PROPOSED REMEDIAL ACTION PLAN

Former Hall-Welter Site
State Superfund Project
Rochester, Monroe County
Site No. 828194
February 2022

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

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Remedial Action Plan (PRAP). The disposal of hazardous wastes at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

Central Library of Rochester & Monroe County Business & Social Science Division
115 South Avenue
Rochester, NY 14604

DECinfo Locator Online Document Repository:

https://www.dec.ny.gov/data/DecDocs/828194/

A public comment period has been set from:

February 16th to March 18th, 2022

A virtual public meeting is scheduled for the following date:

March 10th, 2022 at 7:00pm

Public meeting location:
Due to COVID-19 restrictions, DEC and DOH presentations will be conducted virtually through Webex Events online platform or via conference call.

To join the virtual meeting online on March 10th, 2022 at 7 p.m.:

- Visit:https://meetny.webex.com/meetny/onstage/g.php?MTID=e653dc767a6eddd4e2df111013a07a3d and click "Join"
- Event Number: 161 091 7873
- Password: welcome1

For information on how to participate in a virtual meeting, go to
https://www.dec.ny.gov/public/51805.html

To join by phone:

- Dial: 1-518-549-0500
- Access Code: 161 091 7873#
- Press # again in lieu of an attendee I.D. number

At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent to:

Adam Morgan
NYS Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, NY 14414
adam.morgan@dec.ny.gov

The Department may modify the proposed remedy or select another of the alternatives

presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Former Hall-Welter site is located at 38-46 Mount Hope Avenue on a 0.39-acre parcel. The site is located in the South Wedge area of the City of Rochester, Monroe County.

Site Features: The site is occupied by a one story, multi-use commercial structure and a small parking lot. It is bordered to the north and south by commercial properties, to the east by residential and commercial properties, and to the west by Mount Hope Avenue.

Current Zoning/Use(s): The site is currently a multi-occupant commercial structure and is zoned mixed commercial and residential. The building is currently vacant.

Past Use of the Site: Prior to 1942 the site was used to repair vehicles and as a brass warehouse. The Hall-Welter Company, Inc. purchased the property in 1942 and did defense contracting during World War II. Hall-Welter later manufactured check printing machines until they sold the property in 1988. Years of manufacturing and solvent use lead to contamination at the site. The site was occupied by The Rochester Rehabilitation center from 1988-2014. After 2014, the site has had numerous commercial tenants. Volatile organic compound (VOC) contamination was encountered during phase II investigations conducted from 2014 through 2016 which led to the Department listing the site on the New York State Inactive Hazardous Waste Site Registry in 2017.

Site Geology and Hydrogeology: Data from the site investigations indicate that groundwater flow is generally to the northwest. Groundwater was encountered at an average depth of approximately 10-12 feet below ground surface. Soils consist of fill material above sand and gravel deposits. Bedrock was encountered at approximately 17 feet below ground surface.

A site location map is attached.

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 commercial use (which allows for industrial use) as described in Part 375-1.8(g) are being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

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

The PRPs for the site, documented to date, include:

Hall Welter Company, Inc; and
Center Properties.

The PRPs for the site declined to implement a remedial program when requested by the Department. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

Center Properties elected to install and operate a sub slab depressurization system (SSDS) under an Order-on-Consent with the Department. The system was installed under an interim remedial measure (IRM) and is being managed by an interim site management plan (ISMP).

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site include data for:

- groundwater
- soil
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. 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 hazardous waste 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 in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

tetrachloroethene (PCE)
cis-1,2-dichloroethene
trichloroethene (TCE)
trans 1,2-dichloroethene

vinyl chloride

As illustrated in Exhibit A, the contaminants of concern exceed the applicable SCGs for one or more of:

- groundwater
- soil
- soil vapor intrusion
- indoor air

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 Record of Decision.

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

Installation of a sub slab depressurization system

Prior to the site being listed, the site owner attempted to address soil vapor intrusion by installing two SSDSs in the building. Those systems did not adequately depressurize the extent of the building's footprint or reduce indoor air contaminants to levels below applicable air guidelines. When the site was listed, additional SSDSs were installed by the site owner to mitigate indoor air contaminants as an IRM. This IRM was done under an Order-on-Consent between Center Properties (site owner) and the Department. The site owner prepared an IRM work plan for the construction of an SSDS to address the entire building footprint. An additional fan and multiple suction points were added to the site's SSDS in order to completely depressurize the slab and address indoor air concerns. The SSDS is being managed under an interim site management plan (ISMP) by the site owner which requires annual indoor air monitoring and confirms that indoor air remains below NYSDOH air guidelines.

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 Fish and Wildlife Resources Impact Analysis (FWRIA) for the site, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Based upon investigations conducted to date, the primary contaminants of concern include tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans 1,2-dichloroethene (trans-1,2-DCE) and vinyl chloride.

Soil - Chlorinated VOCs are present in soils under the southern portion of the building and in the alley way, but were below commercial use soil cleanup objectives (SCOs). Due to limited access to the suspected source area, a complete evaluation of soil contamination could not be conducted. Sample results from four locations adjacent to the suspected source area were above the protection of groundwater (PGWSCOs) of 1.3 parts per million (ppm), 0.47 ppm, and 0.25 ppm for PCE, TCE, and cis-1,2-DCE respectively. PCE was detected as high as 3.5 ppm, TCE as high as 44 ppm, and cis-1,2-DCE as high as 1.6 ppm.

Groundwater - PCE was detected in groundwater at concentrations up to 960 parts per billion (ppb). TCE was detected in groundwater at concentrations up to 93 ppb. Cis-1,2-DCE was detected in groundwater at concentrations up to 120 ppb. PCE, TCE and cis-1,2-DCE all have a New York State groundwater standard of 5 ppb. Groundwater concentrations at the downgradient property lines are above New York State groundwater standards; however, groundwater use is prohibited as a potable water source within the City of Rochester, and SVI investigations were performed.

Soil Vapor - Sub-slab soil vapor samples taken on-site indicate that PCE (350 ug/m^3), TCE (33,000 ug/m^3), and cis-1,2 DCE (52 ug/m^3) are present in the soil vapor.

Indoor Air - TCE was detected in indoor air at concentrations above the NYSDOH air guideline of 2 ug/m^3. Historically, indoor air levels of TCE were as high as 158 ug/m^3. With the installation of a SSDS, the latest expansion of the SSDS and sealing of slab cracks or penetrations, the last round of indoor air samples showed all samples below NYSDOH air guidelines.

Soil vapor intrusion investigations were performed at five off-site locations where access was granted. Indoor air concentrations for contaminants of concern were not found above DOH air guidelines at any of the locations. However, based on elevated sub-slab vapor levels detected (TCE), actions to address this contamination were recommended to the site owners of two off-site locations.

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.*

People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by site-related contamination. People may contact contaminated soil and groundwater if they dig below the building foundation or surface/site cover. Volatile organic compounds (VOCs) in the groundwater or soil may

move into the soil vapor (air spaces within the soil), which in turn 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. Actions have been taken in the on-site building and at two off-site buildings to address the potential for soil vapor intrusion. Environmental data collected at other off-site locations did not indicate the need for additional actions to address soil vapor intrusion.

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.
- 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 to contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF THE PROPOSED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the site were identified, screened and evaluated in the FS report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's proposed remedy is set forth at Exhibit D.

The proposed remedy is referred to as the Soil Vapor Extraction (SVE) and Site Management remedy.

The estimated present worth cost to implement the remedy is $479,536. The cost to construct the remedy is estimated to be $291,400, and the estimated annual costs are as follows: years 1 & 2: $45,200, years 3 – 7: $23,600, year 8 – 15: $5400, and every 5 years: $2500.

The elements of the proposed 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 will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for commercial or industrial use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable SCOs for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Soil Vapor Extraction (SVE)

Soil vapor extraction (SVE) will be implemented to remove volatile organic compounds (VOCs) from the subsurface. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). These wells are proposed to be installed horizontally below the building, but a final decision will be determined during remedial design. The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

4. Treatment Remedy Shutdown

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

5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system (SSDS), or other acceptable measures, to mitigate the migration of vapors into the building from soil and groundwater.

6. Engineering and Institutional Controls

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 commercial 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

7. Site Management Plan

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

- 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

Engineering Controls: The soil cover discussed in #2, the soil vapor extraction system discussed in #3, and the sub-slab depressurization system discussed in #5 and section 6.2 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
    - 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. This includes areas underneath the existing building.
    - 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 that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph #2 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable SCOs;
- A provision for the evaluation of the potential for soil vapor intrusion for any buildings off-site in areas of site-related contamination, including provision for implementing actions recommended to address exposures related to soil vapor intrusions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification;
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls; and
- a provision to monitor the ownership status of off-site locations where mitigation was recommended, but not conducted by the Department.

- a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
  - monitoring of groundwater and soil vapor to assess the performance and effectiveness of the remedy;
  - Monitoring for vapor intrusion for any buildings off-site, as may be required by the Institutional Control Plan discussed above.
  - a schedule of monitoring and frequency of submittals to the Department;
- an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
  - procedures for operating and maintaining the remedy;
  - compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
  - maintaining site access controls and Department notification; and
  - providing the Department access to the site and O&M records.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting groundwater, soil, and soil vapor.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and Source areas were identified at the site.

Source material for volatile organic compounds (VOCs) was identified in soil samples below the southern portion of the site building and south of the site in the former loading dock area. Soil samples showed concentrations of VOCs in soils above the protection of groundwater standards. Due to limited access (i.e., loading docks, large slabs, and utilities described in the RI), source area delineation could not be performed. The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from overburden and bedrock monitoring wells. The samples were collected to assess groundwater conditions on and off-site. The results indicate that contamination in overburden groundwater at the site exceeds the SCGs for volatile organic compounds. Contaminant levels in bedrock groundwater exceeded the NYS Standards for volatile organic compounds as well. Groundwater was also sampled for metals, semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and per- and polyfluoroalkyl substances (PFAS), and there were no exceedances of site-related compounds.

Table 1 - Groundwater		Screening Criteria in use: NEW YORK STATE CLASS GA	
Detected Constituents	**Concentration Range Detected (ppb[a])**	**SCG[b] (ppb[a])**	**Frequency Exceeding SCG[b]**
VOC NYS CLASS GA			
Cis-1,2-Dichloroethene	2.90-120	5	18/21
Methylene Chloride	ND - 12	5	8/21
Tetrachloroethene (PCE)	0.410-960	5	17/21
Trans-1,2-Dichloroethene	ND - 26.0	5	11/21
Trichloroethene (TCE)	ND - 93.0	5	20/21
Vinyl Chloride	ND - 3.2	2	13/21
ND - Non-Detect			

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b - SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The primary groundwater contaminants are volatile organic compounds associated with former operations at the site. As noted on Figure 1, the primary groundwater contamination is associated with the soil contamination in the southern portion of the site.

Based on the findings of the RI, the presence of volatile organic compounds has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: cis-1,2-Dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), trans-1,2-Dichloroethene, trichloroethene (TCE) and vinyl chloride.

Soil

Subsurface soil samples were collected at the site during the RI from a depth of 2 - 20 feet to assess soil contamination impacts to groundwater. The results shown in Figure 2 indicate that soils at the site exceed the unrestricted and protection of groundwater SCOs for VOCs. Soil sampling indicated that the bulk of contamination is in the vadose zone above the water table. Site soils were also sampled for metals, SVOCs, PCBs, and pesticides, and there were no exceedances. There are no surface or exposed soils at this site; all soils are currently under the building or pavement/cement.

Table 2 - Soil		Screening Criteria in use: 375 SOIL - COMMERCIAL USE, 375 SOIL - PROTECTION OF GROUNDWATER, 375 SOIL - UNRESTRICTED USE				
Detected Constituents	Concentration Range Detected (ppm[a])	Exceeding Unrestricted SCO[b]	Commercial SCO[c] (ppm)	Exceeding Commercial SCO	Protection of Groundwater SCO[d] (POGW)/ Unrestricted Use SCO[b] (ppm)	Exceeding POGW/ Unrestricted SCO
VOC PART 375						
Cis-1,2-Dichloroethene	ND[e] - 1.60	1/43	500	0/43	0.25	1/43
Tetrachloroethene (PCE)	ND -1.90	2/43	150	0/43	1.3	2/43
Trichloroethene (TCE)	0.000950 - 44.0	4/43	200	0/43	0.47	4/43

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater

e – ND = Non-Detect

The primary soil contaminants are VOCs associated with the former operations of the site. As noted on Figure 2, the primary soil contamination is associated with the southern portion of the site including the southern portion of the building and loading dock area. Four sample locations adjacent to the suspected source area were above the protection of groundwater (POGW) SCOs of 1.3 ppm, 0.47 ppm and 0.25 ppm for PCE, TCE and cis-1,2-DCE respectively.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are cis-1,2-DCE, PCE and TCE.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of soil vapor, sub-slab soil vapor under structures, and indoor air inside structures.

Sub-slab vapor and indoor/outdoor air samples were collected from the Former Hall Welter site property and in five adjacent off-site properties. The samples were collected to assess the potential for soil vapor intrusion. The results indicate TCE was detected at

elevated levels, as high as 33,000 ug/m^3, in on-site sub-slab vapor and TCE was detected in the indoor air of the on-site structure at a concentration of up to 158 ug/m^3, above the NYSDOH air guideline value of 2 ug/m^3 for TCE in air. A sub-slab depressurization system was installed as an interim remedial measure to address exposures related to soil vapor intrusion. Soil vapor intrusion samples collected off-site identified two properties with detections of volatile organic compounds beneath the building slab at levels having the potential for soil vapor intrusion. Concentrations at those properties for volatile organic compounds in indoor air were below the NYSDOH air guideline values. Based on elevated sub-slab vapor levels detected (TCE), actions to address this contamination were recommended to the site owners of the two referenced locations. The owner of the two off site properties elected to install an SSDS without state involvement. No further actions were recommended at the remaining off-site locations.

Based on the concentration detected, and in comparison with the NYSDOH Soil Vapor Intrusion Guidance, soil vapor contamination identified during the RI was addressed during the IRM described in Section 6.2.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of soil vapor. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of soil vapor to be addressed by the remedy selection process are, VOCs including PCE and TCE.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative maintains engineering controls (ECs) which were part of the IRM and includes institutional controls (ICs), in the form of and environmental easement and site management plan (SMP), necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

Present Worth: $382,052

Capital Cost:..... $30,000

Annual Costs:..... $27,220 and

Every 5 Years: $2500

Alternative 3: Soil Vapor Extraction, and Site Management

This alternative would include all of the Alternative 2 elements, plus one additional active remedy, soil vapor extraction (SVE), to reduce sorbed contaminant mass from vadose zone soils in the overburden of the site. Data collected below the building and in the rear of the building show contamination in soils. Though not tested to date due to access feasibility, based on data collected from other areas of the site, it appears that there is mass in subsurface soils underneath the rear (southeast) of the building. The presence of this mass in soils has the potential to contribute to contaminants in soil vapor beneath the site building, as well as serve as a potential on-going source to groundwater, thereby

adversely affecting groundwater quality and contributing to vapor migration concerns to other properties nearby. While vertical or horizontal SVE wells may be utilized, given the thickness of the slab in this area (which to date has impeded remedial investigations), the collection of empirical data, the presumed shallow impacts to soils, and the historic approach of conducting site investigation from the exterior, traditional vertical soil vapor extraction points may not be the most economical or feasible method to employ at this site. Horizontal SVE wells have the greatest potential to reach the targeted zone for treatment, being able to be installed from the exterior of the building while keeping the screened intervals in the shallow-most, and presumably, most impacted subsurface soils. By employing SVE at the site, sorbed mass can be removed from vadose zone soils thereby reducing concentrations in site soils, reducing concentrations in soil vapor over time, and reducing the contribution of contaminant mass to site groundwater and ultimately potential vapor from the dissolved-phase plume. SVE can be used in combination with ongoing sub-slab depressurization system (SSDS) as an engineering control, as well as monitoring of soil vapor and groundwater conditions through an SMP. This approach would be effective at removing mass if air permeability testing of the site soils supports soil venting in support of long-term monitored natural attenuation of groundwater, as well as reducing the period that SSDS operation may be necessary at the site and neighboring properties. This alternative also includes a pre-design investigation consisting of air permeability testing, additional soils testing, and collection of other data needed to fully design the SVE system.

Present Worth: $479,536

Capital Cost:..... $291,400

Annual Costs:..... Year 1 & 2: $45,200

Year 3 – 7: $23,600

Year 8 – 15: $5400

Every 5 Years: $2500

Alternative 4: Soil Vapor Extraction, In-Situ Enhanced Bioremediation of Groundwater, and Site Management

This Alternative includes all of Alternative 3, plus one additional active remedy to reduce concentrations in the dissolved phase beneath the site. This Alternative includes SVE to address source mass in the vadose zone, an engineering control to continue operation of the SSDSs, as well as long-term monitoring under the SMP. The presence of PCE degradation products in groundwater presently suggest that anaerobic degradation is occurring at the site, the degree of which should be confirmed prior to selection of an

injectant during full design and implementation. In addition, this alternative can use an injectant that supports anaerobic reductive dechlorination such as any number of electron donor solutions to enhance a reducing environment in the subsurface saturated zone. The site has elevated concentrations in groundwater above standards in the overburden groundwater, as well as in the bedrock beneath the site. However, known concentrations in both the overburden and bedrock are similar in magnitude, with a few hundred parts per billion of chlorinated volatile organic compounds (CVOCs) present. This Alternative takes one more step to reduce concentrations in groundwater over Alternative 3, in concept reducing the duration of active treatment periods via an engineered control (SSDS). An SMP may be necessary for site monitoring until such time that groundwater conditions meet criteria. As with Alternative 3, additional data would be necessary for design of such an approach including permeability testing (air) and evaluation for site-specific seepage velocities, additional soils testing, as well as obtaining interior access. In addition, groundwater geochemical data would be necessary to specify the chemical and dose to be used for in-situ groundwater treatment.

Present Worth: $722,662

Capital Cost:..... $521,550

Annual Costs:..... Year 1 & 2: $66,450

Year 3: $32,200

Year 4: $23,200

Year 5: $26,200

Year 6 & 7: $14,200

Alternative 5: Source Area Excavation with In-Situ Enhanced Bioremediation of Groundwater, and Site Management

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil cleanup objectives listed in Part 375-6.8 (a). This alternative would include removal of source material and active remediation of dissolved-phase contamination to return the site to pre-release conditions. Based on the data available, it is probable that subsurface soils are impacted beneath the thickest part of the site building's slab. For this reason, the building would be razed allowing free access to the slab and what lies beneath. This alternative includes the demolition of the on-site building and slab to support soil sampling beneath the building to define the extent of the soil excavation and allow installation of active groundwater treatment infrastructure This alternative assumes that 1,750 cubic yards of soil would be excavated from the southeastern loading dock area. Persistent VOC concentrations in the bedrock

groundwater would be further reduced to groundwater standards by injecting an amendment to support increased biological dechlorination of dissolved contaminants. A short-term IC and SMP would need to be implemented to ensure groundwater at the site is not used for drinking water until such time that groundwater conditions meet criteria (expected to be approximately 5 years).

Capital Cost:..... $1,782,200

Annual Costs:.....Year 1: $77,900

Year 2 & 3: $21,000

Year 4: $12,000

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
#1: No Further Action	$10,000	$0	$10,000
#2: No Further Action with Site Management	$30,000	Annually: $27,220 Every 5 Years: $2500	$382,058
#3: Soil Vapor Extraction and Site Management	$291,400	Year 1 & 2: $45,200 Year 3 – 7: $23,600 Year 8 – 15: $5400 Every 5 Years: $2500	$479,556
#4: Soil Vapor Extraction, In-Situ Enhanced Biological Remediation of Groundwater, and Site Management	$521,550	Year 1 & 2: $66,450 Year 3: $32,200 Year 4: $23,200 Year 5: $26,200 Year 6 & 7: $14,200	$722,662
#5: Source Area Excavation with In-Situ Enhanced Biological Treatment of Groundwater, and Site Management	$1,782,200	Year 1: $77,900 Year 2 & 3: $21,000 Year 4: $12,000	$1,899,643

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 3, Soil Vapor Extraction, Engineering Controls, with Site Management Plan as the remedy for this site. Alternative 3 would achieve the remediation goals for the site by implementing soil vapor extraction to remove contaminate mass sorbed to soils in the vadose zone, continue operation of the SSDS and implementation of a SMP. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 5.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

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

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy, Alternative 3, would satisfy this criterion by removing contamination sorbed to soils from above the water table. Alternative 3 addresses the source of the groundwater contamination and soil vapor contamination, which are the most significant threats to public health and the environment. Alternative 1 (No Action) does not provide any protection to public health and the environment. The potential for soil vapor intrusion will remain high under Alternative 2. Soil vapor mitigation is required under Alternative 2 in order to protect human health and does not address remaining contamination. Alternative 5, by removing all soil contaminated above the unrestricted soil cleanup objective, meets the threshold criteria. Alternatives 3, and 4 also comply with this criterion but to a lesser degree or with lower certainty. Alternatives 2, 4 and 5 rely on a restriction of groundwater use at the site to protect human health. Alternative 3, 4 and 5 may require a short-term restriction on groundwater use; however, it is expected the restriction will be able to be removed in approximately fifteen years for Alternative 3, 5 years for Alternative 4 and 4 years for Alternative 5. The potential for soil vapor intrusion will be significantly reduced by Alternative 5 and, to a somewhat lesser extent, Alternative 3 and 4. Remedies 2, 3, 4 and 5 will also address SVI concerns at adjacent properties through the Site Management Plan if determined necessary in the future.

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

Alternative 1 and 2 do not meet SCGs for soil or groundwater. Alternative 3 is expected to achieve compliance with chemical specific SCGs and site-specific cleanup levels in soil by reducing contaminant concentrations through physical treatment via SVE. Over time, reduction of sorbed mass in soils will reduce, then eliminate, contributions to the dissolved phase leading to an improvement in groundwater quality over time. In addition, remediation of CVOCs in vadose zone soils will improve soil vapor concentrations and allowing for discontinuation of the SSDS over time. Alternative 4 is expected to achieve chemical-specific SCGs and site-specific cleanup levels in soil by reducing contaminant concentrations through physical treatment via SVE. Remediation of CVOCs in vadose zone soils will improve soil vapor concentrations and allowing for discontinuation of the SSDS over time. Over time, reduction of sorbed mass in soils will reduce, then eliminate, contributions to the dissolved phase leading to an improvement in groundwater quality. Finally, chemical-specific SCGs and site-specific cleanup levels are expected to be achieved in the dissolved-phase by reducing contaminant concentrations through biological treatment. Alternative 5 is expected to achieve chemical-specific SCGs and site-specific cleanup levels by removing contaminants and reducing dissolved-phase concentrations through biological treatment.

Alternatives 1 and 2 do not meet the Threshold Criteria and were eliminated from further consideration. Because Alternative 3, 4 and 5 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

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

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

Alternative 3 provides long-term effectiveness and permanence by treating contaminants sorbed to soils and reducing concentrations in soils, groundwater, and vapor phases. Alternative 3 will result in the indirect emissions of greenhouse gasses (GHGs) via the long-term use of electricity necessary to operate the SVE and SSDS systems. Alternative 3 will require the least use of heavy equipment of the alternatives which pass the Threshold Criteria. This would result in an overall lower environmental footprint of remediation compared to the other alternatives. Alternative 4 provides long-term effectiveness and permanence by treating contaminants sorbed to soils and reducing concentrations in soils, groundwater, and vapor phases. Alternative 4 will also result in the indirect emissions of GHGs via the long-term use of electricity necessary to operate the SVE and SSDS systems. Alternative 4 will require slightly more use of heavy

equipment than Alternative 3, but significantly less than Alternative 5. This would result in an overall slightly higher environmental footprint of remediation compared Alternative 3, but a much lower environmental footprint of remediation compared Alternative 5. Alternative 5 provides long-term effectiveness and permanence by treating contaminants to reduce concentrations to pre-release conditions. Although Alternative 5 would not require use of electricity to operate SVE or SSDS systems on-site, this alternative has the largest environmental remediation footprint of the evaluated remedies. The removal of soil requires the expenditure of fuel which produces GHGs. The impacted soil also occupies the limited available space in non-hazardous and hazardous waste landfills. The environmental impact of the remedy would be reduced if non impacted soil remained on-site as fill. The demolition of the on-site building would also produce additional waste that would need to be removed. Alternatives 3 and 4 would require long-term restrictions on groundwater and Alternative 5 would require a short-term restriction. All three alternatives would reduce the potential for soil vapor intrusion.

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

Alternative 3 will reduce the contaminant mass through physical treatment via SVE, and mitigation through existing SSDS. Decreased concentrations and mass will also reduce chemical toxicity and, indirectly, mobility. Reduction in contaminant concentrations in soil will reduce dissolution to the dissolved phase, and thereby limit plume extents over time. Alternative 4 will reduce the contaminant mass through physical treatment via SVE, mitigation through existing SSDS, and will reduce the contaminant mass through biological treatment. Decreased concentrations and mass will also reduce chemical toxicity and, indirectly, mobility. Reduction in contaminant concentrations in soil and groundwater will reduce plume extents over time. This would occur more quickly with Alternatives 4 and 5 compared to Alternative 3. Alternative 5 will reduce the contaminant mass through excavation, and chemical or biological treatment. Decreased concentrations and mass will also reduce chemical toxicity and, mobility, indirectly. Reduction in contaminant concentrations in soil and groundwater will reduce plume extents over time. Alternatives 3 and 4 would require long-term restrictions on groundwater and Alternative 5 would require a short-term restriction. All three alternatives would reduce the potential for soil vapor intrusion.

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

Alternative 3 will have a short-term impact during remediation construction. The potential will exist during remediation for fugitive dust and emissions that may impact the surrounding community, which will be lessened by the implementation of a Community Air Monitoring Plan (CAMP). Alternative 3 can be effective because SVE removes

contaminants sorbed to vadose zone soils by partitioning CVOCs from the sorbed-phase to vapor phase for removal from the subsurface. Based on the soil and groundwater concentrations, an expected active treatment duration of approximately 5 years followed by a period of monitoring to confirm soil vapor has been reduced could lead to discontinued operation of the SSDSs. Finally, long-term groundwater monitoring would be required under the SMP, as no direct treatment of groundwater is proposed under this alternative. Alternative 4 will have a short-term impact during remediation construction. The potential will exist during remediation for fugitive dust and emissions that may impact the surrounding community. Alternative 4 is effective because SVE removes contaminants sorbed to vadose zone soils by partitioning CVOCs from the sorbed-phase to vapor phase for removal from the subsurface. Alternative 4 is effective because the biological treatment will remove dissolved-phase contaminants through biological dechlorination to innocuous byproducts. Treatment time is anticipated to be relatively short owning to the relatively low concentrations found presently in site soils and groundwater (<5 years), followed by a period of monitoring to confirm soil vapor has been reduced sufficiently to discontinue operation of SSDS. Alternative 5 will have a short-term impact during remediation construction and excavation. The potential will exist during remediation and excavation actions for fugitive dust and emissions that may impact the surrounding community. Alternative 5 is effective because the excavation removes contaminants for off-site disposal, while biological treatment of groundwater reducing concentrations in groundwater through a permanent reductive dechlorination. The expected treatment time is anticipated to be less than one year.

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

Alternative 3 is readily implementable using horizontal drilling techniques, along with standard equipment installation. Alternative 4 is also readily implementable using horizontal drilling techniques, along with standard equipment installation. The biological amendments are commercially available for nationwide distribution. Regarding installation of off-site wells, access agreement and permits may need to be obtained prior to implementation. Alternative 5 is best implemented if the existing building were to be removed. It is not readily implementable (large-scale excavation) should the building remain in place as access to the sub-slab materials would not be feasible. The biological amendment is commercially available for nationwide distribution, and best applied to the areas where source material was formerly present (presumed to be beneath the building footprint).

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis.

Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternative 3 has the lowest cost but would require engineering controls, institutional controls and longer restrictions for impacts to groundwater. Alternative 4 has a higher cost due to additional actions being taken, but would still require institutional and engineering controls, as well as short term groundwater restrictions. Alternative 5 is the costliest by a wide margin since the building would be demolished, excavation would take place and in-situ groundwater treatment would be conducted. Alternative 5 would require the least amount of post remedial work but has a very high upfront cost.

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

The anticipated use is commercial, consistent with the current zoning. Alternative 3 and 4 do not alter the current land use of the site and would institute restrictions on future use through institutional controls. Alternative 5 does alter the current land use of the site, as it is best applied in circumstances where the current building is demolished. The land use could remain the same (commercial) and could be modified to be used for residential purposes under this Alternative.

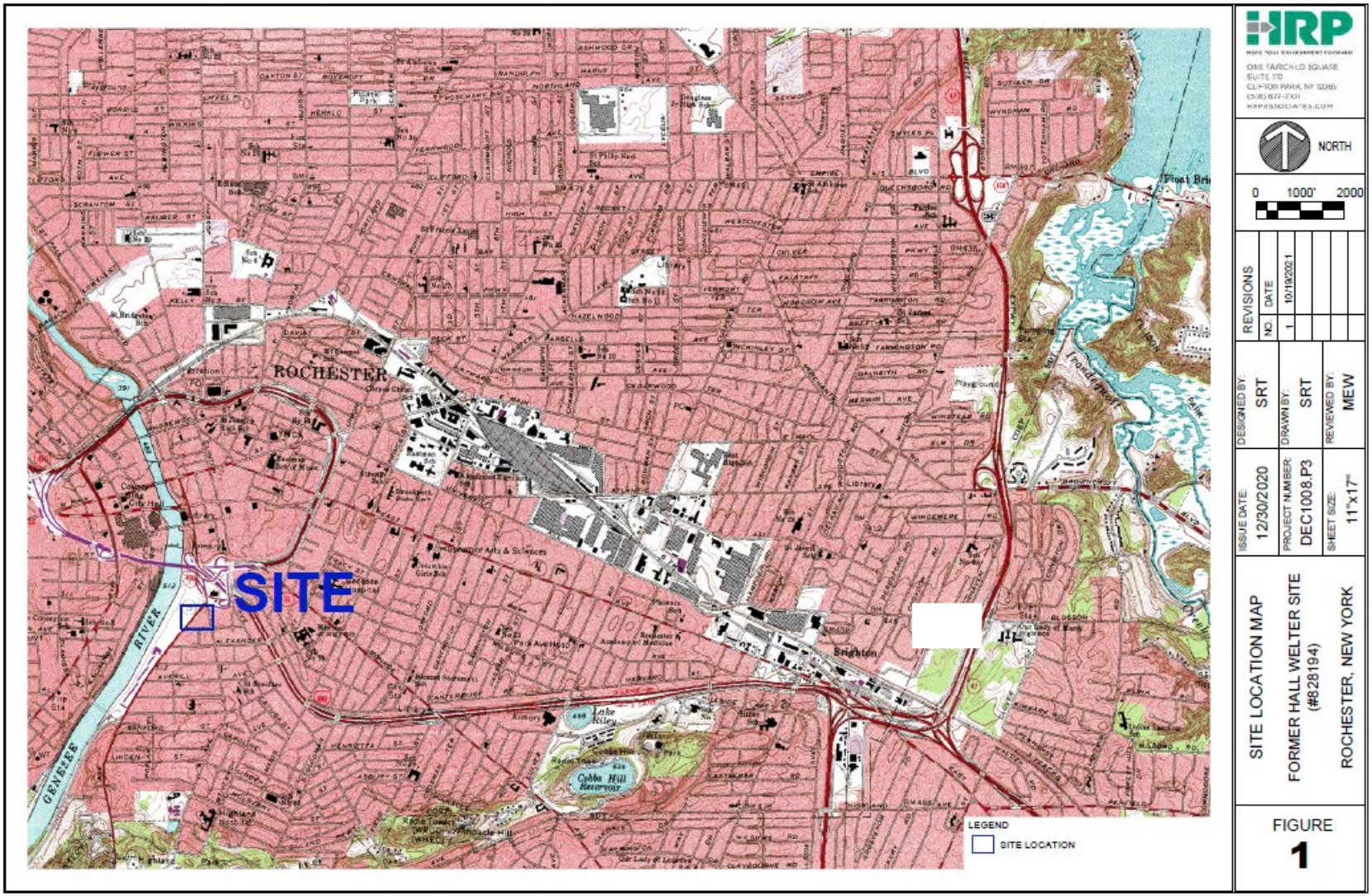
The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

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

Alternative #3 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

Figures

Site Location:




Mt Hope Ave
South Ave
71
22-32
397-399
401-405
38-46
407-409
415
417
48
50
60-66
70
76
429
Site

Figure 1:

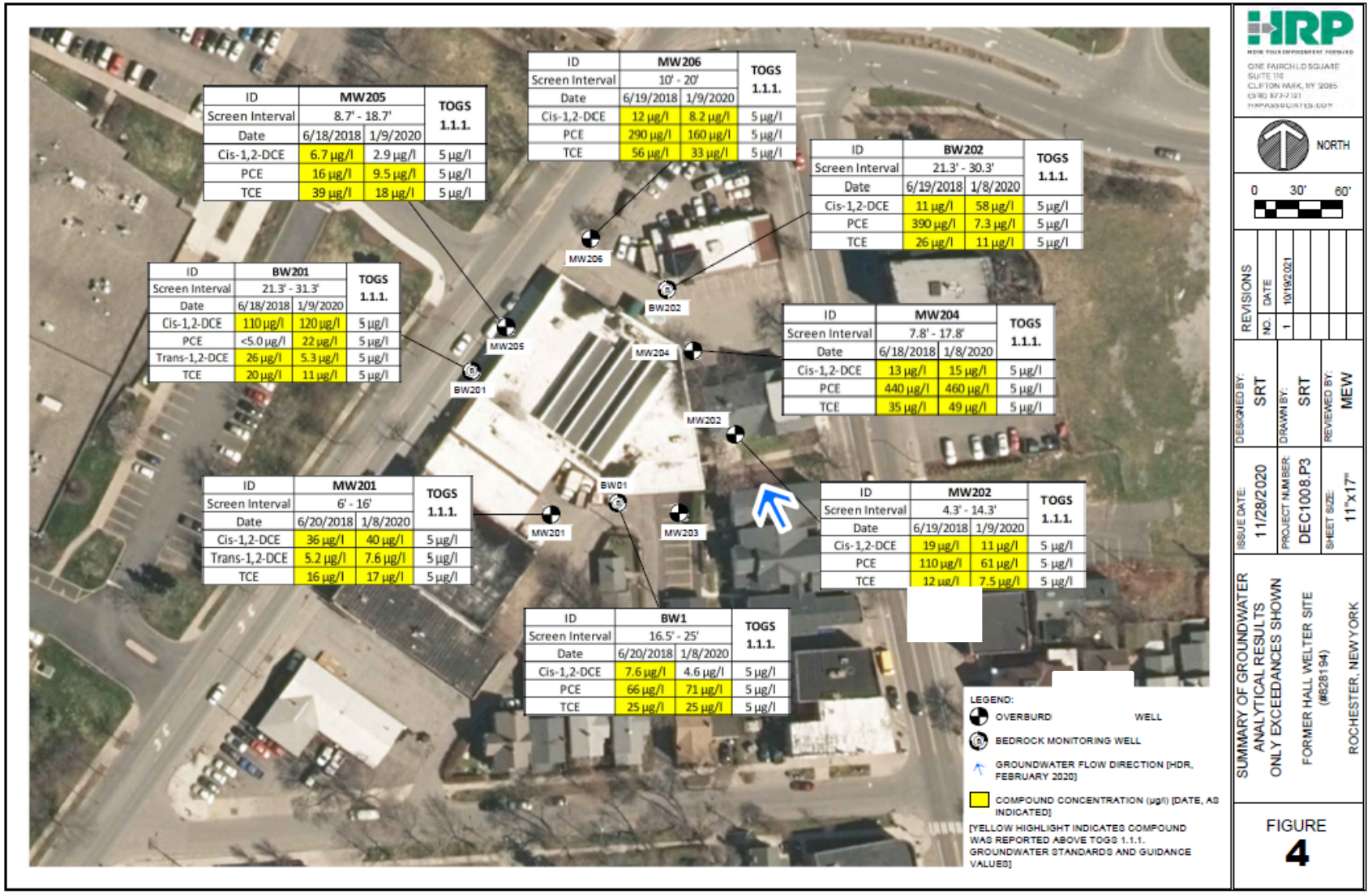

ID | MW205 | TOGS 1.1.1.
Screen Interval | 8.7' - 18.7'
Date | 6/18/2018 | 1/9/2020
Cis-1,2-DCE | 6.7 µg/l | 2.9 µg/l | 5 µg/l
PCE | 16 µg/l | 9.5 µg/l | 5 µg/l
TCE | 39 µg/l | 18 µg/l | 5 µg/l
ID | MW206 | TOGS 1.1.1.
Screen Interval | 10' - 20'
Date | 6/19/2018 | 1/9/2020
Cis-1,2-DCE | 12 µg/l | 8.2 µg/l | 5 µg/l
PCE | 290 µg/l | 160 µg/l | 5 µg/l
TCE | 56 µg/l | 33 µg/l | 5 µg/l
ID | BW202 | TOGS 1.1.1.
Screen Interval | 21.3' - 30.3'
Date | 6/19/2018 | 1/8/2020
Cis-1,2-DCE | 11 µg/l | 58 µg/l | 5 µg/l
PCE | 390 µg/l | 7.3 µg/l | 5 µg/l
TCE | 26 µg/l | 11 µg/l | 5 µg/l
ID | BW201 | TOGS 1.1.1.
Screen Interval | 21.3' - 31.3'
Date | 6/18/2018 | 1/9/2020
Cis-1,2-DCE | 110 µg/l | 120 µg/l | 5 µg/l
PCE | <5.0 µg/l | 22 µg/l | 5 µg/l
Trans-1,2-DCE | 26 µg/l | 5.3 µg/l | 5 µg/l
TCE | 20 µg/l | 11 µg/l | 5 µg/l
ID | MW204 | TOGS 1.1.1.
Screen Interval | 7.8' - 17.8'
Date | 6/18/2018 | 1/8/2020
Cis-1,2-DCE | 13 µg/l | 15 µg/l | 5 µg/l
PCE | 440 µg/l | 460 µg/l | 5 µg/l
TCE | 35 µg/l | 49 µg/l | 5 µg/l
ID | MW201 | TOGS 1.1.1.
Screen Interval | 6' - 16'
Date | 6/20/2018 | 1/8/2020
Cis-1,2-DCE | 36 µg/l | 40 µg/l | 5 µg/l
Trans-1,2-DCE | 5.2 µg/l | 7.6 µg/l | 5 µg/l
TCE | 16 µg/l | 17 µg/l | 5 µg/l
ID | MW202 | TOGS 1.1.1.
Screen Interval | 4.3' - 14.3'
Date | 6/19/2018 | 1/9/2020
Cis-1,2-DCE | 19 µg/l | 11 µg/l | 5 µg/l
PCE | 110 µg/l | 61 µg/l | 5 µg/l
TCE | 12 µg/l | 7.5 µg/l | 5 µg/l
ID | BW1 | TOGS 1.1.1.
Screen Interval | 16.5' - 25'
Date | 6/20/2018 | 1/8/2020
Cis-1,2-DCE | 7.6 µg/l | 4.6 µg/l | 5 µg/l
PCE | 66 µg/l | 71 µg/l | 5 µg/l
TCE | 25 µg/l | 25 µg/l | 5 µg/l
MW206
BW202
MW205
BW201
MW204
MW202
BW01
MW201
MW203
LEGEND:
OVERBURD WELL
BEDROCK MONITORING WELL
GROUNDWATER FLOW DIRECTION [HDR, FEBRUARY 2020]
COMPOUND CONCENTRATION (µg/l) [DATE, AS INDICATED]
[YELLOW HIGHLIGHT INDICATES COMPOUND WAS REPORTED ABOVE TOGS 1.1.1. GROUNDWATER STANDARDS AND GUIDANCE VALUES]
NORTH
0 30' 60'
REVISIONS
NO. DATE
1 10/19/2021
DESIGNED BY: SRT
DRAWN BY: SRT
REVIEWED BY: MEW
ISSUE DATE: 11/28/2020
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS ONLY EXCEEDANCES SHOWN
FORMER HALL WELTER SITE (#828194)
ROCHESTER, NEW YORK
FIGURE 4

Figure 2:

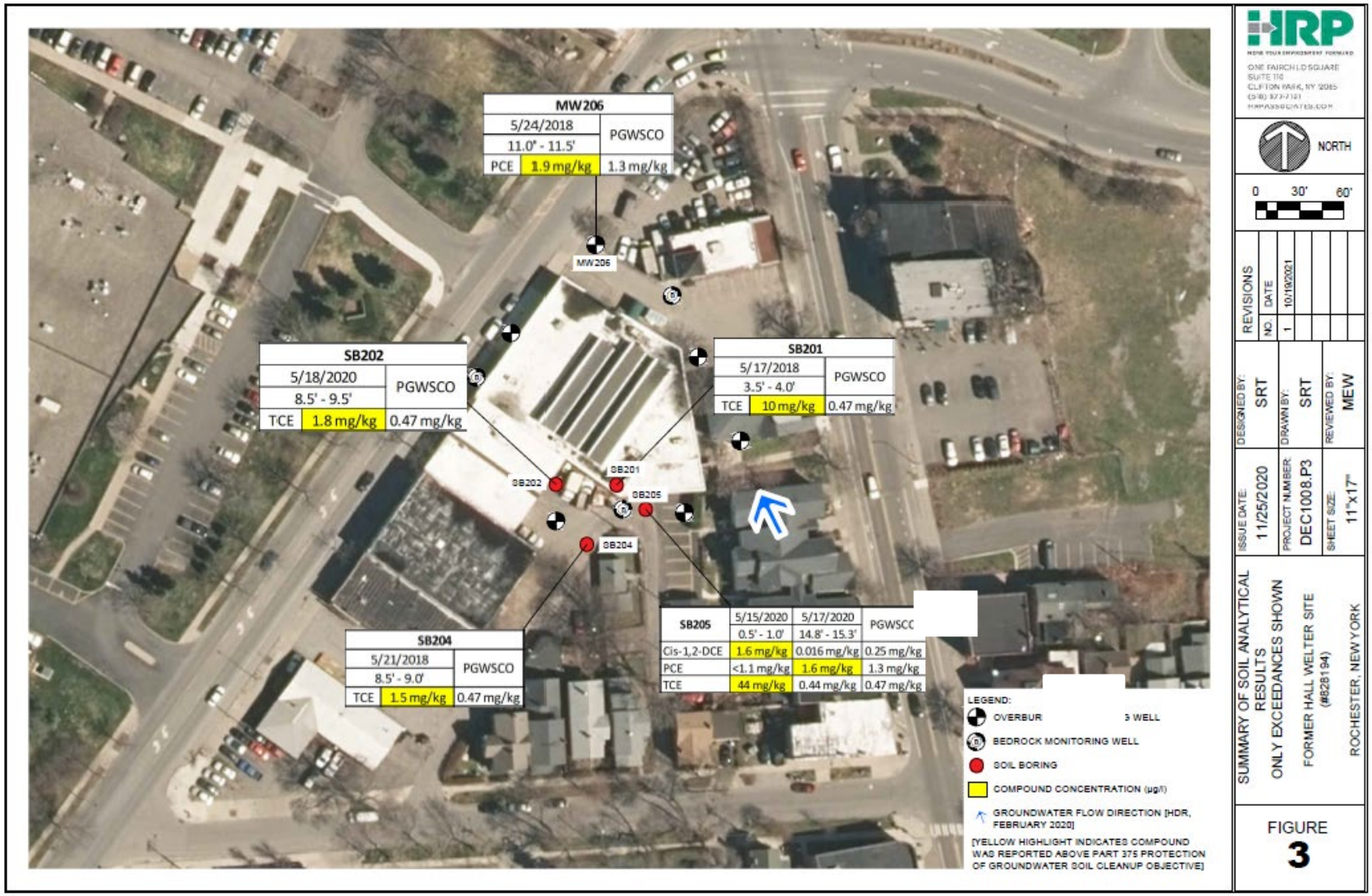

MW206
5/24/2018
11.0' - 11.5'
PCE 1.9 mg/kg
PGWSCO 1.3 mg/kg
MW206
SB202
5/18/2020
8.5' - 9.5'
TCE 1.8 mg/kg
PGWSCO 0.47 mg/kg
SB201
5/17/2018
3.5' - 4.0'
TCE 10 mg/kg
PGWSCO 0.47 mg/kg
SB202
SB201
SB205
SB204
SB204
5/21/2018
8.5' - 9.0'
TCE 1.5 mg/kg
PGWSCO 0.47 mg/kg
SB205 5/15/2020 0.5' - 1.0' 5/17/2020 14.8' - 15.3' PGWSCO
Cis-1,2-DCE 1.6 mg/kg 0.016 mg/kg 0.25 mg/kg
PCE <1.1 mg/kg 1.6 mg/kg 1.3 mg/kg
TCE 44 mg/kg 0.44 mg/kg 0.47 mg/kg
LEGEND:
OVERBUR 3 WELL
BEDROCK MONITORING WELL
SOIL BORING
COMPOUND CONCENTRATION (µg/l)
GROUNDWATER FLOW DIRECTION [HDR, FEBRUARY 2020]
[YELLOW HIGHLIGHT INDICATES COMPOUND WAS REPORTED ABOVE PART 375 PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVE]
HRP
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
NORTH
0 30' 60'
REVISIONS
NO. DATE
1 10/19/2021
DESIGNED BY: SRT
DRAWN BY: SRT
REVIEWED BY: MEW
ISSUE DATE: 11/25/2020
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"
SUMMARY OF SOIL ANALYTICAL RESULTS
ONLY EXCEEDANCES SHOWN
FORMER HALL WELTER SITE (#828194)
ROCHESTER, NEW YORK
FIGURE
3

Figure 3:

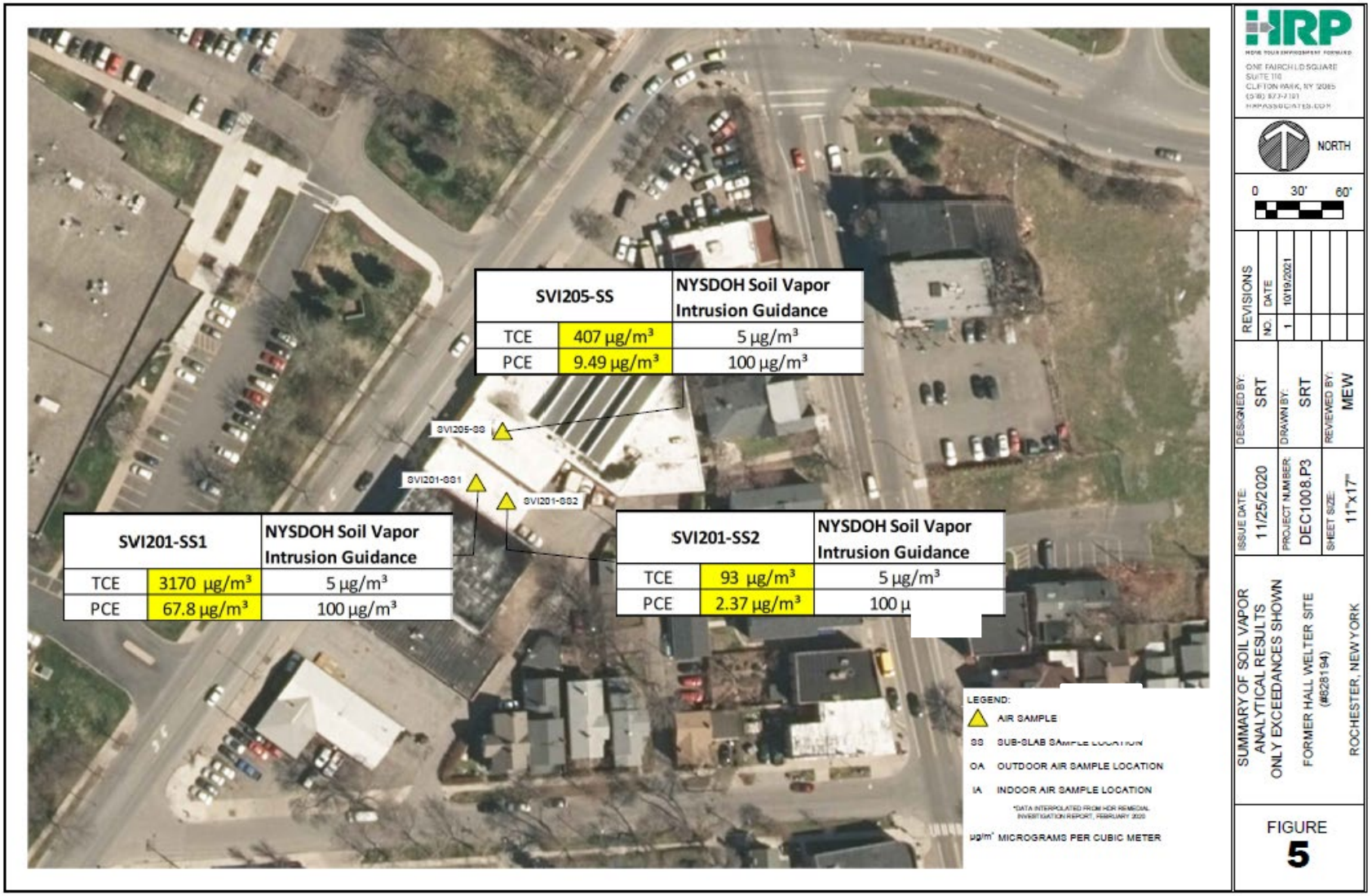

SVI205-SS
NYSDOH Soil Vapor Intrusion Guidance
TCE 407 µg/m³ 5 µg/m³
PCE 9.49 µg/m³ 100 µg/m³
SVI205-SS
SVI201-SS1
SVI201-SS2
SVI201-SS1
NYSDOH Soil Vapor Intrusion Guidance
TCE 3170 µg/m³ 5 µg/m³
PCE 67.8 µg/m³ 100 µg/m³
SVI201-SS2
NYSDOH Soil Vapor Intrusion Guidance
TCE 93 µg/m³ 5 µg/m³
PCE 2.37 µg/m³ 100 µ
LEGEND:
AIR SAMPLE
SS SUB-SLAB SAMPLE LOCATION
OA OUTDOOR AIR SAMPLE LOCATION
IA INDOOR AIR SAMPLE LOCATION
*DATA INTERPOLATED FROM HDR REMEDIAL INVESTIGATION REPORT, FEBRUARY 2020
µg/m³ MICROGRAMS PER CUBIC METER
HRP
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
NORTH
0 30' 60'
REVISIONS
NO. DATE
1 10/19/2021
DESIGNED BY: SRT
DRAWN BY: SRT
REVIEWED BY: MEW
ISSUE DATE: 11/25/2020
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"
SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS ONLY EXCEEDANCES SHOWN
FORMER HALL WELTER SITE (#828194)
ROCHESTER, NEW YORK
FIGURE
5

Figure 4:

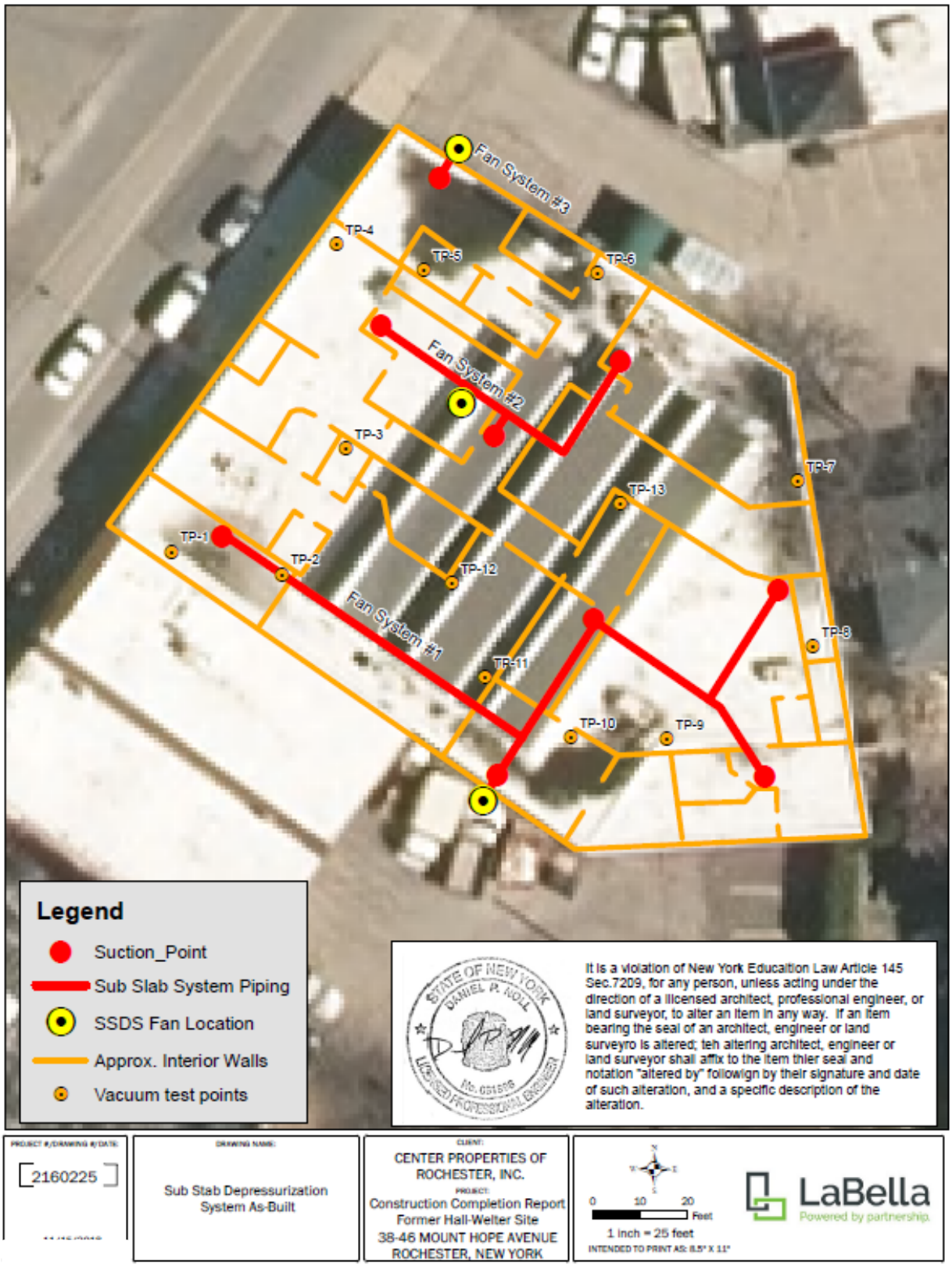
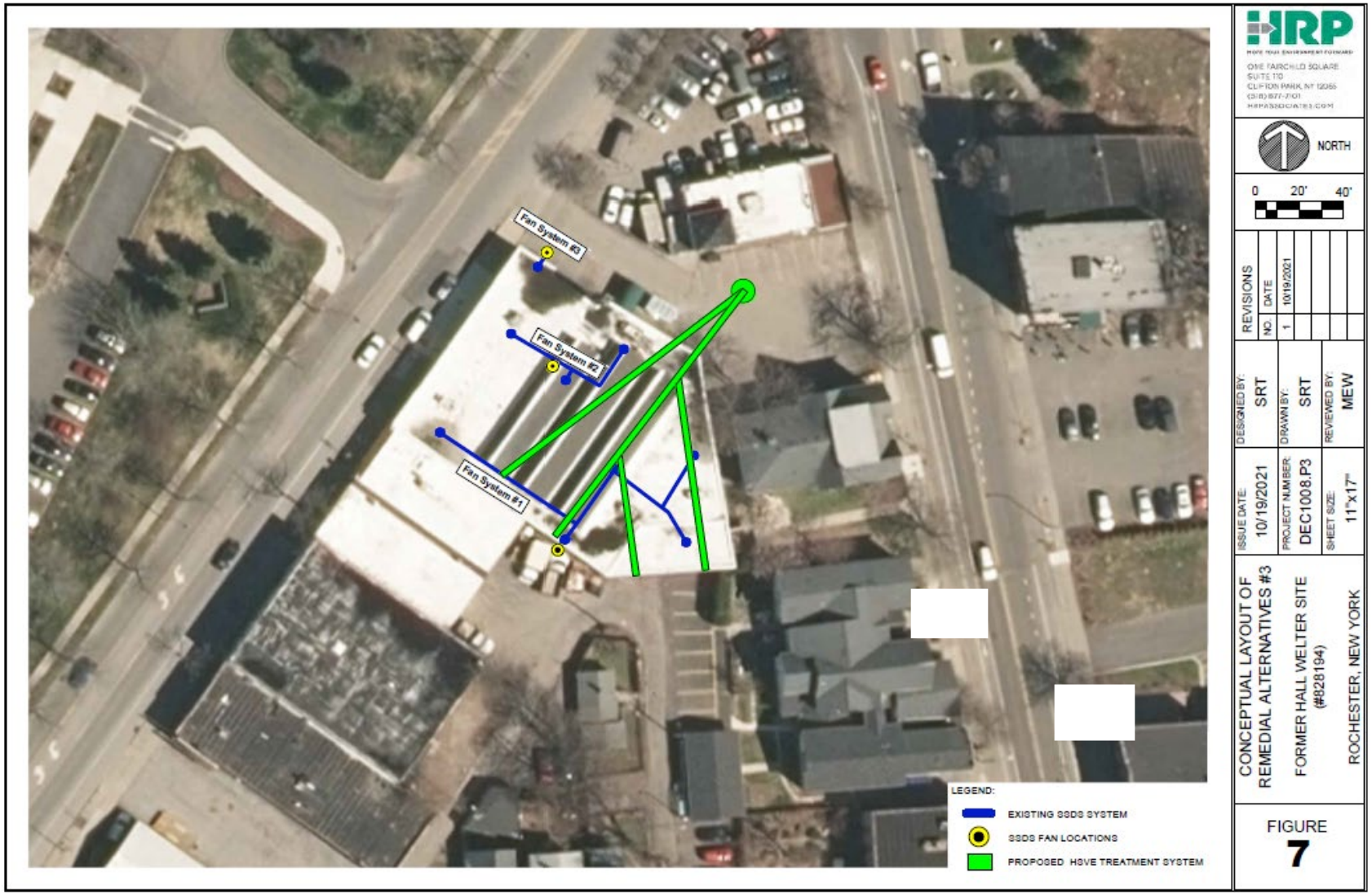

Fan System #3
Fan System #2
Fan System #1
TP-1
TP-2
TP-3
TP-4
TP-5
TP-6
TP-7
TP-8
TP-9
TP-10
TP-11
TP-12
TP-13
Legend
Suction_Point
Sub Slab System Piping
SSDS Fan Location
Approx. Interior Walls
Vacuum test points
STATE OF NEW YORK
DANIEL P. NOLL
No. 031696
LICENSED PROFESSIONAL ENGINEER
It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer or land surveyro is altered; teh altering architect, engineer or land surveyor shall affix to the item thier seal and notation "altered by" followign by their signature and date of such alteration, and a specific description of the alteration.
2160225
Sub Stab Depressurization System As-Built
CENTER PROPERTIES OF ROCHESTER, INC.
Construction Completion Report
Former Hall-Welter Site
38-46 MOUNT HOPE AVENUE
ROCHESTER, NEW YORK
0 10 20 Feet
1 inch = 25 feet
INTENDED TO PRINT AS: 8.5" X 11"
LaBella
Powered by partnership

Figure 5:


Fan System #3
Fan System #2
Fan System #1
LEGEND:
EXISTING SSDS SYSTEM
SSDS FAN LOCATIONS
PROPOSED HSVE TREATMENT SYSTEM
HRP
ONE FAIRCHILD SQUARE
SUITE 110
CLIFTON PARK, NY 12065
NORTH
0 20' 40'
REVISIONS
NO. DATE
1 10/19/2021
DESIGNED BY: SRT
DRAWN BY: SRT
REVIEWED BY: MEW
ISSUE DATE: 10/19/2021
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"
CONCEPTUAL LAYOUT OF REMEDIAL ALTERNATIVES #3
FORMER HALL WELTER SITE (#828194)
ROCHESTER, NEW YORK
FIGURE 7