Former United Hospital Brownfield Cleanup Program Rye, Westchester County Site No. C360202 April 2025



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

DECLARATION STATEMENT - DECISION DOCUMENT

Former United Hospital Brownfield Cleanup Program Rye, Westchester County Site No. C360202 April 2025

Statement of Purpose and Basis

This document presents the remedy for the Former United Hospital brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Former United Hospital 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. Green Remediation/Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic, and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and

 Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise (TM) (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The remaining on-site slabs will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal to implement the remedy.

Track 1 area: Excavation and off-site disposal of all on-site soils which exceed Unrestricted Use Soil Cleanup Objectives (UUSCOs) in the Track 1 remedy area (located in the south-central portion of the site) as defined by 6 NYCRR Part 375-6.8 above bedrock. Impacted weathered bedrock will also be removed and properly disposed of off-site. Areas of the site where a Track 1 cleanup is achieved, a cover system will not be a required element of the remedy. Soil excavation in the Track 1 area will extend to bedrock, approximately 6-ft bgs across the area, removing the requirement for endpoint samples to be collected from the area.

Track 4 area: All on-site soils within the Track 4 cleanup areas (majority of the site) and below two feet which exceed the Track 4 site-specific SCOs described below will be

excavated from identified areas of concern (AOC) and disposed of off-site:

Excavation and off-site disposal of contaminant source areas, including:

- o grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- The presence of concentrated solid or semi-solid hazardous substances (DER-10 §1.3(70); 6 NYCRR 375 §1.2(au), including soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead) as observed in AOC-3, -4, and -9;
- $\circ~$ Total SVOC concentrations exceeding 500 mg/kg as may be encountered in AOCs 2, 5, 6, 7, and 8;
- Total PCB concentrations in excess of 10 mg/kg;
- VOC concentrations in soil exceeding the RRSCOs;
- Field observations of grossly contaminated media, as defined in 6 NYCRR Part 375-1.2(u), or soils with the potential to create nuisance conditions, as defined in CP-51 Section G. as may be encountered in ACO 5, -6, -7, and -8, including:
 - The presence of visual waste material or mobile contamination (i.e. NAPL), identified by visual or olfactory observations or elevated vapor concentrations (DER-10 §1.2(70); 6 NYCRR 375 §1.2(au)); and
 - Soils exhibiting distinct odors or staining that may result in nuisance conditions following the remedial action [CP-51 §5(G)].

All soils in the upper two feet in the proposed Track 4 area which exceed the restricted residential SCOs (RRSCO) will be excavated and transported off-site for disposal.

Approximately 27,900 cubic yards of soil will be excavated across the top 2 feet of the site to facilitate placement of a composite cover system in the Track 4 area. Within the Track 4 areas, an additional 7,900 cubic yards of soil will be excavated and transported off-site guided by the Site-Specific SCOs listed above. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. Endpoint samples will not be collected in excavation areas within the Track 4 area that extend to bedrock. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicants must notify the Department, submit the sample results and, and in consultation with the Department and NYSDOH, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits. Any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination will be excavated and removed from the site.

3. Backfill

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs (PoGW SCOs) for any constituent, may be used beneath the cover system described in remedy element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site. If bedrock is deemed uncontaminated, it can be reused on-site beneath a cover system.

Backfill 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.

4. Site Cover

A site cover will be required in Track 4 portions of the site where the upper two feet of exposed surface soil will exceed the applicable SCOs, to allow for future restricted residential use of the site. 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.

5. In-Situ Treatment using Activated Carbon

Activated carbon will be added to the subsurface in AOC-10 to capture and prevent the migration of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) in groundwater in the northwest corner of the site. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, on-site pilot scale studies will be conducted to further define design parameters.

6. Monitored Natural Attenuation

Petroleum related groundwater contamination remaining in Area of Concern 6 after active remediation, as discussed in remedial element 2 above, will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the biological activity

breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time (5 years). Reports of the attenuation will be provided at 5 years, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated in-situ chemical oxidation would be the expected contingency remedial action.

7. Institutional Control

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

- requires 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);
- allows 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;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Westchester County DOH; and
- requires compliance with the Department approved Site Management Plan.

8. Site Management Plan

A Site Management Plan (SMP) 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 engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in remedy element 7 above.

Engineering Controls: A site cover as discussed in remedy element 4 and groundwater monitoring wells as discussed in remedy element 6.

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;
- a description 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 any buildings on the site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;

- a provision 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 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 groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan as discussed in section a. above.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

April 29, 2025

Date

Sarah Saucier

Sarah Saucier, Director Remedial Bureau C

DECISION DOCUMENT

Former United Hospital Rye, Westchester County Site No. C360202 April 2025

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 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, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

DECInfo Locator - Web Application https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C360202

Port Chester - Rye Brook Public Library Attn: Robin Lettieri 1 Haseco Avenue Port Chester, NY 10573 Phone: (914) 939-6710

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Former United Hospital site is comprised of 12.03 acres located at 406 Boston Post Road and 999 High Street, Village of Port Chester, Town of Rye, Westchester County, New York and is inclusive of one tax lot (Block 1, Lot 2) of the Town of Rye, Village of Port Chester Tax Map Section 141.052). The site is located in a mixed residential and commercial use area.

Site Features: The site is unoccupied and consists of multiple concrete slabs and former basements associated with the demolition of the former New York United Hospital Medical Center. The site also contains several asphalt paved areas comprised of former parking lots and private roadways, and vegetated areas. One sub-grade structure remains associated with transformers for the former hospital.

Current Zoning and Land Use: The site is currently vacant and is zoned as PMU (planned mixed use). To the north, the site is bounded by Abendroth Park and residential properties; to the west by Interstate 287, followed by residential properties and St. Mary's Cemetery; to the east by Boston Post Road followed by a commercial shopping center; and to the south by High Street; followed by a former rehabilitation and nursing facility at 999 High Street to be demolished.

Past Uses of the Site: Historical records indicate the site was partially developed as a hospital as early as 1915. Various additions, renovations, and standalone structures, including the boiler/power plant and a residential apartment building, were completed over time. Hospital operations ceased in 2004, the site has since remained vacant.

Site Geology and Hydrogeology:

Bedrock ranges in depth from 2 to 13.5 feet below ground surface (bgs), overlain by apparent fill material. Bedrock outcrops are observed on the western portion of the site. Bedrock beneath the site is comprised of three major geologic rock formations: the Fordham Gneiss; Manhattan Schist; and Inwood Marble.

Groundwater depths range from 10.5 to 12.7 feet bgs and groundwater flows south. The nearest surface waters to the site are the Blind Brook Stream (approximately 2,000 feet to the west) and the Long Island Sound (approximately 4,300 feet to the southeast).

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicants under the Brownfield Cleanup Agreement are Volunteers. The Applicants do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: <u>Summary of the Remedial Investigation</u>

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 wastes identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <u>http://www.dec.ny.gov/regulations/61794.html</u>

6.1.2: <u>RI Results</u>

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 contaminants of concern identified at this site are:

lead 1,2,4-trimethylbenzene benzo(a)pyrene benzo(b)fluoranthene chrysene arsenic perfluorooctane sulfonic acid perfluorooctanoic acid tetrachloroethene (PCE) trichloroethene (TCE) mercury benzo(a)anthracene benzo(k)fluoranthene dibenz[a,h]anthracene indeno(1,2,3-cd)pyrene

DDD DDE DDT carbon tetrachloride benzene ethylbenzene 1,2,4-trimethylbenzene 2,2,4-trimethylpentane o-xylene m-xylene p-xylene heptane hexane toluene The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil

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.

The following IRM has been completed at this site based on conditions observed during the RI.

Antennae Area

Soil Excavation

In August 2023, demolition of on-site buildings took place. The work required the relocation of cellular and emergency communication equipment located on a building set for demolition. The cellular and emergency communication equipment were planned for relocation to an 8,000 square foot area along the western boundary of the site.

In December 2023, approximately 1000 tons of metals-contaminated, non-hazardous soil/fill was excavated from this 8,000 square foot area, now referred to as the Track 2 area. The excavation included the removal of the top two feet of soil across the Track 2 area and two limited metal hotspot excavations in the eastern portion of the Track 2 area. Hot spot excavations extended from six feet below ground surface (bgs) to bedrock which was encountered eleven feet bgs. Post-excavation confirmation samples were collected from the hotspot areas and analyzed for metals. All post-excavation confirmation sample results were below restricted-residential SCOs. All excavated soils were properly disposed off-site.

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) was brought in to replace the excavated soil and establish the designed grades at the site to allow construction of the communication antennae and ancillary equipment. This IRM is documented in the Construction Completion Report dated March 2025.

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, soil vapor, and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Based upon investigations conducted to date, the primary contaminants of concern for the site include VOCs, SVOCs, pesticides, and metals in soil, VOCs in soil vapor, and PFAS in groundwater.

Soil:

Track 1 Area:

VOCs detected above the unrestricted use soil cleanup objectives (UUSCOs) within the Track 1 area include, 1,2,4-trimethylbenzene detected up to 11 ppm and total xylenes detected up to 2 ppm. Both compounds exceeded their Track 1 UUSCO of 0.51 ppm and 0.26 ppm, respectively.

SVOCs detected above the UUSCO within the Track 1 area include, benzo(a)anthracene was detected up to 3.9 ppm, exceeding the UUSCO of 1 ppm. Benzo(a)pyrene, benzo(b)fluoranthene, and chrysene were detected up to 3.6 ppm, 4.7 ppm, and 3.3 ppm, respectively, exceeding their UUSCO of 1 ppm for all compounds. Benzo(k)fluoranthene was detected up to 2 ppm, exceeding the UUSCO of 0.8 ppm. Dibenz(a,h)anthracene was detected up to 0.33 ppm, exceeding the UUSCO of 0.33 ppm. Indeno(1,2,3-c,d)pyrene was detected up to 2.8 ppm, exceeding the UUSCO of 0.5 ppm.

Pesticides detected above the UUSCO within the Track 1 area include, P,P'-DDD, P,P'-DDE, and P,P'-DDT which were detected up to 0.015 ppm, 0.018 ppm, and 0.0041 ppm, respectively, exceeding their UUSCO of 0.0033 ppm. PCBs were not detected in site soils within the Track 1 area.

Metals detected above the UUSCO within the Track 1 area include lead, which was detected up to 131 ppm, exceeding the UUSCO of 63 ppm and mercury, detected up to 1.3 ppm, exceeding the UUSCO of 0.18 ppm.

PFOS and PFOA were not detected above the guidance values for unrestricted use of 0.88 ppb and 0.66 ppb, respectively, in Track 1 area.

Track 4 Area:

SVOCS detected above the restricted residential soil cleanup objective (RRSCO) include benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene, which were detected up to 8.3 ppm, 7.9 ppm, and 7.3 ppm, respectively, each exceeding their RRSCO of 1 ppm. Chrysene was detected up to 9.3 ppm, exceeding the RRSCO of 3.9 ppm. Dibenz(a,h)anthracene was detected up to 1 ppm, exceeding the RRSCO of 0.33 ppm and indeno(1,2,3-c,d)pyrene was detected up to 3.7 ppm, exceeding the RRSCO of 0.5 ppm.

Metals detected above the RRSCO include arsenic, which was detected up to 50.1 ppm, exceeding the RRSCO of 16 ppm. Lead was detected up to 30,400 ppm, exceeding the RRSCO of 400 ppm. Mercury was detected up to 12.8 ppm, exceeding the RRSCO of 0.81.

PFOS was detected up to 2.2 ppb and PFOA was detected up to 0.93 ppb within the Track 4 areas, both exceeding the exceeding their respective PoGW SCO of 1.0 ppb and 0.8 ppb.

VOCs, PCBs, and pesticides were not detected above the RRSCOs in the Track 4 areas.

Data does not indicate any off-site impacts in soil related to this site.

Groundwater:

There were no detections of VOCs, SVOCs, PCBs, metals, or pesticides above their ambient water quality standards AWQS.

PFOA and PFOS were reported at concentrations of up to 705 and 24.2 parts per trillion (ppt), respectively, exceeding the 6.7 ppt and 2.7 ppt respective water quality guidance values. 1,4-dioxane was not detected in groundwater samples.

August 2024, during a groundwater gauging event, visual evidence of petroleum related contamination (sheen) was observed in the Area of Concern 6. Samples were not collected as part of the groundwater gauging event and petroleum impacts had not been observed in groundwater prior to this event.

Data does not indicate off-site impacts related to groundwater from this site.

Soil Vapor:

Soil vapor samples were collected from the site during two sampling events, the first in August 2022 and the second in November 2023. Soil vapor samples were not collected with co-located indoor air samples.

During these sampling events PCE was detected up to 10 micrograms per meter cubed (ug/m3), TCE was detected up to 2.3 ug/m3, and carbon tetrachloride was detected up to 0.39 ug/m3.

Additionally, benzene was detected up to 25 ug/m3, ethylbenzene was detected up to 53 ug/m3, cyclohexane was detected up to 160 ug/m3, 2,2,4-trimethylpentane was detected up to 68 ug/m3, 1,2,4-trimethylbenzene was detected up to 3.6 ug/m3, o-xylene was detected up to 11 ug/m3, m,p-xylene was detected up to 24 ug/m3, heptane was detected up to 98 ug/m3, hexane was detected up to 130 ug/m3, and toluene was detected up to 48 ug/m3.

A majority of the elevated petroleum aromatic hydrocarbon and TCE concentrations were detected along northern portion of the site, near abandoned underground storage tanks. Elevated PCE was detected in the center of the site.

Data does not indicate potential off-site impacts from soil vapor related to the site.

6.4: <u>Summary of Human Exposure Pathways</u>

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*.

The site is vacant. People will not come into contact with contaminated soil and groundwater unless they dig below the ground surface. 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. The inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern, however, may be a potential concern for future onsite buildings. Environmental sampling indicates soil vapor intrusion from site contamination is not a concern for off-site buildings.

6.5: <u>Summary of the Remediation Objectives</u>

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:

<u>Groundwater</u>

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.

<u>Soil</u>

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.

<u>Soil Vapor</u>

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 Multiple Cleanup Tracks remedy.

The selected remedy is referred to as the Soil Excavation, In-Situ Treatment with Activated Carbon, and Site Cover with Site Management remedy.

The elements of the selected remedy, as shown in Figure 3A and 3B, are as follows:

1. Green Remediation/Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes which balance ecological, economic, and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise (TM) (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The remaining on-site slabs will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal to implement the remedy.

Track 1 area: Excavation and off-site disposal of all on-site soils which exceed UUSCOs in the Track 1 remedy area (located in the south-central portion of the site) as defined by 6 NYCRR Part 375-6.8 above bedrock. Impacted weathered bedrock will also be removed and properly disposed of off-site. Areas of the site where a Track 1 cleanup is achieved, a cover system will not be a required element of the remedy. Soil excavation in the Track 1 area will extend to bedrock, approximately 6-ft bgs across the area, removing the requirement for endpoint samples to be collected from the area.

Track 4 area: All on-site soils within the Track 4 cleanup areas (majority of the site) and below two feet which exceed the Track 4 site-specific SCOs described below will be excavated from identified AOC and disposed of off-site:

Excavation and off-site disposal of contaminant source areas, including:

- o grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- The presence of concentrated solid or semi-solid hazardous substances (DER-10 §1.3(70); 6 NYCRR 375 §1.2(au), including soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead) as observed in AOC-3, -4, and -9;
- Total SVOC concentrations exceeding 500 mg/kg as may be encountered in AOCs 2, 5, 6, 7, and 8;
- Total PCB concentrations in excess of 10 mg/kg;
- VOC concentrations in soil exceeding the RRSCOs;
- Field observations of grossly contaminated media, as defined in 6 NYCRR Part 375-1.2(u), or soils with the potential to create nuisance conditions, as defined in CP-51 Section G. as may be encountered in ACO 5, -6, -7, and -8, including:
 - The presence of visual waste material or mobile contamination (i.e. NAPL), identified by visual or olfactory observations or elevated vapor concentrations (DER-10 §1.2(70); 6 NYCRR 375 §1.2(au)); and
 - Soils exhibiting distinct odors or staining that may result in nuisance conditions following the remedial action [CP-51 §5(G)].

All soils in the upper two feet in the proposed Track 4 area which exceed the RRSCO will be excavated and transported off-site for disposal.

Approximately 27,900 cubic yards of soil will be excavated across the top 2 feet of the site to facilitate placement of a composite cover system in the Track 4 area. Within the Track 4 areas, an additional 7,900 cubic yards of soil will be excavated and transported off-site guided by the Site-Specific SCOs listed above. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. Endpoint samples will not be collected in excavation areas within the Track 4 area that extend to bedrock. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicants must notify the Department, submit the sample results and, and in consultation with the Department and NYSDOH, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste

characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

Any USTs, fuel dispensers, underground piping or other structures associated with a source of contamination will be excavated and removed from the site.

3. Backfill

On-site soil which does not exceed the above excavation criteria or the PoGW SCOs for any constituent, may be used beneath the cover system described in remedy element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site. If bedrock is deemed uncontaminated, it can be reused on-site beneath a cover system.

Backfill 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.

4. Site Cover

A site cover will be required in Track 4 portions of the site where the upper two feet of exposed surface soil will exceed the applicable SCOs, to allow for future restricted residential use of the site. 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.

5. In-Situ Treatment using Activated Carbon

Activated carbon will be added to the subsurface in AOC-10 to capture and prevent the migration of PFOA and PFOS in groundwater in the northwest corner of the site. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, on-site pilot scale studies will be conducted to further define design parameters.

6. Monitored Natural Attenuation

Petroleum related groundwater contamination remaining in Area of Concern 6 after active remediation, as discussed in remedial element 2 above, will be addressed with MNA. Groundwater will be monitored for site related contamination and also for MNA indicators

which will provide an understanding of the biological activity breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in a reasonable period of time (5 years). Reports of the attenuation will be provided at 5 years, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated in-situ chemical oxidation would be the expected contingency remedial action.

7. Institutional Control

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

- requires 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);
- allows 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;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or Westchester County DOH; and
- requires compliance with the Department approved Site Management Plan.
- 8. Site Management Plan

A SMP 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 engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in remedy element 7 above.

Engineering Controls: A site cover as discussed in remedy element 4 and groundwater monitoring wells as discussed in remedy element 6.

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;
- a description 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 any buildings on the site, including provisions for implementing actions recommended to address

exposures related to soil vapor intrusion;

- a provision 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 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 groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan as discussed in section a. above.





Site Location Map

Figure 1

Site No. C360202 Former United Hospital Rye, Westchester County, NY



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<u>MAP SOURCES:</u> 1. CAD drawing *A051141B 406 Boston Post Road, Port Chester Email 03-21-2017.dwg* received from Rose Associates, Inc. on March 17, 2020.

2. https://giswww.westchestergov.com





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OVERLAY

BUILDING

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PLAN

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Former United Hospital 406 Boston Post Road Port Chester, New York

LEGEND

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X

 BCP SITE BOUNDARY
 TAX LOT BOUNDARY
UNDERGROUND STORAGE TANK (UST)
ABOVEGROUND STORAGE TANK (AST)
EXISTING BUILDING PENDING DEMOLITION
RECENTLY DEMOLISHED STRUCTURE (2023)
HISTORICALLY DEMOLISHED STRUCTURE
FORMER BUILDING IDENTIFICATION NUMBER
C&D DEBRIS PILE
INFERRED GROUNDWATER FLOR DIRECTION

NOTE: FORMER BUILDING STRUCTURES TAKEN FROM TRC "SITE LAYOUT PLAN INCLUDING EXISTING AND DEMOLISHED BUILDINGS", DATED AUGUST 2014, FIGURE 2.

FORMER BUILDING STRUCTURES						
Building No.	Description	Approximate Construction Date	Approximate Demolition Date			
1	Macy's Home for Nurses	1915 or prior	Between 1950 and 1990			
2	Hospital Wards	1915 or prior	Between 1950 and 1990			
3A	Coal/Storage Building	1915 or prior	Between 1919 and 1934			
3B	Gas Tank	Between 1919 and 1934	Between 1950 and 1990			
4	Administration Building	Between 1915 and 1919	Between 1950 and 1990			
5	One of two small buildings to the east of the Engineering Office	Between 1919 and 1934	Between 1950 and 1990			
6	One of two small buildings to the east of the Engineering Office	Between 1919 and 1934	Between 1950 and 1990			
7	Two small buildings to the south of the hospital (Use Uknown)	Between 1915 and 1919	Between 1950 and 1990			
8	Small Building (Use Unknown)	Between 1919 and 1934	Between 1950 and 1990			
9A	Three small buildings to the north of the hospital (Use Uknown)	Between 1919 and 1934	Between 1934 and 1950			
9B	Three small buildings to the north of the hospital - labeled as "Storage"	Between 1919 and 1934	Between 1934 and 1950			
9C	Three small buildings to the north of the hospital - labeled as "Auto"	Between 1919 and 1934	Between 1934 and 1950			
10	Morgue	Between 1919 and 1934	Between 1950 and 1990			

GARAGE/MAINTENANCE & ENGINEERING OFFICE

POTENTIAL LOCATION OF CLØSED-REMOVED 550 GALLON UST AND CLOSÉD/NYSDEC SPILL

APPROXIMATE LOCATION OF REPORTED CLEANUP OF SUSPECTED MERCURY RELEASE IN 1ST FLOOR

DATE 1/2/2025 PROJECT NO. 200057 FIGURE 2

SCALE IN FEET



Groundwater Areas of Concern

AOC	Description	Proposed Remedial Action			
6D	Residual petroleum product and oily water at RI-MW-02BR	Address residual groundwater contamination via recovery, direct application of an oxygen-releasing compound and/or chemical oxidant (ORC [®] , Persulfox [®] and/or similar product) to excavation area to promote aerobic biodegradation/destruction of residual petroleum contamination, and/or in-situ injections (bioremediation and/or chemical oxidation), followed by groundwater monitoring with a minimum of three monitoring wells. ^(II)			
9	Elevated PFAS at	In-situ groundwater treatment consisting of the injection of a colloidal GAC product to address elevated			
	RI-MW-01BR	detections of PFAS, followed by groundwater monitoring with a minimum network of three monitoring wells.			
Notes:	Notes: AOC = area of concern; PFAS = per- and polyfluoroalkyl substances; GAC = granular activated carbon; (1) = final number of monitoring wells and their locations will be				

determined in consultation with NYSDEC and included in the future Site Management Plan.

<u>MAP SOURCES:</u> 1. CAD drawing 2024-06-19_United Hospital_Subdivision Plan.dwg received from SLR International Corporation on June 19, 2024.

2. https://giswww.westchestergov.com

3. 2018 and 2019 Borings, Soil Vapor Points, Temporary Groundwater Wells, and Test Pits taken from SESI Drawing Numbers FIG 1.4 (dated 11-14-19), FIG-3.1, FIG-3.2, FIG-3.3 (dated 12/17/18).

	A40 Park Avenue South, New York, NY 10016
LEGEND BCP SITE BOUNDARY FUTURE TAX LOT BOUNDARY NON-BCP PORTION OF THE REDEVELOPMENT PROJECT PROPOSED TRACK 1 AREA: PIO FUTURE LOT 1 COMPLETED TRACK 2 AREA: FUTURE LOT 5 PROPOSED TRACK 4 AREA: PIO FUTURE LOT 3, 4, AND 7; PIO FUTURE MAIL CORY WAY; PIO FUTURE LOT 3, 4, AND 7; PIO FUTURE MAIL CORY WAY; PIO FUTURE LOT 0 BE DEEEDED FOR HIGHWAY PURPOSES APPROXIMATE EXTENT OF AREAS OF CONCERN (ACCs) FOR FUTURE REMEDIAL ACTION AKRF TEMPORARY GROUNDWATER WELL LOCATION (2019) SESI SOIL AND TEMPORARY GROUNDWATER WELL LOCATION (2019) BEDROCK MONITORING WELL (2024) INFERRED GROUNDWATER FLOW DIRECTION PROXIMATE LOCATION OF PROPOSED UP-GRADIENT / SOURCE AREA VELL (FINAL NUMBER OF WELLS AND THIER LOCATIONS TO BE SELECTED IN CONSULTATION WITH NYSDEC AND INCLUDED IN FUTURE SELECTED IN CONSULTATION WITH NYSDEC AND INCLUDED IN FUTURE SITE MANAGEMENT PLAN) APPROXIMATE LOCATION OF PROPOSED DOWN-GRADIENT WELL (FINAL NUMBER OF WELLS AND THIER LOCATIONS TO BE SELECTED IN CONSULTATION WITH NYSDEC AND INCLUDED IN FUTURE SITE MANAGEMENT PLAN) CONCEPTUAL PLANILOCATIONS OF PROPOSED DOWN-GRADIENT WELL (FINAL NUMBER OF WELLS AND THIER LOCATIONS TO BE SELECTED IN CONSULTATION WITH NYSDEC AND INCLUDED IN FUTURE SITE MANAGEMENT PLAN) CONCEPTUAL PLANILOCATIONS OF PROPOSED DOWN-WATER FREATMENT INJECTION POINTS AT AOC-10 (FINAL NUMBER OF WELLS AND THIER LOCATIONS TO BE SELECTED IN CONSULTATION WITH NYSDEC AND INCLUDED IN FUTURE SITE MANAGEMENT PLAN)	Former United Hospital Former United Hospital 406 Boston Post Road Port Chester, New York PROPOSED GROUNDWATER MONITORING AND/OR TREATMENT AREAS
0 <u>50 100 200</u>	DATE 4/15/2025 PROJECT NO. 200057 FIGURE

	FUTURE TA
	NON-BCP P
	TRACK 1 AF
	COMPLETE
	PROPOSED P/O FUTURI HIGHWAY P
	APPROXIM/ FOR FUTUR
TW-1	AKRF TEMF
	SESI SOIL A
RI-SESI_GW-3	AKRF REME [SESI GROL (2018/2019)]
Ψ	

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FUTURE LOT 2

ROUTEN

POAD

(2018/2019)] BEDROCK I RI-MW-01BR INFERRED (APPROXIM/ WELL (FINA AOC-10-GW-UG-01 SELECTED I SITE MANAG

APPROXIM/ 籔 ((FINAL NU AOC-10-GW-DG-01 CONSULTAT

SCALE IN FEET

3A



with approximate dimensions of 100 feet by 100 feet, TCLP lead was detected above the TCLP lead at Waste Characterization Grid 17 hazardous waste threshold. Additional delineation sampling will be conducted in accordance with disposal facility requirements to limit the area classified as hazardous waste. In-situ groundwater treatment consisting of the injection of a colloidal GAC product to address Elevated PFAS at elevated detections of PFAS, followed by groundwater monitoring with a minimum network 10 RI-MW-01BR of three monitoring wells. (1) Notes: AOC = area of concern; UST = underground storage tank; bgs = below ground surface; PFAS = per- and polyfluoroalkyl substances; TCLP = Toxicity

Characteristic Leaching Procedure; GAC = granular activated carbon; (1) = final number of monitoring wells and their locations will be determined in consultation with NYSDEC and included in the future Site Management Plan.

5A

5**B**

6A

6B

6C

6D

<u>MAP SOURCES:</u> 1. CAD drawing 2024-06-19_United Hospital_Subdivision Plan.dwg received from SLR International Corporation on June 19, 2024.

2. https://giswww.westchestergov.com



SCALE IN FEET

200057

FIGURE

3B