
PROPOSED RECORD OF DECISION AMENDMENT FORMER NUHART PLASTICS MANUFACTURING SITE



Brooklyn / Kings County / Registry No. 224136

March 2024

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

SECTION 1: PURPOSE AND SUMMARY OF THE PROPOSED RECORD OF DECISION AMENDMENT

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), is proposing an amendment to the Record of Decision (ROD) for the above referenced site. The disposal of hazardous wastes at this site, as more fully described in the original ROD document and Section 6 of this document, has caused the contamination of various environmental media. The proposed amendment is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This amendment identifies the new information which has led to this proposed amendment and discusses the reasons for the preferred remedy.

NYSDEC has issued this document in accordance with the requirements of 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 Environmental Remediation Programs. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

On March 27, 2019, the NYSDEC issued a Record of Decision (ROD) which selected a remedy for the Former NuHart Plastics Manufacturing Site. A minor modification of the ROD was issued on November 28, 2022, the details of which are noted in Section 7.1 below.

The ROD required excavation and off-site disposal of all “grossly contaminated soil” as that term is defined in 6NYCRR Part 375-1.2(u), specifically: “...soil, sediment, surface water or groundwater which contains sources or substantial quantities of mobile contamination in the form of NAPL...”

The proposed amendment will add a new ROD Element 2A, In-Situ Solidification for certain soils containing bis(2-ethylhexyl)phthalate at concentrations exceeding 10,000 parts per million (ppm) as established in DER-10 Section 2.1(f). This is the concentration at which non-aqueous phase liquid (NAPL) would be expected to be present. The proposed amendment will also modify ROD Element 2, Excavation, Sub-Bullet 1 as follows: “Grossly contaminated soil as defined in 6NYCRR Part 375-1.2(u) *to the extent feasible*.”

New ROD Element 2A would read as follows: “Soils containing bis(2-ethylhexyl)phthalate in the form of NAPL that cannot be feasibly excavated will be treated via In Situ Solidification (ISS) up to a maximum depth of 25 feet below grade surface.”

SECTION 2: CITIZEN PARTICIPATION

NYSDEC seeks input from the community on this proposed ROD Amendment. This is an opportunity for

public participation in the remedy selection process. The information here is a summary of what can be found in greater detail in reports that have been placed in the Administrative Record for the site. The public is encouraged to review the reports and documents, which are available at the following repositories:

DECinfo Locator: Project documents may be accessed electronically at <https://extapps.dec.ny.gov/data/DecDocs/224136>

Brooklyn Public Library – Greenpoint Branch

107 Norman Avenue
Brooklyn, NY 11222
(718) 389-4394

Monday	10 am - 6 pm
Tuesday	1 pm - 8 pm
Wednesday	10 am - 6 pm
Thursday	10 am - 8 pm
Friday	10 am - 6 pm
Saturday	10 am - 5 pm
Sunday	CLOSED

Brooklyn Public Library – Williamsburg Branch

240 Division Avenue
Brooklyn, NY 11211
(718) 486-6006

Monday	10 am - 6 pm
Tuesday	1 pm - 8 pm
Wednesday	10 am - 6 pm
Thursday	10 am - 8 pm
Friday	10 am - 6 pm
Saturday	10 am - 5 pm
Sunday	CLOSED

Brooklyn Community Board 1

435 Graham Avenue
Brooklyn, NY 11211
(718) 389-0009
Bk01@cb.nyc.gov

A public comment period has been set for March 25, 2024 to April 24, 2024 to provide an opportunity for you to comment on these proposed changes. An online public meeting is scheduled for April 10, 2024 at 7:00PM. Virtual meeting details will be provided in a forthcoming fact sheet issued via the county listserv (see listserv information further below).

At the meeting, a description of the original ROD and the circumstances that have led to proposed changes in the ROD will be presented. After the presentation, a question-and-answer period will be held, during which you can submit verbal or written comments on the proposal. We encourage you to review this summary and attend the meeting.

Written comments may also be sent to:

Jennifer Gonzalez, Project Manager
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 12233
(718) 482-4508
jennifer.gonzalez@dec.ny.gov

NYSDEC may amend or reject the proposed changes based on new information or public comments. Therefore, the public is encouraged to review and comment on this proposal. Comments will be summarized and addressed in the responsiveness summary section of the final version of the ROD Amendment, which will then be NYSDEC's final selection of the remedy for the site.

Receive Site Citizen Participation Information By Email

Please note that NYSDEC's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>.

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The site is located at 65 Dupont Street in the Greenpoint section of Brooklyn, Kings County, NY. The 1.18-acre site is identified on the tax map as Block 2487, portion of Lot 17. The site is bordered immediately to the north by Clay Street followed by commercial/industrial buildings, to the east by the Brownfield Cleanup Program (BCP) Site Former NuHart East (ID: C224287), to the south by Dupont Street followed by multi-family residential structures, and to the west by Franklin Street followed by a New York City playground.

Site Features:

The dimensions of the site are approximately 200 feet by 245 feet. The site is currently under construction.

Current Zoning and Land Use:

The site is zoned M1-2/R6, which designates the site as manufacturing with a residential overlay. The site is currently being redeveloped for residential use. Future use of the site is consistent with current zoning.

Past Use of the Site:

The site has been in use for various manufacturing and commercial purposes since 1887. It has been used for manufacturing, as an office, for storage, and for shipping and receiving. Prior to the late 1940s, the site and the surrounding lots were used as a boiler shop for Logan Ironworks, two stables, a gas and light fixture factory, a sheet metal works, a soap factory, a waterproofing factory, and a scrap metal facility. The subject property was developed for plastic manufacturing purposes in the late 1940s to early 1950s and has remained relatively unchanged since that time. From 1983 to 2004, NuHart and Company made

vinyl siding and sheeting at the site. After 2004, NuHart vacated the on-site buildings.

A total of 12 underground storage tanks (USTs) were located at the site prior to demolition of the on-site buildings. According to records, these tanks were emptied and closed. There were also two large aboveground silos on site. The Petroleum Bulk Storage (PBS) facility number is 2-608875, and the Chemical Bulk Storage (CBS) facility number is 2-000444 both of which are closed. Liquid plasticizers stored included bis(2-ethylhexyl)phthalate, bis(2-ethylhexyl)adipate, and palatinol 711P phthalate.

Operable Units:

The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

Operable unit 1 (OU1) is the on-site source area and associated contamination. OU2 consists of the off-site groundwater and soil vapor contamination associated with the site.

Site Geology and Hydrogeology:

Soil at the site consists of a layer of urban fill extending from the surface to about 8 feet below the original onsite slab, underlain by sand, silty sand and/or sandy silt. Groundwater is encountered at a depth of approximately 10 to 15 feet below grade surface and flows generally westerly to northwesterly towards the East River.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. The Former NuHart Plastics Manufacturing site is currently zoned M1-2/R6 for manufacturing and residential use and is located in an area of mixed- use manufacturing, commercial and residential.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

NYSDEC and 49 Dupont Realty Corp. entered into a Consent Order on January 18, 2011. The Order was amended on February 7, 2014 to add a new owner (Dupont Street Developers LLC). NYSDEC and the current owner (Dupont Street Owner LLC) entered into a new Consent Order on November 30, 2022. The Consent Order obligates the responsible parties to implement a full remedial program.

SECTION 6: SITE CONTAMINATION

6.1: Summary of Environmental Assessment

Nature and Extent of Contamination:

Soil and groundwater samples from both on-site and off-site were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), PCBs, pesticides and metals. Based upon previous investigations, the primary contaminants of concern for both OU1 and OU2 include phthalates (specifically bis(2-ethylhexyl) phthalate and di-n-octyl phthalate) and VOCs (specifically

trichloroethylene and its decomposition products). The following describes the nature and extent of contamination at the site prior to remediation.

Soil: VOCs in soil were found both on and off-site at levels above unrestricted use soil cleanup objectives (UUSCOs) in a limited area in the northeast portion of the site and extending off-site beneath the sidewalk on the south side of Clay Street. The highest soil contamination concentration of trichloroethylene (TCE) was reported at 14 ppm compared to the UUSCO of 0.47 ppm. Other VOCs detected above the UUSCOs include: cis-1,2-dichloroethene (DCE) with maximum concentration of 2.4 ppm (UUSCO is 0.25 ppm). SVOCs in soil were identified both onsite and off-site above UUSCOs, including bis(2-ethylhexyl) phthalate (DEHP) at a concentration of 59,200 ppm (UUSCO is 50 ppm) and di-n-octyl phthalate (DOP) at a concentration of 3,010 ppm (UUSCO is 100 ppm). The following site-specific chemicals were identified in soil exceeding the restricted residential SCOs: bis(2-ethylhexyl) phthalate, di-n-octyl phthalate, cis-1,2-dichloroethene, and TCE.

Groundwater: Phthalates were present as an LNAPL plume floating on the groundwater surface beneath most of the site and extending off-site to the west and southwest. Dissolved-phase phthalates were detected above NYSDEC groundwater standards in several wells generally located on the periphery of the LNAPL plume. The maximum concentration of DEHP was reported at 1,750 parts per billion (ppb; compared to the groundwater standard of 5 ppb) and DOP at 87.1 ppb (compared to the groundwater standard of 50 ppb). Dissolved phase TCE and its associated breakdown product DCE were found in the northeast portion of the site and extend off-site to the northwest at concentrations exceeding the groundwater standards of 5 ppb. The maximum concentrations of TCE was reported at 33,000 ppb, and DCE at 2,700 ppb.

Soil Vapor: VOCs were detected in on-site sub-slab soil vapor beneath the northeastern portion of the site building with the greatest impacts coinciding with the chlorinated VOC-impacted groundwater in this area. On-site sub-slab vapor contaminant concentrations were detected up to a maximum of 43,000 micrograms per cubic meter (ug/m³) for TCE, 2,500 ug/m³ for PCE, and 3,700 ug/m³ for DCE.

6.2: Interim Remedial Measures

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

An IRM consisting of LNAPL recovery at the site was initiated under the spill program in November 2006. The IRM consisted of the removal of LNAPL from recovery wells via manual bailing and automated product-seeking equipment. An Operation, Maintenance and Monitoring (OM&M) Plan for the IRM was prepared to describe the implementation, management, and performance evaluation activities under the IRM. IRM activities concluded in February 2022 as part of Resource Conservation and Recovery Act (RCRA) closure activities. Approximately 4,600 gallons of product were recovered and disposed of offsite.

6.3: Summary of Human Exposure Pathways

Access is restricted by a fence and the site is vacant. People who enter may come into contact with contaminants in soil by walking on the site, digging or otherwise disturbing the soil. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in 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. As the site is vacant, soil vapor intrusion is not a current concern, however the potential exists for soil vapor intrusion in future buildings on-site. Environmental sampling indicates soil vapor intrusion from site contamination is not a concern for off-site buildings.

SECTION 7: SUMMARY OF ORIGINAL REMEDY AND PROPOSED AMENDMENT

7.1 Original Remedy

The elements of the 2019 ROD, as modified in 2022, include:

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 (OU1)

The existing on-site building(s) will be demolished and materials which can't be beneficially reused on site will be taken off-site for property disposal in order to implement the remedy. Excavation and off-site disposal of contaminant source areas, including:

- Grossly contaminated soil as defined in 6NYCRR Part 375-1.2(u);
- Concentrated soil or semi-solid hazardous substance per 6 NYCRR Part 375-1.2(au);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil which exceeds the protection of groundwater soil cleanup objectives (PGWSCO's), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in the site groundwater above standards;
- Soil that creates a nuisance condition, as defined in Commissioner Policy CP-51 section G;
- Grossly contaminated soil that may be present in proximity to the Underground Storage Tanks (USTs) and piping trench systems formerly used to store and convey phthalates and lubricating oil during the former plastic manufacturing process;
- VOC-impacted soil that are above the water table in the northeastern corner of the site; and
- Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 22,500 cubic yards of soil will be excavated in total. An estimated 6,600 cubic yards is expected to be disposed off-site as hazardous waste, and the remaining material is anticipated to be non-hazardous historic fill and un-impacted native soil.

3. Backfill (OU-1)

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and/or to complete backfilling of the excavation and establish the designed grades at the site.

4. LNAPL Physical Barriers (OU-1 and OU-2)

Installation of two physical barriers to support the on-site excavation and prevent further off-site LNAPL migration.

- Shoring will be installed as a physical barrier around the entire perimeter of the on-site excavation area down to about 30 feet below grade;
- Installation of a physical barrier to prevent LNAPL migration onto the off-site property located to the southwest of the site.

5. Cover System (OU-1)

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

6. LNAPL Recovery (OU-2)

Installation and operation of a network of recovery wells and/or trenches located off-site to recover mobile LNAPL from the subsurface. The number, depth, type and spacing of the recovery wells and/or trenches will be determined during the design phase of the remedy. LNAPL will be collected periodically from each well; however, if wells are determined by the Department to accumulate large quantities of LNAPL over extended time periods, they can be converted to automated collection. Enhancement of the recovery via surfactant injection to increase the mobility of the LNAPL may also be considered. A monitoring program will be implemented for groundwater and LNAPL to monitor the effectiveness of the LNAPL recovery effort.

7. Air Sparging/ Soil Vapor Extraction (OU-1 and OU-2)

Air sparging will be implemented to address the groundwater plume contaminated by volatile organic compounds (VOCs) identified in the northeast portion of the site and in the downgradient vicinity of the site. VOCs will be physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface. The injected air rising through the groundwater will volatilize and transfer the VOCs from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the vadose zone (the area below the ground surface but above the water table) where a soil vapor extraction (SVE) system, designed to remove the injected air, will be installed. The SVE

system will apply a vacuum to wells that have been installed into the vadose zone to remove the volatile organic compounds (VOCs) along with the air introduced by the sparging process. The air extracted from the SVE wells will be treated as necessary prior to being discharged to the atmosphere.

The number, depth, type and spacing of the AS/SVE wells will be determined during the design phase of the remedy.

[Note: During the Remedial Design phase, the Remedial Party's consultant determined that AS/SVE was infeasible due to the presence of clay and silt lenses beneath the site, and the In-Situ Chemical Reduction utilizing zero-valent iron (ZVI) to treat chlorinated VOCs (CVOCs) in groundwater was substituted for AS/SVE as documented in the 2022 minor ROD modification.]

8. Vapor Mitigation (OU-1 and OU-2)

Any on-site and off-site buildings impacted by the contaminants migrating from the site will be required to have a sub-slab depressurization system, or other acceptable measure, to mitigate the migration of vapors into the building from soil or groundwater. The sub-slab depressurization system will be installed in the on-site buildings to be constructed at the site. An evaluation will be conducted, as discussed in paragraph 11 below, to determine whether sub-slab depressurization systems are necessary in off-site properties north of Clay Street pending site access from the owner(s).

[Note: During the Remedial Design phase, the foundation design of the proposed buildings was modified such that the entire foundation will be below the water table. Therefore, NYSDEC and NYSDOH concurred that active vapor mitigation for the on-site (OU-1) building was not required, as documented in the 2022 minor ROD modification.]

9. Treatment Remedy Shutdown

The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

10. Institutional Controls (OU-1)

Imposition of an institutional control in the form of an environmental easement for the controlled property that 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 or industrial 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 NYCDOHMH; and
- require compliance with the Department-approved Site Management Plan.

11. Site Management Plan (OU-1 and OU-2)

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 10 above.

- Engineering Controls: The migration barriers, site cover, LNAPL recovery, AS/SVE, and vapor mitigation systems discussed in paragraphs 4 through 8 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 for buildings in off-site areas of contamination, including provision 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 8 above will be placed in any area 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 LNAPL, groundwater and soil vapor to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for vapor intrusion for any 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.

7.2 Elements of the Remedy Already Performed

To date, the following remedial activities have been performed:

Eastern half of OU-1

- Excavation to a maximum depth of 19 feet below grade surface (bgs); approximately 17,500 tons of material have been excavated and removed.
- Twenty-seven endpoint samples were collected to document the effectiveness of the remedy.
- ZVI was mixed in remaining soils at the northeastern portion of the site to treat saturated soil and groundwater contaminated with CVOCs.
- End point soil sample results identified a maximum concentration of bis(2-

ethylhexyl)phthalate of 7,700 ppm in remaining soil. The pre-remedial maximum concentration of bis(2-ethylhexyl)phthalate in the eastern portion was 59,000 ppm. The remaining soil concentrations did not exceed 10,000 ppm per DER-10 Section 2.1(f). NYSDEC therefore concurred that the remedial action objective for source removal had been achieved and excavation was complete.

Western half of OU-1

- Excavation to depths ranging from 18.5 to 21 feet bgs; approximately 21,000 tons of material have been excavated and removed.
- Field confirmation of the absence of visual NAPL through shaker tests.
- Twenty-eight endpoint samples were collected to document remaining contamination in on-site soils.

OU-2

- Installation of a drilled cut-off wall around the downgradient property located southwest of the site.
- Continued monthly gauging of off-site monitoring wells.
- Recovery wells have been installed along the downgradient offsite portion of the site along Franklin Street and Clay Street and an LNAPL recovery pilot test was completed between October 2023 and January 2024
- ZVI injections began in February 2024 in the northeast portion of OU-2 along Clay Street.

7.3 New Information

On January 3, 2024 the owner's consultant submitted the "Completion of OU-1 Western Excavation Remedial Element" letter to NYSDEC. This letter documented remaining concentrations of bis(2-ethylhexyl)phthalate at up to 26,000 ppm, which exceeds the 10,000 ppm NAPL concentration. The location of endpoint samples with exceedances were located along the western and southern perimeter. NYSDEC requested vertical delineation of contamination along the western and southern perimeter to better understand extent of remaining contamination. Vertical delineation of contamination confirmed the bulk of remaining contamination extends approximately 4 feet below base of excavation at a maximum depth of 25 feet bgs. This was documented in the February 5, 2024 "Proposed Amendment to the Record of Decision" letter submitted by the owner's consultant.

Further excavation to remove the remaining contaminated soil is deemed infeasible due to:

- The existing support of excavation (sheet pile cutoff wall, Remedy Element 4 of the original ROD) was installed to 34 feet bgs and is designed for a maximum excavation depth of 19 feet bgs. Any deeper excavation will undermine the SOE and could cause failure of the sheet pile wall.
- Structural stability of the negative pressure enclosure (tent) will be compromised.
- Deeper excavation would require further dewatering, which would require redesign and re-permitting of the existing dewatering system.
- Further dewatering needed to accomplish additional excavation may induce off-site drawdown, raising settling issues for on-site foundations and neighboring buildings.

7.4 Proposed Changes to the Original Remedy

A summary of the changes to the original ROD as proposed in this document are shown in the Table on

the following page:

SUMMARY OF PROPOSED REMEDY CHANGES

Former NuHart Plastics Manufacturing Site (No. 224136) Record of Decision Amendment

Media:	2019 ROD	Amended ROD
Soil	<p>Excavation and off-site disposal of contaminant source areas, including:</p> <p>(1) Grossly contaminated soil as defined in 6NYCRR Part 375-1.2(u);</p> <p>(2) Concentrated soil or semi-solid hazardous substance per 6 NYCRR Part 375-1.2(au);</p> <p>(3) Non-aqueous phase liquids;</p> <p>(4) Soil with visual waste material or non-aqueous phase liquid;</p> <p>(5) Soil which exceeds the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in the site groundwater above standards;</p> <p>(6) Soil that creates a nuisance condition, as defined in Commissioner Policy CP-51 section G;</p> <p>(7) Grossly contaminated soil that may be present in proximity to the Underground Storage Tanks (USTs) and piping trench systems formerly used to store and convey phthalates and lubricating oil during the former plastic manufacturing process;</p> <p>(8) VOC-impacted soil that are above the water table in the northeastern corner of the site; and</p> <p>(9) Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.</p>	<p>(1) Grossly contaminated soil as defined in 6NYCRR Part 375-1.2(u) <i>to the extent feasible</i>.</p> <p>New Remedy Element 2A: <i>Soils containing bis(2-ethylhexyl)phthalate in the form of NAPL, or exceeding 10,000 ppm, that cannot be feasibly excavated will be treated via In Situ Solidification (ISS) up to a maximum depth of 25 feet below grade surface.</i></p>

SECTION 8: EVALUATION OF PROPOSED CHANGES

8.1 Remedial Objectives

Remedial action objectives (RAOs) for the cleanup of the site were established in the original ROD. 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:

For OU 01:

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.

For OU 02:

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.

- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

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.

8.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Public Health and the Environment. This criterion is an overall evaluation of each alternatives ability to protect public health and the environment.

The original remedy would satisfy this criterion by removing the on-site contaminated soils, removing on-site and off-site LNAPL, treating any on-site groundwater contamination, thereby preventing the further migration of the groundwater plume, and managing remaining contamination to prevent human exposures. The on-site and off-site physical barrier will prevent further migration of the LNAPL plume both on and off-site.

The proposed amended remedy will equally comply with this criterion with the addition of ISS to immobilize LNAPL source material remaining post-excavation.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which NYSDEC has determined to be applicable on a case-specific basis.

The original remedy complies with SCGs on-site, and to the extent practicable off-site. For the on-site source, would achieve compliance by fully excavating the on-site LNAPL and VOC contaminated source areas.

The proposed amended remedy would achieve the SCGs on-site and off-site to the extent practicable. For the on-site source, the remedy will achieve compliance by fully excavating the on-site VOC contaminated source areas and LNAPL contaminated source areas to the extent practicable. Remaining LNAPL source area material would be immobilized via ISS.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the

remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is equally accomplished by the original remedy and proposed amended remedy as both provide a significant reduction the volume of the LNAPL source and VOC impacted soil contamination, which would in turn reduce both the potential for soil vapor intrusion and off-site migration of the VOC plume.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Both the original remedy and the proposed amended remedy quickly and permanently remove on-site LNAPL contamination and provide a reduction in toxicity, mobility and volume. The removal of the source area contamination will also significantly limit the continued source area contribution to the off-site plume and reduce the potential for VOC soil vapor intrusion.

The proposed remedy amendment will provide additional reduction in mobility by solidifying remaining contamination in soil, which would also reduce contaminant loading to downgradient groundwater.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Both the original remedy and the proposed amended remedy would be expected to have some short-term impacts associated with their activities. Both remedies involve some degree of intrusive activities which may temporarily disrupt the surrounding residential community via noise, odor, and increased truck traffic. These impacts may be minimized with careful coordination with the municipality and surrounding landowners during remedial design. A community air monitoring plan (CAMP) and health and safety plan (HASP) would be required during remediation activities for each of the alternatives presented.

The time needed to achieve the remediation goals would be significantly longer for the original remedy in comparison to the proposed amendment, since the additional excavation would require a wholesale redesign and installation of both deeper support of excavation and dewatering system(s).

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Both the original remedy and the proposed remedy amendment are considered implementable from a technical standpoint, since both use proven technologies for treating contamination. However, to implement deeper excavation to satisfy requirements of the original remedy (to a depth of 25 feet) would require the design and installation of a new, deeper cutoff wall/support of excavation, which would require destruction of existing foundations on the eastern portion of the site. The cost and significant delay needed

to procure materials and implement additional excavation to achieve the original remedy (a minimum of 5 months) is considered administratively infeasible. The proposed remedy amendment will take less time to implement (estimated 60 to 90 days), would not require significant changes to the support of excavation, and would use easily procured materials, in particular, Type III Portland Cement and on-site grout mixing plants.

Both remedies have similar off-site implementability by use of similar technologies (i.e., off-site barrier, groundwater treatment via zero-valent iron injections, LNAPL extraction via recovery wells) for remediating groundwater, LNAPL, and soil vapor identified off-site.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The relative costs of the original remedy and proposed remedy amendment vary significantly. The capital costs of the proposed remedy amendment would be significantly less than the original remedy. As stated in the previous subsection, it is administratively infeasible to implement the original remedy. The estimated cost of the additional excavation to comply with the original remedy would be approximately \$75,000,000 in addition to the \$40,200,000 already incurred through current remediation efforts.

Annual maintenance cost for both remedies is the same.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

The site is currently vacant; however, the anticipated future use of the site is commercial and residential.

It is expected that both the original remedy and the proposed remedy amendment would provide an acceptable level of cleanup for future site redevelopment. The proposed amendment is slightly less desirable because some NAPL source material will remain on-site, however, it will be immobile and inaccessible in the ISS monolith. The original remedy would permanently remove or treat the entire on-site source area but may take significantly longer to implement. Both remedies will require that remaining contamination be monitored and controlled with a site management plan, and institutional and engineering controls.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.

9. Community Acceptance. Concerns of the community regarding the proposed changes are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which NYSDEC will address the concerns raised. If the final remedy differs significantly from the proposed remedy amendment, notices to the public will be issued describing the differences and reasons for the changes.

The proposed remedy amendment is being selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

SECTION 9: PROPOSED AMENDED REMEDY

NYSDEC is proposing to amend the Record of Decision (ROD) for the Former NuHart Plastics Manufacturing Site. The changes to the selected remedy are summarized in Section 7.3 above.

The total estimated cost (“Present Worth”) to implement the remedy as outlined in the ROD was \$30,700,000. To date, the actual incurred costs have been approximately \$40,200,000, and the estimated additional cost to complete the original remedy (including redesign and installation of new SOE, replacement of existing foundation and building elements on eastern half of the site, and redesign and installation of the dewatering system in order to remove 4 feet of soil) is \$55,000,000. The estimated additional cost to implement the amended remedy is \$1,400,000.

The elements of the proposed amended remedy listed below are identified as *unchanged*, *amended* or *new* when compared to the 2019 ROD/2022 amended remedy:

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.

Unchanged

2. Excavation (OU1)

The existing on-site building(s) will be demolished and materials which can't be beneficially reused on site will be taken off-site for property disposal in order to implement the remedy. Excavation and off-site disposal of contaminant source areas, including:

- Grossly contaminated soil as defined in 6NYCRR Part 375-1.2(u) *to the extent feasible*;
- Concentrated soil or semi-solid hazardous substance per 6 NYCRR Part 375-1.2(au);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil which exceeds the protection of groundwater soil cleanup objectives (PGWSCO), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in the site groundwater above standards. Soil that creates a nuisance condition, as defined in Commissioner Policy CP-51 section G;

- Grossly contaminated soil that may be present in proximity to the Underground Storage Tanks (USTs) and piping trench systems formerly used to store and convey phthalates and lubricating oil during the former plastic manufacturing process;
- VOC-impacted soil that are above the water table in the northeastern corner of the site; and
- Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 22,500 cubic yards of soil will be excavated in total. An estimated 6,600 cubic yards is expected to be disposed off-site as hazardous waste, and the remaining material is anticipated to be non-hazardous historic fill and un-impacted native soil.

Amended

2.A In-Situ Solidification

For areas where source material cannot not be excavated (below 19.5 ft), in-situ solidification (ISS) will be implemented. The area to be solidified is shown on Figure 2. ISS is a process that binds the soil particles in place creating a low permeability mass. The residual contaminated soil from 19.5 ft to 24.5 ft will be mixed in place together with Type III Portland Cement using an excavator or augers. The soil and cement are mixed to produce a solidified mass resulting in a low permeability monolith.

The design requirements are that the solidified mass will produce a hydraulic conductivity (K) of 1.0×10^{-6} cm/sec or less and would also result in an unconfined compressive strength of 50 psi. The solidified mass will then be covered with a cover system as described in Element 5 to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

New

3. Backfill (OU-1)

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and/or to complete backfilling of the excavation and establish the designed grades at the site.

Unchanged

4. LNAPL Physical Barriers (OU-1 and OU-2)

Installation of two physical barriers to support the on-site excavation and prevent further off-site LNAPL migration.

- Shoring will be installed as a physical barrier around the entire perimeter of the on-site excavation area down to about 30 feet below grade
- Installation of a physical barrier to prevent LNAPL migration onto the off-site property located to the southwest of the site.

Unchanged

5. Cover System (OU-1)

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such

components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Unchanged

6. LNAPL Recovery (OU-2)

Installation and operation of a network of recovery wells and/or trenches located off-site to recover mobile LNAPL from the subsurface. The number, depth, type and spacing of the recovery wells and/or trenches will be determined during the design phase of the remedy. LNAPL will be collected periodically from each well; however, if wells are determined by the Department to accumulate large quantities of LNAPL over extended time periods, they can be converted to automated collection. Enhancement of the recovery via surfactant injection to increase the mobility of the LNAPL may also be considered. A monitoring program will be implemented for groundwater and LNAPL to monitor the effectiveness of the LNAPL recovery effort.

Unchanged

7. Air Sparging/ Soil Vapor Extraction (OU-1 and OU-2)

Air sparging will be implemented to address the groundwater plume contaminated by volatile organic compounds (VOCs) identified in the northeast portion of the site and in the downgradient vicinity of the site. VOCs will be physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface. The injected air rising through the groundwater will volatilize and transfer the VOCs from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the vadose zone (the area below the ground surface but above the water table) where a soil vapor extraction (SVE) system, designed to remove the injected air, will be installed. The SVE system will apply a vacuum to wells that have been installed into the vadose zone to remove the VOCs along with the air introduced by the sparging process. The air extracted from the SVE wells will be treated as necessary prior to being discharged to the atmosphere.

The number, depth, type and spacing of the AS/SVE wells will be determined during the design phase of the remedy.

[November 2022 Minor Remedy Modification: In situ Chemical Reduction (ISCR) will be implemented to remediate groundwater and saturated soil contaminated by chlorinated volatile organic compounds (CVOCs) in the northeast portion of the site and in the downgradient vicinity of the site. By introducing zero valent iron (ZVI) into the subsurface, CVOCs will be chemically reduced. For the on-site portion of the CVOC contamination, ZVI will be bucket-mixed with soils below the water table to a depth of one foot into the underlying clay layer. For the off-site portion of the CVOC contamination, ZVI will be injected into the groundwater and saturated soil immediately downgradient of the site from approximately from 10 to 20 feet below grade.]

Unchanged

8. Vapor Mitigation (OU-1 and OU-2)

Any on-site and off-site buildings impacted by the contaminants migrating from the site will be required to have a sub-slab depressurization system, or other acceptable measure, to mitigate the migration of vapors into the building from soil or groundwater. The sub-slab depressurization system will be installed in the on-site buildings to be constructed at the site. An evaluation will be conducted, as discussed in paragraph 11 below, to determine whether sub-slab depressurization systems are necessary in off-site properties north of Clay Street pending site access from the owner(s).

[November 2022 Minor Remedy Modification: The planned development includes a full cellar level installed below the water table across the entire footprint of the site. The foundation slab and sidewalls will include a waterproofing/vapor barrier to prevent groundwater and vapor from entering the building. Furthermore, the lowest level of the building will be occupied by a parking garage which must be ventilated per NYC Building Code. The OU-1 soil vapor remedy will therefore consist of a vapor intrusion evaluation conducted post remedy and prior to occupancy.]

Unchanged

9. Treatment Remedy Shutdown

The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

Unchanged

10. Institutional Controls (OU-1)

Imposition of an institutional control in the form of an environmental easement for the controlled property that 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 or industrial 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 NYCDOHMH; and
- require compliance with the Department-approved Site Management Plan.

Unchanged

11. Site Management Plan (OU-1 and OU-2)

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 10 above.
 - Engineering Controls: The migration barriers, site cover, LNAPL recovery, ISCR, and vapor mitigation systems discussed in paragraphs 4 through 8 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 for buildings in off-site areas of contamination, including provision 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 8 above will be place in any area 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 LNAPL, groundwater and soil vapor to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the Department;
 - monitoring for vapor intrusion for any 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.

Unchanged

SECTION 10: NEXT STEPS

As described above, there will be a public meeting and comment period on the proposed changes to the selected remedy. At the close of the comment period, NYSDEC will evaluate the comments received and prepare a responsiveness summary which will be made available to the public. A notice describing NYSDEC's final decision will be sent to all persons on the site mailing list.

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

Project Related Questions



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Site-Related Health Questions

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Figure 1 - Site Boundary Map
Former NuHart Plastic Manufacturing
Site No. 224136

- Legend**
-  Former NuHart Property Boundary
 -  Superfund Site Boundary

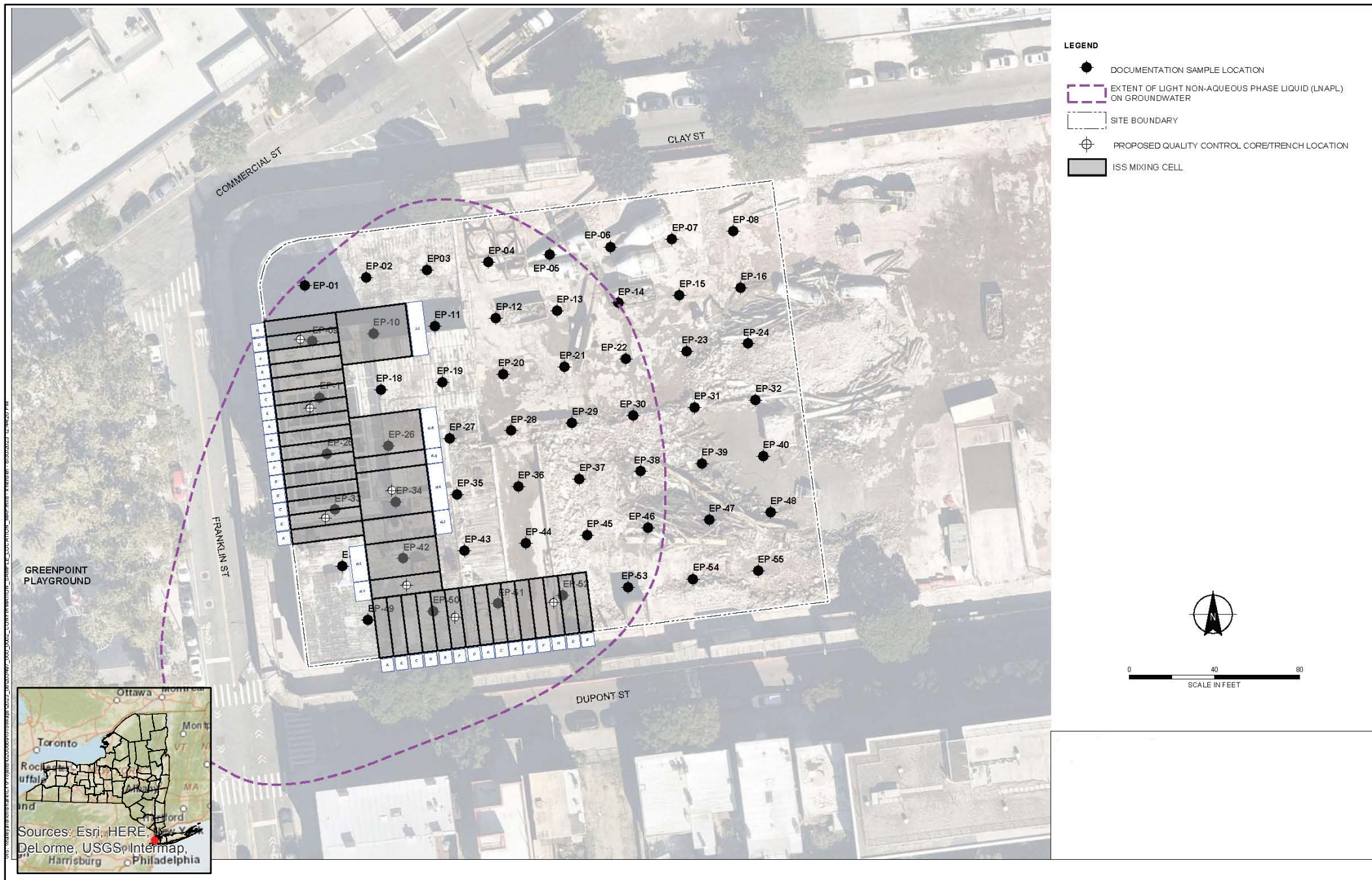


Figure 2 - Proposed ISS installation