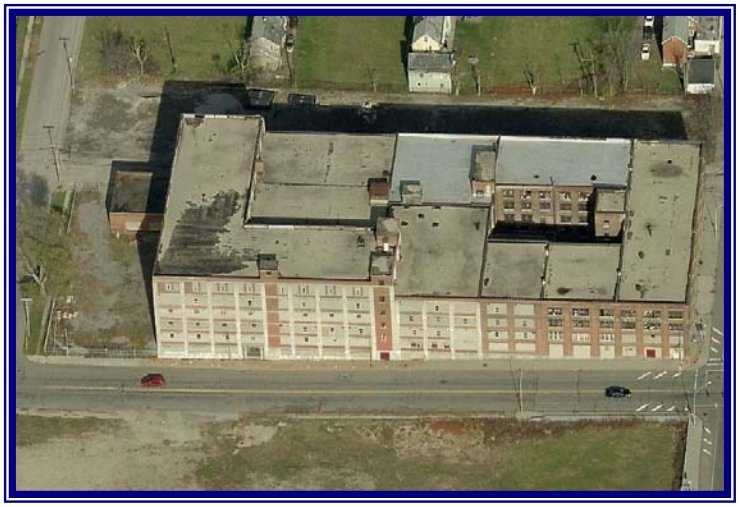
Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Report

500 Seneca Street Site
Buffalo, New York

April 2015 0270-012-001

Prepared For:

500 Seneca Street, LLC



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BROWNFIELD CLEANUP PROGRAM

REMEDIAL INVESTIGATION/INTERIM REMEDIAL MEASURES/ALTERNATIVES ANALYSIS REPORT

500 SENECA STREET SITE
BCP SITE NO. C915273
BUFFALO, NEW YORK

April 2015 0270-012-001

Prepared for:

500 Seneca Street, LLC

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Benchmark Environmental Engineering & Science, PLLC
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Buffalo, NY 14218

REMEDIAL INVESTIGATION/INTERIM REMEDIAL MEASURES/ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE
BCP SITE NO. C915273

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Certification

I, Thomas H. Forbes, certify that I am currently a NYS registered professional engineer and that this April 2015 Remedial Investigation/Interim Remedial Measures/Alternatives Analysis (RI/IRM/AA) Report for the 500 Seneca Street Site (C915273) 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 plans and any DER-approved modifications.

_____

Date

1.0 INTRODUCTION

This Remedial Investigation/Interim Remedial Measures/Alternatives Analysis (RI/IRM/AA) Report has been prepared on behalf of 500 Seneca Street, LLC (500 Seneca) by Benchmark Environmental Engineering & Science, PLLC (Benchmark) for the 500 Seneca Street Site located in the City of Buffalo, New York (Site; see Figures 1 and 2).

500 Seneca elected to pursue cleanup and redevelopment of the Site under the New York State Brownfield Cleanup Program (BCP) and executed a Brownfield Cleanup Agreement (BCA, Index # C915273-04-13, Site No. C915273) with the New York State Department of Environmental Conservation (NYSDEC) dated June 7, 2013.

The RI and IRM activities completed were approved by the NYSDEC, with concurrence from the New York State Department of Health (NYSDOH), in accordance with: the RI Work Plan, approved on July 23, 2013; the Petroleum IRM Work Plan acknowledged in November 2014; and the Loading Dock IRM Work Plan, approved December 22nd, 2014.

Interpretations presented within this report are based on historic investigations completed by others prior to the Site entering into the BCP and subsequent to RI and IRM activities. The analytical data generated as part of the other investigations are included within this report and compared to the current applicable cleanup guidance.

1.1 Background

The Site consists of a single parcel (SBL# 111.81-7-1) totaling approximately 1.87-acres, located at 500 Seneca Street in the City of Buffalo, Erie County, New York. The Site is currently improved with a single six-story building occupying the majority of the property. A gravel/stone covered area to the west of the building covers the remainder of the Site. The Site encompasses an entire block, being bound by Myrtle Avenue to the north, Seneca Street to the south, Hamburg Street to the east, and Spring Street to the west.

The Site originally housed the F.N. Burt Box Company, which utilized the property for box manufacturing from the point of original building construction in the early 1900s until 1959. Between approximately 1968 and 1980, Wolkind Bros, Inc., a clothing rental business, utilized the Site. New Era Cap Co. purchased and utilized the Site for manufacturing, warehousing and shipping operations from 1986 to 2004. The Site has been

largely vacant and underutilized since New Era Cap Co. manufacturing operations ceased in 2004.

Historic environmental investigations completed at the Site have identified evidence of environmental contamination related to the former uses of the Site, including elevated levels of volatile organic compounds (VOCs) (petroleum- and chlorinated-related) have been detected on-Site at concentrations exceeding regulatory guidelines. Summaries of the previous investigations are presented in Section 1.2.

The planned redevelopment of the Site is an adaptive re-use of the former factory and office building into a mixed use commercial office/retail and residential (upper floor) redevelopment.

1.2 Historic Investigations

A summary of the investigations that have been completed at the Site are presented below. Appendix A includes the laboratory data from these investigations and Figure 3 shows the approximate locations of the referenced samples.

1.2.1 October 2007 – Phase I Environmental Site Assessment

GZA GeoEnvironmental, (GZA) conducted a Phase I Environmental Site Assessment (ESA) (Ref. 2) of the 500 Seneca Street parcel. The findings of the report are summarized below.

- Site reconnaissance indicated 500 Seneca was "generally vacant" and machine parts were observed being stored on the first floor.
- The Site has been vacant since 2003. The Site was owned and operated by New Era Cap Company Since 1986. Prior to New Era Caps use of the facility for manufacturing and distribution it was historically occupied by Wolkind Bros. Inc., clothing rentals from approximately 1968 to 1980. Burt Company Box manufactures also occupied the Site approximately from at least the 1930 to 1955. Both New Era Cap and Burt Box Company utilized various chemical and petroleum products. New Era Cap was identified as a small quantity generator of hazardous wastes (RCRA EPA ID# NYD986906295), and on the NY Manifest for disposal of PCB containing transformers, confirming the historic use of hazardous materials at the Site.

- Historic records identified a 2,000-gallon tank installed on the northwestern corner of the 500 Seneca parcel. The tank was reportedly installed in 1967. These records also referenced an existing (at that time) 550-gallon tank installed in 1957, for a total capacity of 2,500-gallons. Vent pipes were noted during Site reconnaissance in the vicinity of what appears to be a former pump island in this same area of the property.
- Several aboveground water storage tanks were noted on the 1st floor and an underground water storage tank (believed to be a cistern) was noted. Size and dimensions of the underground water storage tank were not known.

1.2.2 December 2007 – Phase II Environmental Site Assessment

GZA GeoEnvironmental, (GZA) conducted a Phase II Environmental Site Assessment (Ref. 3) on the 500 Seneca Street parcel. The relevant findings of the report are summarized below.

- GZA performed an electromagnetic (EM) geophysical survey using an EM61 time domain electromagnetic unit across the open lot area of the Site. GZA located two anomalies corresponding to the suspect locations of the underground storage tanks described above.
- Temporary monitoring wells installed in the vicinity of the suspected USTs identified low levels of petroleum type compounds in the groundwater, including: benzene, ethylbenzene, isopropylbenzene, n-propylbenzene, sec-butylbenzene, n-butylbenzene, and xylenes.
- Chlorinated solvents were detected in one location (SP-9) in the at grade loading dock on the northern portion of the Site. The source and extent of contamination were unknown. The detected concentrations in both soil and groundwater exceed NYSDEC groundwater standards and industrial soil cleanup objectives including: tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride (VC).

1.2.3 January 2008 – USTs Removal and Excavation Report

Hazard Evaluations, Inc. (Hazard Evaluations) produced a Summary Report; USTs Removal and Excavation Report, to address the USTs at the 500 Seneca Street parcel. The findings of the report are summarized below.

- Upon locating the tanks, 1,650-gallons of non-hazardous petroleum/water mixture were removed from the vessels and transported off-Site to an appropriate disposal facility.
- Petroleum impacted soil was observed in the vicinity of the former 550-gallon UST and NYSDEC Spill# 0751217 was subsequently opened.
- 44.58 tons of petroleum impacted soil was removed from the vicinity of the former 550-gallon UST and disposed of at Tonawanda Landfill; excavation of impacted soils from this area was impeded by the presence of the on-Site garage building and the adjacent street (Myrtle Avenue).
- Post-excavation verification samples indicated elevated target VOCs at levels above the applicable NYSDEC Recommended Soil Cleanup Objectives (RSCOs) (per spill cleanup guidance in place at that time) along the east wall (garage building) and floor of the excavation.
- Spill# 0751217 is listed as "Record Closed" per NYSDEC Spills Database. It should be noted that the spill was made inactive with no further action required; however, residual contamination that could not be removed due to proximity of existing garage building remained on-Site.

1.2.4 April 2008 – Focused Phase II Environmental Site Assessment

GZA GeoEnvironmental, (GZA) conducted a Focused Phase II Environmental Site Assessment on the 500 Seneca Street parcel. The findings of the report are summarized below.

- Chlorinated solvents were detected in the soil samples collected during the interior investigation of the loading dock area. Dichloroethene (DCE), TCE, and PCE were determined to be the contaminants of concern in eight of the nine locations sampled.

- During field investigations the presence of PCE appeared to be localized to the western most loading dock bay area. One drain was noted in the area, which is assumed to be a clean out for a sewer line. An interview with a knowledgeable person at New Era disclosed that they did not know the purpose or discharge location of that drain.
- Chlorinated solvents were identified in the groundwater at three locations at concentrations above Class GA groundwater standards. One location had a PCE concentration four orders of magnitude higher than the NYSDEC Class GA standard.
- Limited subslab vapor testing indicated concentrations of regulated VOCs within acceptable ranges per New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion.
- Based on the findings of the report GZA concluded that "chlorinated solvents, specifically PCE, are present in the western loading dock area at concentrations that require remedial action. The source of the contamination was not clearly identified. However, the presence of the chlorinated solvents appeared to be localized to the western most loading dock area. The area of soil impact generally appears to be at depths from 6 to 10 feet below ground surface, within a lateral area estimated at 20 feet (east to west) by 25 feet (north to south)."

1.2.5 October 2012 – Supplemental Site Reconnaissance

On October 30, 2012 Benchmark performed a supplemental site reconnaissance for the purpose of scoping the RI activities described herein. Benchmark was accompanied by a representative from the NYSDEC as well as a representative of 500 Seneca. Areas of potential concern identified included: a vehicle maintenance pit in the garage area of the building; a mechanical room; a former coal-fired boiler area; a suspect hydraulic lift in the courtyard area of the site; a former battery storage room; an electrical equipment (suspect transformer) room; and a reported sump in a flooded basement area of the building.

1.3 Purpose and Scope

This RI/IRM/AAR has been prepared to describe and present the findings of the environmental investigations, the completed IRM, and evaluate the remedial alternatives for the Site.

This report contains the following sections:

- Section 1.0 provides an introduction to the project and Site background information.
- Section 2.0 presents the RI approach.
- Section 3.0 describes the Site physical characteristics as they pertain to the investigation findings.
- Section 4.0 presents the investigation results by media.
- Section 5.0 summarizes the completed IRM activities.
- Section 6.0 describes the fate and transport of the constituents of primary concern (COPCs).
- Section 7.0 presents the qualitative risk assessment.
- Section 8.0 evaluates remedial alternatives for the Site.
- Section 9.0 presents the project summary and conclusions.
- Section 10.0 provides a list of references for this report.

2.0 INVESTIGATION APPROACH

The Remedial Investigation (RI) scope of work focused on further defining the nature and extent of contamination, identifying potential source(s) of contamination, defining chemical constituent migration pathways, qualitatively assessing human health and ecological risks (if necessary), and obtaining data of sufficient quantity and quality to perform the remedial alternatives evaluation in accordance with NYSDEC DER-10.

The RI was performed to supplement previous investigations and to more fully characterize surface and subsurface soil/fill materials, soil vapor, groundwater, and overburden stratigraphy within the Site boundaries. The RI tasks were performed in accordance with the approved RI/AA Work Plan. RI activities were completed at the Site between October 2013 and April 2015.

The investigation activities are described below. Figures 3-5 present the RI sample locations including historic sample locations. Appendix A contains a photo log of field activities. Field borehole logs and well completion details are included in Appendix B.

Field team personnel collected environmental samples (i.e., surface and sub-surface soil, soil vapor, water and groundwater) in accordance with the rationale and protocols described in the Sampling and Analysis Plan (SAP) of the Quality Assurance Project Plan (QAPP, Section 4.0 of the RI/AA Work Plan) as detailed on Table 1. Representative environmental samples were collected during the RI using dedicated sampling devices and were placed in pre-cleaned laboratory provided sample containers, cooled to 4ºC in the field (if necessary), and transported under chain-of-custody command to a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified analytical laboratory.

Samples for chemical analysis were analyzed in accordance with USEPA SW-846 methodologies to meet the definitive-level data requirements. A Category B deliverable package was provided for each sample delivery group to allow independent third-party data validation and provide defensible data. Analytical results were evaluated by a third-party data validation expert in accordance with provisions described in the QAPP.

2.1 RI Soil/Fill Investigation

A soil/fill investigation was completed across the site to supplement previous environmental data and to further delineate known contamination on-Site. The soil/fill

investigation included the advancement of soil borings across the Site, including accessible location beneath the existing building and hardscaped (i.e., asphalt, concrete and brick covered) areas of the Site, and the collection of surface and subsurface soil/fill samples.

2.1.1 Surface Soil/Fill Investigation

A surface soil/fill investigation was completed to assess surface soil/fill on the western portion of the Site, as the majority of the eastern and central portions of the Site are covered by the existing six-story building. An open air courtyard surrounded by the existing building is located in the eastern portion of the Site; however, the courtyard area is covered by concrete pavement. No surface samples were collected from this area.

Three (3) surface soil/fill samples, identified as SS-1, SS-2 and SS-3, were collected from the upper 6-inches of soil/fill (see Figure 4). Surface soil/fill samples were collected and analyzed in accordance with approved Sampling and Analysis Plan as detailed on Table 1.

2.1.2 Subsurface Soil/Fill Investigation

2.1.2.1 Soil Boring Investigation

A subsurface soil/fill investigation was completed to supplement the previous environmental data collected, further delineate extent of known VOC contamination, and to obtain general Site coverage.

Sixteen (16) soil borings were advance into the subsurface, designated as SB-1 through SB-16, as shown on Figure 4. The soil boring logs are provided in Appendix B. The rationale for the soil borings are as follows.

- SB-1 through SB-4 were completed to evaluate the potential for impacts associated with the garage area maintenance pit under the garage slab. A temporary 1-inch diameter PVC micro-well (TW-1) was installed at the location of SB-1.
- SB-5 was completed to evaluate potential residual impacts from the former 550-gallon UST beneath the garage slab.
- SB-6 through SB-9 were completed to assess the western exterior portion of Site south of the previously-remediated UST and pump island area. We note

that SB-7 was completed at the location of SS-1, SB-6 at the location of SS-2 and SB-9 at the location of SS-3.

- SB-10 through SB-13 were completed in the loading dock to supplement previous investigation data and assess the area for development of remedial measures that will be required to address previously identified impacts. A temporary 1-inch diameter PVC micro-well (TW-2) was installed at the location of SB-10 and temporary micro-well, TW-3, was installed at the location of SB-13.
- SB-14 through SB-16 were completed in the eastern courtyard area of the Site. Two (2) sample intervals were collected from the courtyard boring locations; from a shallow 0.5-2 ft. interval below the pavement, and another sample at a greater depth (see Table 1).

Soil borings were advanced using direct push methodology via hydraulic hammer on a track mounted rig. Soil samples were collected with a macro-core sampler which contained a 2-inch outer diameter by 48-inch long acetate liner. A new acetate liner was used for each 4-foot sample run. Borings were pushed through fill material and native overburden soils to the top of bedrock and/or refusal, which ranged from approximately 6 feet below ground surface (fbgs; SB-9) to 16.6 fbgs (SB-14), with an average refusal depth of 13 fbgs.

The soil/fill samples retrieved from the borings allowed for visual, olfactory, and photo ionization detector (PID) assessment of subsurface conditions. Soil/fill samples were collected from the borings for laboratory analysis (see Table 1). Elevated PID readings above background levels (less than 1 part per million (ppm)) were noted at nine (9) of the 16 locations, with a maximum PID reading of (147 ppm) at 5 fbgs at SB-5 (see Boring Logs in Appendix B).

2.1.2.2 Hand Cores Soil/Fill Investigation

A subsurface soil/fill investigation beneath the Site building slab using hand cores was completed to assess areas of potential concern on the ground floor and basement not readily accessible using conventional drilling equipment. These areas included the former mechanical room, a former battery storage area, a boiler room and an electrical equipment area.

Sub-slab hand core (HC) soil/fill samples were collected via a pre-cleaned stainless steel barrel auger through a core hole that was cut through the concrete floor using an electric powered core drill. The soil/fill samples from beneath the building were collected from the 2-foot interval of soil/fill beneath the concrete floor slab. The auger was decontaminated between sample locations.

Representative soil/fill samples were placed in pre-cleaned laboratory provided sample jars, cooled to 4ºC in the field, and transported under chain-of-custody command to the laboratory for analysis.

2.1.3 Soil/Fill Sample Collection and Analyses

Soil/fill samples were collected using dedicated stainless steel sampling tools. Representative soil samples were placed in pre-cleaned laboratory provided sample bottles, cooled to 4ºC in the field, and transported under chain-of-custody command to a NYSDOH ELAP certified analytical laboratory.

Representative subsurface soil/fill samples were analyzed in accordance with the approved work plan, for Target Compound List (TCL) plus Commissioner Policy (CP-51) VOCs and TCL semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs) pesticides and herbicides as detailed on Table 1.

All samples were collected and analyzed in accordance with United States Environmental Protection Agency (USEPA) SW-846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment.

2.2 Groundwater Investigation

Benchmark personnel provided oversight for the installation of seven (7) 2-inch permanent groundwater monitoring wells, identified as MW-1 through MW-7, and three (3) temporary groundwater monitoring wells, identified as TW-1 through TW-3, to investigate on-Site groundwater quality and flow. Details of the well installation, well development, and groundwater sampling are provided below. Figures 4 and 5 present the location of the monitoring well network.

2.2.1.1 RI Monitoring Well Installation

After completion of the four (4) soil borings, 2-inch inside diameter (ID) groundwater monitoring wells were installed at the boring locations, identified as MW-1 through MW-4 in October 2013. Each well was constructed with a flush-joint Schedule 40 PVC, 0.010-inch machine slotted well screen. The screen lengths ranged from 5 to 7 feet. Each well screen and attached riser was placed at the bottom of each borehole and a silica sand filter pack (size #00N) was installed from the base of the well to approximately 2 feet above the top of the screen. A bentonite chip seal was installed and hydrated to mitigate the potential for downhole contamination. The monitoring wells were completed with lockable J-plug, and a steel flush mounted road box. The monitoring well construction details are presented in Appendix B.

2.2.1.2 Supplemental Monitoring Well Installation

After completion of the IRMs and review of the initial groundwater monitoring analytical results in consultation with the Department, three (3) additional 2-inch groundwater monitoring wells, identified as MW-5 through MW-7, were installed in April 2015. MW-5 was installed within the loading dock area to replace TW-2 that was removed in its entirety during the IRM excavation, MW-6 was installed to replace the decommissioned MW-1 and MW-2 in the western parking lot area, and an additional up-gradient off-site well, MW-7, was installed to further assess previously suspect groundwater constituents. The wells were installed in accordance with the approved work plan. Locations are included on Figures 4-5. Boring and well construction logs are provided in Appendix B.

2.2.1.3 Permanent Monitoring Well Development

The installed monitoring wells were developed after installation, in accordance with the approved work plan and Benchmark and NYSDEC protocols. Development of the monitoring wells was completed with dedicated disposable polyethylene bailers via surge and purge methodology. Field parameters including pH, temperature, turbidity, dissolved oxygen and specific conductance were measured every well volume during development until they became relatively stable. Stability was defined as variation between measurements of approximately 10 percent or less with no overall upward or downward trend in the measurements; or a minimum of three well volumes.

2.2.1.4 Permanent Monitoring Well Groundwater Sample Collection

Newly installed permanent monitoring wells were developed, as described above, prior to sampling to remove residual sediments and ensure hydraulic connection within the water-bearing zone. Benchmark personnel sampled monitoring wells using a peristaltic pump and dedicated tubing following low-flow/minimal drawdown purge and sample collection procedures. Field measurements for pH, specific conductance, temperature, turbidity, and water level as well as visual and olfactory field observations were periodically recorded and monitored for stabilization. Purging was considered complete when field measurements stabilized, and when turbidity measurements fell below 50 Nephelometric Turbidity Units (NTU) or became stable above 50 NTU. Upon stabilization of field parameters, groundwater samples were collected.

The collected groundwater samples were placed in pre-cleaned, pre-preserved (if required) laboratory provided sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to the laboratory for analysis. The groundwater sample analysis from permanent wells included TCL VOCs, TCL SVOCs, TAL Metals, PCBs, pesticides and herbicides as detailed on Table 1. In consultation with the Department, post-IRM supplemental groundwater samples were selectively analyzed for TCL VOCs, TCL SVOCs (base-neutral fraction), Part 375 List dissolved metals, and pesticides (see Table 1).

2.2.1.5 Temporary Micro-Well Installation (March 2014)

Subsequent to the completion of three (3) soil borings, three (3) temporary micro-wells were installed. As described above, temporary micro-well, TW-1 was installed at SB-1, TW-2 was installed at SB-10, and TW-3 was installed at SB-13.

The temporary micro-wells were constructed using 1-inch diameter flush-joint Schedule 40 PVC with a 5-foot flush-joint Schedule 40 PVC slotted well screen. With the exception of TM-3, temporary monitoring wells were removed in their entirety during IRM excavation activities.

2.2.1.6 Temporary Micro-Well Groundwater Sample Collection

The temporary micro-wells were purged and sampled by Benchmark personnel using dedicated and disposable micro-bailers. Field measurements for pH, specific conductance, temperature, turbidity, and water level as well as visual and olfactory field observations were periodically recorded and monitored. A minimum of three (3) well volumes were removed.

The collected groundwater samples were placed in pre-cleaned, pre-preserved (if required) laboratory provided sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to the laboratory for analysis. The groundwater sample analysis from temporary micro-wells included TCL VOCs, TCL SVOCs and TAL Metals as detailed on Table 1.

2.3 Soil Vapor Intrusion Investigation

A soil vapor intrusion (SVI) investigation was completed to further supplement previous SVI completed by others within the building. To supplement the evaluation, three (3) locations within the building were evaluated (see Figure 4). At each of these locations one (1) sub-slab vapor (SSV) and one (1) interior ambient air sample was collected, with a common outdoor ambient air sample collected to establish background conditions. One duplicate SSV sample was also collected.

2.3.1 Pre-Sample Assessment

Prior to initiation of the sampling, a pre-sampling inspection was performed to identify and minimize conditions that might interfere with or bias the testing (e.g., open containers of solvents, paints, etc.). No such concerns were observed during the RI.

2.3.2 Sub-slab Vapor & Ambient Air Sample Collection

Sub-slab vapor and ambient air sampling was completed in general conformance with the NYSDOH Soil Vapor Intrusion Guidance and Benchmark's Ambient Air/Subslab Vapor Sampling Field Operating Procedure, which was included with the approved RI Work Plan.

At each SSV sampling location, Benchmark personnel drilled a hole through a competent portion of the concrete slab, away from cracks and floor drains using a hand-held hammer drill. Sub-slab vapor samples were collected in the following manner:

- After installation of the probes, one to three volumes (i.e., the volume of the sample probe and tube) were purged prior to collecting the samples to ensure they were representative;
- The SSV probes were sealed at the surface with non-VOC containing clay;

- Flow rates for both purging and sample collection were regulated to less than 0.2 liters per minute; and
- SSV sample canisters were equipped with an 8-hour regulator to allow the sample to be collected over an approximate eight-hour period.

Concurrent with the SSV samples, indoor ambient air samples and an outdoor air sample were collected. Indoor ambient air samples were collected in the vicinity of each SSV sample. One (1) outdoor air sample was also collected from a ground level location upwind of the facility, determined on the day of the SSV field activities. Both the indoor and outdoor air sample canisters were also equipped with an 8-hour regulator to allow the sample to be collected over the same approximate 8-hour period.

Each canister, with an initial pressure of approximately 30 inches of mercury (in Hg) was fitted with an appropriate regulator for the 8-hour sampling period. The summa canister valves were kept closed until the SSV samples holes were complete and the ambient indoor air canisters were in their respective positions. Information regarding the sample duration and starting and ending vacuums was recorded on the sampling forms included in Appendix C.

After the sampling was completed, the regulator valves were closed and the soil vapor samples were transported to the laboratory for TCL VOCs analysis via USEPA Method TO-15 (see Table 1).

2.4 Basement Investigation

During the initial RI activities in October 2013 the basement area was flooded, limiting access. 500 Seneca pumped out the accumulated water in the basement to the municipal sewer, under Buffalo Sewer Authority Temporary Discharge Permit #14-05-TP218. A copy of the permit is included in Appendix G.

Visual inspection of the basement identified the previously reference sump and former air handling system and mechanical equipment with suspect electrical and hydraulic components. In consultation with the Department, a modified investigation approach was employed which included PCB wipe sampling of the electrical equipment and suspect floor

staining, sampling of floor soil-debris in the mechanical equipment room, and water sampling from the air handling blower sump.

Benchmark completed the basement investigation sampling on November 25th, 2014. Four (4) PCB wipe samples, identified as Wipe #1 (Motor #1–Housing), Wipe #2 (Motor #1-Floor), Wipe #3 (Motor #2-Housing) and Wipe #4 (Motor #2-Floor) were collected from the former air handling equipment electrical equipment and associated floor staining directly below each motor. Residual contents of the oil reservoir from Motor #1 were accessible and a water sample was collected by disposable bailer and analyzed for PCBs.

A composite floor soil-debris sample was collected from the mechanical equipment (hydraulic piston) room and analyzed for TCL SVOCs, RCRA Metals, and PCBs. A water sample was collected from the former air handling blower condensate sump and analyzed for TCL SVOCs and PCBs. All samples were placed in pre-cleaned, pre-preserved (if required) laboratory provided sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to laboratory for analysis. Approximate sample locations are shown on Figure 4. A photo log is provided in Appendix A.

2.5 Other Investigation Activities

In addition to the soil, groundwater and SVI assessments discussed above, additional evaluations were performed to assist in Site characterization, as follows.

- Cistern – A cistern was located in the southern-central portion of the building. The dimensions of the cistern are estimated at 80 feet long by 37 feet wide by 10 feet deep. The volume of water present is estimated to be 220,000-gallons. It is reported that the cistern is fed by the municipal water supply. A water sample from the cistern was collected in March 2014 with a dedicated and disposable bailer and analyzed for TCL VOCs, TCL SVOCs and TAL Metals.

2.6 Field Specific Quality Assurance/Quality Control Sampling

In addition to the soil/fill and groundwater samples described above, field-specific quality assurance/quality control (QA/QC) samples were collected and analyzed to ensure the reliability of the generated data as described in the QAPP and to support the required

third-party data usability assessment effort. Site-specific QA/QC samples included matrix spikes, matrix spike duplicates, blind duplicates, and trip blanks (see Table 1)

2.7 Site Mapping

A Site map was developed during the RI field investigation. The sample points and relevant Site features were located on the map. Benchmark used a handheld GPS unit to identify the investigation locations relative to State planar grid coordinates. Monitoring well riser elevations were measured by Benchmark's surveyor and used as the basis for the groundwater isopotential map showing the general direction of groundwater flow based on water level measurements (see Figure 5).

2.8 Decontamination & Investigation-Derived Waste Management

Dedicated sampling equipment was employed for the majority of the investigation activities, however, in instances where non-dedicated equipment (e.g., hand cores, spilt spoons) was used it was decontaminated with a non-phosphate detergent (i.e., Alconox®) and potable water mixture, rinsed with distilled water, and air-dried before each use in accordance with Benchmark's field operating procedures (FOPs).

RI generated drilling spoils and decontamination, and groundwater development water were containerized to allow for appropriate characterization, as necessary, based on the RI analytical findings. IDW soil/fill was removed and disposed off-site with the petroleum IRM excavation soils.

3.0 SITE PHYSICAL CHARACTERISTICS

The physical characteristics of the Site observed during the RI are described in the following sections.

3.1 General Site Features

The Site consists of a single parcel totaling approximate 1.87-acres, located at 500 Seneca Street in the City of Buffalo, Erie County, New York. The Site encompasses an entire block, being bound by Myrtle Avenue to the north, Seneca Street to the south, Hamburg Street to the east, and Spring Street to the west. The Site is largely comprised of large multi-story building with an attached single story garage/storage building and open lot on the western side of the parcel (see Figure 2).

3.2 Geology

3.2.1 Overburden

The U.S. Department of Agriculture Soil Conservation Service soil survey map of Erie County describes the general soil type at the Site as Urban Land (Ud). This is indicative of level to gently sloping land with at least 40 percent of the soil surface covered by asphalt, concrete, buildings, or other impervious structures typical of an urban environment.

RI activities investigated subsurface soils at the Site which generally consisted of non-native soil/fills overlying native soil. The non-native soil/fill materials were generally present in the upper 4 feet consisting of varying amounts of granular soils (silts, sands and gravels) with fill characteristics (cinders, brick fragments, slag) and lesser amounts of clay. The native soils generally consisted of variations of brown lean clays with varying amounts of sands, silts and gravels. Appendix B includes the Field Boring Logs.

3.2.2 Bedrock

Based on the bedrock geologic map of Erie County, the Site is situated over the Onondaga Formation of the Middle Devonian Series. The Onondaga Formation is comprised of a varying texture from coarse to very finely crystalline with a dark gray to tan color and chert and fossils within. The unit has an approximate thickness of 110 to 160 feet.

Structurally, the bedrock formations strike in an east-west direction and exhibit a regional dip that approximates 40 feet per mile (3 to 5 degrees) toward the south and southwest.

The historic subsurface investigations have advanced borings to a maximum depth of 19-fbgs and the RI average refusal depth was about 13 fbgs (with ranges from 6 to 16.6 fbgs), with refusals being assumed to be the top of bedrock.

3.3 Hydrogeology

Groundwater elevation data was collected in April 2015 as part of the supplemental groundwater monitoring completed on MW-3, MW-4, MW-5, MW-6, MW-7 and TW-3 Depth to groundwater ranged from approximately 5 to 9 fbgs across the Site, with the exception of , MW-3, installed in the open courtyard, generally has been dry or has only yielded a few inches of water throughout the RI. This well was installed to a depth of approximately 13 fbgs (refusal at suspected top of bedrock).

Based upon observations made during IRM activities, which generally indicated no groundwater infiltration into the cVOC excavation to a depth of 14 fbgs, and the lack of groundwater encountered in the petroleum IRM excavation to a depth of 8 fbgs it appears that there is no hydraulic connection between the overburden groundwater found in the soil/fill outside of the building footprint and the perched water encountered within the tight clay formations found underneath the building..

The Site hydrogeology is further complicated by the presence of municipal subgrade utilities along all sides of the property; an elevated section of Seneca Street and Hamburg Street influencing surface runoff and infiltration in the immediate vicinity, subgrade building structural footers and foundation (assumed to bedrock based on IRM observations), and the significant development cycles that have occurred in this section of the City, including dense historic residential development off-site across Myrtle Avenue (MW-4 and MW-7).

In general, groundwater flow direction is estimated to be west-northwest direction. Figure 5 depicts the estimated overburden groundwater isopotential map based on the water level measurements collected during the April 2015 groundwater sampling event.

3.3.1 Hydraulic Gradients

Using well installation and water level information from the April 2015 sampling event, the estimated hydraulic gradient was calculated to be an average of 0.00475 ft./ft. As discussed above, calculating the hydraulic gradient is complicated by the presence of the subslab cistern, building basement, multiple deep structural footers and foundation across the building footprint, presence of subgrade utilities, and significant historic development is this area of the City.

4.0 INVESTIGATION RESULTS BY MEDIA

The nature and extent of contamination at the Site was further characterized using soil, groundwater, and soil vapor samples collected and analyzed as part of the RI. As described in Section 2, soil, groundwater and soil vapor samples collected during previous investigations were used to supplement this RI..

The soil, groundwater, and SVI samples collected during the RI sampling events were submitted for analyses under chain-of-custody to a NYSDOH ELAP-certified laboratory. Analytical services were performed in accordance with the most current SW-846 analytical methods and protocols. Appendix E contains raw analytical data (Form 1 packages) for samples analyzed from the RI investigation. Tabulated analytical data discussed in this section includes results from prior investigations as well as the RI data collected by Benchmark personnel. Tabulated analytical results are shown only for those parameters for which a value greater than the laboratory method detection limit was detected at a minimum of one sample location.

Figure 3 shows the sampling locations for soil, groundwater and SVI samples collected during historic investigations and Figure 4 shows both the historic and RI investigations. Table 1 summarizes the sampling and analytical program employed under RI.

4.1 Standards, Criteria, and Guidance

According to DER-10 Section 1.3(b)71, SCGs mean "*standards and criteria that are generally applicable, consistently applied, and officially promulgated, that are either directly applicable or not directly applicable but are relevant and appropriate, unless good cause exists why conformity should be dispensed with, and with consideration being given to guidance determined, after the exercise of scientific and engineering judgment, to be applicable. This term incorporates both the CERCLA concept of 'applicable or relevant and appropriate requirements' (ARARs) and the USEPA's 'to be considered' (TBCs) category of non-enforceable criteria or guidance. For purposes of this Guidance, 'soil SCGs' means the soil cleanup objectives and supplemental soil cleanup objectives identified in 6NYCRR 375-6.8 and the Commissioner Policy on Soil Cleanup Guidance (CP-Soil).*"

For discussion purposes, analytical results for the investigation were compared with the following SCG values.

Surface and Subsurface Soil/Fill:

Soil Cleanup Objectives (SCOs) per 6 New York Code Rules and Regulation (6 NYCRR) Part 375 Environmental Remediation Programs, Subparts 375-12 to 375-4 & 375-6, effective December 14, 2006.

Groundwater

Class GA Groundwater Quality Standards and Guidance Values (GWQS/GVs) per NYSDEC's Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1), June 1998, amended April 2000.

Soil Vapor Intrusion Samples

Matrices 1 and 2 per NYSDOH's "Final Guidance for Evaluating Soil Vapor Intrusion in the State New York" dated October 2006 (NYSDOH Guidance).

Sample results compared to the above criteria are described below according to media and contaminant class.

4.2 Historic Soil/Fill Results

As described above, previous investigations and environmental remediation activities have been completed at the Site, by others prior to 500 Seneca taking ownership of the Site. A total of 25 soil locations, including the collection of a total of 18 soil probes by GZA, identified as SP-1 through SP-18; and seven (7) post-excavation samples by HEI, collected after removal of the former USTs and pump. No surface samples were collected during the previous investigations.

A total of 22 soil samples were collected and analyzed for VOCs, five (5) samples were analyzed for SVOCs, and one (1) sample was analyzed for PCBs. Table 3A summarizes the historic subsurface soil/fill analytical results. Historic soil probe locations are identified on Figure 4.

Chlorinated VOCs (cVOCs) were detected above their USCOs, RRSCOs, and CSOCs, respectively in eight (8) soil probe locations associated with the loading dock. Petroleum VOCs were detected above USCOs and RRSCOs in soil probe and post-excavation sample results, particularly along the east wall of the former UST excavation where residual petroleum contaminated soil/fill was noted in the historic report. No SVOCs or PCBs were detected above USCOs in the previous investigations.

4.3 RI Soil/Fill Investigation Results

Benchmark completed the soil/fill investigation across the Site in accordance with the approved Work Plan. In total, three (3) surface and 28 subsurface surface soil/fill samples were collected and analyzed as part of the RI.

Tables 2 and 3B compare the soil/fill data to a range of health risk-based SCOs as published in 6NYCRR Part 375, including Unrestricted Use SCOs (USCOs), Restricted Residential Use SCOs (RRSCOS), and Commercial Use SCOs (CSCOS).

The RRSCOs are deemed protective of human health under a scenario whereby site use and associated exposure pathways are assumed to be similar to those under a single family home setting, excluding those that might occur from consumption of foods grown in a home vegetable garden. Based upon the reasonably anticipated future use of the Site in a mixed-use commercial and residential capacity, the RRSCOs are conservatively considered to be the most applicable health risk-based comparative criteria. Nevertheless, the following sections discuss the surface and subsurface soil results relative to the range of health-based SCO criteria to provide a comprehensive summary of the data.

4.3.1 RI Surface Soil/Fill Results

Three (3) surface soil/fill samples (designated SS-1, SS-2 and SS-3) were collected for analysis from the western portion of the Site (see Figure 4).

Table 2 summarizes the analytical results of the surface/fill soil samples with comparison to Part 375 SCOs. No surface soil/fill samples were collected as part of the historic investigation activities.

4.3.1.1 SVOCs

The majority of SVOCs were reported as non-detect (below method detection level) or trace (estimated) concentrations by the analytical laboratory in SS-1 and SS-2. Select SVOCs, primarily polycyclic aromatic hydrocarbons (PAHs), were detected in SS-3 exceeding their respective RRSCOs and/or CSCOs.

4.3.1.2 Metals

No analytes were detected above their respective RRSCOs. Three (3) analytes (chromium, lead and zinc) were detected above their respective USCOs selectively in SS-2 and SS-3.

4.3.1.3 PCBs

No PCBs were detected above MDLs in the three (3) surface soil/fill samples analyzed.

4.3.1.4 Pesticides

No pesticide compounds were detected above their respective RRSCOs. Two (2) compounds, 4,4'-DDE and 4,4'-DDT, were detected above their respective USCOs at estimated concentrations in the three (3) surface sample locations.

4.3.1.5 Herbicides

No herbicides were detected above USCOs; with all laboratory analytical results reported as non-detect or estimated concentrations below MDLs.

4.3.2 RI Subsurface Soil/Fill Results

Twenty-eight (28) subsurface soil samples were collected from the 16 soil borings (designated SB-1 through SB-16) and six (6) hand cores (designated HC-1 through HC-6) as part of the RI. Table 3B presents a summary of the RI subsurface soil/fill sample results and Figure 3 details the sample locations.

4.3.2.1 VOCs

No VOCs were detected above RRSCOs in the RI subsurface soil/fill samples, with the majority of the detected compounds falling below USCOs. Chlorinated VOCs,

specifically, tetrachloroethene (PCE) and trichloroethene (TCE) were detected above USCOs in SB-10 and SB-11, located in the loading dock.

4.3.2.2 SVOCs

No SVOCs were detected above RRSCOs with the minor exception of select polycyclic aromatic hydrocarbons (PAHs) in SB-6(5-7) and SB-8(6-8). In all cases the total (i.e., combined) concentration of PAHs was less than 50 ppm. The vast majority of analytes were reported as non-detect or estimated values below MDL by the laboratory (see Table 3B).

4.3.2.3 Metals

Arsenic was detected above its CSCOs and lead above its RRSCO in one location, SB-4 (0.5-4). Mercury was detected above its RRSCO in one soil boring location, SB-3 and two (2) hand core locations, HC-5 and HC-6 beneath the building concrete floor slab. Select naturally occurring metals were also detected above their respective USCOs (see Table 3B).

4.3.2.4 PCBs

No PCBs were detected above USCOs, with all results being reported as non-detect (below the MDL) by the laboratory.

4.3.2.5 Pesticides

No pesticides were detected above RRSCOs. Two compounds (4,4'-DDE and 4,4'-DDT) were detected above their respective USCOs at four sample locations (see Table 3B).

4.3.2.6 Herbicides

No herbicides were detected above USCOs, with all results being reported as non-detect or estimated values by the laboratory.

4.4 Groundwater Investigation Results

Benchmark personnel provided oversight for the installation of RI groundwater monitoring wells to investigate on-Site groundwater quality and flow. Figure 4 presents the location of the monitoring well network and Tables 4A and 4B presents a comparison of the detected groundwater parameters to the Class GA Groundwater Quality Standards (GWQS) per NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1

Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1988). Groundwater samples were collected in accordance with the work plan and analyzed in accordance with Table 1.

4.4.1 Historic Groundwater Results

Four (4) groundwater samples were collected, as part of the historic investigations, from temporary micro-wells installed at locations: SP-1, SP-9, SP-11 and SP-12 (see Figures 3 and 4). SP-1 was located adjacent to the former 500 gallon UST, and SP-9, SP-10 and SP-11 are associated with the loading dock. A water sample was also collected from the basement sump. A summary of the historic analytical results is presented on Table 4A.

Elevated VOCs above GWQS were detected in each of the four temporary wells. No elevated VOCs were detected in the basement sump. Specifically, elevated petroleum-related VOCs above were detected in SP-1, and elevated chlorinated VOCs were detected in SP-9, SP-11, and SP-12 located in the loading dock. No elevated VOCs above GWQS were detected in the basement sump sample.

4.4.2 RI Groundwater Investigation Results

Groundwater samples were collected as part of the RI activities; including seven (7) permanent monitoring wells and three (3) from temporary micro-wells (see Figure 4). The permanent monitoring wells are designated MW-1 through MW-7 and the temporary micro-wells are designated TW-1 through TW-3. A water sample was also collected from an internal building cistern located in the south central portion of the building as part of the RI.

Table 4B summarizes the results of the water/groundwater samples collected as part of the RI. The groundwater and water sample results from the RI and previous investigations were compared to the NYS Class "GA" Groundwater Quality Standards and Guidance Values (GWQS/GVs) and discussed below.

4.4.3 VOCs

Prior to IRM activities the majority of the analytes were reported as non-detectable or trace (estimated) concentrations below the laboratory quantitation limit. Chlorinated VOCs,

specifically, cis-1,2-dichlorothene, (DCE), TCE, and PCE were detected above their respective GWQS in TW-2, located in the loading dock.

Post-IRM supplemental groundwater sampling analytical results indicate no chlorinated VOCs above GWQS. Acetone was reported above GWQS at one location (MW-5); however, acetone is a known laboratory contaminant and previous historic and RI groundwater analytical results did not indicate elevated acetone at any sample location above GWQS, further indicating likely laboratory contamination (see Table 4B).

4.4.4 SVOCs

The vast majority of analytes were reported as non-detectable or trace (estimated) concentrations below the laboratory quantitation limit. Select PAHs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, and chrysene were detected above their GWQS in MW-3, TMW-1, TMW-2, and TMW-3 (see Table 4B). The PAHs detected are reasonably attributed to high turbidity in the groundwater samples from the temporary wells.

Post-IRM supplemental groundwater sampling analytical results indicate no SVOCs above GWQS with all laboratory results reported as non-detectable or trace (estimated) values (see Table 4B).

4.4.5 Inorganic Compounds

The majority of metals detected at concentrations above GWQS were primarily limited to naturally-occurring minerals, including iron, magnesium, manganese, and sodium. Lead slightly exceeded its GWQS of 25 ug/L in TMW-1 (26 ug/L). The detections are likely associated with suspended soil particles, as evidence by the results for dissolved metals at MW-4.

No elevated metals above GWQS were detected in the supplemental groundwater sampling analytical results.

4.4.6 Polychlorinated biphenyls (PCBs)

No PCBS were detected above GWQS, with all results reported as non-detectable concentrations below the laboratory quantitation limit.

4.4.7 Pesticides

During the RI, the majority of analytes were reported as non-detectable or at trace (estimated) concentrations below the laboratory quantitation limit. Several pesticides were detected above their respective GWQS (see Table 4B), including the off-site upgradient well MW-4. Furthermore, the soil analytical results did not report elevated detection of similar constituents to the groundwater results.

No pesticides were detected above GWQS during the post-IRM supplemental groundwater sampling; including both on-Site and off-Site monitoring wells (see Table 4B).

4.4.8 Herbicides

No herbicides were detected above GWQS, with all results reported as non-detectable concentrations below the laboratory quantitation limit.

4.4.9 Cistern Water Sample

A water sample from the building cistern was collected and analyzed as part of the RI. No VOCs or SVOCs were detected. Sodium was detected at a concentration that exceeds its respective GWQS/GVs. It is believed that the cistern is mechanically filled from a public-water supply and was used as part of the historic building fire suppression system.

4.5 Soil Vapor Investigation Results

4.5.1 Historic SVI Results

A total of six (6) air samples were collected and five (5) samples were analyzed during the previous investigations. The historic report indicates that the outdoor ambient location was not analyzed due to equipment failure. The samples were analyzed for VOCs via Method TO-15. Table 5A summarizes the historic investigation.

Utilizing NYSDOH Matrix 1 and Matrix 2 comparison guidelines, analytical results for the Matrix 1 compound vinyl chloride (VC) and all results for Matrix 2 compounds indicated "No Further Action (NFA)". Matrix 1 compounds TCE and carbon tetrachloride results for the warehouse and office air sampling locations indicate "take reasonable and practical actions to identify source(s) and reduce exposures (I,R)" (see Table 5A). It should

be noted that the previous investigation identified various chemicals on the pre-sampling inventory, including oils, grease, primers, cleaning products, sealing solutions, enamels, paints, insecticides and disinfectants.

4.5.2 RI SVI Results

Seven (7) air samples were collected and analyzed during the RI. The samples were analyzed for VOCs via Method TO-15 (see Figure 4). Table 6A summarizes the RI air sampling analytical results. Analytical results were compared to the NYSDOH *Summary of Indoor and Outdoor Levels of Volatile Organic Compounds from Fuel Oil Heated Homes in NYS (dated November 2005)*, Indoor 90th percentile values. All indoor air results were below the 90th percentile values.

Of the Matrix 1 compounds, TCE was only detected in one sample location (SSV-1), and carbon tetrachloride was only detected in ambient air sampling locations, with the highest results being detected in the outdoor ambient sample location. All other Matrix 1 and Matrix 2 compounds were reported by the laboratory as non-detect.

Utilizing NYSDOH Matrix 1 and Matrix 2 comparison guidelines, all results for Matrix 1 and Matrix 2 compounds indicate NFA (see Table 6B).

4.6 Basement Investigation Results

Benchmark personnel inspected the 500 Seneca Street building basement, located in the north central portion of the building footprint, in November 2014 after the standing water that prevented initial RI activities was pumped out under Temporary Discharge Permit #14-05-TP218. Four potential areas of concern were identified as the boiler sump (a small, concrete sump likely used for blower housing condensate/moisture discharge), mechanical room (hydraulic piston) floor contents and two air handling motors designated Motor #1 and Motor #2. The following sections summarize the results for the various sampling performed on each potential area of concern.

4.4.1 PCB Wipe Samples

Four (4) PCB wipe samples were during the basement investigation. Wipe 1 was collected from the oil-reservoir housing of Motor#1, and Wipe 2 was collected from suspect

floor staining beneath Motor #1 (see Photolog and Figure 4). Wipe 3 was collected from the oil-reservoir housing of Motor #2, and Wipe 4 was collected for the floor beneath Motor #2. PCB wipe samples were collected utilizing laboratory supplied hexane-preserved wipes and 100 square centimeter sampling grids for each location. Wipe sample results are summarized on Table 7.

All analytical results were reported as non-detect by the laboratory, with the minor exception of Wipe #2 for Aroclor 1016, which was reported with an estimated value of 2.9 ug/Abs (per 100 sq. cm.). Wipe 2 results are less than the 40CFR Part 761.1(3) and 761.79(b)(3)(i) decontamination standards for non-porous surfaces with no-free flowing liquids of less than or equal to 10 ug/100 sq. cm.

4.6.1 Water Samples

Two (2) water samples were collected during the basement investigation. One (1) sample was collected from the accessible Motor #1 oil-reservoir for PCBs, and one (1) water sample was collected from the air handler blower condensate sump for PCBs and SVOCs. Analytical results are summarized on Table 8.

No PCBs were detected in the Motor #1 oil-reservoir contents.

One (1) SVOC, 2,6-dinitrotoluene, and one PCB, Aroclor 1242, were detected at low concentrations in the Blower Sump water sample. The detected constituent concentrations fall well below the applicable municipal sewer discharge permit limits (Buffalo Sewer Authority), which generally limits total toxic organic concentrations to 2.13 mg/L per USEPA pretreatment regulations.

4.6.2 Mechanical Room Floor Composite Sample Results

During the basement visual inspection with the Department, it was noted that several mechanical system tanks (condensate and/or expansion) and metal support structures that were previously submerged were exhibiting corrosion (rusting) of the metal components. No free liquid was noted. Additionally, a hydraulic piston driven piece of equipment was also present in the mechanical room.

Based on the visual inspection, one (1) composite sample was collected and analyzed for SVOCs, metals and PCBs. No PCBs were detected above the MDL by the laboratory and as such were reported as non-detect. Several select metals and SVOCs were detected

above the RRSCO and CSCOs, respectively. As stated above, "rust flakes" were visible within the floor sediment-debris and the likely source of metals contamination. Total SVOCs were less than 50 ppm, with all analytes related were reported by the laboratory as estimate (J-flagged) values (see Table 9).

500 Seneca plans to professionally clean (power wash and vacuum) the floor and lower four (4) feet of the walls (i.e., flooded depth). The blower sump will also be cleaned and vacuumed as part of these remaining housekeeping activities. All cleaning water and residuals will be properly disposed off-site.

4.7 Summary of Investigation Findings

The following is a summary of the historic investigations and RI findings.

Surface Soils:

No SVOCs, metals, PCBs, pesticides or herbicides were detected at concentrations above RRSCOs, with the exception of select PAHs in one location, SS-3 (see Table 2). Elevated PAHs above their respective RRSCOs and/or CSCOs were only identified in SS-3. This location was removed during IRM excavation activities (see Section 5 below).

Subsurface Soils:

Investigation results identified elevated chlorinated VOCs (loading dock) and petroleum VOCs (former UST area), select PAHs, and metals at concentrations above RRSCOS and CSCOs (see Tables 3A and 3B). No PCBs or herbicides were detected above the laboratory MDL and were all reported as non-detect.

It should be noted that after completion of the IRM activities, no remaining on-Site subsurface soil/fill exceeds RRSCOs, with minor exceptions beneath the building slab.

Groundwater:

As described above, no VOCs, SVOCs, metals, or pesticides were detected above GWQS during the post-IRM supplemental groundwater sampling event (April 2015),

with the minor exception of the common laboratory contaminant acetone at one location (see Table 4B).

Historic groundwater sample results indicated that no PCBs or herbicides were detected above the laboratory MDL (see Tables 4A and 4B). Elevated VOCs were previously detected above GWQS in the loading dock area and former UST area. Select PAHs were detected above GWQS, primarily in the temporary wells and can be likely attributed to the turbidity in the water. Dissolved metals detected above GWQS are primarily naturally occurring minerals. Several pesticides were initially detected above their respective GWQS, including the off-site upgradient well (MW-4), indicating a potential background condition associated with subsurface soil/fill material predominant in urban environments. Furthermore, the soil analytical results did not report elevated detection of similar constituents to the groundwater results.

Soil Vapor Intrusion:

The majority of air results indicate "No Further Action (NFA)", with minor exception in the historic investigation which indicated "take reasonable and practical actions to identify source(s) and reduce exposures (I,R).", (note that the pre-sampling inventory indicated the presence of potential indoorsources such as paints, cleaners) of potential indoor air contamination. No air results were detected at concentrations above the NYSDOH Indoor Air 90th percentile guidelines (see Tables 5A through 6B).

IRM activities removed potential volatile source material and installed the subgrade extraction piping for an ASD System in the loading dock area to address potential residual volatile constituents under the building slab, if necessary.

Water:

Non-groundwater liquid samples were collected during the investigations, including the basement sump, cistern and basement water samples. No water results were detected at concentrations above GWQS with the exception of naturally occurring minerals (e.g., sodium) and/or relevant municipal sewer discharge limits,

Wipe Samples:

The majority of wipe sample results were reported as non-detect or estimated concentrations below the laboratory MDL (see Table 9). Only one estimated results was reported by the laboratory at a concentration below the federal guidelines for non-porous surfaces.

4.8 Data Usability Summary

In accordance with the RI Work Plan, the laboratory analytical data was independently assessed and, as required, submitted for independent review. Ms. Judy Harry of Data Validation Services located in North Creek, New York performed the data usability summary assessment for the soil vapor, soil/fill and groundwater samples, which involved a review of the summary form information and sample raw data, and a limited review of associated QC raw data. Specifically, the following items were reviewed:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate Recoveries
- Field Duplicate Correlation
- Preparation/Calibration Blanks
- Control Spike/Laboratory Control Samples
- Instrumental IDLs
- Calibration/CRI/CRA Standards
- ICP Interference Check Standards
- ICP Serial Dilution Correlations
- Sample Results Verification

The Data Usability Summary Reports (DUSRs) were conducted using guidance from the USEPA Region 2 validation Standard Operating Procedures, the USEPA National Functional Guidelines for Data Review, as well as professional judgment. Appendix F includes the DUSRs for the September 2010 and May 2011 analytical data, which were prepared in accordance with Appendix 2B of NYSDEC's DER-10 guidance. Those items listed above that demonstrated deficiencies are discussed in detail in the DUSR narrative

sections. Analytical results were edited or qualified per the DUSR with changes reflected on the summary tables. In general, the sample analyses were primarily conducted in compliance with the required analytical protocols. The sample results were usable either as reported, usable with minor qualification or edited. No data were rejected.

4.9 Constituents of Concern (COCs)

Based on historical investigation and the RI findings to date, the Constituents of Concern (COCs) for a restricted residential development are presented by media below:

- Surface Soil/Fill: SVOCs
- Subsurface Soil/Fill: SVOCs, metals

5.0 INTERIM REMEDIAL MEASURES

500 Seneca prepared and submitted two (2) IRM Work Plans, including the Petroleum IRM Work Plan (October 2014) and the Loading Dock IRM Work Plan (December 2014) to describe the planned remedial activities. Details of the completed IRMs are presented below.

5.1 Petroleum IRM Activities

As described above, residual petroleum contamination remained on-Site after completion of the UST removal in 2008 under the NYSDEC Spills Program (Spill No. 0751217). In accordance with the Department's August 19, 2010 correspondence, additional excavation was required in the vicinity of the former UST area to address residual petroleum if future intrusive activities were completed in the former UST area.

After completion of the above grade demolition activities, Benchmark provided oversight of the remedial excavation activities, including removal of subgrade footers/foundations, excavation of impacted soil/fill, implementation of the approved community air monitoring plan (CAMP), and collection of post-excavation confirmatory soil samples. Petroleum IRM remedial activities were completed between November 17th and 25th, 2014. The petroleum excavation was completed to approximately eight (8) feet below grade surface (fbgs). Figure 6 details the lateral extent of the petroleum IRM excavation and Table 10 summarizes the post-excavation confirmatory soil/fill sample results. Laboratory analytical data packages are provided electronically in Appendix X.

It should be noted that the petroleum excavation was extended to the east to address elevated arsenic in SB-4. Post-excavation samples from the floor and wall proximate to SB-4 (Bottom-02 and Sidewall-East) were additionally analyzed for metals (see Table 10). All petroleum IRM post-excavation results were below USCOs.

After completion of the petroleum excavation, 500 Seneca, in consultation with the Department, elected to address polycyclic aromatic hydrocarbon (PAH) impacts identified in the SS-3 area. The SS-3 excavation was completed to approximately 2 fbgs. Post-excavation confirmatory samples were collected for PAHs. Post-excavation results indicated a reduction in PAH concentration. Although select individual PAHS remained slightly above their respective RRSCOs, total PAHs fall below 25 ppm;. During redevelopment, additional

soil/fill in the vicinity of SS-3 was excavated during installation of subgrade utilities and asphalt and disposed off-site at the Waste Management (WM) Chaffee Landfill. The western lot of the Site is being redeveloped as a parking lot in accordance with DER-10 cover system requirements.

Specific elements of the petroleum IRM, as implemented, included:

- Excavation of approximately 385 tons of non-hazardous petroleum, metal and PAH impacted soil/fill followed by off-site transportation by R. E. Lorenz (9A-799) for disposal at the WM Chaffee Landfill, located in Chaffee, New York.
- Collection of a total of 11 post-excavation confirmatory soil samples including: six (6) from the petroleum and SB-4 area, and five (5) from the SS-3 area Analytical results indicate that post-excavation samples are below RRSCOs, with minor exception of select PAHs in the SS-3 area, with Total PAHs below 25 ppm in all cases.
- Demarcation fabric was placed at the completion of excavation activities to delineate remaining in place soil/fill material from approved backfill. Demarcation fabric was also placed in the utility excavations prior to utility installation and backfilling. Details of the cover system will be provided in the Final Engineering Report (FER).

Though not a component of the petroleum IRM, excess soil/fill generated during redevelopment activities, including excavations for subgrade utilities and site paving activities were removed from the Site, including:

- Approximately 1,316 tons of excess soil/fill material that was unsuitable for reuse was excavated during redevelopment activities by 500 Seneca's general contractor, Scott Lawn Yard, and transported off-site for disposal at WM Chaffee Landfill, located in Chaffee, New York under the same approved disposal profile for the remedial excavation soil/fill described above.
- NYSDEC approved virgin-source backfill material, including bedding sand, pea stone and 2-inch run-of-crush, was used during utility installation. Demarcation fabric was placed prior to utility installation and backfilling.

5.2 Loading Dock IRM Activities

As described above 500 Seneca submitted an IRM Work to address chlorinated VOC impacts identified in the loading dock. NYSDEC approved the IRM Work Plan for public comment on December 22, 2014, with noticed public comment period from January 12, 2015 through February 12, 2015. We understand that no comments were received.

Remedial excavation was completed between January 26th and 30, 2014. Although the original IRM approach proposed an excavation depth of approximately six (6) feet below surface (fbgs) due to potential structural issues, the remedial excavation was successful in removing source area to competent rock, which was encountered at a depth of approximately 14 fbgs. Excavation was completed with near vertical sidewalls and extended to the accessible limits to the south as defined by the elevated loading dock platform, to the west as limited by existing building foundation wall, and to the north as limited by the foundation wall along Myrtle Avenue. Confirmatory post-excavation sidewall samples were collected after excavation was deemed complete. As the excavation was completed to rock, no bottom sample was collected. All post-excavation sample results are below RRSCOs. Lateral extents and post-excavation sample locations are presented on Figure 7. Table 11 summarizes the post-excavation confirmatory soil/fill sample results. Laboratory analytical data packages are provided electronically in Appendix E.

After the excavation was deemed complete, Benchmark installed the subgrade components of a groundwater treatment pipe (to provide a means to introduce amendment(s) in the future, if required) and vapor extraction systems, and backfilled the area with NYSDEC approved virgin-source stone backfill. Installation and backfilling was completed on February 20, 2015.

Specific elements of the Loading Dock IRM, as implemented included:

- Removal and off-site recycling of two (2) loads, approximately 40 tons, of non-impacted concrete.
- Excavation of approximately 382 tons of non-hazardous soil/fill followed by off-site transportation by R. E. Lorenz (9A-799) for disposal at WM's Chaffee Landfill, located in Chaffee, New York.
- Collection of four (4) sidewall post-excavation confirmatory soil samples. All post-excavation analytical results are below RRSCOs.

- Installation of the subgrade vapor extraction pipe. Details of the ASD System will be provided in the FER.
- Installation of subgrade groundwater treatment pipe to provide a conduit for in-situ treatment of perched water in the loading dock, if needed. Details of the groundwater treatment system will be provided in the FER.
- Backfilling of the excavation with NYSDEC approved virgin-source stone.

The Final Engineering Report, to be submitted as a separate document, includes additional details and supporting documentation of the IRMs.

6.0 FATE AND TRANSPORT OF COCS

The soil, groundwater, water and soil vapor sample analytical results associated with historic investigation and the RI were incorporated with the physical characterization of the Site to evaluate the fate and transport of COCs in Site media. The mechanisms by which the COCs can migrate to other areas or media are briefly outlined below. In all instances, the potential pathways are evaluated in the context of post-IRM conditions.

6.1 Fugitive Dust Generation

Volatile and non-volatile chemicals present in soil/fill can be released to ambient air as a result of fugitive dust generation. Impacted soil/fill was excavated and disposed off-site as part of the IRM activities and the completed remedial action achieved RRSCOs for VOCs.

Based on the completed IRM activities, and the planned future use and redevelopment with the Site primarily covered by building, concrete and asphalt, the potential for fugitive dust generation would be limited to shallow excavations during redevelopment and/or utility repair activities.

The vast majority of the RI and IRM subsurface soil/fill samples were below USCOs, and accessible soil/fill beneath the cover system generally falls below RRSCOs, and as such is protective of human health and environment. Additionally, any future intrusive activities beneath the cover system would need to be completed in accordance with the Excavation Work Plan to be included in the Site Management Plan (SMP), thereby significantly reducing potential for dust migration; therefore, fugitive dust generation is considered a relevant but unlikely migration pathway.

6.2 Volatilization

Volatile chemicals present in soil/fill and groundwater may be released to ambient or indoor air through volatilization either from or through the soil/fill underlying building structures. Volatile chemicals typically have a low organic-carbon partition coefficient (K_{oc}), low molecular weight, and a high Henry's Law constant.

A soil vapor investigation was completed as part of the RI. Utilizing the NYSDOH Matrix 1 and Matrix 2 guidelines, all results indicated "No Further Action (NFA)."

The completed IRMs were successful in source area removal of both residual petroleum impacts and cVOC impacts (loading dock) and achieved a RRSCO cleanup. After completion of the IRMs, no VOCs were detected in on-Site soil/fill above RRSCOs, with the vast majority below USCOs.

Post-IRM groundwater monitoring indicates no VOCs above GWQS, with exception of the common laboratory contaminant acetone in one location.

Based on the RI results, the IRM activities which achieved RRSCOs for VOCs and post-IRM groundwater sampling which indicates no cVOCs above GWQS, volatilization to indoor and outdoor air is not considered a relevant pathway at the Site.

6.3 Surface Water Runoff

The potential for soil particle transport with surface water runoff is low, as the majority of the Site is covered by building, concrete, and/or asphalt. Precipitation waters are collected in on-Site catch basins, and transmitted to the municipal sewer (Buffalo Sewer Authority). The combined sanitary/storm sewer system provides a mechanism for controlled surface water transport that ultimately result in sediment captured in Buffalo Sewer Authority's grit chambers followed by disposal at a permitted sanitary landfill. As such, surface water runoff is not considered a relevant migration pathway.

All future intrusive activities will be completed in accordance with the SMP.

6.4 Leaching

Leaching refers to chemicals present in soil/fill capable of migrating downward to groundwater as a result of infiltration of precipitation. The completed IRM excavation/removal and off-Site disposal of impacted soil/fill from the Site achieved RRSCOs in nearly all areas of the property. . Furthermore, the majority of the Site is covered by impermeable surfaces (i.e., asphalt, concrete, and buildings) which limit infiltration of precipitation. As such, leaching is considered a relevant but unlikely on-site/off-site contaminant migration pathway.

6.5 Groundwater Transport

Overburden groundwater underlying the Site flows in a west-northwesterly direction and is strongly influenced by underground utilities and building foundations. As described in Section 4.2, groundwater data initially indicated an isolated impact to perched groundwater by cVOCs in the area of the at grade loading dock. The cVOCs present in groundwater did not appear to be migrating away from this area. The completed IRM activities effectively removed the potential source areas, with all remaining groundwater monitoring wells yielding analytical results below GWQS/GV's for cVOCs.

The Site and surrounding area are serviced by municipal (supplied) water and it does not appear that cVOC contamination is being transported off-site via groundwater migration. Therefore, it does not appear that groundwater transport is a relevant migration pathway.

6.6 Exposure Pathways

Based on the analysis of chemical fate and transport provided above, the pathways through which Site COCs could reach receptors at significant exposure point concentrations have been significantly minimized by the completed IRM activities. Specifically, the IRM activities have:

- Mitigatedthe potential for contaminated soil/fill particles to migrate from the Site in the form of fugitive dust and/or surface runoff. ().
- Addressed the potential indoor and outdoor air volatilization pathways by excavation and offsite disposal of the petroleum and cVOC-impacted soils and installation of an ASD system in the loading dock. Post IRM groundwater monitoring results indicate no cVOC exceedance of GWQS.
- Addressed leaching of soil COCs via excavation of outdoor and indoor (loading dock) locations where elevated concentrations of organic constituents were present... Final remedial measures, which are expected to employ a cover system and Site Management Plan as discussed below, will further minimize this exposure pathway

7.0 QUALITATIVE EXPOSURE ASSESSMENT

7.1 Potential Human Health Risks

Based on the achieved Restricted-Residential Use cleanup, the 500 Seneca Street Site is fully protective of human health. The planned mixed-use residential and commercial redevelopment is consistent with the surrounding property use and zoning. As such, under current conditions (i.e., redevelopment) human contact with the Site can be expected to occur primarily by two types of receptors: trespassers who may traverse the property during redevelopment, and construction workers. Trespassers may be comprised of adolescents or adults, whereas construction workers would be limited to adults. In both instances, exposure frequency is expected to be negligible with remaining on-Site samples all below Part 375 RRSCOs, with minor exception beneath the building slab.

For groundwater, post-IRM analytical results indicate no exceedance of VOCs above GWQS, . Elevated PAHs, metals and pesticides appear to be ubiquitous to the urban environment of the Site. Based on similar concentrations in off-site wells and the availability of municipal water source at the Site, the potential for routine direct human contact or ingestion (i.e., as might occur with use of on-Site groundwater water for potable or process purposes) is highly unlikely in only the rarest occurrence of deep excavation beyond 6 fbgs for utility or structural work. Municipally supplied potable water is provided, and required to be used in the City of Buffalo.

The IRMs were completed to reduce/eliminate exposure to COPCs. As discussed in Sections 4 and 5, nearly all site soils achieve RRSCOs with only limited areas remaining beneath existing building or the proposed cover system. ..

7.2 Potential Ecological Risks

The Site is a former commercial manufacturing facility located within a highly developed area of the City of Buffalo. The Site former and current site is predominantly covered with asphalt, concrete and buildings, which provide little or no wildlife habitat or food value, and/or access to the detected subsurface contamination. No natural waterways are present on or adjacent to the Site. The future use is a mixed residential and commercial redevelopment. The exterior western portion of the Site has been improved with asphalt

pavement to be used for parking. As such, no unacceptable ecological risks are expected under the current and future use scenario.

8.0 ALTERNATIVES ANALYSIS EVALUATION

This section provides an analysis of the selected remedial approach(s) by using the Remedy Selection Evaluation Criteria identified in Section 4.2 of DER-10: Technical Guidance for Site Investigation and Remediation. In accordance with DER-10 Section 4.4(d)2, in addition to the baseline alternative, the following alternatives are developed and assessed for each BCP Site based on NYSDEC-defined cleanup tracks as follows:

Track 1, 6 New York Codes, Rules and Regulations (6NYCRR) Part 375-3.8(e)(1) requires site media to meet Part 375 SCOs that will allow the site to be used for any purpose without restrictions on the use of the site (i.e., unrestricted use). The soil cleanup must achieve the unrestricted use criteria at any depth above bedrock. Details and evaluation of the Track 1 alternative are described below.

Track 2, 6NYCRR Part 375-3.8(e)(2) requires site media to meet Part 375 restricted use SCOs that are consistent with the end use. For the Site, the Track 2 cleanup must achieve the Commercial Use SCOs to a depth of 15 fbgs. For Track 2 remedies, restrictions can be placed on the use of the property in the form of institutional and engineering controls, and future use and development will be completed in accordance with the environmental easement and site management plan. Details and evaluation of the of the Track 2 cleanup are described below.

Track 4, 6NYCRR Part 375-3.8(e)(4) soil cleanups uses site-specific information to identify site-specific SCOs (or site-specific action levels; SSALs) that are protective of public health and the environment under a restricted use scenario. For Track 4 remedies, restrictions can be placed on the use of the property in the form of institutional and engineering controls if they can be realistically implemented and maintained in a reliable and enforceable manner. As set forth in 6 NYCRR Part 375-3.8(e)(4)(iii)(b)(1), the top one foot of all exposed surface soils, not otherwise covered by the components of the development of the site (e.g., buildings, pavement), shall not exceed the restricted use (Commercial Use) SCOs. Areas that exceed these SCOs must be covered by material meeting the requirements of the generic soil cleanup table contained in Part 375-6.7(d) for the applicable future site uses (i.e., commercial).

8.1 Remedial Action Objectives

The final remedial measures for the Site must satisfy Remedial Action Objectives (RAOs). Remedial Action Objectives are site-specific statements that convey the goals for minimizing or eliminating substantial risks to public health and the environment. Per DER-10, generic RAOs associated with the Site include:

1. Groundwater:
    a. Public Health Protection
        - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
        - Prevent contact with, or inhalation of volatiles, from contaminated groundwater.
    b. Environmental Protection
        - Remove the source of groundwater
        - Prevent the discharge of contaminants to surface waters
        -
2. Soil:
    a. Public Health Protection
        - Prevent ingestion/direct contact with contaminated soil.
        - Prevent inhalation of or exposure from contaminants volatilizing from soil.
    b. Environmental Protection
        - Prevent leaching of contaminants that would result in groundwater contamination.

3. Soil Vapor:
    a. Public Health Protection
        - Mitigate impacts to public health resulting from potential soil vapor intrusion into building(s) on the site.

In addition to achieving RAOs, NYSDEC's Brownfield Cleanup Program calls for remedy evaluation in accordance with DER-10 Technical Guidance for Site Investigation and Remediation. Specifically, the guidance states "When proposing an appropriate remedy, the person responsible for conducting the investigation and/or remediation should identify and develop a remedial action that is based on the following criteria..:"

- **Overall Protection of Public Health and the Environment**. This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced, or controlled through removal, treatment, engineering controls, or institutional controls.
- **Compliance with Standards, Criteria, and Guidance (SCGs)**. Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.
- **Long-Term Effectiveness and Permanence**. This criterion evaluates the long-term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: (i) the magnitude of the remaining risks (i.e., will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals), (ii) the adequacy of the engineering and institutional controls intended to limit the risk, (iii) the reliability of these controls, and (iv) the ability of the remedy to continue to meet RAOs in the future.
- **Reduction of Toxicity, Mobility or Volume with Treatment**. This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination. Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Site.
- **Short-Term Effectiveness**. Short-term effectiveness is an evaluation of the potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during construction and/or implementation. This includes a discussion of how the identified adverse impacts and health risks to the community or workers at the Site will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives.

- **Implementation**. The implementation criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.
- **Cost**. Capital, operation, maintenance, and monitoring costs are estimated for the remedy and presented on a present worth basis.
- **Community Acceptance**. This criterion evaluates the public's comments, concerns, and overall perception of the remedy.
- **Land Use –** This criterion includes the Department's determination of reasonable certainty of the use; and the evaluation of the reasonably anticipated future use of the site.

8.2 Future Land Use Evaluation

In developing and screening remedial alternatives, NYSDEC's Part 375 regulations require that the reasonableness of the anticipated future land be factored into the evaluation. The regulations identify 16 criteria that must be considered. These criteria and the resultant outcome for the 500 Seneca Street Site are presented below.

1. *Current use and historical and/or recent development patterns:* The Site was developed with residential dwellings in the 1800s. Between 1901 and 1927, a series of adjoining building buildings were constructed to serve as the office and manufacturing facilities for F.N. Burt Company, which utilized the property for box manufacturing from the point of original building construction until 1959. Between approximately 1968 and 1980, Wolkind Bros, Inc., a clothing rental business, utilized the Site. New Era Cap Co. purchased and utilized the Site for manufacturing, warehousing and shipping operations from 1986 to 2004. The Site has been largely vacant and underutilized since New Era Cap Co. manufacturing operations ceased in 2004.

   The planned redevelopment of the Site would include utilizing the existing structure for mixed use residential (upper floors) and commercial office space (main/ground surface level). **Accordingly, a mixed use residential and commercial site redevelopment would be consistent with current and anticipated redevelopment plans for the area around the Site.**

2. *Applicable zoning laws and maps:* The Site and the surrounding areas to the south are located in an area of the City of Buffalo zoned M1-Light Industrial District. However, to the west and north the zoning is R3- Dwelling District.

   The proposed development use of mixed residential and commercial office space is consistent with current zoning and the City of Buffalo's Buffalo Green Code, as further discussed in Bullet 4.

3. *Brownfield opportunity areas as designated set forth in GML 970-r:* The Brownfield Opportunity Area (BOA) Program provides municipalities and community based organizations with assistance to complete revitalization plans and implementation strategies for areas or communities affected by the presence of brownfield sites, and site assessments for strategic sites. **The subject property does not lie within a BOA.**

4. *Applicable comprehensive community master plans, local waterfront revitalization plans as provided for in EL article 42, or any other applicable land use plan formally adopted by a municipality:* According to the Transitional Analysis completed as part of the Buffalo Green Code, Unified Development Ordinance dated May 2014, the Site within the boundaries of an area slated for transition to Urban Core (N-1D, N-1E and N-1S). Based on the location of the Site to downtown Buffalo, N-1E, Downtown Edge, is likely the most applicable. It is described as a "Full-Block, zero setbacks, zero side yard development with consistent pedestrian-orientated ground floor frontages and significant vertical mixed-use". **The proposed redevelopment of the Site for a mixed residential and commercial use is consistent with the Buffalo Green Code.**

5. *Proximity to real property currently used for residential use, and to urban, commercial, industrial, agricultural, and recreational areas:* The Site is located within the boundaries of the new Urban Core (N-1) designated in the Draft Unified Development Ordinance and Buffalo Green Code. Residential properties are located approximately 250-ft to the north and northwest of the Site across Myrtle Avenue and Spring Street. Commercial and industrial properties, including an active rail line, are located proximate to the Site across Seneca Street. **Nearby and adjacent properties are mixed use, including residential, commercial and industrial. The proposed redevelopment of the Site for a mixed residential and commercial use is consistent with the Buffalo Green Code.**

6. *Any written and oral comments submitted by members of the public on the proposed use as part of the activities performed pursuant to the citizen participation plan:* **No comments have been received from the public relevant to Site use concerns.**

7. *Environmental justice concerns, which include the extent to which the proposed use may reasonably be expected to cause or increase a disproportionate burden on the community in which the site is located, including low-income minority communities, or to result in a disproportionate concentration of commercial or industrial uses in what has historically been a mixed use or residential community:* **Nearby and adjacent properties are a mixed use of residential, commercial and industrial properties. The proposed redevelopment of the Site for a mixed residential and commercial use is consistent with the Buffalo Green Code This does not pose environmental justice issues.**

8. *Federal or State land use designations:* The property is designated Urban Land by the Soil Conservation Service. **Reuse in a restricted residential and commercial capacity is typical in urban areas where background conditions sometimes preclude achieving unrestricted use soil cleanup objectives.**

9. *Population growth patterns and projections:* The City of Buffalo, encompassing 40 square miles, has a population of 261,025 (2011 US Census Bureau), a decrease of 0.1% from 2010 U.S. Census. The population density in the City is 5,525.6 people per square mile. The Site is located in Census Tract 12, in the area of the city zoned for commercial/light industrial/residential.

   The Site is located in a highly developed mixed use residential, commercial and industrial are of the City of Buffalo. Properties adjacent to the Site include commercial, residential, and industrial properties. **Reuse of the Site in a mixed residential and commercial capacity increases the opportunities for residential population growth.**

10. *Accessibility to existing infrastructure:* The Site is located in a mixed residential, commercial and industrial area with easy access to City of Buffalo streets and nearby Interstate 190. Utilities (sewer, water, gas, and electric) are present along these streets**. Existing infrastructure supports continued reuse in a mixed use capacity**.

11. Proximity of the site to important cultural resources, including federal or State historic or heritage sites or Native American religious sites: **The Kamman Building (NR#: 09NR06076) addressed at 755 Seneca Street is located approximately 0.4-miles to the east of the Site. No other federal or State historic or heritage sites or Native American religious sites area in the vicinity.**

12. *Natural resources, including proximity of the site to important federal, State or local natural resources, including waterways, wildlife refuges, wetlands, or critical habitats of endangered or threatened species:* No State or Federal wetlands exist on the Site. The Buffalo River is located approximately 0.8-miles southwest of the Site and a NYSDEC regulated freshwater wetland (BU-3) is located approximately 1.25-miles to the west of the site. According to the NYSDEC's Environmental Resource Mapper (ERM) there are only two important plant habitats/endangered species listed for the area encompassing the Site:
    - The Golden Dock (Rumex fueginus) is listed as an endangered rare plant species under NYS Protected Status.
    - The American Burying Beetle (Nicrophorus americanus) is listed as an endangered rare animal species under NYS Protection Status.

    The absence of significant ecological resources on or adjacent to the Site indicates that cleanup to restricted-residential use conditions will not pose an ecological threat.

13. *Potential vulnerability of groundwater to contamination that might emanate from the site, including proximity to wellhead protection and groundwater recharge areas and other areas identified by the Department and the State's comprehensive groundwater remediation and protection program established set forth in ECL Article 15 Title 31:* Groundwater at the Site is assigned Class "GA" by 6NYCRR Part 701.15. A total of seven overburden groundwater monitoring wells and seven piezometers were installed on the Site. Groundwater data obtained during the RI and post-IRM sampling events, indicate conformance with GWQS, with minor exceptions. There are no groundwater supply wells present on the Site. Regionally, groundwater in the area has not been developed for industrial, agriculture, or public supply purposes. Potable water service is provided to the Site and surrounding area by the local municipal water authority. **The absence of potable wells, wellhead protection, and groundwater recharge areas indicates that cleanup to restricted-residential use conditions will not pose a drinking water threat.**

14. *Proximity to flood plains:* No flood plains exist on the Site; therefore there is no risk of significant soil erosion due to flooding. **As such, cleanup to restricted-residential use standards does not pose a threat to surface water.**

15. *Geography and geology:* Shallow surface soils at the Site, although present beneath asphalt and/or the building, were generally characterized during the RI as non-native soil/fill materials in the upper 4 feet consisting of varying amounts of granular soils (silts, sands and gravels) with fill characteristics (cinders, brick fragments, slag) and lesser amounts of clay. The native soils generally consisted of variations of brown

lean clays with varying amounts of sands, silts and gravels. **Geography and geology are consistent with a mixed residential/commercial redevelopment.**

16. *Current institutional controls applicable to the site:* **No institutional controls are currently present that would affect redevelopment options.**

Based on the above analysis, reuse of the Site in a commercial-residential capacity is consistent with past and current development and zoning on and around the Site, and does not pose additional environmental or human health risk.

8.3 Remedial Alternatives Evaluation

In addition to the evaluation of alternatives to remediate to the likely end use of the Site, NYSDEC regulation and policy calls for evaluation of more restrictive end-use scenarios. These include an unrestricted use scenario (considered under 6NYCRR Part 375 to be representative of cleanup to pre-disposal conditions), and a scenario less restrictive than the reasonably anticipated future use, which is residential use. Per NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, evaluation of a "no action/ no further action" alternative is also required to provide a baseline for comparison against other alternatives.

The alternatives evaluated below in greater detail include:

- No Further Action/IRM
- Track 4 Restricted Residential Use Cleanup
- Track 2 Restricted Residential Use Cleanup
- Unrestricted Use Cleanup (Track 1)

8.3.1 Alternative #1- No Further Action/IRM

Under this alternative, the Site would remain in its current state, with no additional controls in-place beyond the IRMs completed (i.e., Petroleum IRM and Loading Dock IRM).

Overall Protection of Public Health and the Environment – This alternative does not reduce the risk or exposure for human health and the environment beyond the

completed IRMs. The Site as it exists is not fully protective of human health and the environment due to the presence of contamination (albeit at low levels) remaining on-Site, and the absence of institutional controls to mitigate exposure to remaining impacts and prevent more restrictive forms of future Site use (e.g., unrestricted or residential). Accordingly, no further action is not fully protective of public health and does not satisfy the RAOs.

Compliance with SCGs – Under the current and future use scenario (restricted residential), the remaining contamination on-Site detected in the soil/fill and groundwater do not comply with applicable SCGs in the absence of institution controls.

Long-Term Effectiveness and Permanence – Though the completed IRMs were successful in reducing on-site contamination permanently (off-site disposal in licensed disposal facility), without the application of institutional controls the no further action alternative provides no long-term effectiveness or permanence in achieving RAOs.

Reduction of Toxicity, Mobility, or Volume – The IRMs completed at the Site have reduced the toxicity, mobility and volume of COPCs. However, remaining contamination on-Site will need to be removed to comply with RAOs, and therefore, no further action is not protective of public health and does not satisfy the RAOs.

Short-Term Impact and Effectiveness – The completed IRMs were effective in initially reducing short-term adverse impacts to the community.

Implementability – No technical or administrative implementability issues are associated with the no further action alternative.

Cost – The capital cost of the IRMs completed was approximately $225,000. There would be no capital or long-term operation, maintenance, or monitoring costs associated with the no further action alternative.

Community Acceptance – The Loading Dock IRM Work Plan was made available for public review from January 12, 2015 through February 12, 2015. No comments from the public were received. Continued community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets and other planned Citizen Participation activities.

8.3.2 Alternative 2- Track 4 Restricted Residential Use Cleanup

Under this alternative, in addition to the completed IRMs, the Site would be cleaned up to achieve a Track 4 Restricted Residential Use. Figure 10 identifies the additional remedial measures necessary to achieve a Track 4 RRSCO cleanup. Table 12 provides a cost estimate to complete this alternative.

The additional remedial & housekeeping measures would include:

- **Basement Cleaning Measures**, including cleaning and off-site disposal of residual surface contamination in the basement. The remedial cleaning would include removal and off-site disposal/scrap recycling of former air handler and mechanical equipment, cleaning of the air handler sump, and cleaning of the basement concrete floor and walls to approximately 4 feet above floor elevation. All cleaning residual wastes (floor soil debris and cleaning waters) will be properly handled and disposed off-Site.
- **Universal and Chemical Waste Removal**, including the collection and off-site disposal of potential mercury lamps and bulbs, batteries, and potential pcb-containing light ballasts. Other miscellaneous chemical wastes and drums (e.g., associated with the former boiler room) will be removed and properly disposed/recycled off-site.
- **Placement of Cover System,** including demarcation layer underlying DER-10 acceptable backfill in areas without hardscape (building, asphalt and concrete) to address remaining contamination above RRSCOs.
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:
    - **Institutional Controls and Engineering Controls (IC/EC)** Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the Site to restricted residential use.

- **Operation and Maintenance Plan** that describes the measures necessary to operate, monitor, and maintain any mechanical components of the remedial work (not considered applicable in this case).
- **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the Site are completed in a safe and environmentally responsible manner;
- **Site Monitoring Plan** that includes: provisions for a Site-wide inspection program to assure that the IC/ECs have not been altered and remain effective; and,
- **Environmental Easement** filed with Erie County.

Overall Protection of Public Health and the Environment –This alternative would be protective of public health and the environment, based on the completed IRMs, and planned remedial activities, as stated above, and the use of engineering and institutional controls to prevent potential future exposure The SMP will include appropriate plans, controls and measures and an environmental easement to ensure the restricted-residential use remedy is protective of human health and the environment. Therefore, this alternative is protective of health and the environment and satisfies the RAOs.

Compliance with SCGs – The planned remedial activities will be performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria. The IRMs and planned remedial actions are fully protective of human health and the environment, and achieves RAOs for the Site. This alternative complies with applicable SCGs.

Long-Term Effectiveness and Permanence – The completed IRMs removed approximately 760 tons of petroleum and CVOC impacted soil/fill and disposed off-site at permitted landfill. The planned remedial activities, including basement, universal and chemical wastes, cover system, and implementation of EC/IC will provide long-term effectiveness and permanence.

The SMP will include appropriate plans, controls, and measures and an environmental easement to ensure the restricted use remedy is protective of human health

and the environment. The SMP will be followed by the current Site owner as well as future Site owners. As such, this alternative will provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume – Reduction of toxicity (via removal of exposure pathways) and mobility (via disposal of impacted materials in a secured landfill) has been be achieved by completion of the IRMs.. The SMP will include appropriate plans, controls, and measures and an environmental easement to ensure the restricted use remedy remains protective of human health and the environment. Accordingly, this alternative satisfies this criterion.

- ***Short-Term Impact and Effectiveness*** – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the IRM were effectively controlled in accordance with the site Health and Safety Plan and IRM Work Plans.

Implementability – No technical or administrative implementability issues are associated with this alternative.

Cost – The capital costs for this alternative, including the completed IRMs is estimated at approximately $745,000. Annual certification is estimated at approximately $2,500 per year.

Community Acceptance – The Loading Dock IRM Work Plan was made available for public review from January 12, 2015 through February 12, 2015. No comments from the public were received.

Continued community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets and other planned Citizen Participation activities.

8.3.3 Alternative 3- Track 2 Restricted Residential Use Cleanup

Under this alternative, in addition to the completed IRMs, the Site would be remediated to achieve 6NYRR Part 375 Restricted Residential Use Cleanup (Track 2), which

in general would include: excavation and off-Site disposal of soil exceeding RRSCOs to a depth of 15-ft below post-redevelopment final grade (or bedrock, whichever is encountered first) across the entire site, and implementation of a Site Management Plan, and filing of an environmental easement. Figure 11 identifies the additional remedial measures necessary to achieve a Track 2 RRSCOs cleanup.

The alternative includes the following components:

- **Excavation Activities** to address soil/fill exceeding their respective RRSCOs in the upper 15 feet of soil/fill or above bedrock.
- **Implementation of a Site Management Plan (SMP)**. The SMP will include the same elements as described under Alternative 2.

Overall Protection of Public Health and the Environment –

Under this alternative, additional remedial excavation beyond the completed IRMs would be necessary to achieve RRSCOs across the Site. Since the IRM and additional remedial action would achieve removal of impacted soil/fill to below RRSCOs, and implement institutional controls, this alternative is fully protective of human health and the environment, and would successfully achieves the RAOs for the Site.

Compliance with SCGs – The planned remedial activities will be performed in accordance with applicable, relevant, and appropriate SCGs. The IRMs and planned remedial actions are fully protective of human health and the environment, and achieve RAOs for the Site. The SMP would include: an Operation and Maintenance (O&M) plan to confirm that the ASD system is operating and being maintained in accordance with the SMP; and, a Site-wide Inspection program to assure that the engineering and institutional controls placed on the Site have not been altered and remain effective.

Long-Term Effectiveness and Permanence – The completed IRM and additional remedial action would effectively remove soil/fill exceeding RRSCOs to a depth of 15 fbgs, or bedrock across the site, and thereby provide long-term effectiveness and permanence. A Site Management Plan would be prepared to assure that the Institutional Controls placed on

the Site have not been altered and remain effective. As such, this alternative will provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume – Reduction of toxicity, mobility or volume would be achieved by the completed IRMs and the planned additional excavation and off-site disposal of soil/fill exceeding RRSCOs across the Site. The SMP will include appropriate plans, controls, and measures and an environmental easement to ensure the restricted use remedy is protective of human health and the environment. Accordingly, this alternative satisfies this criterion.

Short-Term Impact and Effectiveness – There are several potential short-term impacts associated with this alternative.

- There is potential for impacts to human health (workers and construction personnel) due to direct contact with impacted soil and particulate releases. This alternative would require implementation of a health and safety plan (HASP) to identify proper personal protective equipment required as well as the proper site and community air monitoring, as outlined in the NYSDOH Generic Community Air Monitoring Plan (CAMP), in order to mitigate potential adverse conditions/short-term impacts. Additional health and safety measures would need to be employed during excavation activities within the building and under the building slab. Moreover, significant physical hazards may be encountered due to structural limitations associated with removal of subslab soil/fill as described below.
- Human health and the environment associated with chemical exposures would be protected under this alternative if the HASP and CAMP are properly implemented. This alternative is expected to meet RAOs at completion of the excavations, because the impacted soil will be removed from the Site. Confirmatory soil sampling would be performed.

Implementability – Technical implementation issues would impede construction of this alternative. Select subslab soil/fill samples exceed RRSCOs, and under this scenario would require excavation and removal. Excavating soil/fill from beneath the building slab,

particularly in subgrade areas of the building, may require specialized techniques and/or may be deemed infeasible where heavy equipment access would be limited and/or where structural supports or load bearing walls might be compromised by the work. Constituents exceeding RRSCOs beneath the slab are not amenable to in-Situ or other non-destructive remedial approaches (i.e., elevated metals in HC-5 and HC-6). As such the feasibility of achieving a Track 2 cleanup is questionable.

Cost – The capital costs for this alternative, including the completed IRMs is estimated at approximately $1,425,000. Significant expense is associated with material excavation beneath the building slab in non-accessible area and the potential structural shoring required (see Table 13).

Annual certification is estimated at approximately $2,500 per year

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets and other planned Citizen Participation activities.

8.3.4 Alternative 4 - Unrestricted Use Alternative

An Unrestricted Use alternative would necessitate remediation of all soil/fill where concentrations exceed the 6NYCRR Part 375 Unrestricted Use SCOs. For Unrestricted Use scenarios, excavation and off-site disposal of impacted soil/fill is generally regarded as the most applicable remedial measure, because institutional controls cannot be used to supplement the remedy. As such, the Unrestricted Use alternative assumes that those areas with constituents above Unrestricted Use SCOs would be excavated and disposed at an off-Site commercial solid waste landfill. Following removal and confirmatory sampling of the excavation, the areas would be backfilled with DER-10 approved backfill material.

The Site surface and subsurface soil samples indicate concentrations of VOCs, SVOCs, metals, and pesticides are present in unsaturated soil above USCOs. These areas of the Site would be excavated to rock, approximately 13 fbgs. In-situ groundwater treatment would be used to address the residual cVOC contamination remaining in the loading dock excavation. The volume of soil above USCOs is estimated to be greater than 7,000 cubic

yards. Figure 12 shows the approximate extent of additional excavation required to achieve USCOs. Table 14 provides a cost estimate for completion of this alternative.

Overall Protection of Public Health and the Environment – Excavation and off-site disposal to achieve Unrestricted Use SCOs would be protective of public health under any reuse scenario. However, this alternative would permanently use and displace valuable landfill airspace, causing ancillary environmental issues due to reduced landfill capacity, and would require excavating, transporting, and placing a similar volume of clean soil from an off-site borrow source to backfill the excavation, also contributing to significant detrimental off-site environmental issues.

Compliance with SCGs – The Unrestricted Use alternative would be performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria.

Long-Term Effectiveness and Permanence – The Unrestricted Use alternative would achieve removal of all residual impacted soil/fill; therefore, the Unrestricted Use alternative would provide long-term effectiveness and permanence. Post-remedial monitoring and certifications would not be required.

Reduction of Toxicity, Mobility, or Volume with Treatment – Through removal of all soil/fill above Unrestricted Use SCOs, this alternative would permanently and significantly reduce the toxicity, mobility, and volume of Site contamination.

Short-Term Impact and Effectiveness – There are several potential short-term impacts associated with this alternative as described in the Track 2 RRSCO cleanup above. However, this alternative would significantly increase the duration of time community, workers, and the environment is exposed to fugitive dust and potential off-site exposures during remediation.

Implementability – Technical implementation would be a major barrier to construction of this alternative. Soil/fill samples exceed USCOs, and under this scenario would require excavation and removal. Excavating soil/fill from beneath the building slab

may require specialized techniques and/or may be deemed infeasible in interior areas of the building where heavy equipment access would be limited and/or where structural supports or load bearing walls might be compromised by the work. Constituents exceeding USCOs beneath the slab are not amenable to in-Situ or other non-destructive remedial approaches. As such the feasibility of achieving an Unrestricted cleanup is questionable.

Cost – The capital costs for this alternative, including the completed IRMs is estimated at approximately $2,100,000. Significant expense is associated with material excavation from beneath the building slab in non-accessible area and the structural shoring required. No long-term monitoring/certifications would be required under this alternative.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets and other planned Citizen Participation activities.

8.4 Recommended Remedial Measure

Based on the Remedial Alternatives Analysis evaluation, the proposed remedial approach for the Site is Alternative 2 - Track 4 RRSCO cleanup. A Track 4 RRSCO cleanup is fully protective of public health and the environmental, is significantly less disruptive to the community, and is consistent with current and future land use, and represents a cost-effective approach that fully satisfies the RAOs.

In summary this alternative includes the following components:

- **Basement Cleaning Measures**, including cleaning and off-site disposal of residual surface contamination in the basement. The remedial cleaning would include removal and off-site disposal/scrap recycling of former air handler and mechanical equipment, cleaning of the air handler sump, and cleaning of the basement concrete floor and walls to approximately 4 feet above floor elevation. All cleaning residual wastes (floor soil debris and cleaning waters) will be properly handled and disposed off-Site.
- **Universal and Chemical Wastes**, including the collection and off-site disposal of potential mercury lamps and bulbs, batteries, and potential pcb-containing light ballasts. Other miscellaneous chemical wastes and drums (e.g., associated with the former boiler room) will be removed and properly disposed/recycled off-site.

- **Placement of Cover System,** including demarcation layer, DER-10 acceptable backfill in areas without building or hardscape (building, asphalt and concrete) to address remaining contamination above RRSCOs.
- **Implementation of a Site Management Plan (SMP)**. The SMP will include:
    - **Institutional Controls and Engineering Controls (IC/EC)** Engineering controls include any physical barrier or method employed to actively or passively contain, stabilize, or monitor contaminants; restrict the movement of contaminants; or eliminate potential exposure pathways to contaminants. Institutional controls at the site will include groundwater use restrictions and use restrictions of the Site to restricted residential use.
    - **Operation and Maintenance Plan** (not considered applicable to this alternative).
    - **Excavation Work Plan** to assure that future intrusive activities and soil/fill handling at the Site are completed in a safe and environmentally responsible manner;
    - **Site Monitoring Plan** that includes: provisions for a Site-wide inspection program to assure that the IC/ECs have not been altered and remain effective; and,
    - **Environmental Easement** filed with Erie County.

9.0 RI/IRM/AAR SUMMARY AND CONCLUSIONS

Based on the data and analyses presented in the preceding sections, we offer the following summary and conclusions:

- Based on the remaining on-Site soil/fill data, no VOCs, SVOCs, metals, PCBs, pesticides, or herbicides exceed RRSCOS, with minor exception beneath the building slab, concrete and asphalt-paved surface lot and cover system, with the vast majority below USCOs.

- Based on the post-IRM groundwater monitoring data, the vast majority of analytes were detected below GWQS, reported as estimated values by the laboratory, or can be described as potential ubiquitous background contamination related to the historic fill material in this section of the City of Buffalo. Furthermore, municipally supplied potable water is available, and on-Site groundwater is not used for potable or other purposes.

- Based on the nature and extent of the impacts identified during the RI, as well as previously known conditions (e.g., Spill report, and elevated VOCs in soil/fill), IRM Work Plans were submitted and approved by NYSDEC with concurrence from the NYSDOH. The completed IRMs included: excavation and off-site disposal of approximately 770 tons of petroleum, metals, PAH and cVOC-impacted soil/fill.

- Based on the Alternatives Analysis, a Track 4 RRSCO cleanup was selected. Additional components of the remedial measures to achieve the select remedial alternative include:
    - Placement of cover system, including 12-inch of approved DER-10 soil material in areas without buildings and hardscape (i.e., asphalt and concrete)
    - Completion of proposed Basement Cleaning Measures
    - Universal and miscellaneous chemical waste disposal
    - Implementation of Site Management Plan.

10.0 REFERENCES

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10. United States Department of Agriculture, Soil Conservation Services, *Soil Survey of Erie County, New York,* dated December 1986.

11. Edward J. Buehler and Irving H. Tesmer, *Geologic Map of Erie County, New York Bedrock Geology*, dated 1963.

12. Camiros. B*uffalo Green Code, Unified Development Ordinance, Public Review Draft.* Prepared for The City of Buffalo, Mayor's Office of Strategic Planning, May 2014.

TABLES

TABLE 1

SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Sample Identifier	Data Source	Depth Sampled/ Screened (fbgs)	TCL + CP51 VOCs	TCL VOCs 8260	TCL SVOCs	SVOCs (BN only)	PCBs	Pesticides	Herbicides	TAL Metals	RCRA Metals	Dissolved Metals	Total Cyanide	TO-15	Date Sampled
Surface Soil															
SS-1	Remedial Investigation	0-0.5			X		X	X	X	X					03/06/2014
SS-2	Remedial Investigation	0-0.5			X		X	X	X	X					03/06/2014
SS-3	Remedial Investigation	0-0.5				X	X	X		X					03/06/2014
PISTON ROOM COMPOSITE	Remedial Investigation	--			X		X				X				11/25/2014
Subsurface Soil/Fill															
SB-1	Remedial Investigation	2-4	X			X	X			X					03/06/2014
SB-2	Remedial Investigation	4-6				X	X			X					03/06/2014
SB-3	Remedial Investigation	2-4				X	X			X					03/06/2014
SB-4	Remedial Investigation	0.5-4				X	X			X					03/06/2014
SB-5	Remedial Investigation	4-6			X										03/06/2014
SB-6	Remedial Investigation	5-7				X		X		X					03/06/2014
SB-7	Remedial Investigation	2-4	X			X	X	X	X	X					03/06/2014
SB-8	Remedial Investigation	6-8	X			X	X	X	X	X					03/06/2014
SB-9	Remedial Investigation	2-4				X		X		X					03/06/2014
SB-10	Remedial Investigation	8-10	X		X		X	X	X	X					04/02/2014
SB-11	Remedial Investigation	3-5	X		X										04/02/2014
SB-12	Remedial Investigation	3-5	X		X										04/02/2014
SB-13	Remedial Investigation	6-8	X		X										04/08/2014
SB-14	Remedial Investigation	0.3-2			X		X			X					04/08/2014
SB-14	Remedial Investigation	2-4	X		X		X			X					04/08/2014
SB-15	Remedial Investigation	0.2-2			X		X	X		X					04/08/2014
SB-15	Remedial Investigation	2-4				X	X			X					04/08/2014
SB-16	Remedial Investigation	0.2-2			X		X			X					04/08/2014
SB-16	Remedial Investigation	2-4				X	X			X					04/08/2014
HC-1	Remedial Investigation	0.3-1.4					X								03/06/2014
HC-2	Remedial Investigation	0.4-2					X								03/06/2014
HC-3	Remedial Investigation	0.5-1.5				X	X				X				04/02/2014
HC-3	Remedial Investigation	1.5-2.5				X	X				X				04/02/2014
HC-4	Remedial Investigation	0.7-2				X					X				03/06/2014
HC-5	Remedial Investigation	0.4-1.7				X					X				03/06/2014
HC-6	Remedial Investigation	0.3-2				X					X				03/06/2014
Groundwater															
MW-1	Remedial Investigation	--	X	X	X		X	X	X	X			X		10/09/2013
MW-2	Remedial Investigation	--	X	X	X		X	X	X	X			X		10/09/2013
MW-3	Remedial Investigation	--	X		X			X		X					04/08/2014
MW-3 (2)	Supplemental RI	--		X											04/15/2015
MW-4	Remedial Investigation	--	X	X	X		X	X	X	X		X	X		10/10/2013
MW-4 (2)	Supplemental RI	--		X		X		X				X			04/16/2015
MW-5	Supplemental RI	--		X		X		X				X			04/16/2015
MW-6	Supplemental RI	--		X		X		X				X			04/16/2015
MW-7	Supplemental RI	--													04/16/2015
TW-1	Remedial Investigation	--	X		X					X					03/07/2014
TW-2	Remedial Investigation	--	X		X					X					04/08/2014
TW-3	Remedial Investigation	--	X		X					X					04/08/2014
TW-3 (2)	Supplemental RI	--		X											04/16/2015
Water															
CISTERN	Remedial Investigation	--	X		X					X					03/07/2014
MOTOR #1 CONTENTS	Remedial Investigation	--					X								11/25/2014
BOILER SUMP CONTENTS	Remedial Investigation	--			X		X								11/25/2014
Air															
SSV-1	Remedial Investigation	--												X	02/27/2014
AMBIENT #1	Remedial Investigation	--												X	02/27/2014
SSV-2	Remedial Investigation	--												X	02/27/2014
AMBIENT #2	Remedial Investigation	--												X	02/27/2014
SSV-3	Remedial Investigation	--												X	02/27/2014
AMBIENT #3	Remedial Investigation	--												X	02/27/2014
OUTSIDE AMBIENT	Remedial Investigation	--												X	02/27/2014
Wipe															
MOTOR #1 WIPE #1 (HOUSING)	Remedial Investigation	--					X								11/25/2014
MOTOR #1 WIPE #2 (FLOOR)	Remedial Investigation	--					X								11/25/2014
MOTOR #2 WIPE #3 (HOUSING)	Remedial Investigation	--					X								11/25/2014
MOTOR #2 WIPE #4 (FLOOR)	Remedial Investigation	--					X								11/25/2014
Post-excavation Verification Soil/Fill Samples															
BOTTOM-01 (PETROLEUM IRM)	IRM	--	X												11/17/2014
BOTTOM-02 (PETROLEUM IRM)	IRM	--	X								X				11/17/2014
SIDEWALL-NORTH (PETROLEUM IRM)	IRM	--	X												11/17/2014
SIDEWALL-SOUTH (PETROLEUM IRM)	IRM	--	X												11/17/2014
SIDEWALL-EAST (PETROLEUM IRM)	IRM	--	X								X				11/17/2014
SIDEWALL-WEST (PETROLEUM IRM)	IRM	--	X												11/17/2014
BOTTOM-01 (PAH IRM)	IRM	--			X										11/17/2014
SIDEWALL-NORTH (PAH IRM)	IRM	--			X										11/17/2014
SIDEWALL-SOUTH (PAH IRM)	IRM	--			X										11/17/2014
SIDEWALL-EAST (PAH IRM)	IRM	--			X										11/17/2014
SIDEWALL-WEST (PAH IRM)	IRM	--			X										11/17/2014
POST EXC-NORTHWALL (cVOC IRM)	IRM	--		X											01/30/2015
POST EXC-SOUTHWALL (cVOC IRM)	IRM	--		X											01/30/2015
POST EXC-EASTWALL (cVOC IRM)	IRM	--		X											01/30/2015
POST EXC-WESTWALL (cVOC IRM)	IRM	--		X											01/30/2015

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 2

SUMMARY OF SURFACE SOIL/FILL SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs [2]	Restricted Residential Use SCOs [2]	Commercial Use SCOs [2]	SAMPLE LOCATION (DEPTH)		
				SS-1 (0-0.5')	SS-2 (0-0.5')	SS-3 (0-0.5')
				3/6/2014		
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]						
2-Methylnaphthalene	--	--	--	ND	0.035 J	2.1 J
Acenaphthene	**20**	**100**	**500**	ND	0.025 J	4.9
Acenaphthylene	**100**	**100**	**500**	ND	0.011 J	ND
Acetophenone	--	--	--	ND	0.011 J	ND
Anthracene	**100**	**100**	**500**	ND	0.063 J	11
Benzo(a)anthracene	**1**	**1**	**5.6**	ND	0.34	**22**
Benzo(a)pyrene	**1**	**1**	**1**	ND	0.35	**19**
Benzo(b)fluoranthene	**1**	**1**	**5.6**	ND	0.52	**26**
Benzo(ghi)perylene	**100**	**100**	**500**	ND	0.28	10
Benzo(k)fluoranthene	**0.8**	**3.9**	**56**	ND	0.21	**12**
Biphenyl	--	--	--	ND	ND	0.5 J
Carbazole	--	--	--	ND	0.043 J	6.1
Chrysene	**1**	**3.9**	**56**	ND	0.4	**21**
Dibenzo(a,h)anthracene	**0.33**	**0.33**	**0.56**	ND	ND	ND
Dibenzofuran	**7**	**59**	**350**	ND	0.018 J	4.3
Fluoranthene	**100**	**100**	**500**	ND	0.57	47
Fluorene	**30**	**100**	**500**	ND	0.025 J	6
Indeno(1,2,3-cd)pyrene	**0.5**	**0.5**	**5.6**	ND	0.28	**12**
Naphthalene	**12**	**100**	**500**	ND	0.025 J	4.9
Phenanthrene	**100**	**100**	**500**	ND	0.35	51
Pyrene	**100**	**100**	**500**	ND	0.69	51
Metals - mg/Kg						
Aluminum	--	--	--	12300	2990	10600
Arsenic	**13**	**16**	**16**	3.7	3.9	7.2
Barium	**350**	**400**	**400**	90.9 J	32.7	140
Beryllium	**7.2**	**72**	**590**	2.8	0.39	1.7
Cadmium	**2.5**	**4.3**	**9.3**	ND	0.33	0.79
Calcium	--	--	--	196000	169000	89900
Chromium	**30**	**180**	**1500**	14.4	**91.1 J**	20.1
Cobalt	--	--	--	0.59	1.5	2.4
Copper	**50**	**270**	**270**	6.5	11.6 J	46.4
Iron	--	--	--	5350 J	13200 J	10500
Lead	**63**	**400**	**1000**	36.3	**78.3 J**	**116**
Magnesium	--	--	--	16400	14000 J	13900
Manganese	**1600**	**2000**	**10000**	1230	1650 J	1310
Mercury	**0.18**	**0.81**	**2.8**	ND	0.023	0.061
Nickel	**30**	**310**	**310**	ND	9.2	12.4
Potassium	--	--	--	811	590	914
Silver	**2**	**180**	**1500**	ND	ND	ND
Sodium	--	--	--	645	289	337
Vanadium	--	--	--	9.5	29.6 J	18.9
Zinc	**109**	**10000**	**10000**	17.7	36.3	**125**
Polychlorinated biphenyls (PCBs) - mg/Kg [3]						
Total PCBs	**0.1**	**1**	**1**	ND	ND	ND
Pesticides and Herbicides - mg/Kg [3]						
4,4'-DDE	**0.0033**	**8.9**	**62**	**0.035 J**	**0.025 J**	**0.032 J**
4,4'-DDT	**0.0033**	**7.9**	**47**	**0.065 J**	**0.043 J**	**0.085 J**
delta-BHC	**0.04**	**100**	**500**	0.039 B,J	ND	ND
Endrine ketone	--	--	--	ND	ND	0.029 J
gamma-BHC (Lindane)	**0.1**	**1.3**	**9.2**	ND	ND	0.031 J
Methoxychlor	--	--	--	ND	ND	0.041 J

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.
"--" = No value available for the parameter; Parameter not analysed for.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B= Compund was found in the balnk and sample.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Restricted Residential Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 3A

SUMMARY OF HISTORICAL SOIL/FILL SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs[2]	Restricted Residential Use SCOs[2]	Commercial Use SCOs[2]	SAMPLE LOCATION (DEPTH)															SAMPLE LOCATION (DEPTH)						
				SP-1 (2-4')	SP-4 (3-5')	SP-5 (3-5')	SP-7 (1-4')	SP-9 (6-8')	SP-10 (4-6')	SP-11 (6-8')	SP-12 (8-11')	SP-13 (6-8')	SP-14 (6-8')	SP-15 (8-10')	SP-16 (6-8')	SP-16 (8-10')	SP-17 (14-16')	SP-18 (12-15')	500 GAL. UST N. WALL	500 GAL. UST S. WALL	500 GAL. UST E. WALL	500 GAL. UST W. WALL	500 GAL. UST FLOOR 8'	2000 GAL. UST FLOOR	PUMP ISLAND PIPING COMP
				11/12/2007						2/5/2008									12/13/2007						
Volatile Organic Compounds (VOCs) - mg/Kg [3]																									
1,2,4-Trimethylbenzene	**3.6**	**52**	**190**	0.052	ND	ND	--	ND	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0459	ND	1.52	ND	ND	ND	ND
1,3,5-Trimethylbenzene	**8.4**	**52**	**190**	ND	ND	ND	--	ND	0.083	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0417	ND	0.485	ND	ND	ND	ND
2-Butanone (MEK)	**0.12**	**100**	**500**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	**0.05**	**100**	**500**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	**0.06**	**4.8**	**44**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0281	ND	**11.7**	ND	**3.32**	ND	ND
cis-1,2-Dichloroethene	**0.25**	**100**	**500**	ND	ND	ND	--	**1**	ND	**0.58**	0.1	**0.61**	**0.41**	ND	**1.6**	**1.3**	**0.26**	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	**1**	**41**	**390**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.273	ND	**1.61**	ND	ND	ND	ND
Isopropylbenzene (Cumene)	**--**	**--**	**--**	ND	ND	ND	--	ND	0.065	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0973	ND	0.288	ND	ND	ND	ND
Methyl tert butyl ether (MTBE)	**0.93**	**100**	**500**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0336	ND	ND	ND	ND	ND	ND
Naphthalene	**--**	**--**	**--**	ND	ND	ND	--	ND	0.082	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.534	ND	0.697	ND	ND	ND	ND
n-Butylbenzene	**12**	**--**	**--**	ND	ND	ND	--	ND	0.088	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0803	ND	0.408	ND	ND	ND	ND
n-Propylbenzene	**3.9**	**100**	**500**	ND	ND	ND	--	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.237	ND	1.15	ND	ND	ND	ND
p-Isopropyltoluene	**--**	**--**	**--**	ND	ND	ND	--	ND	0.077	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0637	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	**11**	**100**	**500**	ND	ND	ND	--	ND	0.061	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0646	ND	0.166	ND	ND	ND	ND
tert-Butylbenzene	**5.9**	**100**	**500**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**1.3**	**19**	**150**	ND	ND	ND	--	**270**	ND	**260**	**5.8**	**21**	**30**	0.64	**150**	**130**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	**0.7**	**100**	**500**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0123	ND	**1.32**	ND	ND	ND	0.0111
trans-1,2-Dichloroethene	**0.19**	**100**	**500**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**0.47**	**21**	**200**	ND	ND	ND	--	**6**	ND	**6**	**1.5**	**2.1**	**2.6**	ND	**5.1**	**4.7**	0.11	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	**0.02**	**0.9**	**13**	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	**0.26**	**100**	**500**	**0.054**	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.127	0.0092	**2.979**	ND	ND	ND	0.00918
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]																									
Total SVOCs	--	--	--	ND	ND	ND	--	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated biphenyls (PCBs) - mg/Kg [3]																									
Total PCBs	**0.1**	**1**	**1**	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.
"--" = No value available for the parameter; Parameter not analysed for.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Restricted Residential Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 3B

SUMMARY OF REMEDIAL INVESTIGATION SUBSURFACE SOIL/FILL SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs [2]	Restricted Residential Use SCOs [2]	Commercial Use SCOs [2]	SAMPLE LOCATION (DEPTH)																								
				SB-1 (2-4)	SB-2 (4-6)	SB-3 (2-4)	SB-4 (0.5-4)	SB-5 (4-6)	SB-6 (5-7)	SB-7 (2-4)	SB-8 (6-8)	SB-9 (2-4)	SB-10 (8-10)	SB-11 (3-5)	SB-12 (3-5)	SB-13 (6-8)	SB-14 (0.3-2)	SB-14 (2-4)	SB-15 (0.2-2)	SB-15 (2-4)	SB-16 (0.2-2)	SB-16 (2-4)	HC-1 (0.3-1.4')	HC-2 (0.4-2.0')	HC-3 (0.5-1.5')	HC-3 (1.5-2.5')	HC-4 (0.7-2.0')	HC-5 (0.4-1.7')	HC-6 (0.3-0.2')
				3/6/2014									4/2/2014				4/8/2014						3/6/2014		4/2/2014		3/6/2014		
Volatile Organic Compounds (VOCs) - mg/Kg [3]																												
1,1-Dichloroethene	**0.33**	**100**	**500**	ND	--	--	--	--	--	ND	ND	--	0.0051 J	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
2-Butanone (MEK)	**0.12**	**100**	**500**	ND	--	--	--	--	--	ND	ND	--	ND	ND	ND	0.0062 J	--	ND	--	--	--	--	--	--	--	--	--	--	--
Acetone	**0.05**	**100**	**500**	0.037 J	--	--	--	--	--	ND	0.027 J	--	ND	ND	0.0098 J	0.026 J	--	ND	--	--	--	--	--	--	--	--	--	--	--
Benzene	**0.06**	**4.8**	**44**	ND	ND	ND	0.0016 J	ND	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	**0.25**	**100**	**500**	ND	--	--	--	ND	--	ND	ND	--	0.2	0.018	0.0023 J	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
n-Butylbenzene	**12**	**--**	**--**	ND	ND	ND	ND	0.33	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	**3.9**	**100**	**500**	ND	ND	ND	ND	0.36	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
p-Isopropyltoluene	**--**	**--**	**--**	ND	--	--	--	--	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	**11**	**100**	**500**	ND	ND	ND	ND	0.17	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	**5.9**	**100**	**500**	ND	ND	ND	ND	0.026 J	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	**1.3**	**19**	**150**	ND	--	--	--	--	--	ND	ND	--	**3.4**	**14**	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
Toluene	**0.7**	**100**	**500**	0.0022 J	ND	ND	0.0037 J	ND	--	ND	ND	--	0.00046 J	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	**0.19**	**100**	**500**	ND	--	--	--	--	--	ND	ND	--	0.0028 J	0.0026 J	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	**0.47**	**21**	**200**	ND	--	--	--	--	--	ND	ND	--	**1.3**	**0.56**	0.0016 J	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	**0.02**	**0.9**	**13**	ND	--	--	--	--	--	ND	ND	--	0.0066	0.0067	0.00092 J	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
Total Xylenes	**0.26**	**100**	**500**	0.0029 J	ND	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	--	ND	--	--	--	--	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]																												
2-Methylnaphthalene	**--**	**--**	**--**	0.014 J	0.0085 J	0.044 J	0.37	0.076 J	0.34 J	0.088 J	0.43	0.016 J	ND	ND	ND	ND	ND	ND	0.013 J	ND	ND	ND	--	--	ND	0.0053 J	0.065 J	0.045 J	0.64 J
Acenaphthene	**20**	**100**	**500**	0.0068 J	ND	0.052 J	0.027 J	ND	0.99	0.0087 J	0.31	0.016 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	0.0022 NJ	ND	0.045 J	0.074 J	ND
Acenaphthylene	**100**	**100**	**500**	0.0084 J	ND	0.055 J	0.022 J	ND	0.041 J	0.034 J	0.016 NJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	0.019 J	0.026 J	ND
Acetophenone	**--**	**--**	**--**	ND	ND	0.0089 J	0.047 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	ND
Anthracene	**100**	**100**	**500**	0.019 J	ND	0.2	0.071 J	ND	1.4	0.029 J	0.57	0.039 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	0.009 J	ND	0.089 J	0.14 J	ND
Benzaldehyde	**--**	**--**	**--**	0.062 J	ND	0.05 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.021 J	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	ND
Benzo(a)anthracene	**1**	**1**	**5.6**	ND	ND	0.66	0.2	ND	**2.9**	ND	0.81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	0.019 J	0.26	0.4	ND
Benzo(a)pyrene	**1**	**1**	**1**	0.055 J	ND	0.56	0.19	ND	**2.6**	0.29	0.75	0.084 J	ND	0.0052 J	0.061 J	ND	ND	ND	0.021 J	ND	ND	ND	--	--	0.032 J	0.0076 J	0.24	0.36	ND
Benzo(b)fluoranthene	**1**	**1**	**5.6**	0.075 J	ND	0.69	0.25	ND	**3.3**	0.31	0.87	0.13 J	ND	0.0042 J	ND	ND	ND	ND	0.028 J	ND	ND	ND	--	--	0.046 J	0.016 J	0.32	0.45	ND
Benzo(ghi)perylene	**100**	**100**	**500**	0.03 J	ND	0.35 J	0.13 J	ND	1.5 J	0.21 J	0.52 J	0.048 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	0.02 J	0.0073 J	0.18	0.23	ND
Benzo(k)fluoranthene	**0.8**	**3.9**	**56**	0.03 J	ND	0.32	0.093 J	ND	1.3	0.15 J	0.41	0.049 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	0.15 J	0.2 J	ND
Biphenyl	**--**	**--**	**--**	ND	ND	ND	0.036 J	ND	0.099 J	ND	0.068 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	0.011 J	ND	0.13 J
Bis(2-ethylhexyl) phthalate	**--**	**--**	**--**	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	ND	ND	ND
Carbazole	**--**	**--**	**--**	ND	ND	0.042 J	0.04 J	ND	0.82	0.014 J	0.22	0.011 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	0.0062 J	ND	0.042 J	0.06 J	ND
Chrysene	**1**	**3.9**	**56**	0.063 J	ND	0.61	0.2	ND	**3.3**	0.22	0.8	0.13 J	ND	ND	ND	ND	ND	ND	0.026 J	ND	ND	ND	--	--	0.051 J	0.022 J	0.32	0.43	ND
Dibenzo(a,h)anthracene	**0.33**	**0.33**	**0.56**	ND	ND	0.11 J	ND	ND	0.49 J	0.06 J	0.11 J	ND	ND	0.0079 J	ND	ND	ND	ND	ND	ND	ND	ND	--	--	0.0076 NJ	0.0029 J	ND	ND	ND
Dibenzofuran	**7**	**59**	**350**	0.0082 J	ND	0.044 J	0.11 J	ND	0.74 J	0.028 J	0.29	0.012 J	ND	ND	ND	ND	ND	ND	0.0039 J	ND	ND	ND	--	--	0.0069 NJ	ND	0.041 J	0.062 J	0.062 NJ
Fluoranthene	**100**	**100**	**500**	0.079 NJ	0.0085 J	1.1	0.3	ND	6	0.18	1.4	0.14 J	ND	ND	ND	ND	0.0075 J	ND	0.032 J	ND	ND	ND	--	--	0.065 J	0.016 J	0.46	0.67	0.12 J
Fluorene	**30**	**100**	**500**	0.0071 J	ND	0.066 J	0.033 J	ND	0.87	ND	0.35	0.015 NJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND	0.04 J	0.07 J	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**0.5**	**5.6**	ND	ND	0.43	0.15 J	ND	**1.7**	0.25	**0.62**	0.077 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	0.019 J	0.0061 NJ	0.18	0.23	ND
Naphthalene	**12**	**100**	**500**	0.016 J	0.0093 J	0.039 J	0.25	0.1 J	0.79 J	0.064 J	0.66	0.012 J	ND	ND	ND	0.0079 J	ND	0.0054 J	0.015 J	0.0078 J	0.0095 J	0.0089 J	--	--	0.018 J	ND	0.041 J	0.044 J	0.26 J
Phenanthrene	**100**	**100**	**500**	0.08 J	0.01 J	0.73	0.44	ND	8	0.12 J	2	0.15 J	ND	ND	0.0039 J	ND	0.0063 J	ND	0.027 J	ND	ND	ND	--	--	0.05 J	0.014 J	0.5	0.75	0.18 J
Pyrene	**100**	**100**	**500**	0.11 J	0.01 J	1.55	0.44	ND	7.8	0.33	1.9	0.19	ND	ND	ND	ND	0.007 J	ND	0.036 J	ND	ND	ND	--	--	0.052 J	0.013 J	0.62	0.88	0.2 J
Metals - mg/Kg																													
Aluminum	**--**	**--**	**--**	10100	12600	5930	1810	--	10200	9490	4040	9710	3250	--	--	--	8870	14700	14900	11200	11100	9190	--	--	--	--	--	--	--
Arsenic	**13**	**16**	**16**	8.1	ND	6.9	**24.3**	--	5.9	6.7	9.5	5.9	ND	--	--	--	3.6	6.4	8.7	3.3	5.2	4.5	--	--	7.1	5.8	6.6	10.7	6.9
Barium	**350**	**400**	**400**	129	119	161	39	--	127	145	48.8	71.6	32.5	--	--	--	49.7	144	139	83.6	109	75.9	--	--	131	125	91.3	78.5	199
Beryllium	**7.2**	**72**	**590**	0.57	0.67	0.34	0.28	--	0.49	0.5	0.31	0.45	ND	--	--	--	0.48	0.81	0.83	0.58	0.63	0.49	--	--	--	--	--	--	--
Cadmium	**2.5**	**4.3**	**9.3**	0.38	0.27	0.32	ND	--	0.28	0.26	ND	0.24	ND	--	--	--	ND	0.42	0.24	ND	ND	ND	--	--	ND	ND	0.22	ND	0.48
Calcium	**--**	**--**	**--**	8770	1570	34500	22900	--	18500	30200	37100	33800	83600	--	--	--	12500	3050	5880	49300	47400	48700	--	--	--	--	--	--	--
Chromium	**30**	**180**	**1500**	13.8	16.6	10.2	5.7	--	13.3	14.2	4.7	12.7	5.5	--	--	--	10.5	19.3	21	16.3	15.2	14.2	--	--	9.9	18	12	7.9	2
Cobalt	**--**	**--**	**--**	7.1	8.2	4.9	12	--	6.5	6.5	2.7	8	2.7	--	--	--	6	14.2	12.3	8.2	10.3	17.7	--	--	--	--	--	--	--
Copper	**50**	**270**	**270**	40.5	7.9	35.9	**110**	--	27.7	46	8	20.1	6.8	--	--	--	15.8	24.4	24.1	21.3	20.4	23.7	--	--	--	--	--	--	--
Iron	**--**	**--**	**--**	13600	17400	13000	36900	--	12800	14100	8440	15300	6800	--	--	--	13700	24000	25700	17300	18400	16400	--	--	--	--	--	--	--
Lead	**63**	**400**	**1000**	**192**	16.8	**307**	**598**	--	**227**	**196**	6.9	37.8	5	--	--	--	21.7	20.3	18.5	14.4	16.5	17.3	--	--	34.3	19.4	**225**	**157**	**189**
Magnesium	**--**	**--**	**--**	4760	3760	5700	782	--	7350	9680	4140	13800	29300	--	--	--	5610	5780	6200	17200	16600	17100	--	--	--	--	--	--	--
Manganese	**1600**	**2000**	**10000**	251	436	290	111	--	311	247	97.7	432	232	--	--	--	210	1220	796	303	532	573	--	--	--	--	--	--	--
Mercury	**0.18**	**0.81**	**2.8**	**0.36**	0.045	**1.4**	**0.3**	--	**0.74**	0.043	ND	**0.71**	ND	--	--	--	**0.19**	0.025	0.14	ND	ND	ND	--	--	0.091	0.056	**0.5**	**2.3**	**1.7**
Nickel	**30**	**310**	**310**	16.3	18.7	11.6	13.5	--	14.6	15.7	6.7	19.5	6.7	--	--	--	12.9	**33.6**	**34.6**	21.9	24.1	**30.7**	--	--	--	--	--	--	--
Potassium	**--**	**--**	**--**	1400	1370	1410	473	--	1300	1880	429	2390	859	--	--	--	890	2140	1890	1820	2010	1460	--	--	--	--	--	--	--
Silver	**2**	**180**	**1500**	ND	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	ND	ND	ND	ND	ND	ND	--	--	**2.3**	ND	ND	ND	ND
Sodium	**--**	**--**	**--**	405	484	638	353	--	232	341	281	236	228	--	--	--	ND	186	224	259	ND	189	--	--	--	--	--	--	--
Vanadium	**--**	**--**	**--**	20.9	25.1	12.3	13.2	--	20.6	19.4	9.6	18.3	9	--	--	--	15.5	25.5	27.9	20.1	20.8	18.3	--	--	--	--	--	--	--
Zinc	**109**	**10000**	**10000**	**290**	59.6	**251**	44	--	**113**	**131**	14.4	70	33.3	--	--	--	47.9	76.1	73	56.2	59.6	50.1	--	--	--	--	--	--	--
Polychlorinated biphenyls (PCBs) - mg/Kg [3]																													
Total PCBs	**0.1**	**1**	**1**	ND	ND	ND	ND	--	--	ND	ND	--	ND	--	--	ND	ND	--	--	ND	ND	--	ND	ND	--	--	--	--	--
Pesticides and Herbicides - mg/Kg [3]																													
4,4'-DDD	**0.0033**	**13**	**92**	--	--	--	--	--	ND	ND	ND	0.00043 J	ND	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
4,4'-DDE	**0.0033**	**8.9**	**62**	--	--	--	--	--	**0.012 NJ**	**0.0099 J**	**0.0085 J**	ND	ND	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
4,4'-DDT	**0.0033**	**7.9**	**47**	--	--	--	--	--	**0.012 J**	**0.012 J**	**0.011 J**	0.00073 J	ND	--	--	--	--	--	**0.0072 J**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
beta-BHC	**0.036**	**0.036**	**3**	--	--	--	--	--	ND	ND	ND	0.00051 NJ	ND	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
delta-BHC	**0.04**	**100**	**500**	--	--	--	--	--	ND	ND	ND	ND	0.0005 J	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Endrin	**0.014**	**11**	**89**	--	--	--	--	--	ND	ND	ND	0.00043 NJ	ND	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
gamma-BHC (Lindane)	**--**	**--**	**--**	--	--	--	--	--	ND	0.0079 J	ND	ND	ND	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Methoxychlor	**--**	**--**	**--**	--	--	--	--	--	ND	ND	0.0086 J	0.00054 J	ND	--	--	--	--	--	ND	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.
"--" = No value available for the parameter; Parameter not analysed for.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B= Compound was found in the blank and sample.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Restricted Residential Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 4A

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER [1]	GWQS [2]	Sample Location				
		SP-1	SP-9	SP-11	SP-12	Basement Sump
		11/12/07		02/05/08		03/19/08
Volatile Organic Compounds (VOCs) - ug/L						
1,1-Dichloroethene	**5**	ND	**5.2**	1.6	ND	ND
n-Butylbenzene	**5**	**11**	ND	ND	ND	ND
sec-Butylbenzene	**5**	**11**	ND	ND	ND	ND
Benzene	**5**	**970**	ND	ND	ND	ND
Chloroform	**7**	ND	ND	ND	ND	1.4
cis-1,2-Dichloroethene	**5**	ND	**380**	**120**	**8.6**	ND
Ethylbenzene	**5**	**11**	ND	ND	ND	ND
Isopropylbenzene	**5**	**34**	ND	ND	1	ND
n-Propylbenzene	**5**	**75**	ND	ND	ND	ND
Tetrachloroethene	**5**	ND	**20000**	**5300**	**84**	ND
trans-1,2-Dichloroethene	**5**	ND	4.8	3	ND	ND
Trichloroethene	**5**	ND	**2100**	**560**	**50**	ND
Vinyl chloride	**2**	ND	**6.7**	**3.8**	**3.5**	ND
Total Xylene	**5**	**51**	ND	ND	ND	ND

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - Class GA (TOGS 1.1.1).

Definitions:

ND = Parameter has a GWQS of non-detect; Parameter not detected above laboratory detection limit.

BOLD = Result exceeds GWQS.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 4B

SUMMARY OF REMEDIAL INVESTIGATION GROUNDWATER SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER [1]	GWQS [2]	Sample Location													
		MW-1	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-6	MW-7	TW-1	TW-2	TW-3	TW-3	CISTERN
		10/09/13		04/08/14	04/16/15	10/10/13	04/16/15				03/07/14	04/08/14		04/16/15	03/07/14
Volatile Organic Compounds (VOCs) - ug/L															
2-Butanone (MEK)	**50**	2.4 J	ND	ND	ND	ND	ND	2.3 J	ND	ND	ND	ND	ND	ND	ND
Acetone	**50**	10	4.5 J	ND	2.1 J	7.5 J	ND	**150**	7.3	7.6	6.5 J	ND	9.2 J	2.1 J	ND
Carbon disulfide	**--**	ND	ND	ND	ND	0.46 J	ND	ND	1.1 J	ND	ND	ND	ND	ND	ND
Cyclohexane	**--**	ND	ND	ND	ND	0.21 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	1.6 J	ND	ND	ND	**420**	ND	ND	ND
Methylcyclohexane	**--**	0.38 J	ND	ND	ND	0.31 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND	**2500 D**	0.78 J	ND	ND
Trichloroethene	**5**	ND	ND	ND	ND	ND	ND	0.37 J	ND	ND	ND	**950**	ND	ND	ND
Vinyl chloride	**2**	ND	ND	ND	ND	ND	ND	0.28 J	ND	ND	ND	ND	ND	ND	ND
Semi-Volatile Organic Compounds (SVOCs) - ug/L															
2,4-Dimethylphenol	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.4 J**	ND	--	ND
2-Methylnaphthalene	**--**	ND	ND	ND	ND	ND	ND	0.16 J	0.11 J	ND	ND	2.2 J	ND	--	ND
2-Methylphenol	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.8 J**	ND	--	ND
3-Methylphenol/4-Methylphenol	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.7**	ND	--	ND
Acenaphthene	**20**	0.66 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND
Acetophenone	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2 J	ND	--	ND
Anthracene	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.62 J	1 J	ND	--	ND
Benzaldehyde	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.87 J *	ND	ND	--	ND
Benzo(a)anthracene	**0.002**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.1 J**	**0.82 NJ**	**0.8 J**	--	ND
Benzo(a)pyrene	**ND**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.96 J**	**0.69 J**	**0.87 J**	--	ND
Benzo(b)fluoranthene	**0.002**	ND	ND	**2.3 J**	ND	ND	ND	ND	ND	ND	**1.5 J**	**1.4 J**	**1.2 J**	--	ND
Bis(2-ethylhexyl) phthalate	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5 J	3.9 J	3.1 J	--	ND
Carbazole	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.48 J	1.1 NJ	ND	--	ND
Chrysene	**0.002**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.1 J**	**0.49 J**	**0.56 J**	--	ND
Dibenz(a,h)anthracene	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.57 J	ND	--	ND
Diethyl phthalate	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	8.1	0.91 J	--	ND
Di-n-butyl phthalate	**50**	ND	ND	ND	ND	ND	ND	ND	ND	1 J	ND	3.3 J	1.4 J	--	ND
Fluoranthene	**50**	ND	ND	2.6 J	ND	ND	ND	ND	ND	0.05 J	2.6 J	1.7 J	1.4 J	--	ND
Fluorene	**50**	ND	ND	ND	ND	ND	ND	ND	0.06 J	ND	0.58 J	ND	ND	--	ND
Napthalene	**10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1 J	1.4 J	ND	--	ND
Phenanthrene	**50**	ND	ND	ND	ND	ND	ND	0.13 J	0.24	0.07 J	ND	2.6 J	0.93 J	--	ND
Phenol	**1**	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78 J	**4.4 J**	0.49 NJ	--	ND
Pyrene	**50**	ND	ND	1.6 J	ND	ND	ND	ND	ND	ND	1.9 J	1 J	1 J	--	ND
Total Metals - ug/L															
Aluminum	**--**	1100	290	10	--	7900	--	--	--	--	1600	33.3	439	--	ND
Arsenic	**25**	ND	ND	ND	--	ND	--	--	--	--	ND	0.047	0.16	--	ND
Barium	**1000**	100	110	0.38	--	170	--	--	--	--	160	0.95	15.3	--	69
Beryllium	**3**	ND	ND	ND	--	ND	--	--	--	--	ND	0.0021	0.018	--	ND
Cadmium	**5**	ND	ND	ND	--	ND	--	--	--	--	ND	0.0035	0.022	--	ND
Calcium	**--**	295000	112000	121	--	228000	--	--	--	--	48200	662	5000	--	35700
Chromium	**50**	ND	ND	0.015	--	12	--	--	--	--	6.6	0.062	0.52	--	ND
Cobalt	**5**	**7.1**	ND	0.0049	--	ND	--	--	--	--	**14**	1.4	0.28	--	ND
Copper	**200**	ND	ND	0.027	--	ND	--	--	--	--	23	0.14	3	--	ND
Cyanide	**200**	ND	ND	ND	--	ND	2 J	2 J	2 J	2 J	ND	ND	ND	--	--
Iron	**300**	**1400**	290	10.4	--	**9500**	--	--	--	--	**4800**	59.8	404	--	ND
Lead	**25**	ND	ND	0.21	--	ND	--	--	--	--	**26**	0.15	8.7	--	ND
Magnesium	**35000**	**161000**	24300	53.7	--	**136000**	--	--	--	--	6000	144	372	--	7300
Manganese	**300**	**410**	**360**	0.17	--	**320**	--	--	--	--	230	4.2	46.8	--	ND
Mercury	**0.7**	ND	ND	ND	--	ND	--	--	--	--	ND	0.0023 B	0.03 B	--	ND
Nickel	**100**	ND	ND	0.011	--	10	--	--	--	--	18	0.16	0.76	--	ND
Potassium	**--**	6900	3600	7.3	--	8300	--	--	--	--	10900 B7	30.5	120	--	14200 B7
Silver	**50**	ND	ND	ND	--	ND	--	--	--	--	ND	ND	0.019	--	ND
Sodium	**20000**	**493000**	**133000**	82.1	--	**64100**	--	--	--	--	**517000**	352	46.4	--	**81200**
Vanadium	**14**	ND	ND	0.02	--	**20**	--	--	--	--	ND	0.068	0.65	--	ND
Zinc	**2000**	13	ND	0.23	--	28	--	--	--	--	96	0.82	7.6	--	20
Dissolved Metals - ug/L															
Arsenic	**25**	--	--	--	--	ND	ND	0.29 J	0.44 J	0.18 J	--	--	--	--	--
Barium	**1000**	--	--	--	--	130	177.1	162.6	152.7	356.4	--	--	--	--	--
Cadmium	**5**	--	--	--	--	ND	ND	ND	0.06 J	ND	--	--	--	--	--
Calcium	**--**	--	--	--	--	136	--	--	--	--	--	--	--	--	--
Chromium	**50**	--	--	--	--	ND	1.09	0.8 J	1.1	1.04	--	--	--	--	--
Copper	**200**	--	--	--	--	ND	0.4 J	0.3 J	0.29 J	0.55 J	--	--	--	--	--
Iron	**300**	--	--	--	--	**310**	**--**	**--**	**--**	**--**	--	--	--	--	--
Lead	**25**	--	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--
Magnesium	**35000**	--	--	--	--	**113000**	--	--	--	--	--	--	--	--	--
Manganese	**300**	--	--	--	--	110	36.4	2660	513	162.1	--	--	--	--	--
Mercury	**0.7**	--	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--
Nickel	**100**	--	--	--	--	ND	0.74	8	11.53	6.01	--	--	--	--	--
Potassium	**--**	--	--	--	--	4800	--	--	--	--	--	--	--	--	--
Sodium	**20000**	--	--	--	--	**63000**	**--**	**--**	**--**	**--**	--	--	--	--	--
Zinc	**2000**	--	--	--	--	ND	13.44	12.13	17.09	17.5	--	--	--	--	--
PCB (ug/L)															
Total PCBs	**0.09**	ND	ND	--	--	ND					--	--	--		--
Pesticides and Herbicides - ug/L															
4,4'-DDD	**0.3**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
4,4'-DDE	**0.2**	ND	ND	ND		ND	ND	ND	ND	ND	--	--	--	--	--
4,4'-DDT	**0.2**	ND	ND	ND	--	ND	0.039 J	0.039 J	ND	ND	--	--	--	--	--
Aldrin	**ND**	0.14 J	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
alpha-BHC	**0.01**	**0.05 J**	**0.065 J**	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
beta-BHC	**0.01**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
delta-BHC	**0.01**	**0.093 J**	ND	ND	--	**0.017 NJ**	ND	ND	ND	ND	--	--	--	--	--
gamma-BHC (Lindane)	**0.05**	**0.071 J**	0.042 NJ	0.012 J	--	0.019 NJ	ND	ND	ND	ND	--	--	--	--	--
gamma-Chlordane	**0.05**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
alpha-Chlordane	**0.05**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Dieldrin	**0.004**	ND	ND	ND	--	**0.013 J**	ND	ND	ND	ND	--	--	--	--	--
Endosulfan I	**--**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Endosulfan II	**--**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Endosulfan Sulfate	**--**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Endrin	**ND**	**0.098 NJ**	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Endrin Aldehyde	**5**	0.16 NJ	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Endrin Ketone	**5**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Heptachlor	**0.04**	**0.091 J**	ND	**0.041 J**	--	ND	ND	ND	ND	ND	--	--	--	--	--
Heptachlor epoxide	**0.03**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Methoxychlor	**35**	0.18 NJ	0.082 NJ	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--
Toxaphene	**0.06**	ND	ND	ND	--	ND	ND	ND	ND	ND	--	--	--	--	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - Class GA (TOGS 1.1.1)
3. MW-3 was not sampled in October 2013 because the well was dry; Well was sampled in April 2014 with a limited volume of water produced.

Definitions:

ND = Parameter has a GWQS of non-detect; Parameter not detected above laboratory detection limit.
"--" = No value available for the parameter; Parameter not analysed for.
J = Estimated value; result is less than the reporting limit but greater than zero.
D = Dillution required due to high concentration of target analyte above the laboratory reporting limit.
* = Laboratory control sample exceeds the control limits.
B7 = Compound detected in method blank at or above method detection limit. Concentration in sample was 10 times above concentration found in the balnk.
BOLD = Result exceeds GWQS.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 5A

SUMMARY OF HISTORIC AIR SAMPLING ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Parameter [1]	Sample Location				
	AMBIENT WAREHOUSE	SUBSLAB WAREHOUSE	AMBIENT OFFICE	SUBSLAB OFFICE	AMBIENT BASEMENT
	3/19/2008				7/5/2007
Volatile Organics Compounds (VOCs) - ug/m [3]					
1,2,4-Trimethylbenzene	0.949	1.2	0.899	1.3	ND
1,3,5-Trimethylbenzene	0.55	1	0.6	0.9	ND
1,4-Dichlorobenzene	1.77	ND	1.83	ND	ND
2,2,4-Tyrimethylpentane	ND	0.57	ND	0.52	ND
4-ethyltoluene	ND	0.65	ND	0.75	ND
Acetone	16.2	27	13.9	22	14.1
Benzene	1.56	1.9	1.46	1.9	1.56
Carbon disulfide	0.538	3.4	0.601	3.2	0.538
Carbon tetrachloride	0.703	0.7	0.831	0.64	0.767
Chloroform	ND	0.99	ND	ND	ND
Chloromethane	0.945	ND	1.01	0.23	1.11
Cyclohexane	1.19	26	ND	6.6	0.805
Ethyl acetate	1.72	0.92	0.769	1.3	1.28
Ethylbenzene	0.927	1.3	0.485	2	0.53
Freon 11	1.37	1.7	1.54	1.8	1.66
Freon 12	4.52	4.1	4.78	4.5	3.77
Heptane	2.08	3.9	0.583	4.5	0.542
Hexane	1	3	0.967	2.8	1.04
Total Xylene	3.58	5	1.988	7.2	1.894
Methyl Ethyl Ketone	2.01	2	1.08	2.4	ND
Methyl Isobutyl Ketone	0.749	0.58	0.708	0.42	1.11
Methylene chloride	2.05	1.8	1.52	2.4	1.2
Styrene	0.476	1.2	0.39	1.6	ND
Tetrachloroethylene	1.38	13	1.59	21	2.21
Tetrahydrofuran	ND	ND	ND	0.51	ND
Toluene	35.4	5.1	2.8	7.5	4.63
Trichloroethene (TCE)	0.655	0.82	0.437	1.7	0.273

Notes:

1. Only compounds were detected in the samples presented on this table.
2. Analytical testing completed by Centek Laboroatories, in Syracuse, New York.
3. ug/m^3 = micrograms per cubic meter.
4. ND = Non-Detect

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 5B

HISTORIC AIR SAMPLING RESULTS VS. NYSDOH MATRICES

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Sample Location	Trichloroethene (TCE)		Carbon Tetrachloride		Vinyl Chloride		Tetrachloroethene (PCE)		1,1-Dichloroethene		cis-1,2-Dichloroethene		1,1,1 -Trichloroethane	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2
SUBSLAB WAREHOUSE	0.82	I, R	0.7	I, R	ND	NFA	13	NFA	ND	NFA	ND	NFA	ND	NFA
AMBIENT WAREHOUSE	0.655		0.703		ND		1.38		ND		ND		ND	
SUBSLAB OFFICE	1.7	I, R	0.64	I, R	ND	NFA	21	NFA	ND	NFA	ND	NFA	ND	NFA
AMBIENT OFFICE	0.437		0.831		ND		1.59		ND		ND		ND	
AMBIENT BASEMENT	0.273	I, R	0.767	I, R	ND	NFA	2.21	NFA	ND	NFA	ND	NFA	ND	NFA

Notes:

1. Soil Vapor/Indoor Air Matrices per Department of Health (DOH) guidance from October 2006 (Updated June 2007).
2. Samples were collected March 19, 2008.

ND = Not Detected

NFA = No further action.

I, R = Take reasonable and practical actions to identify source(s) and reduce exposures.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 6A

SUMMARY OF REMEDIAL INVESTIGATION AIR SAMPLING ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Parameter [1]	Sample Location						
	SSV-1	Ambient #1	SSV-2	Ambient #2	SSV-3	Ambient #3	Outside Ambient
Volatile Organics Compounds (VOCs) - ug/m [3]							
Benzene	ND	0.15	0.27	0.15	0.33	0.16	0.16
Cyclohexane	ND	ND	1.14	ND	1.85	ND	ND
Dichlorodifluoromethane	ND	0.48	ND	0.52	ND	0.56	0.51
n-Heptane	ND	0.041	1.07	0.041	0.91	0.042	0.047
n-Hexane	ND	0.095	1.32	0.082	1.66	0.089	0.086
Trichlorofluoromethane	0.2	0.19	ND	ND	ND	ND	ND
Tetrachloroethene (PCE) [4]	ND	ND	0.23	0.069	ND	0.061	ND
Toluene	0.24	0.13	0.92	0.18	0.26	0.11	0.093
Trichloroethene (TCE) [3]	0.62	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	0.22	ND	0.23	0.22
Xylene, Total	ND	0.055	ND	0.043	ND	0.057	0.055
Carbon tetrachloride [3]	ND	0.05	ND	0.061	ND	0.062	0.066

Notes:

1. Only those parameters detected above the method detection limit, at a minimum of one location, are presented in this table.
2. Constituent monitored under NYSDOH Vapor/ Indoor Air Quality Standards - October 2006/June 2007.
3. NYSDOH Decision Matrix 1 used to determine appropriate corrective action.
4. NYSDOH Decision Matrix 2 used to determine appropriate corrective action.
5. Samples collected on February 27, 2014.

ND = Compound analyzed but not detected at a concentration above the reporting limit.

SSV = Subslab Soil Vapor

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 6B

REMEDIAL INVESTIGATION AIR SAMPLING RESULTS VS. NYSDOH MATRICES

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Sample Location	Trichloroethene (TCE)		Carbon Tetrachloride		Vinyl Chloride		Tetrachloroethene (PCE)		1,1-Dichloroethene		cis-1,2-Dichloroethene		1,1,1 -Trichloroethane	
	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 1	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2	Lab Reported Concentration (ug/m^3)	Soil Vapor / Indoor Air Matrix 2
SSV-1	0.62	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA
Ambient #1	ND		0.05		ND		ND		ND		ND		ND	
SSV-2	ND	NFA	ND	NFA	ND	NFA	0.23	NFA	ND	NFA	ND	NFA	ND	NFA
Ambient #2	ND		0.061		ND		0.069		ND		ND		ND	
SSV-3	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA	ND	NFA
Ambient #3	ND		0.062		ND		0.061		ND		ND		ND	
Outside Ambient	ND	--	0.066	--	ND	--	ND	--	ND	--	ND	--	ND	--

Notes:

1. Samples collected February 27, 2014.
2. Soil Vapor/Indoor Air Matrices per Department of Health (DOH) guidance from October 2006 (Updated June 2007).

ND = Not Detected

NFA = No further action.

SSV = Subslab Soil Vapor

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 7

SUMMARY OF BASEMENT FLOOR SAMPLING ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs [2]	Restricted Residential Use SCOs [2]	Commercial Use SCOs [2]	Sample Location
				Basement Mechanical Room (Floor Comp.)
				11/25/2014
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]				
Benzo(a)anthracene	1	1	5.6	**1.9 J**
Benzo(a)pyrene	1	1	1	**4.5 J**
Benzo(b)fluoranthene	1	1	5.6	**7.2 J**
Benzo(ghi)perylene	100	100	500	1.3 J
Benzo(k)fluoranthene	0.8	3.9	56	**1.1 J**
Chrysene	1	3.9	56	**2.3 J**
Fluoranthene	100	100	500	3 J
Indeno(1,2,3-cd)pyrene	0.5	0.5	5.6	**7.2 J**
Phenanthrene	100	100	500	1.7 J
Pyrene	100	100	500	2.3 J
Total PAHs	--	--	500	32.50
Metals - mg/Kg				
Arsenic	13	16	16	**108**
Barium	350	400	400	**5090**
Cadmium	2.5	4.3	9.3	**5.5**
Chromium	30	180	1500	**95.8**
Lead	63	400	1000	**4170**
Mercury	0.18	0.81	2.8	**1.6**
Polychlorinated biphenyls (PCBs) - mg/Kg [3]				
Total PCBs	0.1	1	1	ND

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.
"--" = No value available for the parameter; Parameter not analysed for.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Restricted Residential Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 8

SUMMARY OF BASEMENT LIQUID/WATER SAMPLING ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Sample Location	
	Motor #1 Contents	Blower Sump
	11/25/2014	
Semi-Volatile Organic Compounds (SVOCs) - ug/L		
2,6-Dinitrotoluene	--	4.4 J
Benzo(a)anthracene	--	ND
Benzo(a)pyrene	--	ND
Benzo(b)fluoranthene	--	ND
Benzo(ghi)perylene	--	ND
Benzo(k)fluoranthene	--	ND
Chrysene	--	ND
Fluoranthene	--	ND
Indeno(1,2,3-cd)pyrene	--	ND
Phenanthrene	--	ND
Pyrene	--	ND
Polychlorinated biphenyls (PCBs) - ug/L		
Aroclor 1242	ND	1.2
Total PCBs	ND	1.2

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds reported as ND.

Definitions:

ND = Parameter not detected above laboratory detection limit.

"--" = Parameter not analysed for.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 9

SUMMARY OF REMEDIAL INVESTIGATION PCB WIPE SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW TORK

PARAMETER[1]	SAMPLE LOCATION			
	Motor #1		Motor #2	
	Wipe #1 (Housing)	Wipe #2 (Floor)	Wipe #3 (Housing)	Wipe #4 (Floor)
	11/25/2014			
Polychlorinated biphenyls (PCBs) - ug/Abs (100 square centimeters)				
Aroclor 1016	ND	2.9 J	ND	ND
Aroclor 1221	ND	ND	ND	ND
Aroclor 1232	ND	ND	ND	ND
Aroclor 1242	ND	ND	ND	ND
Aroclor 1248	ND	ND	ND	ND
Aroclor 1254	ND	ND	ND	ND
Aroclor 1260	ND	ND	ND	ND
Total PCBs	ND	2.9	ND	ND

Notes:

1. Sample results were reported by the laboratory in ug/Abs (per 100 square centimeters)

Definitions:

ND = Parameter not detected above laboratory detection limit.

"--" = No value available for the parameter; Parameter not analysed for.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 10

SUMMARY OF PETROLEUM IRM POST-EXCAVATION CONFIRMATORY SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs [2]	Restricted Residential Use SCOs [2]	Commercial Use SCOs [2]	SAMPLE LOCATION										
				Petroleum IRM Excavation						PAH (SS-3) IRM Excavation				
				Bottom-01	Bottom-02	Sidewall-North	Sidewall-South	Sidewall-East	Sidewall-West	Bottom-01	Sidewall-North	Sidewall-South	Sidewall-East	Sidewall-West
				11/17/2014										
Volatile Organic Compounds (VOCs) - mg/Kg [3]														
Acetone	**0.05**	**100**	**500**	0.025 J	0.048 J	0.019 J	ND	0.041 J	ND	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]														
Benzo(a)anthracene	**1**	**1**	**5.6**	--	--	--	--	--	--	ND	**1.8 J**	0.24 J	0.53 J	ND
Benzo(a)pyrene	**1**	**1**	**1**	--	--	--	--	--	--	ND	**2.5 J**	0.92 J	**1.1 J**	0.41 J
Benzo(b)fluoranthene	**1**	**1**	**5.6**	--	--	--	--	--	--	0.66 J	**4.2**	**1.5 J**	**1.8 J**	0.66 J
Benzo(ghi)perylene	**100**	**100**	**500**	--	--	--	--	--	--	ND	0.86 J	ND	ND	ND
Benzo(k)fluoranthene	**0.8**	**3.9**	**56**	--	--	--	--	--	--	ND	**0.83 J**	ND	0.29 J	ND
Chrysene	**1**	**3.9**	**56**	--	--	--	--	--	--	ND	**1.6 J**	ND	0.47 J	ND
Fluoranthene	**100**	**100**	**500**	--	--	--	--	--	--	ND	3.7 J	0.45 J	1 J	0.1 J
Indeno(1,2,3-cd)pyrene	**0.5**	**0.5**	**5.6**	--	--	--	--	--	--	ND	**3.8 J**	**1.7 J**	ND	ND
Phenanthrene	**100**	**100**	**500**	--	--	--	--	--	--	ND	2.8 J	0.33 J	0.82 J	ND
Pyrene	**100**	**100**	**500**	--	--	--	--	--	--	ND	2.9 J	0.36 J	0.74 J	ND
Metals - mg/Kg														
Arsenic	**13**	**16**	**16**	--	5.4	--	--	ND	--	--	--	--	--	--
Barium	**350**	**400**	**400**	--	190	--	--	97.1	--	--	--	--	--	--
Cadmium	**2.5**	**4.3**	**9.3**	--	0.79	--	--	0.25	--	--	--	--	--	--
Chromium	**30**	**180**	**1500**	--	26.5	--	--	19.8	--	--	--	--	--	--
Lead	**63**	**400**	**1000**	--	23.9	--	--	16.5	--	--	--	--	--	--
Mercury	**0.18**	**0.81**	**2.8**	--	0.063	--	--	0.029	--	--	--	--	--	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.

"--" = No value available for the parameter; Parameter not analysed for.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Restricted Residential Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 11

SUMMARY OF LOADING DOCK IRM POST EXCAVATION CONFIRMATORY SOIL SAMPLE ANALYTICAL RESULTS

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs [2]	Restricted Residential Use SCOs [2]	Commercial Use SCOs [2]	SAMPLE LOCATION			
				Loading Dock IRM Excavation			
				Northwall	Southwall	Eastwall	Westwall
				1/30/2015			
Volatile Organic Compounds (VOCs) - mg/Kg [3]							
2-Butanone (MEK)	**0.12**	**100**	**500**	0.0014 J	ND	ND	ND
Acetone	**0.05**	**100**	**500**	0.015	0.0084 J	0.013	**0.85 J**
cis-1,2-Dichloroethene	**0.25**	**100**	**500**	0.0014	0.00091 J	0.0031	0.072 J
Tetrachloroethene	**1.3**	**19**	**150**	0.027	0.0049	0.0046	**17**
Trichloroethene	**0.47**	**21**	**200**	0.0058	0.0014	0.00058 J	**0.52**

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.

"--" = No value available for the parameter; Parameter not analysed for.

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Restricted Residential Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 12

ALTERNATIVE 2 - TRACK 4 RRSCO COST ESTIMATE

REMEDIAL INVESTIGATION / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Item	Quantity	Units	Unit Cost	Total Cost
IRM Completed				
Petroleum IRM Excavation	1	LS	$ 65,000	$ 65,000
Loading Dock IRM Excavation and Disposal	1	LS	$ 100,000	$ 100,000
Verification Sampling	13	EA	$ 600	$ 7,800
ASD System	1	LS	$ 30,000	$ 30,000
In-Situ Chemical Feed System	1	LS	$ 15,000	$ 15,000
				$ 217,800
Additional Remedial Measures				
Basement Remedial Cleaning	1	EST	$ 15,000	$ 15,000
Universal and Chemical Wastes	1	EST	$ 12,000	$ 12,000
Cover System (asphalt, concrete and soil cover)	1	EST	$ 250,000	$ 250,000
Backfill-Topsoil Analytical Sampling	10	EA	$ 500	$ 5,000
				$ 282,000
Site Restoration				
Concrete Slab Restoration	150	CY	$ 185	$ 27,750
Building Masonry Restoration	1	EST	$ 30,000	$ 30,000
				$ 57,750
Subtotal:				**$ 557,550**
Final Engineering Report/Site Management Plan				**$ 30,000**
Subtotal Capital Cost				**$ 587,550**
Health and Safety (3%)				$ 16,727
Engineering/Contingency (25%)				$ 139,388
Total Capital Cost				**$ 743,660**
Annual Operation Maintenance & Monitoring (OM&M):				
Annual Certification	1	Yr	$ 2,500	$ 2,500
Total Annual OM&M Cost				**$ 2,500**
Capital Cost				**$ 744,000**

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 13

ALTERNATIVE 3 - TRACK 2 RRSCO COST ESTIMATE

REMEDIAL INVESTIGATION / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

BUFFALO, NEW YORK

Item	Quantity	Units	Unit Cost	Total Cost
IRM Completed				
Petroleum IRM Excavation and Disposal	1	LS	$ 65,000	$ 65,000
Loading Dock IRM Excavation and Disposal	1	LS	$ 100,000	$ 100,000
Verification Sampling	13	EA	$ 600	$ 7,800
ASD System	1	LS	$ 30,000	$ 30,000
In-Situ Chemical Feed System	1	LS	$ 15,000	$ 15,000
				$ 217,800
Additional Remedial Measures				
Basement Remedial Cleaning	1	EST	$ 15,000	$ 15,000
Universal and Chemical Wastes	1	EST	$ 25,000	$ 25,000
				$ 40,000
Impacted Soil/Fill Removal				
Exterior Soil/Fill Excavation	6288	TON	$ 15	$ 94,320
Interior Soil/Fill Excavation	144	TON	$ 100	$ 14,400
Interior Excavation Shoring and Stabilization	1	EST	$ 50,000	$ 50,000
Transportation & Disposal of NH Soil/Fill	6432	TON	$ 35	$ 225,120
Groundwater Handling and Treatment	1	EST	$ 25,000	$ 25,000
Verification Sampling	40	EA	$ 500	$ 20,000
				$ 428,840
Site Restoration				
Part 375 Compliant Backfill, Haul, Place & Compact	4030	CY	$ 25	$ 100,750
Concrete Slab restoration	100	CY	$ 185	$ 18,500
Building Masonry Restoration	1	EST	$ 30,000	$ 30,000
Cover System (asphalt and soil cover)	1	EST	$ 250,000	$ 250,000
Backfill-Topsoil Analytical Sampling	10	EA	$ 500	$ 5,000
				$ 404,250
Final Engineering Report/Site Management Plan				**$ 30,000**
Subtotal Capital Cost				**$ 1,120,890**
Health and Safety (2%)				$ 22,418
Engineering/Contingency (25%)				$ 280,223
Total Capital Cost				**$ 1,423,530**
Annual Operation Maintenance & Monitoring (OM&M):				
Annual Certification	1	Yr	$ 2,500	$ 2,500
Total Annual OM&M Cost				**$ 2,500**
Capital Cost				**$ 1,424,000**

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 14

ALTERNATIVE 4 - UNRESTRICTED USE COST ESTIMATE

REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES / ALTERNATIVE ANALYSIS REPORT

500 SENECA STREET SITE

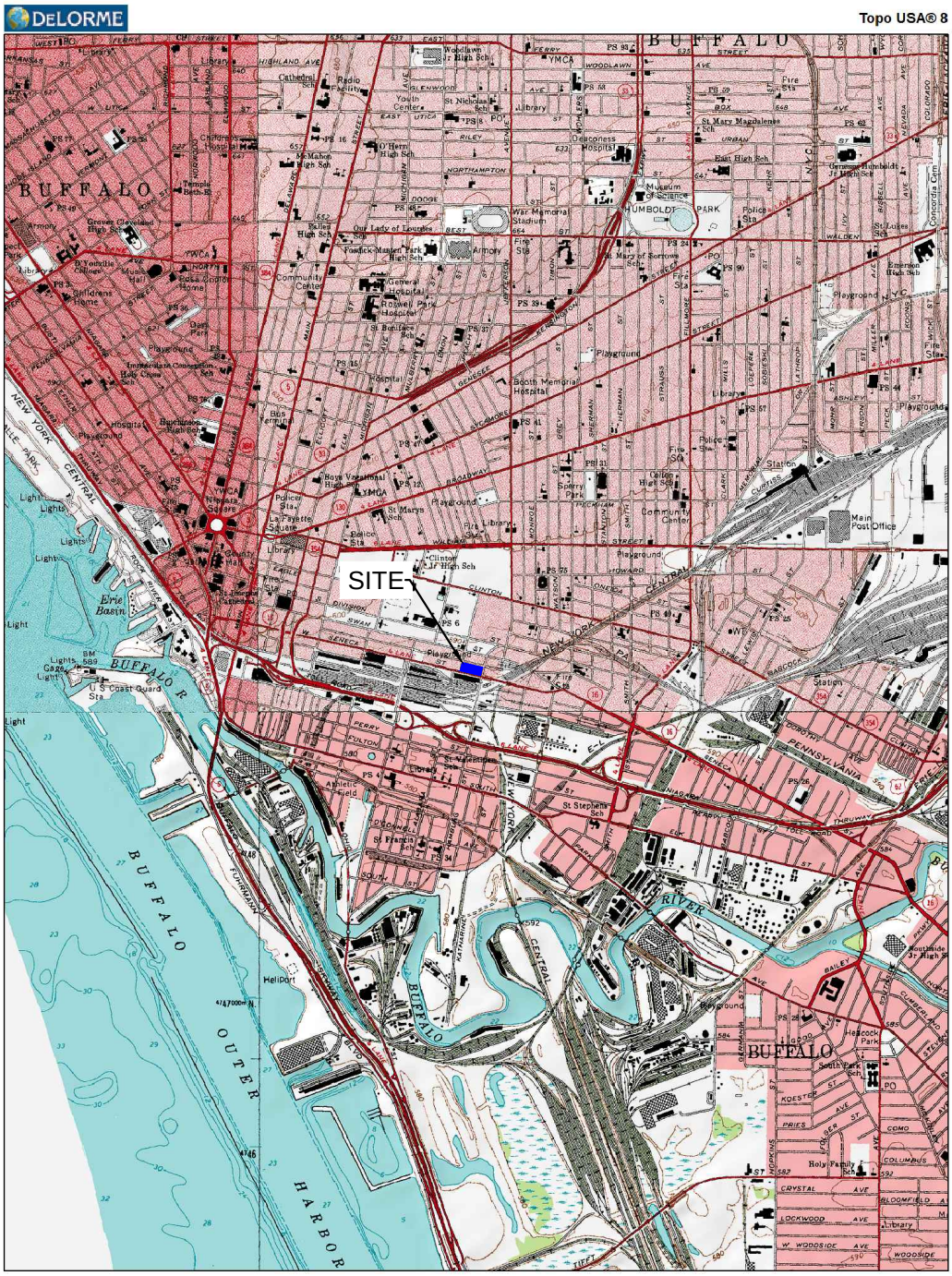
BUFFALO, NEW YORK

Item	Quantity	Units	Unit Cost	Total Cost
IRM Completed				
Petroleum IRM Excavation and Disposal	1	LS	$ 65,000	$ 65,000
Loading Dock IRM Excavation and Disposal	1	LS	$ 100,000	$ 100,000
Verification Sampling	13	EA	$ 600	$ 7,800
ASD System	1	LS	$ 30,000	$ 30,000
In-Situ Chemical Feed System	1	LS	$ 15,000	$ 15,000
				$ 217,800
Additional Remedial Measures				
Basement Remedial Cleaning	1	EST	$ 15,000	$ 15,000
Universal and Chemical Wastes	1	EST	$ 25,000	$ 25,000
				$ 40,000
Impacted Soil/Fill Removal				
Exterior Soil/Fill Excavation	10200	TON	$ 15	$ 153,000
Interior Soil/Fill Excavation	960	TON	$ 100	$ 96,000
Interior Excavation Shoring and Stabilization	1	EST	$ 100,000	$ 100,000
Transportation & Disposal of NH Soil/Fill	11160	TON	$ 35	$ 390,600
Groundwater Handling and Treatment	1	EST	$ 25,000	$ 25,000
Verification Sampling	65	EA	$ 500	$ 32,500
				$ 797,100
Site Restoration				
Part 375 Compliant Backfill, Haul, Place & Compact	6975	CY	$ 25	$ 174,375
Concrete Slab restoration	600	CY	$ 185	$ 111,000
Building Masonry Restoration	1	EST	$ 30,000	$ 30,000
Cover System (asphalt and soil cover)	1	EST	$ 250,000	$ 250,000
Backfill-Topsoil Analytical Sampling	10	EA	$ 500	$ 5,000
				$ 570,375
Final Engineering Report/Site Management Plan				**$ 30,000**
Subtotal Capital Cost				**$ 1,655,275**
Health and Safety (2%)				$ 33,106
Engineering/Contingency (25%)				$ 413,819
Total Capital Cost				**$ 2,102,200**
Capital Cost				**$ 2,102,000**

FIGURES

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 1; Site Location and Vicinity Map.dwg

FIGURE 1



BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

PROJECT NO.: 0270-012-001

DATE: APRIL 2015

DRAFTED BY: BLR

SITE LOCATION AND VICINITY MAP

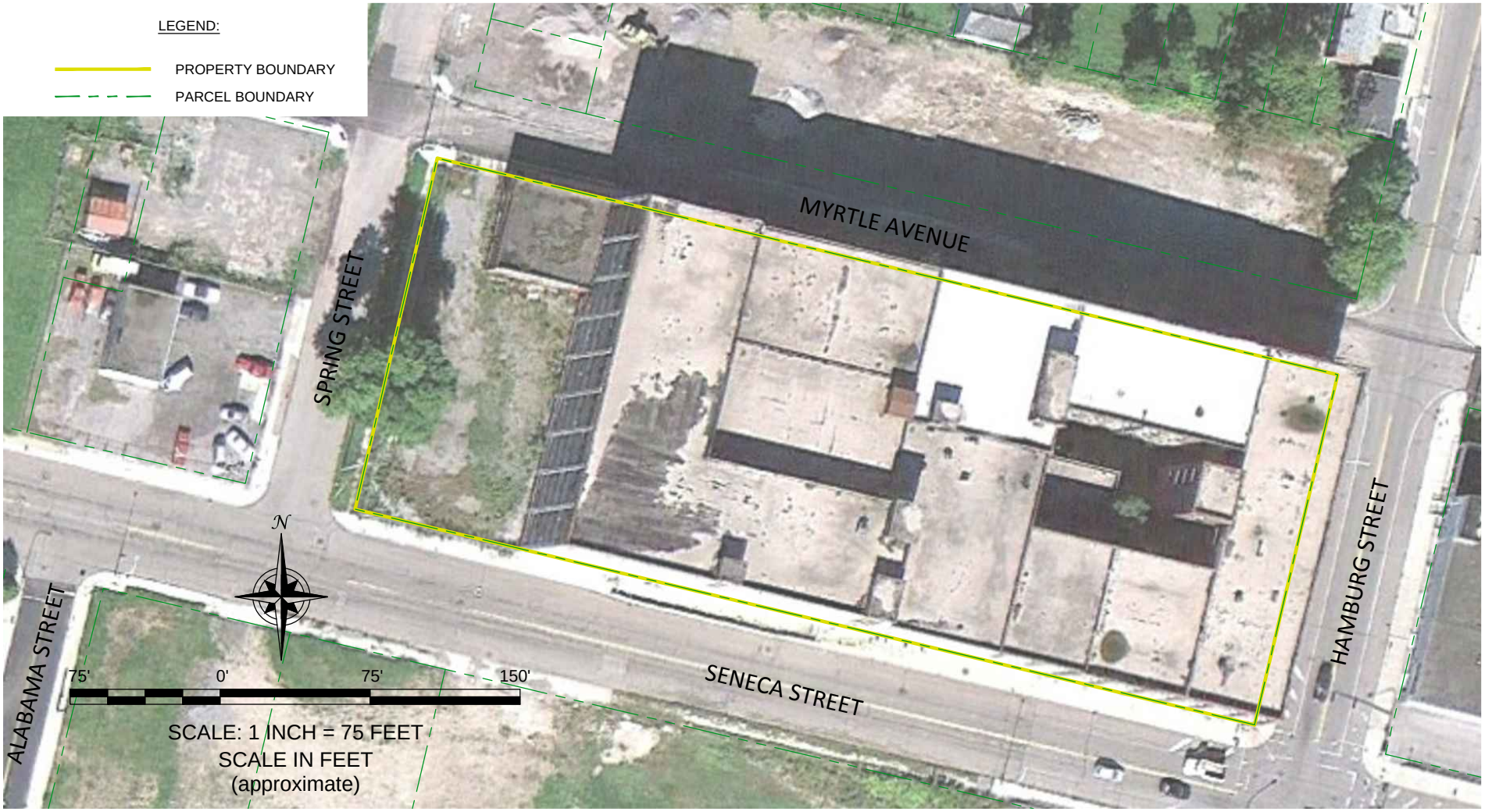
RI-IRM-AA REPORT

500 SENECA STREET SITE
BCP NO. C915273
BUFFALO, NEW YORK

PREPARED FOR

500 SENECA STREET, LLC

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 2; Site Plan (Aerial).dwg



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2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

PROJECT NO.: 0270-012-001

DATE: APRIL 2015

DRAFTED BY: BLR

SITE PLAN (AERIAL)

RI-IRM-AA REPORT

500 SENECA STREET SITE
BCP NO. C915273
BUFFALO, NEW YORK

PREPARED FOR

500 SENECA STREET, LLC

FIGURE 2

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 3; Historic Sample Locations.dwg

LEGEND:

- PROPERTY BOUNDARY
- SP-3 ● HISTORIC SOIL BORING LOCATION (BY OTHERS)
- SP-1 / TMW ◉ HISTORIC SOIL BORING/TEMPORARY MONITORING WELL LOCATION (BY OTHERS)
- OUTDOOR AIR SAMPLE HISTORIC AIR SAMPLING LOCATION (BY OTHERS)

SPRING STREET

MYRTLE AVENUE

HAMBURG STREET

SENECA STREET

SP-1 / TMW
SP-2
SP-3
SP-4
SP-5
SP-6
SP-8
SP-7
SP-9 / TMW
SP-10
SP-11 / TMW
SP-12 / TMW
SP-13
SP-14
SP-15
SP-16
SP-17
SP-18

OUTDOOR AIR SAMPLE

OFFICE AIR/SSV SAMPLES

WAREHOUSE/SSV AIR SAMPLES

BASEMENT AIR SAMPLE

ELEV.

NEW BOILER ROOM

N

40' 0' 40' 80'

SCALE: 1 INCH = 40 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2015
DRAFTED BY: BLR

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0270-012-001

HISTORIC SAMPLE LOCATIONS

RI-IRM-AA REPORT
500 SENECA STREET SITE
BCP NO. C915273
BUFFALO, NEW YORK
PREPARED FOR
500 SENECA STREET, LLC

FIGURE 3

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 4; Remedial Investigation and Historic Sample Locations.dwg

LEGEND:

- PROPERTY BOUNDARY
- SB-12 ● REMEDIAL INVESTIGATION SOIL BORING LOCATION
- SS-2/SB-6 ● REMEDIAL INVESTIGATION SURFACE SAMPLE / SOIL BORING LOCATION
- SB-1/TW-1 ◉ REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION
- MW-2 ⊕ REMEDIAL INVESTIGATION MONITORING WELL LOCATION
- HC-3 ⊗ REMEDIAL INVESTIGATION HAND CORE SAMPLE LOCATION
- SSV/AMBIENT-2 REMEDIAL INVESTIGATION AIR SAMPLE LOCATION
- WIPE 2 ✕ REMEDIAL INVESTIGATION PCB WIPE LOCATION
- BLOWER SUMP ⊠ REMEDIAL INVESTIGATION SUMP SAMPLE LOCATION
- SP-3 ● HISTORIC SOIL BORING LOCATION (BY OTHERS)
- SP-1 / TMW ◉ HISTORIC SOIL BORING/TEMPORARY MONITORING WELL LOCATION (BY OTHERS)
- OUTDOOR AIR SAMPLE HISTORIC AIR SAMPLING LOCATION (BY OTHERS)

MW-7 ⊕
MW-4 ⊕
OUTSIDE AMBIENT SAMPLE
SP-1 / TMW
SP-2
SB-5
SB-3
SP-3
SB-2
SB-4
SP-4
SP-5
SB-1/TW-1
SP-8
SP-6
SB-10/TW-2
MW-5 ⊕
SP-13
SP-15
SB-11
OFFICE AIR/SSV SAMPLES
SP-14
SP-9 / TMW
SP-12 / TMW
SP-18
SP-11 / TMW
SP-16
SP-17
SB-12
MW-2 ⊕
SS-1/SB-7
GARAGE DEMOLISHED DURING IRM ACTIVITIES
ELEV.
SB-13/TW-3
SS-2/SB-6
SB-8
WAREHOUSE/SSV AIR SAMPLES
WIPE 1
WIPE 2
(MOTOR #1 CONTENTS)
WIPE 3
WIPE 4
(MOTOR #2)
BLOWER SUMP
BASEMENT FLOOR COMP
BASEMENT AIR SAMPLE
BASEMENT SUMP
NEW BOILER ROOM
HC-5
HC-4
HC-6
BATTERY STORAGE ROOM
SB-14
SB-15
SP-10
HC-3
MW-3 ⊕
SB-16
SSV/AMBIENT-3
SSV/AMBIENT-2
HC-2
HC-1
ELECTRICAL EQUIPMENT AREA
CISTERN
OUTDOOR AIR SAMPLE
MW-6 ⊕
SSV/AMBIENT-1
MW-1 ⊕
SP-7
SS-3/SB-9
SPRING STREET
MYRTLE AVENUE
HAMBURG STREET
SENECA STREET

N

40' 0' 40' 80'

SCALE: 1 INCH = 40 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2015
DRAFTED BY: BLR

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

JOB NO.: 0270-012-001

REMEDIAL INVESTIGATION AND HISTORIC SAMPLE LOCATIONS

RI-IRM-AA REPORT
500 SENECA STREET SITE
BCP NO. C915273
BUFFALO, NEW YORK
PREPARED FOR
500 SENECA STREET, LLC

FIGURE 4

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 5; Groundwater Isopotential Map (April 2015).dwg

LEGEND:

- PROPERTY BOUNDARY
- SB-13/TW-3 495.12 — REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION WITH GROUNDWATER ELEVATION
- MW-3 487.98 — REMEDIAL INVESTIGATION MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION
- 495 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

MW-7 492.45
MW-4 490.46
MW-5 493.05
SB-13/TW-3 495.12
MW-6 493.12
MW-3 487.98
ELEV.
NEW BOILER ROOM
491
493
495
497
MYRTLE AVENUE
SPRING STREET
SENECA STREET
HAMBURG STREET

N

40' 0' 40' 80'

SCALE: 1 INCH = 40 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2015
DRAFTED BY: BLR

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0270-012-001

GROUNDWATER ISOPOTENTIAL MAP (APRIL 2015)

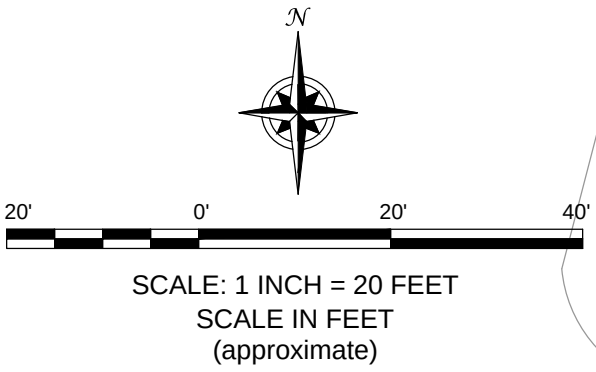
RI-IRM-AA REPORT

500 SENECA STREET SITE
BCP NO. C915273
BUFFALO, NEW YORK

PREPARED FOR
500 SENECA STREET, LLC

FIGURE 5

DATE: APRIL 2015
DRAFTED BY: BLR



LEGEND:

- PROPERTY BOUNDARY
- SS-3/SB-9 ● REMEDIAL INVESTIGATION SURFACE SOIL / SOIL BORING LOCATION
- EXCAVATION LIMITS
- SW-EAST ✕ POST EXCAVATION CONFIRMATORY SIDEWALL SAMPLE LOCATION
- BOTTOM-01 ● POST EXCAVATION CONFIRMATORY BOTTOM SAMPLE LOCATION

MYRTLE AVENUE

SPRING STREET

SW-NORTH ✕
SB-5
SW-WEST ✕
BOTTOM-01
SB-3
SB-2
SB-4
✕ SW-EAST
SW-SOUTH ✕
BOTTOM-02

PETROLEUM EXCAVATION

SS-1/SB-7

GARAGE DEMOLISHED

ELEV

SS-2/SB-6

SB-8

PAH EXCAVATION

✕ SW-NORTH
SW-WEST ✕
SS-3/SB-9
BOTTOM-01
✕ SW-EAST
SW-SOUTH ✕

FIGURE 6

PETROLEUM AND PAH IRM EXCAVATION AREAS

RI-IRM-AA REPORT

500 SENECA STREET SITE
BCP NO. C915273
BUFFALO, NEW YORK

PREPARED FOR

500 SENECA STREET, LLC

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0270-012-001

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 7: Loading Dock Excavation Area.dwg

LEGEND:

PROPERTY BOUNDARY

SB-10/TW-2 REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION

EXCAVATION LIMITS

EASTWALL POST EXCAVATION CONFIRMATORY SIDEWALL SAMPLE LOCATION

NORTHWALL

SB-10/TW-2

WESTWALL

EASTWALL

SOUTHWALL

LOADING DOCK EXCAVATION

MYRTLE AVENUE

SB-13/TW-3

N

16' 0' 16' 32'

SCALE: 1 INCH = 16 FEET
SCALE IN FEET
(approximate)

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LOADING DOCK IRM EXCAVATION AREA

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500 SENECA STREET SITE
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BUFFALO, NEW YORK
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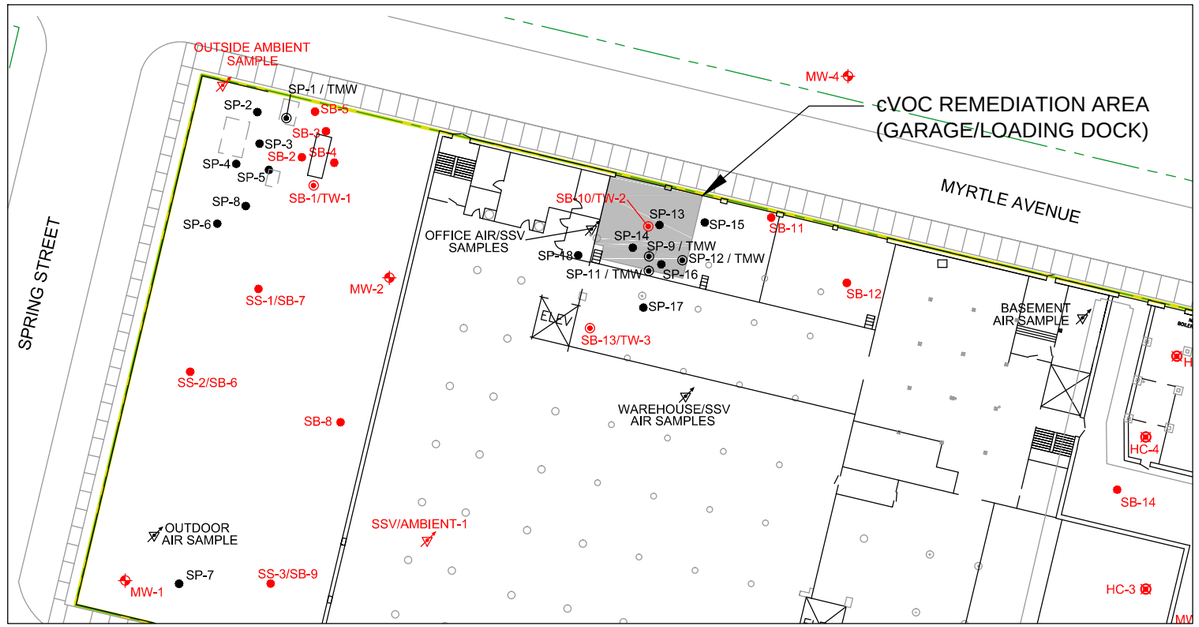
FIGURE 7

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 8: In-Situ Treatment System Design and Layout.dwg

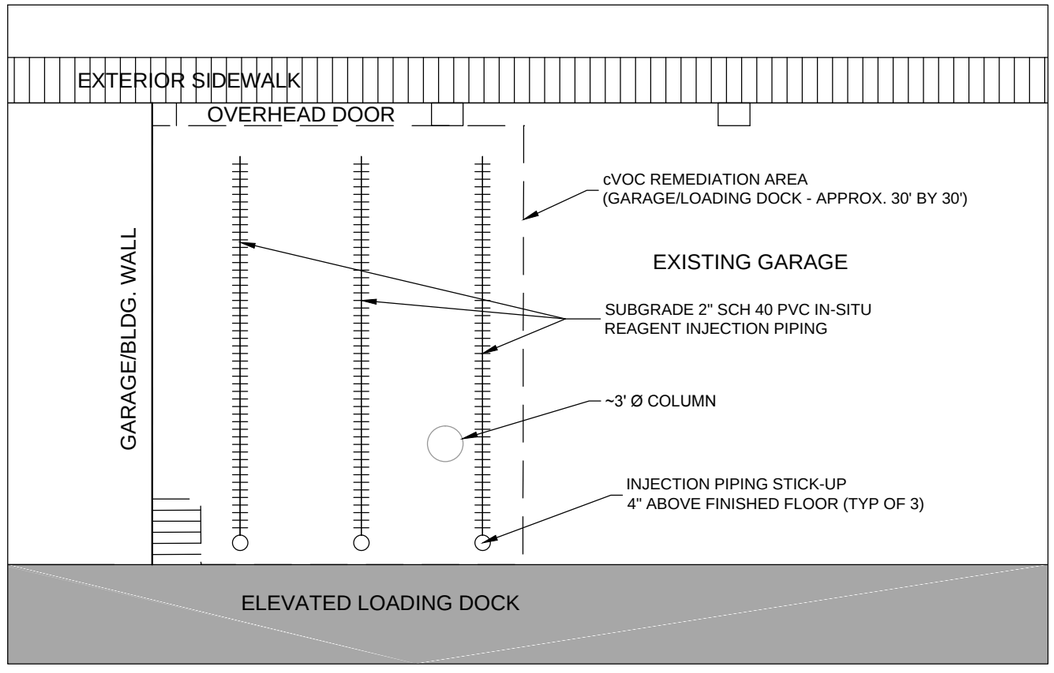
SITE PLAN: SCALE 1:50

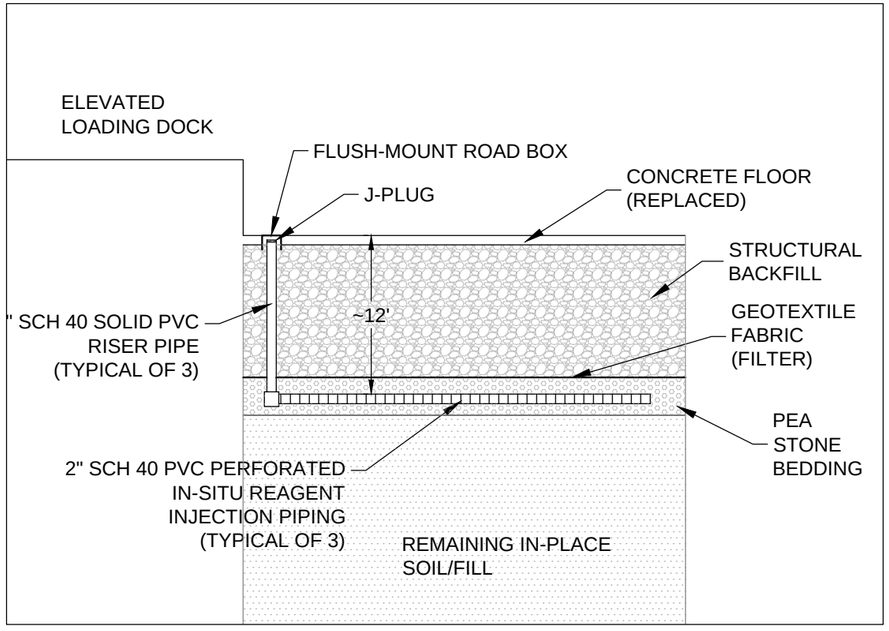


LEGEND:

	PROPERTY BOUNDARY
SB-12	REMEDIAL INVESTIGATION SOIL BORING LOCATION
SS-2/SB-6	REMEDIAL INVESTIGATION SURFACE SAMPLE / SOIL BORING LOCATION
SB-1/TW-1	REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION
MW-2	REMEDIAL INVESTIGATION MONITORING WELL LOCATION
HC-3	REMEDIAL INVESTIGATION HAND CORE SAMPLE LOCATION
SSV/AMBIENT-2	REMEDIAL INVESTIGATION AIR SAMPLE LOCATION
SP-3	HISTORIC SOIL BORING LOCATION (BY OTHERS)
SP-1 / TMW	HISTORIC SOIL BORING/TEMPORARY MONITORING WELL LOCATION (BY OTHERS)
OUTDOOR AIR SAMPLE	HISTORIC AIR SAMPLING LOCATION (BY OTHERS)

PLAN VIEW: SCALE 1:10





CROSS-SECTION

NTS

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IN-SITU TREATMENT SYSTEM DESIGN AND LAYOUT

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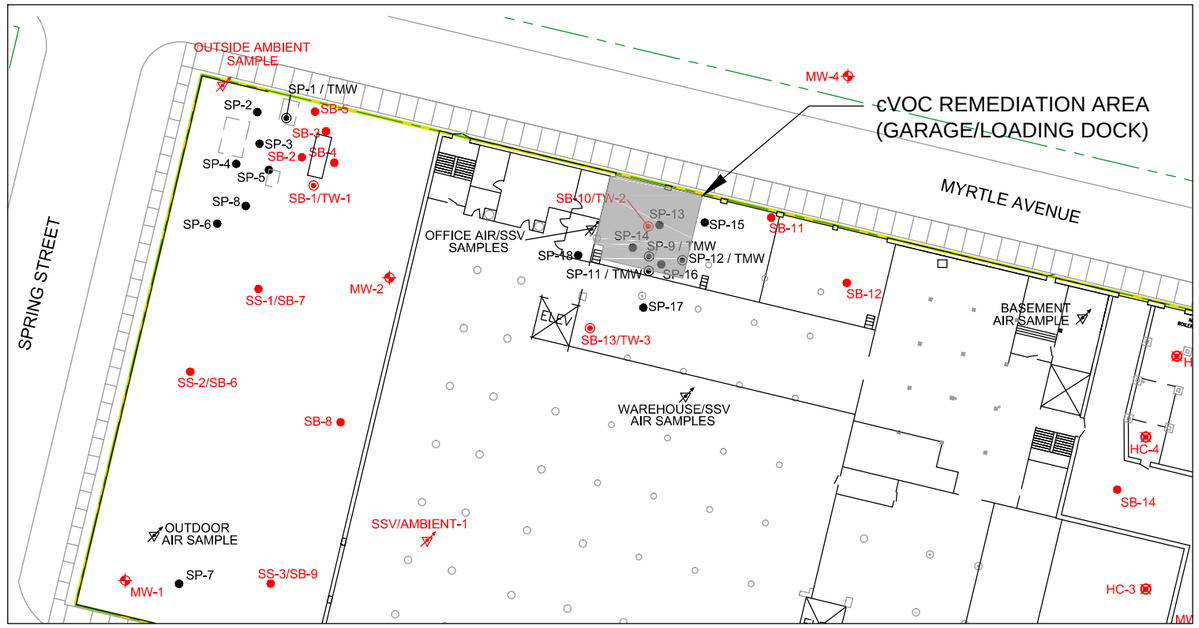
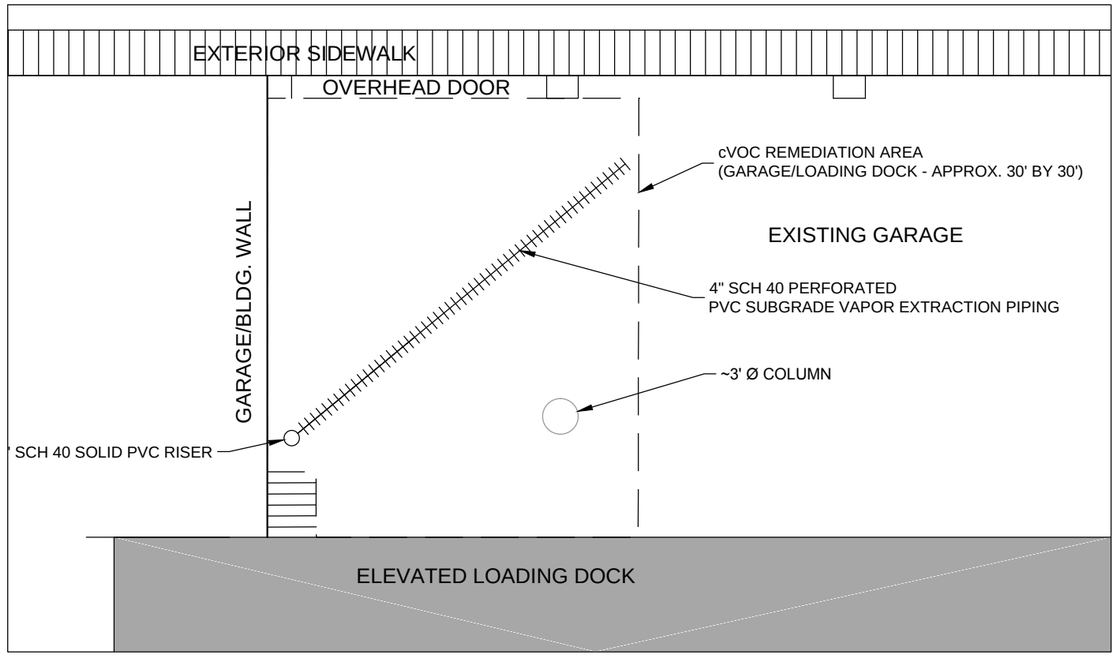
FIGURE 8

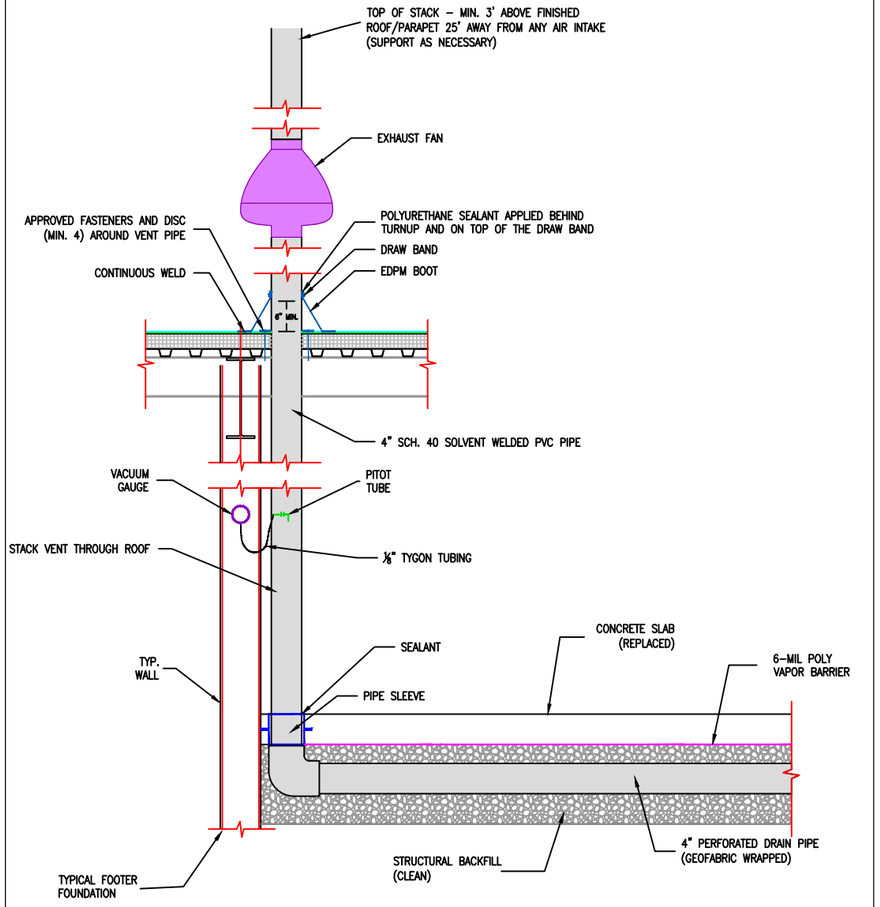
F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 9; ASD System Design and Layout.dwg

SITE PLAN: SCALE 1:50



PLAN VIEW: SCALE 1:10





Note: Detail provides for standard interior wall alignment and and roof penetration. Optional penetration through exterior wall may be evaluated.

SYSTEM DETAIL

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SUBSLAB DEPRESSURIZATION SYSTEM DESIGN AND LAYOUT

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FIGURE 9

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 10; Option 2- RRSCO Track 4 Cleanup.dwg

LEGEND:

- PROPERTY BOUNDARY
- SB-12 ● REMEDIAL INVESTIGATION SOIL BORING LOCATION
- SS-2/SB-6 ● REMEDIAL INVESTIGATION SURFACE SAMPLE / SOIL BORING LOCATION
- SB-1/TW-1 ◉ REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION
- MW-2 ⊕ REMEDIAL INVESTIGATION MONITORING WELL LOCATION
- HC-3 ⊠ REMEDIAL INVESTIGATION HAND CORE SAMPLE LOCATION
- SSV/AMBIENT-2 REMEDIAL INVESTIGATION AIR SAMPLE LOCATION
- COMPOSITE COVER SYSTEM (PAVEMENT, CONCRETE, HARDSCAPE, SOIL COVER & BUILDING)
- BASEMENT REMEDIATION AREA

MW-7
MW-4
OUTSIDE AMBIENT SAMPLE
SB-5
SB-3
SB-2
SB-4
SB-1/TW-1
SB-10/TW-2
MW-5
SB-11
SB-12
SPRING STREET
MYRTLE AVENUE
SOIL COVER
SS-1/SB-7
MW-2
PAVEMENT
CONCRETE
SS-2/SB-6
SB-8
ELEV.
SB-13/TW-3
NEW BOILER ROOM
HC-5
HC-4
HC-6
SB-14
SB-15
BASEMENT REMEDIATION AREA
MW-6
SSV/AMBIENT-1
SS-3/SB-9
MW-1
OPEN COURTYARD AREA (HARDSCAPE)
HC-3
MW-3
SB-16
SSV/AMBIENT-3
ELEV.
TRANSFORMER PAD
SSV/AMBIENT-2
HC-2
HC-1
HAMBURG STREET
SENECA STREET

N

40' 0' 40' 80'

SCALE: 1 INCH = 40 FEET
SCALE IN FEET
(approximate)

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TRACK 4 RRSCO CLEANUP ALTERNATIVE

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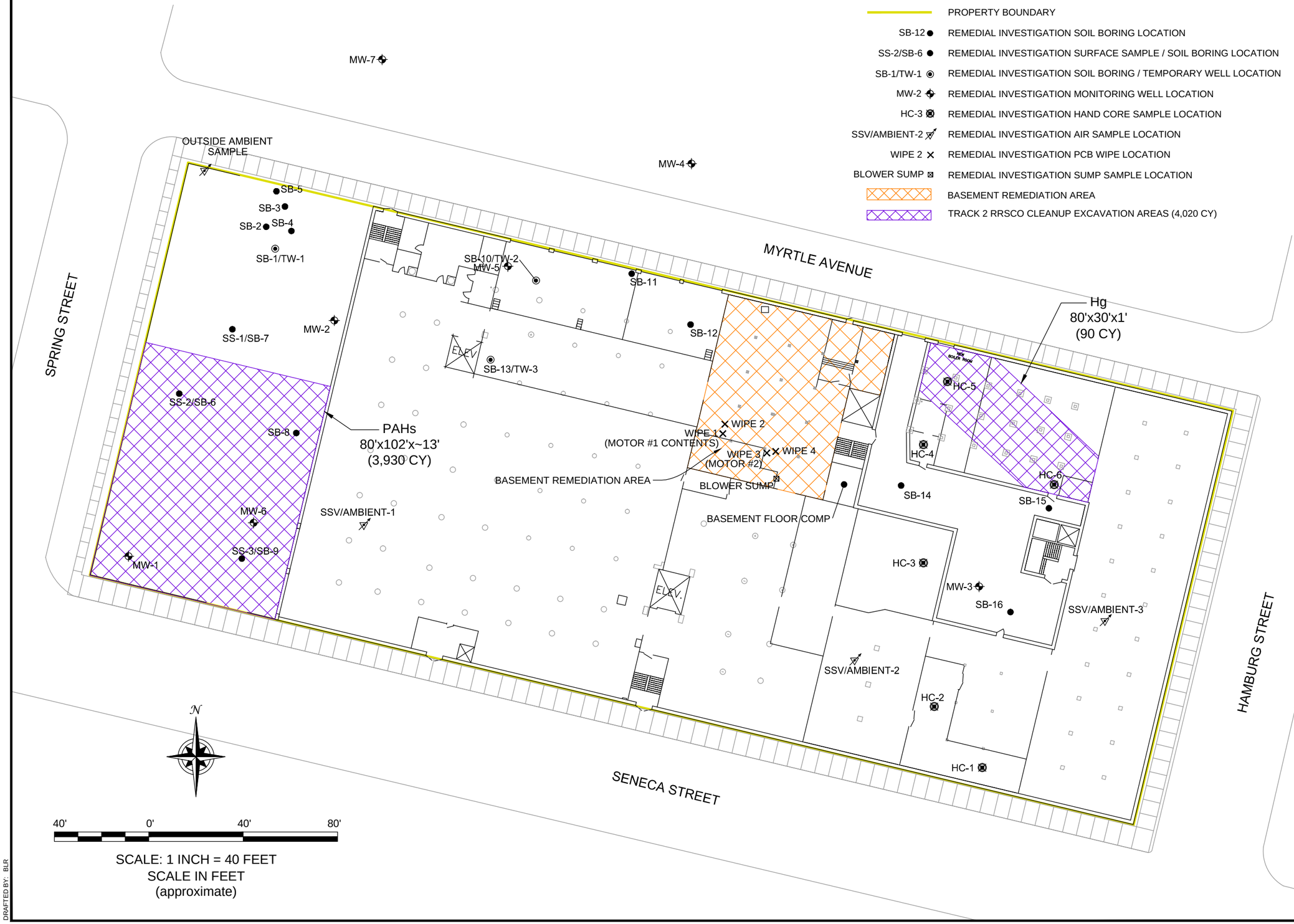
500 SENECA STREET, LLC

FIGURE 10

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 11; Option 3- RRSCO Track 2 Cleanup.dwg

LEGEND:

- PROPERTY BOUNDARY
- SB-12 ● REMEDIAL INVESTIGATION SOIL BORING LOCATION
- SS-2/SB-6 ● REMEDIAL INVESTIGATION SURFACE SAMPLE / SOIL BORING LOCATION
- SB-1/TW-1 ◉ REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION
- MW-2 ⊕ REMEDIAL INVESTIGATION MONITORING WELL LOCATION
- HC-3 ⊗ REMEDIAL INVESTIGATION HAND CORE SAMPLE LOCATION
- SSV/AMBIENT-2 REMEDIAL INVESTIGATION AIR SAMPLE LOCATION
- WIPE 2 × REMEDIAL INVESTIGATION PCB WIPE LOCATION
- BLOWER SUMP ⊠ REMEDIAL INVESTIGATION SUMP SAMPLE LOCATION
- BASEMENT REMEDIATION AREA
- TRACK 2 RRSCO CLEANUP EXCAVATION AREAS (4,020 CY)



SCALE: 1 INCH = 40 FEET
SCALE IN FEET
(approximate)

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TRACK 2 RRSCO CLEANUP ALTERNATIVE

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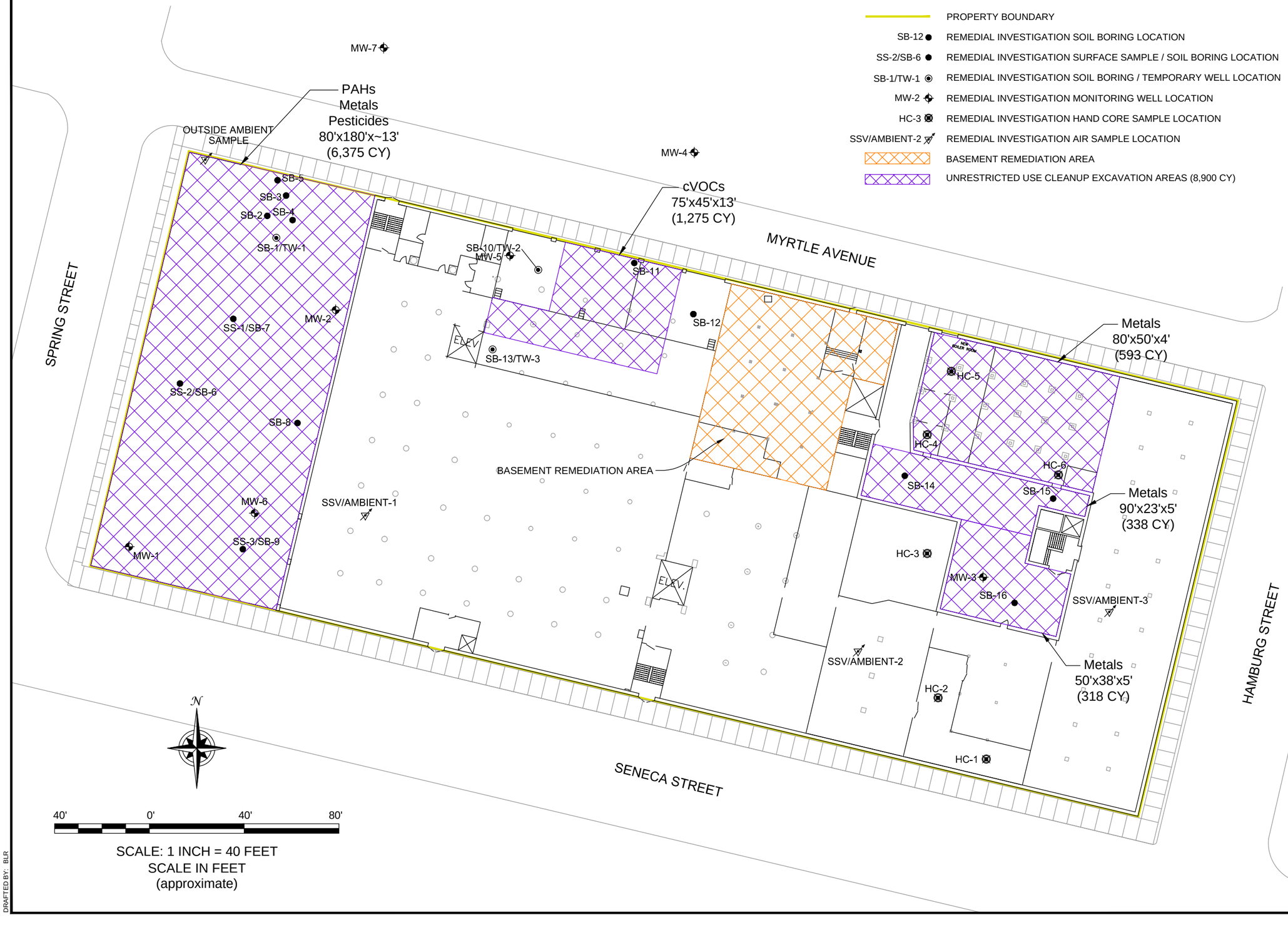
FIGURE 11

F:\CAD\Benchmark\500 Seneca Street, LLC\RI-IRM-AA Report\Figure 12; Option 4- RRSCO Unrestricted SCO Cleanup.dwg

LEGEND:

- PROPERTY BOUNDARY
- SB-12 ● REMEDIAL INVESTIGATION SOIL BORING LOCATION
- SS-2/SB-6 ● REMEDIAL INVESTIGATION SURFACE SAMPLE / SOIL BORING LOCATION
- SB-1/TW-1 ◉ REMEDIAL INVESTIGATION SOIL BORING / TEMPORARY WELL LOCATION
- MW-2 ⊕ REMEDIAL INVESTIGATION MONITORING WELL LOCATION
- HC-3 ⊠ REMEDIAL INVESTIGATION HAND CORE SAMPLE LOCATION
- SSV/AMBIENT-2 REMEDIAL INVESTIGATION AIR SAMPLE LOCATION
- BASEMENT REMEDIATION AREA
- UNRESTRICTED USE CLEANUP EXCAVATION AREAS (8,900 CY)



SCALE: 1 INCH = 40 FEET
SCALE IN FEET
(approximate)

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UNRESTRICTED USE SCO CLEANUP ALTERNATIVE

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FIGURE 12

APPENDIX A

PROJECT PHOTOLOG