DECISION DOCUMENT

Portion of Former Vacuum Oil Refinery
Brownfield Cleanup Program
Rochester, Monroe County
Site No. C828190
September 2023

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

DECLARATION STATEMENT - DECISION DOCUMENT

Portion of Former Vacuum Oil Refinery
Brownfield Cleanup Program
Rochester, Monroe County
Site No. C828190
September 2023

Statement of Purpose and Basis

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

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Portion of Former Vacuum Oil Refinery site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design:
   A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:
   - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
   - Reducing direct and indirect greenhouse gases and other emissions;
   - Increasing energy efficiency and minimizing use of non-renewable energy;
   - Conserving and efficiently managing resources and materials;
   - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
   - Maximizing habitat value and creating habitat when possible;
   - Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
   - Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and

- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings 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

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soil containing total SVOCs exceeding 500 ppm;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 32,500 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that the above excavation goals have been achieved. If confirmation sampling indicates that these goals were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that the above excavation goals 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.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below 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 to establish the designed grades at the site.

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

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

The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (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. Engineering and Institutional Controls

Imposition of an institutional control in the form of an Environmental Easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential cleanup at a minimum.

Institutional Control

Imposition of an institutional control in the form of an Environmental Easement for the controlled property which will:

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

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

A. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in remedy element 6 above.

Engineering Controls: The cover system discussed in remedy element 4.

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 provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment.

- a provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
- 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 any occupied buildings on the site, 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 remedy element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

B. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - Monitoring of groundwater to assess the performance and effectiveness of the remedy.
   - A schedule of monitoring and frequency of submittals to the Department.
   - Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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.

9/22/2023 — Michael J Cruden

Date

Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

Portion of Former Vacuum Oil Refinery
Rochester, Monroe County
Site No. C828190
July 2023

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, 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 repositories:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C828190

Phillis Wheatley Community Library
33 Dr Samuel McCree Way
Rochester, New York 14608
Phone: 585-428-8212

PLEX Neighborhood Association
Carlson Commons
70 Coretta Scott Crossing
Rochester, New York 14608
Phone: (585) 328-6916

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Portion of Former Vacuum Oil Refinery site is a 15.4-acre site located in an urban area. The site is in the southwestern quadrant of the City of Rochester in the Plymouth-Exchange (PLEX) neighborhood. The includes the following parcels or a portion of the parcels:

10 Flint Street – 121.77-1-86.001
1 Cottage Street – 136.21-1-1
13 Cottage Street – 136.21-1-3.001
31 Cottage Street – 136.21-1-4
49 Cottage Street – 136.21-1-3.002
69 Cottage Street – 135.28-2-45
75 Cottage Street – 135.28-2-44
100 Riverview Place – 136.21-1-2
102 Violetta Street – 121.70-1-39.001
1320 S. Plymouth Avenue – 135.28-2-63

Site Features: The site is currently undeveloped except for an asphalt-paved recreational trail that runs through the entire eastern side of the site from north to south. A grass-covered area is located east of the trail. The rest of the site is wooded and contains remnants of structures from the former refinery.

Current Zoning and Land Use: The site is vacant exception for a recreational trail. The site is currently zoned for single family residential houses. The City of Rochester has created an Environmental Protection Overlay District within the City's proposed new Zoning code restricting single family residences in future development. The Genesee River is just east of the site. Residential, commercial, and light industrial properties are located to the north, south, and west.

Past Use of the Site: A significant portion of the site was part of the former Vacuum Oil refinery that operated from about 1866 to 1930. Other historical uses of the site included railroads and canals for the shipment of raw materials and finished products. The Vacuum Oil Company was a predecessor of ExxonMobil Corporation.

In 1989, a tar-like substance was encountered on property south of the site. NYSDEC excavated and properly disposed of the tar off-site. In 1990, the City of Rochester prepared a report that describes property and traces the history of the Vacuum Oil Company. In 2001, NYSDEC completed an investigation of a 24-acre portion of the former Vacuum Oil facility south of Flint St. In 2005 and 2009 ExxonMobil performed work that expanded on the NYSDEC investigation and in 2012 an additional site assessment report was prepared for the City of Rochester.

The results of these investigations indicate the presence of various contaminants in soil and/or groundwater including volatile organic compounds, semi-volatile organic compounds, and metals. Based on these results, the Portion of Former Vacuum Oil Refinery site entered the Brownfield Cleanup Program in April 2015.

Site Geology and Hydrogeology: Both native soil and fill materials are present at the site. Native soils consist of sands, silts, and clays. Fill consists of bricks, slag, cinders, gravels, wood, and miscellaneous debris. Fill material extends from the surface to approximately 16.5 feet below ground surface. Groundwater is present at depths of approximately 3 to 8 feet. Groundwater flow in the northern portion of the site is relatively flat. Groundwater flow in the southern portion of the site is to the north northwest. Bedrock groundwater flow appears to be northeastern.

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 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 Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does 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 with respect to the Applicant.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings, or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminants of

concern identified at this site are:

benzo(a)pyrene
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
polychlorinated biphenyls (PCB)
arsenic
copper
lead
mercury
naphthalene
benzene
xylene (mixed)
toluene
1,1-dichloroethane

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.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: The nature and extent of contamination at the site has been defined under the remedial investigation completed as part of the Brownfield Cleanup Program. The primary contaminants of concern include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals.

Surface Soil:
Surface soil samples were analyzed for TCL VOCs, TCL SVOCs, metals, PCBs, and pesticides. Surface soil sampling indicated that SVOCs, metals, and PCBs are the primary contaminants that exceed the restricted residential and protection of groundwater soil cleanup objectives (SCO).

SVOCs: Benzo(a)pyrene concentrations ranged from non-detect to 52.3 parts per million [ppm] (protection of groundwater SCO – 22 ppm). Benzo(a)anthracene concentrations ranged from non-detect to 59.3 ppm (protection of groundwater SCO – 1 ppm). Benzo(b)fluoranthene concentrations ranged from non-detect to 66 ppm (protection of groundwater SCO – 1.7 ppm). Chrysene concentrations ranged from non-detect to 58.7 ppm (protection of groundwater SCO – 1 ppm). Benzo(k)fluoranthene concentrations ranged from non-detect to 23.8 ppm (protection of groundwater SCO – 1.7 ppm). Indeno(1,2,3-cd)pyrene concentrations ranged from non-detect to

32.9 ppm (restricted residential SCO – 0.5 ppm). Dibenz(a,h)anthracene concentrations ranged from non-detect to 7.85 ppm (restricted residential SCO – 0.33 ppm).

PCB concentrations ranged from non-detect to 4.7 ppm (protection of groundwater SCO – 3.2 ppm).

Metals: Arsenic concentrations ranged from 2.3 to 65.4 ppm (protection of groundwater SCO – 16 ppm). Barium concentrations ranged from non-detect to 3,690 ppm (restricted residential SCO – 400 ppm). Copper concentrations ranged from 9.3 to 3,980 ppm (restricted residential SCO – 270 ppm). Lead concentrations ranged from 23.8 to 2,640 ppm (restricted residential SCO – 400 ppm). Mercury concentrations ranged from 0.002 to 16.4 ppm (restricted residential SCO – 0.81 ppm).

Surface soil data does not indicate a potential for off-site impacts in soil.

Subsurface Soil:
Sub-surface soil samples were analyzed for TCL VOCs, TCL SVOCs, metals, PCBs, and pesticides. Subsurface soil sampling indicated that VOCs, SVOCs, and metals are the primary contaminants that exceed the restricted residential and protection of groundwater soil cleanup objectives (SCO).

VOCs: Benzene concentrations ranged from non-detect to 4.4 ppm (protection of groundwater SCO – 0.6 ppm). 1,2,4-trimethylbenzene concentrations ranged from 0.00025 to 31 ppm (protection of groundwater SCO – 3.6 ppm). 1,3,5-trimethylbenzene concentrations ranged from 0.00053 to 22 ppm (protection of groundwater SCO – 8.4 ppm). Ethylbenzene concentrations ranged from 0.000086 to 12 ppm (protection of groundwater SCO – 1 ppm). Toluene concentrations ranged from 0.00074 to 35 ppm (protection of groundwater SCO – 0.7 ppm). Xylene (mixed) concentrations ranged from non-detect to 88.1 ppm (protection of groundwater SCO – 1.6 ppm).

SVOCs: Benzo(a)pyrene concentrations ranged from non-detect to 106 ppm (protection of groundwater SCO – 22 ppm). Benzo(a)anthracene concentrations ranged from non-detect to 112 ppm (protection of groundwater SCO – 1 ppm). Benzo(b)fluoranthene concentrations ranged from non-detect to 148 ppm (protection of groundwater SCO – 1.7 ppm). Chrysene concentrations ranged from non-detect to 115 ppm (protection of groundwater SCO – 1 ppm). Benzo(k)fluoranthene concentrations ranged from non-detect to 52.7 ppm (protection of groundwater SCO – 1.7 ppm). Indeno(1,2,3-cd)pyrene concentrations ranged from non-detect to 73.2 ppm (restricted residential SCO – 0.5 ppm). Dibenz(a,h)anthracene concentrations ranged from non-detect to 17.3 ppm (restricted residential SCO – 0.33 ppm). Fluoranthene concentrations ranged from non-detect to 230 ppm (restricted residential SCO – 100 ppm). Naphthalene concentrations ranged from non-detect to 359 ppm (protection of groundwater SCO – 12 ppm).

Metals: Arsenic concentrations ranged from 0.857 to 510 ppm (restricted residential SCO – 16 ppm). Copper concentrations ranged from 3.9 to 11,300 ppm (restricted residential SCO – 270 ppm). Lead concentrations ranged from non-detect to 1,080 ppm (restricted residential SCO – 400 ppm). Mercury concentrations ranged from non-detect to 44.2 ppm (restricted residential SCO – 0.81 ppm).

Subsurface soil data does not indicate a potential for off-site impacts in soil.

Groundwater:
Groundwater samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, PCBs, pesticides, PFOS, and PFOA. Groundwater sampling conducted indicated VOCs (chlorinated and petroleum), SVOCs, PFOS, PFOA, and metals that exceeded the State's standards and guidance values in overburden groundwater.

VOCs: 1,1-dichloroethane concentrations ranged from non-detect to 77 parts per billion [ppb] (groundwater standard – 5 ppb). 1,2,4-trimethylbenzene concentrations ranged from non-detect to 8.7 ppb (groundwater standard – 5 ppb). 1,3,5-trimethylbenzene concentrations ranged from non-detect to 11 ppb (groundwater standard – 5 ppb). Benzene concentrations ranged from non-detect to 7.7 ppb (groundwater standard – 1 ppb). Chloroethane concentrations ranged from non-detect to 54 ppb (groundwater standard – 5 ppb). Toluene concentrations ranged from non-detect to 22 ppb (groundwater standard – 5 ppb). Trichloroethene concentrations ranged from non-detect to 7.3 ppb (groundwater standard – 5 ppb). Xylenes (total) concentrations ranged from non-detect to 33.2 ppb (groundwater standard – 5 ppb). Perfluorooctanesulfonic acid concentrations ranged from non-detect to 16 parts per trillion [ppt] (groundwater standard – 10 ppt). Perfluorooctanoic acid concentrations ranged from non-detect to 17 ppt (groundwater standard – 10 ppt).

SVOCs: Benzo(a)anthracene concentrations ranged from 1.1 to 2.2 ppb (groundwater standard – 0.002 ppb). Benzo(a)pyrene concentrations ranged from 1 to 2.1 ppb (groundwater standard – 0 ppb). Benzo(b)fluoranthene concentrations ranged from 1.1 to 2.1 ppb (groundwater standard – 0.002 ppb). Benzo(k)fluoranthene concentrations ranged from 0 to 0.48 ppb (groundwater standard – 0.002 ppb). Chrysene concentrations ranged from 1.2 to 2.2 ppb (groundwater standard – 0.002 ppb). Indeno(1,2,3-cd)pyrene concentrations ranged from 0.66 to 2.2 ppb (groundwater standard – 0.002 ppb). Naphthalene concentrations ranged from 0.15 to 13.6 ppb (groundwater standard – 10 ppb).

Metals: Arsenic concentrations ranged from 5.1 to 408 ppb (groundwater standard – 25 ppb). Copper concentrations ranged from 0.9 to 484 ppb (groundwater standard – 200 ppb). Lead concentrations ranged from 2.1 to 335 ppb (groundwater standard – 25 ppb). Chromium concentrations ranged from 3.5 to 466 ppb (groundwater standard – 50 ppb). Thallium concentrations ranged from 10.3 to 26.1 ppb (groundwater standard – 0.5 ppb).

Groundwater data and flow direction does not indicate a potential for off-site impacts in groundwater.

Soil Vapor:
The remedial investigation soil gas sampling event included the collection of co-located groundwater and subsurface soil samples. The soil gas samples were analyzed using Method TO-15 for VOCs. The groundwater samples were analyzed for TCL VOCs and TCL SVOCs. The sub-surface soil samples were analyzed for TCL VOCs. The soil gas and groundwater sampling indicated petroleum related compounds in the soil vapor and groundwater at the site boundary. 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, 4-ethyltoluene were detected at the

property boundary. Co-located groundwater samples indicated petroleum VOCs. Benzene was the only VOC in groundwater that exceeded SCGs. Benzene concentrations ranged from non-detect to 1.2 ppb (groundwater standard – 1 ppb). Co-located subsurface soil samples were non-detect for all VOCs. Concentrations of the petroleum related VOCs in soil gas ranged from non-detect to 15 microgram per cubic meter (ug/m^3). Soil vapor data does not indicate a potential for off-site impacts.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching, or swallowing). This is referred to as *exposure.*

The site is not fenced and persons who enter the site could contact contaminants in the soil by walking on the soil, 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 the soil vapor may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Environmental sampling indicates that soil vapor intrusion is not a concern for off-site structures.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- 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.
- Prevent the discharge of contaminants to surface water.
- 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.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation and Cover remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design:
   A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:
   - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
   - Reducing direct and indirect greenhouse gases and other emissions;
   - Increasing energy efficiency and minimizing use of non-renewable energy;
   - Conserving and efficiently managing resources and materials;
   - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
   - Maximizing habitat value and creating habitat when possible;
   - Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;

- 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
   Excavation and off-site disposal of contaminant source areas, including:
   - grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
   - concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1)
   - non-aqueous phase liquids;
   - soil with visual waste material or non-aqueous phase liquid;
   - soil containing total SVOCs exceeding 500 ppm;
   - soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
   - soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

   All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 32,500 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that the above excavation goals have been achieved. If confirmation sampling indicates that these goals were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that the above excavation goals 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.

3. Backfill
On-site soil which does not exceed the above excavation criteria may be used below 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 to establish the designed grades at the site.

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

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

The site will be re-graded to accommodate installation of a cover system as described in remedy element 4.

4. Cover System
A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (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. Engineering and Institutional Controls

Imposition of an institutional control in the form of an Environmental Easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential cleanup at a minimum.

Institutional Control

Imposition of an institutional control in the form of an Environmental Easement for the controlled property which will:

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

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

A. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in remedy element 6 above.

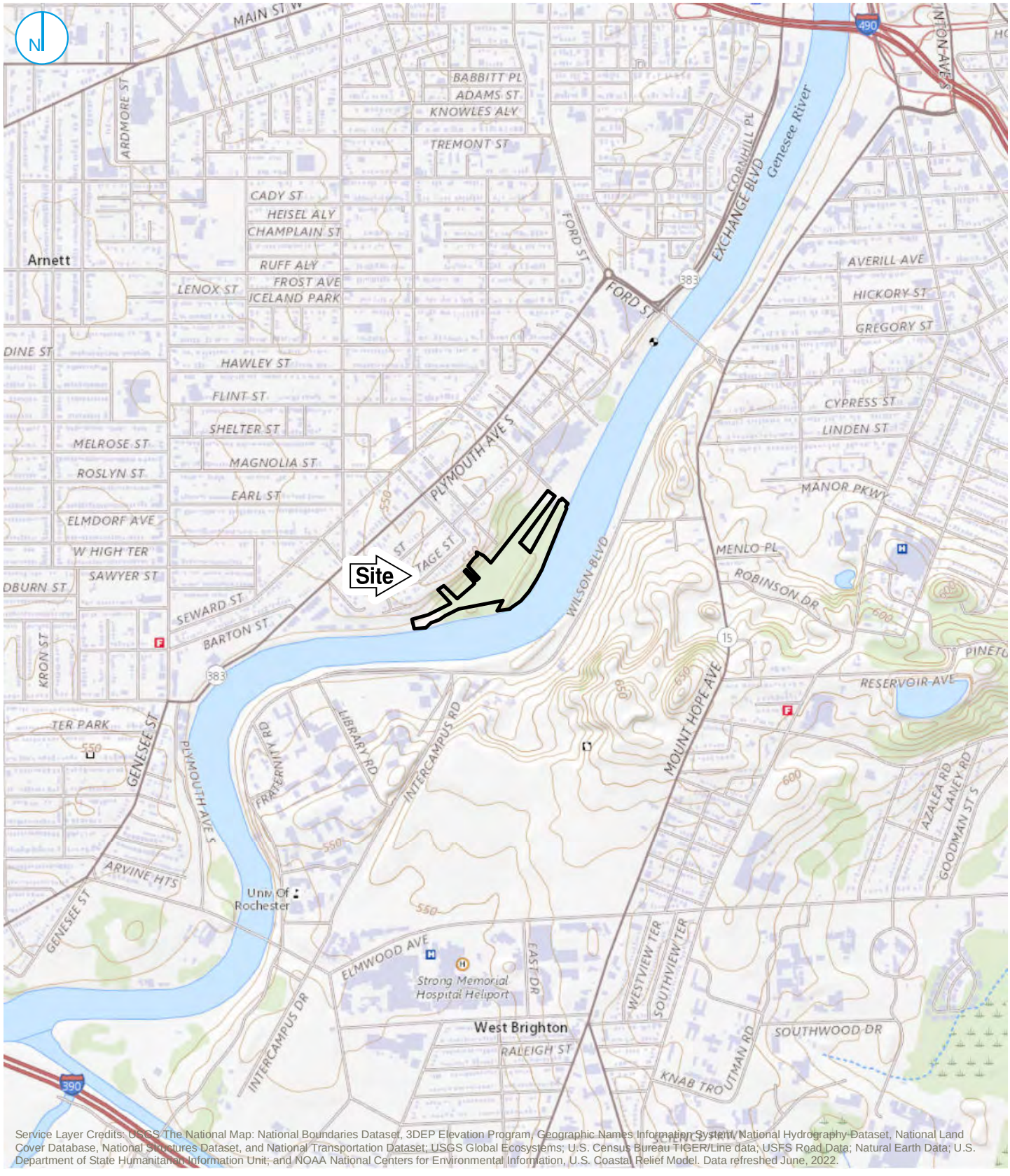
Engineering Controls: The cover system discussed in remedy element 4.

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 provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment.

- a provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
- 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 any occupied buildings on the site, 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 remedy element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

B. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
    - Monitoring of groundwater to assess the performance and effectiveness of the remedy.
    - A schedule of monitoring and frequency of submittals to the Department.
    - Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



Service Layer Credits: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022.

Map Scale: 1:24,000 | Map Center: 77°37'20"W 43°8'4"N

0 1,000 2,000 Feet

BROWNFIELD CLEANUP PROGRAM
REMEDIAL ALTERNATIVES ANALYSIS REPORT

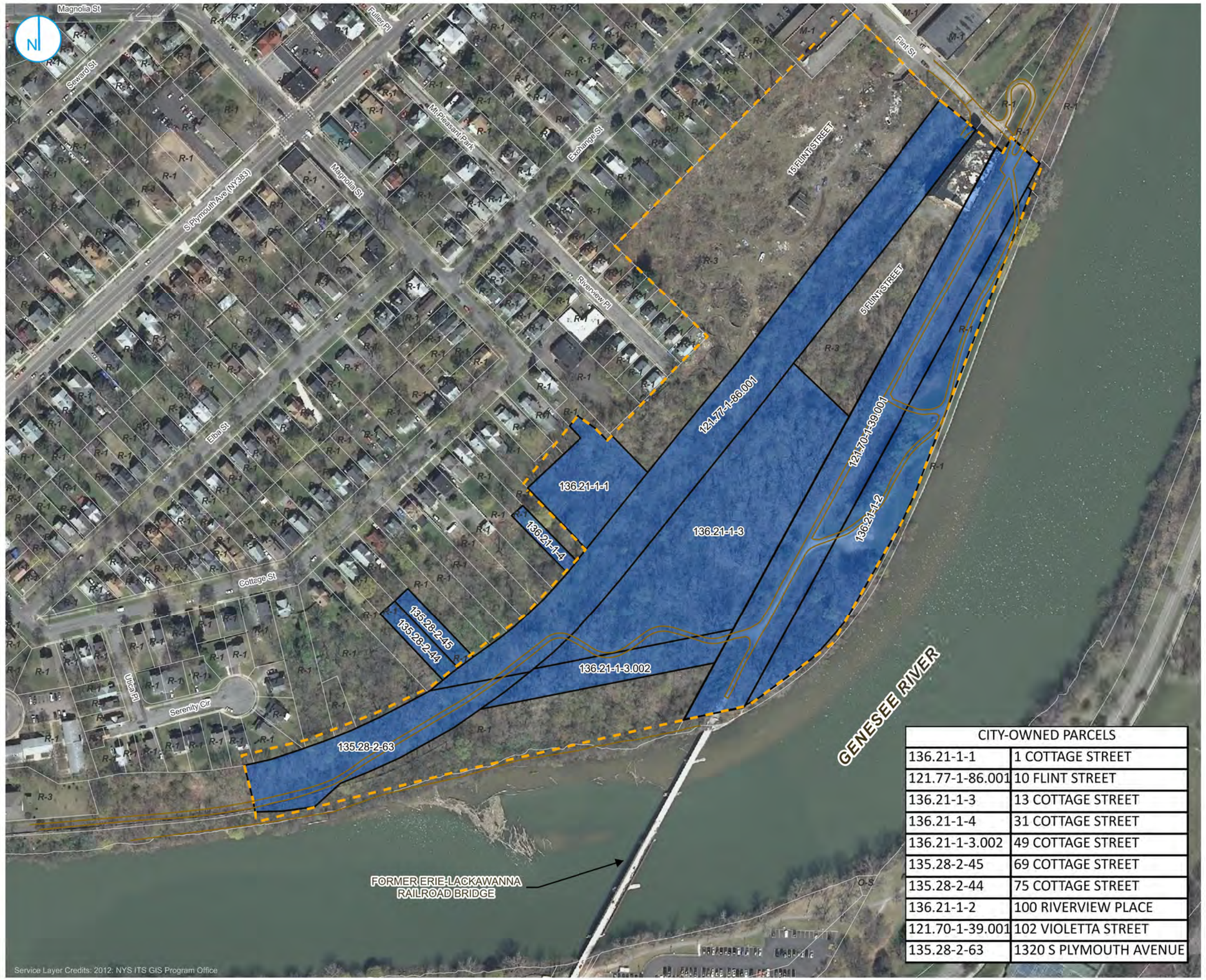
PORTION OF FORMER VACUUM OIL REFINERY
CITY OF ROCHESTER
ROCHESTER, NEW YORK

FIGURE 1
SITE LOCATION
JUNE 2023

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

PROJECT: 1940061157 | DATED: 6/7/2023 | DESIGNER: SSOULE \\ramrodfile01.ramboll.ramboll-group.global.network\projects\Rochester-C.11862\61157.Vacuum-Oil-Bcp\Docs\DWG\MXD\RIR_2017\JMN\SITE_LOCATION.mxd



CITY-OWNED PARCELS	
136.21-1-1	1 COTTAGE STREET
121.77-1-86.001	10 FLINT STREET
136.21-1-3	13 COTTAGE STREET
136.21-1-4	31 COTTAGE STREET
136.21-1-3.002	49 COTTAGE STREET
135.28-2-45	69 COTTAGE STREET
135.28-2-44	75 COTTAGE STREET
136.21-1-2	100 RIVERVIEW PLACE
121.70-1-39.001	102 VIOLETTA STREET
135.28-2-63	1320 S PLYMOUTH AVENUE

LEGEND

- FORMER VACUUM OIL REFINERY (APPROXIMATE)
- BROWNFIELD CLEANUP PROGRAM SITE LIMITS (APPROXIMATELY 15.4 ACRES)
- ASPHALT PAVED BIKE/PEDESTRIAN PATH

R-1

CITY OF ROCHESTER ZONING CODE:
M-1 = Industrial District
O-S = Open Space
R-1 = Low-Density Residential
R-3 = High-Density Residential

NOTE

1. TAX PARCELS PROVIDED BY MONROE COUNTY DES, MARCH 2010.
2. CITY PARCEL OWNERSHIP VERIFIED THROUGH THE CITY OF ROCHESTER PROPERTY INFORMATION WEBSITE ON JANUARY 11, 2022. (http://www.cityofrochester.gov/propinfo/)
3. AERIAL IMAGERY PROVIDED BY NYS GIS CLEARINGHOUSE, DATED SPRING 2012.
4. 10 FLINT STREET WAS FORMERLY IDENTIFIED AS 1320 S. PLYMOUTH AVENUE (TAX PARCEL 121.77-01-086) AND HAS SINCE BEEN DIVIDED INTO 2 PARCELS: 10 FLINT STREET (TAX PARCEL 121.77-1-86.001) AND 1320 S. PLYMOUTH AVENUE (TAX PARCEL 135.28-2-63). THESE PARCELS WERE FORMALLY IDENTIFIED AS 1315 S. PLYMOUTH AVENUE (TAX PARCEL 135.35-1-18.004).
5. 31, 69, AND 75 COTTAGE STREET ARE NOT CURRENTLY KNOWN TO HAVE BEEN SITUATED WITHIN THE FORMER VACUUM OIL REFINERY FOOTPRINT, BUT ARE INCLUDED IN THE BCP APPLICATION AND PROPOSED REMEDIAL INVESTIGATION.
6. 5 FLINT STREET AND 15 FLINT STREET INVESTIGATED BY OTHER ENTITIES (NYSDEC BCP SITE NO. C828162)

0 100 200 Feet

BROWNFIELD CLEANUP PROGRAM
REMEDIAL ALTERNATIVES ANALYSIS REPORT

PORTION OF FORMER VACUUM OIL REFINERY
13, 31, 49, 69, AND 75 COTTAGE STREET; 100 RIVERVIEW PLACE; AND PORTIONS OF 1 COTTAGE STREET; 10 FLINT STREET; 102 VIOLETTA STREET; AND 1320 S. PLYMOUTH AVENUE
ROCHESTER, NEW YORK

FIGURE 2
SITE PLAN

JUNE 2023

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

PROJECT: 11862.61157 | DATED: 6/8/2023 | DESIGNER: SSOULE
\\ramrocfile01.ramboll.ramboll-group.global.network\projects\Rochester-C.11862\61157.Vacuum-Oil-Bcp\Docs\DWG\MXD\RIR_2017JMN\Vacuum_Oil_RIR

LEGEND

- FORMER VACUUM OIL REFINERY (APPROXIMATE)
- BROWNFIELD CLEANUP PROGRAM SITE LIMITS (APPROXIMATELY 15.4 ACRES)
- 2 FOOT VEGETATED COVER (12.6 AC)
- ASPHALT COVER (1 AC)

APPROXIMATE OVERBURDEN THICKNESS (FT) FOR TARGETED EXCAVATION (APPROXIMATELY 1.1 AC, 22,300 CUBIC YARDS)

- TARGRETED EXCAVATION, 11' - 20'
- TARGETED EXCAVATION, UP TO 21'

Notes

Additional soil may be excavated and disposed off-site based on presence of odors/staining, as encountered, during remedial actions and site redevelopment activities. For the purpose of developing the RAAR, an additional 20 percent by volume soil (approximately 4,500 cubic yards) was assumed for excavation and off-site disposal.

0 100 200 Feet

BROWNFIELD CLEANUP PROGRAM
REMEDIAL ALTERNATIVES ANALYSIS REPORT

PORTION OF FORMER VACUUM OIL REFINERY

13, 31, 49, 69, AND 75 COTTAGE STREET; 100 RIVERVIEW PLACE; AND PORTIONS OF 1 COTTAGE STREET; 10 FLINT STREET; 102 VIOLETTA STREET; AND 1320 S. PLYMOUTH AVENUE
ROCHESTER, NEW YORK

FIGURE 5
ALTERNATIVE - 2

JUNE 2023

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

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PROJECT: 1940061157 | DATED: 6/9/2023 | DESIGNER: SSOULE

FIGURE 11B

NOTES:
1. SOME SHAPEFILES OBTAINED FROM LABELLA ASSOCIATES, P.C. IN 2008/2009.
2. INFORMATION SOURCES:
   - DATA SUMMARY PACKAGE, FORMER VACUUM OIL REFINERY SITE - 15 FLINT STREET, OCTOBER 2008, LABELLA ASSOCIATES, P.C.
   - SUBSURFACE INVESTIGATION SUMMARY REPORT, FORMER VACUUM OIL COMPANY REFINERY AREA, JANUARY 12, 2009, ROUX ASSOCIATES, INC.
   - PHASE I ENVIRONMENTAL SITE ASSESSMENTS 1, 13, 31, 69, AND 75 COTTAGE STREET; 100 RIVERVIEW PLACE; 102 VIOLETTA STREET; AND 1315 S. PLYMOUTH AVENUE; ROCHESTER, NEW YORK, DECEMBER 2012, OBG.
3. 2015 AERIAL IMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE.
4. EXISTING MULTI-USE TRAIL SHAPEFILE PROVIDED BY GENESEE TRANSPORTATION COUNCIL, LOCATED IN ROCHESTER, NEW YORK ON MAY 28, 2015.
5. SAMPLE LOCATION COORDINATES RECORDED USING A GPS UNIT.

CITY-OWNED PARCELS	
136.21-01-001	1 COTTAGE STREET
136.21-01-003	13 COTTAGE STREET
136.21-01-004	31 COTTAGE STREET
135.28-02-045	69 COTTAGE STREET
135.28-02-044	75 COTTAGE STREET
136.21-01-002	100 RIVERVIEW PLACE
121.70-01-039.1	102 VIOLETTA STREET
121.77-01-086	1320 S. PLYMOUTH AVENUE

VOLATILE ORGANIC COMPOUNDS / SEMI-VOLATILE ORGANIC COMPOUNDS / METALS / PESTICIDES/PCBs / SAMPLE POINT LOCATION

- EXCEEDS NY PART 375 - COMMERCIAL
- EXCEEDS NY PART 375 - RESTRICED RESIDENTIAL
- EXCEEDS NY PART 375 - UNRESTRICTED
- DOES NOT EXCEED CRITERIA
- NOT SAMPLED

LEGEND

SAMPLE LOCATION TYPE

- BED1-100 — BEDROCK WELL
- OVR-106 — OVERBURDEN MONITORING WELL
- TP-149 — TEST PIT
- SB-100 — SOIL BORING
- SS-100 — SURFACE SOIL
- SV-100 — SOIL VAPOR
- BIKE PATH
- BROWNFIELD CLEANUP PROGRAM SITE LIMITS (APPROXIMATELY 15.4 ACRES)
- FORMER VACUUM OIL REFINERY SITE (APPROXIMATE)
- NOT PART OF CITY OF ROCHESTER BROWNFIELD CLEANUP PROGRAM SITE; HOWEVER, THESE PARCELS ARE BEING INVESTIGATED BY OTHER ENTITIES.

CITY OF ROCHESTER
BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION REPORT
PORTION OF FORMER VACUUM OIL REFINERY

1, 13, 31, 69, AND 75 COTTAGE STREET;
100 RIVERVIEW PLACE;
102 VIOLETTA STREET; AND PORTION OF
1320 S. PLYMOUTH AVENUE
ROCHESTER, NEW YORK

SURFACE COVER EXCEEDANCES

0 37.5 75 150
Feet

11862.61157
OCTOBER 2019

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 13

NOTES:
1. SOME SHAPEFILES OBTAINED FROM LABELLA ASSOCIATES, P.C. IN 2008/2009.
2. INFORMATION SOURCES:
   - DATA SUMMARY PACKAGE, FORMER VACUUM OIL REFINERY SITE - 15 FLINT STREET, OCTOBER 2008, LABELLA ASSOCIATES, P.C.
   - SUBSURFACE INVESTIGATION SUMMARY REPORT, FORMER VACUUM OIL COMPANY REFINERY AREA, JANUARY 12, 2009, ROUX ASSOCIATES, INC.
   - PHASE I ENVIRONMENTAL SITE ASSESSMENTS 1, 13, 31, 69, AND 75 COTTAGE STREET; 100 RIVERVIEW PLACE; 102 VIOLETTA STREET; AND 1315 S. PLYMOUTH AVENUE; ROCHESTER, NEW YORK, DECEMBER 2012, OBG.
3. 2015 AERIAL IMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE.
4. EXISTING MULTI-USE TRAIL SHAPEFILE PROVIDED BY GENESEE TRANSPORTATION COUNCIL, LOCATED IN ROCHESTER, NEW YORK ON MAY 28, 2015.
5. SAMPLE LOCATION COORDINATES RECORDED USING A GPS UNIT.

CITY-OWNED PARCELS	
136.21-01-001	1 COTTAGE STREET
136.21-01-003	13 COTTAGE STREET
136.21-01-004	31 COTTAGE STREET
135.28-02-045	69 COTTAGE STREET
135.28-02-044	75 COTTAGE STREET
136.21-01-002	100 RIVERVIEW PLACE
121.70-01-039.1	102 VIOLETTA STREET
121.77-01-086	1320 S. PLYMOUTH AVENUE

LEGEND

SAMPLE LOCATION TYPE

- BED1-100 — BEDROCK WELL
- OVR-106 — OVERBURDEN MONITORING WELL
- TP-149 — TEST PIT
- SB-100 — SOIL BORING
- SS-100 — SURFACE SOIL
- BIKE PATH
- BROWNFIELD CLEANUP PROGRAM SITE LIMITS (APPROXIMATELY 15.4 ACRES)
- FORMER VACUUM OIL REFINERY SITE (APPROXIMATE)
- NOT PART OF CITY OF ROCHESTER BROWNFIELD CLEANUP PROGRAM SITE; HOWEVER, THESE PARCELS ARE BEING INVESTIGATED BY OTHER ENTITIES.

CITY OF ROCHESTER
BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION
REPORT
PORTION OF FORMER VACUUM OIL
REFINERY

1, 13, 31, 69, AND 75 COTTAGE STREET;
100 RIVERVIEW PLACE;
102 VIOLETTA STREET; AND PORTION OF
1320 S. PLYMOUTH AVENUE
ROCHESTER, NEW YORK

SUBSURFACE SOIL EXCEEDANCES

0 37.5 75 150
Feet

11862.61157
OCTOBER 2019

O'BRIEN & GERE ENGINEERS, INC.

This document was developed in color. Reproduction in B/W may not represent the data as intended.

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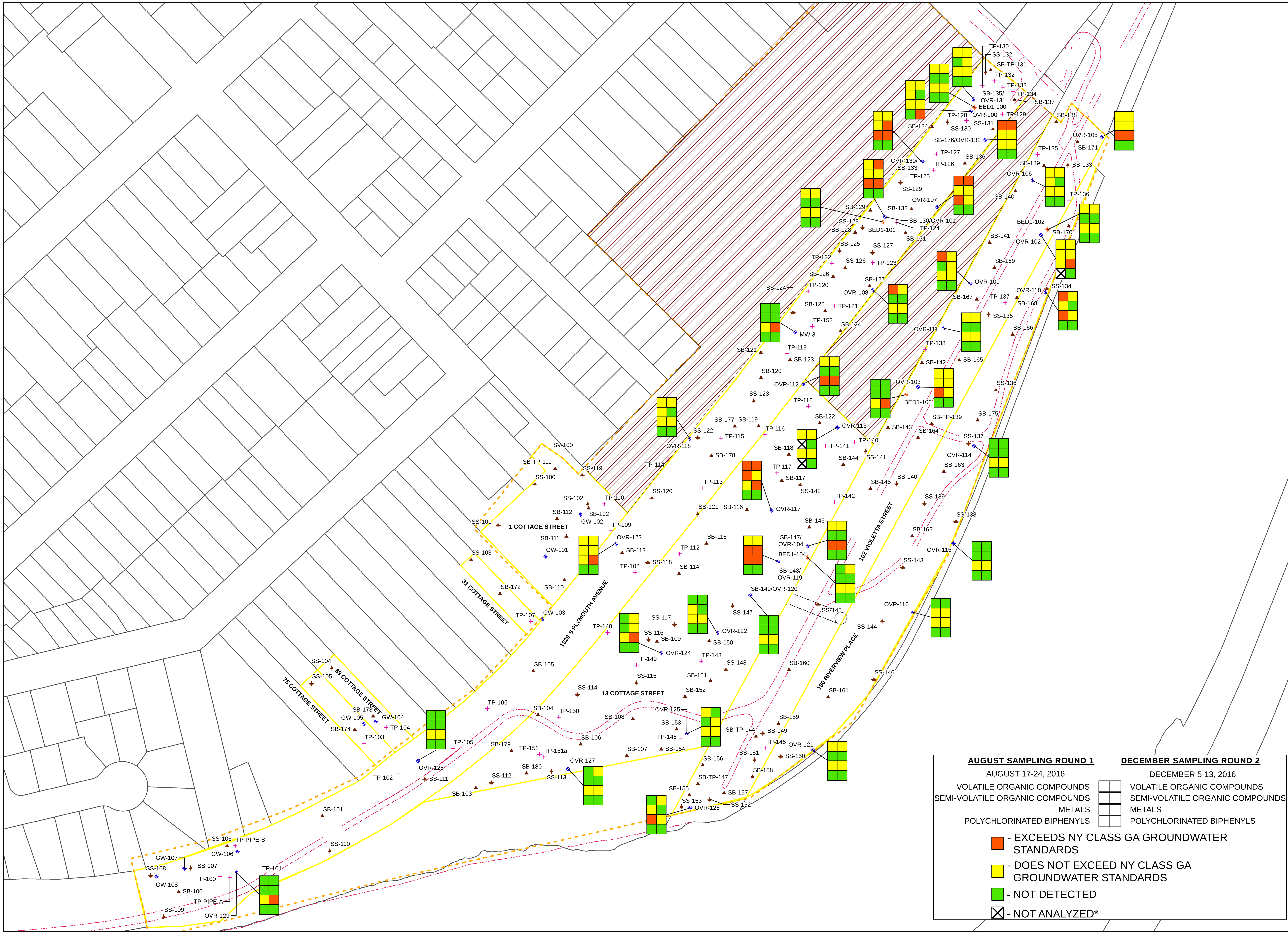
4/18/2018 1:34:07 PM



N

LEGEND

SAMPLE LOCATION TYPE

- BEDROCK WELL
- OVERBURDEN MONITORING WELL
- TEST PIT
- SOIL BORING
- SURFACE SOIL
- DRAINPIPE
- BIKE PATH
- NOT PART OF CITY OF ROCHESTER BROWNFIELD CLEANUP PROGRAM SITE; HOWEVER, THESE PARCELS ARE BEING INVESTIGATED BY OTHER ENTITIES.
- FORMER VACUUM OIL REFINERY SITE (APPROXIMATE)
- BROWNFIELD CLEANUP PROGRAM SITE LIMITS (APPROXIMATELY 15.4 ACRES)
- MONROE COUNTY PARCEL BOUNDARY

NOTES:
-GW-101 THROUGH GW-108 ANALYTICAL RESULTS ARE NOT INCLUDED IN THIS FIGURE. PLEASE SEE RI REPORT FOR MORE INFORMATION.
-DATA DOES NOT INCLUDE VOC/SVOC TICKS.
-* DATA WAS NOT ANALYZED DUE TO BROKEN BOTTLEWARE.

CITY OF ROCHESTER
BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION
REPORT
PORTION OF FORMER VACUUM OIL
REFINERY

1, 13, 31, 69, AND 75 COTTAGE STREET;
100 RIVERVIEW PLACE;
102 VIOLETTA STREET; AND PORTION
OF 1320 S. PLYMOUTH AVENUE
ROCHESTER, NEW YORK

GROUNDWATER EXCEEDANCES
AUGUST 2016 AND DECEMBER 2016

0 37.5 75 150
Feet

11862.61157
OCTOBER 2019

O'BRIEN & GERE ENGINEERS, INC.

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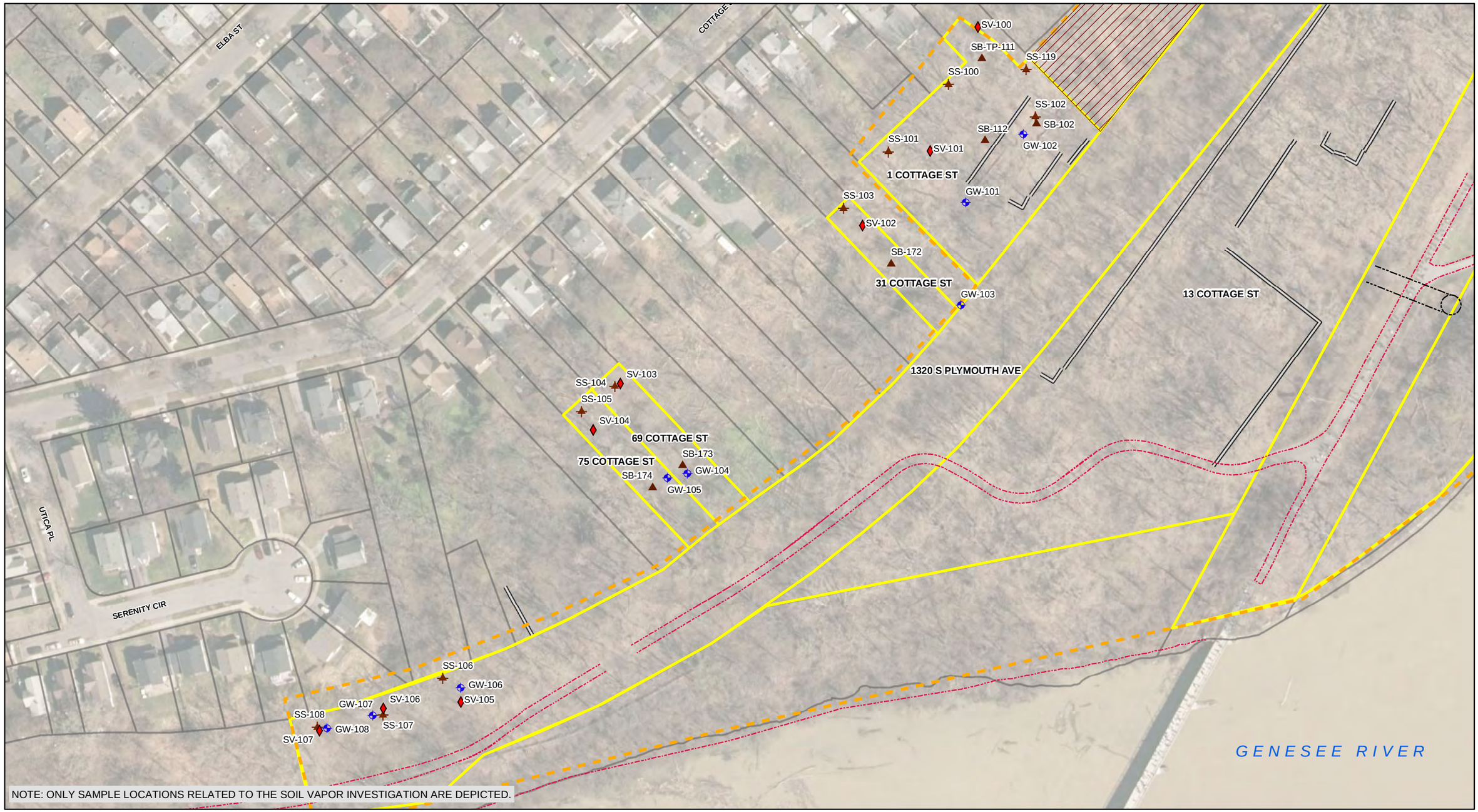

NOTE: ONLY SAMPLE LOCATIONS RELATED TO THE SOIL VAPOR INVESTIGATION ARE DEPICTED.

LEGEND

- OVERBURDEN MONITORING WELL
- SOIL BORING
- SURFACE SOIL
- SOIL VAPOR
- BIKE PATH
- WALL FOUNDATION
- CITY TAX PARCEL
- BROWNFIELD CLEANUP PROGRAM SITE LIMITS (APPROXIMATELY 15.4 ACRES)
- FORMER VACUUM OIL REFINERY SITE (APPROXIMATE)
- NOT PART OF CITY OF ROCHESTER BROWNFIELD CLEANUP PROGRAM SITE; HOWEVER, THESE PARCELS ARE BEING INVESTIGATED BY OTHER ENTITIES.

CITY OF ROCHESTER - BROWNFIELD CLEANUP PROGRAM
REMEDIAL INVESTIGATION REPORT - PORTION OF FORMER VACUUM OIL REFINERY

1, 13, 31, 69, AND 75 COTTAGE STREET;
100 RIVERVIEW PLACE;
102 VIOLETTA STREET; AND PORTION OF
1320 S. PLYMOUTH AVENUE
ROCHESTER, NEW YORK

0 50 100 200
Feet

N

SOIL VAPOR SAMPLE LOCATIONS

O'BRIEN & GERE ENGINEERS, INC.

11862.61157
OCTOBER 2019