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FEASIBILITY STUDY AND REMEDIAL ALTERNATIVES ANALYSIS

Former Hall Welter
38-46 Mt. Hope Ave.
Rochester, New York, 14620

Prepared For:

NYS Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Program Management
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HRP #: DEC1008.P3
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PE Certification:

I Thomas S. Seguljic certify that I am currently a [NYS registered professional engineer or Qualified Environmental Professional as defined in 6 NYCRR Part 375] and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Thomas S. Seguljic, P.E., P.G. – Vice President and Contract Manager

1.0 INTRODUCTION

This report presents a feasibility study for remediation prepared by HRP Associates, Inc. (HRP) in connection with the Former Hall Welter Facility at 38-46 Mount Hope Avenue in the City of Rochester, Monroe County, New York (Site # 828194), referred to herein as the Site (**Figure 1**).

A Remedial Investigation (RI) was completed at the Site from February 2017 through January 2020, the extent of which is shown on **Figure 2**. The purpose of the RI was to identify and characterize the source(s) of contamination and define the nature and extent of contamination at the Site. The RI is included as **Appendix A.**

To address soil vapor intrusion issues, three Sub-Slab Depressurization Systems (SSDSs) were installed and continue to be operated by the Site owner. One SSDS was installed in the basement of the on-site building in 2014 and the second was installed in a storage area in the southern portion of the building in 2016 and the final SSDS was installed in 2017 to increase the coverage area to the entire building.

This report summarizes the findings of the RI report (**Appendix A**) and presents and compares potential remedial alternatives for the Site. This report identifies, evaluates, and selects a remedy to address the contamination identified by the RI.

2.0 SITE DESCRIPTION AND HISTORY

2.1 Land Use

The Site is located in the South Wedge area of the City of Rochester, Monroe County, New York. The Site is currently developed with a vacant 13,700 square-foot multi-occupant commercial structure (site building) and a small parking lot. The main building, a one-story, pentagon-shaped structure of approximately 160-feet (ft) long by 100-ft wide, is the dominant feature of the Site and was used to repair vehicles and as a brass warehouse prior to 1942. The 0.39-acre Site consists of one tax parcel (Tax I.D.#121.48-1-80).

According to the City of Rochester Property Information Portal (online tax maps), the Site is currently zoned as "CCDR" which stands for Center City District – Riverfront, a commercial designation. Areas surrounding the Site to the North, East, South, and West, are described below:

- To the North: L & S Auto Parts, Rochester Used Car Dealers, and Much More Cars, a used car dealer
- To the East: South Avenue, followed by St. Joseph's House-Hospitality, a Catholic Community Center
- To the South: Tellmorr International, MacInTak Computers Sales and Service, Krudko Skate Shop, and Orion Alley, followed to the south by Comfort Street
- To the West: Mount Hope Avenue, followed by a telecommunications office complex (Spectrum)

2.2 Geology

2.2.1 Surficial Geology

Surficial Geology at the Site is reported by the United States Geological Survey (USGS) Surficial Geologic Map of New York, Finger Lakes Sheet, 1986 to consist of lacustrine silt and clay (lsc), generally described as laminated. Lacustrine silt and clay is typically deposited in proglacial lakes, and is generally calcareous. Land instability may result in areas overlain with lsc, as thickness is variable, and may extend up to 50 meters.

Soil at the Site is described by the United State Department of Agriculture (USDA) Web Soils Survey (WSS) as Urban Land (ub), encompassing the entire Site.

Overburden at the Site was reported during previous subsurface investigation to consist of fill material (approximately four to five feet in thickness) overlaying native lsc. Fill material at the Site was described to consist of fine to brown sand with varying amounts of silt and gravel, overlaying a thin layer of light gray fine sand with varying amounts of gravel overlaying the bedrock. Fill was also noted to contain black cinders, gray ash, and black staining. Sand and gravel fill indicative of a former tank excavation was encountered during a Phase II Environmental Site Assessment (ESA) by LaBella Associates (LaBella) of Rochester, New York in boring GP-1 from below the asphalt to a depth of approximately 12.0 feet below ground surface (ft. bgs).

2.2.2 Bedrock Geology

Bedrock at the Site is described by the USGS as Lockport Group Dolostone and Limestone and was reported by HDR during the RI at a depth of approximately 17 to 19 ft. bgs. The general bedrock elevation on-site was determined by HDR to be approximately 495 feet above mean sea level (amsl). Bedrock encountered during the 2014 Phase II ESA was described by Labella as gray limestone. Several horizontal fractures were noted from 18.1 to 18.3 ft bgs.

2.3 Hydrogeology

2.3.1 Surface Water

The nearest water body to the Site is the Genesee River, located approximately 700 feet west of the Site. Precipitation at the Site is not expected to enter the subsurface because the entire site is covered with impervious surfaces (site building and paved area).

2.3.2 Overburden Groundwater

The overburden water table was reported by HDR at a depth of 9 to 12 ft bgs during groundwater gauging events in June 2018 and in January 2020. The highest groundwater elevation at the Site was reported by HDR at MW203 at 501.95 ft amsl. The lowest groundwater elevation was observed at MW205 at 500.5 ft amsl, located northwest (downgradient) of the Site. Groundwater gauging conducted during HDR's June 2018 sampling event indicated a groundwater flow direction to the northwest, at a horizontal hydraulic gradient of 0.007 feet/foot (ft/ft).

2.3.3 Bedrock Aquifer

The potentiometric surface of groundwater observed in the bedrock aquifer at the Site was reported by HDR at elevations ranging from 501.70 ft amsl in BW1, located south (upgradient) of the Site building to 493.9 ft amsl in BW201, located northwest (downgradient) of the Site. Groundwater gauging conducted during the June 2018 sampling event indicated a bedrock groundwater flow direction to the northwest, similar to overburden groundwater, with an overall horizontal hydraulic gradient of 0.05 ft/ft.

2.3.4 Wetlands

The Site is situated in an urban setting, and no obvious wetlands are present on-site. No state wetlands were reported according to the NYSDEC Online Resource Mapper, and no U.S. Fish and Wildlife National Wetland Inventory areas were identified or reported on the Site.

3.0 SUMMARY OF REMEDIAL INVESTIGATION AND EXPOSURE ASSESSMENT

In February of 2020, HDR prepared a Remedial Investigation Report (RIR), to document the nature and extent of contamination identified within soil and groundwater at the Site during the RI, and previous investigations. The RI also evaluated off-site soil vapor and indoor air impacts to nearby properties (**Figure 2**). Compounds detected in the various media tested during the RI Investigation were compared to the following New York State guidance documents and standards (SCGs):

- Groundwater: NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1); Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations dated October 1993; Revised June 1998; ERRATA Sheet dated January 1999; and Addendum dated April 2000 (NYSDEC Class GA).

- Soil: NYSDEC Regulation, 6 NYCRR Subpart 375-6: "Remedial Program Soil Cleanup Objectives" which applies to the development and implementation of the remedial programs for soil and other media set forth in subparts 375-2 through 375-4 (Inactive Hazardous Waste Disposal Site Remedial Program, Brownfield Cleanup Program, and Environmental Restoration Program) and includes the soil cleanup objective (SCO) tables developed pursuant to ECL 27-1415(6). During the RI, soil sample results were compared to the restricted use commercial (Commercial SCOs), and protection of groundwater (PGW SCOs) SCOs.

- Soil Vapor: NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006.

3.1 Contaminants of Concern

Based on the results of the RI and previous investigations, Contaminants of Concern (COCs) at the Site consist of chlorinated solvents, including tetrachloroethylene (PCE), trichloroethylene (TCE) and the associated degradation byproducts including cis-1-2, dichloroethylene (cis-1-2-DCE) and limited vinyl chloride. COCs were detected at concentrations above applicable criteria in on-site soil, groundwater, and soil vapor.

In addition to the COCs, additional parameters were analyzed during the RI, including semi-volatile organic compounds (SVOCs), metals, pesticides, polychlorinated biphenyls (PCBs), and Emerging Contaminants (PFAS and 1,4-dioxane). These compounds were not detected at concentrations exceeding applicable clean-up criteria.

3.2 Nature and Extent of Site Contamination

3.2.1 Soil

A complete discussion of soil contamination at the Site is presented in the RIR (**Appendix A**). In summary, COCs at concentrations exceeding the Commercial SCOs were not detected at the Site. COCs at concentrations exceeding the PGW SCOs were detected in four sample locations during the RI (SB201, SB204, SB205, and MW206). These locations and concentrations are depicted on **Figure 3**.

3.2.2 Groundwater

Overburden

During the RI sampling events, chlorinated volatile organic compounds (VOCs), mainly PCE and its degradation products (TCE and cis-1,2-DCE) were detected at concentrations exceeding TOGS 1.1.1 criteria in all six overburden monitoring wells. The highest concentrations were detected in MW203, which is located southwest of the Site building, at the most upgradient edge of the Site boundary. The lowest concentrations were detected in MW-205, located downgradient and side gradient from MW-203. Well locations and detected concentrations of COCs are depicted on **Figure 4**.

Bedrock

During the RI sampling events, chlorinated VOCs, mainly PCE and its degradation products (TCE and cis-1,2-DCE), were detected at concentrations exceeding TOGS 1.1.1 criteria in all three bedrock wells. In general, the highest detected concentrations were observed in BW-1, the most upgradient location, located to the south of the building, and the lowest detected concentrations were observed in BW-202, the most downgradient location, located to the north of the building. Well locations and detected concentrations of COCs are depicted on **Figure 4**.

3.2.3 Soil Vapor

Exceedances of the NYSDOH Sub-Slab Vapor Concentration Decision Matrix Minimum Action Levels were encountered at two properties located directly west of the Site building: 48 and 50 Mount Hope Avenue. TCE concentrations exceeded the sub-slab minimum action level of six micrograms per cubic meter (µg/m^3) at 50 Mount Hope Avenue, with the highest concentration (3,170 µg/m^3) detected in SVI201-SS1 located in the basement. TCE was detected at a concentration of 93 µg/m^3 at SVI201-SS2 located in the ground-floor warehouse and at a concentration 407 µg/m^3 at SVI207-SS located in the basement of 48 Mount Hope Avenue. The only other exceedance of the criteria (greater than six µg/m^3) was cis-1,2-DCE detected at a concentration of 112 µg/m^3 at SVI201-SS1, located in the basement of 50 Mount Hope Avenue property.

Three additional properties were sampled during the RI that did not exhibit concentrations of VOCs exceeding the NYSDOH Sub-Slab Vapor Concentration Decision Matrix Minimum Action Levels. A full discussion of soil vapor results is included in the RIR (**Appendix A**) and soil vapor sample locations and vapor concentrations greater than Standards, Criteria, and Guidance (SCGs) are depicted in **Figure 5**.

Based on the data, Sub-Slab Depressurization Systems (SSDS), were recommended at the 48 and 50 Mount Hope Avenue buildings. SSDSs were offered to be installed and maintained by the NYSDEC at the 48 and 50 Mount Hope Avenue properties, however, the owner of the properties declined the offer and instead elected to install and maintain SSDSs without NYSDEC involvement. These SSDSs are not considered IRMs since they were installed and maintained without NYSDEC oversite.

3.2.4 Data Gaps

There are several gaps in the data that limit our understanding of the subsurface contamination on-site. Based on the data collected to date the release area of chlorinated solvents has not been definitively located on-site. While a Phase I Environmental Site Assessment was performed for the Site, locations for most of the Recognized Environmental Conditions were not identified, instead denoting the footprint of the building as broadly having "solvent use in historical operations". It is unknown how or where in the building chlorinated VOCs (CVOCs) were used or how they may have been released to the subsurface.

Based on the data collected during the RI it appears that a source area is likely to exist at or near the loading dock - on the southern, upgradient portion of the Site. However, direct sampling at the loading dock was not completed during the RI due to overhead utilities, underground utilities and a concrete slab reported to be greater than one foot in thickness. As there is only limited data from the area under the Site building, it is not known if a second release area exists under the Site building or under the buildings directly to the west of the Site building. Sub-slab soil vapor concentrations detected under the Site building and adjacent buildings suggest that a source area, or alternatively a preferential pathway exists in the soil beneath one or both buildings that are impacted by sub-slab soil vapor intrusion.

These data gaps do not significantly impact the Exposure Assessment, or the development of remedial alternatives; however, if an active remedial approach is implemented a pre-design investigation will be required to close the gaps prior to designing and implementing a remedy.

3.3 Exposure Assessment

An exposure pathway describes how an individual may be exposed to contaminants originating from the Site. As defined by the NYSDEC, an exposure pathway has five (5) elements: 1) a contaminant source, 2) contaminant release and transport mechanisms, 3) a point of exposure, 4) a route of exposure, and 5) a receptor population. An exposure pathway is complete when all five (5) elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist but could in the future.

3.3.1 Subsurface and Surface Soils

The five exposure pathway elements for on-site soils are evaluated below:

Exposure Pathway Element	Analysis
Contaminant Source	Based on data collected to date a contaminant source exists in the on-site soils, as described in Section 3.2.1 of this report and in the RIR (**Appendix A**).
Contaminant Release and Transport Mechanism	Contaminants in on-site soils could transport to an exposed population via volatilization into the soil vapor or leaching into the groundwater.
Point of Exposure	There is currently no direct exposure pathway to on-site soils. The entire Site is covered with buildings or paved surfaces and no intrusive activities are occurring on-site that disturb soils and generate inhalable dust.

	During possible future development or during the remedial action, specifically disturbance of soils, the potential for exposures to subsurface and surface soils would increase for on-site workers, utility workers, trespassers, and visitors.
Route of Exposure	Potential routes of exposure to soils include dermal contact, ingestion, and inhalation of soil particulates.
Receptor Population	The Receptor population includes Site visitors, trespassers, or future Site workers

Based on the above analysis an exposure pathway is reasonably expected to exist if on-site soils are distributed during future construction activities.

3.3.2 Overburden and Bedrock Groundwater

The five exposure pathway elements for the overburden and bedrock groundwater on and around the Site are evaluated below:

Exposure Pathway Element	**Analysis**
Contaminant Source	Based on data collected to date a contaminant source exists in the on-site bedrock and over burden aquifers, as described in Section 3.2.2 of this report and in the RIR (**Appendix A**).
Contaminant Release and Transport Mechanism	Contaminants in on-site groundwater are expected to transport off-site due to the groundwater movement. Both on-site aquifers flow to the north and west, toward the Genesee River. During transport it is expected that the concentrations of contaminants in the groundwater will reduce due to natural attenuation and dilution. Additionally, it is possible for contaminants in the overburden aquifer to volatilize into the on-site soil vapor.
Point of Exposure	There is currently no direct exposure pathway to groundwater contamination at or around the Site. The Site and surrounding area are served by public drinking water and there are no known domestic water supply wells in the area of the Site. People could come into contact with on-site groundwater if private wells are installed at the property. An additional potential exposure exists if ground intrusive activities are completed at the Site. During possible future development or during the remedial action, the potential for direct exposure to groundwater would increase for on-site workers, utility workers, trespassers, and visitors.
Route of Exposure	Potential routes of exposure to groundwater include dermal contact and ingestion of groundwater.
Receptor Population	The Receptor population includes Site visitors, trespassers, or future Site workers or occupants.

Based on the above analysis an exposure pathway is reasonably expected to exist if on-site groundwater is encountered during future construction activities or if a new water supply well is constructed at the Site.

3.3.3 Soil Vapor

The five exposure pathway elements for the soil vapor on and around the Site are evaluated below:

Exposure Pathway Element	Analysis
Contaminant Source	Based on data collected to date a contaminant source exists in the on-site soil vapor, as described in Section 3.2.3 of this report and in the RIR (**Appendix A**).
Contaminant Release and Transport Mechanism	Contaminants in on-site soil vapor are currently not expected to transport to the indoor air and impact indoor air quality because sub-slab depressurization systems (SSDSs) have been installed in on-site and off-site buildings where soil vapor contamination was documented. A contaminant transport mechanism could exist if operation of one or more of the SSDSs were discontinued.
Point of Exposure	There is currently no point of exposure for soil vapor at the Site because there are SSDSs in operation to prevent soil vapor from impacting indoor air quality. A point of exposure could exist if operation of one or more of the SSDSs were discontinued.
Route of Exposure	Potential routes of exposure to soil vapor includes the inhalation of contaminants in indoor air.
Receptor Population	The Receptor population includes Site workers, visitors, trespassers, or future Site workers or occupants.

Based on the above analysis an exposure pathway is reasonably expected to exist if operation of one or more of the SSDSs were discontinued.

3.4 Presumed Area for Treatment

Taking into account the distribution of chlorinated solvents in soil vapor, soils, and groundwater on and in the vicinity of the Site and former on-site operations (specifically, the presence of the loading dock), it appears that a source area is likely to exist at or near the loading dock - on the southern, upgradient portion of the Site. Direct sampling at the loading dock was not completed during the RI due to overhead utilities, underground utilities and a concrete slab reported to be greater than one foot in thickness, however samples collected adjacent to the suspected source area contained concentrations of CVOCs exceeding PGW SCOs.

For the purposes of this FS, HRP has assumed that the predominant source of chlorinated solvent concentrations in the sub-slab soil vapor both on and off-site is sorbed mass that may be located in vadose zone soils on the southern portion of the Site.

4.0 REMEDIAL ACTION OBJECTIVES (RAOS)

4.1 Remedial Goals

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the Site through the proper application of scientific and engineering principles. The remedial action objectives (RAOs) for public health and environmental protection for the Site follow.

4.1.1 Soil RAOs

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil
- Prevent inhalation exposure to contaminants volatilizing from soil

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater contamination
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain

4.1.2 Groundwater RAOs

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 groundwater contamination

4.1.3 Soil Vapor RAOs

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a Site and surrounding properties

5.0 DEVELOPMENT AND ANALYSIS OF ALTERNATIVES

In accordance with DER-10, an initial screening was performed to develop a list of potential remedial technologies applicable to Site conditions, contaminants, and contaminated media. Applicable technologies passing the initial screen are then formulated into remedial alternatives that undergo a detailed comparative analysis. Potential remediation technologies are screened and described below.

5.1 General Response Actions

General Response Actions are broad non-technology specific categories to address site-specific contaminants and media. Identified actions are then further refined into potential remedial technologies for screening and development into remedial alternatives as presented in **Section 6**.

5.1.1 Soil

General Response Actions to address RAOs for soils include the following:

- Institutional controls (e.g., environmental easement, Site use restrictions)
- Engineering controls (e.g., perimeter fencing)
- Containment (e.g., surface cap)
- In-situ treatment (e.g., thermal destruction, solidification/stabilization, chemical oxidation/enhanced bioremediation)
- Ex-situ treatment (e.g., thermal destruction, solidification/stabilization, chemical oxidation)
- Removal and off-site disposal (e.g., excavation and landfill disposal)

5.1.2 Groundwater

General Response Actions to address the RAOs for groundwater include the following:

- Monitored natural attenuation
- Institutional controls (e.g., environmental easement, groundwater use restrictions)
- Containment (e.g., slurry wall)
- In-situ treatment (e.g., chemical oxidation, enhanced bioremediation, permeable reactive barrier)
- Ex-situ treatment (e.g., pump-and-treat [air sparge/stripping, treatment with activated carbon])

5.1.3 Soil Vapor

General Response Actions to address the RAOs for soil vapor include the following:

- Active mitigation (e.g., sub-slab depressurization system)
- Engineering controls (e.g., vapor barrier, maintaining positive pressure through HVAC controls)
- Source area treatment (e.g., soil and groundwater remediation)

5.2 Identification and Screening of Technologies

The screening of remedial technology types and process options is based on effectiveness for remediating impacted soils, groundwater, and indoor air. Technologies considered for screening include institutional/engineering controls, in-situ treatment, ex-situ treatment, and removal for off-site disposal.

5.2.1 Institutional / Engineering Controls IC/EC

Engineering Controls (EC) are a physical barrier or method employed to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to contamination. Engineering controls include, but are not limited to, pavement, caps, covers, subsurface barriers, vapor barriers, slurry walls, building ventilation systems, fences, access controls, provision of alternative water supplies via connection to an existing public water supply, adding treatment technologies to such water supplies, and installing filtration devices on private water supplies.

Institutional Controls (IC) are any non-physical means of enforcing a restriction on the use of real property that limits human or environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of site management activities at or pertaining to a remedial site. ICs accomplish their goal by limiting land or resource use and/or by providing information that helps modify or guide human behavior at the Site.

IC/ECs are retained for further consideration as they are implementable, and if paired with additional remedial technologies, effective to meet the RAOs at the Site.

5.2.2 In-Situ Treatment

In-situ treatment technologies include biological, thermal, and physical/chemical treatment processes. These processes involve treating the contaminant mass in place to reduce concentrations or mobility and are specifically designed for site conditions. In-situ treatment can address both soil and groundwater impacts. Evaluated in-situ treatment technologies include thermal treatment, solidification/stabilization, permeable reactive barriers, and chemical/biological treatment.

Thermal treatment requires substantial infrastructure and electrical power to heat soil to volatilize, collect, and treat contaminants. Due to the relatively low contaminant concentrations, thermal treatment will not be practical at the Site. Therefore, thermal treatment is not considered further.

Solidification/stabilization involves physically binding contaminants in-situ, thereby decreasing the potential for further leaching and mobility. Due to the relatively low contaminant concentrations, solidification/stabilization treatment will not be practical at the Site. Therefore, solidification/stabilization is not considered further.

Permeable reactive barriers are applicable for dissolved-phase contaminants by treating groundwater as it passes through a barrier of reactive media. Groundwater impacts occur predominantly in bedrock at the Site, therefore this technology is not implementable and not considered further.

Chemical and biological treatment involves application of chemicals or substrates to support bioremediation through injection into groundwater or direct mixing of soil. No external infrastructure or electrical sources are required, contaminants are treated following application both short- and long-term, depending upon the chemical or substrate used. Chlorinated VOCs are amenable to chemical and biological treatment and this technology is readily implementable, therefore this technology is retained for further consideration in developing remedial alternatives.

5.2.3 Ex-Situ Treatment

Ex-situ treatment is applicable to contaminated groundwater and includes pump-and-treat technologies where contaminated groundwater is extracted from the Site, treated in an aboveground treatment system, and either reinjected to groundwater, discharged to surface water, or discharged to a publicly owned treatment works. This technology requires substantial infrastructure and electrical power and is not practical for remediation of the relatively low concentrations of CVOCs detected in groundwater in the vicinity of the Site. Therefore, groundwater pump-and-treat is not considered further.

Soil Vapor Extraction (SVE) can be used to actively reduce sorbed contaminant mass from vadose zone soils in the overburden. 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 is implementable and has the potential to be effective at meeting RAOs at the Site.

Excavated soils can be treated using ex-situ methods (e.g., treatment in soil piles by circulating air or mixing with various chemicals to incite chemical/biological reduction), a technique often retained for large-scale removal of soils to reduce disposal costs, or for on-site soil reuse. In this instance, the likelihood of using a method such as this is not likely cost effective compared to direct disposal costs of excavated material and is therefore not retained for treatment of impacted soils.

5.2.4 Removal for Off-site Disposal

Excavation and removal for off-site disposal is applicable to contaminated soil and physically removes contaminated media from the Site. This technology has proven effectiveness and can be readily implemented with conventional construction equipment provided direct access to soils is feasible (i.e., if the building were to be demolished).

5.3 Development of Remedial Alternatives

Technologies passing the preliminary screen were combined to develop the following six primary remedial alternatives and the media most affected by each alternative:

- Alternative 1: No Action

- Alternative 2: Engineering and Institutional Controls with Site Management Plan (SMP)
- Alternative 3: Soil Vapor Extraction (SVE), Engineering Controls, and an SMP
- Alternative 4: SVE, In-Situ Biological Treatment of Groundwater, and an SMP
- Alternative 5: Source Area Excavation with In-Situ Biological Treatment of Groundwater, and an SMP

Each alternative is presented in an increasing order of cost and complexity. Each alternative is discussed below as to how it may be implemented at the Site to address RAOs.

5.3.1 Alternative 1: No Action

The "No Action" Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative would leave the Site in its present condition and would not provide any additional protection to human health or the environment. The No Action alternative would not involve any surface soil, subsurface soil, groundwater, or soil vapor remedial activity. In addition, the No Action alternative would not place any institutional or engineering controls on the Site property, such as future land use restrictions, groundwater use limitations, and/or continued operation of SSDSs.

5.3.2 Alternative 2: Engineering and Institutional Controls with Site Management Plan (SMP)

This alternative would not seek to actively remove or treat the contaminated media on-site but would disrupt the current or future exposure pathways through the imposition of Engineering Controls (ECs) and Institutional Controls (ICs). Engineering controls have already been enacted at the Site by the Site Owner. Three on-site SSDSs, and one off-site SSDS (48-50 Mount Hope Avenue) have been installed at the Site to mitigate soil vapor intrusion. Additionally, a site-wide cover already exists on the Site in the form of the Site building and pavement, preventing access to the contaminated soils on-site.

Institutional controls (ICs) would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An Environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met.

A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the Site. The SMP would provide a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) performance of periodic inspections, certification of results and submittal of Periodic Review Reports. Specifically, the SMP would include a restriction on future land use, and a provision for soil and groundwater management plan for any future Site excavation or development.

5.3.3 Alternative 3: Soil Vapor Extraction, Engineering and Institutional Controls, and a Site Management Plan

This Alternative includes all of Alternative 2, plus one additional active remedy to reduce sorbed contaminant mass from vadose zone soils in the overburden beneath the Site. Soil vapor extraction (SVE) can be used to actively reduce sorbed contaminant mass from vadose zone soils in the overburden. Though not tested to date, based on data collected from other areas of the Site, it appears that there is mass in subsurface soils towards the rear (southeast) of the building. The presence of this mass in soils has the potential to contribute to an accumulation of concentrations of COCs in soil vapor beneath the Site building, as well as serve as a potential on-going source to groundwater, thereby adversely affecting both groundwater quality, and contribution to vapor migration concerns to other properties nearby.

While vertical or horizontal SVE wells may be utilized, given both the thickness of the slab in this area, which to date has impeded remedial investigations and collection of empirical data, the presumed shallow impacts to soils based on the relatively shallow water table, 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. Conceptual locations of the SVE wells are depicted on **Figure 6**.

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 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.

Additional data would be necessary for design of such an approach including air permeability testing, additional soils testing, as well as obtaining interior access.

5.3.4 Alternative 4: Soil Vapor Extraction, In-Situ Enhanced Biological Treatment of Groundwater, and a Site Management Plan

This Alternative includes all 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. Conceptual locations of the SVE wells and injection points are depicted on **Figure 6.**

In addition to the description in Section 5.3.3, this alternative can use an injectant that supports enhanced reductive dechlorination (ERD) such as any number of electron donor solutions (e.g., CarbStrate, HRC, emulsified oil/lactate/bio-enhanced solution) to enhance a reducing environment in the subsurface saturated zone.

The Site has elevated concentrations in groundwater above standards in both the overburden groundwater, as well as in the bedrock beneath the Site. At this time, the full extent of the groundwater plume is not well understood beyond the immediate vicinity of the Site. However, known concentrations in both the overburden and bedrock are similar in magnitude, with a few hundred parts per billion of CVOCs present, which suggests that dense non-aqueous phase liquid (DNAPL) is not 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.

5.3.5 Alternative 5: Source Area Excavation with In-Situ Enhanced Biological Treatment of Groundwater, and a Site Management Plan

In order to return the Site to pre-release conditions, removal of source material and active remediation of dissolved-phase contamination is the best means of achieving this objective. 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, this remedy is most likely to be implemented in a scenario where 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 extensive soils testing beneath the building. Extensive testing of subsurface soils could pinpoint the location for soil excavation and allow installation of active groundwater treatment infrastructure. By locating impacted soils, the volume for soil excavation could be greatly reduced. To evaluate this alternative in Section 6, an assumption has been made that 1,750 cubic yards of soil may be excavated from the southeastern loading dock area. Persistent VOC concentrations in the bedrock aquifer could be further reduced over a reduced time period by injecting oxidant or amendment to support increased dichlorination of dissolved contaminants. Conceptual boundaries of the remedial excavation and injection points are depicted on **Figure 6.**

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).

6.0 DETAILED EVALUATION OF ALTERNATIVES

This section presents an evaluation of the remedial alternatives to identify advantages and disadvantages and evaluate the extent that each alternative meets the remedial objectives. Each alternative was evaluated against the following criteria set forth in DER-10.

Threshold Criteria:

- Overall Protectiveness of Public Health and the Environment
- Compliance with SCGs

If an evaluated remedial alternative meets the above Threshold Criteria, it will be further evaluated using the Balancing Criteria below:

- Long-Term Effectiveness, Permanence and Sustainability
- Reduction of Toxicity, Mobility, and Volume through Treatment
- Short-Term Impact and Effectiveness
- Feasibility
- Cost Effectiveness
- Land Use
- Sustainability/Green Remediation Concepts

Community and State acceptance are also considered through the receipt and review of public comments. The Record of Decision (ROD) for the Site will address community and State acceptance.

6.1 Individual Analysis of Alternatives

6.1.1 Alternative 1: No Action

Threshold Criteria

Overall Protectiveness of Public Health and the Environment. Alternative 1 is not protective of human health and the environment. All contaminated media will remain with no measures to treat, remove, or otherwise decrease contaminant levels. Exposure routes will remain for on-site workers by inhalation of impacted soil vapor or direct contact with subsurface impacted soil during ground disturbance activities.

Compliance with SCGs. Chemical-specific SCGs and site-specific cleanup levels will not be achieved for soil or groundwater.

Balancing Criteria

Alternative 1, “No Action” does not meet the Threshold Criteria of being protective of human health and the environment or being compliant with SCGs and is removed from future consideration therefore the balancing criteria were not evaluated. Estimated capital and long-term costs for Alternative 1 are presented in **Table 1**.

6.1.2 Alternative 2: Engineering and Institutional Controls with Site Management Plan (SMP)

Threshold Criteria

Overall Protectiveness of Public Health and the Environment: Alternative 2 is protective of human health and the environment. Institutional controls (e.g., land use restrictions) will decrease the likelihood of human exposure, but contaminated soil and groundwater will remain. Contaminants in the vapor-phase (soil gas) beneath the building will continue to be removed through operation of the SSDS. Exposure routes will remain for on-site workers that excavate impacted soil by inhalation of impacted soil vapor or direct contact with subsurface impacted soil during ground disturbance activities.

Compliance with SCGs: Chemical-specific SCGs and Site-specific cleanup levels will not be achieved for soil or groundwater.

Balancing Criteria

Alternative 2, "Engineering and Institutional Controls with Site Management Plan (SMP)" does not meet the Threshold Criteria of being compliant with SCGs and is removed from future consideration therefore the balancing criteria were not evaluated. Estimated capital and long-term costs for Alternative 2 are presented in **Table 2**.

6.1.3 Alternative 3: Soil Vapor Extraction, Engineering and Institutional Controls, and a Site Management Plan

Threshold Criteria

Overall Protectiveness of Public Health and the Environment: Alternative 3 is protective of public health and the environment by reducing contaminant mass in the vadose zone soils through SVE and vapor mitigation via the active SSDS. This alternative reduces sorbed CVOCs on soils, thereby reducing potential transport of contaminants to the dissolved and vapor-phases. The current use of SSDS at the Site further provides protection by mitigation potential vapor intrusion into indoor air. The potential for short-term exposure to impacted soil by on-site workers and remediation personnel via ingestion and inhalation of airborne dust and emissions during construction is mitigated by use of personal protective equipment and adherence to a Health and Safety Plan. Conventional measures are effective and readily implementable to mitigate fugitive dust and emissions during remediation construction.

Compliance with SCGs: 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, eliminating the vapor intrusion pathway, and allowing for discontinuation of the SSDS over time.

Balancing Criteria

Long-Term Effectiveness, Permanence and Sustainability: 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 alternative which pass the Threshold Criteria. This would result in an overall lower environmental footprint of remediation compared to the other alternatives.

Reduction of Toxicity, Mobility and Volume Through Treatment: 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. While there is no known non-aqueous phase liquid (NAPL) at the Site to consider a reduction in mobility, presumably, reduction in contaminant concentrations in soil will reduce dissolution to the dissolved-phase, and thereby limit plume extents over time.

Short-Term Impact and Effectiveness: 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. 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 low soil and groundwater concentrations, an expected active treatment duration <5 years followed by a period of monitoring to confirm soil vapor has been reduced sufficiently and could lead to discontinued operation of the SSDSs. Finally, long-term groundwater monitoring may be required under the SMP, as no direct treatment of groundwater is proposed under this alternative.

Implementability: Alternative 3 is readily implementable using traditional drilling or alternative horizontal drilling techniques, along with standard equipment installation.

Cost Effectiveness: Estimated capital and long-term costs for Alternative 3 are presented in **Table 3**.

Land Use: Alternative 3 does not alter the current land use of the Site, although restrictions on future use may be applied through institutional controls.

6.1.4 Alternative 4: Soil Vapor Extraction, In-Situ Enhanced Biological Treatment of Groundwater, and a Site Management Plan

Threshold Criteria

Overall Protectiveness of Public Health and the Environment: Alternative 4 is protective of public health and the environment by reducing contaminant mass in the vadose zone soils through SVE and vapor mitigation via the active SSDS and removing COVCs through in-situ treatment in overburden and shallow zone bedrock groundwater. Alternative 4 reduces sorbed CVOCs on soils, thereby reducing potential transport of contaminants to the dissolved and vapor-phases, and also eliminates potential transport of contaminants by treating and converting contaminants to non-toxic byproducts (e.g., carbon dioxide and water, or ethene and chloride). The current use of SSDSs at the Site and neighboring properties provides protection by mitigation potential vapor intrusion into indoor air. The potential for short-term exposure to impacted soil by on-site workers and remediation personnel via ingestion and inhalation of airborne dust and emissions during construction is mitigated by use of personal protective equipment and adherence to a Health and Safety Plan. Conventional measures are effective and readily implementable to mitigate fugitive dust and emissions during remediation construction.

Compliance with SCGs: 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, eliminating the vapor intrusion pathway, 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.

Balancing Criteria

Long-Term Effectiveness, Permanence and Sustainability: 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 result in the indirect emissions of Greenhouse Gases (GHGs) via the long-term use of electricity necessary to operate the SVE and SSDS systems. Alternative 4 will require slightly use of heavy equipment than Alternitive 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.

Reduction of Toxicity, Mobility and Volume Through Treatment: 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. While there is no known NAPL at the Site to consider a reduction in mobility, presumably, reduction in contaminant concentrations in soil and groundwater will reduce plume extents over time.

Short-Term Impact and Effectiveness: 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.

Implementability: Alternative 4 is readily implementable using traditional drilling or alternately 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.

Cost Effectiveness: Estimated capital and long-term costs for Alternative 4 are presented in **Table 4**.

Land Use: Alternative 4 does not alter the current land use of the Site, although restrictions on future use may be applied through institutional controls.

6.1.5 Alternative 5: Source Area Excavation with In-Situ Enhanced Biological Treatment of Groundwater, and a Site Management Plan

Threshold Criteria

Overall Protectiveness of Public Health and the Environment: Alternative 5 is protective of public health and the environment through excavation of contaminated soil and treatment of overburden and shallow zone bedrock groundwater. This alternative eliminates all readily accessible source material in the vadose zone, and potential transport of contaminants in the dissolved-phase by biologically treating and converting contaminants to non-toxic byproducts (e.g., carbon dioxide and water, or ethene and chloride). The potential for short-term exposure to impacted soil by on-site workers and remediation personnel via ingestion and inhalation of airborne dust and emissions during construction is mitigated by use of personal protective equipment and adherence to a Health and Safety Plan. Conventional measures are effective and readily implementable to mitigate fugitive dust and emissions during remediation construction. Long-term groundwater monitoring may be necessary and may be addressed with an SMP. This is the only Alternative that returns the Site to pre-release conditions.

Compliance with SCGs: 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.

Balancing Criteria

Long-Term Effectiveness, Permanence and Sustainability: 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 evaluatied 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.

Reduction of Toxicity, Mobility and Volume Through Treatment: Alternative 5 will reduce the contaminant mass through excavation, and biological treatment. Decreased concentrations and mass will also reduce chemical toxicity and, mobility, indirectly. While there is no known NAPL at the Site to consider a reduction in mobility, presumably, reduction in contaminant concentrations in soil and groundwater will reduce plume extents over time.

Short-Term Impact and Effectiveness: 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 reductive dechlorination. The expected treatment time is anticipated to be less than one year.

Implementability: 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).

Cost Effectiveness: Estimated capital costs for Alternative 5 are presented in **Table 5**. No long-term costs are expected with this Alternative as active treatment returns the Site to pre-release conditions.

Land Use: 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) without concern, and in fact could be modified to be used for restricted residential purposes under this Alternative.

6.2 Comparative Analysis of Alternatives

Potential remedial alternatives are compared to criteria defined in 6 NYCRR Part 375. The first two evaluation criteria are termed "threshold criteria" and must be satisfied for an alternative to be considered for selection.

Threshold Criteria:

- Overall Protectiveness of Public Health and the Environment - This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

- Compliance with SCGs - Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria.

Balancing Criteria:

- 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.

- Reduction of Toxicity, Mobility, and Volume through Treatment - For this criterion, preference is given to alternatives that permanently and significantly reduce the toxicity, mobility and volume of the contamination at the Site.

- Short-Term Impact and Effectiveness - This criterion evaluates potential short-term impacts on the community, workers, and the environment during remedial construction. The length of time needed to achieve RAOs is also estimated and compared against the other alternatives.

- Implementability - This criterion evaluates the technical and administrative feasibility to implement each remedial alternative. Technical feasibility includes difficulties associated with the implementation of the remedy and the ability to monitor its effectiveness. Administrative feasibility includes the availability of the necessary personnel and materials along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, etc.

- Cost Effectiveness - Capital costs and annual operation, maintenance, and monitoring costs are estimated for each remedial alternative and compared on a present worth basis. In addition, a long-term evaluation of costs is evaluated to weigh the cost/benefit ratio of applying a more active remedy versus a passive remedy over time, particularly if all other factors are equal to discern a preferred remedy for selection.

- Land Use – This criterion evaluates each remedial alternative with respect to the current, intended, and reasonably anticipated future land use.

- Community Acceptance - Community concerns regarding selection of a remedial alternative will be considered.

Alternatives 1 and 2 do not meet the Threshold Criteria and were eliminated from further consideration. Alternatives 3, 4 and 5 were evaluated relative to each other using the balancing criteria. A summary of the alternative evaluation is provided in **Table 6**, and a discussion of the relative evaluation is below.

6.2.1 Long-Term Effectiveness and Permanence

All three remaining alternatives provide long-term effectiveness and permanence of remedy, however the rate to achieve permanence is variable. For this reason, Alternative 5 scored slightly higher than Alternatives 3 and 4, as the duration of treatment is less, and therefore would reduce the need for EC/IC to mitigate the risk until remaining contamination meets SCGs.

6.2.2 Reduction of Toxicity, Mobility, and Volume through Treatment

All three remaining alternatives will reduce contaminant toxicity, mobility, and volume. The reduction in volume and then toxicity is best achieved through full removal, leading to the highest score for Alternative 5. Alternative 4 scored slightly higher than Alternative 3 with respect to improving groundwater quality (toxicity) through direct treatment of concentrations in groundwater via in-situ remediation, as opposed to waiting for the indirect positive effect source removal would have on groundwater quality.

6.2.3 Short-Term Impact and Effectiveness

All three remaining alternatives provide short-term impact and effectiveness. Alternative 5 scored the highest for this criteria because it will meet the RAOs in the shortest time period. Alternatives 3 and 4 will prove effective in the short-term (<5 years), but in slightly varying degrees. While the exact period of treatment under Alternatives 3 and 4 are not known, HRP assumes that active remediation of groundwater (Alternative 4) would meet SCGs more quickly than relying solely on source removal (Alternative 3) as a mechanism to improve groundwater quality.

6.2.4 Feasibility

Alternative 5 is not readily feasible due to the existing Site buildings presence in the footprint of the proposed excavation and presumed source area. Alternative 4 is inclusive of Alternative 3 and would require additional infrastructure be constructed requiring off-site access, therefore Alternative 3 scored slightly higher than Alternative 4.

6.2.5 Cost Effectiveness

Capital and long-term (30-year) costs were evaluated for each alternative, as capital (short-term) savings may be negated by long-term costs. Alternative 3 was found to be the most cost-effective approach having lower capital cost, and only nominally higher costs beyond the initial remedial action period over Alternative 4. Alternative 5 scored the lowest cost around twice as much as the other alternatives.

6.2.6 Land Use

Alternatives 3 and 4 do not change the current land use in any significant way. Alternative 5 scored lower in this category due to the removal of the on-site building that would be required to implement it.

7.0 REMEDY SELECTION

The recommended alternative is Alternative 3: Soil Vapor Extraction, Institutional Controls, Engineering Controls, and a Site Management Plan. Alternative 3 is protective of public health and the environment by reducing contaminant mass in the vadose zone soils through SVE and vapor mitigation via the active SSDS. This alternative reduces sorbed CVOCs on soils, thereby reducing potential transport of contaminants to the dissolved and vapor-phases. 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.

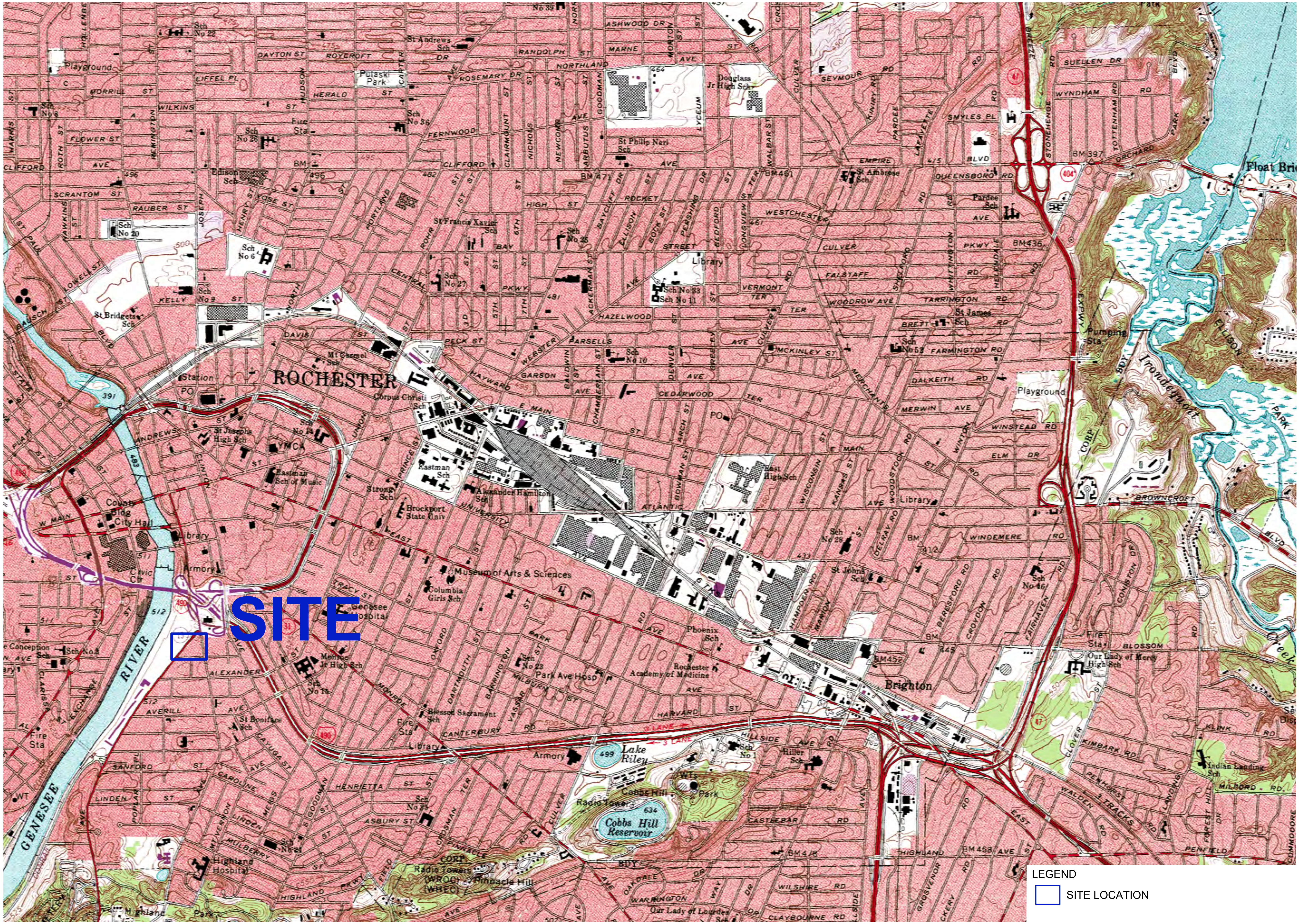
In addition to meeting the Threshold Criteria of being protective of human health and the environment, and achieving compliance with SCGs, Alternative 3 provides the best balance of the balancing criteria (Long-Term Effectiveness and Permanence; Reduction of Toxicity, Mobility, and Volume through Treatment; Short-Term Impact and Effectiveness; Feasibility; Cost Effectiveness; and Land Use).

8.0 REFERENCES

USGS Geologic Names lexicon found at: http://ngmdb.usgs.gov/Geolex/
https://ngmdb.usgs.gov/Geolex/search

United States Geological Survey (USGS) Surficial Geologic Map of New York, Finger Lakes Sheet, 1986

FIGURES



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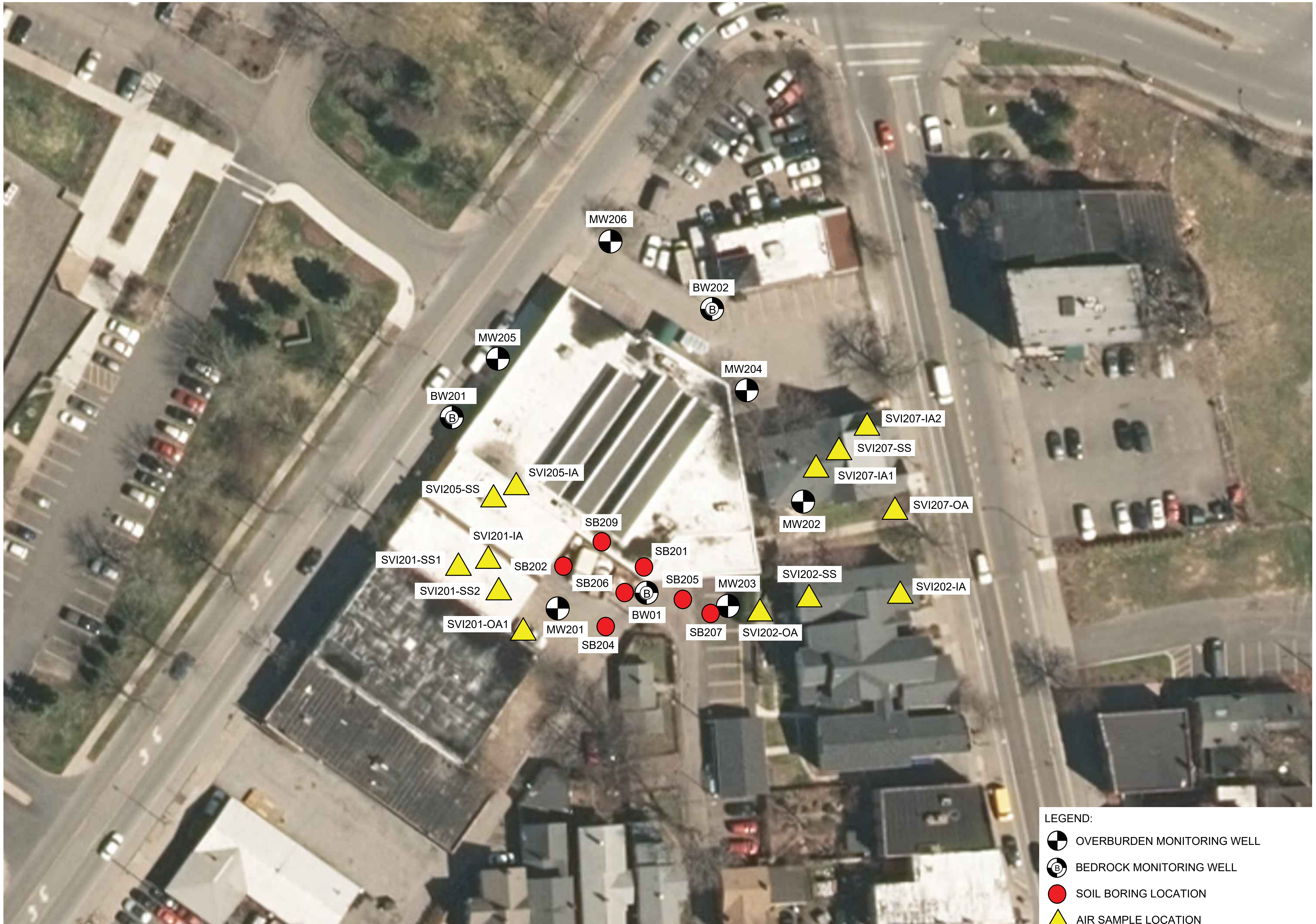
DRAWN BY: SRT
REVIEWED BY: MEW

ISSUE DATE: 12/30/2020
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"

SITE LOCATION MAP
FORMER HALL WELTER SITE (#828194)
ROCHESTER, NEW YORK

FIGURE
1



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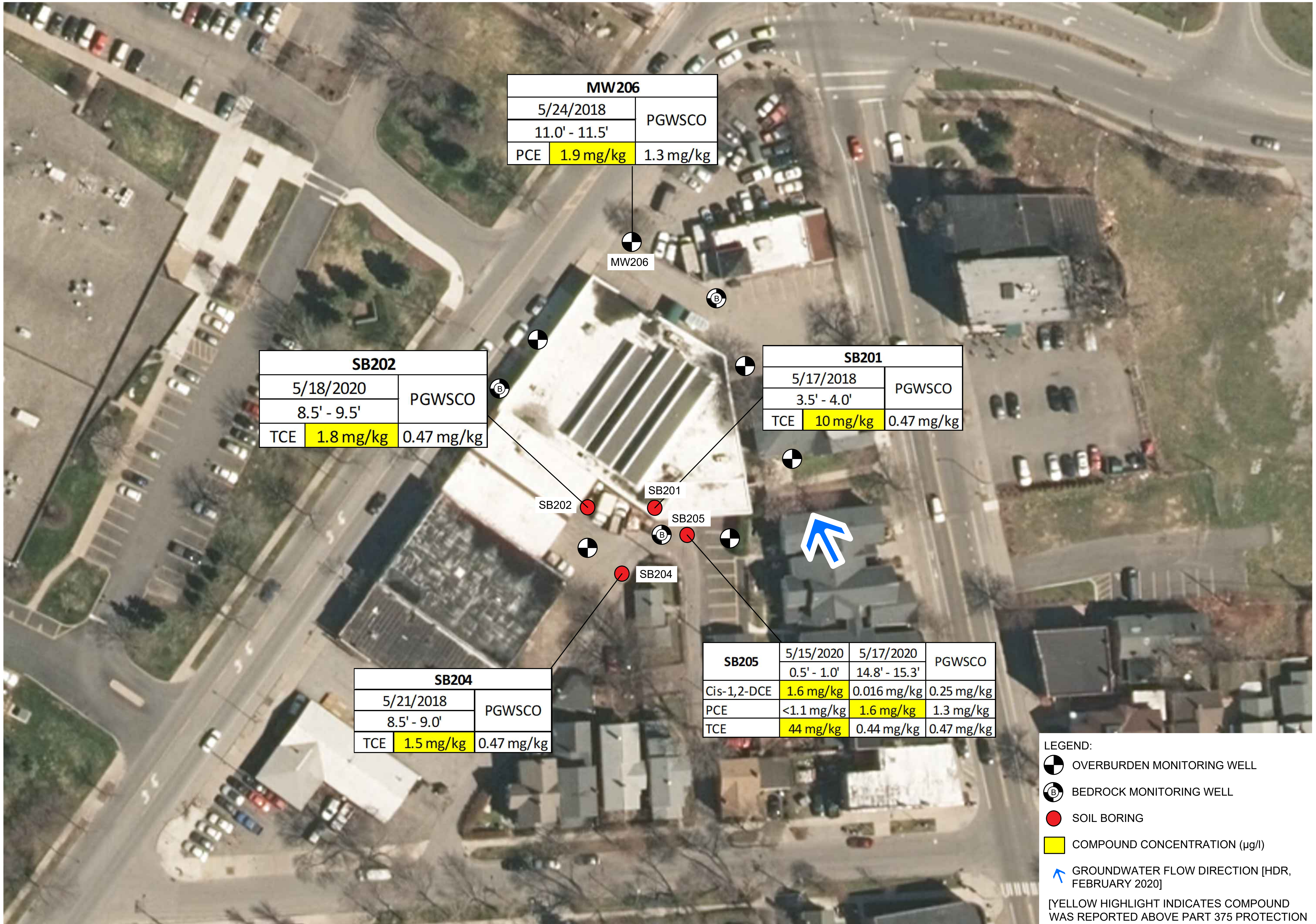
SITE PLAN
FORMER HALL WELTER SITE (#828194)
ROCHESTER, NEW YORK

FIGURE 2



MW206		
	5/24/2018	PGWSCO
	11.0' - 11.5'	
PCE	1.9 mg/kg	1.3 mg/kg

SB202		
	5/18/2020	PGWSCO
	8.5' - 9.5'	
TCE	1.8 mg/kg	0.47 mg/kg

SB201		
	5/17/2020	PGWSCO
	3.5' - 4.0'	
TCE	10 mg/kg	0.47 mg/kg

SB204		
	5/21/2018	PGWSCO
	8.5' - 9.0'	
TCE	1.5 mg/kg	0.47 mg/kg

SB205	5/15/2020	5/17/2020	PGWSCO
	0.5' - 1.0'	14.8' - 15.3'	
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

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ISSUE DATE: 11/25/2020
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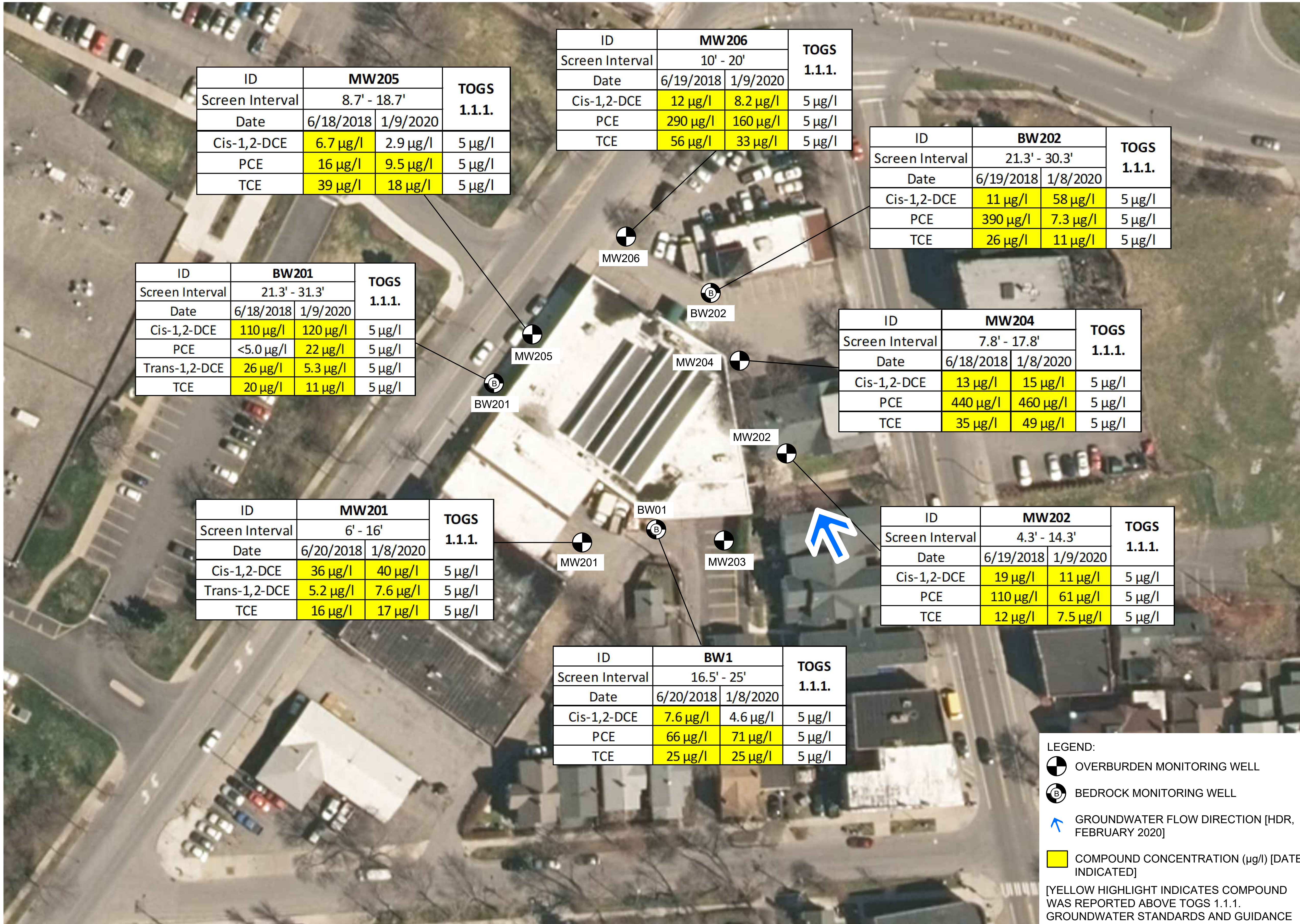
SHEET SIZE: 11"x17"

SUMMARY OF SOIL ANALYTICAL RESULTS
ONLY EXCEEDANCES SHOWN

FORMER HALL WELTER SITE
(#828194)

ROCHESTER, NEW YORK

FIGURE
3



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

LEGEND:
- OVERBURDEN MONITORING 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]

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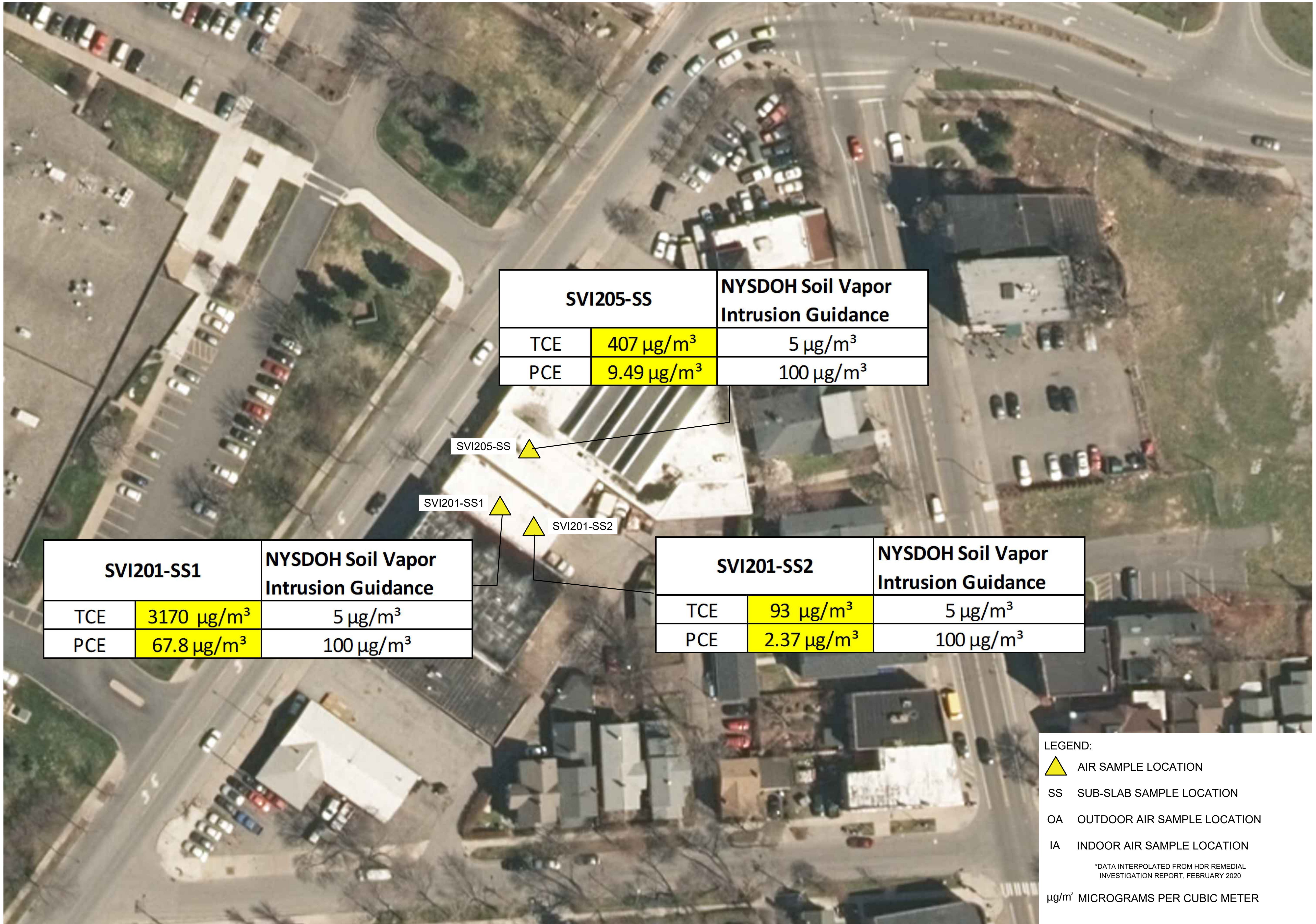
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ONLY EXCEEDANCES SHOWN

FORMER HALL WELTER SITE (#828194)

ROCHESTER, NEW YORK

FIGURE
4



SVI205-SS		NYSDOH Soil Vapor Intrusion Guidance
TCE	407 µg/m³	5 µg/m³
PCE	9.49 µg/m³	100 µg/m³

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 µg/m³

LEGEND:

- ▲ AIR SAMPLE LOCATION
- 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

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NORTH

0 30' 60'

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1	10/19/2021

DESIGNED BY: SRT
DRAWN BY: SRT
REVIEWED BY: MEW

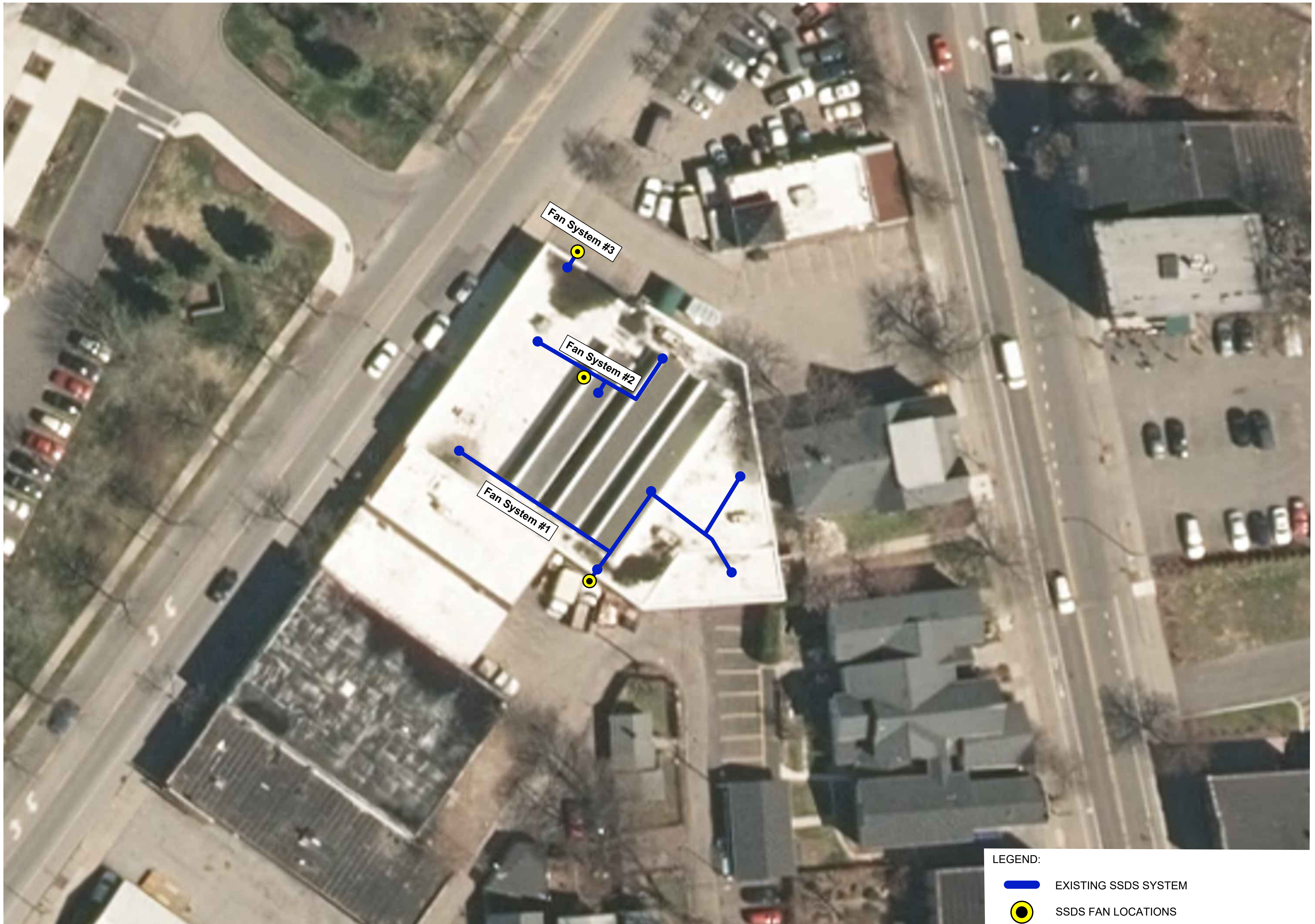
ISSUE DATE: 11/25/2020
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"

SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS
ONLY EXCEEDANCES SHOWN

FORMER HALL WELTER SITE
(#828194)

ROCHESTER, NEW YORK

FIGURE
5



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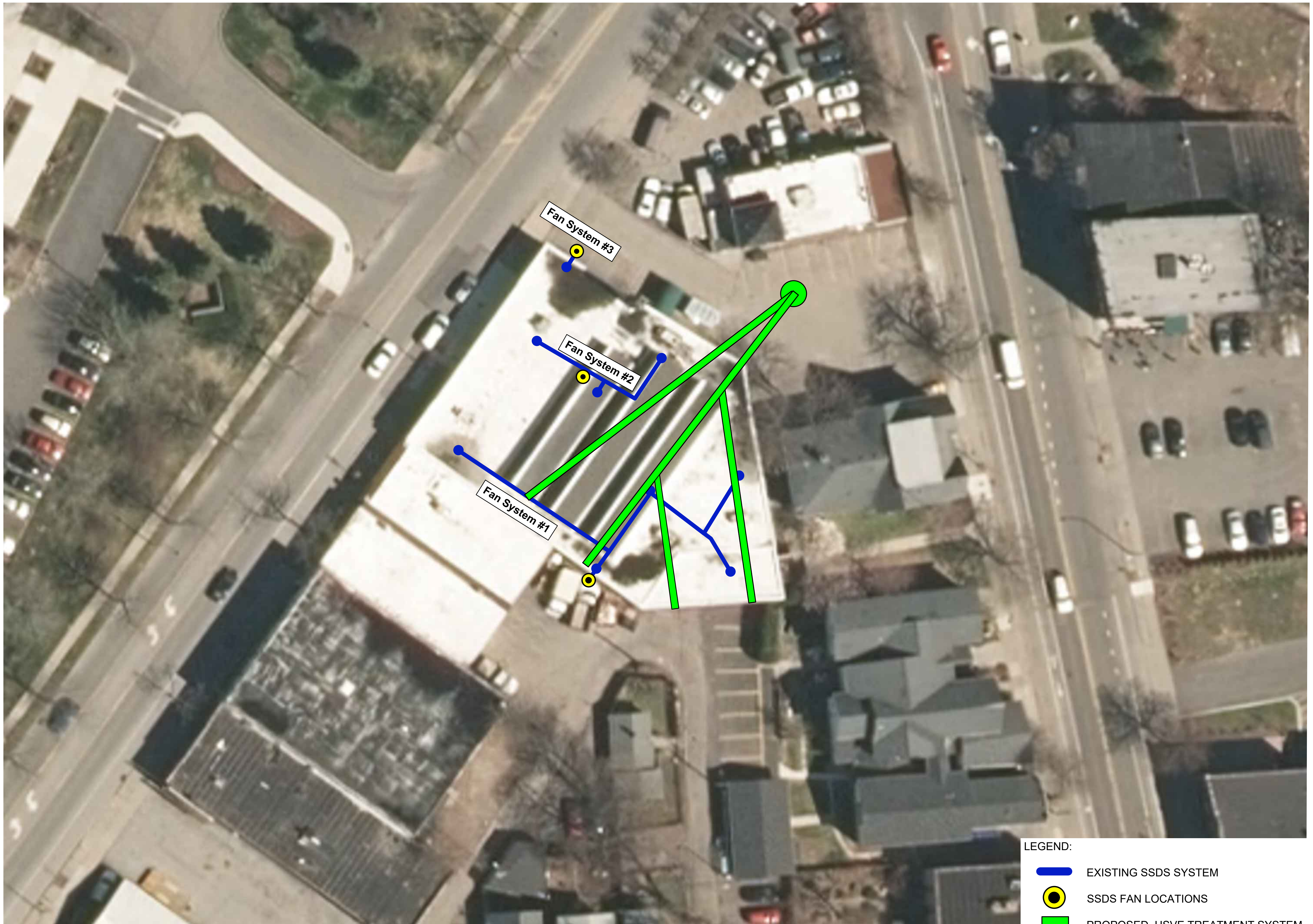
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"

CONCEPTUAL LAYOUT OF
REMEDIAL ALTERNATIVE #2

FORMER HALL WELTER SITE
(#828194)

ROCHESTER, NEW YORK

FIGURE
6



LEGEND:

- EXISTING SSDS SYSTEM
- SSDS FAN LOCATIONS
- PROPOSED HSVE TREATMENT SYSTEM

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1	10/19/2021	

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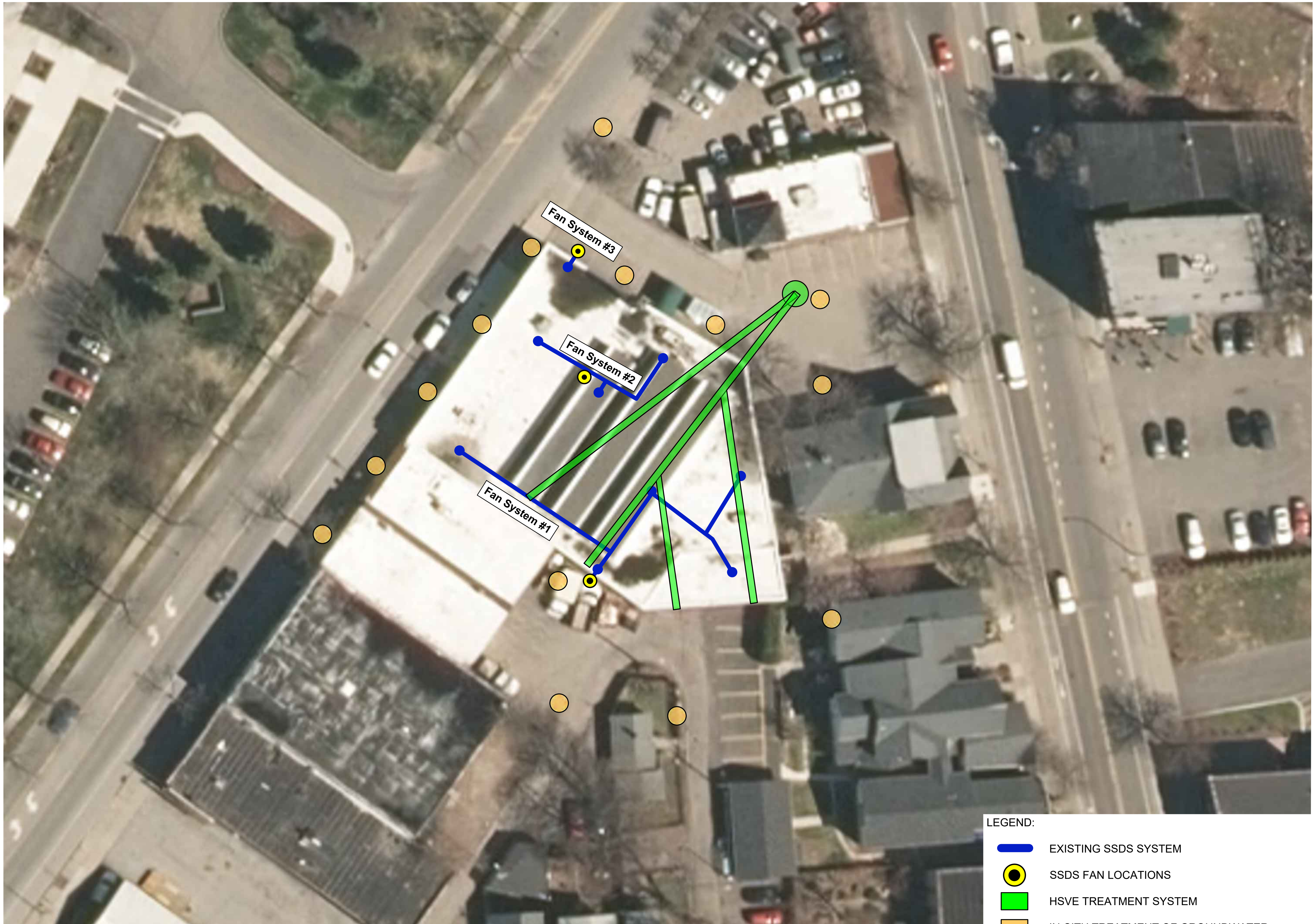
SHEET SIZE: 11"x17"

CONCEPTUAL LAYOUT OF REMEDIAL ALTERNATIVES #3

FORMER HALL WELTER SITE (#828194)

ROCHESTER, NEW YORK

FIGURE
7



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NORTH

0 20' 40'

REVISIONS		
NO.	DATE	
1	10/19/2021	

DESIGNED BY: SRT
DRAWN BY: SRT
REVIEWED BY: MEW

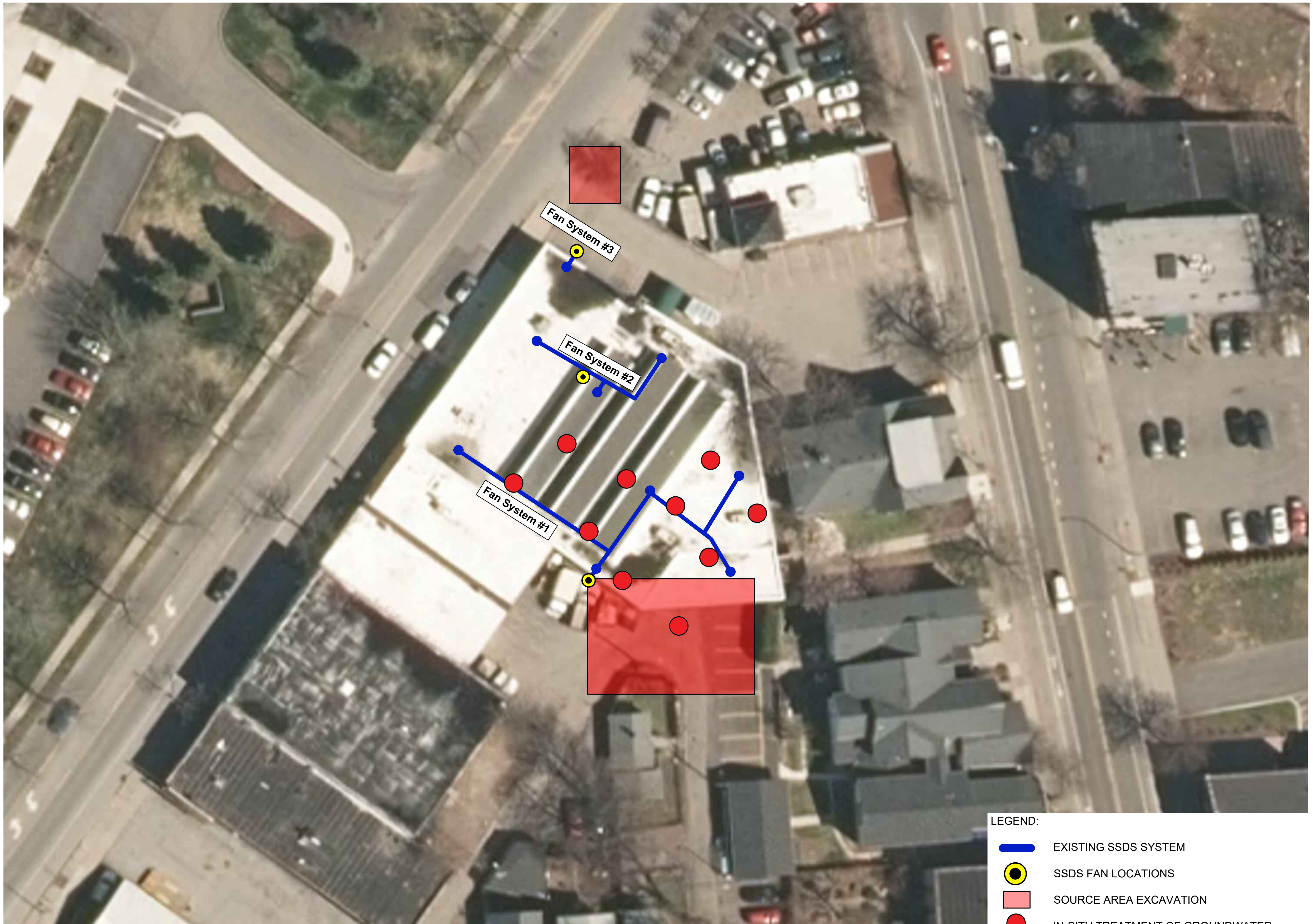
ISSUE DATE: 10/19/2021
PROJECT NUMBER: DEC1008.P3
SHEET SIZE: 11"x17"

CONCEPTUAL LAYOUT OF REMEDIAL ALTERNATIVE #4

FORMER HALL WELTER SITE (#828194)

ROCHESTER, NEW YORK

FIGURE 8



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0 20' 40'

REVISIONS		
NO.	DATE	

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REVIEWED BY: MEW

ISSUE DATE: 10/19/2021

PROJECT NUMBER: DEC1008.P3

SHEET SIZE: 11"x17"

CONCEPTUAL LAYOUT OF REMEDIAL ALTERNATIVE #5

FORMER HALL WELTER SITE (#828194)

ROCHESTER, NEW YORK

FIGURE 9

TABLES

Table 1 - Alternative 1 Cost Analysis
No Action
Hall Welter Site, 38-46 Mount Hope Avenue, Rochester, NY
D009808-08
HRP# DEC1008.P3

Alternative	Description	Remedy Description	Task	Year												Total Cost	Total Present Value Cost at 7%
				Capital Costs	1	2	3	4	5	6	7	8	9	10-20	21-30		
1	No Action	This alternative would leave the Site in its present condition and would not provide any additional protection to human health or the environment. The No Action alternative would not involve any surface soil, subsurface soil, groundwater, or soil vapor remedial activity. In addition, the No Action alternative would not place any institutional or engineering controls on the Site property, such as future land use restrictions, groundwater use limitations, and/or continued operation of SSDS's.	Record of Decision	$10,000													
			Total Cost by Year	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$10,000**	
		This Alternative is not protective and does not meet SCGs.	Discount Factor @ 7%	1.00	0.935	0.873	0.816	0.763	0.713	0.666	0.623	0.582	0.544	4.079	1.815		
			Present Value by Year	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0		**$10,000**

Table 2 - Alternative 2 Cost Analysis
Engineering and Institutional Controls with Site Management Plan
Hall Welter Site, 38-46 Mount Hope Avenue, Rochester, NY
D009808-08
HRP# DEC1008.P3

Alternative	Description	Remedy Description	Task	Year												Total Cost	Total Present Value Cost at 7%
				Capital Costs	1	2	3	4	5	6	7	8	9	10-20	21-30		
2	Engineering and Institutional Controls Site Management Plan	This alternative would not seek to actively remove or treat the contaminated media onsite but would disrupt the current or future exposure pathways through the imposition of Engineering Controls (ECs) and Institutional Controls (ICs). Engineering controls have already been enacted at the site as Interim Remedial Measures. ICs would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An Environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met. A Soil Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the Site. The amount of contaminant mass removed by this Alternative is negligible, and therefore only serves to mitigate rather than remediate. The duration for operation of an SSDS is assumed to be at least 30 years. Costs for O&M assume monthly O&M, annual indoor air monitoring (5 locations), and seminannual groundwater monitoring for VOCs only (8 locations). **This Alternative does not meet SCGs.**	Record of Decision	$10,000													
			Environmental Easement	$ 5,000													
			Site Management Plan (periodic review and updates)	$ 10,000					$2,500					$ 7,500	$ 5,000		
			Operation and Maintenance														
			Monthly O&M		$10,560	$10,560	$10,560	$10,560	$10,560	$10,560	$10,560	$10,560	$10,560	$116,160	$105,600		
			Annual Indoor Air Testing		$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$23,100	$21,000		
			Semi-annual GW Monitoring		$7,940	$7,940	$7,940	$7,940	$7,940	$7,940	$7,940	$7,940	$7,940	$87,340	$79,400		
			Annual Report		$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$27,500	$25,000		
			Contingency (~20%)	$5,000	$4,120	$4,120	$4,120	$4,120	$4,620	$4,120	$4,120	$4,120	$4,120	$46,820	$41,200		
			Total Cost by Year	$30,000	$27,220	$27,220	$27,220	$27,220	$30,220	$27,220	$27,220	$27,220	$27,220	$308,420	$277,200	**$863,600**	
			Discount Factor @ 7%	1.00	0.935	0.873	0.816	0.763	0.713	0.666	0.623	0.582	0.544	4.079	1.815		
			Present Value by Year	$30,000	$25,439	$23,775	$22,220	$20,766	$21,546	$18,138	$16,951	$15,842	$14,806	$115,884	$56,690		**$382,058**

Present Value for Years 10-20 includes an annual cost of $27,720 (including contingency) at a discount rate of 4.079. Periodic SMP reviews at $2,500 each at Years 10, 15 and 20 are added at their respective discount rates of 0.508, 0.362 and 0.258.

Present Value for Years 21-30 includes an annual cost of $27,720 (including contingency) at a discount rate of 1.815. Periodic SMP reviews at $2,500 each at Years 25 and 30 are added at their respective discount rates of 0.184 and 0.131.

Table 3 - Alternative 3 Cost Analysis
Soil Vapor Extraction, Engineering Controls, with Site Management Plan
Hall Welter Site, 38-46 Mount Hope Avenue, Rochester, NY
D009808-08
HRP# DEC1008.P3

Alternative	Description	Remedy Description	Task	Year												Total Cost	Total Present Value Cost at 7%
				Capital Costs	1	2	3	4	5	6	7	8	9	10-15	16-30		
3	Soil Vapor Extraction Engineering and Institutional Controls Site Management Plan	Soil vapor extraction (SVE) can be used to actively reduce sorbed contaminant mass from vadose zone soils in the overburden. The presence of this mass in soils has the potential to contribute to an accumulation of concentrations of COCs in soil vapor beneath the Site building, as well as serve as a potential ongoing source to groundwater, thereby adversely affecting both groundwater quality, and contribution to vapor migration concerns to other properties nearby. 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. SVE can be used in combination with ongoing SSDS as an engineering control, as well as monitoring of soil vapor and groundwater conditions through an SMP. This Alternative does not actively remediate concentrations fo CVOCs in groundwater, and relies soley upon mass reduction in soil to reduce future contribution of source material to the dissolved-phase plume. Costs assume that no additional data collection will be necessary to design the SVE system, and that the SSDS in place may continue to operate without significant modifications. Costs assume monthly O&M after an initial startup period (includes system testing for carbon breakthrough), and periodic testing of indoor air on an annual basis (5 locations). Costs assume semi-annual groundwater monitoring for VOCs only (8 locations) for a period of 7 years, and biennially thereafter until 15 years. Assmes the SVE system will operate for a period of no longer than 5 years, with discontinuation of SSDS two years following completion of SVE operation as an added measure of safety along with post-remediation monitoring.	Record of Decision	$10,000													
			Remedial Design Work Plan	$20,000													
			Construction Completion Report	$7,500													
			Environmental Easement	$ 5,000													
			Site Management Plan (periodic review and updates)	$ 10,000					$2,500					$2,500			
			Installation of Horizontal SVE														
			Drilling Subcontractor	$ 35,000													
			Management	$ 2,800													
			Oversight	$ 15,000													
			Equipment and Installation	$ 50,000													
			Waste Disposal	$ 15,000													
			Electrical	$ 10,000													
			Permitting	$ 5,000													
			Startup, Troubleshooting and O&M	$ 19,800													
			Operation and Maintenance														
			SSDS and SVE Monthly O&M	$25,200	$25,200	$25,200	$7,200	$7,200	$7,200	$7,200	$7,200						
			Annual Indoor Air Testing	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100						
			Semi-annual GW Monitoring	$7,900	$7,900	$7,900	$7,900	$7,900	$7,900	$7,900	$7,900						
			Annual GW Monitoring										$4,000	$11,900	$0		
			Annual Report	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$12,500	$0		
			Contingency (~20%)	$48,600	$7,500	$7,500	$3,900	$3,900	$4,400	$3,900	$3,900	$500	$1,300	$5,400	$0		
			Total Cost by Year	$291,400	$45,200	$45,200	$23,600	$23,600	$26,600	$23,600	$23,600	$3,000	$7,800	$32,300	$0	**$545,900**	
			Discount Factor @ 7%	1.00	0.935	0.873	0.816	0.763	0.713	0.666	0.623	0.582	0.544	2.593	3.301		
			Present Value by Year	$291,400	$42,243	$39,479	$19,265	$18,004	$18,965	$15,726	$14,697	$1,746	$4,243	$13,788	$0		**$479,556**

Present Value for Years 10-15 includes an annual cost of $3,000 (including contingency) at a discount rate of 2.593, and three biennial groundwater monitoring events at Years 11, 13 and 15 at a relative discount rates of 0.475, 0.415 and 0.362.

Table 4 - Alternative 4 Cost Analysis
Soil Vapor Extraction, In-Situ Groundwater Treatment, and a Site Management Plan
Hall Welter Site, 38-46 Mount Hope Avenue, Rochester, NY
D009808-08
HRP# DEC1008.P3

Alternative	Description	Remedy Description	Task	Year											Total Cost	Total Present Value Cost at 7%
				Capital Costs	1	2	3	4	5	6	7	8	9	10-30		
4	Soil Vapor Extraction In Situ Groundwater Treatment Site Management Plan	This Alternative includes all of Alternative 3, plus one additional active remedy to reduce concentrations in the dissolved-phase beneath the Site. Soil vapor extraction (SVE) can be used to actively reduce sorbed contaminant mass from vadose zone soils in the overburden. The presence of this mass in soils has the potential to contribute to an accumulation of concentrations of COCs in soil vapor beneath the Site building, as well as serve as a potential ongoing source to groundwater, thereby adversely affecting both groundwater quality, and contribution to vapor migration concerns to other properties nearby. Horizontal SVE wells have the best 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. While vertical SVE wells may be possible, horizontal wells are considered for this cost evaluation. SVE can be used in combination with ongoing SSDS as an engineering control, as well as monitoring of soil vapor and groundwater conditions through an SMP. In addition, this alternative adds an active remedy to actively reduce concentrations in the dissolved-phase plume through biological treatment via donor circulation to reduce the overall duration of monitoring. Costs assume that no additional data collection will be necessary to design the SVE system, and that the SSDS in place may continue to operate without significant modifications. Costs assume monthly O&M after an initial startup period (includes system testing for carbon breakthrough), and periodic testing of indoor air on an annual basis (5 locations). Assumes the SVE system will operate for a period of no longer than 5 years, with SSDS to continue for a 2-year period following. Assumes an insitu application of electron donor (CarbStrate or similar) through a recirculation loop for continuous application (14 treatment wells). Assumes treatment objectives can be reached in 3 years of operation. Costs assume quarterly groundwater monitoring for VOCs and monitored natural attenuation parameters (iron, manganese, sulfate, nitrate, field parameters) (8 locations) for a period of 3 years during treatment and annually for a period of 2 years following.	Record of Decision	$10,000												
			Remedial Design Work Plan	$20,000												
			Construction Completion Report	$7,500												
			Environmental Easement	$ 5,000												
			Site Management Plan (periodic review and updates)	$ 10,000					$2,500							
			Installation of Horizontal SVE													
			Drilling Subcontractor	$ 35,000												
			Management	$ 2,800												
			Oversight	$ 15,000												
			Equipment and Installation	$ 50,000												
			Waste Disposal	$ 15,000												
			Electrical	$ 10,000												
			Permitting	$ 5,000												
			Startup, Troubleshooting and O&M	$ 19,800												
			GW In-situ Treatment													
			Drilling Subcontractor	$ 35,000												
			Management	$ 4,200												
			Oversight	$ 24,000												
			Equipment and Installation (per vendor Quote)	$ 75,000												
			Waste Disposal	$ 15,000												
			Electrical	$ 10,000												
			Permitting	$ 5,000												
			Startup, Troubleshooting and O&M	$ 6,000												
			Operation and Maintenance													
			SSDS, SVE and GWM Injection Monthly O&M	$35,750	$35,750	$35,750	$7,200	$7,200	$7,200	$7,200	$7,200					
			Annual Indoor Air Testing	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100	$2,100					
			Quarterly GW Monitoring	$15,000	$15,000	$15,000	$15,000									
			Annual GW Monitoring					$7,500	$7,500							
			Annual Report	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500					
			Contingency (~20%)	$86,900	$11,100	$11,100	$5,400	$3,900	$4,400	$2,400	$2,400	$0	$0	$0		
			Total Cost by Year	$521,550	$66,450	$66,450	$32,200	$23,200	$26,200	$14,200	$14,200	$0	$0	$0	**$764,450**	
			Discount Factor @ 7%	1.00	0.935	0.873	0.816	0.763	0.713	0.666	0.623	0.582	0.544	5.894		
			Present Value by Year	$521,550	$62,103	$58,040	$26,285	$17,699	$18,680	$9,462	$8,843	$0	$0	$0		**$722,662**

Table 5 - Alternative 5 Cost Analysis
Source Area Excavation, In-Situ Groundwater Treatment, and a Site Management Plan
Hall Welter Site, 38-46 Mount Hope Avenue, Rochester, NY
D009808-08
HRP# DEC1008.P3

Alternative	Description	Remedy Description	Task	Year							Total Cost	Total Present Value Cost at 7%
				Capital Costs	1	2	3	4	5	6-30		
5	Source Excavation (Assumes Building Demolition) In Situ Groundwater Treatment Site Management Plan	This Alternative assumes that the building has been removed (costs are not considered for this effort), and that the slab can be readily removed/ penetrated, or is absent to support extensive soils testing beneath the building. Extensive testing of subsurface soils could pinpoint the location for soil excavation and allow installation of in-situ groundwater treatment infrastructure to achieve compliance with groundwater criteria. Additonal investigation is included for this reason. In order to evaluate this Alternative, an assumption has been made that 1,750 cubic yards (up to 2,450 tons) of soil may be excavated from the southeastern loading dock area and the area near MW-5. Active injection of ERD chemical into the overbuden and bedrock aquifer could be achieved by installing injection wells and adding donor to polish residual dissolved-phase concentrations of CVOCs. Costs assume injection into up to 5 bedtrock wells and 5 overburden wells. Costs assume 2 injection events. The following additional assumptions have been made to develop costs presented here: - Project duration of 60 days. - Shoring will be required. - Groundwater encountered and removed from de-watering (14,000 gpd over 14 days) can be treated onsite and discharged to sewer. - Given known concentrations of CVOCs in soil, though currently a listed waste (waste solvent), an exemption can be obtained to allow soil disposal as non-hazardous. - Bonding and insurance may be necessary. An SMP may be necessary for Site monitoring until such time that groundwater conditions meet criteria. Given the relatively low groundwater concentrations present prior to source removal, this duration is assumed to be relatively short, not to exceed 3 years post active treatment.	Record of Decision	$10,000								
			Remedial Design Work Plan	$20,000								
			Investigation to Delineate Excavation	$25,000								
			Remedial Investigation and Design	$35,000								
			Construction Completion Report		$7,500							
			Environmental Easement	$ -								
			Site Management Plan (periodic review and updates)	$ 5,000								
			Building Demolition									
			Management	$ 5,000								
			Demolition and disposal	$ 150,000								
			Excavation									
			Management	$ 3,500								
			Bonding and Insurance, Permitting	$ 35,000								
			Survey	$ 15,000								
			Oversight	$ 75,000								
			Shoring (Mob./Demobe., materials, and installation/removal)	$ 495,000								
			Excavation and Stockpiling ($15.cy)	$ 26,250								
			Reloading for Disposal ($8/cy)	$ 14,000								
			Waste Disposal (soil) $130/ton non-haz T&D - 2,450 tons	$ 318,500								
			Wastewater Treatment and Disposal	$ 45,000								
			Backfill and Compaction ($35/cy)	$ 61,250								
			Site Restoration (2,700 sf @ $10/sf)	$ 27,000								
			Groundwater Injections									
			Drilling Subcontractor	$ 47,500								
			Management	$ 2,800								
			Drilling Oversight	$ 12,000								
			GWM Injection (x 2)	$25,000	$25,000							
			Quarterly GW Monitoring	$29,900	$29,900							
			Semi-annual GW Monitoring			$15,000	$15,000					
			Annual GW Monitoring					$7,500				
			Annual Reporting	$2,500	$2,500	$2,500	$2,500	$2,500				
			Contingency (~20%)	$297,000	$13,000	$3,500	$3,500	$2,000	$0	$0		
			Total Cost by Year	$1,782,200	$77,900	$21,000	$21,000	$12,000	$0	$0	**$1,914,100**	
			Discount Factor @ 7%	1.00	0.935	0.873	0.816	0.763	0.713	8.309		
			Present Value by Year	$1,782,200	$72,804	$18,342	$17,142	$9,155	$0	$0		**$1,899,643**

Table 6 - Comparative Summary of Alternatives

Hall Welter Site, 38-46 Mount Hope Avenue, Rochester, NY
D009808-08
HRP# DEC1008.P3

		Threshold Criteria		Balancing Criteria									
Alternative	**Remedy Description**	**Overall Protectiveness of Public Health and the Environment**	**Compliance with the SCGs**	**Long-Term Effectiveness and Permanence**	**Reduction of Toxicity, Mobility, and Volume Through Treatment**	**Short-Term Impact and Effectiveness**	**Implementability**	**Cost Effectiveness**	**Land Use**	**Community Acceptance**	**Green Remediation**	**TOTAL SCORE**	**Comments**
1 No Action	This alternative would leave the Site in its present condition and would not provide any additional protection to human health or the environment. The No Action alternative would not involve any surface soil, subsurface soil, groundwater, or soil vapor remedial activity. In addition, the No Action alternative would not place any institutional or engineering controls on the Site property, such as future land use restrictions, groundwater use limitations, and/or continued operation of SSDS's.	NO	NO	NA	NA	NA	NA	NA $10,000	NA	NA	NA	NA	Though the least expensive and most readily implementable option, this Alternative does not meet SCGs.
2 Engineering and Institutional Controls Site Management Plan	This alternative would not seek to actively remove or treat the contaminated media onsite but would disrupt the current or future exposure pathways through the imposition of Engineering Controls (ECs) and Institutional Controls (ICs). Engineering controls have already been enacted at the site as Interim Remedial Measures. ICs would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An Environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met. A Soil Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the Site.	YES	NO	NA	NA	NA	NA	NA $863,600	NA	NA	NA	NA	This Alternative keeps the current mitigation of soil vapor through SSDS operation in place for the long-term with no appreciable reduction in contaminant mass. Though this Alternative is protective of the primary receptor pathway, by leaving the majority of contamination in place, this Alternative fails to comply with SCGs.
3 Soil Vapor Extraction Engineering Controls Site Management Plan	Soil vapor extraction (SVE) can be used to actively reduce sorbed contaminant mass from vadose zone soils in the overburden. The presence of this mass in soils has the potential to contribute to an accumulation of concentrations of COCs in soil vapor beneath the Site building, as well as serve as a potential ongoing source to groundwater, thereby adversely affecting both groundwater quality, and contribution to vapor migration concerns to other properties nearby. 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. SVE can be used in combination with ongoing SSDS as an engineering control, as well as monitoring of soil vapor and groundwater conditions through an SMP.	YES	YES	4	3	4	4	4 $545,900	4	5	4	**32**	This Alternative keeps the current mitigation of soil vapor through SSDS operation in place while also taking action to reduce sorbed soil mass to improve the long-term outcome. This Alternative is protective of receptors by mitigating soil vapor while reducing sorbed soil mass, which in turn reduces impacts to groundwater and soil vapor. While costs are higher for this alternative than for Alternative 2, it limits the duration needed for mitigation, and can meet SCGs with time. Finally, this Alternative is the least-cost option to meet SCGs with a nomically longer treatment duration than Alternative 4 below.
4 Soil Vapor Extraction In Situ Groundwater Treatment Site Management Plan	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 SSDS, as well as long-term monitoring under the SMP. In addition, this alternative adds an active remedy to actively reduce concentrations in the dissolved-phase plume through in-situ chemical or biological treatment to reduce the overall duration of monitoring.	YES	YES	4	4	4	3	3 $764,450	4	4	3	29	Similar to Alternative 3, this Alternative reduces the duration for long-term monitoring of groundwater, as active treatment of groundwater is included. Though this Alternative scores similarly to Alternative 3, costs for this Alternative are higher than Alternative 3, with little added benefit apart from a shortened monitored duration.
5 Source Excavation (Assumes Building Demolition) In Situ Groundwater Treatment Site Management Plan	This Alternative assumes that the building has been removed (costs are not considered for this effort), and that the slab can be readily removed/ penetrated to support extensive soils testing beneath the building. Extensive testing of subsurface soils could pinpoint the location for soil excavation and allow installation of in-situ groundwater treatment infrastructure to achieve compliance with groundwater criteria. In order to evaluate this Alternative, an assumption has been made that 1,700 cubic yards of soil may be excavated from the southeastern loading dock area and the area near MW-5, and an amendment applied to the backfill to support residual treatment of soils and improve conditions to support degradation of CVOCs in groundwater in the overburden aquifer. Active injection of some ISCO or ERD chemical into the overbuden and bedrock aquifer could be achieved by installing injection wells and adding chemical to polish residual dissolved-phase concentrations of CVOCs. An SMP may be necessary for Site monitoring until such time that groundwater conditions meet criteria.	YES	YES	5	5	5	1	1 $1,914,100	1	3	1	22	This Alternative was included to consider a remedial option whereby the Site may be returned to pre-release conditions. This Alterntive is best applied if the building is razed and the slab removed to allow for free access to the building footprint, which does not agree with current land use. Given that the major pathway to a receptor is presumably via soil vapor intrusion of sorbed contaminants beneath the building, full removal of impacted soils and groundwater may not be desirable, as the feasibility of carrying out this remedial option are low, and costs an order of magnitude above Alternatives 3 and 4 above.

Scoring above was evaluated on a scale of 1 to 5, where 1 = Lowest likelihood of meeting a criteria, and 5 = Highest likelihood of meeting a criteria.

NA = Not Applicable. This Alternative was not evaluated on the balancing criteria because the threshold criteria were not met.

Overall Protectiveness of Public Health and the Environment - This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.
Compliance with SCGs - Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria.

Long-Term Effectiveness and Permanence - This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain onsite 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.

Reduction of Toxicity, Mobility, and Volume through Treatment - For this criterion, preference is given to alternatives that permanently and significantly reduce the toxicity, mobility and volume of the contamination at the Site.

Short-Term Impact and Effectiveness - This criterion evaluates potential short-term impacts on the community, workers, and the environment during remedial construction. The length of time needed to achieve RAOs is also estimated and compared against the other alternatives.

Implementability - This criterion evaluates the technical and administrative feasibility to implement each remedial alternative. Technical feasibility includes difficulties associated with the implementation of the remedy and the ability to monitor its effectiveness. Administrative feasibility includes the availability of the necessary personnel and materials along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, etc.

Cost Effectiveness - Capital costs and annual operation, maintenance, and monitoring costs are estimated for each remedial alternative and compared on a present worth basis. In addition, a long-term evaluation of costs is evaluated to weigh the cost/benefit ratio of applying a more active remedy versus a passive remedy over time, particularly if all other factors are equal to discern a preferred remedy for selection.
Land Use – This criterion evaluates each remedial alternative with respect to the current, intended, and reasonably anticipated future land use.
Community Acceptance - Community concerns regarding selection of a remedial alternative will be considered.
Green Remediation - Considers all environmental effects of the remedy implementation, evaluates the size of the environmental footprint.

APPENDIX A

HDR Remedial Investigation Report, February 2020

FINAL
REMEDIAL INVESTIGATION REPORT

Former Hall Welter Site

(NYSDEC Site Number 828194)

NYSDEC STANDBY ENGINEERING CONTRACT
Work Assignment #D007625-39

PREPARED FOR

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

625 BROADWAY
ALBANY, NEW YORK 12233

FEBRUARY 2020

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CERTIFICATION

I, Erich Zimmerman, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

NYS Professional Engineer # 081831

Date: February 27, 2020

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ACRONYMS AND ABBREVIATIONS

“Hg	Inches of Mercury
µg/kg	Micrograms per Kilogram
µg/l	Micrograms per Liter
$\mu g/m^3$	Micrograms per Cubic Meter
amsl	Above Mean Sea Level
bgs	Below Ground Surface
Cis-1,2-DCE	Cis-1,2-Dichloroethylene
COC	Chain of Custody
DPT	Direct Push Technology
DUSR	Data Usability Summary Report
DVS	Data Validation Services
ESA	Environmental Site Assessment
FAP	Field Activities Plan
ft	Feet
ft/ft	Feet/Foot
HSA	Hollow-Stem Auger
IDW	Investigation-Derived Waste
L	Liter
LaBella	LaBella Associates, P.C.
LCS	LCS, Inc.
mg/kg	Milligrams per Kilogram
Nothnagle	Nothnagle Drilling, Inc.
NRC	National Response Corporation
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene
PFAS/PFOA	Per- and Polyfluoroalkyl Substances/Perfluorooctanoic Acid
PID	Photoionization Detector
ppm	Parts per Million
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
Ravi	Ravi Engineering & Land Surveying P.C.
RECs	Recognized Environmental Conditions
RI	Remedial Investigation
SCO	Soil Cleanup Objective
SSDS	Sub-Slab Depressurization System
SVI	Soil Vapor Intrusion
SVOC	Semi-Volatile Organic Compound
TCE	Trichloroethylene
TOGS	Technical and Operation Guidance Series
UST	Underground Storage Tank
VOC	Volatile Organic Compound

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1.0 INTRODUCTION

This Final Remedial Investigation (RI) Report for the Former Hall Welter Site (the "site") was prepared by Henningson, Durham & Richardson, Architecture and Engineering PC (HDR), in association with HDR Engineering, Inc. as part of New York State Department of Environmental Protection (NYSDEC) Contract D007625, Work Assignment #39.

This RI Report has been developed to summarize RI environmental data, along with historical data for on-site as well as off-site areas of the Site. The RI field activities were conducted by HDR in 2017, 2018, and 2020 in an effort to further characterize and delineate the extent of subsurface contamination at the Site. The RI, which covered seven residential/commercial properties, targeted on-site soil and groundwater contamination and off-site soil vapor intrusion (SVI).

1.1 Background

1.1.1 Site Description

The Former Hall Welter Site is located at 38-46 Mt Hope Ave on a 0.39-acre parcel. The site is located in the South Wedge area of the City of Rochester, Monroe County, New York (**Figure 1**). The site is currently developed with a vacant 13,700 square-foot multi-occupant commercial structure (site building) and a small parking lot. It is bordered to the north and south by commercial properties (Rochester Used Car Dealers and AmeriGlide Rochester), to the east by residential properties (SBL No. 121.48-1-76 and 121.48-1-75) and Orion Alley, and to the west by Mt Hope Ave. **Figure 2** provides an aerial image of the site, with property boundaries, buildings, and other reference features. The main building, a one-story, pentagon-shaped structure of approximately 160-feet (ft) long by 100-ft wide, is the dominant feature of the site and was used to repair vehicles and as a brass warehouse prior to 1942. The site is currently zoned as mixed commercial and residential.

1.1.2 Site History

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. The site was occupied by The Rochester Rehabilitation Center from 1988-2014.

1.2 Remedial Investigation Objectives

The objective of this Remedial Investigation was to better delineate the extent of volatile organic compounds (VOCs) identified within soil and groundwater at the site during previous investigations (see Section 2.0 below). Previous investigation could not identify an on-site source of chlorinated VOC impacts to groundwater. A vertical column of impacted soil was not observed in soil borings, and the highest headspace readings encountered in site soils were observed to be from saturated soils, indicating likely transport in groundwater from an upgradient location.

The RI activities were therefore conducted to delineate the VOC source area and evaluate off-site soil vapor and indoor air impacts to nearby properties. Groundwater samples from the existing as well as new monitoring wells were also collected and evaluated to further delineate the contamination plume.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS

Historic site operations and material handling practices have led to impacts to on-site and off-site environmental media including, but not necessarily limited to, soil, groundwater, and indoor air. Previous environmental assessments/investigations were performed in 2013-2014 to determine the source of soil, groundwater, and indoor air contamination at the site, and are summarized below.

2.1 Phase I Environmental Site Assessment (September 2013)

A Environmental Site Assessment (ESA) was completed by LCS, Inc. (LCS) in September 2013. The LCS's ESA report identified six known or suspected recognized environmental conditions (RECs) including lack of documentation relative to the removal of an 6,000-gallon heating oil underground storage tank (UST) in 1988, historical manufacturing operations including solvent use at the site by a former owner, and use of the adjacent properties to the north and west of the site.

2.2 Phase II Environmental Site Assessment (October 2013)

In October 2013, LaBella Associates, P.C. (LaBella) performed a Phase II ESA (LaBella, 2013a) at the site to address the following issues:

- An assessment of soil and groundwater conditions in the location of a 6,000-gallon heating oil UST reportedly removed from the north side of the site building.
- Historic site use, including automotive service, machine shop/manufacturing, and chemical use at the s ite.

Eight outdoor soil borings (designated GP-1 through GP-8) were completed at the site on October 22, 2013. Based on the findings of the investigation, petroleum impacts were not identified in the location of the former 6,000-gallon heating oil UST. The distribution of soil borings and samples collected were consistent with those typically collected during closure of a tank of this size, and the sand and gravel material encountered in the proximate center of the former UST was consistent with commonly used fill material. As such, the former UST was determined to no longer be of concern. Temporary overburden groundwater monitoring wells were installed in boreholes GP-05 and GP-06, designated as GPMW-5 and GPMW-6, respectively.

The chlorinated VOC tetrachloroethene (PCE) was detected in soil and groundwater samples collected during the investigation. Trichloroethene (TCE) and cis-1,2-Dichloroethene (DCE) were detected in groundwater at the site as well. The concentrations of PCE detected in soil were below NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs). Groundwater concentrations, while relatively low, were above NYSDEC Technical and Operation Guidance Series (TOGS) 1.1.1 standards.

Based on the findings of the Phase II ESA, it could not be determined if the PCE, TCE, and Cis-1,2-DCE concentrations detected at the site originate from the site or from an off-site location.

LaBella recommended additional investigation to determine the presence of a source area beneath the site building or a potential off-site location.

2.3 Supplemental Phase II Environmental Site Assessment (November 2013)

An additional seven (7) soil borings (designated GP-9 through GP-15) and four (4) temporary overburden groundwater monitoring wells were installed within the footprint of the site building by LaBella in November 2013 (LaBella, 2013b). Temporary overburden groundwater monitoring wells were installed in boreholes GP-9, GP-10, GP-11, and GP-12 (designated as GPMW-9 through GPMW-12, respectively). The combined findings of the investigations performed indicated that low concentrations of VOCs were present in soils site-wide at concentrations below 6 New York Codes, Rules and Regulations (NYCRR) Part 375-6.8(a) Unrestricted Use SCOs. Chlorinated VOCs were detected in groundwater site wide at concentrations exceeding NYSDEC TOGS 1.1.1 standards. Overburden groundwater flow at the site was determined to the northwest, towards Mt Hope Ave and the Genesee River. Based on field observations and laboratory analysis, an on-site source of chlorinated VOC impacts was not identified. A vertical column of impacted soil was not observed in soil borings, and the highest headspace readings encountered in site soils were from saturated soils, indicating likely transport in groundwater from an upgradient location. Based on the potential for an upgradient off-site source of chlorinated VOC impacts, additional investigation was recommended by LaBella.

2.4 Bedrock Well Installation/Vapor Intrusion Assessment (February 2014)

In February 2014, a bedrock groundwater monitoring well (BW-01) was installed upgradient of the site building in the access street located south of the loading dock of the site building (LaBella, 2014). TCE was detected in a soil sample obtained during the well installation at a concentration of 3,500 micrograms per kilogram (μg/kg), at a depth of one (1) ft below ground surface (bgs). The high concentration detected in shallow soil is indicative of a nearby surface release in the vicinity of monitoring well BW-01. It should be noted that BW-01 was installed approximately 15 feet south of the loading dock door due to the presence of the storm sewer and overhead obstructions. A vertical column was not observed in the soil boring; however, given the presence of the foundation wall it is unlikely that the source of the release was inside the site building.

Sub-slab and corresponding indoor air samples were collected from three locations in the building. The findings of the vapor intrusion assessment indicate that chlorinated VOCs were present at significant concentrations in sub-slab vapor and at concentrations above New York State Department of Health (NYSDOH) mitigation criteria in the ambient air in the building. Based on the air sampling results, LaBella recommended that a sub-slab depressurization system (SSDS) be installed at the site to mitigate sub-slab vapors.

Previous investigation sampling locations are depicted in figures provided in **Appendix A**.

2.5 Installation of Sub-Slab Depressurization System (2014-2015)

In 2014, an SSDS was installed in the basement of the site building. In December 2015, upgrades to the SSDS were performed, including the following:

1. Sealing all openings in cracks in the basement floor.
2. Installation of an alarm and U-tube style manometer on the SSDS system piping.
3. Extension of the SSDS exhaust piping above the roofline.
4. Performance of a pressure field extension test in the basement.

The pressure field extension test indicated sub-slab pressure measurements ranging from -0.026 to -0.473 inches of water column measured on a digital micromanometer.

On December 31, 2015, indoor air sampling was performed at locations corresponding to previous sample locations (**Appendix A**). TCE was detected in indoor air at elevated concentrations in two of the three sample locations. Thereafter, LaBella sealed boreholes that went through the concrete (including one adjacent to sample location Ambient Air 3) that were left after the previous investigations.

2.6 2016 - Additional SSDS Installation

In February 2016, Center Properties engaged LaBella to install a second SSDS in the storage area on the south side of the site building (**Appendix A**). The system consisted of a four-inch diameter PVC pipe installed into a suction pit proximate to GPMW-11. The piping penetrated the southern exterior wall and was equipped with a Radonaway® GP-501 centrifugal vent fan. The exhaust piping extended above the roofline and was equipped with a bird screen. The system was equipped with an alarm on a separate circuit and a U-tube style manometer. At the time of system installation, the boreholes from previous investigations were sealed with concrete. Follow-up indoor air sampling and/or pressure field extension tests have been performed, and upgrades to the existing systems have been in progress since then.

2.7 Summary of Previous Investigations

Based upon previous investigation conducted at the site, the primary contaminants of concern include PCE, TCE, and Cis-1,2-DCE. Chlorinated VOCs were present in soils but only at concentrations below unrestricted use SCOs, with the exception of one sample which had a concentration of 3.5 milligrams per kilogram (mg/kg) at location BW-1 from 3 inches to 1 ft bgs. PCE was detected in groundwater at concentrations up to 430 micrograms per liter (µg/l). TCE was detected in groundwater at concentrations up to 150 µg/l. Sub-slab soil vapor samples taken on-site indicate that PCE (350 micrograms per cubic meter [µg/m^3]), TCE (33,000 µg/m^3), and Cis-1,2-DCE (52 µg/m^3) are present in the soil vapor.

3.0 RI SITE INVESTIGATION

Components of the RI included SVI investigation conducted in February 2018 for five off-site properties surrounding the site. The second mobilization of the RI included geophysical survey for buried utility clearance conducted in May 2018, followed by direct push technology (DPT) soil boring installation and monitoring well drilling during May and June 2018. Once intrusive activities were completed, HDR collected groundwater samples/elevation data and surveyed the six newly installed, as well as one existing, monitoring wells.

All field activities were conducted in accordance with the HDR – NYSDEC Program Field Activities Plan (FAP) and Program Quality Assurance Project Plan (QAPP). Details of the RI are outlined in the sections that follow.

3.1 Soil Vapor Intrusion Investigation

Prior to initiating SVI sampling, a field-inspection was conducted to identify proposed soil vapor sample locations within the study area (comprised of approximately 5 commercial/residential properties). NYSDEC provided available parcel ownership records for the area outlined for the program and helped secure access to five properties, including 48 and 50 Mt Hope Ave, 407-409 and 417 South Ave, and [redacted].

The SVI investigation began during the week of February 25, 2018 at five properties in the vicinity of the site, including 48 and 50 Mt Hope Ave, 407-409 and 417 South Ave, and [redacted]. In total, 16 air samples were collected for VOCs analysis, including five sub-slab (SS) samples, four outdoor ambient air (OA) samples, six indoor ambient air (IA) samples, and one duplicate IA sample. Field staff mobilized again on December 19, 2018 to collect an additional IA parent sample, IA duplicate sample, and OA sample at [redacted]. Approximate sample locations were sketched in the field notes and are shown in **Figure 2**, and a summary of air samples collected is provided in **Table 1**.

Samples were collected in six-liter (L) Summa canisters via 24-hour flow regulators. Regulator intakes for IA and OA samples were positioned several feet above the ground/floor surface, near the breathing zone. The IA duplicate sample setup was comprised of two Summa canisters connected to a common regulator via a T-fitting. Temporary SS points were installed to just below the concrete slab using a 3/8-inch drill and hand tools. Tubing was inserted into the SS point, and the annulus between the tubing and temporary point was sealed using VOC-free sealing gum. The seal was checked by flooding the outside of the seal with tracer gas while monitoring the concentration of tracer out of the tubing. Once an acceptable seal was achieved, the tubing was attached to a sample canister/regulator setup, and sampling began.

Sample collection was considered complete when the canister's vacuum reached approximately -5 inches of mercury ("Hg) or 24 hours had elapsed from the sample start time, whichever occurred first. Upon retrieval of filled sample canisters, the SS points were cleared and patched with cement.

NYSDOH Indoor Air Quality Questionnaire and Building Inventory forms were completed for each property and are included in **Appendix B**. Information on each building's construction and use was obtained by interviewing the property owner or knowledgeable occupant. The product inventory portion of the form was completed for each property by visual inspection of any chemicals, paints, enamels, etc. found stored near the sample locations. In the warehouse at 50 Mt Hope Ave, the inventory includes estimated quantities of product, as a large portion of products was not readily accessible. Each property/building was sketched showing the approximate locations of the sample canisters, exterior/interior walls, supports, stairs, doors, utilities, sumps, slab penetrations, product storage areas, and other notable features.

Sampling logs detailing the sample collection parameters and sample chain of custody (COC) forms are included in **Appendix C**.

Deviations from Work Plan:

- Due to the large footprint and multiple rooms in the basement at 407-409 South Ave, an additional IA sample was included for this property.
- Since the basement at 50 Mt Hope Ave does not extend to the southeast end of the property beneath the warehouse, an additional SS sample location in the ground-level warehouse was included for this property.
- An OA sample was not collected at 48 Mt Hope Ave, due to the proximity to the OA sample location for 50 Mt Hope Ave.
- With DEC's approval, the proposed SS sample at [redacted] was not collected, as the basement floor was of dirt construction, and the soil vapor was in direct communication with the indoor ambient air.
- A duplicate IA sample was collected at [redacted] on March 1, 2018; however, due to a regulator malfunction, both the parent and duplicate samples canisters collected inadequate sample volumes for analysis. To address this data gap, an additional IA parent sample, IA duplicate sample, and OA sample were collected at [redacted] during the December 2018 mobilization.

3.2 Subsurface Investigation

HDR mobilized to the site on May 14, 2018 to begin subsurface investigation by conducting on- and off-site soil borings and installing monitoring wells. All intrusive work was performed by Nothnagle Drilling, Inc. (Nothnagle). Prior to drilling, each location was cleared for utilities using surface geophysics, performed by Ravi Engineering & Land Surveying P.C. (Ravi), and subsurface hand-clearing by Nothnagle.

Seven soil borings were installed on-site and on nearby properties, including 48 and 50 Mt Hope Ave; 401-405, 407-409, 415, and 417 South Ave; and along Orion Alley. Locations of all soil borings were surveyed by Ravi and are listed in **Table 2** and shown on **Figure 2**. The 2.25-inch diameter borings were installed via DPT and were logged and screened via photoionization detector (PID) continuously and sampled using the split-spoon method. All soil cores were continuously assessed by a geologist for soil type and evidence of impairment. Elevated PID readings (i.e., greater than 1 part per million [ppm]) were only observed in one of the seven soil borings, with the highest PID reading (1.2 ppm) measured at location SB201 between 3.5 and 4.5 ft bgs. Soil boring logs are provided in **Appendix C**.

In general, two to three soil samples were collected per drilling location at intervals of interest: at the surface, at intervals coincident with high PID readings, immediately above the groundwater table, and/or immediately above the bedrock. A total of 38 soil samples plus 15 Quality Assurance/Quality Control (QA/QC) samples were collected. All samples were analyzed for VOCs. Five of the 38 samples were also analyzed for semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals. A summary of soil samples collected during this mobilization is provided in **Table 3**, and sample COCs are provided in **Appendix C**.

Deviations from Work Plan:

- SB201 and SB209 were advanced via hand auger due to the low clearance inside the site building. Only two samples were collected at each of these locations.
- SB208 was cancelled due to carpeting covering the proposed location. No samples were collected at this location.
- MW205 was offset by about five feet away from its planned location to a nearby tree pit due to a utility line uncovered at the proposed location.

3.3 Monitoring Well Completion

During the week of May 21, 2018, six overburden monitoring wells and two bedrock monitoring wells were installed on-site and off-site on properties including 48 and 50 Mt Hope Ave; 401-405, 407-409, 415, and 417 South Ave; and along Orion Alley. Overburden wells (designated as MW201 to MW206) were installed to approximately 14 to 20 ft bgs, and two bedrock monitoring wells (designated as BW201 and BW202) were installed to approximately 30 ft bgs.

Borehole diameters of 2.25 inches were drilled using the hollow-stem auger (HSA) method. All wells were constructed with 2-inch PVC risers and a 10-ft long 0.01-inch PVC slot screen and finished with a flush mount casing and concrete skirt. The sand pack installed at each well extended 2 feet above the top of the screen, and was sealed with minimum of 2 feet of a bentonite seal. After the bentonite seal, the remainder of the boring at each well was filled with bentonite/Portland cement grout to 2 feet below the ground surface.

Monitoring well installation logs are provided in **Appendix C**. Surveyed well locations are shown on **Figure 2** and well construction details are summarized in **Table 4**.

3.4 Monitoring Well Development

Beginning on May 30, 2018, all newly installed monitoring wells and the existing bedrock well (BW1) were developed. A proactive mini typhoon pump was used to develop the wells and a water quality meter and a turbidity meter were used to measure stabilization criteria of the development water at regular intervals. Development continued until stable criteria were achieved over three successive readings or three full well volumes were removed, whichever occurred first.

However, due to prohibitively slow recharge rates at MW201, MW202, MW205, and MW206, neither stabilization nor three full well volumes were attained; instead, these wells were pumped dry, allowed to recharge, and then pumped dry several more times. Well development logs are provided in **Appendix C**.

Development water was stored in 55-gallon drums at the dock area of the main building off of Orion Alley. All investigation-derived waste (IDW) lids were properly sealed, and the staging area was secured with traffic cones and caution tape.

3.5 Groundwater Sampling

Two rounds of groundwater sampling were conducted at the site: the first round of groundwater sampling in June 2018 and the second round in January 2020. Prior to each sampling, a synoptic round of groundwater levels was collected using a depth to water indicator. Low flow purging was performed using bladder pumps in the first round and peristaltic pumps in the second round. A water quality meter and a turbidity meter were used to measure stabilization criteria of the purge water at regular intervals. Purging continued until stable criteria were achieved over three successive readings. During round one sampling, an additional groundwater sample was collected from the sump inside the site building via bailing.

A total of ten groundwater samples were collected from six overburden monitoring wells, three bedrock monitoring wells, and an on-site sump during the June 2018 sampling event. A total of nine groundwater samples were collected from six overburden and three bedrock monitoring wells during the January 2020 sampling event. Groundwater samples were shipped to Test America for laboratory analyses. Five QA/QC samples were also collected. All samples from both rounds of sampling were analyzed for VOCs; in addition, during the 2018 sampling event only, two samples were also analyzed for SVOCs, pesticides, PCBs, 1,4-Dioxane, per- and polyfluoroalkyl substances/perfluorooctanoic acid (PFAS/PFOA), and metals. A summary of groundwater samples collected during both mobilizations is provided in **Table 5**, and sample COCs are provided in **Appendix C**.

3.6 Site Survey

A site survey was conducted on May 31, 2018 by Ravi Engineering and Land Surveying, P.C. and included the site building outline, marked utilities, all monitoring well locations, tops of monitoring well casings, and soil borings locations installed during the RI. The horizontal datum was references NAD83 (US-feet); elevation data references NAVD88 (US-feet) for all surveys and mapping. Survey vertical accuracy is 0.01 feet and horizontal accuracy is 0.1 feet. Survey documents are provided in **Appendix D.**

3.7 Investigation-Derived Waste Handling

All 55-gallon drums filled with IDW were positioned at the dock area of the main building directly off Orion Alley. Drum corrosion was observed when the drums were picked up for disposal. National Response Corporation (NRC) decanted IDW water into new drums for transportation.

One soil sample and one aqueous sample were collected for waste characterization analysis. Both of the analytical results were in accordance with the disposal facility requirements.

The estimated total quantities of the drums requiring disposal increased from 6 to 18 due to additional soil/groundwater generation during drilling. The subsequent loading and transportation as well as effort associated with providing Vac-Truck and operator to extract IDW water from corroded on-site drums to new drums, supplying seven additional new drums and labor requiring to decontaminate, crush, and dispose as steel scrap of 11 55-gallon drums resulted in additional costs for the IDW management.

In total, 18 IDW drums were disposed by NRC to a solid waste disposal facility. IDW handling documents are contained in **Appendix E**. Site photographs are shown in **Appendix F**.

During the January 2020 groundwater sampling event, two IDW drums were disposed by NRC to a solid waste facility. IDW handling documents are contained in **Appendix E.**

4.0 PHYSICAL CHARACTERISTICS

4.1 Geology and Hydrogeology

The geology of the site consists of fill material overlaying native material consisting of fine to brown sand with varying amounts of silt and gravel, overlaying a thin layer of light gray fine sand with varying amounts of gravel overlaying the bedrock. Below the asphalt and gravel bedding, approximately 4- to 5-ft thick layer of fill material consisting of dark brown medium sand and gravel with concrete pieces and debris was observed to a depth of approximately 5 feet bgs. Underlying the fill material, an approximately 10-ft thick layer of native soil generally consisting of brown fine to medium sand with varying amounts of silt and fine gravel was observed to a depth of approximately 15 feet bgs. Underlying the brown sand layer, approximately 3 to 5 feet of soil consisting of light gray fine sand with fine to medium gravel was observed to a depth of approximately 15 to 18 feet bgs. Bedrock consisting of gray limestone was observed at a depth of approximately 17 to 19 feet bgs. Saturated soils, indicative of perched groundwater, were encountered at a depth of approximately 9 to 12 feet bgs. The general bedrock elevation onsite was determined to be approximately 495 feet above mean sea level (amsl).

The water table was encountered at a depth of 9 to 12 ft bgs during the gauging event conducted in June 2018 and in January 2020. Groundwater elevations are provided in **Table 6**. The highest groundwater elevation was observed at MW203, located north (upgradient) of the site building (501.7/501.95 ft amsl). The lowest groundwater elevation was observed at MW205 and MW206 (500.5 ft and 500.64 ft amsl), located northwest (downgradient) of the site. Groundwater gauging conducted during the June 2018 sampling event indicated a groundwater flow direction to the northwest, with an overall horizontal hydraulic gradient of 0.007 feet/foot (ft/ft) between wells MW203 and MW205.

Similarly, the highest bedrock groundwater elevation was observed at BW1, located north (upgradient) of the site building (501.7/502.09 ft amsl). The lowest bedrock groundwater elevation was observed at BW201 (493.9 ft amsl), located northwest (downgradient) of the site. Groundwater gauging conducted during the June 2018 sampling event indicated a bedrock groundwater flow direction to the northwest, similar to overburden groundwater, with an overall horizontal hydraulic gradient of 0.05 ft/ft between wells BW1 and BW201. An interpreted groundwater contour map illustrating the direction of groundwater flow for the June 2018 event is shown in **Figure 3**.

5.0 NATURE AND EXTENT OF CONTAMINATION

This section presents the results of the 2018 RI sampling and laboratory analysis. The investigation results are presented below by the media of concern, including SVI, soil, and groundwater. The sample locations, sampling method, and analytical methods conducted for the 2018 RI were completed in accordance with the HDR – NYSDEC Program QAPP. The data are summarized, with corresponding figures and tables illustrating the sampling locations, sample identification numbers, and laboratory analytical results. An evaluation of these data and screening criteria comparisons are discussed in the sections below.

5.1 Applicable Criteria

The applicable criteria selected for comparison to the analyte concentrations detected in soil vapor, soil, and groundwater are listed below:

Soil-Vapor
Air sample analytical results were compared to NYSDOH Sub-Slab Vapor Concentration Decision Matrix Minimum Action Levels and Indoor Air Guideline Values.

Soil
Soil sample analytical results were compared to NYCRR Restricted Use SCOs – Protection of Groundwater and NYCRR Restricted Use SCO – Commercial.

Groundwater
Groundwater sample analytical results were compared to NYSDEC TOGS 1.1.1 Groundwater Standards.

5.2 Data Validation

SVI, soil, and groundwater analytical data from Chem Tech and Test America were submitted to Data Validation Services (DVS) for data validation. Data validation included a review of pertinent QA/QC data such as sample extraction and analysis, holding times, calibration, a review of laboratory blanks and QA/QC sample results, and a review of the analytical case narrative.

Upon receipt of the analytical laboratory reports (provided in **Appendix G**), a preliminary review of the data was performed by HDR to verify that all of the necessary paperwork, such as COCs, traffic reports, analytical reports, and deliverable packages, were present. HDR then sent the sample delivery groups to DVS which verified the qualitative and quantitative reliability of the data as the laboratory provided it and then performed a detailed quality assurance review.

DVS prepared detailed Data Usability Summary Reports (DUSRs) after conducting the data validation. A separate DUSR was prepared for each of the sample delivery groups associated with this RI. The DUSRs consist of a review of the laboratory deliverables, followed by a section that describes, on an item-by-item basis, the analytical results and any qualifications that were considered when evaluating the data. The qualifications were made by assessing the results submitted by the laboratory in terms of the technical requirements of the analytical methods (including QA/QC criteria) and data validation requirements. The DUSRs highlighted the data results that did not meet QC limits and therefore, may have required data qualification. The reports also indicated the data qualification actions taken as a result of these criteria. DUSRs for this RI are provided in **Appendix H**.

The analytical results for samples collected as part of the investigation are valid and usable with qualifications as noted in each DUSR. Data qualifiers were taken into account during the interpretation of the analytical results. Qualifier flags were limited to "U" for non-detects, "J" for estimated values based upon results of the validation, "UJ" for non-detect values that were estimated based on the validation, and "R" for values that were deemed as unusable during the validation process based on QC deficiencies. The results of TCE in sample, SB202-8.5-9.5-20180518, and its field duplicate were rejected due to inconsistent concentrations/elevated correlation. Overall, there was no significant impact regarding the usability of the data set.

Groundwater sampling data from the January 2020 event was not validated per NYSDEC request.

5.3 Air Sampling Results

All 17 SVI investigation samples were collected for TO-15 analysis. A total VOCs concentration for each SVI sample are provided on **Figure 4** and analytical results are summarized in **Table 7.**

Sub-Slab Sample Results

Exceedances of the NYSDOH Sub-Slab Vapor Concentration Decision Matrix Minimum Action Levels were encountered at two properties: 48 and 50 Mt Hope Ave. TCE exceeded the SS minimum action level of 6 μg/m^3 at 50 Mt Hope Ave, with highest concentration (3170 μg/m^3) detected in SVI201-SS1 located in the basement. TCE was detected at a concentration of 93 μg/m^3 at SVI201-SS2 located in the ground-floor warehouse and at a concentration 407 μg/m3 at SVI207-SS located in the basement of 48 Mt Hope Ave. The only other exceedance of the criteria (greater than 6 μg/m^3) was Cis-1,2-DCE detected at a concentration of 112 μg/m^3 at SVI201-SS1, located in the basement of 50 Mt Hope Ave property.

Similarly, elevated sub-slab total VOCs concentrations were detected at properties 48 and 50 Mt Hope Ave, located immediately southwest of the site building. These elevated concentrations include: 1566.2 μg/m^3 in the basement of 50 Mt Hope Ave, 560.1 μg/m^3 in the basement of 48 Mt Hope Ave, and 237.6 μg/m^3 in the ground-level warehouse of 50 Mt Hope Ave. A total VOCs concentration of less than 140 μg/m^3 was detected at all other sub-slab sampling locations.

Indoor Air Sample Results

No indoor air sample results exceeded NYSDOH Indoor Air Guideline Values.

The total VOCs in indoor air was detected at a concentration of 560.6 μg/m^3 in SVI207-IA2 (northeast corner of the 407-409 South Ave basement), at 176.3 μg/m^3 in SVI201-IA (50 Mt Hope Ave basement), and at 166.0 μg/m^3 in SVI207IA1 (center of the 407-409 South Ave basement).

Outdoor Air Sample Results

Total VOCs in outdoor air was detected at a concentration of 63.3 μg/m^3 at SVI203-OA at [redacted] during the December 2018 sampling.

5.4 Soil Sampling Results

The surface and subsurface soil sampling locations for the 2018 RI are summarized on **Figure 5**. In total, 38 soil samples soil samples were collected from a total of 15 locations. All soil samples were analyzed for VOCs. Five (5) of 38 samples were also analyzed for SVOCs, pesticides, PCBs, and metals. The laboratory analytical results were compared to the NYCRR Restricted Use SCO – Protection of Groundwater and NYCRR Restricted Use SCO – Commercial to evaluate the nature and extent of potential soil impacts in this RI. The soil contaminants of concern included Cis-1,2-DCE, PCE, and TCE, and concentrations exceeding the soil criteria for these analytes are summarized on **Figure 5** and discussed below. Soil analytical results with validated result qualifiers are summarized in **Tables 8A** and **8B**.

SVOCs, pesticides, PCBs, and metals were not detected at concentrations greater than either the NYCRR Restricted Use SCO – Protection of Groundwater or NYCRR Restricted Use SCO – Commercial criteria in any of the soil samples collected from 15 locations.

A total of nine (9) different VOCs were detected in the surface and/or subsurface soil samples collected at the site. No VOCs were detected at concentrations greater than the NYCRR Restricted Use SCO – Commercial criteria. Of the nine (9) detected VOCs, only Cis-1,2-DCE, PCE, and TCE were detected at concentrations greater than the NYCRR Restricted Use SCO – Protection of Groundwater at five (5) of the 15 sample locations (SB201, SB202, SB204, SB205, and MW206). The exceedance at SB202 was rejected during the data validation process since the field duplicate soil sample results did not co-relate well with the sample collected at this location. Of VOCs, only PCE was detected above the criteria by more than a factor of ten at two sampling locations (SB201 and SB205) located in the southwest corner of the site building. The VOCs detected at each location are shown on **Figure 5** and all concentrations that exceed the NYCRR Restricted Use SCO – Protection of Groundwater criteria are shown in bold font on the figure.

The soil VOC concentrations exceed the NYCRR Restricted Use SCO – Protection of Groundwater criteria by the greatest factor at soil boring SB205 from the depth interval of 0.5-1 ft bgs, where Cis-1,2-DCE and TCE were detected at concentrations of 1.6 and 44 mg/kg, respectively. At soil boring SB204 from the depth interval of 8.5-9 feet bgs, TCE was detected at the second highest concentration of 1.5 mg/kg. At soil boring MW206 from the depth interval of 11-11.5 feet bgs, PCE was also detected at a concentration of 1.9 mg/kg, slightly higher than the 1.3 mg/kg criteria. At soil boring SB205, from the deepest depth interval of 14.8-15.3 feet bgs, PCE was detected at a concentration of 1.6 mg/kg.

Overall, the VOC soil sampling results show that relative to the NYCRR Restricted Use SCO – Protection of Groundwater criteria, the VOC concentrations detected in the site soil are relatively low in magnitude, and limited to the southwest corner of the site Building.

5.5 Groundwater Sampling Results

Groundwater sampling locations for the 2018 RI are shown on **Figure 6**. In total, ten (10) groundwater samples were collected from six (6) overburden monitoring wells, three (3) bedrock monitoring wells, and one (1) on-site sump located inside the site building during the June 2018 sampling event. In January 2020, all monitoring wells except for the on-site sump were resampled at NYSDEC's request. All groundwater samples were analyzed for VOCs. Two (2) of ten (10) samples were also analyzed for SVOCs, pesticides, PCBs, 1,4-Dioxane, PFAS/PFOA, and metals. The laboratory analytical results were compared to the NYSDEC TOGS 1.1.1 Groundwater Standards to evaluate nature and extent of groundwater impacts in this RI. The groundwater contaminants of concern included Cis-1,2-DCE, dichloromethane, PCE, trans-1,2-DCE, and TCE. Analytical results are summarized on **Figure 6** and are discussed below. Groundwater analytical results with result qualifiers are summarized in **Tables 9A** and **9B**. Interpreted iso-concentration lines of PCE and TCE in groundwater are depicted on **Figure 7**.

SVOCs, pesticides, PCBs, 1,4-Dioxane, and PFAS/PFOA were not detected at concentrations greater than NYSDEC TOGS 1.1.1 Groundwater Standards in any of the groundwater samples collected from 10 locations.

A total of seven (7) different VOCs were detected in the groundwater samples collected at the site. Of the seven (7) detected VOCs, only Cis-1,2-DCE, dichloromethane, PCE, trans-1,2-DCE, and/or TCE were detected at concentrations greater than the NYSDEC TOGS 1.1.1 Groundwater Standards at all locations except for the on-site sump location. No VOCs were detected in groundwater sample collected from the on-site sump.

Overburden Groundwater Samples (June 2018):

Cis-1,2-DCE was detected in all groundwater samples from on- and off-site overburden wells at concentrations ranging from 6.7 µg/l at MW205 (8.7-18.7 feet bgs) to 36 µg/l at MW201 (6-16 feet bgs). Dichloromethane was detected at only one location, MW204 (9.5 µg/l at 7.8-17.8 feet bgs). PCE was detected in all groundwater samples from on- and off-site overburden wells at concentrations ranging from 0.45 µg/l at MW201 (6-16 feet bgs) to 960 µg/l at MW203 (4.8-14.8 feet bgs). Trans-1,2-DCE was detected slightly higher than the respective criteria of 5 µg/l at only one location, MW201 (5.2 µg/l at 6-16 feet bgs). TCE was detected in all groundwater samples from on- and off-site overburden wells at concentrations ranging from 12 µg/l at MW202 (4.3-14.3 feet bgs) to 93 µg/l at MW203 (4.8-14.8 feet bgs).

The most elevated contaminants of concern were detected at monitoring well MW203 which is located south of the site building, upgradient from the site.

Bedrock Groundwater Samples (June 2018):

Cis-1,2-DCE was detected at concentrations ranging from 7.6 µg/l at BW1 (16.5-25 feet bgs) to 110 µg/l at BW201 (21.3-31.3 feet bgs) in all groundwater samples from bedrock well locations. Dichloromethane was not detected in any of the bedrock wells. PCE was detected at concentrations ranging from non-detect at BW201 (21.3-31.3 feet bgs) to 390 µg/l at BW202

(23.1-30.3 feet bgs). Trans-1,2-DCE was detected at a concentration greater than the NYSDEC TOGS 1.1.1 Groundwater Standard at only one location, BW201 (21.3-31.3 feet bgs). TCE was detected in all bedrock groundwater samples at concentrations ranging from 20 µg/l at BW201 (21.3-31.3 feet bgs) to 26 µg/l at BW202 (23.1-30.3 feet bgs).

The most elevated contaminants of concern were detected at bedrock monitoring wells BW201 located downgradient and BW202 located side-gradient from the site.

Groundwater Resampling (January 2020):

Analytical results from the January 2020 sampling event appear to be similar to the analytical results from the June 2018 sampling event, except at bedrock monitoring well location BW202. PCE was detected at concentration 390 ug/l in June 2018 versus non-detect in January 2020. In contrast, cis-DCE was detected at concentration 11 ug/l in June 2018 versus 58 ug/l in January 2020.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Results Summary and Data Interpretation

SVOCs, pesticides, PCBs, and metals were not detected at concentrations greater than either the NYCRR Restricted Use SCO – Protection of Groundwater or NYCRR Restricted Use SCO – Commercial criteria in any of the soil samples collected from 15 locations. No VOCs were detected at concentrations greater than the NYCRR Restricted Use SCO – Commercial criteria. Only Cis-1,2-DCE, PCE, and TCE were detected at concentrations greater than the NYCRR Restricted Use SCO – Protection of Groundwater at five (5) of the 15 sample locations (SB201, SB202, SB204, SB205 and MW206). The findings of the subsurface investigation conducted at the site indicate that relative to the NYCRR Restricted Use SCO – Protection of Groundwater criteria, the VOC concentrations detected in the site soil are relatively low in magnitude, and limited to the southwest corner of the site Building. Based on these data, there does not appear to be a significant VOC source in soil, and any continued contribution of VOC concentrations from soil into groundwater will be minimal due to the asphalt/concrete cover present at the site.

Chlorinated VOCs, principally cis-1,2-DCE, TCE and PCE, were identified in overburden groundwater in side-gradient, as well as upgradient, portions of the site. Contaminants of concern were detected at the highest concentrations in monitoring well MW203, which is located southwest of the site building, at the most upgradient edge of the site boundary, indicating that constituents detected at this location are most likely from a source around MW203. The potential exists that a significant source of these compounds is present at the southwest corner of the site building in the vicinity of SB205/MW203.

Chlorinated solvents, mainly PCE and its degradation products (TCE and cis-1,2-DCE), were also identified in bedrock groundwater downgradient and upgradient from the site. The concentrations of chlorinated VOCs in bedrock groundwater, above groundwater standards for cis-1,2-DCE, PCE, and TCE, are indicative of significant impacts. As the groundwater flows northwest, the concentrations of PCE/TCE generally decrease. Vinyl chloride was not detected in any of the groundwater samples collected as part of this RI, indicating that limited biodegradation is occurring within the shallow/bedrock aquifer.

The highest total VOCs sub-slab results were encountered at SVI201 and SVI205, located at 50 and 48 Mt Hope Ave, respectively. Of the five properties that underwent sub-slab sampling, three require no further action ([redacted], 407-409 South Ave, and 417 South Ave), and SSDS is recommended at the remaining two (48 and 50 Mt Hope Ave).

The extent of subsurface soil and groundwater contamination within the on-site area has been adequately delineated, characterized, and documented in this RI report. The data collected to evaluate the nature and extent of contamination are sufficient to develop remedial alternatives for the Site.

7.0 REFERENCES

LaBella Associates, P.C., 2013a. Phase II Environmental Site Assessment, 46 Mount Hope Avenue, Rochester, New York. November 2013.

LaBella Associates, P.C., 2013b. Supplemental Phase II Environmental Site Assessment, 46 Mount Hope Avenue, Rochester, New York. December 2013.

LaBella Associates, P.C., 2014. Bedrock Groundwater Evaluation & Vapor Intrusion Assessment, 46 Mount Hope Avenue, Rochester, NY. February 2014.

LaBella Associates, P.C., 2016a. Indoor Air Sampling Work Plan, 46 Mount Hope Avenue, Rochester, NY. April 2016.

LaBella Associates, P.C., 2016b. Preliminary Data – Indoor Air Sampling, 46 Mount Hope Avenue, Rochester, NY. August 2016.

NYSDEC, 2017. Inactive Hazardous Waste Disposal Site Classification Notice, Former Hall-Welter Site. February 2017.

Tables

Table 1 - Air Sampling Summary
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

					Analytical Method
Location ID	**Sample ID**	**Type of Air Sample**	**Sample Type**	**Date Sampled**	**TO-15**
SVI201	SVI201-IA-20180227-20180227	Indoor Air	Normal	2/27/2018	X
SVI201	SVI201-OA-20180227-20180227	Outdoor Air	Normal	2/27/2018	X
SVI201	SVI201-SS1-20180227-20180227	Sub-Slab	Normal	2/27/2018	X
SVI201	SVI201-SS2-20180227-20180227	Sub-Slab	Normal	2/27/2018	X
SVI202	SVI202-IA-20180227-20180227	Indoor Air	Normal	2/27/2018	X
SVI202	SVI202-OA-20180227-20180227	Outdoor Air	Normal	2/27/2018	X
SVI202	SVI202-SS-20180227-20180227	Sub-Slab	Normal	2/27/2018	X
SVI203	SVI203-OA-20180301-20180301	Outdoor Air	Normal	3/1/2018	X
SVI203	SVI-IA1-2018-12-19-20181220	Indoor Air	Normal	12/20/2018	X
SVI203	SVI-IA1D-2018-12-19-20181220	Indoor Air	Field Duplicate	12/20/2018	X
SVI203	SVI-OA1-2018-12-19-20181220	Outdoor Air	Normal	12/20/2018	X
SVI205	SVI205-IA-20180227-20180227	Indoor Air	Normal	2/27/2018	X
SVI205	SVI205-SS-20180227-20180227	Sub-Slab	Normal	2/27/2018	X
SVI207	SVI207-IA1-20180227-20180227	Indoor Air	Normal	2/27/2018	X
SVI207	SVI207-IA2-20180227-20180227	Indoor Air	Normal	2/27/2018	X
SVI207	SVI207-OA-20180227-20180227	Outdoor Air	Normal	2/27/2018	X
SVI207	SVI207-SS-20180227-20180227	Sub-Slab	Normal	2/27/2018	X

Notes:

TO Toxic Organics

Table 2 - Sampling Locations
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

Client: NYSDEC
Facility: Former Hall Welter Site
Location: Rochester, Monroe County, New York
Survey Date: 5/31/2018

Horizontal Datum: NAD83 NYSPCS Western Zone

Location ID	Street Address	NYSPCS Western Zone		Geographic Coordinates (NAD83)		Elevation* (ft amsl)
		Northing	Easting	Latitude	Longitude	
BP-1	38-46 Mt. Hope Avenue	1148600.512	1408888.173	43.1481824°	-077.6068144°	512
BW-1	[redacted]	1148452.625	1408946.936	43.1477748°	-077.6066007°	510.3237
BW-201	38-46 Mt. Hope Avenue	1148549.762	1408836.779	43.1480448°	-077.6070092°	511.6563
BW-202	22-32 Mt. Hope Avenue	1148608.241	1408964.439	43.1482012°	-077.6065283°	513.1765
MW-201	50 Mt. Hope Avenue	1148453.078	1408895.861	43.1477777°	-077.6067920°	511.1403
MW-202	415 South Avenue	1148499.119	1409016.178	43.1479001°	-077.6063392°	511.9861
MW-203	417 South Avenue	1148459.429	1408981.558	43.1477924°	-077.6064707°	510.5369
MW-204	401-405 South Avenue	1148563.765	1408980.818	43.1480786°	-077.6064689°	513.1713
MW-205	38-46 Mt. Hope Avenue	1148578.972	1408854.483	43.1481244°	-077.6069416°	511.7399
MW-206	22-32 Mt. Hope Avenue	1148636.198	1408922.211	43.1482792°	-077.6066853°	512.9612
SB-201	38-46 Mt. Hope Avenue	1148480.79	1408925.123	43.1478528°	-077.6066812°	512.5751
SB-202	48 Mt. Hope Avenue	1148488.059	1408911.273	43.1478732°	-077.6067328°	512.6557
SB-204	50 Mt. Hope Avenue	1148443.472	1408910.355	43.1477509°	-077.6067382°	510.9567
SB-205	[redacted]	1148453.887	1408959.009	43.1477779°	-077.6065554°	510.4987
SB-206	48 Mt. Hope Avenue	1148470.708	1408920.267	43.1478253°	-077.6066998°	511.2644
SB-207	417 South Avenue	1148449.793	1408975.452	43.1477661°	-077.6064940°	510.626
SB-209	38-46 Mt. Hope Avenue	1148486.941	1408899.209	43.1478705°	-077.6067780°	511.774
SVI-201	50 Mt. Hope Avenue	NA	NA	NA	NA	NA
SVI-202	417 South Avenue	NA	NA	NA	NA	NA
SVI-203	[redacted]	NA	NA	NA	NA	NA
SVI-205	48 Mt. Hope Avenue	NA	NA	NA	NA	NA
SVI-207	407-409 South Avenue	NA	NA	NA	NA	NA

Notes:

amsl	Above mean sea level
BTOC	Below top of inner casing
in	Inches
ft	Feet
NA	Not available
NAD	North American 1983 Datum
NYSPCS	New York State Plane Coordinate System
*	Elevation of inner casing for well locations; elevation of ground surface for all other location types

Table 3 - Soil Sampling Summary
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

								Analytical Method	SW6010C	SW8081B	SW8082A	SW8260C	SW8270D
Location ID	**Sample ID**	**Sample Type**	**Easting**	**Northing**	**Date Sampled**	**Start Depth**	**End Depth**	**Unit**	**Metals**	**Pesticides**	**PCBs**	**VOCs**	**SVOCs**
BW201	BW201-1.5-2-20180516	Normal	1408836.779	1148549.762	5/16/2018	1.5	2	ft bgs				X	
BW201	BW201-8.5-9.5-1-20180529	Field Duplicate	1408836.779	1148549.762	5/29/2018	8.5	9.5	ft bgs	X	X	X	X	X
BW201	BW201-8.5-9.5-20180529	Normal	1408836.779	1148549.762	5/29/2018	8.5	9.5	ft bgs	X	X	X	X	X
BW202	BW202-0.5-1-20180516	Normal	1408964.439	1148608.241	5/16/2018	0.5	1	ft bgs				X	
BW202	BW202-11-12-1-20180524	Field Duplicate	1408964.439	1148608.241	5/24/2018	11	12	ft bgs	X	X	X	X	X
BW202	BW202-11-12-20180524	Normal	1408964.439	1148608.241	5/24/2018	11	12	ft bgs	X	X	X	X	X
MW201	MW201-0.5-1-20180515	Normal	1408895.861	1148453.078	5/15/2018	0.5	1	ft bgs				X	
MW201	MW201-15.5-16-20180521	Normal	1408895.861	1148453.078	5/21/2018	15.5	16	ft bgs				X	
MW201	MW201-8.5-9-20180521	Normal	1408895.861	1148453.078	5/21/2018	8.5	9	ft bgs				X	
MW202	MW202-0.5-1-20180516	Normal	1409016.178	1148499.119	5/16/2018	0.5	1	ft bgs				X	
MW202	MW202-9.5-10-20180525	Normal	1409016.178	1148499.119	5/25/2018	9.5	10	ft bgs				X	
MW203	SB203-0.5-1-20180515	Normal	1408981.558	1148459.429	5/15/2018	0.5	1	ft bgs				X	
MW203	SB203-18.5-19-20180517	Normal	1408981.558	1148459.429	5/17/2018	18.5	19	ft bgs				X	
MW203	SB203-9-9.5-20180517	Normal	1408981.558	1148459.429	5/17/2018	9	9.5	ft bgs				X	
MW204	MW204-0.5-1-20180516	Normal	1408980.818	1148563.765	5/16/2018	0.5	1	ft bgs				X	
MW204	MW204-11-11.5-20180523	Normal	1408980.818	1148563.765	5/23/2018	11	11.5	ft bgs				X	
MW204	MW204-16.5-17.5-1-20180523	Field Duplicate	1408980.818	1148563.765	5/23/2018	16.5	17.5	ft bgs	X	X	X	X	X
MW204	MW204-16.5-17.5-20180523	Normal	1408980.818	1148563.765	5/23/2018	16.5	17.5	ft bgs	X	X	X	X	X
MW205	MW205-0.5-1-20180516	Normal	1408854.483	1148578.972	5/16/2018	0.5	1	ft bgs				X	
MW205	MW205-9-10-1-20180529	Field Duplicate	1408854.483	1148578.972	5/29/2018	9	10	ft bgs	X	X	X	X	X
MW205	MW205-9-10-20180529	Normal	1408854.483	1148578.972	5/29/2018	9	10	ft bgs	X	X	X	X	X
MW206	MW206-0.5-1-20180516	Normal	1408922.211	1148636.198	5/16/2018	0.5	1	ft bgs				X	
MW206	MW206-11-11.5-20180524	Normal	1408922.211	1148636.198	5/24/2018	11	11.5	ft bgs				X	

Table 3 - Soil Sampling Summary
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

								Analytical Method	SW6010C	SW8081B	SW8082A	SW8260C	SW8270D
Location ID	**Sample ID**	**Sample Type**	**Easting**	**Northing**	**Date Sampled**	**Start Depth**	**End Depth**	**Unit**	**Metals**	**Pesticides**	**PCBs**	**VOCs**	**SVOCs**
SB201	SB201-0.5-1-20180517	Normal	1408925.123	1148480.79	5/17/2018	0.5	1	ft bgs				X	
SB201	SB201-3.5-4-20180517	Normal	1408925.123	1148480.79	5/17/2018	3.5	4	ft bgs				X	
SB202	SB202-0.5-1-20180515	Normal	1408911.273	1148488.059	5/15/2018	0.5	1	ft bgs				X	
SB202	SB202-15-15.5-20180521	Normal	1408911.273	1148488.059	5/21/2018	15	15.5	ft bgs				X	
SB202	SB202-8.5-9.5-1-20180518	Field Duplicate	1408911.273	1148488.059	5/18/2018	8.5	9.5	ft bgs	X	X	X	X	X
SB202	SB202-8.5-9.5-20180518	Normal	1408911.273	1148488.059	5/18/2018	8.5	9.5	ft bgs	X	X	X	X	X
SB204	SB204-0.5-1-20180515	Normal	1408910.355	1148443.472	5/15/2018	0.5	1	ft bgs				X	
SB204	SB204-15-15.5-20180521	Normal	1408910.355	1148443.472	5/21/2018	15	15.5	ft bgs				X	
SB204	SB204-8.5-9-20180521	Normal	1408910.355	1148443.472	5/21/2018	8.5	9	ft bgs				X	
SB205	SB205-0.5-1-20180515	Normal	1408959.009	1148453.887	5/15/2018	0.5	1	ft bgs				X	
SB205	SB205-14.8-15.3-20180517	Normal	1408959.009	1148453.887	5/17/2018	14.8	15.3	ft bgs				X	
SB205	SB205-8.5-9-20180517	Normal	1408959.009	1148453.887	5/17/2018	8.5	9	ft bgs				X	
SB206	SB206-0.5-1-20180515	Normal	1408920.267	1148470.708	5/15/2018	0.5	1	ft bgs				X	
SB206	SB206-17.5-18-20180521	Normal	1408920.267	1148470.708	5/21/2018	17.5	18	ft bgs				X	
SB206	SB206-8-8.5-20180518	Normal	1408920.267	1148470.708	5/18/2018	8	8.5	ft bgs				X	
SB207	SB207-0.5-1-20180515	Normal	1408975.452	1148449.793	5/15/2018	0.5	1	ft bgs				X	
SB207	SB207-15-15.5-20180517	Normal	1408975.452	1148449.793	5/17/2018	15	15.5	ft bgs				X	
SB207	SB207-9-9.5-20180517	Normal	1408975.452	1148449.793	5/17/2018	9	9.5	ft bgs				X	
SB209	SB209-0.5-1-20180517	Normal	1408899.209	1148486.941	5/17/2018	0.5	1	ft bgs				X	
SB209	SB209-5-5.5-20180517	Normal	1408899.209	1148486.941	5/17/2018	5	5.5	ft bgs				X	

Notes:

ft bgs	Feet below ground surface
PCBs	Polychlorinated biphenyls
SVOCs	Semi-volatile organic compounds
VOCs	Volatile organic compounds

Table 4 - Monitoring Well Construction Details
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

Client: NYSDEC
Facility: Former Hall Welter Site
Location: Rochester, Monroe County, New York
Wells Installed May 21 - 29, 2018
Drilling Contractor: Nothnagle Drilling, Inc.

Horizontal Datum: NAD83 NYSPCS Western Zone

Location ID	Street Address	Monitoring Well Type	Casing Material	Top of Casing Elevation (ft amsl)	Well Diameter (in)	Well Depth (ft BTOC)	Screen Interval (ft BTOC)
BP-1	38-46 Mt. Hope Avenue	Sump	NA	512	NA	NA	NA
BW-1	[redacted]	Bedrock	PVC	510.3237	2	25	16.5 - 25
BW-201	38-46 Mt. Hope Avenue	Bedrock	PVC	511.6563	2	31.33	21.33 - 31.33
BW-202	22-32 Mt. Hope Avenue	Bedrock	PVC	513.1765	2	30	21.33 - 30.33
MW-201	50 Mt. Hope Avenue	Overburden	PVC	511.1403	2	16	6 - 16
MW-202	415 South Avenue	Overburden	PVC	511.9861	2	14.25	4.25 - 14.25
MW-203	417 South Avenue	Overburden	PVC	510.5369	2	14.833	4.833 - 14.833
MW-204	401-405 South Avenue	Overburden	PVC	513.1713	2	17.75	7.75 - 17.75
MW-205	38-46 Mt. Hope Avenue	Overburden	PVC	511.7399	2	18.833	8.833 - 18.833
MW-206	22-32 Mt. Hope Avenue	Overburden	PVC	512.9612	2	20	10 - 20

Notes:

amsl	Above mean sea level
BTOC	Below top of inner casing
in	Inches
ft	Feet
NA	Not Applicable
NYSPCS	New York State Plane Coordinate System
PVC	Polyvinyl chloride

Table 5 - Groundwater Sampling Summary
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

								Analytical Method	E537-LL	SW6010C	SW8081B	SW8082A	SW8260C	SW8270D	SW8270DSIM
Location ID	Sample ID	Sample Type	Easting	Northing	Date Sampled	Start Depth	End Depth	Unit	PFAS/ PFOA	Metals	Pesticides	PCBs	VOCs	SVOCs	1,4-Dioxane
June 2018															
BP-1	SUMP-20180618	Normal	1408888.173	1148600.512	6/18/2018	0	0	ft bgs					X		
BW1	BP-1-20180620	Normal	1408946.936	1148452.625	6/20/2018	16.5	25	ft bgs					X		
BW201	BW201-20180618	Normal	1408836.779	1148549.762	6/18/2018	21.3	31.3	ft bgs	X	X	X	X	X	X	X
BW202	BW202-20180619	Normal	1408964.439	1148608.241	6/19/2018	21.3	30.3	ft bgs					X		
MW201	MW201-20180620	Normal	1408895.861	1148453.078	6/20/2018	6	16	ft bgs					X		
MW202	MW202-20180619	Normal	1409016.178	1148499.119	6/19/2018	4.3	14.3	ft bgs					X		
MW203	MW203-20180620	Normal	1408981.558	1148459.429	6/20/2018	4.8	14.8	ft bgs					X		
MW204	MW204-20180618	Normal	1408980.818	1148563.765	6/18/2018	7.8	17.8	ft bgs					X		
MW205	MW205-20180618	Normal	1408854.483	1148578.972	6/18/2018	8.7	18.7	ft bgs	X	X	X	X	X	X	X
MW205	MW205-20180618-1	Field Duplicate	1408854.483	1148578.972	6/18/2018	8.7	18.7	ft bgs	X	X	X	X	X	X	X
MW206	MW206-20180619	Normal	1408922.211	1148636.198	6/19/2018	10	20	ft bgs					X		
January 2020															
BW1	BW1-16.5-25-20200108	Normal	1408946.936	1148452.625	1/8/2020	16.5	25	ft bgs					X		
BW201	BW201-21.3-31.3-20200109	Normal	1408836.779	1148549.762	1/9/2020	21.3	31.3	ft bgs					X		
BW202	BW202-21.3-30.3-20200108	Normal	1408964.439	1148608.241	1/8/2020	21.3	30.3	ft bgs					X		
MW201	MW201-6-16-20200108	Normal	1408895.861	1148453.078	1/8/2020	6	16	ft bgs					X		
MW202	MW202-4.3-14.3-20200109	Normal	1409016.178	1148499.119	1/9/2020	4.3	14.3	ft bgs					X		
MW203	MW203-4.8-14.8-20200108	Normal	1408981.558	1148459.429	1/8/2020	4.8	14.8	ft bgs					X		
MW203	MW203-4.8-14.8-20200108-1	Field Duplicate	1408981.558	1148459.429	1/8/2020	4.8	14.8	ft bgs					X		
MW204	MW204-7.8-17.8-20200108	Normal	1408980.818	1148563.765	1/8/2020	7.8	17.8	ft bgs					X		
MW205	MW205-8.7-18.7-20200109	Normal	1408854.483	1148578.972	1/9/2020	8.7	18.7	ft bgs					X		
MW206	MW206-10-20-20200109	Normal	1408922.211	1148636.198	1/9/2020	10	20	ft bgs					X		

Notes:

ft bgs	Feet below ground surface
PCBs	Polychlorinated biphenyls
PFAS	Perfluoroalkyl substances
PFOA	Perfluorooctanoic acid
SVOCs	Semi-volatile organic compounds
VOCs	Volatile organic compounds

Table 6 - Groundwater Elevation Data
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

Well ID	NYSPCS Western Zone		Geographic Coordinates (NAD83)		Top of Casing Elevation (ft amsl)	Depth to Water (ft BTOC)	Water Elevation (ft amsl)	Depth to Water (ft BTOC)	Water Elevation (ft amsl)
	Northing	Easting	Latitude	Longitude		June 2018	June 2018	January 2020	January 2020
BP-1 (Sump)	1148600.512	1408888.173	43.1481824°	-077.6068144°	512	NA	NA	NA	NA
BW-1	1148452.625	1408946.936	43.1477748°	-077.6066007°	510.3237	8.62	501.70	8.23	502.09
BW-201	1148549.762	1408836.779	43.1480448°	-077.6070092°	511.6563	17.76	493.90	17.76	493.90
BW-202	1148608.241	1408964.439	43.1482012°	-077.6065283°	513.1765	13.28	499.90	12.70	500.48
MW-201	1148453.078	1408895.861	43.1477777°	-077.6067920°	511.1403	9.34	501.80	9.08	502.06
MW-202	1148499.119	1409016.178	43.1479001°	-077.6063392°	511.9861	10.39	501.60	10.20	501.79
MW-203	1148459.429	1408981.558	43.1477924°	-077.6064707°	510.5369	8.84	501.70	8.59	501.95
MW-204	1148563.765	1408980.818	43.1480786°	-077.6064689°	513.1713	12.07	501.10	11.89	501.28
MW-205	1148578.972	1408854.483	43.1481244°	-077.6069416°	511.7399	11.24	500.50	11.03	500.71
MW-206	1148636.198	1408922.211	43.1482792°	-077.6066853°	512.9612	12.46	500.50	12.32	500.64

Notes:

ft	Feet
amsl	Above mean sea level
BTOC	Below top of inner casing
NA	Not Applicable
NAD	North American 1983 Datum
NYSPCS	New York State Plane Coordinate System
*	Survey performed May 31, 2018

Table 7 - Sub-Slab Gas and Ambient Air Sample Results Summary
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

	Sample Type	NYSDOH Indoor Air Guideline Values (2)	Indoor Air Sample													
	Location ID		SVI201		SVI202		SVI203		SVI203		SVI205		SVI207		SVI207	
	Sample ID		SV1201-IA-20180227-20180227		SV1202-IA-20180227-20180227		SVI-IA1-20181219-20181220		SVI-IA1D-20181219-20181220		SV1205-IA-20180227-20180227		SV1207-IA1-20180227-20180227		SV1207-IA2-20180227-20180227	
	Sample Date		2/27/2018		2/27/2018		12/20/2018		12/20/2018		2/27/2018		2/27/2018		2/27/2018	
Analyte	Cas No.		Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.
1,1,1-Trichloroethane	71-55-6	NA	0.16	U	0.16	U	0.03	U	0.03	U	0.16	U	0.16	U	0.16	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	3.43	U	3.43	U	0.5	U	0.5	U	3.43	U	3.43	U	3.43	U
1,1,2-Trichloroethane	79-00-5	NA	2.73	U	2.73	U	0.5	U	0.5	U	2.73	U	2.73	U	2.73	U
1,1-Dichloroethane	75-34-3	NA	2.02	U	2.02	U	0.5	U	0.5	U	2.02	U	2.02	U	2.02	U
1,1-Dichloroethene	75-35-4	NA	1.98	U	1.98	U	0.5	U	0.5	U	1.98	U	1.98	U	1.98	U
1,2,4-Trichlorobenzene	120-82-1	NA	3.71	U	3.71	U	0.5	U	0.5	U	3.71	U	3.71	U	3.71	U
1,2,4-Trimethylbenzene	95-63-6	NA	4.52		2.46	U	0.5	U	0.5	U	0.98	J	0.84	J	1.28	J
1,2-Dibromoethane	106-93-4	NA	3.84	U	3.84	U	0.5	U	0.5	U	3.84	U	3.84	U	3.84	U
1,2-Dichlorobenzene	95-50-1	NA	3.01	U	3.01	U	0.5	U	0.5	U	3.01	U	3.01	U	3.01	U
1,2-Dichloroethane	107-06-2	NA	2.02	U	2.02	U	0.5	U	0.5	U	2.02	U	2.02	U	2.02	U
1,2-Dichloropropane	78-87-5	NA	2.31	U	2.31	U	0.5	U	0.5	U	2.31	U	2.31	U	2.31	U
1,2-Dichlorotetrafluoroethane	76-14-2	NA	3.49	U	3.49	U	0.5	U	0.5	U	3.49	U	3.49	U	3.49	U
1,3,5-Trimethylbenzene	108-67-8	NA	1.38	J	2.46	U	0.5	U	0.5	U	2.46	U	2.46	U	0.49	J
1,3-Butadiene	106-99-0	NA	1.11	U	1.11	U	0.5	U	0.5	U	1.11	U	1.11	U	1.11	U
1,3-Dichlorobenzene	541-73-1	NA	3.01	U	3.01	U	0.5	U	0.5	U	3.01	U	3.01	U	3.01	U
1,4-Dichlorobenzene	106-46-7	NA	3.01	U	3.01	U	0.5	U	0.5	U	3.01	U	3.01	U	3.01	U
1,4-Dioxane	123-91-1	NA	1.8	U	1.8	U	0.5	U	0.5	U	1.8	U	1.8	U	1.8	U
2,2,4-Trimethylpentane	540-84-1	NA	1.96	J	2.34	U	0.5	U	0.5	U	0.79	J	0.89	J	1.21	J
2-Butanone	78-93-3	NA	5.31		0.77	J	0.12	J	0.1	J	1.53		19.2		112	D
2-Chlorotoluene	95-49-8	NA	2.59	U	2.59	U	0.5	U	0.5	U	2.59	U	2.59	U	2.59	U
4-Ethyltoluene	622-96-8	NA	1.77	J	2.46	U	0.5	U	0.5	U	2.46	U	2.46	U	2.46	U
4-Methyl-2-Pentanone	108-10-1	NA	2.05	U	2.05	U	0.5	U	0.5	U	2.05	U	2.05	U	2.05	U
Acetone	67-64-1	NA	99.5	DB	7.6	B	2.4		2.4		15.2	B	24	B	27.1	B
Allyl Chloride	107-05-1	NA	1.57	U	1.57	U	0.5	U	0.5	U	1.57	U	1.57	U	1.57	U
Benzene	71-43-2	NA	0.99	J	0.67	J	0.13	J	0.12	J	0.96	J	1.21	J	1.31	J
Bromodichloromethane	75-27-4	NA	3.35	U	3.35	U	0.5	U	0.5	U	3.35	U	3.35	U	3.35	U
Bromoform	75-25-2	NA	5.17	U	5.17	U	0.5	U	0.5	U	5.17	U	5.17	U	5.17	U
Bromomethane	74-83-9	NA	1.94	U	1.94	U	0.5	U	0.5	U	1.94	U	1.94	U	1.94	U
Carbon Disulfide	75-15-0	NA	1.56	U	1.56	U	0.5	U	0.5	U	1.56	U	1.56	U	1.56	U
Carbon Tetrachloride	56-23-5	NA	0.44		0.44		0.09		0.08		0.44		0.5		0.5	
Chlorobenzene	108-90-7	NA	2.3	U	2.3	U	0.5	U	0.5	U	2.3	U	2.3	U	2.3	U
Chlorodibromomethane	124-48-1	NA	4.26	U	4.26	U	0.5	U	0.5	U	4.26	U	4.26	U	4.26	U
Chloroethane	75-00-3	NA	1.32	U	1.32	U	0.5	U	0.5	U	1.32	U	1.32	U	1.32	U
Chloroform	67-66-3	NA	2.44	U	2.44	U	0.5	U	0.5	U	2.44	U	0.73	J	1.12	J
Chloromethane	74-87-3	NA	1.26		1.03		0.61		0.57		1.28		1.42		1.51	
Cis-1,2-Dichloroethene	156-59-2	NA	1.98	U	1.98	U	0.5	U	0.5	U	1.98	U	1.98	U	1.98	U
Cis-1,3-Dichloropropene	10061-01-5	NA	2.27	U	2.27	U	0.5	U	0.5	U	2.27	U	2.27	U	2.27	U
Cyclohexane	110-82-7	NA	0.76	J	1.72	U	0.5	U	0.5	U	1.72	U	1.72	U	1.17	J
Dichlorodifluoromethane	75-71-8	NA	3.41	J	3.66	J	0.63		0.61		3.76	J	3.26	J	2.92	J
Dichloromethane	75-09-2	60	2.54	U	1.91	U	1.5	B	3.6	B	2.92	U	4.17	U	1.95	U
Ethylbenzene	100-41-4	NA	3.69		2.17	U	0.5	U	0.5	U	0.87	J	0.78	J	1.35	J
Freon 113	76-13-1	NA	3.83	U	3.83	U	0.5	U	0.5	U	3.83	U	3.83	U	3.83	U
Hexachlorobutadiene	87-68-3	NA	5.33	U	5.33	U	0.5	U	0.5	U	5.33	U	5.33	U	5.33	U
m,p-Xylene	179601-23-1	NA	16.9		0.69	J	1	U	1	U	3.47	J	3.21	J	4.34	
Methyl Methacrylate	80-62-6	NA	2.05	U	2.05	U	0.5	U	0.5	U	2.05	U	2.05	U	2.05	U
Methyl T-Butyl Ether	1634-04-4	NA	1.8	U	1.8	U	0.5	U	0.5	U	1.8	U	1.8	U	1.8	U
Naphthalene	91-20-3	NA	2.62	U	2.62	U	0.5	U	0.5	U	1	J	2.62	U	2.62	U
N-Heptane	142-82-5	NA	2.01	J	0.49	J	0.5	U	0.5	U	0.78	J	3.69		23.8	
N-Hexane	110-54-3	NA	2.93		2.08		0.5		0.59		3.52		4.23		3.88	
O-Xylene	95-47-6	NA	5.65		2.17	U	0.5	U	0.5	U	1.48	J	1.17	J	1.35	J
Styrene	100-42-5	NA	0.89	J	2.13	U	0.5	U	0.5	U	2.13	U	1.11	J	1.41	J
Tert-Butyl Alcohol	75-65-0	NA	1.52	U	1.52	U	0.5	U	0.5	U	1.52	U	1.52	U	1.52	U
Tetrachloroethene	127-18-4	30	1.76		0.2	U	0.03	U	0.03	U	0.27		0.27		0.47	
Tetrahydrofuran	109-99-9	NA	1.71		1.47	U	0.5	U	0.5	U	0.59	J	0.8	J	1.47	U
Toluene	108-88-3	NA	20.4		2.52		0.23	J	1.4	J	5.28		76.1	D	452	D
Trans-1,2-Dichloroethene	156-60-5	NA	1.98	U	1.98	U	0.5	U	0.5	U	1.98	U	1.98	U	1.98	U
Trans-1,3-Dichloropropene	10061-02-6	NA	2.27	U	2.27	U	0.5	U	0.5	U	2.27	U	2.27	U	2.27	U
Trichloroethylene	79-01-6	2	0.38		0.16	U	0.06		0.03	U	0.86		0.16	U	0.16	U
Trichlorofluoromethane	75-69-4	NA	1.35	J	1.35	J	0.27	J	0.26	J	1.46	J	1.46	J	1.4	J
Vinyl Bromide	593-60-2	NA	2.19	U	2.19	U	0.5	U	0.5	U	2.19	U	2.19	U	2.19	U
Vinyl Chloride	75-01-4	NA	0.08	U	0.08	U	0.03	U	0.03	U	0.08	U	0.08	U	0.08	U

Table 7 - Sub-Slab Gas and Ambient Air Sample Results Summary
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

Sample Type		NYSDOH Sub-Slab Vapor Concentration Decision Matrix (minimum action level) (1)	Sub-Slab Soil Vapor Samples										Outdoor Ambient Air									
Location ID			SVI201		SVI201		SVI202		SVI205		SVI207		SVI201		SVI202		SVI203		SVI203		SVI207	
Sample ID			SV1201-SS1-20180227-20180227		SV1201-SS2-20180227-20180227		SV1202-SS-20180227-20180227		SV1205-SS-20180227-20180227		SV1207-SS-20180227-20180227		SV1201-OA-20180227-20180227		SV1202-OA-20180227-20180227		SV1203-OA-20180301-20180301		SVI-OA1-20181219-20181220		SV1207-OA-20180227-20180227	
Sample Date			2/27/2018		2/27/2018		2/27/2018		2/27/2018		2/27/2018		2/27/2018		2/27/2018		3/1/2018		12/20/2018		2/27/2018	
Analyte	Cas No.		Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.	Result (ug/m^3)	Qua.
1,1,1-Trichloroethane	71-55-6	*100*	6		0.55		0.16	U	1.42		0.16	U	0.16	U	0.16	U	0.16	U	0.03	U	0.16	U
1,1,2,2-Tetrachloroethane	79-34-5	*NA*	3.43	U	3.43	U	3.43	U	3.43	U	3.43	U	3.43	U	3.43	U	3.43	U	0.5	U	3.43	U
1,1,2-Trichloroethane	79-00-5	*NA*	2.73	U	2.73	U	2.73	U	2.73	U	2.73	U	2.73	U	2.73	U	2.73	U	0.5	U	2.73	U
1,1-Dichloroethane	75-34-3	*NA*	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	0.5	U	2.02	U
1,1-Dichloroethene	75-35-4	*6*	1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	0.5	U	1.98	U
1,2,4-Trichlorobenzene	120-82-1	*NA*	3.71	U	3.71	U	3.71	U	3.71	U	3.71	U	3.71	U	3.71	U	3.71	U	0.5	U	3.71	U
1,2,4-Trimethylbenzene	95-63-6	*NA*	2.46	U	0.69	J	2.46	U	2.46	U	0.93	J	2.46	U	2.46	U	2.46	U	0.5	U	1.08	J
1,2-Dibromoethane	106-93-4	*NA*	3.84	U	3.84	U	3.84	U	3.84	U	3.84	U	3.84	U	3.84	U	3.84	U	0.5	U	3.84	U
1,2-Dichlorobenzene	95-50-1	*NA*	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	0.5	U	3.01	U
1,2-Dichloroethane	107-06-2	*NA*	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	2.02	U	0.5	U	2.02	U
1,2-Dichloropropane	78-87-5	*NA*	2.31	U	2.31	U	2.31	U	2.31	U	2.31	U	2.31	U	2.31	U	2.31	U	0.5	U	2.31	U
1,2-Dichlorotetrafluoroethane	76-14-2	*NA*	3.49	U	3.49	U	3.49	U	3.49	U	3.49	U	3.49	U	3.49	U	3.49	U	0.5	U	3.49	U
1,3,5-Trimethylbenzene	108-67-8	*NA*	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	0.5	U	2.46	U
1,3-Butadiene	106-99-0	*NA*	1.11	U	1.11	U	1.11	U	1.11	U	1.11	U	1.11	U	1.11	U	1.11	U	0.5	U	1.11	U
1,3-Dichlorobenzene	541-73-1	*NA*	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	0.5	U	3.01	U
1,4-Dichlorobenzene	106-46-7	*NA*	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	3.01	U	0.5	U	3.01	U
1,4-Dioxane	123-91-1	*NA*	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	0.5	U	1.8	U
2,2,4-Trimethylpentane	540-84-1	*NA*	2.66		3.46		7.94		6.54		5.6		2.34	U	2.34	U	2.34	U	0.14	J	0.61	J
2-Butanone	78-93-3	*NA*	8.26		4.42		1.53		7.08		11.2		0.74	J	0.68	J	1.47	U	0.23	J	1.18	J
2-Chlorotoluene	95-49-8	*NA*	2.59	U	2.59	U	2.59	U	2.59	U	2.59	U	2.59	U	2.59	U	2.59	U	0.5	U	2.59	U
4-Ethyltoluene	622-96-8	*NA*	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	2.46	U	0.5	U	2.46	U
4-Methyl-2-Pentanone	108-10-1	*NA*	2.95		2.5		2.05	U	6.97		2.05	U	2.05	U	2.05	U	2.05	U	0.5	U	2.05	U
Acetone	67-64-1	*NA*	53.2	DB	36.3	DB	13.5	J	36.1	DB	35.2	J	7.13	B	5.7	B	4.75	B	5.1		6.18	B
Allyl Chloride	107-05-1	*NA*	1.57	U	1.57	U	1.57	U	1.57	U	1.57	U	1.57	U	1.57	U	1.57	U	0.5	U	1.57	U
Benzene	71-43-2	*NA*	1.25	J	5.75		1.12	J	3.51		1.57	J	0.67	J	0.64	J	0.45	J	0.47	J	0.77	J
Bromodichloromethane	75-27-4	*NA*	3.35	U	3.35	U	3.35	U	3.35	U	3.35	U	3.35	U	3.35	U	3.35	U	0.5	U	3.35	U
Bromoform	75-25-2	*NA*	5.17	U	5.17	U	5.17	U	5.17	U	5.17	U	5.17	U	5.17	U	5.17	U	0.5	U	5.17	U
Bromomethane	74-83-9	*NA*	1.94	U	1.94	U	1.94	U	1.94	U	1.94	U	1.94	U	1.94	U	1.94	U	0.5	U	1.94	U
Carbon Disulfide	75-15-0	*NA*	1.4	J	4.36		0.75	J	15.9		1.49	J	1.56	U	1.56	U	1.56	U	0.5	U	1.56	U
Carbon Tetrachloride	56-23-5	*6*	0.25		0.25		0.19	U	0.31		0.44		0.44		0.44		0.44		0.08		0.44	
Chlorobenzene	108-90-7	*NA*	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	0.5	U	2.3	U
Chlorodibromomethane	124-48-1	*NA*	4.26	U	4.26	U	4.26	U	4.26	U	4.26	U	4.26	U	4.26	U	4.26	U	0.5	U	4.26	U
Chloroethane	75-00-3	*NA*	1.32	U	1.32	U	1.32	U	1.32	U	1.08	J	1.32	U	1.32	U	1.32	U	0.5	U	1.32	U
Chloroform	67-66-3	*NA*	9.28		2	J	2.44	U	19		4.83		2.44	U	2.44	U	2.44	U	0.5	U	2.44	U
Chloromethane	74-87-3	*NA*	1.26		1.03	U	1.03	U	1.03	U	12.8		1.09		1.03		1.09		0.69		1.32	
Cis-1,2-Dichloroethene	156-59-2	***6***	**112**	**D**	1.98	U	1.98	U	2.54		1.98	U	1.98	U	1.98	U	1.98	U	0.5	U	1.98	U
Cis-1,3-Dichloropropene	10061-01-5	*NA*	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	0.5	U	2.27	U
Cyclohexane	110-82-7	*NA*	0.83	J	6.88		8.95		3.1		2.51		1.72	U	1.72	U	1.72	U	0.5	U	1.72	U
Dichlorodifluoromethane	75-71-8	*NA*	1.98	J	2.13	J	1.93	J	2.18	J	1.78	J	3.16	J	3.41	J	3.12	J	0.61		3.21	J
Dichloromethane	75-09-2	*100*	2.12		6.25		2.5		1.49	J	4.52		1.91	U	2.92	U	1.74	U	4.1	B	1.74	U
Ethylbenzene	100-41-4	*NA*	0.87	J	1.43	J	0.87	J	1.74	J	1.22	J	2.17	U	2.17	U	2.17	U	0.5	U	2.17	U
Freon 113	76-13-1	*NA*	3.83	U	3.83	U	3.83	U	0.61	J	3.83	U	3.83	U	3.83	U	3.83	U	0.5	U	3.83	U
Hexachlorobutadiene	87-68-3	*NA*	5.33	U	5.33	U	5.33	U	5.33	U	5.33	U	5.33	U	5.33	U	5.33	U	0.5	U	5.33	U
m,p-Xylene	179601-23-1	*NA*	3	J	6.95		2.95	J	5.65		4.13	J	0.74	J	0.65	J	4.34	U	0.27	J	0.78	J
Methyl Methacrylate	80-62-6	*NA*	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	2.05	U	0.5	U	2.05	U
Methyl T-Butyl Ether	1634-04-4	*NA*	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U	0.5	U	1.8	U
Naphthalene	91-20-3	*NA*	2.62	U	2.62	U	2.62	U	2.62	U	2.62	U	2.62	U	2.62	U	2.62	U	0.5	U	2.62	U
N-Heptane	142-82-5	*NA*	1.8	J	13.1		3.16		6.97		4.92		2.05	U	0.41	J	2.05	U	0.5	U	2.05	U
N-Hexane	110-54-3	*NA*	4.58		16.2		7.4		10.2		5.99		1.9		2.5		0.92	J	1.3		2.47	
O-Xylene	95-47-6	*NA*	1.87	J	2.78		2.48		3.3		2	J	2.17	U	2.17	U	2.17	U	0.1	J	2.17	U
Styrene	100-42-5	*NA*	1.66	J	1.45	J	1.92	J	2.64		1.79	J	2.13	U	2.13	U	2.13	U	0.5	U	2.13	U
Tert-Butyl Alcohol	75-65-0	*NA*	3.94	J	3.33	J	1.09	J	2.46	J	2.61	J	1.52	U	1.52	U	1.52	U	0.5	U	1.52	U
Tetrachloroethene	127-18-4	*100*	67.8		2.37		0.2	U	9.49		10.2		0.2	U	0.2	U	0.2	U	0.03	U	0.2	U
Tetrahydrofuran	109-99-9	*NA*	1.47	U	0.56	J	1.47	U	1.47	U	1.47	U	1.47	U	1.47	U	1.47	U	0.5	U	1.47	U
Toluene	108-88-3	*NA*	4.52		15.1		4.15		11.7		18.8		1.77	J	2.37		0.72	J	5.7		2.98	
Trans-1,2-Dichloroethene	156-60-5	*NA*	9.52		1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	1.98	U	0.5	U	1.98	U
Trans-1,3-Dichloropropene	10061-02-6	*NA*	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	2.27	U	0.5	U	2.27	U
Trichloroethylene	79-01-6	***6***	**3170**	**D**	**93**	**D**	0.16	U	**407**	**D**	0.32		0.16	U	0.16	U	0.16	U	0.03	U	0.16	U
Trichlorofluoromethane	75-69-4	*NA*	1.29	J	1.18	J	1.12	J	1.57	J	1.18	J	1.29	J	1.29	J	1.29	J	0.28	J	1.29	J
Vinyl Bromide	593-60-2	*NA*	2.19	U	2.19	U	2.19	U	2.19	U	2.19	U	2.19	U	2.19	U	2.19	U	0.5	U	2.19	U
Vinyl Chloride	75-01-4	*6*	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.08	U	0.03	U	0.08	U

Notes:

NYSDOH	New York State Department of Health
NA	Not Available
ug/m3	Micrograms per cubic meter
U	Analytical Non-Detect Value
J	Estimated Analytical Value
B	Analyte is found in associated blank sample
D	Analyte identified in an analysis at a secondary dilation factor.
0.38	Results that are **bold** exceed the NYSDOH guidance values for evaluating soil vapor intrusion.

(1) NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Soil Vapor/Indoor Air Matrix A, B & C as of May 2017 [Note: This Guidance uses a combination of indoor air and sub-slab soil vapor when comparing to the matrices.

(2) NYSDOH, Guidance for Evaluating Soil Vapor Intrusion in the State of New York. Table 3.1 - Air Guidline values derived by the NYSDOH, new ambient air guideline for trichloroethene (August 2015) and tetrachloroethene (Sepetember 2013).

Table 8A - Soil Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	BW201		BW201		BW201		BW202		BW202		BW202		MW201		MW201		MW201		MW202		MW202		MW203	
			Sample ID	BW201-1.5-2-20180516		BW201-8.5-9.5-1-20180529		BW201-8.5-9.5-20180529		BW202-0.5-1-20180516		BW202-11-12-1-20180524		BW202-11-12-20180524		MW201-0.5-1-20180515		MW201-15.5-16-20180521		MW201-8.5-9-20180521		MW202-0.5-1-20180516		MW202-9.5-10-20180525		SB203-0.5-1-20180515	
			Sample Date	5/16/2018		5/29/2018		5/29/2018		5/16/2018		5/24/2018		5/24/2018		5/15/2018		5/21/2018		5/21/2018		5/16/2018		5/25/2018		5/15/2018	
			Start Depth (ft bgs)	1.5 - 2		8.5 - 9.5		8.5 - 9.5		0.5 - 1		11 - 12		11 - 12		0.5 - 1		15.5 - 16		8.5 - 9		0.5 - 1		9.5 - 10		0.5 - 1	
Analyte	Cas No.	PART375REST - POGW (mg/kg)	PART375REST- COMMERCIAL (mg/kg)	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.
1,1,1-Trichloroethane	71-55-6	0.68	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,1,2-Trichloroethane	79-00-5	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,1-Dichloroethane	75-34-3	0.27	240	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,1-Dichloroethene	75-35-4	0.33	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,2-Dichlorobenzene	95-50-1	1.1	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,2-Dichloroethane	107-06-2	0.02	30	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,2-Dichloropropane	78-87-5	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,3-Dichlorobenzene	541-73-1	2.4	280	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
1,4-Dichlorobenzene	106-46-7	1.8	130	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
2-Butanone	78-93-3	0.12	500	< 0.018	U	< 0.019	UJ	< 0.02	UJ	< 0.039	U	< 0.022	UJ	< 0.025	UJ	< 0.021	U	< 0.019	U	< 0.02	U	< 0.025	U	< 0.024	U	< 0.02	U
2-Hexanone	591-78-6	NA	NA	< 0.018	U	< 0.019	UJ	< 0.02	UJ	< 0.039	U	< 0.022	UJ	< 0.025	UJ	< 0.021	U	< 0.019	U	< 0.02	U	< 0.025	U	< 0.024	U	< 0.02	U
4-Methyl-2-Pentanone	108-10-1	NA	NA	< 0.018	U	< 0.019	UJ	< 0.02	UJ	< 0.039	U	< 0.022	UJ	< 0.025	UJ	< 0.021	U	< 0.019	U	< 0.02	U	< 0.025	U	< 0.024	U	< 0.02	U
Acetone	67-64-1	0.05	500	< 0.019	U	< 0.036	UJ	< 0.036	UJ	< 0.039	U	< 0.046	UJ	< 0.036	UJ	< 0.021	U	< 0.034	U	< 0.028	U	< 0.025	U	< 0.045	U	< 0.02	U
Benzene	71-43-2	0.06	44	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.033	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	0.00021	J	< 0.0049	U	< 0.0047	U	< 0.0040	U
Bromodichloromethane	75-27-4	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Bromoform	75-25-2	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Bromomethane	74-83-9	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Carbon Disulfide	75-15-0	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Carbon Tetrachloride	56-23-5	0.76	22	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Chlorobenzene	108-90-7	1.1	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Chlorodibromomethane	124-48-1	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Chloroethane	75-00-3	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Chloroform	67-66-3	0.37	350	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Chloromethane	74-87-3	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Cis-1,2-Dichloroethene	156-59-2	**0.25**	500	< 0.0037	U	0.00062	JL	< 0.0040	UJ	< 0.0077	U	0.0042	JL	0.0064	JL	< 0.0043	U	0.066		0.019		< 0.0049	U	< 0.0047	U	< 0.0040	U
Cis-1,3-Dichloropropene	10061-01-5	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Cyclohexane	110-82-7	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Dichlorodifluoromethane	75-71-8	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Dichloromethane	75-09-2	0.05	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Ethylbenzene	100-41-4	1	390	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Freon 113	76-13-1	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Isopropyl benzene	98-82-8	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Methyl acetate	79-20-9	NA	NA	< 0.018	U	< 0.019	UJ	< 0.02	UJ	< 0.039	U	< 0.022	UJ	< 0.025	UJ	< 0.021	U	< 0.019	U	< 0.02	U	< 0.025	U	< 0.024	U	< 0.02	U
Methyl T-Butyl Ether (MTBE)	1634-04-4	0.93	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Methylcyclohexane	108-87-2	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Styrene	100-42-5	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Tetrachloroethene	127-18-4	**1.3**	150	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	0.091	JL	0.11	JL	< 0.0043	U	< 0.0037	U	0.00076	J	< 0.0049	U	0.015		< 0.0040	U
Toluene	108-88-3	0.7	500	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	0.00043	J	< 0.0049	U	< 0.0047	U	< 0.0040	U
Trans-1,2-Dichloroethene	156-60-5	0.19	500	< 0.0037	U	0.00041	JL	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	0.0055		0.0036	J	< 0.0049	U	< 0.0047	U	< 0.0040	U
Trans-1,3-Dichloropropene	10061-02-6	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Trichloroethylene	79-01-6	**0.47**	200	< 0.0037	U	0.0031	JL	0.0018	JL	0.15		0.12	JL	0.16	JL	< 0.0043	U	0.076		0.094		< 0.0049	U	< 0.0047	U	< 0.0040	U
Trichlorofluoromethane	75-69-4	NA	NA	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	< 0.0037	U	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Vinyl Chloride	75-01-4	0.02	13	< 0.0037	U	< 0.0039	UJ	< 0.0040	UJ	< 0.0077	U	< 0.0044	UJ	< 0.0050	UJ	< 0.0043	U	0.00049	J	< 0.0040	U	< 0.0049	U	< 0.0047	U	< 0.0040	U
Xylenes, Total	XYLENES	NA	NA	< 0.0073	U	< 0.0077	UJ	< 0.0080	UJ	< 0.015	U	< 0.0089	UJ	< 0.01	UJ	< 0.0085	U	< 0.0075	U	< 0.0079	U	< 0.0098	U	< 0.0095	U	< 0.0081	U

Notes:

ft bgs	Feet below ground surface
ID	Identification
mg/kg	Milligrams per kilogram
NA	Not available
No.	Number
PART375REST - POGW	6 New York Codes, Rules and Regulations Part 375 - Protection of Groundwater
PART375REST- COMMERCIAL	6 New York Codes, Rules and Regulations Part 375 - Commercial
Qua.	Qualifier
VOCs	Volatile organic compounds
B	Analyte found in associated blank sample
J	Estimated analytical value
JL	Definition not known
R	Rejected
U	Analytical non-detect value
UJ	Compound was analyzed but not detected; the value given is an estimate
300	Results that are bold exceed the PART375REST - POGW

Table 8A - Soil Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	MW203		MW203		MW204		MW204		MW204		MW204		MW205		MW205		MW205		MW206		MW206		SB201	
			Sample ID	SB203-18.5-19-20180517		SB203-9-9.5-20180517		MW204-0.5-1-20180516		MW204-11-11.5-20180523		MW204-16.5-17.5-1-20180523		MW204-16.5-17.5-20180523		MW205-0.5-1-20180516		MW205-9-10-1-20180529		MW205-9-10-20180529		MW206-0.5-1-20180516		MW206-11-11.5-20180524		SB201-0.5-1-20180517	
			Sample Date	5/17/2018		5/17/2018		5/16/2018		5/23/2018		5/23/2018		5/23/2018		5/16/2018		5/29/2018		5/29/2018		5/16/2018		5/24/2018		5/17/2018	
			Start Depth (ft bgs)	18.5 - 19		9 - 9.5		0.5 - 1		11 - 11.5		16.5 - 17.5		16.5 - 17.5		0.5 - 1		9 - 10		9 - 10		0.5 - 1		11 - 11.5		0.5 - 1	
Analyte	Cas No.	PART375REST - POGW (mg/kg)	PART375REST- COMMERCIAL (mg/kg)	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.
1,1,1-Trichloroethane	71-55-6	0.68	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,1,2-Trichloroethane	79-00-5	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,1-Dichloroethane	75-34-3	0.27	240	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,1-Dichloroethene	75-35-4	0.33	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,2-Dichlorobenzene	95-50-1	1.1	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,2-Dichloroethane	107-06-2	0.02	30	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,2-Dichloropropane	78-87-5	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,3-Dichlorobenzene	541-73-1	2.4	280	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
1,4-Dichlorobenzene	106-46-7	1.8	130	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
2-Butanone	78-93-3	0.12	500	< 0.019	U	< 0.02	U	< 0.033	U	< 0.023	U	< 0.018	U	< 0.019	U	< 0.021	U	< 0.02	UJ	< 0.022	UJ	< 0.03	U	< 0.27	U	< 0.025	U
2-Hexanone	591-78-6	NA	NA	< 0.019	U	< 0.02	U	< 0.033	U	< 0.023	U	< 0.018	U	< 0.019	U	< 0.021	U	< 0.02	UJ	< 0.022	UJ	< 0.03	U	< 0.27	U	< 0.025	U
4-Methyl-2-Pentanone	108-10-1	NA	NA	< 0.019	U	< 0.02	U	< 0.033	U	< 0.023	U	< 0.018	U	< 0.019	U	< 0.021	U	< 0.02	UJ	< 0.022	UJ	< 0.03	U	< 0.27	U	< 0.025	U
Acetone	67-64-1	0.05	500	< 0.02	U	< 0.02	U	< 0.033	U	< 0.045	U	< 0.039	U	< 0.027	U	< 0.021	U	< 0.032	UJ	< 0.055	UJ	< 0.036	U	< 0.27	U	< 0.031	U
Benzene	71-43-2	0.06	44	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Bromodichloromethane	75-27-4	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Bromoform	75-25-2	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Bromomethane	74-83-9	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	UJ	< 0.0050	U
Carbon Disulfide	75-15-0	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Carbon Tetrachloride	56-23-5	0.76	22	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Chlorobenzene	108-90-7	1.1	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Chlorodibromomethane	124-48-1	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Chloroethane	75-00-3	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Chloroform	67-66-3	0.37	350	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	0.00036	J
Chloromethane	74-87-3	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Cis-1,2-Dichloroethene	156-59-2	**0.25**	500	0.0057		< 0.0039	U	< 0.0067	U	< 0.0047	U	0.00091	J	0.00055	J	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	0.0011	J
Cis-1,3-Dichloropropene	10061-01-5	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Cyclohexane	110-82-7	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Dichlorodifluoromethane	75-71-8	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Dichloromethane	75-09-2	0.05	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Ethylbenzene	100-41-4	1	390	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Freon 113	76-13-1	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Isopropyl benzene	98-82-8	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Methyl acetate	79-20-9	NA	NA	< 0.019	U	< 0.02	U	< 0.033	U	< 0.023	U	< 0.018	U	< 0.019	U	< 0.021	U	< 0.02	UJ	< 0.022	UJ	< 0.03	U	< 0.27	U	< 0.025	U
Methyl T-Butyl Ether (MTBE)	1634-04-4	0.93	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Methylcyclohexane	108-87-2	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Styrene	100-42-5	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Tetrachloroethene	127-18-4	**1.3**	150	0.0011	J	0.0070		< 0.0067	U	0.047		< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	0.0034	J	**1.9**		< 0.0050	U
Toluene	108-88-3	0.7	500	< 0.0037	U	0.00034	J	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	0.00043	J
Trans-1,2-Dichloroethene	156-60-5	0.19	500	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Trans-1,3-Dichloropropene	10061-02-6	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Trichloroethylene	79-01-6	**0.47**	200	< 0.0037	U	0.00095	J	< 0.0067	U	0.0019	J	< 0.0036	U	< 0.0037	U	< 0.0042	U	0.0012	JL	0.0019	JL	0.023		0.14		0.16	
Trichlorofluoromethane	75-69-4	NA	NA	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Vinyl Chloride	75-01-4	0.02	13	< 0.0037	U	< 0.0039	U	< 0.0067	U	< 0.0047	U	< 0.0036	U	< 0.0037	U	< 0.0042	U	< 0.0040	UJ	< 0.0044	UJ	< 0.0060	U	< 0.055	U	< 0.0050	U
Xylenes, Total	XYLENES	NA	NA	< 0.0074	U	< 0.0078	U	< 0.013	U	< 0.0093	U	< 0.0071	U	< 0.0074	U	< 0.0084	U	< 0.0080	UJ	< 0.0089	UJ	< 0.012	U	< 0.11	U	< 0.01	U

Notes:

ft bgs Feet below ground surface
ID Identification
mg/kg Milligrams per kilogram
NA Not available
No. Number
PART375REST - POGW 6 New York Codes, Rules and Regulations Part 375 - Protection of Groundwater
PART375REST- COMMERCIAL 6 New York Codes, Rules and Regulations Part 375 - Commercial
Qua. Qualifier
VOCs Volatile organic compounds
B Analyte found in associated blank sample
J Estimated analytical value
JL Definition not known
R Rejected
U Analytical non-detect value
UJ Compound was analyzed but not detected; the value given is an estimate
300 Results that are bold exceed the PART375REST - POGW

Table 8A - Soil Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	SB201		SB202		SB202		SB202		SB202		SB204		SB204		SB204		SB205		SB205		SB205		SB206	
			Sample ID	SB201-3.5-4-20180517		SB202-0.5-1-20180515		SB202-15-15.5-20180521		SB202-8.5-9.5-1-20180518		SB202-8.5-9.5-20180518		SB204-0.5-1-20180515		SB204-15-15.5-20180521		SB204-8.5-9-20180521		SB205-0.5-1-20180515		SB205-14.8-15.3-20180517		SB205-8.5-9-20180517		SB206-0.5-1-20180515	
			Sample Date	5/17/2018		5/15/2018		5/21/2018		5/18/2018		5/18/2018		5/15/2018		5/21/2018		5/21/2018		5/15/2018		5/17/2018		5/17/2018		5/15/2018	
			Start Depth (ft bgs)	3.5 - 4		0.5 - 1		15 - 15.5		8.5 - 9.5		8.5 - 9.5		0.5 - 1		15 - 15.5		8.5 - 9		0.5 - 1		14.8 - 15.3		8.5 - 9		0.5 - 1	
Analyte	Cas No.	PART375REST - POGW (mg/kg)	PART375REST- COMMERCIAL (mg/kg)	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.	Result (mg/kg)	Qua.
1,1,1-Trichloroethane	71-55-6	0.68	500	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	UJ	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,1,2-Trichloroethane	79-00-5	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,1-Dichloroethane	75-34-3	0.27	240	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,1-Dichloroethene	75-35-4	0.33	500	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,2-Dichlorobenzene	95-50-1	1.1	500	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,2-Dichloroethane	107-06-2	0.02	30	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,2-Dichloropropane	78-87-5	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,3-Dichlorobenzene	541-73-1	2.4	280	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
1,4-Dichlorobenzene	106-46-7	1.8	130	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
2-Butanone	78-93-3	0.12	500	< 0.024	U	< 0.021	U	< 0.018	U	< 0.021	U	< 0.02	U	< 0.025	U	< 0.019	U	< 0.022	U	< 5.6	U	< 0.017	U	< 0.019	U	< 0.027	U
2-Hexanone	591-78-6	NA	NA	< 0.024	U	< 0.021	U	< 0.018	U	< 0.021	U	< 0.02	U	< 0.025	U	< 0.019	U	< 0.022	U	< 5.6	U	< 0.017	U	< 0.019	U	< 0.027	U
4-Methyl-2-Pentanone	108-10-1	NA	NA	< 0.024	U	< 0.021	U	< 0.018	U	< 0.021	U	< 0.02	U	< 0.025	U	< 0.019	U	< 0.022	U	< 5.6	U	< 0.017	U	< 0.019	U	< 0.027	U
Acetone	67-64-1	0.05	500	< 0.025	U	< 0.021	U	< 0.018	U	0.02	J	0.011	J	< 0.025	U	< 0.035	U	< 0.054	U	< 5.6	U	< 0.018	U	< 0.019	U	< 0.031	U
Benzene	71-43-2	0.06	44	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	0.00043	J	< 0.0037	U	0.00038	J	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Bromodichloromethane	75-27-4	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Bromoform	75-25-2	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Bromomethane	74-83-9	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Carbon Disulfide	75-15-0	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Carbon Tetrachloride	56-23-5	0.76	22	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Chlorobenzene	108-90-7	1.1	500	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Chlorodibromomethane	124-48-1	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Chloroethane	75-00-3	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Chloroform	67-66-3	0.37	350	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Chloromethane	74-87-3	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Cis-1,2-Dichloroethene	156-59-2	**0.25**	500	0.0036	J	< 0.0042	U	0.034		0.0012	J	0.0062		0.026		0.011		0.042		**1.6**		0.016	J	0.00073	J	< 0.0055	U
Cis-1,3-Dichloropropene	10061-01-5	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Cyclohexane	110-82-7	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Dichlorodifluoromethane	75-71-8	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Dichloromethane	75-09-2	0.05	500	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Ethylbenzene	100-41-4	1	390	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Freon 113	76-13-1	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Isopropyl benzene	98-82-8	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Methyl acetate	79-20-9	NA	NA	< 0.024	U	< 0.021	U	< 0.018	U	< 0.021	U	< 0.02	U	< 0.025	U	< 0.019	U	< 0.022	U	< 5.6	U	< 0.017	U	< 0.019	U	< 0.027	U
Methyl T-Butyl Ether (MTBE)	1634-04-4	0.93	500	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Methylcyclohexane	108-87-2	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Styrene	100-42-5	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Tetrachloroethene	127-18-4	**1.3**	150	0.00086	J	< 0.0042	U	< 0.0036	U	0.00087	J	< 0.0040	U	< 0.0050	U	< 0.0037	U	0.0021	J	< 1.1	U	**1.6**		0.035		< 0.0055	U
Toluene	108-88-3	0.7	500	0.00040	J	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	0.00067	J	< 0.0037	U	0.0012	J	< 1.1	U	0.00027	J	0.00030	J	< 0.0055	U
Trans-1,2-Dichloroethene	156-60-5	0.19	500	< 0.0049	U	< 0.0042	U	0.0039		< 0.0042	U	0.00071	J	0.02		0.012		0.0047		< 1.1	U	0.00036	J	< 0.0037	U	< 0.0055	U
Trans-1,3-Dichloropropene	10061-02-6	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Trichloroethylene	79-01-6	**0.47**	200	**10**		< 0.0042	U	0.099		0.01	R	**1.8**	**R**	0.063		0.095		**1.5**		**44**		0.44		0.028		0.01	
Trichlorofluoromethane	75-69-4	NA	NA	< 0.0049	U	< 0.0042	U	< 0.0036	U	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Vinyl Chloride	75-01-4	0.02	13	< 0.0049	U	< 0.0042	U	0.00079	J	< 0.0042	U	< 0.0040	U	< 0.0050	U	< 0.0037	U	< 0.0043	U	< 1.1	U	< 0.0034	U	< 0.0037	U	< 0.0055	U
Xylenes, Total	XYLENES	NA	NA	< 0.0098	U	< 0.0085	U	< 0.0071	U	< 0.0084	U	< 0.0079	U	< 0.01	U	< 0.0074	U	< 0.0086	U	< 2.2	U	< 0.0068	U	< 0.0074	U	< 0.011	U

Notes:

ft bgs	Feet below ground surface
ID	Identification
mg/kg	Milligrams per kilogram
NA	Not available
No.	Number
PART375REST - POGW	6 New York Codes, Rules and Regulations Part 375 - Protection of Groundwater
PART375REST- COMMERCIAL	6 New York Codes, Rules and Regulations Part 375 - Commercial
Qua.	Qualifier
VOCs	Volatile organic compounds
B	Analyte found in associated blank sample
J	Estimated analytical value
JL	Definition not known
R	Rejected
U	Analytical non-detect value
UJ	Compound was analyzed but not detected; the value given is an estimate
300	Results that are bold exceed the PART375REST - POGW

Table 8A - Soil Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	SB206		SB206		SB207		SB207		SB207		SB209		SB209	
			Sample ID	**SB206-17.5-18-20180521**		**SB206-8-8.5-20180518**		**SB207-0.5-1-20180515**		**SB207-15-15.5-20180517**		**SB207-9-9.5-20180517**		**SB209-0.5-1-20180517**		**SB209-5-5.5-20180517**	
			Sample Date	**5/21/2018**		**5/18/2018**		**5/15/2018**		**5/17/2018**		**5/17/2018**		**5/17/2018**		**5/17/2018**	
			Start Depth (ft bgs)	**17.5 - 18**		**8 - 8.5**		**0.5 - 1**		**15 - 15.5**		**9 - 9.5**		**0.5 - 1**		**5 - 5.5**	
Analyte	**Cas No.**	**PART375REST - POGW (mg/kg)**	**PART375REST-COMMERCIAL (mg/kg)**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**
1,1,1-Trichloroethane	71-55-6	0.68	500	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,1,2-Trichloroethane	79-00-5	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,1-Dichloroethane	75-34-3	0.27	240	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,1-Dichloroethene	75-35-4	0.33	500	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,2,4-Trichlorobenzene	120-82-1	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,2-Dichlorobenzene	95-50-1	1.1	500	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,2-Dichloroethane	107-06-2	0.02	30	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,2-Dichloropropane	78-87-5	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,3-Dichlorobenzene	541-73-1	2.4	280	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
1,4-Dichlorobenzene	106-46-7	1.8	130	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
2-Butanone	78-93-3	0.12	500	< 0.017	U	< 0.022	U	< 0.024	U	< 0.017	U	< 0.021	U	< 0.024	U	< 0.026	U
2-Hexanone	591-78-6	NA	NA	< 0.017	U	< 0.022	U	< 0.024	U	< 0.017	U	< 0.021	U	< 0.024	U	< 0.026	U
4-Methyl-2-Pentanone	108-10-1	NA	NA	< 0.017	U	< 0.022	U	< 0.024	U	< 0.017	U	< 0.021	U	< 0.024	U	< 0.026	U
Acetone	67-64-1	0.05	500	< 0.019	U	0.028		< 0.024	U	< 0.017	U	< 0.021	U	< 0.028	U	< 0.031	U
Benzene	71-43-2	0.06	44	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Bromodichloromethane	75-27-4	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Bromoform	75-25-2	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Bromomethane	74-83-9	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Carbon Disulfide	75-15-0	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Carbon Tetrachloride	56-23-5	0.76	22	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Chlorobenzene	108-90-7	1.1	500	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Chlorodibromomethane	124-48-1	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Chloroethane	75-00-3	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Chloroform	67-66-3	0.37	350	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Chloromethane	74-87-3	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Cis-1,2-Dichloroethene	156-59-2	**0.25**	500	0.0051		0.0030	J	< 0.0049	U	< 0.0035	U	< 0.0043	U	0.0010	J	0.0040	J
Cis-1,3-Dichloropropene	10061-01-5	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Cyclohexane	110-82-7	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Dichlorodifluoromethane	75-71-8	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Dichloromethane	75-09-2	0.05	500	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Ethylbenzene	100-41-4	1	390	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Freon 113	76-13-1	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Isopropyl benzene	98-82-8	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Methyl acetate	79-20-9	NA	NA	< 0.017	U	< 0.022	U	< 0.024	U	< 0.017	U	< 0.021	U	< 0.024	U	< 0.026	U
Methyl T-Butyl Ether (MTBE)	1634-04-4	0.93	500	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Methylcyclohexane	108-87-2	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Styrene	100-42-5	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Tetrachloroethene	127-18-4	**1.3**	150	< 0.0035	U	0.0025	J	0.0016	J	< 0.0035	U	0.038		0.00098	J	0.0047	J
Toluene	108-88-3	0.7	500	< 0.0035	U	0.00035	J	< 0.0049	U	0.00026	J	< 0.0043	U	< 0.0048	U	< 0.0052	U
Trans-1,2-Dichloroethene	156-60-5	0.19	500	0.01		< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	0.00062	J
Trans-1,3-Dichloropropene	10061-02-6	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Trichloroethylene	79-01-6	**0.47**	200	0.023		0.028		0.0014	J	< 0.0035	U	0.0015	J	0.044		0.16	
Trichlorofluoromethane	75-69-4	NA	NA	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Vinyl Chloride	75-01-4	0.02	13	< 0.0035	U	< 0.0044	U	< 0.0049	U	< 0.0035	U	< 0.0043	U	< 0.0048	U	< 0.0052	U
Xylenes, Total	XYLENES	NA	NA	< 0.0070	U	< 0.0088	U	< 0.0098	U	< 0.0070	U	< 0.0085	U	< 0.0096	U	< 0.01	U

Notes:

ft bgs	Feet below ground surface
ID	Identification
mg/kg	Milligrams per kilogram
NA	Not available
No.	Number
PART375REST - POGW	6 New York Codes, Rules and Regulations Part 375 - Protection of Groundwater
PART375REST- COMMERCIAL	6 New York Codes, Rules and Regulations Part 375 - Commercial
Qua.	Qualifier
VOCs	Volatile organic compounds
B	Analyte found in associated blank sample
J	Estimated analytical value
JL	Definition not known
R	Rejected
U	Analytical non-detect value
UJ	Compound was analyzed but not detected; the value given is an estimate
300	Results that are bold exceed the PART375REST - POGW

Table 8B - Soil Sample Results Summary - All Other Analytes
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	BW201		BW201		BW202		BW202		MW204		MW204		MW205		MW205		SB202		SB202	
			Sample ID	BW201-8.5-9.5-1-20180529		BW201-8.5-9.5-20180529		BW202-11-12-1-20180524		BW202-11-12-20180524		MW204-16.5-17.5-1-20180523		MW204-16.5-17.5-20180523		MW205-9-10-1-20180529		MW205-9-10-20180529		SB202-8.5-9.5-1-20180518		SB202-8.5-9.5-20180518	
			Sample Date	5/29/2018		5/29/2018		5/24/2018		5/24/2018		5/23/2018		5/23/2018		5/29/2018		5/29/2018		5/18/2018		5/18/2018	
			Sample Depth (ft bgs)	8.5 - 9.5		8.5 - 9.5		11 - 12		11 - 12		16.5 - 17.5		16.5 - 17.5		9 - 10		9 - 10		8.5 - 9.5		8.5 - 9.5	
Analyte	**Case No.**	**PART375REST - POGW (mg/kg)**	**PART375REST-COMMERCIAL (mg/kg)**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**
Aluminum	7429-90-5	NA	NA	5150		5900		5080	J	312	J	2940		2710		5180		3870		4000	B	4100	B
Antimony	7440-36-0	NA	NA	< 17.5	U	0.52	J	< 17.7	U	< 17.7	U	< 16.5	U	< 16.3	U	0.56	J	0.55	J	0.51	J	0.52	J
Arsenic	7440-38-2	16	16	0.90	J	0.64	J	3.5		< 2.3	U	0.96	J	1.2	J	1.9	J	1.4	J	1.7	J	1.6	J
Barium	7440-39-3	820	400	27.9		34.9		39.2	J	23.2	J	24.6		23.3		26.8	J	14.1	J	26.8		20.4	
Beryllium	7440-41-7	47	590	0.25		0.30		0.27		< 0.23	U	0.13	J	0.13	J	0.27		0.21	J	0.21	J	0.23	
Cadmium	7440-43-9	7.5	9.3	< 0.23	U	< 0.23	U	0.19	J	0.10	J	0.058	J	0.050	J	0.11	J	0.044	J	0.15	J	0.096	J
Calcium	7440-70-2	NA	NA	4880	J	1950	J	15300	B	12300	B	32200	B	31500	B	14600		13500		55700	B	42000	B
Chromium	7440-47-3	NA	1500	0.53	J	7.1	J	7.6	J	< 0.59	UJ	4.8		5.3		6.8		7.5		7.6		7.9	
Cobalt	7440-48-4	NA	NA	3.9		4.3		5.2		3.1		2.2		2.3		4.2		3.6		3.7	B	3.6	B
Copper	7440-50-8	1720	270	12.0	B	11.5	B	11.8	J	2.2	J	5.1		6.5		13.8	B	9.6	B	10.6		11.2	
Iron	7439-89-6	NA	NA	7790	B	8310	B	9760	J	48.2	J	6270		7260		9320	B	7550	B	9520	B	9900	B
Lead	7439-92-1	450	1000	3.1	J	7.3	J	7.8	J	1.7	J	2.0		2.2		8.0		11.0		17.6	J	9.9	J
Magnesium	7439-95-4	NA	NA	3050		2380		6430	B	6000	B	8880		8450		7940		7370		24700	J	13700	J
Manganese	7439-96-5	2000	10000	94.1		85.6		361	B	264	B	230		238		182	J	107	J	293	B	260	B
Nickel	7440-02-0	130	310	10.7	B	11.8	B	11.8		6.4		4.7	J	5.1	J	10.2	B	8.8	B	10.2		10.2	
Potassium	7440-09-7	NA	NA	1080		1290		1450	J	518	J	736		614		1080		885		987		1160	
Selenium	7782-49-2	4	1500	< 4.7	U	< 4.6	U	< 4.5	U	< 4.7	U	< 4.4	U	< 4.4	U	< 4.9	U	0.63	BJ	< 4.5	U	< 4.3	U
Silver	7440-22-4	8	1500	< 0.70	U	< 0.69	U	< 0.71	U	< 0.71	U	< 0.66	U	< 0.65	U	< 0.73	U	< 0.73	U	< 0.67	U	< 0.65	U
Sodium	7440-23-5	NA	NA	649		608		107	J	62.7	J	209		163		433		314		138	J	128	J
Thallium	7440-28-0	NA	NA	< 7.0	U	< 6.9	U	< 6.7	U	< 7.0	U	< 6.6	U	< 6.5	U	< 7.3	U	< 7.3	U	< 6.7	U	< 6.5	U
Vanadium	7440-62-2	NA	NA	12.6		13.4		11.6	J	< 0.59	UJ	8.5		9.8		12.6		10		11.8	B	12.0	B
Zinc	7440-66-6	2480	10000	34.5		37.7		32.0	J	19.2	J	10.1		10.9		65.2		34.5		38.0		29.2	
4,4'-DDD	72-54-8	14	92	< 0.0019	UT	< 0.0019	UT	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	UT	< 0.0020	UT	< 0.0018	U	< 0.0018	U
4,4'-DDE	72-55-9	17	62	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
4,4'-DDT	50-29-3	136	47	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Aldrin	309-00-2	0.19	0.68	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Alpha-BHC	319-84-6	0.02	3.4	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Alpha-Chlordane	5103-71-9	2.9	24	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Beta-BHC	319-85-7	0.09	3	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Chlorinated Camphene	8001-35-2	NA	NA	< 0.019	U	< 0.019	U	< 0.019	U	< 0.019	U	< 0.018	U	< 0.018	U	< 0.019	U	< 0.02	U	< 0.018	U	< 0.018	U
Delta-Bhc	319-86-8	0.25	500	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Dieldrin	60-57-1	0.1	1.4	< 0.0019	UT	< 0.0019	UT	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	UT	< 0.0020	UT	0.00077	NJ	< 0.0018	U
Endosulfan I	959-98-8	102	200	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Endosulfan II	33213-65-9	102	200	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	0.00039	J	< 0.0018	U	< 0.0018	U
Endosulfan Sulfate	1031-07-8	1000	200	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Endrin	72-20-8	0.06	89	< 0.0019	UT	< 0.0019	UT	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	UT	< 0.0020	UT	< 0.0018	U	< 0.0018	U
Endrin Aldehyde	7421-93-4	NA	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	0.0010	J	0.00099	J
Endrin Ketone	53494-70-5	NA	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Gamma-BHC (Lindane)	58-89-9	0.1	9.2	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Gamma-Chlordane	5103-74-2	NA	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Heptachlor	76-44-8	0.38	15	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Heptachlor Epoxide	1024-57-3	NA	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Methoxychlor	72-43-5	NA	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0019	U	< 0.0018	U	< 0.0018	U	< 0.0019	U	< 0.0020	U	< 0.0018	U	< 0.0018	U
Aroclor 1016	12674-11-2	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
Aroclor 1221	11104-28-2	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
Aroclor 1232	11141-16-5	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
Aroclor 1242	53469-21-9	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
Aroclor 1248	12672-29-6	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
Aroclor 1254	11097-69-1	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
Aroclor 1260	11096-82-5	NA	NA	< 0.24	U	< 0.26	U	< 0.23	U	< 0.24	U	< 0.24	U	< 0.22	U	< 0.28	U	< 0.25	U	< 0.28	U	< 0.22	U
1,1-Biphenyl	92-52-4	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2,4,5-Trichlorophenol	95-95-4	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2,4,6-Trichlorophenol	88-06-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2,4-Dichlorophenol	120-83-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U

Table 8B - Soil Sample Results Summary - All Other Analytes
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	BW201		BW201		BW202		BW202		MW204		MW204		MW205		MW205		SB202		SB202	
			Sample ID	BW201-8.5-9.5-1-20180529		BW201-8.5-9.5-20180529		BW202-11-12-1-20180524		BW202-11-12-20180524		MW204-16.5-17.5-1-20180523		MW204-16.5-17.5-20180523		MW205-9-10-1-20180529		MW205-9-10-20180529		SB202-8.5-9.5-1-20180518		SB202-8.5-9.5-20180518	
			Sample Date	5/29/2018		5/29/2018		5/24/2018		5/24/2018		5/23/2018		5/23/2018		5/29/2018		5/29/2018		5/18/2018		5/18/2018	
			Sample Depth (ft bgs)	8.5 - 9.5		8.5 - 9.5		11 - 12		11 - 12		16.5 - 17.5		16.5 - 17.5		9 - 10		9 - 10		8.5 - 9.5		8.5 - 9.5	
Analyte	**Case No.**	**PART375REST - POGW (mg/kg)**	**PART375REST-COMMERCIAL (mg/kg)**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**
2,4-Dimethylphenol	105-67-9	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2,4-Dinitrophenol	51-28-5	NA	NA	< 1.9	U	< 1.9	U	< 1.9	U	< 1.9	U	< 1.8	U	< 1.8	U	< 1.9	U	< 1.9	U	< 1.8	U	< 1.8	U
2,4-Dinitrotoluene	121-14-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2,6-Dinitrotoluene	606-20-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2-Chloronaphthalene	91-58-7	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2-Chlorophenol	95-57-8	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2-Methylnaphthalene	91-57-6	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2-Methylphenol	95-48-7	0.33	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
2-Nitroaniline	88-74-4	NA	NA	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
2-Nitrophenol	88-75-5	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
3,3`-Dichlorobenzidine	91-94-1	NA	NA	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
3-Nitroaniline	99-09-2	NA	NA	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
4,6-Dinitro-2-Methylphenol	534-52-1	NA	NA	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
4-Bromophenyl Phenyl Ether	101-55-3	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
4-Chloro-3-Methylphenol	59-50-7	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
4-Chloroaniline	106-47-8	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
4-Chlorophenyl Phenylether	7005-72-3	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
4-Methylphenol	106-44-5	0.33	500	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
4-Nitroaniline	100-01-6	NA	NA	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
4-Nitrophenol	100-02-7	NA	NA	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
Acenaphthene	83-32-9	98	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.041	J	0.057	J
Acenaphthylene	208-96-8	107	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Acetophenone	98-86-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Anthracene	120-12-7	1000	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.11	J	0.089	J
Atrazine	1912-24-9	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Benzaldehyde	100-52-7	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Benzo(A)Anthracene	56-55-3	1	5.6	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.43		0.41	
Benzo(A)Pyrene	50-32-8	22	1	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.44		0.41	
Benzo(B)Fluoranthene	205-99-2	1.7	5.6	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.66		0.63	
Benzo(G,H,I)Perylene	191-24-2	1000	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.34		0.34	
Benzo(K)Fluoranthene	207-08-9	1.7	56	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.28		0.32	
Bis(2-Chloroethoxy) Methane	111-91-1	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Bis(2-Chloroethyl) Ether	111-44-4	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Bis(2-Ethylhexyl) Phthalate	117-81-7	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Bis-Chloroisopropyl Ether	108-60-1	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Butyl Benzyl Phthalate	85-68-7	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Caprolactam	105-60-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Carbazole	86-74-8	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.13	J	0.13	J
Chrysene	218-01-9	1	56	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.57		0.57	
Dibenzo(A,H)Anthracene	53-70-3	1000	0.56	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	0.098	J
Dibenzofuran	132-64-9	210	350	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.034	J	0.042	J
Diethylphthalate	84-66-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Dimethylphthalate	131-11-3	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Di-N-Butylphthalate	84-74-2	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Di-N-Octyl Phthalate	117-84-0	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Fluoranthene	206-44-0	1000	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	1.2		1.3	
Fluorene	86-73-7	386	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.066	J	0.063	J
Hexachlorobenzene	118-74-1	3.2	6	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Hexachlorobutadiene	87-68-3	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Hexachlorocyclopentadiene	77-47-4	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Hexachloroethane	67-72-1	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Indeno(1,2,3-Cd)Pyrene	193-39-5	8.2	5.6	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.29		0.3	
Isophorone	78-59-1	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Naphthalene	91-20-3	12	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Nitrobenzene	98-95-3	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U

Table 8B - Soil Sample Results Summary - All Other Analytes
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

			Location ID	BW201		BW201		BW202		BW202		MW204		MW204		MW205		MW205		SB202		SB202	
			Sample ID	BW201-8.5-9.5-1-20180529		BW201-8.5-9.5-20180529		BW202-11-12-1-20180524		BW202-11-12-20180524		MW204-16.5-17.5-1-20180523		MW204-16.5-17.5-20180523		MW205-9-10-1-20180529		MW205-9-10-20180529		SB202-8.5-9.5-1-20180518		SB202-8.5-9.5-20180518	
			Sample Date	5/29/2018		5/29/2018		5/24/2018		5/24/2018		5/23/2018		5/23/2018		5/29/2018		5/29/2018		5/18/2018		5/18/2018	
			Sample Depth (ft bgs)	8.5 - 9.5		8.5 - 9.5		11 - 12		11 - 12		16.5 - 17.5		16.5 - 17.5		9 - 10		9 - 10		8.5 - 9.5		8.5 - 9.5	
Analyte	**Case No.**	**PART375REST - POGW (mg/kg)**	**PART375REST- COMMERCIAL (mg/kg)**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**	**Result (mg/kg)**	**Qua.**
N-Nitroso-Di-N-Propylamine	621-64-7	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
N-Nitrosodiphenylamine	86-30-6	NA	NA	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Pentachlorophenol	87-86-5	0.8	6.7	< 0.38	U	< 0.38	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U	< 0.38	U	< 0.38	U	< 0.36	U	< 0.36	U
Phenanthrene	85-01-8	1000	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.74		0.79	
Phenol	108-95-2	0.33	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	< 0.19	U	< 0.19	U
Pyrene	129-00-0	1000	500	< 0.2	U	< 0.19	U	< 0.19	U	< 0.2	U	< 0.18	U	< 0.18	U	< 0.2	U	< 0.2	U	0.96		1	

Notes:

ft bgs Feet below ground surface
ID Identification
mg/kg Milligrams per kilogram
NA Not available
No. Number
PART375REST - POGW 6 New York Codes, Rules and Regulations Part 375 - Protection of Groundwater
PART375REST- COMMERCIAL 6 New York Codes, Rules and Regulations Part 375 - Commercial
Qua. Qualifier
VOCs Volatile organic compounds
B Analyte found in associated blank sample
J Estimated analytical value
JL Definition not known
NJ The analysis indicate the presence of an analyte "tentatively identified"
R Rejected
U Analytical non-detect value
UJ Compound was analyzed but not detected; the value given is an estimate
UT Non-detect value but value reported is less than the laboratory method detection limit.

Table 9A - Groundwater Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

Location ID			BP-1		BW1		BW1		BW201		BW201		BW202		BW202		MW201		MW201		MW202	
Sample ID			SUMP-20180618		BP-1-20180620		BW1-16.5-25-20200108		BW201-20180618		BW201-21.3-31.3-20200109		BW202-20180619		BW202-21.3-30.3-20200108		MW201-20180620		MW201-6-16-20200108		MW202-20180619	
Sample Date			6/18/2018		6/20/2018		1/8/2020		6/18/2018		1/9/2020		6/19/2018		1/8/2020		6/20/2018		1/8/2020		6/19/2018	
Sample Depth (ft bgs)			0 - 0		16.5 - 25		16.5 - 25		21.3 - 31.3		21.3 - 31.3		21.3 - 30.3		21.3 - 30.3		6 - 16		6 - 16		4.3 - 14.3	
Analyte	**Cas No.**	**NYS GW Criteria (ug/l)**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**	**Results**	**Qual.**
1,1,1-Trichloroethane	71-55-6	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,1,2,2-Tetrachloroethane	79-34-5	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,1,2-Trichloroethane	79-00-5	1	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,1-Dichloroethane	75-34-3	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,1-Dichloroethene	75-35-4	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,2,4-Trichlorobenzene	120-82-1	NA	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,2-Dibromoethane	106-93-4	0.0006	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,2-Dichlorobenzene	95-50-1	3	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,2-Dichloroethane	107-06-2	0.6	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,2-Dichloropropane	78-87-5	1	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,3-Dichlorobenzene	541-73-1	3	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
1,4-Dichlorobenzene	106-46-7	3	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
2-Butanone	78-93-3	50	< 40	U	< 10	U	< 10	U	< 50	U	< 50	U	< 50	U	< 10	U	< 10	U	< 10	U	< 20	U
2-Hexanone	591-78-6	50	< 20	U	< 5.0	U	< 5.0	U	< 25	U	< 25	U	< 25	U	< 5.0	U	< 5.0	U	< 5.0	U	< 10	U
4-Methyl-2-Pentanone	108-10-1	NA	< 20	U	< 5.0	U	< 5.0	U	< 25	U	< 25	U	< 25	U	< 5.0	U	< 5.0	U	< 5.0	U	< 10	U
Acetone	67-64-1	50	< 40	U	< 10	U	< 10	U	< 50	U	< 50	U	< 50	U	< 10	U	< 10	U	< 10	U	< 20	U
Benzene	71-43-2	1	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Bromodichloromethane	75-27-4	50	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Bromoform	75-25-2	50	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Bromomethane	74-83-9	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Carbon Disulfide	75-15-0	60	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Carbon Tetrachloride	56-23-5	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Chlorobenzene	108-90-7	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Chlorodibromomethane	124-48-1	50	< 4.0	U	< 1.0	UT	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	UT	< 1.0	U	< 2.0	U
Chloroethane	75-00-3	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Chloroform	67-66-3	7	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Chloromethane	74-87-3	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Cis-1,2-Dichloroethene	156-59-2	**5**	< 4.0	U	**7.6**		4.6		**110**		**120**		**11**		**58**		**36**		**40**		**19**	
Cis-1,3-Dichloropropene	10061-01-5	NA	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Cyclohexane	110-82-7	NA	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Dichlorodifluoromethane	75-71-8	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Dichloromethane	75-09-2	**5**	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Ethylbenzene	100-41-4	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Freon 113	76-13-1	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Isopropyl benzene	98-82-8	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U

Table 9A - Groundwater Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

		Location ID	BP-1		BW1		BW1		BW201		BW201		BW202		BW202		MW201		MW201		MW202	
		Sample ID	SUMP-20180618		BP-1-20180620		BW1-16.5-25-20200108		BW201-20180618		BW201-21.3-31.3-20200109		BW202-20180619		BW202-21.3-30.3-20200108		MW201-20180620		MW201-6-16-20200108		MW202-20180619	
		Sample Date	6/18/2018		6/20/2018		1/8/2020		6/18/2018		1/9/2020		6/19/2018		1/8/2020		6/20/2018		1/8/2020		6/19/2018	
		Sample Depth (ft bgs)	0 - 0		16.5 - 25		16.5 - 25		21.3 - 31.3		21.3 - 31.3		21.3 - 30.3		21.3 - 30.3		6 - 16		6 - 16		4.3 - 14.3	
Analyte	Cas No.	NYS GW Criteria (ug/l)	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.
Methyl acetate	79-20-9	NA	< 10	U	< 2.5	U	< 2.5	U	< 13	U	< 13	U	< 13	U	< 2.5	U	< 2.5	U	< 2.5	U	< 5.0	U
Methyl T-Butyl Ether	1634-04-4	10	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	1		0.24	J	0.17	J	< 2.0	U
Methylcyclohexane	108-87-2	NA	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	0.16	J	< 1.0	U	< 2.0	U
Styrene	100-42-5	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Tetrachloroethene	127-18-4	**5**	< 4.0	U	**66**		**71**		< 5.0	U	**22**		**390**		< 1.0	U	0.45	J	0.41	J	**110**	
Toluene	108-88-3	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Trans-1,2-Dichloroethene	156-60-5	**5**	< 4.0	U	1.1		< 1.0	U	**26**		**5.3**		< 5.0	U	**7.3**		**5.2**		**7.6**		< 2.0	U
Trans-1,3-Dichloropropene	10061-02-6	NA	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Trichloroethylene	79-01-6	**5**	< 4.0	U	**25**		**25**		**20**		**11**		**26**		**11**		**16**		**17**		**12**	
Trichlorofluoromethane	75-69-4	5	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	< 1.0	U	< 1.0	U	< 1.0	U	< 2.0	U
Vinyl Chloride	75-01-4	2	< 4.0	U	< 1.0	U	< 1.0	U	< 5.0	U	< 5.0	U	< 5.0	U	**3.2**		< 1.0	U	< 1.0	U	< 2.0	U
Xylenes, Total	XYLENES	NA	< 8.0	U	< 2.0	U	< 2.0	U	< 10	U	< 10	U	< 10	U	< 2.0	U	< 2.0	U	< 2.0	U	< 4.0	U

Notes:

ft bgs Feet below ground surface
ID Identification
NA Not available
No. Number
Qua. Qualifier
ug/l Micrograms per liter
VOCs Volatile organic compounds
J Estimated analytical value
U Analytical non-detect value
UT Non-detect value but value reported is less than the laboratory method detection limit.
25 Results that are bold and highlighted exceed the New York State Department of Environmental Conservation (NYSDEC) Technical & Operation Guidance Series (TOGS) 1.1.1 Groundwater Standards

Table 9A - Groundwater Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

		Location ID	MW202		MW203		MW203		MW203		MW204		MW204		MW205		MW205		MW205		MW206		MW206	
		Sample ID	MW202-4.3-14.3-20200109		MW203-20180620		MW203-4.8-14.8-20200108		MW203-4.8-14.8-20200108-1		MW204-20180618		MW204-7.8-17.8-20200108		MW205-20180618		MW205-20180618-1		MW205-8.7-18.7-20200109		MW206-20180619		MW206-10-20-20200109	
		Sample Date	1/9/2020		6/20/2018		1/8/2020		1/8/2020		6/18/2018		1/8/2020		6/18/2018		6/18/2018		1/9/2020		6/19/2018		1/9/2020	
		Sample Depth (ft bgs)	4.3 - 14.3		4.8 - 14.8		4.8 - 14.8		4.8 - 14.8		7.8 - 17.8		7.8 - 17.8		8.7 - 18.7		8.7 - 18.7		8.7 - 18.7		10 - 20		10 - 20	
Analyte	Cas No.	NYS GW Criteria (ug/l)	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	MW205	Qual.	Results	Qual.	Results	Qual.
1,1,1-Trichloroethane	71-55-6	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,1,2,2-Tetrachloroethane	79-34-5	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,1,2-Trichloroethane	79-00-5	1	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,1-Dichloroethane	75-34-3	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,1-Dichloroethene	75-35-4	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,2,4-Trichlorobenzene	120-82-1	NA	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,2-Dibromoethane	106-93-4	0.0006	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,2-Dichlorobenzene	95-50-1	3	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,2-Dichloroethane	107-06-2	0.6	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,2-Dichloropropane	78-87-5	1	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,3-Dichlorobenzene	541-73-1	3	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
1,4-Dichlorobenzene	106-46-7	3	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
2-Butanone	78-93-3	50	< 10	U	< 200	U	< 200	U	< 200	U	< 100	U	< 100	U	< 10	U	< 10	U	< 10	U	< 40	U	< 40	U
2-Hexanone	591-78-6	50	< 5.0	U	< 100	U	< 100	U	< 100	U	< 50	U	< 50	U	< 5.0	U	< 5.0	U	< 5.0	U	< 20	U	< 20	U
4-Methyl-2-Pentanone	108-10-1	NA	< 5.0	U	< 100	U	< 100	U	< 100	U	< 50	U	< 50	U	< 5.0	U	< 5.0	U	< 5.0	U	< 20	U	< 20	U
Acetone	67-64-1	50	< 10	U	< 200	U	< 200	U	< 200	U	< 100	U	< 100	U	< 10	U	< 10	U	< 10	U	< 40	U	< 40	U
Benzene	71-43-2	1	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Bromodichloromethane	75-27-4	50	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Bromoform	75-25-2	50	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Bromomethane	74-83-9	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Carbon Disulfide	75-15-0	60	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Carbon Tetrachloride	56-23-5	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Chlorobenzene	108-90-7	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Chlorodibromomethane	124-48-1	50	< 1.0	U	< 20	UT	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Chloroethane	75-00-3	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Chloroform	67-66-3	7	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Chloromethane	74-87-3	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Cis-1,2-Dichloroethene	156-59-2	**5**	**11**		**26**		**28**		**25**		**13**		**15**		**6.4**		**6.7**		2.9		**12**		**8.2**	
Cis-1,3-Dichloropropene	10061-01-5	NA	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Cyclohexane	110-82-7	NA	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Dichlorodifluoromethane	75-71-8	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Dichloromethane	75-09-2	**5**	< 1.0	U	< 20	U	< 20	U	**12**	**J**	**9.5**	**J**	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Ethylbenzene	100-41-4	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Freon 113	76-13-1	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Isopropyl benzene	98-82-8	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U

Table 9A - Groundwater Sample Results Summary - VOCs Only
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

		Location ID	MW202		MW203		MW203		MW203		MW204		MW204		MW205		MW205		MW205		MW206		MW206	
		Sample ID	MW202-4.3-14.3-20200109		MW203-20180620		MW203-4.8-14.8-20200108		MW203-4.8-14.8-20200108-1		MW204-20180618		MW204-7.8-17.8-20200108		MW205-20180618		MW205-20180618-1		MW205-8.7-18.7-20200109		MW206-20180619		MW206-10-20-20200109	
		Sample Date	1/9/2020		6/20/2018		1/8/2020		1/8/2020		6/18/2018		1/8/2020		6/18/2018		6/18/2018		1/9/2020		6/19/2018		1/9/2020	
		Sample Depth (ft bgs)	4.3 - 14.3		4.8 - 14.8		4.8 - 14.8		4.8 - 14.8		7.8 - 17.8		7.8 - 17.8		8.7 - 18.7		8.7 - 18.7		8.7 - 18.7		10 - 20		10 - 20	
Analyte	Cas No.	NYS GW Criteria (ug/l)	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	Results	Qual.	MW205	Qual.	Results	Qual.	Results	Qual.
Methyl acetate	79-20-9	NA	< 2.5	U	< 50	U	< 50	U	< 50	U	< 25	U	< 25	U	< 2.5	U	< 2.5	U	< 2.5	U	< 10	U	< 10	U
Methyl T-Butyl Ether	1634-04-4	10	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Methylcyclohexane	108-87-2	NA	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Styrene	100-42-5	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Tetrachloroethene	127-18-4	**5**	**61**		**960**		**880**		**850**		**440**		**460**		**16**		**15**		**9.5**		**290**		**160**	
Toluene	108-88-3	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Trans-1,2-Dichloroethene	156-60-5	**5**	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Trans-1,3-Dichloropropene	10061-02-6	NA	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Trichloroethylene	79-01-6	**5**	**7.5**		**93**		**93**		**91**		**35**		**49**		**39**		**39**		**18**		**56**		**33**	
Trichlorofluoromethane	75-69-4	5	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Vinyl Chloride	75-01-4	2	< 1.0	U	< 20	U	< 20	U	< 20	U	< 10	U	< 10	U	< 1.0	U	< 1.0	U	< 1.0	U	< 4.0	U	< 4.0	U
Xylenes, Total	XYLENES	NA	< 2.0	U	< 40	U	< 40	U	< 40	U	< 20	U	< 20	U	< 2.0	U	< 2.0	U	< 2.0	U	< 8.0	U	< 8.0	U

Notes:

ft bgs Feet below ground surface
ID Identification
NA Not available
No. Number
Qua. Qualifier
ug/l Micrograms per liter
VOCs Volatile organic compounds
J Estimated analytical value
U Analytical non-detect value
UT Non-detect value but value reported is less than the laboratory method detection limit.
25 Results that are bold and highlighted exceed the New York State Department of Environmental Conservation (NYSDEC) Technical & Operation Guidance Series (TOGS) 1.1.1 Groundwater Standards

Table 9B - Groundwater Sample Results Summary - All Other Analytes
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

		Location ID	BW201		MW205		MW205	
		Sample ID	BW201-20180618		MW205-20180618		MW205-20180618-1	
		Sample Date	6/18/2018		6/18/2018		6/18/2018	
		Sample Depth (ft bgs)	21.3 - 31.3		8.7 - 18.7		8.7 - 18.7	
Analyte	**Cas No.**	**NYS GW Criteria (ug/l)**	**Result (ug/l)**	**Qua.**	**Result (ug/l)**	**Qua.**	**Result (ug/l)**	**Qua.**
2-(N-methyl perfluorooctanesulfonamido) acetic acid	2355-31-9	NA	< 0.019	U	< 0.019	U	< 0.019	U
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine	2991-50-6	NA	< 0.019	U	< 0.019	U	< 0.019	U
Perfluorobutanesulfonic Acid	375-73-5	NA	0.00082	J	0.0017	J	0.0016	J
Perfluorobutyric Acid (PFBA)	375-22-4	NA	0.012	B	0.015	B	0.015	B
Perfluorodecane Sulfonic Acid	335-77-3	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluorodecanoic Acid (PFDA)	335-76-2	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluorododecanoic Acid (PFDoA)	307-55-1	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluoroheptane Sulfonate (PFHpS)	375-92-8	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NA	0.0015	J	0.0016	J	0.0015	J
Perfluorohexanesulfonic Acid	355-46-4	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluorohexanoic Acid (PFHxA)	307-24-4	NA	0.0028		0.0052		0.0050	
Perfluorononanoic Acid	375-95-1	NA	0.00027	J+	< 0.0019	U	< 0.0019	U
Perfluorooctane Sulfonamide (FOSA)	754-91-6	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluorooctane Sulfonic Acid (PFOS)	1763-23-1	NA	0.00085	J	< 0.0019	U	< 0.0019	U
Perfluorooctanoic acid (PFOA)	335-67-1	NA	0.0028		< 0.0019	U	< 0.0019	U
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NA	0.0053		0.0086		0.0087	
Perfluorotetradecanoic Acid (PFTeA)	376-06-7	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluorotridcanoic Acid (PFTriA)	72629-94-8	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NA	< 0.0019	U	< 0.0019	U	< 0.0019	U
SODIUM 1H,1H,2H,2H-PERFLUORODECANE SULFONATE (8:2)	39108-34-4	NA	< 0.019	U	< 0.019	U	< 0.019	U
SODIUM 1H,1H,2H,2H-PERFLUOROOCTANE SULFONATE (6:2)	27619-97-2	NA	< 0.019	U	< 0.019	U	< 0.019	U
Aluminum	7429-90-5	NA	< 200	U	220		220	
Antimony	7440-36-0	3	< 20	U	< 20	U	< 20	U
Arsenic	7440-38-2	25	< 15	U	< 15	U	< 15	U
Barium	7440-39-3	1000	200		160		160	
Beryllium	7440-41-7	3	< 2.0	U	< 2.0	U	< 2.0	U
Cadmium	7440-43-9	5	< 2.0	U	< 2.0	U	< 2.0	U
Calcium	7440-70-2	NA	142000		148000		152000	
Chromium	7440-47-3	50	1.8	J	1.1	J	< 4.0	U
Cobalt	7440-48-4	NA	< 4.0	U	< 4.0	U	0.73	J
Copper	7440-50-8	200	< 10	U	1.6	J	1.7	J
Iron	7439-89-6	**300**	**2500**		300		**310**	
Lead	7439-92-1	25	< 10	U	< 10	U	< 10	U
Magnesium	7439-95-4	**35000**	**41900**		**38600**		**39500**	
Manganese	7439-96-5	300	270		180		180	
Nickel	7440-02-0	100	1.5	J	3.4	J	3.7	J
Potassium	7440-09-7	NA	11400		9800		10000	
Selenium	7782-49-2	10	< 25	U	< 25	U	< 25	U
Silver	7440-22-4	50	< 6.0	U	< 6.0	U	< 6.0	U
Sodium	7440-23-5	**20000**	**307000**		**283000**		**293000**	
Thallium	7440-28-0	0.5	< 20	U	< 20	U	< 20	U
Vanadium	7440-62-2	NA	< 5.0	U	< 5.0	U	< 5.0	U
Zinc	7440-66-6	2000	2.4	J	2.1	J	1.6	J
4,4'-DDD	72-54-8	0.3	< 0.060	U	< 0.050	U	< 0.052	U
4,4'-DDE	72-55-9	0.2	< 0.060	U	< 0.050	U	< 0.052	U
4,4'-DDT	50-29-3	0.2	< 0.060	U	< 0.050	U	< 0.052	U
Aldrin	309-00-2	NA	< 0.060	U	< 0.050	U	< 0.052	U
Alpha-BHC	319-84-6	0.01	< 0.060	U	< 0.050	U	< 0.052	U
Alpha-Chlordane	5103-71-9	NA	< 0.060	U	< 0.050	U	< 0.052	U
Beta-BHC	319-85-7	0.04	< 0.060	U	< 0.050	U	< 0.052	U
Chlorinated Camphene	8001-35-2	0.06	< 0.60	U	< 0.50	U	< 0.52	U
Delta-Bhc	319-86-8	0.04	< 0.060	U	< 0.050	U	< 0.052	U
Dieldrin	60-57-1	0.004	< 0.060	U	< 0.050	U	< 0.052	U
Endosulfan I	959-98-8	NA	0.014	J	< 0.050	U	< 0.052	U
Endosulfan II	33213-65-9	NA	< 0.060	U	< 0.050	U	< 0.052	U
Endosulfan Sulfate	1031-07-8	NA	< 0.060	U	< 0.050	U	< 0.052	U
Endrin	72-20-8	NA	< 0.060	U	< 0.050	U	< 0.052	U
Endrin Aldehyde	7421-93-4	5	< 0.060	U	< 0.050	U	< 0.052	U
Endrin Ketone	53494-70-5	5	< 0.060	U	< 0.050	U	< 0.052	U
Gamma-BHC (Lindane)	58-89-9	0.05	0.012	J	< 0.050	U	< 0.052	U
Gamma-Chlordane	5103-74-2	NA	< 0.060	U	< 0.050	U	< 0.052	U
Heptachlor	76-44-8	0.04	< 0.060	U	< 0.050	U	< 0.052	U
Heptachlor Epoxide	1024-57-3	0.03	< 0.060	U	< 0.050	U	< 0.052	U
Methoxychlor	72-43-5	35	< 0.060	U	< 0.050	U	< 0.052	U
Aroclor 1016	12674-11-2	NA	< 0.50	U	< 0.50	U	< 0.50	U
Aroclor 1221	11104-28-2	NA	< 0.50	U	< 0.50	U	< 0.50	U
Aroclor 1232	11141-16-5	NA	< 0.50	U	< 0.50	U	< 0.50	U
Aroclor 1242	53469-21-9	NA	< 0.50	U	< 0.50	U	< 0.50	U
Aroclor 1248	12672-29-6	NA	< 0.50	U	< 0.50	U	< 0.50	U
Aroclor 1254	11097-69-1	NA	< 0.50	U	< 0.50	U	< 0.50	U
Aroclor 1260	11096-82-5	NA	< 0.50	U	< 0.50	U	< 0.50	U
1,1-Biphenyl	92-52-4	5	< 5.0	U	< 5.0	U	< 5.0	U
2,4,5-Trichlorophenol	95-95-4	NA	< 5.0	U	< 5.0	U	< 5.0	U
2,4,6-Trichlorophenol	88-06-2	NA	< 5.0	U	< 5.0	U	< 5.0	U
2,4-Dichlorophenol	120-83-2	1	< 5.0	U	< 5.0	U	< 5.0	U

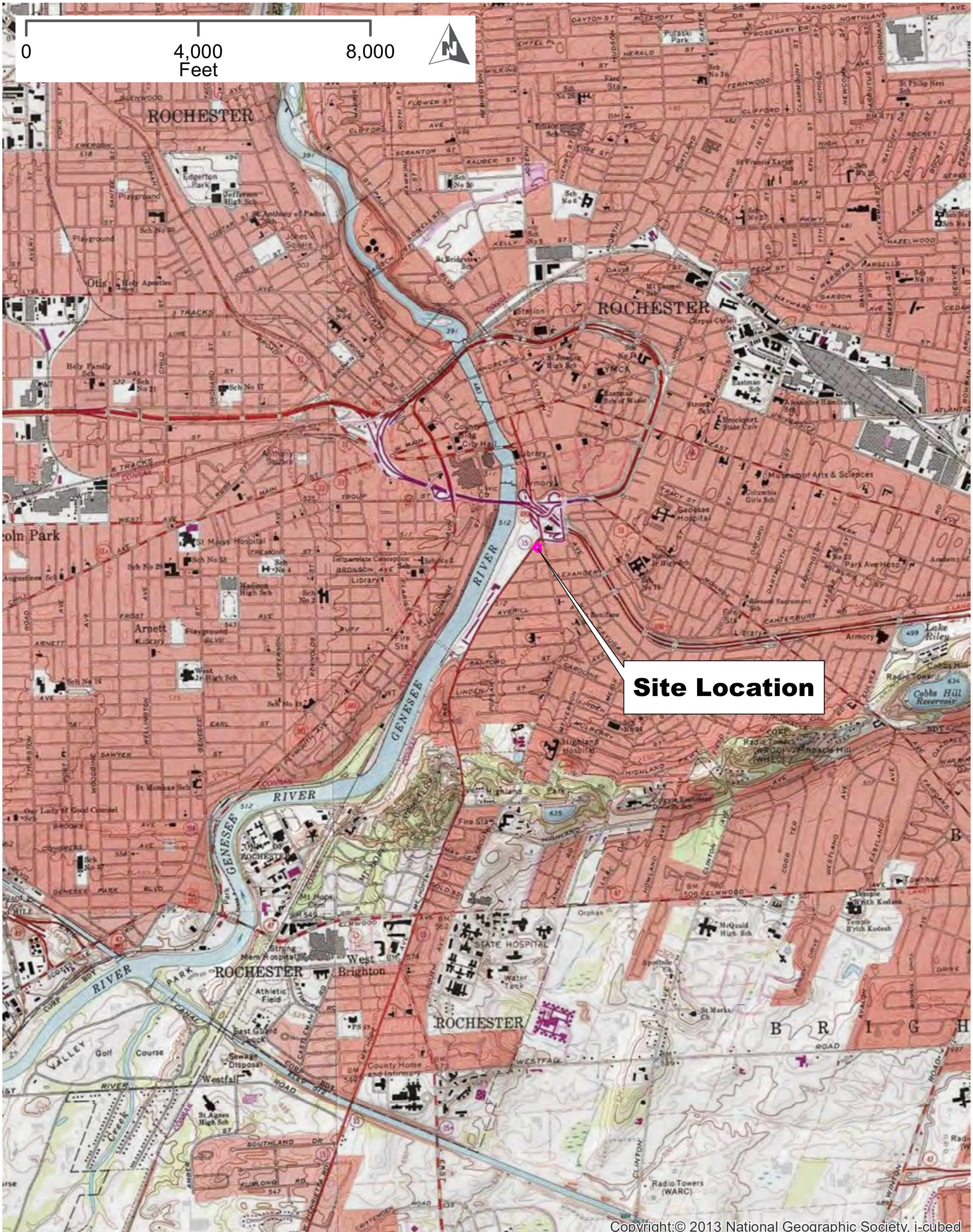
Table 9B - Groundwater Sample Results Summary - All Other Analytes
Former Hall Welter Site, NYSDEC Site Number: 828194
Rochester, Monroe County, New York

		Location ID	**BW201**		**MW205**		**MW205**	
		Sample ID	**BW201-20180618**		**MW205-20180618**		**MW205-20180618-1**	
		Sample Date	**6/18/2018**		**6/18/2018**		**6/18/2018**	
		Sample Depth (ft bgs)	**21.3 - 31.3**		**8.7 - 18.7**		**8.7 - 18.7**	
Analyte	**Cas No.**	**NYS GW Criteria (ug/l)**	**Result (ug/l)**	**Qua.**	**Result (ug/l)**	**Qua.**	**Result (ug/l)**	**Qua.**
2,4-Dimethylphenol	105-67-9	1	< 5.0	U	< 5.0	U	< 5.0	U
2,4-Dinitrophenol	51-28-5	1	< 10	U	< 10	U	< 10	U
2,4-Dinitrotoluene	121-14-2	5	< 5.0	U	< 5.0	U	< 5.0	U
2,6-Dinitrotoluene	606-20-2	5	< 5.0	U	< 5.0	U	< 5.0	U
2-Chloronaphthalene	91-58-7	10	< 5.0	U	< 5.0	U	< 5.0	U
2-Chlorophenol	95-57-8	NA	< 5.0	U	< 5.0	U	< 5.0	U
2-Methylnaphthalene	91-57-6	NA	< 5.0	U	< 5.0	U	< 5.0	U
2-Methylphenol	95-48-7	NA	< 5.0	U	< 5.0	U	< 5.0	U
2-Nitroaniline	88-74-4	5	< 10	U	< 10	U	< 10	U
2-Nitrophenol	88-75-5	NA	< 5.0	U	< 5.0	U	< 5.0	U
3,3`-Dichlorobenzidine	91-94-1	5	< 5.0	U	< 5.0	U	< 5.0	U
3-Nitroaniline	99-09-2	5	< 10	U	< 10	U	< 10	U
4,6-Dinitro-2-Methylphenol	534-52-1	NA	< 10	U	< 10	U	< 10	U
4-Bromophenyl Phenyl Ether	101-55-3	NA	< 5.0	U	< 5.0	U	< 5.0	U
4-Chloro-3-Methylphenol	59-50-7	NA	< 5.0	U	< 5.0	U	< 5.0	U
4-Chloroaniline	106-47-8	5	< 5.0	U	< 5.0	U	< 5.0	U
4-Chlorophenyl Phenylether	7005-72-3	NA	< 5.0	U	< 5.0	U	< 5.0	U
4-Methylphenol	106-44-5	NA	< 10	U	< 10	U	< 10	U
4-Nitroaniline	100-01-6	5	< 10	U	< 10	U	< 10	U
4-Nitrophenol	100-02-7	NA	< 10	U	< 10	U	< 10	U
Acenaphthene	83-32-9	20	< 5.0	U	< 5.0	U	< 5.0	U
Acenaphthylene	208-96-8	NA	< 5.0	U	< 5.0	U	< 5.0	U
Acetophenone	98-86-2	NA	< 5.0	U	< 5.0	U	< 5.0	U
Anthracene	120-12-7	50	< 5.0	U	< 5.0	U	< 5.0	U
Atrazine	1912-24-9	7.5	< 5.0	U	< 5.0	U	< 5.0	U
Benzaldehyde	100-52-7	NA	< 5.0	U	< 5.0	U	< 5.0	U
Benzo(A)Anthracene	56-55-3	0.002	< 5.0	U	< 5.0	U	< 5.0	U
Benzo(A)Pyrene	50-32-8	NA	< 5.0	U	< 5.0	U	< 5.0	U
Benzo(B)Fluoranthene	205-99-2	0.002	< 5.0	U	< 5.0	U	< 5.0	U
Benzo(G,H,I)Perylene	191-24-2	NA	< 5.0	U	< 5.0	U	< 5.0	U
Benzo(K)Fluoranthene	207-08-9	0.002	< 5.0	U	< 5.0	U	< 5.0	U
Bis(2-Chloroethoxy) Methane	111-91-1	5	< 5.0	U	< 5.0	U	< 5.0	U
Bis(2-Chloroethyl) Ether	111-44-4	1	< 5.0	U	< 5.0	U	< 5.0	U
Bis(2-Ethylhexyl) Phthalate	117-81-7	5	< 5.0	U	< 5.0	U	< 5.0	U
Bis-Chloroisopropyl Ether	108-60-1	5	< 5.0	U	< 5.0	U	< 5.0	U
Butyl Benzyl Phthalate	85-68-7	50	< 5.0	U	< 5.0	U	< 5.0	U
Caprolactam	105-60-2	NA	< 5.0	U	6.5		7.1	
Carbazole	86-74-8	NA	< 5.0	U	< 5.0	U	< 5.0	U
Chrysene	218-01-9	0.002	< 5.0	U	< 5.0	U	< 5.0	U
Dibenzo(A,H)Anthracene	53-70-3	NA	< 5.0	U	< 5.0	U	< 5.0	U
Dibenzofuran	132-64-9	NA	< 10	U	< 10	U	< 10	U
Diethylphthalate	84-66-2	50	< 5.0	U	< 5.0	U	< 5.0	U
Dimethylphthalate	131-11-3	50	< 5.0	U	< 5.0	U	< 5.0	U
Di-N-Butylphthalate	84-74-2	50	< 5.0	U	< 5.0	U	< 5.0	U
Di-N-Octyl Phthalate	117-84-0	NA	< 5.0	U	< 5.0	U	< 5.0	U
Fluoranthene	206-44-0	50	< 5.0	U	< 5.0	U	< 5.0	U
Fluorene	86-73-7	50	< 5.0	U	< 5.0	U	< 5.0	U
Hexachlorobenzene	118-74-1	0.04	< 5.0	U	< 5.0	U	< 5.0	U
Hexachlorobutadiene	87-68-3	0.5	< 5.0	U	< 5.0	U	< 5.0	U
Hexachlorocyclopentadiene	77-47-4	5	< 5.0	U	< 5.0	U	< 5.0	U
Hexachloroethane	67-72-1	5	< 5.0	U	< 5.0	U	< 5.0	U
Indeno(1,2,3-Cd)Pyrene	193-39-5	0.002	< 5.0	U	< 5.0	U	< 5.0	U
Isophorone	78-59-1	50	< 5.0	U	< 5.0	U	< 5.0	U
Naphthalene	91-20-3	10	< 5.0	U	< 5.0	U	< 5.0	U
Nitrobenzene	98-95-3	0.4	< 5.0	U	< 5.0	U	< 5.0	U
N-Nitroso-Di-N-Propylamine	621-64-7	NA	< 5.0	U	< 5.0	U	< 5.0	U
N-Nitrosodiphenylamine	86-30-6	50	< 5.0	U	< 5.0	U	< 5.0	U
Pentachlorophenol	87-86-5	1	< 10	U	< 10	U	< 10	U
Phenanthrene	85-01-8	50	< 5.0	U	< 5.0	U	< 5.0	U
Phenol	108-95-2	1	< 5.0	U	< 5.0	U	< 5.0	U
Pyrene	129-00-0	50	< 5.0	U	< 5.0	U	< 5.0	U
1,4-Dioxane	123-91-1	NA	< 0.22	U	< 0.20	U	< 0.20	U

Notes:

ft bgs	Feet below ground surface
ID	Identification
NA	Not available
No.	Number
Qua.	Qualifier
ug/l	Micrograms per liter
VOCs	Volatile Organic Compounds
B	Analyte is found in associated blank sample
J	Estimated Analytical Value
J+	Estimated Analytical Value is High
U	Analytical Non-Detect Value
300	Results that are bold and highlighted exceed the New York State Department of Environmental Conservation (NYSDEC) Technical & Operation Guidance Series (TOGS) 1.1.1 Groundwater Standards

Figures

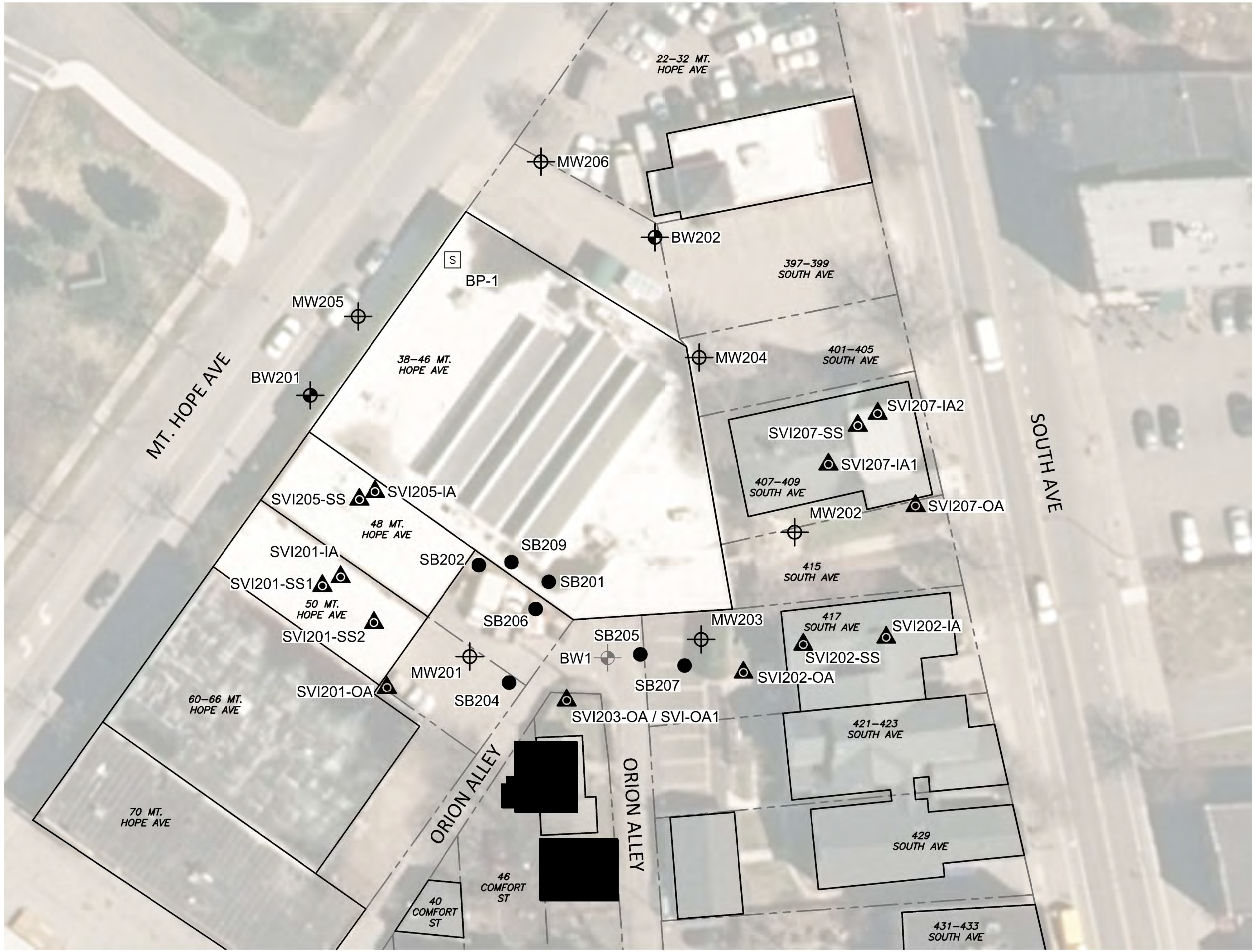


FORMER HALL WELTER SITE (SITE NO. 828194)

SITE LOCATION MAP

FIGURE 1

PATH: C:\USERS\APATEL\DESKTOP\MY DOCUMENTS\NYSDEC - FORMER HALL WETLER SITE\SITE LOCATION MAP.MXD - USER: APATEL - DATE: 9/22/2017



LEGEND:

- BEDROCK WELL LOCATION
- EXISTING BEDROCK WELL LOCATION
- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- SVI SAMPLE LOCATION

SVI SOIL VAPOR INTRUSION
SS SUB SLAB
IA INDOOR AIR
OA OUTDOOR AIR

- BUILDING
- PROPERTY LINE
- S SUMP LOCATION

N

NOTES:

1. SURVEY OF SAMPLE LOCATIONS COMPLETED ON MAY 31, 2018 BY RAVI ENGINEERING AND LAND SURVEYING, P.C. HORIZONTAL COORDINATE SYSTEM: N.A.D. '83(2011) N.Y.S.P.C.S. WESTERN ZONE. VERTICAL COORDINATE SYSTEM: N.A.V.D. '88.
2. SVI SAMPLE LOCATIONS WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON FIELD NOTES.
2. OFF-SITE BUILDING OUTLINES AND PROPERTY LINES WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON AN AERIAL PHOTOGRAPH AND TAX MAP, RESPECTIVELY.

40 0 40 80

(IN FEET)
1" = 40'

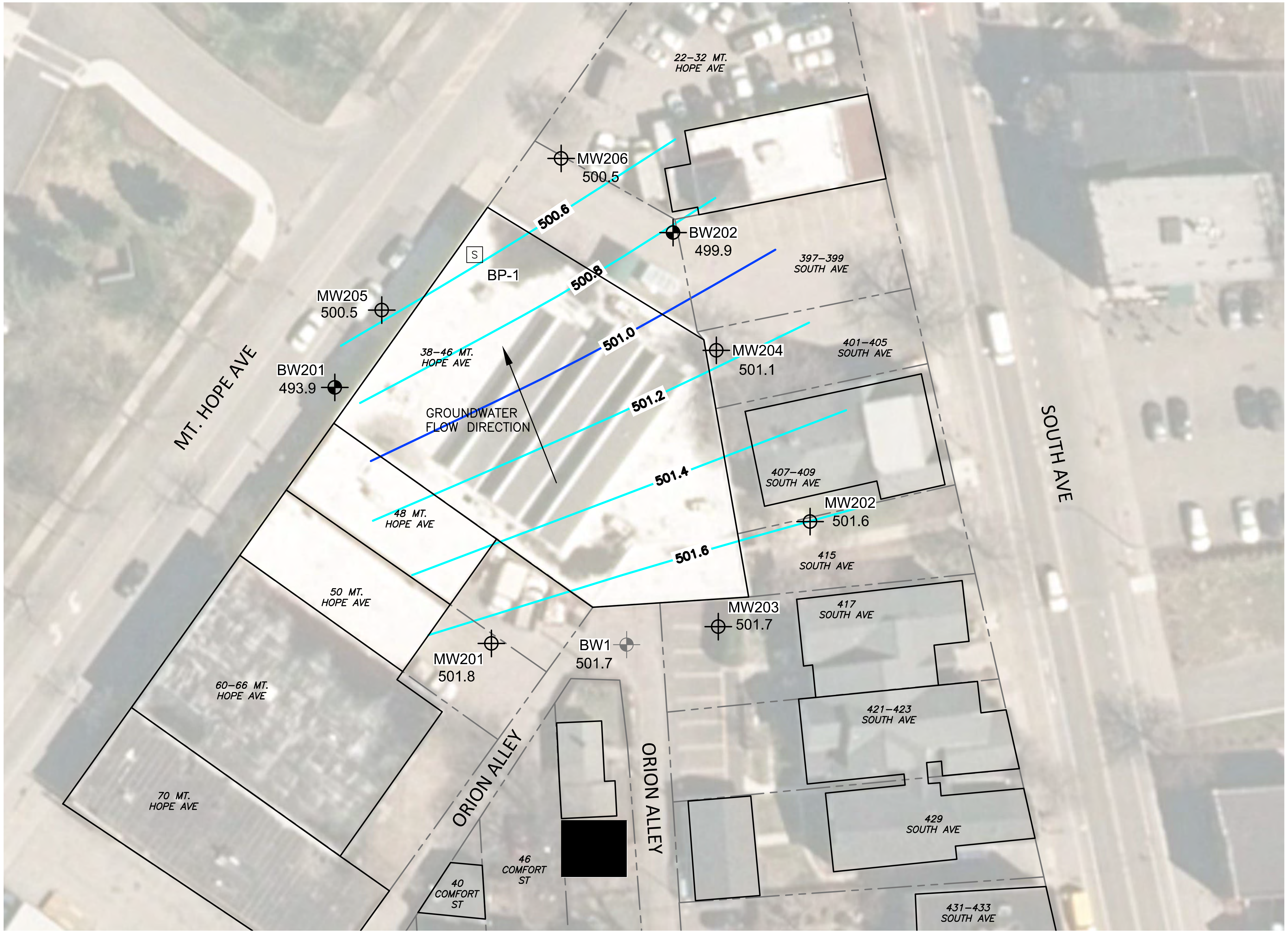
HDR

SITE PLAN AND SAMPLE LOCATIONS

FORMER HALL WELTER SITE
REMEDIAL INVESTIGATION
NYSDEC SITE# 828194
ROCHESTER, NEW YORK

DATE
2020-02

FIGURE
2



LEGEND:

BEDROCK WELL LOCATION

EXISTING BEDROCK WELL LOCATION

MONITORING WELL LOCATION

MAJOR GROUNDWATER CONTOUR LINE (JUNE 2018) (INTERPRETED)

MINOR GROUNDWATER CONTOUR LINE (JUNE 2018) (INTERPRETED)

MW202 — LOCATION ID

501.6 — GROUNDWATER ELEVATION (JUNE 2018; FEET AMSL)

AMSL	ABOVE MEAN SEA LEVEL
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHYLENE
ug/l	MICROGRAMS PER LITER

NOTES:

1. SURVEY OF SAMPLE LOCATIONS COMPLETED ON MAY 31, 2018 BY RAVI ENGINEERING AND LAND SURVEYING, P.C. HORIZONTAL COORDINATE SYSTEM: N.A.D. '83(2011) N.Y.S.P.C.S. WESTERN ZONE. VERTICAL COORDINATE SYSTEM: N.A.V.D. '88.
2. GROUNDWATER ELEVATIONS WERE CALCULATED BASED ON GROUNDWATER LEVELS COLLECTED IN JUNE 2018. UNIT: FEET AMSL.
3. OFF-SITE BUILDING OUTLINES AND PROPERTY LINES WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON AN AERIAL PHOTOGRAPH AND TAX MAP, RESPECTIVELY.

40 0 40 80

(IN FEET)

1" = 40'

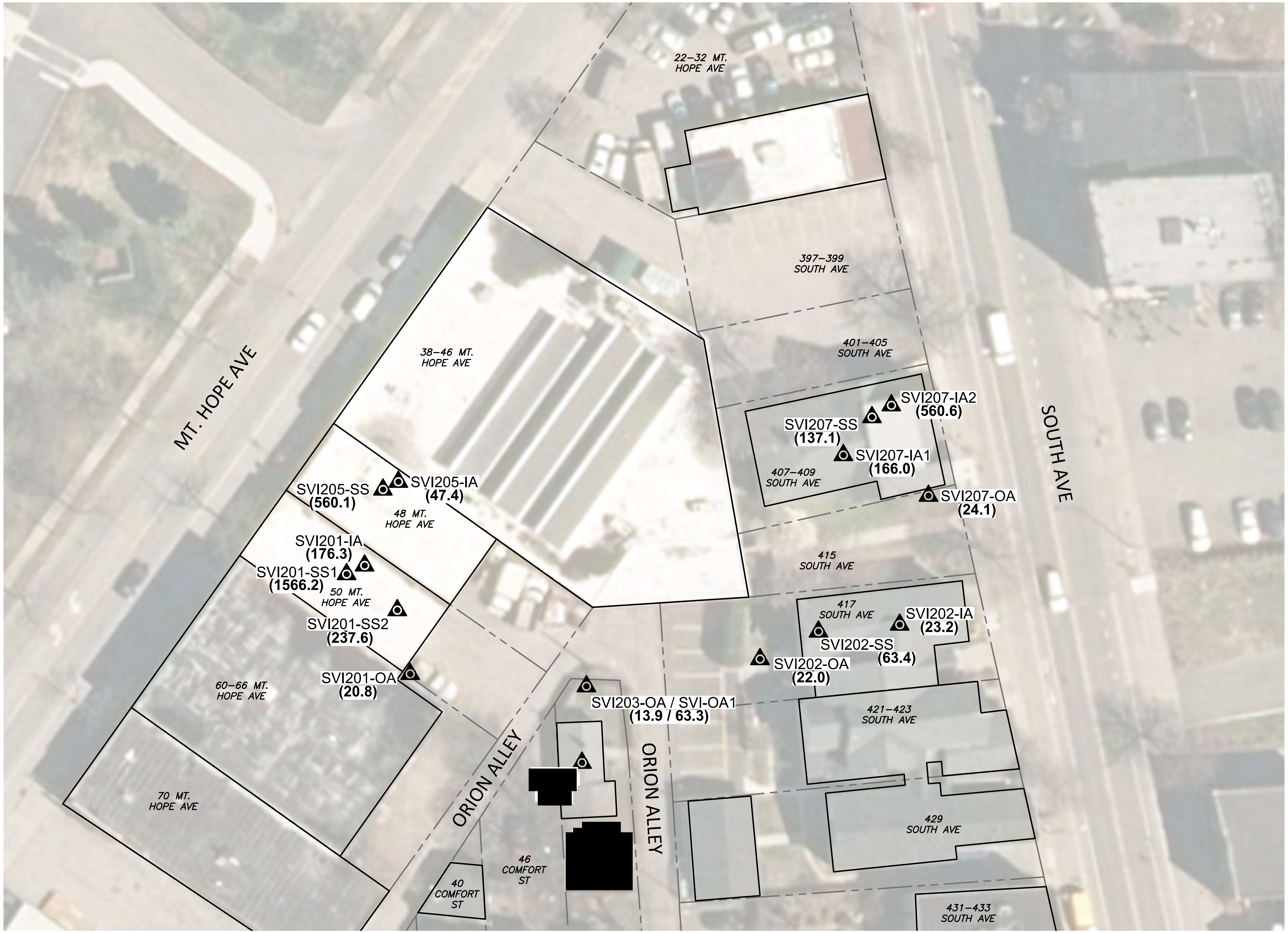
HDR

INTERPRETED GROUNDWATER ELEVATION MAP (JUNE 2018)

FORMER HALL WELTER SITE
REMEDIAL INVESTIGATION
NYSDEC SITE# 828194
ROCHESTER, NEW YORK

DATE 2020-02

FIGURE 3



N

LEGEND

BUILDING

PROPERTY LINE

SVI SAMPLE LOCATION

SVI SOIL VAPOR INTRUSION
SS SUB SLAB
IA INDOOR AIR
OA OUTDOOR AIR

SAMPLE ID

SVI207-IA2
(560.6)

TOTAL VOLATILE ORGANIC CARBON CONCENTRATION (ug/m^3)

NOTES:

1. SURVEY OF SAMPLE LOCATIONS COMPLETED ON MAY 31, 2018 BY RAVI ENGINEERING AND LAND SURVEYING, P.C. HORIZONTAL COORDINATE SYSTEM: N.A.D. '83(2011) N.Y.S.P.C.S. WESTERN ZONE. VERTICAL COORDINATE SYSTEM: N.A.V.D. '88.
2. SVI SAMPLE LOCATIONS WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON FIELD NOTES.
3. OFF-SITE BUILDING OUTLINES AND PROPERTY LINES WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON AN AERIAL PHOTOGRAPH AND TAX MAP, RESPECTIVELY.

40 0 40 80

(IN FEET)
1" = 40'

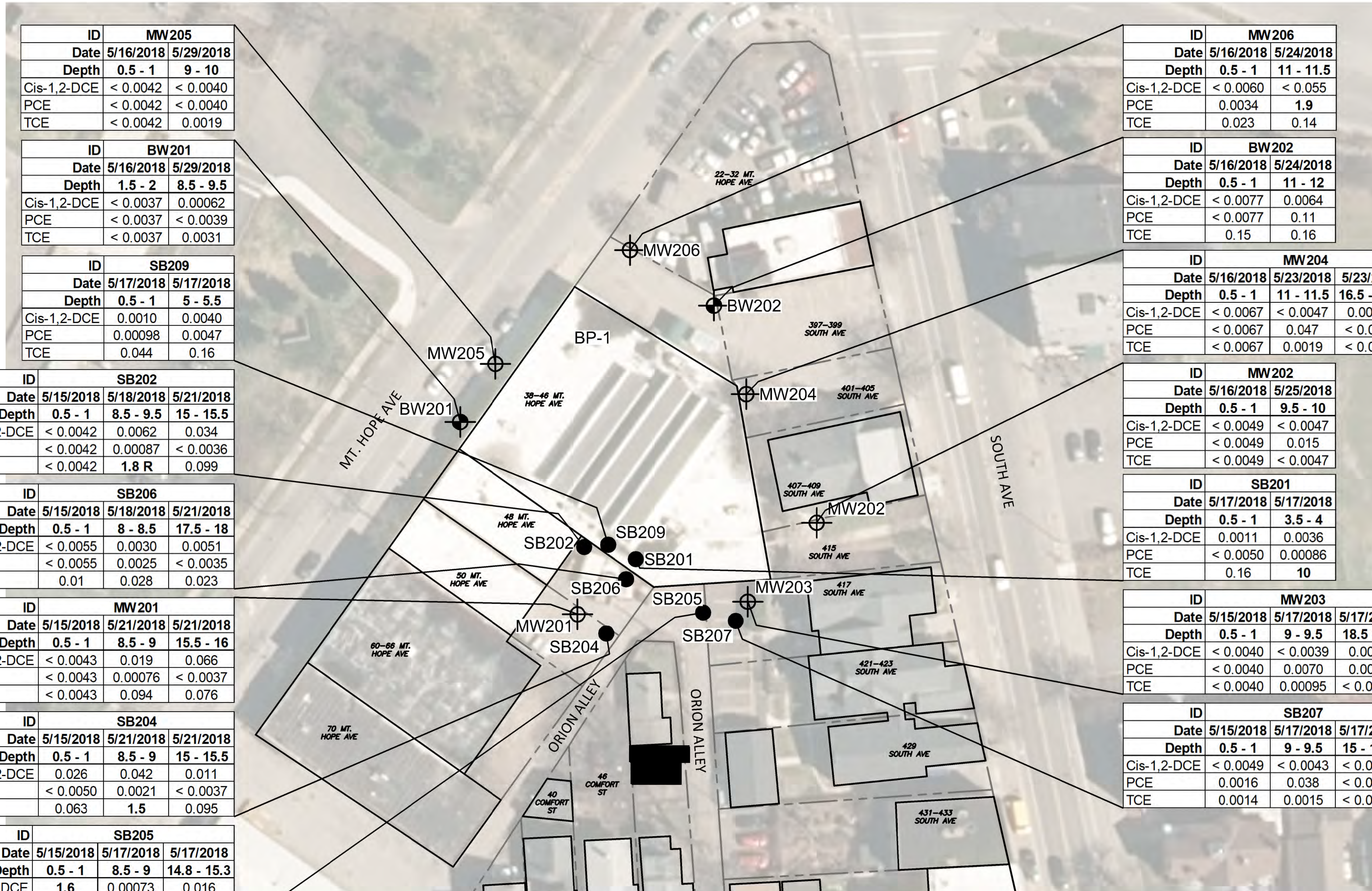
HDR

SUMMARY OF SOIL VAPOR INSTRUSION SAMPLE ANALYTICAL RESULTS

FORMER HALL WELTER SITE
REMEDIAL INVESTIGATION
NYSDEC SITE# 828194
ROCHESTER, NEW YORK

DATE
2020-02

FIGURE
4



ID	MW205	
Date	5/16/2018	5/29/2018
Depth	0.5 - 1	9 - 10
Cis-1,2-DCE	< 0.0042	< 0.0040
PCE	< 0.0042	< 0.0040
TCE	< 0.0042	0.0019

ID	BW201	
Date	5/16/2018	5/29/2018
Depth	1.5 - 2	8.5 - 9.5
Cis-1,2-DCE	< 0.0037	0.00062
PCE	< 0.0037	< 0.0039
TCE	< 0.0037	0.0031

ID	SB209	
Date	5/17/2018	5/17/2018
Depth	0.5 - 1	5 - 5.5
Cis-1,2-DCE	0.0010	0.0040
PCE	0.00098	0.0047
TCE	0.044	0.16

ID	SB202		
Date	5/15/2018	5/18/2018	5/21/2018
Depth	0.5 - 1	8.5 - 9.5	15 - 15.5
Cis-1,2-DCE	< 0.0042	0.0062	0.034
PCE	< 0.0042	0.00087	< 0.0036
TCE	< 0.0042	**1.8 R**	0.099

ID	SB206		
Date	5/15/2018	5/18/2018	5/21/2018
Depth	0.5 - 1	8 - 8.5	17.5 - 18
Cis-1,2-DCE	< 0.0055	0.0030	0.0051
PCE	< 0.0055	0.0025	< 0.0035
TCE	0.01	0.028	0.023

ID	MW201		
Date	5/15/2018	5/21/2018	5/21/2018
Depth	0.5 - 1	8.5 - 9	15.5 - 16
Cis-1,2-DCE	< 0.0043	0.019	0.066
PCE	< 0.0043	0.00076	< 0.0037
TCE	< 0.0043	0.094	0.076

ID	SB204		
Date	5/15/2018	5/21/2018	5/21/2018
Depth	0.5 - 1	8.5 - 9	15 - 15.5
Cis-1,2-DCE	0.026	0.042	0.011
PCE	< 0.0050	0.0021	< 0.0037
TCE	0.063	**1.5**	0.095

ID	SB205		
Date	5/15/2018	5/17/2018	5/17/2018
Depth	0.5 - 1	8.5 - 9	14.8 - 15.3
Cis-1,2-DCE	**1.6**	0.00073	0.016
PCE	< 1.1	0.035	**1.6**
TCE	**44**	0.028	0.44

ID	MW206	
Date	5/16/2018	5/24/2018
Depth	0.5 - 1	11 - 11.5
Cis-1,2-DCE	< 0.0060	< 0.055
PCE	0.0034	**1.9**
TCE	0.023	0.14

ID	BW202	
Date	5/16/2018	5/24/2018
Depth	0.5 - 1	11 - 12
Cis-1,2-DCE	< 0.0077	0.0064
PCE	< 0.0077	0.11
TCE	0.15	0.16

ID	MW204		
Date	5/16/2018	5/23/2018	5/23/2018
Depth	0.5 - 1	11 - 11.5	16.5 - 17.5
Cis-1,2-DCE	< 0.0067	< 0.0047	0.00091
PCE	< 0.0067	0.047	< 0.0036
TCE	< 0.0067	0.0019	< 0.0036

ID	MW202	
Date	5/16/2018	5/25/2018
Depth	0.5 - 1	9.5 - 10
Cis-1,2-DCE	< 0.0049	< 0.0047
PCE	< 0.0049	0.015
TCE	< 0.0049	< 0.0047

ID	SB201	
Date	5/17/2018	5/17/2018
Depth	0.5 - 1	3.5 - 4
Cis-1,2-DCE	0.0011	0.0036
PCE	< 0.0050	0.00086
TCE	0.16	**10**

ID	MW203		
Date	5/15/2018	5/17/2018	5/17/2018
Depth	0.5 - 1	9 - 9.5	18.5 - 19
Cis-1,2-DCE	< 0.0040	< 0.0039	0.0057
PCE	< 0.0040	0.0070	0.0011
TCE	< 0.0040	0.00095	< 0.0037

ID	SB207		
Date	5/15/2018	5/17/2018	5/17/2018
Depth	0.5 - 1	9 - 9.5	15 - 15.5
Cis-1,2-DCE	< 0.0049	< 0.0043	< 0.0035
PCE	0.0016	0.038	< 0.0035
TCE	0.0014	0.0015	< 0.0035

LEGEND:

- BEDROCK WELL LOCATION
- MONITORING WELL LOCATION
- SOIL BORING LOCATION

ID	SB201	
Date	5/17/2018	5/17/2018
Depth	0.5 - 1	3.5 - 4
Cis-1,2-DCE	0.0011	0.0036
PCE	< 0.0050	0.00086
TCE	0.16	10

LOCATION IDENTIFICATION
SAMPLE DATE
SAMPLE DEPTH (FT BGS)
ANALYTICAL RESULT (mg/kg)
BOLD RESULT INDICATES CONCENTRATION GREATER THAN SCO – PROTECTION OF GROUNDWATER

RED HIGHLIGHT WITH "R" QUALIFIER INDICATES REJECTED RESULT

N

Analyte	NYCRR Table 375-6.8(b): Restricted Use SCO - Protection of Groundwater (mg/kg)	NYCRR Table 375-6.8(b): Restricted Use SCO - Commercial (mg/kg)
Cis-1,2-DCE	0.25	500
PCE	1.3	150
TCE	0.47	200

DCE	DICHLOROETHENE
FT BGS	FEET BELOW GROUND SURFACE
mg/kg	MILLIGRAMS PER KILOGRAM
NYCRR	NEW YORK CODES, RULES, AND REGULATIONS
R	INDICATES REJECTED RESULT
SCO	SOIL CLEANUP OBJECTIVES
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHYLENE

NOTES:

1. SURVEY OF SAMPLE LOCATIONS AND ON-SITE BUILDING COMPLETED ON MAY 31, 2018 BY RAVI ENGINEERING AND LAND SURVEYING, P.C. HORIZONTAL COORDINATE SYSTEM: N.A.D. '83(2011) N.Y.S.P.C.S. WESTERN ZONE. VERTICAL COORDINATE SYSTEM: N.A.V.D. '88.
2. OFF-SITE BUILDING OUTLINES AND PROPERTY LINES WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON AN AERIAL PHOTOGRAPH AND TAX MAP, RESPECTIVELY.

60 0 60 120

(IN FEET)
1" = 60'

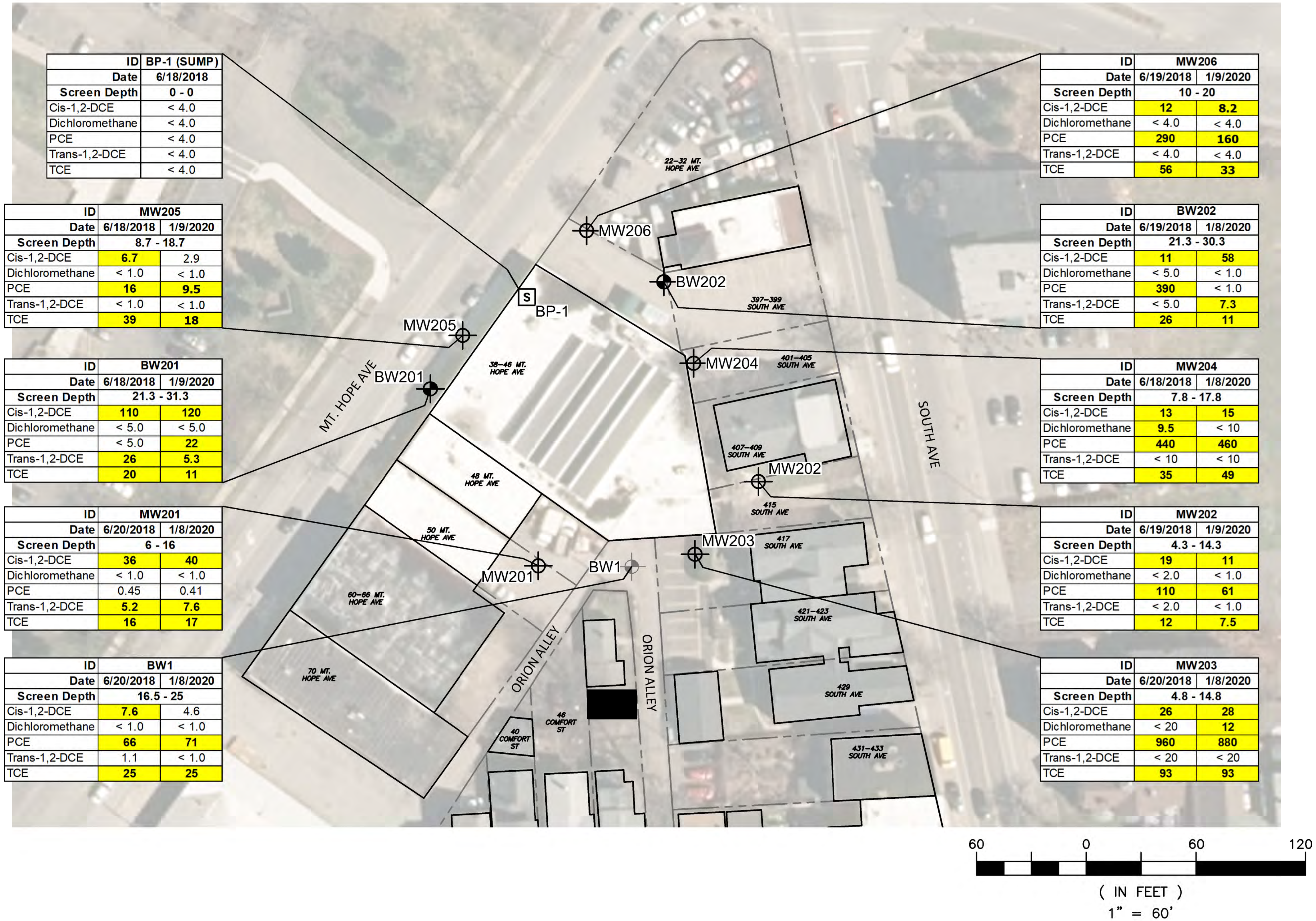
HDR

SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS

FORMER HALL WELTER SITE
REMEDIAL INVESTIGATION
NYSDEC SITE# 828194
ROCHESTER, NEW YORK

DATE 2020-02

FIGURE 5



ID	BP-1 (SUMP)
Date	6/18/2018
Screen Depth	0 - 0
Cis-1,2-DCE	< 4.0
Dichloromethane	< 4.0
PCE	< 4.0
Trans-1,2-DCE	< 4.0
TCE	< 4.0

ID	MW205	
Date	6/18/2018	1/9/2020
Screen Depth	8.7 - 18.7	
Cis-1,2-DCE	**6.7**	2.9
Dichloromethane	< 1.0	< 1.0
PCE	**16**	**9.5**
Trans-1,2-DCE	< 1.0	< 1.0
TCE	**39**	**18**

ID	BW201	
Date	6/18/2018	1/9/2020
Screen Depth	21.3 - 31.3	
Cis-1,2-DCE	**110**	**120**
Dichloromethane	< 5.0	< 5.0
PCE	< 5.0	**22**
Trans-1,2-DCE	**26**	**5.3**
TCE	**20**	**11**

ID	MW201	
Date	6/20/2018	1/8/2020
Screen Depth	6 - 16	
Cis-1,2-DCE	**36**	**40**
Dichloromethane	< 1.0	< 1.0
PCE	0.45	0.41
Trans-1,2-DCE	**5.2**	**7.6**
TCE	**16**	**17**

ID	BW1	
Date	6/20/2018	1/8/2020
Screen Depth	16.5 - 25	
Cis-1,2-DCE	**7.6**	4.6
Dichloromethane	< 1.0	< 1.0
PCE	**66**	**71**
Trans-1,2-DCE	1.1	< 1.0
TCE	**25**	**25**

ID	MW206	
Date	6/19/2018	1/9/2020
Screen Depth	10 - 20	
Cis-1,2-DCE	**12**	**8.2**
Dichloromethane	< 4.0	< 4.0
PCE	**290**	**160**
Trans-1,2-DCE	< 4.0	< 4.0
TCE	**56**	**33**

ID	BW202	
Date	6/19/2018	1/8/2020
Screen Depth	21.3 - 30.3	
Cis-1,2-DCE	**11**	**58**
Dichloromethane	< 5.0	< 1.0
PCE	**390**	< 1.0
Trans-1,2-DCE	< 5.0	**7.3**
TCE	**26**	**11**

ID	MW204	
Date	6/18/2018	1/8/2020
Screen Depth	7.8 - 17.8	
Cis-1,2-DCE	**13**	**15**
Dichloromethane	**9.5**	< 10
PCE	**440**	**460**
Trans-1,2-DCE	< 10	< 10
TCE	**35**	**49**

ID	MW202	
Date	6/19/2018	1/9/2020
Screen Depth	4.3 - 14.3	
Cis-1,2-DCE	**19**	**11**
Dichloromethane	< 2.0	< 1.0
PCE	**110**	**61**
Trans-1,2-DCE	< 2.0	< 1.0
TCE	**12**	**7.5**

ID	MW203	
Date	6/20/2018	1/8/2020
Screen Depth	4.8 - 14.8	
Cis-1,2-DCE	**26**	**28**
Dichloromethane	< 20	**12**
PCE	**960**	**880**
Trans-1,2-DCE	< 20	< 20
TCE	**93**	**93**

LEGEND:

- BEDROCK WELL LOCATION
- MONITORING WELL LOCATION
- EXISTING BEDROCK WELL LOCATION
- S SUMP LOCATION

- LOCATION IDENTIFICATION
- SAMPLE DATE
- SCREEN INTERVAL (FT BGS)
- ANALYTICAL RESULT (ug/l)
- BOLD RESULT WITH YELLOW HIGHLIGHT INDICATES CONCENTRATION GREATER THAN NYSDEC DIVISION OF WATER TOGS 1.1.1 GROUNDWATER STANDARD.

Analyte	NYSDEC Division of Water TOGS 1.1.1 Groundwater Standard (ug/l)
Cis-1,2-DCE	5
Dichloromethane	5
PCE	5
Trans-1,2-DCE	5
TCE	5

DCE	DICHLOROETHENE
FT BGS	FEET BELOW GROUND SURFACE
NYSDEC	NEW YORK STATE DEPARTMET OF ENVIRONMENTAL CONSERVATION
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHYLENE
ug/l	MICROGRAMS PER LITER

NOTES:

1. SURVEY OF WELL LOCATIONS AND ON-SITE BUILDING WAS COMPLETED ON MAY 31, 2018 BY RAVI ENGINEERING AND LAND SURVEYING, P.C. HORIZONTAL COORDINATE SYSTEM: N.A.D. '83(2011) N.Y.S.P.C.S. WESTERN ZONE. VERTICAL COORDINATE SYSTEM: N.A.V.D. '88.
2. OFF-SITE BUILDING OUTLINES AND PROPERTY LINES WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON AN AERIAL PHOTOGRAPH AND TAX MAP, RESPECTIVELY.
3. THE BP-1 SUMP LOCATION WAS NOT SURVEYED BUT IS ESTIMATED BASED ON FIELD NOTES. SAMPLE DEPTH FOR THIS LOCATION IS NOT AVAILABLE.

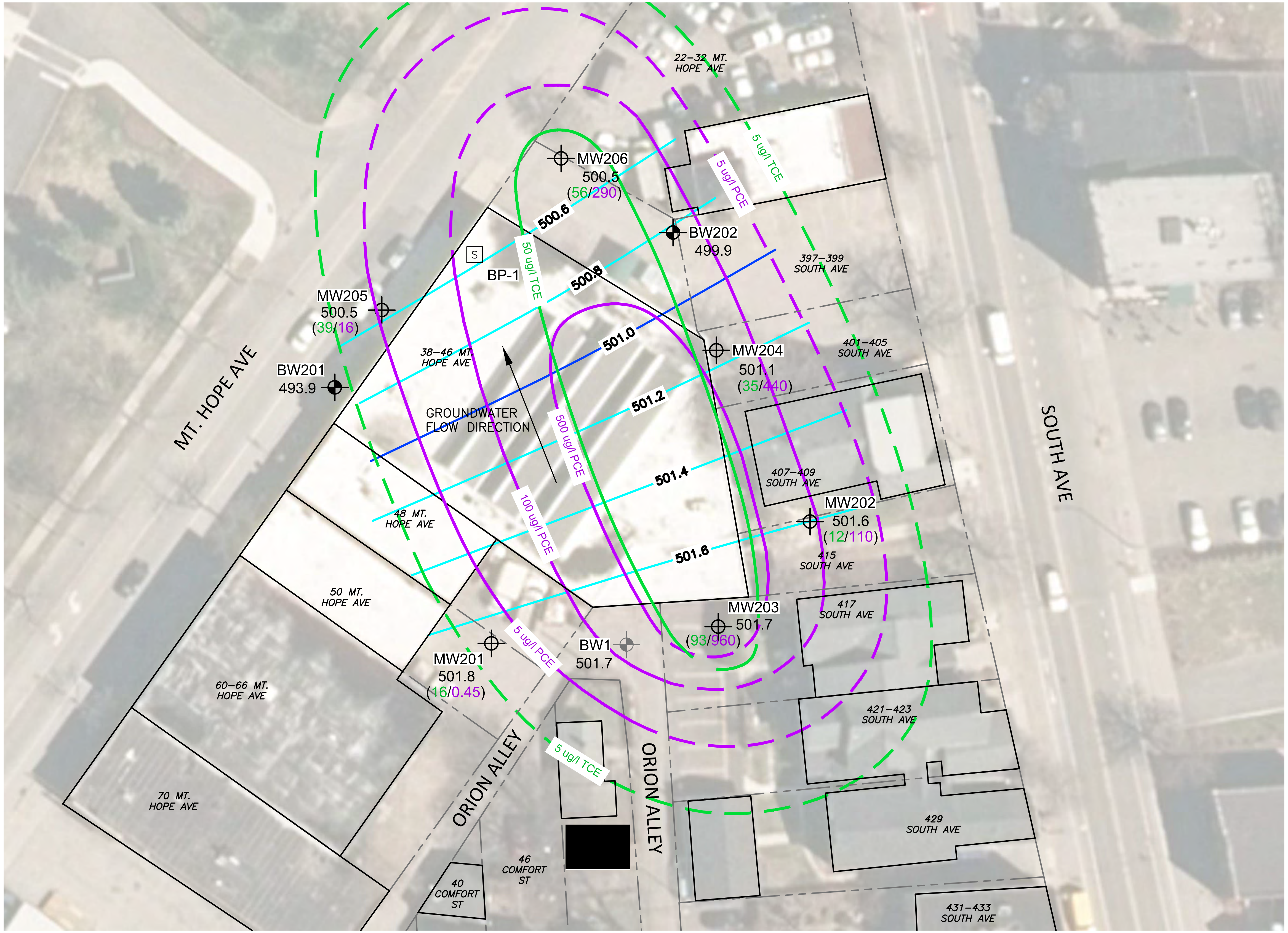
HDR

SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS

FORMER HALL WELTER SITE
REMEDIAL INVESTIGATION
NYSDEC SITE# 828194
ROCHESTER, NEW YORK

DATE 2020-02

FIGURE 6



LEGEND:

BEDROCK WELL LOCATION

EXISTING BEDROCK WELL LOCATION

MONITORING WELL LOCATION

MAJOR GROUNDWATER CONTOUR LINE (JUNE 2018) (INTERPRETED)

MINOR GROUNDWATER CONTOUR LINE (JUNE 2018) (INTERPRETED)

TCE ISO–CONCENTRATION LINE (JUNE 2018; DASHED WHERE INFERRED)

PCE ISO–CONCENTRATION LINE (JUNE 2018; DASHED WHERE INFERRED)

MW202
501.6
(12/110)

LOCATION ID

GROUNDWATER ELEVATION (JUNE 2018; FEET AMSL)

PCE CONCENTRATION (JUNE 2018; ug/l)

TCE CONCENTRATION (JUNE 2018; ug/l)

AMSL	ABOVE MEAN SEA LEVEL
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHYLENE
ug/l	MICROGRAMS PER LITER

NOTES:

1. SURVEY OF SAMPLE LOCATIONS COMPLETED ON MAY 31, 2018 BY RAVI ENGINEERING AND LAND SURVEYING, P.C. HORIZONTAL COORDINATE SYSTEM: N.A.D. '83(2011) N.Y.S.P.C.S. WESTERN ZONE. VERTICAL COORDINATE SYSTEM: N.A.V.D. '88.
2. GROUNDWATER ELEVATIONS WERE CALCULATED BASED ON GROUNDWATER LEVELS COLLECTED IN JUNE 2018. UNIT: FEET AMSL.
3. ISO–CONCENTRATION LINES WERE DRAWN BASED ON JUNE 2018 GROUNDWATER LEVELS AND JUNE 2018 ANALYTICAL DATA.
4. OFF–SITE BUILDING OUTLINES AND PROPERTY LINES WERE NOT SURVEYED BUT ARE ESTIMATED BASED ON AN AERIAL PHOTOGRAPH AND TAX MAP, RESPECTIVELY.

40 0 40 80

(IN FEET)

1" = 40'

INTERPRETED GROUNDWATER ISO-CONCENTRATION MAP (JUNE 2018)

FORMER HALL WELTER SITE
REMEDIAL INVESTIGATION
NYSDEC SITE# 828194
ROCHESTER, NEW YORK

DATE 2020-02

FIGURE 7