EXPLANATION OF SIGNIFICANT DIFFERENCE
737 4TH AVENUE SITE

City of New York / Kings County / Site No. C224332 / October 2023

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

1.0 INTRODUCTION

The purpose of this notice is to describe the progress of the cleanup at the 737 4th Avenue Site and to inform you about a change in the Site remedy. The Site is located at 731-747 4th Avenue, Brooklyn, NY (see Figure 1). On March 7, 2023, the New York State Department of Environmental Conservation ("NYSDEC") issued a Decision Document ("DD") which selected a remedy to clean up the Site. The selected Track 2 Restricted Residential remedy presented in the DD consisted, in part, of the following:

- Implementation of an Interim Remedial Measure ("IRM") comprising:
  1. installation and operation of six product recovery wells (6-inch diameter) to a depth of 28 feet below ground surface in the central and southern portions of the site to remove potentially mobile petroleum product from the subsurface; and
  2. installation of a secant pile barrier wall along the southeastern property boundary to prevent off-site contamination from migrating onto the site.

- Implementation of in-situ chemical oxidation ("ISCO") in two small areas near the southeastern and southwestern boundaries of the site to treat contaminants in soil above and at the groundwater table.

Based on tests and evaluations conducted during the installation of production piles for the new building and during the ISCO injections, it was determined that drilling of the secant piles next to the existing foundation will cause risk to the structural integrity of the adjacent building. The change to the original remedy involves eliminating the barrier wall portion of the IRM due to it being structurally infeasible. As detailed below, contamination is not believed to be continually migrating on-site based on the IRM product recovery activities to date.

This Explanation of Significant Difference ("ESD") will become part of the Administrative Record for this Site. The information here is a summary of what can be found in greater detail in documents that are available through DECInfo Locator (https://www.dec.ny.gov/data/DecDocs/C224332/) and have been placed in the following repositories:

Brooklyn Public Library – Sunset Library Branch
4201 4th Avenue
Brooklyn, NY 11232
Call for hours: (718) 435-3648

Brooklyn Community Board 7
4201 4th Avenue
Brooklyn, NY 11232
Call in advance: (718) 854-0003

Although this is not a request for comments, interested persons are invited to contact NYSDEC's Project Manager for this site to obtain more information or have questions answered.

2.0 SITE DESCRIPTION AND ORIGINAL REMEDY

2.1 Site History, Contamination, and Selected Remedy

Site Description: The 0.46-acre site is bounded by: 24th Street and mixed residential and commercial properties to the north; industrial and manufacturing properties to the east; 25th Street, commercial, industrial and manufacturing properties, and office buildings to the south; and 4th Avenue, residential, commercial, industrial and manufacturing properties to the west. The site is currently vacant following building demolition. Historically, the site had been used for residential purposes, metals manufacturing, as a gas station, as a junk yard, and more recently, restaurants and an auto body repair shop.

Summary of the Investigation: The primary contaminants of concern at the site are semi-volatile organic compounds ("SVOCs") and metals in soil, petroleum-related VOCs, SVOCs, and metals in groundwater, and petroleum-related VOCs in soil vapor.

Elements of the Selected Remedy:

- Removal of petroleum product through pumping from recovery wells and off-site disposal and installation of a barrier wall as part of an Interim Remedial Measure;
- Excavation and off-site disposal of contaminated soil exceeding Track 2 restricted residential use and/or applicable protection of groundwater soil cleanup objectives ("PGWSCOs");
- Collection and analysis of confirmation samples to evaluate the effectiveness of the remedy;
- Treatment of contaminated soil above and at the water table through injection of chemical oxidants into the soil in the southern portion of the site;
    - Collection of one round of post-injection soil samples from within the treatment areas;
    - A contingency for the installation of an SVE system in two small areas to treat soil above the water table if post-ISCO soil sample results do not meet PGWSCOs. Effectiveness of the SVE system will be measured by monitoring the concentrations of VOCs in the system effluent. These areas would achieve a Track 4 cleanup and cover system as an engineering control;
- Installation of a vapor barrier as part of the foundation of the planned new building;
- Performance of a soil vapor intrusion evaluation to determine whether mitigation would be necessary (the Applicant elected to install a passive sub-slab depressurization system that could be converted to an active system if deemed necessary by the evaluation);
- Importation of clean soil that meets established SCOs for use as backfill;
- Implementation of a Health and Safety Plan and Community Air Monitoring Plan during all ground-intrusive activities;
- Implementation of the Site Management Plan ("SMP") to ensure the remedy remains effective; and
- An Environment Easement ("EE") will be filed to ensure the proper use of the site.

3.0 CURRENT STATUS

The Remedial Action is ongoing and includes soil excavation and in-situ soil treatment. NYSDEC has received a proposed addendum to the approved Remedial Action Work Plan detailing the proposed

changes discussed here and is reviewing the document in consultation with the NYS Department of Health ("DOH"). NYSDEC is awaiting submittal of the draft SMP, Final Engineering Report ("FER") and EE by the Applicant.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCE

4.1 New Information

In addition to the modifications announced in the August 2023 ESD, which described the contingency for SVE, a cover system and a Track 4 restricted residential cleanup in two small areas of the site, a further modification to the site remedy has been made. This modification is based on design evaluations and field tests comprising optical and vibration monitoring conducted from June through September 2023 and field measurements and observations made as part of the ongoing IRM.

Based on detailed evaluations conducted during the installation of production piles for the new building and during the ISCO injections, it was determined that vibrations created during the installation of the secant piles adjacent to the neighboring property could exacerbate cracks observed in the adjacent building and further undermine its structural integrity.

Petroleum product was encountered in on-site groundwater monitoring wells ranging in thickness from 0.25 inches to 2.5 inches during the March 2022 Remedial Investigation which led to the development of the IRM for product removal and installation of a secant pile barrier wall to prevent further migration of off-site contaminants onto the site. Petroleum product which has historically been in observed in on-site groundwater monitoring wells installed in the southeast portion of the site has been attributed to an upgradient, off-site source, where there is a known open spill (#1610373) of No.2 fuel oil and underground storage tank with a known leak. However weekly well gauging over the past six months has shown minimal petroleum product (no more than a 0.12 inches), which supports the conclusion that petroleum is not actively migrating on-site from the upgradient off-site source. No product removals under the IRM have been necessary to date. Furthermore, the off-site source is being addressed by the owner of the adjacent property through monthly product removal events via vacuum enhanced fluid recovery.

Due to the structural risk to a building adjacent to the southeastern property boundary of the site, it is not feasible to install the barrier wall in this area. Migration of off-site contamination onto the site is not anticipated; however, sentinel groundwater monitoring wells (as shown on Figure 2) will be installed in this area to monitor groundwater migrating onto the site. During the construction phase of the project, the sentinel wells will be sampled prior to and at least two weeks after construction dewatering has been completed. The sentinel wells will be sampled on a quarterly basis for at least one year, after which the frequency may be reduced with approval by NYSDEC if an increase in contamination is not detected. In the event contamination is found to be migrating onto the site, there is a contingency for ISCO treatment to address the contamination. ISCO will be accomplished through six injection wells installed along the southeastern property boundary of the site (as shown on Figure 2).

4.2 Comparison of Changes with Original Remedy

The change from the original remedy presented in the DD applies to the elimination of the barrier wall from the previously approved IRM.

From this point forward, the following will be occurring at the site:

- Completion of Remedial Action including contaminated soil excavation;
- Collection of confirmation samples to evaluate the effectiveness of the remedy;
- Implementing ISCO for soil treatment (above and at the water table) and a contingency treatment for groundwater in the event that off-site contamination does migrate onto the site;
- Collection of post-injection soil samples from within the ISCO treatment areas;
- As described in the August 2023 ESD, if post-ISCO soil sample results do not meet PGWSCOs, a soil vapor extraction ("SVE") system will be installed in two small areas to treat soil above the water table, and these areas will achieve a Track 4 cleanup. The effectiveness of the SVE system will be measured by monitoring the concentrations of VOCs in the system effluent;
- Continued removal of petroleum product, if necessary, through pumping and off-site disposal in accordance with the IRM;
- Importation of clean soil and/or re-use of on-site soils that meet established SCOs for use as backfill;
- If SVE is implemented, installation of a cover system consisting of two feet of clean fill, pavement or concrete in the Track 4 areas.
- Development of an SMP to address proper handling of contaminated soils which may be excavated at the site during future development;
- Performance of a soil vapor intrusion evaluation to determine whether the mitigation measures are necessary for the new on-site building;
- Preparation of an FER;
- The imposition of institutional controls in the form an EE that would require compliance with the SMP;
- Implementation of a long-term maintenance program;
- Periodic certifications to NYSDEC that the institutional and engineering controls are still in place, have not been altered, and are still effective.

5.0 SCHEDULE AND MORE INFORMATION

Essential remedial work associated with this project is still ongoing.

If you have questions or need additional information you may contact any of the following:

Ronnie Lee, Project Manager
NYSDEC Central Office
625 Broadway, 12th Floor
Albany, NY 12233-7016
(518) 402-9615
ronnie.lee@dec.ny.gov

James Sullivan, Project Manager
NYSDOH
Bureau of Environmental Exposure Investigation
Empire State Plaza, Corning Tower
Albany, NY 12237
(518) 402-5584
beei@health.ny.gov

DECLARATION

The selected remedy is protective of public health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

9/12/23
Date

Ronnie Lee, Project Manager
Remedial Section C
Remedial Bureau B

9/18/23
Date

Sarah Quandt, Section Chief
Remedial Section C
Remedial Bureau B

9/26/23
Date

Jane H. O'Connell, Regional Remediation Engineer
Region 2

9/29/23
Date

Andrew Guglielmi, Director
Division of Environmental Remediation

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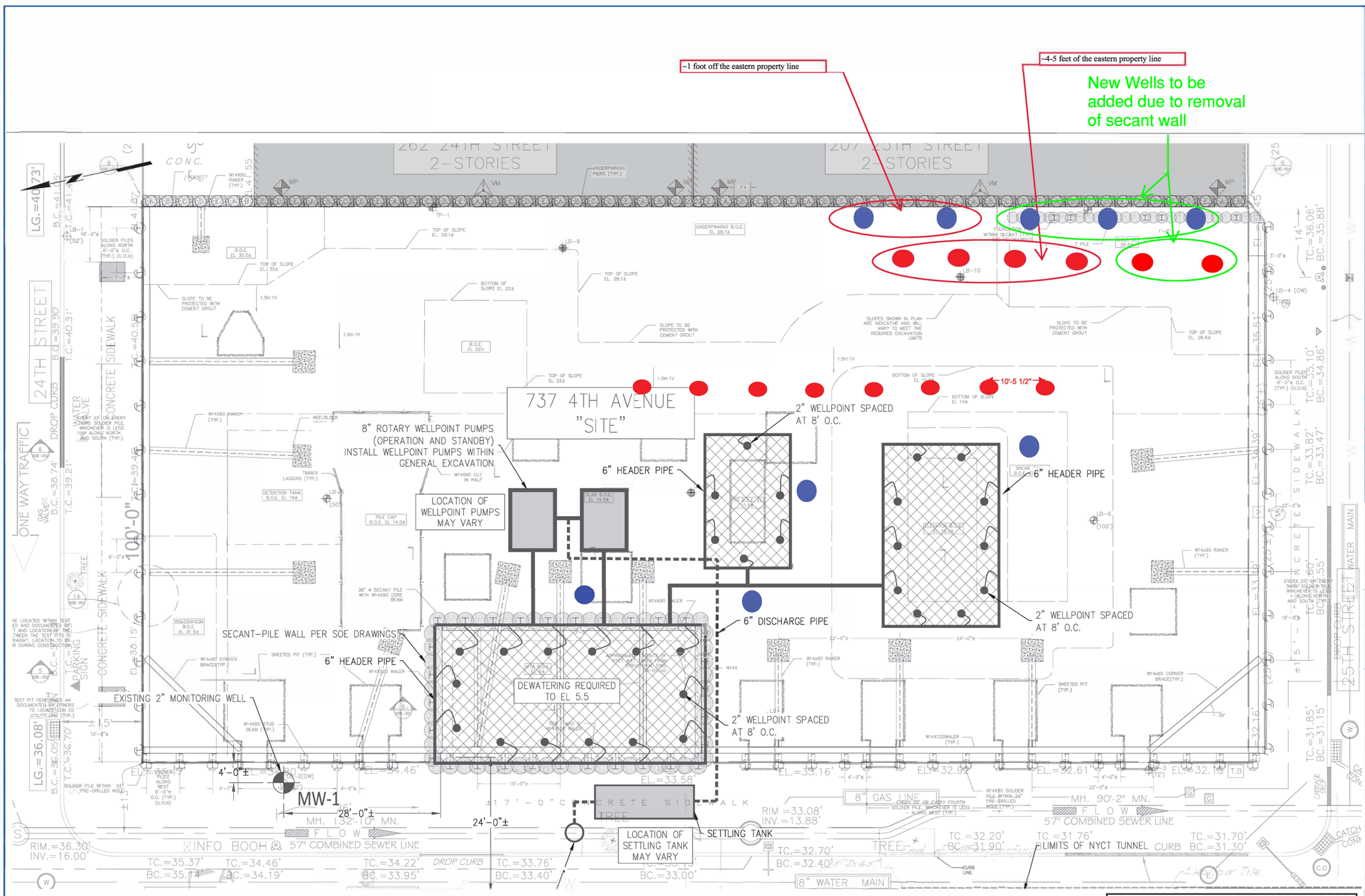
Figure 1

Site Location Map

737 4th Avenue Site
Brooklyn, Kings County
Site No. C224332

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation



Base proposed dewatering map provided by Cichetti Engineering

Document Path: W:\Projects\S-Z\TOT\2202\RDWP\RDWP.aprx

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DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	TOT2202	Designed by:	JL
Date:	6/20/2023	Drawn by:	PH
Scale:	AS SHOWN	Approved by:	JL

Option 1

731-747 4th Ave
Brooklyn, NY

FIGURE NO:

2