NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau A
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www.dec.ny.gov

December 6, 2016

Fredric Oliver
100 Ring Road West
Suite 101
Garden City, NY 11530

Re: 31/32 LIC LLC
Site ID No. # C241182
Remedial Work Plan & Decision Document

Dear Mr. Oliver:

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health have reviewed the Remedial Work Plan (RWP) for the 31/32 LIC LLC dated September 2016 and prepared by CA Rich Consultants, Inc. on your behalf. The RWP is hereby approved. Please ensure that a copy of the approved RWP is placed in the document repositories. The draft plan should be removed.

Enclosed is a copy of the Department's Decision Document for the site. The remedy is to be implemented in accordance with this Decision Document. Please ensure that a copy of the Decision Document is placed in the document repositories.

Please contact the Department's Project Manager, Caroline Eigenbrodt at (518) 402-9621 or by email at caroline.eigenbrodt@dec.ny.gov at your earliest convenience to discuss next steps. Please recall the Department requires seven days notice prior to the start of field work.

Sincerely,

James B. Harrington PE
Director
Remedial Bureau A
Division of Environmental Remediation

Enclosure

ec *w/attachments*:

V. Whlelan, CA Rich
R. Izzo, CA Rich
N. Andrianas, P.E., NAC Consultants, Inc.
L. Schnapf, Schnapf LLC.
R. Schick, NYSDEC
M. Ryan, NYSDEC
J. Harrington. NYSDEC
G. Bobersky, NYSDEC
C. Eigenbrodt, NYSDEC
S. Selmer, NYSDOH
J. Deming, NYSDOH

DECISION DOCUMENT

31/32 LIC LLC
Brownfield Cleanup Program
Queens, Queens County
Site No. C241182
December 2016

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

DECLARATION STATEMENT - DECISION DOCUMENT

31/32 LIC LLC
Brownfield Cleanup Program
Queens, Queens County
Site No. C241182
December 2016

Statement of Purpose and Basis

This document presents the remedy for the 31/32 LIC LLC 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 31/32 LIC LLC 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

The site will be excavated to 3 feet across the entire site and to 6 feet along the southern boundary, northwest corner and eastern most portion of the site.

The on-site building slab will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

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 4,000 tons of contaminated soil will be removed from the site.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling 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.

4. Local Institutional Controls

If no EE or SMP is needed to achieve soil, groundwater, 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.

Contingent Track 1 Elements

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no environmental easement or site management plan is anticipated.

In the event that Track 1 unrestricted use is not achieved, including achievement of 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.

Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum and will include an environmental easement and site management plan as described below.

5. 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 restricted residential 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 NYCDOH; 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 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;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion to future 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.

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.

December 2, 2016

Date

James B Harrington, Director
Remedial Bureau A

DECISION DOCUMENT

31/32 LIC LLC
Queens, Queens County
Site No. C241182
December 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 repositories:

Queens Library - Astoria Branch
14-01 Astoria Blvd.
Astoria, NY 11102
Phone: (718) 278-2220

Queens Community Board 1
45-02 Ditmars Blvd
LL Suite 1025
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, 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 31/32 LIC LLC site is a 0.40-acre parcel located in a well-developed urban area with a mix of commercial and residential buildings. The site address is 37-29 31st Street, Long Island City, NY (formerly 37-26 32nd Street and 37-27 31st Street). The site fronts both 31st Street and 32nd Street and is located between 37th and 38th Avenue. Elevated New York City Subway tracks are located along the 31st Street frontage of the property.

Site Features - Previously the site was developed with two one-story structures. Prior to demolition, there was no open space on the property as the buildings fully cover the lot. The structures were both slab on grade with small partial cellars. The slab was left in place during demolition activities.

Current Zoning and Land Use – The current zoning designation is M1-2/R6A which includes light manufacturing and residential use. The site is currently vacant. The proposed use is consistent with existing zoning for the property.

Past Uses of the Site – The site and its surrounding properties were undeveloped until about 1915 when 3rd Avenue traversed the site from northeast to southwest until 1936. Since 1936, the property has hosted multiple tenants which included: tool manufacturing and plating works (1947-1950); lighting factory (1953); welding equipment warehouse (1970-1979); food cart manufacturer, refrigeration facility, and metal shop (1977- 2015); and an auto body facility (1980 – present). Past uses most likely contaminated the property through on-site disposal of materials through historic drains, sumps, and pits.

Site Geology and Hydrogeology - The property is underlain by glacial and alluvial deposits with Harrison Gneiss underlying. Medium grain sand and fill extend to three feet below grade and medium grain sand from three to 23 feet below grade. The site is relatively level and has no natural or artificial surface water bodies or impoundments.

The depth of the shallow groundwater ranges from 22 to 23 feet below grade. Shallow groundwater beneath the site flows to the southwest towards the East River and Dutch Kills. Underlying groundwater in this area of Queens is not used for potable supply purposes. Potable water is provided to the residents by the NYC Department of Environmental Protection.

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(s)) 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:

- air
- 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:

trichloroethene (TCE)	benzo(a)anthracene
lead	benzo(b)fluoranthene
copper	benzo(a)pyrene
chromium	dibenz[a,h]anthracene
zinc	indeno(1,2,3-CD)pyrene

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

- 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 were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and metals during the remedial investigation. Soil vapor, subslab vapor, indoor and outdoor air were also analyzed for VOCs during the remedial investigation. Based on the investigations performed to date the primary contaminants of concern are trichloroethene (TCE) in soil vapor and SVOCs and various metals consistent with historic fill identified in the top 5 feet of soil.

Soil – Lead, copper, chromium, and zinc were identified in the top 3-5 feet of soil across the site at levels above unrestricted and restricted residential SCOs. It was also found that metals exceed residential SCOs at 18–20 feet below ground surface (bgs). SVOCs benzo(a)anthracene, benzo(b)flouranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were also identified in the northwestern and southeastern areas of the site above restricted residential SCOs. The highest level of SVOCs was in the northwestern area of the site with benzo(a)anthracene at 6.9 parts per million (ppm). The pesticide 4,4'-DDD was detected above unrestricted SCOs between 0-2 feet in the northern portion of the site, detections ranged between 0.0042 and 0.013 ppm. No VOCs or PCBs were detected above unrestricted SCOs during the investigation. No off-site sampling was conducted as part of this investigation.

Groundwater – The dissolved metals magnesium, sodium, and nickel, were found in groundwater across the site above groundwater standards. In the western portion of the site chloroform was found between 19–24 parts per billion (ppb), exceeding groundwater standards. No PCBs, pesticides, or SVOCs were detected above NYSDEC TOGS class GA standards in any of the monitoring wells sampled. No off-site samples were collected as part of this investigation.

Soil Vapor, Sub-slab Vapor, and Indoor Air – TCE soil vapor levels were identified at high concentrations across the site. The highest concentrations are noted in the western-most potion of the site at 12,500 micrograms per cubic meter (ug/m3) and gradually decline to the eastern portion of the site. An occupied 6-story residential building is located to the north. Soil vapor samples collected along the northern-most boundary of the site range from 924-945 ug/m3. TCE was detected in indoor and outdoor air samples at 0.86 ug/m3 and 1.07 ug/m3, respectively. The indoor air sample was collected from a cellar on-site due to the building being demolished prior to investigation activities. No off-site samples were collected as part of this investigation.

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 site is covered with a building slab. People may contact site-related contaminants if they dig below the surface. Groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that is 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 the 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 the buildings, is referred to as soil vapor intrusion. There is no on-site building, therefore inhalation of site contaminants in indoor air 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. Further evaluation is needed 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.

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

The site will be excavated to 3 feet across the entire site and to 6 feet along the southern boundary, northwest corner and eastern most portion of the site.

The on-site building slab will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

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 4,000 tons of contaminated soil will be removed from the site.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling 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.

4. Local Institutional Controls

If no EE or SMP is needed to achieve soil, groundwater, 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.

Contingent Track 1 Elements

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no environmental easement or site management plan is anticipated.

In the event that Track 1 unrestricted use is not achieved, including achievement of 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.

Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 2 restricted residential cleanup at a minimum and will include an environmental easement and site management plan as described below.

5. 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 restricted residential 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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

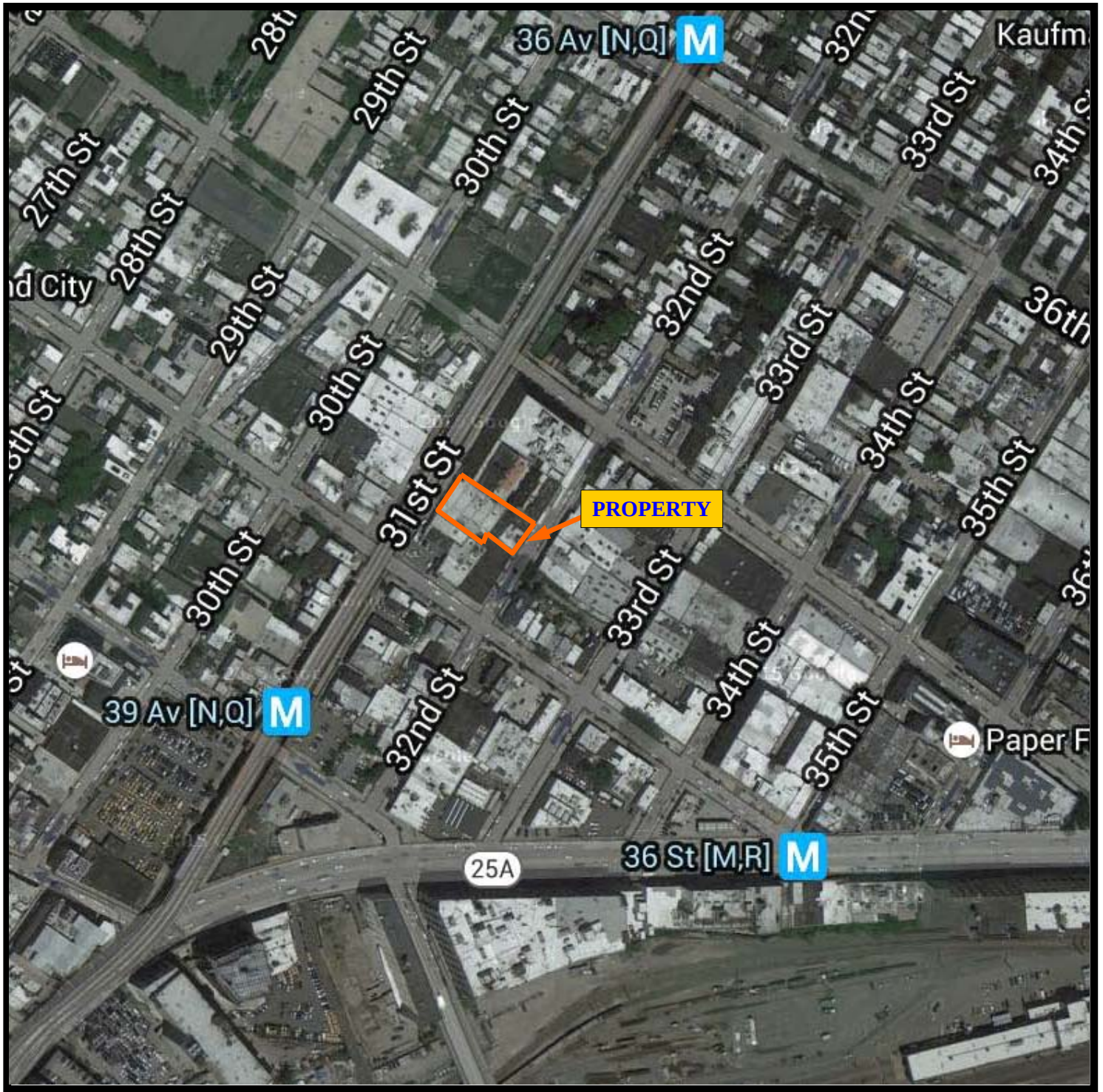
A Site Management Plan is required, which includes the following:

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 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;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion to future 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.



Approx. Scale (ft)

0 100 200 300

N

Adapted from Google Maps

CA RICH CONSULTANTS, INC.
17 Dupont Street,
Plainview, NY 11803

TITLE: **Property Location Map**	DATE: **6/6/2016**
	SCALE: **Not Shown**
FIGURE: **1**	DRAWN BY: **TRB**
DRAWING:	**37-25 31st Street Queens, New York**
	APPR. BY: **VW**

T-3 (3-5')		
	Result	UU SCO
Total Metals	mg/kg	mg/kg
Lead, Total	70	63
Mercury, Total	0.21	0.18

SB-5 (0-2)		
	Result	UU SCO
SVOCs	mg/Kg	mg/Kg
Benzo(a)anthracene	3.4	1
Chrysene	3.8	1
Benzo(b)fluoranthene	3.3	1
Benzo(k)fluoranthene	1.4	0.8
Benzo(a)pyrene	2.8	1
Indeno(1,2,3-cd)pyrene	1.8	0.5
Dibenzo(a,h)anthracene	0.43	0.33
Pesticides	mg/Kg	mg/Kg
4,4-DDD	0.013	0.0033
Metals	mg/Kg	mg/Kg
Chromium	12.0	1
Copper	169	50
Lead	239	63
Zinc	494	109
SB-5 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	9.7	1

T-4 (2-5')		
	Result	UU SCO
Total Metals	mg/kg	mg/kg
Lead, Total	72	63
Mercury, Total	0.18	0.18
Zinc, Total	130	109

SB-6 (0-2)		
	Result	UU SCO
Metals	mg/Kg	mg/Kg
Chromium	12.5	1
Lead	404	63
Zinc	176	109
SB-6 (18-20)		
Metals	Results	UU SCO
Chromium	9.3	1

SB-7 (0-2)		
	Result	UU SCO
Metals	mg/Kg	mg/Kg
Chromium	13.5	1
Copper	84.5	50
Lead	183	63
Zinc	543	109
SB-7 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	11.5	1

SB-4 (0-2)		
	Result	UU SCO
SVOCs	mg/Kg	mg/Kg
Benzo(a)anthracene	6.9	1
Chrysene	7.9	1
Benzo(b)fluoranthene	6.4	1
Benzo(k)fluoranthene	2.3	0.8
Benzo(a)pyrene	5.2	1
Indeno(1,2,3-cd)pyrene	2.8	0.5
Dibenzo(a,h)anthracene	0.86	0.33
Pesticides	mg/Kg	mg/Kg
4,4-DDD	0.0081	0.0033
Metals	mg/Kg	mg/Kg
Chromium	12.2	1
Lead	1120	63
Zinc	344	109
Mercury	0.82	0.18
SB-4 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	9.5	1

T-5 (2-5')		
	Result	UU SCO
Total Metals	mg/kg	mg/kg
Lead, Total	170	63
Zinc, Total	140	109

T-7 (3-5')		
	Result	UU SCO
VOCs	mg/kg	mg/kg
Trichloroethene	2	0.47
Total Metals	mg/kg	mg/kg
Copper, Total	170	50
Lead, Total	1,000	63
Zinc, Total	400	109

T-8 (3-5')		
	Result	UU SCO
SVOCs	mg/kg	mg/kg
Benzo(a)anthracene	4	1
Benzo(a)pyrene	3.4	1
Benzo(b)fluoranthene	4.3	1
Benzo(k)fluoranthene	1.4	0.8
Chrysene	3.8	1
Dibenzo(a,h)anthracene	0.42	0.33
Indeno(1,2,3-cd)pyrene	2.1	0.5
Total Metals	mg/kg	mg/kg
Lead, Total	170	63
Zinc, Total	460	109

SB-3 (0-2)		
	Result	UU SCO
Pesticides	mg/Kg	mg/Kg
4,4-DDD	0.0042	0.0033
Metals	mg/Kg	mg/Kg
Chromium	13.3	1
Lead	922	63
Zinc	532	109
Mercury	0.61	0.18
SB-3 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	6.1	1

T-6
No Exceedances

T-2 (2-5')		
	Result	UU SCO
Total Metals	mg/kg	mg/kg
Lead, Total	710	63

SB-10 (0-2)		
	Result	UU SCO
SVOCs	mg/Kg	mg/Kg
Chrysene	1.2	1
Benzo(b)fluoranthene	1.3	1
Indeno(1,2,3-cd)pyrene	0.66	0.5
Metals	mg/Kg	mg/Kg
Barium	398	350
Chromium	13.3	1
Lead	720	63
Zinc	357	109
Mercury	0.44	0.18
SB-10 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	20.4	1

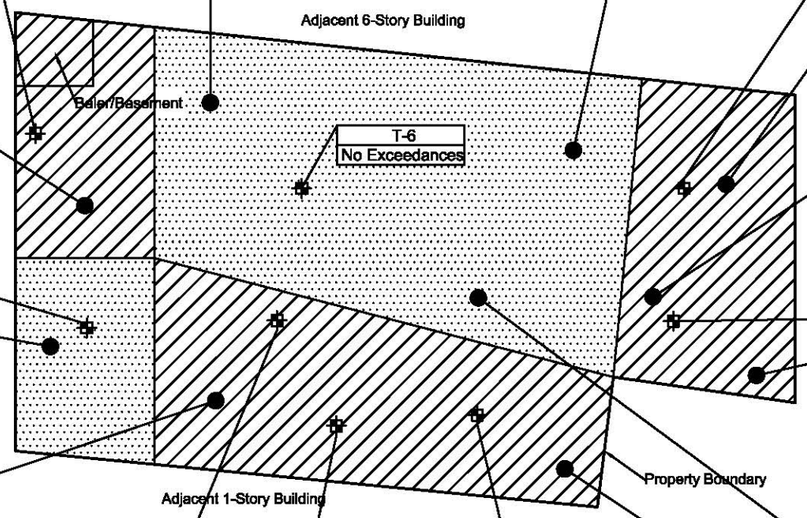
SB-9 (0-2)		
	Result	UU SCO
Metals	mg/Kg	mg/Kg
Barium	1340	350
Cadmium	2.7	2.5
Chromium	12.4	1
Copper	113	50
Lead	1760	63
Zinc	689	109
Mercury	1.1	0.18
SB-9 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	6.4	1

T-1 (2-5')		
	Result	UU SCO
Total Metals	mg/kg	mg/kg
Lead, Total	210	63
Zinc, Total	310	109

SB-8 (0-2)		
	Result	UU SCO
Metals	mg/Kg	mg/Kg
Chromium	45.6	1
Lead	292	63
Zinc	200	109
SB-8 (18-20)		
Metals	Results	UU SCO
Chromium	9.9	1

SB-2 (0-2)		
	Result	UU SCO
Metals	mg/Kg	mg/Kg
Chromium	15.9	1
Zinc	114	109
SB-2 (18-20)		
Metals	mg/Kg	mg/Kg
Chromium	20.0	1

SB-1 (0-2)		
	Result	UU SCO
Metals	mg/Kg	mg/Kg
Chromium	36.0	1
Lead	334	63
SB-1 (18-20)		
Metals	Results	UU SCO
Chromium	6.3	1



Legend

- CA RICH May 2016 Soil Boring Locations
- GZA December 2014 Soil Boring Locations
- Based on RI data remedial excavation to approximately 6ft
- Based on RI data remedial excavation to approximately 3ft

Note:

Remedial Soil Estimate
Total = 77,460 ft³
Cubic Yards = 2,869 yd³
Tons = 4,017

Graphic Scale In Feet

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Site Excavation Diagram	DATE: 9/6/2016
	SCALE: AS SHOWN
FIGURE: 2	DRAWN BY: T.R.B.
DRAWING NO: 2016-16	37-25 31st Street Queens, NY
	APPR. BY: V.W.

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