

Drawing Title

Drawing No

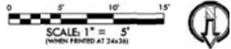
VAPOR MITIGATION SYSTEM SHEETS ENV-1 THROUGH ENV-5

VERTICAL WALLS TO BE WATERPROOFED. TIE VAPOR BARRIER INTO VERTICAL WATERPROOFING COMPONENT. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.



LEGEND

- VAPOR MEMBRANE (PLACED UNDER ENTIRE FOOTPRINT OF BUILDING)
- 6" RISER TO ROOF
- BELOW GRADE VENT PIPING (3" PERFORATED OR SLOTTED PIPING)
- BELOW GRADE VENT PIPING (4" PERFORATED OR SLOTTED PIPING)
- SUB SLAB MONITORING POINT
- VENT PIPING TRENCH (2'X1.5')



FOR APPROVAL SIGNATURE

Remedial Action Work Plan
 Teitelbaum Dry Cleaning, Inc.
 35-45 35th Street
 Astoria, New York

Drawing Title
**Proposed SSSDS Location
 Adjacent Development
 35-01 36th Avenue**

Drawing No
Figure 5