Pierce Arrow Business Center

155-157 Chandler

ERIE COUNTY

BUFFALO, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: C915312

Prepared for:

R&M Leasing LLC

391 Washington Street

Buffalo, New York 14203

Prepared by:

Hazard Evaluations, Inc.
3636 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

Schenne & Associates
391 Washington Street, Suite 800
Buffalo, NY 14203
(716) 655-4991

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

DECEMBER 14, 2017

CERTIFICATION STATEMENT

I MICHELE WITTMAN certify that I am currently a Qualified Environmental Professional as in defined in 6 NYCRR Part 375 and that this Site Management Plan 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).

_____ QEP

12/14/17 DATE

I JOHN A. SCHNNE, PE certify that I am currently a NYS registered professional engineer and that this Site Management Plan 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).

_____ P.E.

12/14/17 DATE

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List of Acronyms

ACM	Asbestos Containing Material
AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECDOH	Erie County Department of Health
ECL	Environmental Conservation Law
EE	Environmental Easement
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
IRM	Interim Remedial Measure
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act

RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RRUSCO	Restricted Residential Use Soil Cleanup Objective
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification: BCP #C915312 – Pierce Arrow Business Center

Institutional Controls:	1. The property may be used for restricted residential use;	
	• The property may be used for : restricted residential use; • The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Erie County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department. • Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP; • All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP; • Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement. • Vegetable gardens and farming on the site are prohibited;	
Engineering Controls:	1. Sub-Slab Depressurization System	
	.	
Inspections:		Frequency
1. Sub-Slab Depressurization System		Annually

Site Identification: BCP #C915312 – Pierce Arrow Business Center

Monitoring:	
1. Groundwater Monitoring Well MW-3	Semi-Annual
Maintenance:	
1. Sub-Slab Depressurization System	As needed
Reporting:	
1. Periodic Review Report	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Pierce Arrow Business Center at 155-157 Chandler located in Buffalo, Erie, New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Brownfield Cleanup Program (BCP) Site No. C915312 which is administered by New York State Department of Environmental Conservation (NYSDEC).

R&M Leasing LLC entered into a Brownfield Cleanup Agreement (BCA Index No. C915312-02-17) on April 24, 2017 with the NYSDEC to remediate the site. A figure showing the site location and boundaries of this site is provided in Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix A. The Environmental Easement is included as Appendix A.

After completion of the remedial work, some contamination remains at this site, which is hereafter referred to as "remaining contamination". Institutional (ICs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Erie County Clerk, requires compliance with this SMP and all ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC), release or closure letter;
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA Index No. #C915312-02-17 for the site, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix B of this SMP.

This SMP was prepared by Hazard Evaluations, Inc. and Schenne & Associates, on behalf of R&M Leasing LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated September 2017, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs that are required by the Environmental Easement for the site.

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shut-down of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the site conditions. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Brownfield Cleanup Agreement (BCA), 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Brownfield Cleanup Agreement and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1.3 on the following page includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table 1.3: Notifications*

Name	**Contact Information**
Jaspal Walia	716-851-7220 jaspal.walia@dec.ny.gov
Chad Staniszewski, P.E.	716-851-7220 chad.staniszewski@dec.ny.gov
Kelly A. Lewandowski, P.E.	518-402-9543 kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in Buffalo, Erie County, New York and is identified as Section 77.84 Block 1 and Lot 4 and Section 77.84 Block 1 and Lot 5 on the Erie County Tax Map (see Figure 3). The site is an approximately 2.37 acre area and is bounded by Chandler Street to the north, Grote Street and residential houses to the south, residential houses to the to the east, and Manton Street to the west (see Figure 4 – Site Layout Map). The boundaries of the site are more fully described in Appendix A – Environmental Easement. The owner(s) of the site parcel(s) at the time of issuance of this SMP is/are:

R&M Leasing, LLC, 391 Washington Street, Buffalo, NY 14203

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: an approximate 65,000-square foot building, 22,000-square foot courtyard within the central area of the building and an approximate 0.39 acre parking lot area. The Site is zoned D-C Flex Commercial, which permits Residential, Retail & Service, and Light Industrial uses.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include light industrial, commercial and residential properties. The properties immediately south of the Site include residential properties; the properties immediately north of the Site include vacant commercial properties; the properties immediately east of the Site include residential properties; and the properties to the west of the Site include vacant commercial properties.

2.2.2 Geology

Site geologic conditions generally consist of 6-inches to 4 feet of granular and cohesive fill material. Silty clay soils were encountered below the fill material at each location completed at the site. A perched groundwater condition was present at the fill/native interceptor at occasional locations, generally three to four feet below ground surface. Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

Monitoring well locations MW-1 to MW-4 are shown on Figure 5. Table 1 presents the relative groundwater elevation data. Groundwater depth was generally encountered 6 to 21 feet below grade. Figure 6 presents the estimated groundwater flow direction in October 2017, which generally appeared to be a northwesterly to westerly

direction. IRM activities, as well as construction activities which included newly constructed roof drains, were completed during the summer and fall months in 2017. Groundwater depth measured in October 2017 identified a perched groundwater condition in what appeared to be the fill/native interceptor at the monitoring well locations, generally at one to three feet below the ground surface, with the exception of MW-3 within the parking lot area. Figure 6 is the isopotential map for October 2017, where a perched groundwater condition appears to be present below the building. The groundwater does not appear to flow in a direction, but be stagnant under the building. Groundwater monitoring well construction logs are provided in Appendix D.

2.3 Investigation and Remedial History

The site building was originally constructed in 1907 and utilized as a factory occupied by Linde Air Products until the early 1950s. Bell Aircraft Corp. was located at the site in the early/mid 1950s. In 1958, the building was purchased by Donald Rosen, who utilized the property for G & R Machinery (machine shop) from approximately 1959 through at least the 1990s. The property was owned by Donald Rosen from 1958 through 1990, and by Irving Rosen from 1990 through 2005. The site was purchased by Ontario Equipment Co. in 2005. Prior uses that appear to have led to site contamination including machining, gas manufacturing, and manufacturing.

During due diligence work prior to property purchase, Hazard Evaluations, Inc. (HEI) completed a limited Phase II investigation for R&M Leasing LLC at the property in September of 2016. The work included completion of 23 soil borings and collection of soil and groundwater samples. Based on this limited investigation, the primary contaminants of concern in the soil/fill profile include semi-volatile organic compounds (SVOCs), metals and PCBs within the courtyard area, while SVOCs and chlorinated solvents were detected in the groundwater.

Historical records identified a permit dated November 30, 1953 for the installation of a 10,000-gallon #6 bunker oil tank identified within “bricked in enclosure abutting boiler room basement area” for Bell Aircraft Corp. The tank was identified as 6 feet above ground and 4 feet underground. No record of tank removal or registration was identified.

Additionally, a permit dated April 30, 1959 was identified for a 2,000-gallon gasoline underground storage tank (UST) installed for J&R Machine Co. A figure with the permit application identified the tank within the courtyard area. A possible vent pipe was observed by HEI during the Phase II investigation in the 2,000-gallon tank area. No record of tank removal or registration identified.

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

A series of interim remedial measures (IRM) were performed at the site in order to remediate the on-site concerns.

Courtyard Area:

- Asbestos containing materials (ACM) were identified within the courtyard area, which resulted in the need to remove the top 2-inches of soil. A composite characterization sample was collected for landfill disposal. Test results identified PCBs at a concentration of 53 parts per million (ppm) which prompted further IRM work within the courtyard area.
- ACM soils, which were identified by Owner's representative AMD Environmental, were excavated and disposed off-site as PCB containing soil. The soils were disposed at Waste Management facility in Emelle, Alabama.
- After the courtyard was deemed as ACM free, additional soil excavations were completed under the guidance of HEI. Soil containing over 50 ppm of PCBs was excavated from the courtyard area, and disposed off-site.
- Additional materials removal was completed from the courtyard area which included the following:
    - The brick was generated from the pavers that were present within the courtyard. The concrete was generated from former pad areas as well as foundations within the courtyard area. The concrete and brick materials were disposed at Waste Management facility in Chaffee, New York.
    - Further soil excavation was completed, generally to depth 2 to 3 feet below original grade, into the native underlying clay soils. Soil that contained PCBs below 50ppm, but over the Restricted Residential Use Soil Cleanup Objective (RRUSCO) standard of 1 ppm were excavated and disposed at Waste Management facility in Chaffee, New York.
- One 2,000-gallon gasoline tank was located within the courtyard area. The tank was uncovered and approximately 150-gallons of gasoline/water mixture was pumped from the tank. Upon removal, the steel tank was cleaned and crushed for recycling at Niagara Metals. Limited amount of impacted soil was present on the bottom and northern sidewall. The impacted soil was excavated soil was disposed at Waste Management facility in Chaffee, New York.
- Three drainage structures or "pits" were identified within the courtyard area. Each structure was excavated and impacted soil disposed at Waste Management facility in Chaffee, New York.
- Historical records identified the potential for a 10,000-gallon AST vault to be present near the former boiler room. During concrete pad removal, the vault area was discovered under the pad. Once the concrete was removed, the vault was found to be filled with brick and sand.
    - A sample of the sand material was analyzed for PCBs, indicating a concentration over 50 ppm. The sand and brick material were removed from the vault and materials disposed off-site at Waste Management facility in Emelle, Alabama.
    - The concrete footer for the vault is approximately 18-inches wide and extended over four feet below grade. The vault had a concrete floor/base that was approximately 6-inches thick. Due to the vault's proximity to the

chimney, the vault footer is required to remain in place, because removal would risk comprising the chimney foundation and structural stability.

- Sidewall and bottom samples were collected from the UST excavation area, former vault area, as well as from the drainage structure/pit areas. Additionally, confirmatory soil samples were selected from the bottom of the excavation which occurred in the courtyard area. Soil sample results did not identify impacts above the RRUSCO.

Parking Lot Area

- Due to the presence of metals and SVOCs within the fill material, the 3 to 4 feet of fill within the parking lot area was planned for removal during the IRM work. Initial waste characterization samples identified portions of the parking lot at concentrations deemed as hazardous, due to leaching of lead. Additional delineation work was completed to evaluate areas with lead impacts.
- The lead soils will be stabilized on site by using the MAECTITE® stabilization process, a proprietary process completed by Sevenson Environmental. The stabilization process bound the lead, preventing further leaching. As such, the soil was able to be disposed as non-hazardous soil.
- The parking lot area was then excavated to depth of 3 to 4 feet below grade to the underlying native clay soils. Approximately 2,200 tons of soil was excavated and disposed off-site at Waste Management facility in Chaffee, New York.
- Confirmatory sidewall and bottom samples were collected from the parking lot area. Analytical test results did not identify compounds above RRUSCO.

Under Building Area

- The subject site is on a fast track for site development. As such, HEI worked with the site owner to evaluate areas under the building of proposed future water and/or sewer lines. The various areas were investigated. Concrete samples were collected to determine if PCBs were present. Additionally, soil samples were collected and if impacts were identified, the soil was excavated.
- During RI work, areas of impact were identified. For each area, the soil surrounding the area was excavated and sidewall and bottom samples collected, which did not have further exceedances.
- Soil from under the building has been excavated and disposed at Chaffee, New York.
- PCBs were identified within the concrete floor at various locations, specifically in the southwestern corner of the site. The concrete was removed and disposed at Waste Management facility in Chaffee, New York. Confirmatory samples were collected from adjoining concrete floor, in which PCBs were below RRUSCO.

Following is summary of soil amounts that have been disposed at the site as part of IRM work.

Profile Number	General Location	General Description	Total Amount	Disposal Facility
404490AL	Courtyard	Soil – ACM and over 50 ppm PCBs	119 tons	Waste Management Emelle, AL
404490AL	Courtyard	Soil – over 50 ppm PCBs	291 tons	Waste Management Emelle, AL
117978NY	Courtyard	Soil – ACM; non-hazardous	45 tons	Waste Management Chaffee, NY
118129NY	Interior/Courtyard	Concrete and Brick Pavers	1,227 tons	Waste Management Chaffee, NY
118169NY	Interior	Soil from Under Building – non-hazardous	444 tons	Waste Management Chaffee, NY
118170NY	Courtyard	Soil – non-hazardous	721 tons	Waste Management Chaffee, NY
118194NY	Courtyard	Soil – UST Excavation, non-hazardous	96 tons	Waste Management Chaffee, NY
118211NY	Parking Lot	Soil – non-hazardous; treated	1,678 tons	Waste Management Chaffee, NY
118289NY	Parking Lot	Soil – non-hazardous	531 tons	Waste Management Chaffee, NY

2.4 Remedial Action Objectives

Based on the IRM work completed and anticipated laboratory results, the DD is anticipated to be no-further action needed.

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document are as follows.

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

- Prevent contact with, or inhalation of, volatiles from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

2.5 Remaining Contamination

2.5.1 Soil

Based on results of the IRM work completed, as well as remedial work completed in future sub-grade work areas needed during site development, no areas of soil are anticipated at concentrations above RRUSCO.

Remaining soil impacts included limited concentrations of metals, SVOCs and PCBs at concentrations above the applicable Unrestricted Use SCO (UUSCO) (Part 375-6) after completion of remedial actions.

The areas of remaining contamination above UUSCO but below RRUSCO are within the courtyard area, generally at depths of approximately 2 to 3 feet below the final ground surface. Clean fill material will be brought on-site. Further, site development activities within the courtyard area expected to include surface features including brick, grass areas, and concrete areas. Table 2 and Figure 7 identify remaining soil impacts in the courtyard area.

The parking lot area was excavated to a depth of approximately 3 to 4 feet below grade, into native clay soils. Clean fill material was brought on-site. Further site development within the parking lot includes an asphalt cover throughout the entire parking lot area. Table 3 and Figure 8 identify remaining soil impacts in the courtyard area above UUSCO but below RRUSCO.

The areas of remaining contamination above UUSCO but below the RRUSCO remain under the floor of the building, as well as PCBs above UUSCO but below RRUSCO on the concrete floor surfaces. In general, approximately 6-inches to 1-foot of granular fill appears to be under the floor throughout the building. Development plans include a new 4-inch thick concrete floor throughout the entire building. The new concrete prevents further contact with the underlying fill soils or concrete. Table 4 and Figure 9 identify remaining soil impacts under the floor slab, and Table 5 and Figure 10 identify remaining PCB impacts on the building existing floor slab.

2.5.2 Sediment

All site surfaces were removed/remediated during the IRM work, or located under a building floor. No sediment is present on site.

2.5.3 Groundwater

Four groundwater monitoring wells were installed during RI work. Table 6 summarizes the results of all samples of groundwater that exceed the SCGs and Figure 5 shows the monitoring well locations.

- Benzene was detected within on sample collected from the parking lot area (MW-3) at an initial concentration of 2.2 ppb. Additional VOCs were not detected above Class GA Criteria. MW-3 was resampled and benzene concentration decreased to 1.2 ppb. The resampled MW-3 results also identified acetone, 2-buantanone and TCE at concentrations slightly exceeding their respective Class GA Criteria

- SVOCs were detected in the groundwater samples at concentrations above Class GA Criteria. The groundwater samples were high in turbidity, which may result in the presence of SVOCs in the groundwater samples. MW-3 was resampled the turbidity was lower. Pentachlorophenol concentration decreased from 84 ppb to 3.0 ppb.

- Total metals were detected at concentrations above Class GA Criteria including naturally occurring metals iron, magnesium, manganese, and sodium. MW-3 was resampled and no metals were identified in the total or dissolved samples at concentrations exceeding their respective Class GA Criteria.

- PCBs were non-detected in the groundwater samples. Pesticide detections were below the Class GA Criteria.

Table 6 and Figure 11 summarize the results of all samples of groundwater that exceed the SCGs after completion of the remedial action.

2.5.4 Surface Water

The site is covered by building, asphalt and other non-pervious surfaces. No surface water is present on-site.

2.5.5 Soil Vapor

Soil vapor samples were collected on-site in September 2017. Vapor intrusion air samples were analyzed from five sub-slab locations, six ambient air locations throughout the building, and one outdoor location. Please note that one sub-slab location was destroyed during sample collection; therefore, a sample was not able to be analyzed. Vapor intrusion sample results are summarized in Tables 7 and 8.

Based on Decision Matrices summarized on Table 8, no further work was needed associated with samples SS-1/IA-1, SS-2/IA-2, SS-5/IA-5, or SS-6/IA-6. However, due to TCE concentrations in the sub-slab samples from SS-3 and SS-4, mitigation was required in these areas, located in the southwestern portion of the site.

TCE – TCE was detected in three of the sub-slab samples at concentrations ranging from 2.2 ug/m^3 at SS-2 to 3,500 ug/m^3 at SS-4. TCE was also detected at the indoor samples at concentrations ranging from 0.38 ug/m^3 at SS-2 to 1.7 ug/m^3 at SS-4. However, all indoor air sample results for TCE were below the NYSDOH AGV of 2 ug/m^3. The decision matrix from the NYSDOH guidance indicates that no further action or to identify source(s) for locations SS-1/IA-1, SS-2/IA-2,SS-5/IA-5 and SS-6/IA-6. However, based on the TCE concentration of 730 ug/m^3 and 3500 ug/m^3 in the subslab sample from SS-3 and SS-4, respectively, the decision matrix indicates these locations/areas would require mitigation.

cis-DCE – cis-DCE was detected in one of the sub-slab samples at concentration of 3.3 ug/m^3 at SS-4; however, cis-DCE was not detected in the indoor air sample. The decision matrix from the NYSDOH guidance indicates that no further action is needed in this scenario.

Carbon Tetrachloride - Carbon tetrachloride was detected several sub-slab and indoor air samples. Decision matrix for the majority of coupled samples was no further action. However, at SS-3/IA-3 decision matrix was to monitor.

1,1,1-TCA – 1,1,1-TCA was detected in one of the sub-slab samples at concentration of 62 ug/m^3 at SS-4; however, 1,1,1-TCA was not detected in the indoor air sample. The decision matrix from the NYSDOH guidance indicates that no further action is needed in this scenario.

Methylene Chloride – Methylene Chloride (MC) was detected in the sub-slab and indoor air samples generally ranging from 1.6 ug/m^3 to 3.9 ug/m^3. The decision matrix from the NYSDOH guidance indicates that no further action is needed in these scenarios. However, MC was detected at a concentration of 150 ug/m^3 at IA-4. The concurrent sub-slab sample, SS-4, detected MC at a concentration of 2.6 J (estimated value) ug/m^3. As MC was only encountered at the one location, the source of the MC is not known, but assumed to be associated with the on-going construction activities in that area, on the day of sampling.

PCE – PCE was detected in four sub-slab samples at concentrations ranging from 0.95 ug/m^3 at SS-2 to 340 ug/m^3 at SS-4. PCE was detected in indoor air samples at concentrations ranging from 0.75 ug/m^3 at SS-1 to 1.2 ug/m^3 at SS-3, which is below the NYSDOH AGV of 30 ug/m^3. The decision matrix from the NYSDOH guidance indicates that no further action is needed in these scenarios.

Vinyl Chloride – Vinyl Chloride was not detected in the sub-slab samples, however it was detected in one ambient indoor air sample IA-6 at a concentration of 0.66 ug/m^3. The concentration is therefore likely to be associated with indoor sources and not associated with sub-slab vapor intrusion. The source of the vinyl chloride is not known.

A subslab depressurization (SSD) system was installed in the southwestern portion of the site, as shown in Figure 12. The SSD was installed in response to NYSDOH decision matrices requirements. Soil analysis did not identify compounds at concentrations above RRUSCO. The objective of the system included the following elements:

- Reduce and maintain indoor air concentrations of below levels of the NYSDOH Soil Vapor Guidance Document Matrix A.

- Maintain a minimum of 0.25-inches of water column in the four SSD Systems measured in the exhaust piping manometer located 5-feet above the finished floor, so as to prevent vapors from entering the indoor air of the building, while also releasing the trapped vapors beneath the slab

- Demonstrate system effectiveness while maintaining for continuous operation of the SSDS, with no significant non-operating time.

The indoor air will be re-sampled during the 2017-2018 heating season from areas throughout the building, to continue to the document the effectiveness of the SSDS. A letter report will be provided summarizing the indoor air results. The results will also be included in the annual periodic review report (PRR) for the Property.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix E for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the site to Restricted Residential uses only. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are the BCP site limits as shown on Figure 2. These ICs are:

- The property may be used for : Restricted Residential use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Erie County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;

- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited;

3.3 Engineering Controls

3.3.1 Sub-slab Depressurization Systems

A sub-slab depressurization (SSD) system was installed in the southwestern portion of the site, in proximity to SS-3/AI-3 and SS-4/AI-4 sample locations. The system objectives and performance goals include the following elements:

- Reduce and maintain indoor air concentrations of below levels of the NYSDOH Soil Vapor Guidance Document Matrix A.
- Maintain a minimum of 0.25-inches of water column in the four SSD Systems measured in the exhaust piping manometer located 5-feet above the finished floor, so as to prevent vapors from entering the indoor air of the building, while also releasing the trapped vapor beneath the slab;
- Demonstrate system effectiveness while maintaining for continuous operation of the SSDS, with no significant non-operating time.

The SSD system was installed in November 2017, with a system start date of November 8, 2017. A figure identifying the SSD system locations within the building is included as Figure 12. The four (4) OBAR fans are individually monitored in real time by a Sensaphone SCADA 3000 Remote Terminal Unit (RTU). The SCADA 3000 monitors the SSDS 24 hours per day through receivers mounted on the building that receive continuous wireless signals from the transmitters mounted on each fan. Each fan also includes an interior mounted monometer installed at eye level to provide a visual indication to tenants that the system is operating. In the event that a fan loses power or vacuum an alarm will be initiated by the SCADA 3000 that notifies the administrator through a telephone call.

The piping network consists of 3 -inch diameter schedule 40 polyvinyl chloride (PVC) piping originating at four vacuum trench floor locations and connecting to 4”-inch diameter risers. The vacuum trench locations are depicted on Figure 12. The trench

locations were located near building column lines with the intent for the interior columns to provide a level of protection for the vertical PVC risers.

The horizontal pipes runs were installed with a minimum slope returning to the vacuum trenches of 1-inch per 20-feet. All 4 vacuum trenches include 2-inch ball valves for balancing the system, where required. Trenches were backfilled with washed #2 stone and covered with a new 4" concrete floor. Each vacuum trench were sealed with foam backer rod and polyurethane self-leveling caulk and allowed to sufficiently dry according to manufacturer specifications prior to activation of the system. The horizontal pipe under the roof where necessary supported with pipe hangers within two feet of couplings and a maximum hanger spacing of six feet per New York State Plumbing Code. Vertical 4" PVC piping (SCH.40) was raised to the underside of the roof and penetrate the roof diaphragm. A rain cap was mounted to the pipe on the roof to allow exhaust and control rain water.

Procedures for operating and maintaining the SSDS are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). As built drawings, signed and sealed by a professional engineer, are included in Appendix F – Operations and Maintenance Manual. Figure 12 shows the location of the ECs for the site.

3.3.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

3.3.2.1 - Sub-Slab Depressurization (SSD) System

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. In the event that monitoring data indicates that the SSD system may no longer be required, a proposal to discontinue the SSD system will be submitted by the remedial party to the NYSDEC and NYSDOH.

3.3.2.2 - Monitoring Wells associated with Monitored Natural Attenuation

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC with consultation with NYSDOH, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the site SCGs, or have become asymptotic at an acceptable level over an extended period. In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the system will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix G.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix H – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;

- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date; and

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Treatment System Monitoring and Sampling

4.3.1 Sub-slab Depressurization System Monitoring

Monitoring of the SSD system will be performed on a routine basis, as identified in Table 4.3-1 SSD system and schedule (see below). Modification to the frequency or sampling requirements will require approval from the NYSDEC. A visual inspection of the complete system will be conducted during each monitoring event. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSD system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. SSD system components to be monitored include, but are not limited to, the components included in Table 4.3-1 below.

Table 4.3-1 – Sub-Slab Depressurization System and Schedule

Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
Vacuum blower	Flow Rate	5 – 10 GPM	Continuous
General system piping	Piping condition	-	yearly

Maintenance and inspected information is provided in the Operations and Maintenance Plan included in Appendix F. If any equipment readings are not within their specified operation range, any equipment is observed to be malfunctioning or the system is not performing within specifications; maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.3.2 Sub-Slab Depressurization System Sampling

The SSD system was installed in November 2018. However, due to site construction activities, the new flooring of the building was not completed to allow for SSD system sampling. The new floor system includes a 10 milliliter polyethylene sheeting vapor barrier, overlain by 1 to 3 inches of washed 1-inch gravel, covered with a new 4-inch concrete slab, as shown on Figure 13. The new floor system will be completed throughout the entire building.

Indoor air samples shall be collected from the site indoor air on a routine basis to assess effectiveness of SSD system. Sampling locations, required analytical parameters and schedule are provided in Table 4.3-2 – System Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 4.3-2 – Sub-Slab Depressurization System Sampling Requirements and Schedule

Sampling Location	Analytical Parameters	Schedule
	VOC (EPA Method TO-15)	
IA-1	X	Yearly, minimum 3 years
IA-2	X	Yearly, minimum 3 years
IA-3	X	Yearly, minimum 3 years
IA-4	X	Yearly, minimum 3 years
IA-5	X	Yearly, minimum 3 years
IA-6	X	Yearly, minimum 3 years

Detailed sample collection and analytical procedures and protocols are provided in Appendix G– Quality Assurance Project Plan. In general, the following sampling will be done.

Building Survey
An inspection of the specific sampling areas and product inventory will be conducted to assess the current conditions and determine the likelihood of existing chemicals of concern that may be present that would influence the vapor test results. A PID will be used to monitor indoor air and scan vapors of individual containers that may be present.

Site Preparation
In accordance with NYSDOH recommendations, the HVAC system will be activated.

Ambient Indoor Air
An ambient indoor air sample will be collected in similar locations to IA-1 to IA-6 locations, as shown on Figure 12. The sample collection canister will be placed approximately 3 to 4 feet above the slab floor. Samples were collected over an 8-hour period of time. Each sample will be analyzed for VOCs via TO-15 methodology.

Ambient Outdoor Air
One ambient outdoor sample will be collected at an upwind location from approximately 4 to 5 feet above the ground surface. A sample will be collected over an 8-hour collection period. The sample will be analyzed for VOCs via TO-15 methodology

4.4 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the groundwater on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table 4.4-1 – Post Remediation System Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 4.4-1 – Post Remediation Sampling Requirements and Schedule

Sampling Location	Analytical Parameters	Schedule
	VOCs (EPA Method 8260)	
Monitoring Well #3	X	Semi-Annually for one year; then Annually

Detailed sample collection and analytical procedures and protocols are provided in Appendix G – Quality Assurance Project Plan. Prior to sample collection, static groundwater level will be measured at each of the monitoring wells. The well will be purged and field measurements of pH, specific conductivity, temperature and turbidity will be recorded and monitored for stabilization prior to sampling. Purging is considered complete when pH, specific conductivity, and temperature stabilized. Groundwater samples will be collected using low flow sampling techniques.

4.4.1 Groundwater Sampling

Groundwater monitoring will be performed at MW-3 on a semi-annually for one year, then yearly after. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 4.4-2 summarizes the wells identification number, as well as the location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring MW-3 is sampled to evaluate the VOC concentrations.

Table 4.4-2 – Monitoring Well Construction Details

Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-3	Parking Lott	42.9430° N, 78.8845° W	2	103.94	NA	90.87	80.87

Ground surface elevation has changed after remedial work and parking lot construction. Monitoring well construction logs are included in Appendix D of this document.

If biofouling or silt accumulation occurs in MW-3, the well will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced, if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.4.2 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix H - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for MW-3.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

This Operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the SSD system;
- Will be updated periodically to reflect changes in site conditions or the manner in which the SSD system is operated and maintained.

Further detail regarding the Operation and Maintenance of the SSD system is provided in Appendix F - Operation and Maintenance Manual. A copy of this Operation and Maintenance Manual, along with the complete SMP, is to be maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

5.2 Operation and Maintenance of Sub-Slab Depressurization System

The following sections provide a description of the operations and maintenance of the SSD system. As-built drawings for the SSD system are provided in Appendix F - Operations and Maintenance Manual.

5.2.1 System Start-Up and Testing

Pre start-up inspection – Assure that the on/off switch for exhaust fan operation is in the "off" position.

Pre start-up system texts – leak detection – Operators of unit are instructed to use a spray bottle of water with dish soap to spray around areas where seals may exist in order to visually inspect systems and determine if a leak is present in the system.

Warning device – An alarm will emit noise and a pilot light will illuminate when system has malfunctioned or is need of service. In the event the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operations and Maintenance Plan include as Appendix F.

The system testing described above will be conducted if, in the course of the SSD system lifetime, the system goes down or significant changes are made to the system and the system must be restarted.

5.2.2 Routine System Operation and Maintenance

Troubleshooting guide

- Ensure that, if the system fails to operate, that the on/off switch is in the "on" position.
- In the event of a system failure or malfunction, operators are instructed to inspect to see if the warning pilot light has been illuminated, and listen for a perceptible alarm.
- If warning indicators indicate trouble shooting is necessary, operators are instructed to use a spray bottle filled with water and dish soap in order to determine if a leak is present in the seals of the system by spraying the soapy water on the seals. If bubbles appear around the seals, there is a leak in the seals in the system.
- If there are no signs of leaks in the system seals, operators are instructed to replace fan units with new fan units.

The SSD system has a warning device to indicate that the system is not operating property. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operations and Maintenance Plan in Appendix F. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

Operating schedule – The system should be operating at all times, 24 hours a day, indefinitely.

Inspection schedule:

Remedial System Component	**Monitoring Parameter**	**Operating Range**	**Monitoring Schedule**
Vacuum blower	Flow Rate	5-10 gpm	Continuous
General system piping	Piping condition	-	Yearly

Inspection:

- Ensure that, if the system fails to operate, that the on/off switch is in the "off" position.
- System Test – Leak Detection.
- Operators of unit are instructed to use a spray bottle of water with dish soap in it to spray around areas where seals may exist in order to visually inspect systems and determine if a leak is present.
- Routine maintenance activities and minimum schedules.

5.2.3 Non-Routine Operation and Maintenance

The SSD system has a warning devise to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operations and Maintenance Plan in Appendix F. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

5.2.4 System Monitoring Devices and Alarms

The system is equipped with an alarm system that will alert operators of system failure. This includes an audible alarm and a pilot light that will emit light in the event of a system failure.

The SSD system has a warning devices to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

This section provides a summary of site information. A vulnerability assessment will not be conducted for the site due to the following:

- The subject site is located within the City of Buffalo which has a municipal-wide prohibition on use of groundwater.
- No flood plains or wetlands are located within over ¼ mile of the subject site.
- The site has limited open air areas, which include the courtyard and parking lot areas. Both areas will be developed with new surfaces and will include new on-site drainage structures, which will be connected to the municipal storm sewer system. Due to new drainage structures, no areas of flooding are expected.
- All surfaces on the site will be developed and finished, no areas of erosion are anticipated.
- The site is not in a high wind area. Courtyard is surrounded by the building and therefore protected from wind. The parking lot area will be finished with asphalt cover.
- The site cleanup goal is Restricted Residential and will not have a remedial system.

7.0 REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix H. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 7.1 and summarized in the Periodic Review Report.

Table 7.1: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Inspection Report	Annually
Periodic Review Report	Annually, or as otherwise determined by the Department

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS^{TM} database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually, as appropriate to the Department or at another frequency as may be required by the Department. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix A -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.

- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
  - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.
  - The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the site, I certify that all of the following statements are true:*

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*

- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid;*
- *The assumptions made in the qualitative exposure assessment remain valid.*

- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Rocco Termini,, of R&M Leasing LLC, am certifying as Owner for the site."

In addition, every five years the following certification will be added:

- The assumption made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists,

no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

8.0 REFERENCES

Final Remedial Investigation – Interim Remedial Measures – Alternative Analysis Report; Brownfield Cleanup Program for Pierce Arrow Business Center, 155-157 Chandler, Buffalo, New York, 14207, BCP #C915312, prepared for R&M Leasing LLC by Hazard Evaluations, Inc. and Schenne & Associates, dated December 5, 2017.

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

TABLES

Table 1
Groundwater Monitoring Well Data
155-157 Chandler Street Buffalo, NY

			7/20/2017		7/26/2017		8/30/2017		10/6/2017	
Location	**Well Depth (feet)**	**Top of Casing Elevation**	**Depth to Water (feet)**	**Groundwater Elevation**	**Depth to Water (feet)**	**Groundwater Elevation**	**Depth to Water (feet)**	**Groundwater Elevation**	**Depth to Water (feet)**	**Groundwater Elevation**
SB121/MW-1	20.20	98.89	16.05	82.84	9.30	89.59	Not Measured		1.55	97.34
SB125/MW-2	15.25	98.93	9.10	89.83	6.90	92.03			2.60	96.33
SB126/MW-3	23.07	103.94	21.97	81.97	21.30	82.64			8.97	94.97
SB128/MW-4	15.20	99.22	6.45	92.77	3.35	95.87			2.52	96.70
SB131/MW-5	20.30	99.30	Not Installed				14.95	84.35	2.20	97.10

Notes: Depths measured to top of well casing.

Table 2
Courtyard Unrestricted Use SCO Exceedances
155 Chandler Street, Buffalo, NY

Parameter	UUSCO	Residential USCO	Restricted Residential USCO	CY-CS-2A	Ex-UST-East Wall	CY-North Pit-Ex Sidewalls	CY-CS-1	CY-CS-2-2	CY-CS-2 Sidewall	CY-CS-3	CY-CS-3 Sidewall	CY-CS-5	CY-CS-8	CY-CS-14	CY-CS-15
Alpha Job Number				L1734168	L1728765	L1728765	L1730110	L1734168	L1730110	L1730110	L1730110	L1730110	L1730110	L1730110	L1730110
Sampling Date				09/27/17	08/18/17	08/18/17	08/25/17	09/27/17	08/25/17	08/25/17	08/25/17	08/25/17	08/25/17	08/25/17	08/25/17
Volatiles 8260C Analysis (ug/kg)															
cis-1,2-Dichloroethene	250	59,000	100,000	NT	ND	0.70 J	960 J	NT	2.4	NT	ND	NT	42	NT	0.52 J
Trichloroethene	470	10,000	21,000	NT	2.3	1.5	1,100 J	NT	50	NT	0.74 J	NT	1.8	NT	1.5
Semivolatile 8270D Analysis (ug/kg)															
No semi-volatile organic compounds detected at concentrations above unrestricted use soil cleanup objectives															
Metals Analysis (mg/kg)															
Copper	50	270	270	NT	17.8	Area re-excavated	53 J	NT	25	NT	25.9	NT	23.4	NT	15.2
Mercury (total)	0.18	0.81	0.81	NT	0.42 J		0.05 J	NT	0.22	NT	ND	NT	ND	NT	0.02 J
Nickel	30	140	310	NT	16.9		30.3 J	NT	29.8	NT	31.4	NT	30.8 J	NT	30.3
PCB Analysis (ug/kg)															
Aroclor 1248	100	1,000	1,000	ND	NT	ND	ND	ND	ND	ND	ND	170 J	ND	64.7 J	ND
Aroclor 1260	100	1,000	1,000	29.2 J	NT	261 J	39.1	222	28.8 J	118	8.88 J	504	4.24 J	76	ND
PCBs, total	100	1,000	1,000	174 J	NT	342 J	70.4	222	60.9	118	8.88	674	4.24	141	ND
Pesticides Analysis (ug/kg)															
No pesticides/herbicides detected at concentrations above unrestricted use soil cleanup objectives															

Notes:

1. **Only compounds and samples presented where analytical results exceeded Unrestricted Use Soil Cleanup Objectives (UUSCO) are presented on table**
2. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples at concentrations above UUSCO are presented in this table. Refer to RI-IRM-AAR report for sample locations and full analytical report.
3. ug/kg = parts per billion; mg/kg = parts per million.
4. ND = not detected; NT = not tested; NV = no value.
5. Analytical results compared to NYSDEC Part 375-6; Remedial Program Soil Cleanup Objectives, Table 375-(a) Unrestricted Use Soil Cleanup Objective; and Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.
6. J = Estimated value.
7. Shading indicates:
   - exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
   - exceeds RUSCO - Residential Use Soil Cleanup Objective
   - exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

Table 3
Parking Lot Unrestricted Use SCO Exceedances
157 Chandler Street, Buffalo, NY

Parameter	UUSCO	Residential USCO	Restricted Residential USCO	PL-CS-2-Bottom	PL-CS-2-Sidewall	PL-CS-3-Bottom	PL-CS-4-Bottom	PL-CS-5-Sidewall	PL-CS-6-Bottom	PL-CS-6-Sidewall-1	PL-CS-6-Sidewall-2	PL-CS-8-Bottom	PL-CS-8-Sidewall	PL-CS-10-Bottom	PL-CS-11-Bottom	PL-CS-12-Bottom	PL-CS-12-Sidewall	PL-CS-13-Bottom	PL-CS-13-Sidewall	PL-CS-15-Bottom	PL-CS-15-Sidewall	PL-CS-16-Bottom
Alpha Job Number				L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734877	L1734168	L1734168	L1734168	L1734168	L1734168
Sampling Date				09/29/17	09/29/17	09/29/17	09/29/17	09/29/17	09/29/17	09/29/17	09/29/17	09/29/17	09/29/17	09/28/17	09/28/17	09/29/17	09/29/17	09/25/17	09/25/17	09/26/17	09/26/17	09/26/17
Volatiles 8260C Analysis (ug/kg)																						
Acetone	50	100,000	100,000	62	ND	66	74	ND	92	53	ND	34	ND	100	52	88	ND	ND	ND	56	ND	55
Semivolatile 8270D Analysis (ug/kg)																						
No semi-volatile organic compounds detected at concentrations above unrestricted use soil cleanup objectives																						
Metals Analysis (mg/kg)																						
Cadmium	2.5	2.5	4.3	1.00	1.08	0.847 J	0.800 J	1.46	0.814 J	0.859 J	2.54	0.796 J	0.810 J	0.947 J	0.739 J	0.738 J	0.665 J	1.26	1.6	1.06	1.17	1.14
Chromium, total	30	36	180	25.4	30.6	31.7	28.0	23.1	25.0	24.4	17.8	23.6	29.7	33	24.6	22.3	18.3	25	18.3	20.3	18.4	20.6
Copper	50	270	270	24.5	16.9	20.8	24.1	30.6	15.7	21.1	34.8	16.2	20.5	21.8	18.8	14.0	7.42	21.1	33.6	8.68	54.4 J	8.11
Lead	63	400	400	15.0	10.6	12.4	10.6	147	21.4	34.5	78.8	11.0	79.5	16.2	18.0	18.4	74.4 J	10.1	27.2	10.7	63.1 J	12.1
Nickel	30	140	310	29.7	23.5	33.9	28.7	40.6	25.0	28.6	30.5	32.6	32.3	26.7	30.7	21.2	14.1	30.8	16.8	14.8	21.2	14.5
Zinc	109	2,200	10,000	85.0	63.6	87.9	88.5	71.6	71.0	66.5	1,760	61.2	111	65.5	99.6	59.6	62.0	69.8	480	47.8	106 J	46.7
PCB Analysis (ug/kg)																						
No PCBs detected at concentrations above unrestricted use soil cleanup objectives																						
Pesticides Analysis (ug/kg)																						
No Pestices/herbicides detected at concentrations above unrestricted use soil cleanup objectives																						

Notes:

1. Only compounds and samples presented where analytical results exceeded Unrestricted Use Soil Cleanup Objectives (UUSCO) are presented on table

2. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples at concentrations above UUSCO are presented in this table.
Refer to RI-IRM-AAR report for sample locations and full analytical report.

3. ug/kg = parts per billion; mg/kg = parts per million.

4. ND = not detected; NT = not tested; NV = no value.

5. Analytical results compared to NYSDEC Part 375-6; Remedial Program Soil Cleanup Objectives,
Table 375-(a) Unrestricted Use Soil Cleanup Objective; and Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

6. J = Estimated value.

7. Shading indicates:
exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
exceeds RUSCO - Residential Use Soil Cleanup Objective
exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

Table 4
Unrestricted Use SCO Exceedances under Building Slab
155 Chandler Street, Buffalo, NY

Parameter	UUSCO	Residential USCO	Restricted Residential USCO	Interior Ex-1 East Wall	Interior Ex-1 West Wall	Interior Ex-1 North Wall	Interior Ex-1 South Wall 090717	WLT-003b Bottom	WLT-001 (6-10")	WLT-001 (10-14")	WLT-002 Southeast wall (0.5-2.5')	EB-ECC-SS-1
Alpha Job Number				L1728034	L1728034	L1728034	L1731834	L1733847	L1723390	L1723390	L1728332	L1735281
Sampling Date				08/10/17	08/10/17	08/10/17	09/07/17	09/21/17	07/10/17	07/10/17	08/10/17	10/02/17
Volatiles 8260C Analysis (ug/kg)												
No volatile organic compounds detected at concentrations above unrestricted use soil cleanup objectives												
Semivolatile 8270D Analysis (ug/kg)												
No semi-volatile organic compounds detected at concentrations above unrestricted use soil cleanup objectives												
Metals Analysis (mg/kg)												
Copper	50	270	270	18.4 J	112	189	22.4	18.1 J	64.4	81.3	70	NT
Lead	63	400	400	11.9 J	91.3	50.5	8.88 J	11.5 J	172	34.2	38.2	NT
Mercury (total)	0.18	0.81	0.81	0.03 J	0.18	0.41	0.04 J	0.05 J	0.17	0.06 J	0.08 J	NT
Nickel	30	140	310	25.3	26.5	17.6	33.2 J	30.8 J	16.6	17.8	31	NT
Zinc	109	2,200	10,000	252	411	464	84.1 J	65.4 J	157	113	459	NT
PCB Analysis (ug/kg)												
Aroclor 1254	100	1,000	1,000	NT	NT	NT	NT	NT	ND	ND	NT	61.3
Aroclor 1260	100	1,000	1,000	NT	NT	NT	NT	NT	ND	ND	NT	98
PCBs, total	100	1,000	1,000	NT	NT	NT	NT	NT	ND	ND	NT	159
Pesticides Analysis (ug/kg)												
No pesticide/herbicide detected at concentrations above unrestricted use soil cleanup objectives												

Notes:

1. Only compounds and samples presented where analytical results exceeded Unrestricted Use Soil Cleanup Objectives (UUSCO) are presented on table

2. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples at concentrations above UUSCO are presented in this table.
Refer to RI-IRM-AAR report for sample locations and full analytical report.

3. ug/kg = parts per billion; mg/kg = parts per million.

4. ND = not detected; NT = not tested; NV = no value.

5. Analytical results compared to NYSDEC Part 375-6; Remedial Program Soil Cleanup Objectives,
Table 375-(a) Unrestricted Use Soil Cleanup Objective; and Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

6. J = Estimated value.

7. Shading indicates:
exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
exceeds RUSCO - Residential Use Soil Cleanup Objective
exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

Table 5
PCB Unrestricted Use SCO Exceedances - Concrete Slab
155 Chandler Street, Buffalo, NY

Parameter	UUSCO	Residential USCO	Restricted Residential USCO	Interior-SCC-001	EB-WCC-001	EB-NWC-001-NE	EB-NWC-001-W	EB-ECC-001-N	EB-SEC-001-N	WB-NWC-001	WB-NEC-001-N	WB-CWC-001-S	WB-CWC-001-W	WB-SWC-001-E 100617
Alpha Job Number				L1727779	L1730220	L1731834	L1731834	L1731834	L1731834	L1728334	L1733847	L1732935	L1732935	L1735281
Sampling Date				08/09/17	08/28/17	09/13/17	09/13/17	09/13/17	09/13/17	08/14/17	09/20/17	09/15/17	09/15/17	10/06/17
PCB Analysis (ug/kg)														
Aroclor 1254	100	1,000	1,000	ND	171	247	ND	ND	212	278	117 J	661	473 J	577
Aroclor 1260	100	1,000	1,000	161 P	161	500 J	298 J	228	417 J	274 P	ND	294	293 J	370
PCBs, total	100	1,000	1,000	161	332	747	298	228	629	552	117	955	766	947

Notes:

1. Only compounds and samples presented where analytical results exceeded Unrestricted Use Soil Cleanup Objectives (UUSCO) are presented on table

2. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples at concentrations above UUSCO are presented in this table.
   Refer to RI-IRM-AAR report for sample locations and full analytical report.
3. ug/kg = parts per billion; mg/kg = parts per million.
4. ND = not detected; NT = not tested; NV = no value.
5. Analytical results compared to NYSDEC Part 375-6; Remedial Program Soil Cleanup Objectives,
   Table 375-(a) Unrestricted Use Soil Cleanup Objective; and Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.
6. J = Estimated value.
7. Shading indicates: exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
   exceeds RUSCO - Residential Use Soil Cleanup Objective
   exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

Table 6
Groundwater Monitoring Well Exceedances
155 Chandler Street, Buffalo, NY

Parameter	GA	SB121 / MW-1	SB125 / MW-2	SB126 / MW-3	SB126 / MW-3	SB128 / MW-4
Alpha Job Number		L1726253	L1726253	L1726029	L1738023	L1726029
Sampling Date		07/28/17	07/28/17	07/27/17	10/19/17	07/27/17
Volatiles 8260C Analysis (ug/L)						
Acetone	**50**	18 J	ND	24 J	88 J	19 J
2-butanone	**50**	ND	ND	7.5	130 J	2.6 J
Benzene	**1**	ND	ND	2.2	1.2	ND
Trichloroethene	**5**	ND	ND	ND	11 J	0.23 J
Semivolatile 8270D Analysis (ug/L)						
Benz(a)anthracene	**0.002**	2.4	ND	ND	ND	2.7
Benzo(b)fluoranthene	**0.002**	4.6	ND	0.15	ND	4.2
Benzo(k)fluoranthene	**0.002**	1.8	ND	0.05 J	ND	1.5
Bis(2-ethylhexyl)phthalate	**5**	5.2	ND	6.9	ND	2.4 J
Chrysene	**0.002**	3	ND	0.09 J	ND	3
Indeno(1,2,3-cd)pyrene	**0.002**	2.6	ND	0.1 J	ND	2.1
Pentachlorophenol	**2**	ND	ND	84 E	3.0	ND
Metals Analysis (ug/L) - total metal						
Iron	**300**	958	1,960	4,840	19.7	2,370 J
Magnesium	**35,000**	561,000	842,000	971,000	1,410	90,000 J
Manganese	**300**	1,011	1,497	1,634	2.037	639.8
Sodium	**20,000**	285,000	216,000	300,000	334	136,000
Metals Analysis (ug/L) - dissolved metals						
Aluminum	**NV**	NT	NT	NT	0.00371 J	NT
Antimony	**3**	NT	NT	NT	0.00254 J	NT
Arsenic	**25**	NT	NT	NT	0.01081 J	NT
Barium	**1,000**	NT	NT	NT	0.01768 J	NT
Calcium	**NV**	NT	NT	NT	492 J	NT
Chromium	**50**	NT	NT	NT	0.00046 J	NT
Cobalt	**NV**	NT	NT	NT	0.0048 J	NT
Iron	**300**	NT	NT	NT	10.7 J	NT
Magnesium	**35,000**	NT	NT	NT	1500 J	NT
Manganese	**300**	NT	NT	NT	0.8835 J	NT
Nickel	**100**	NT	NT	NT	0.01051 J	NT
Potassium	**NV**	NT	NT	NT	17.6 J	NT
Sodium	**20,000**	NT	NT	NT	348 J	NT
Zinc	**2,000**	NT	NT	NT	0.01086 J	NT
PCB Analysis (ug/L)						
No PCBs detected above Class GA Criteria						
Pesticides Analysis (ug/L)						
No Pesticides/Herbicides detected above Class GA Criteria						

Notes:

1. Only compounds and samples presented where analytical results exceeded Class GA Criteria are presented on table

1. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples are presented in this table. Refer to Appendix for the full analytical report.
2. ug/L = parts per billion; mg/L = parts per million.
3. ND = not detected; NT = not tested; NV = no value.
4. Analytical results compared to NYSDEC Ambient Water Quality Standards and Guidance Values, derived from Article 17 of the Environmental Conservation Law and 6 NYCRR Parts 700-706, Water Quality Regulations.
6. E = Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
7. J = Estimated value. The target analyte is below the reporting limit (RL), but above the method dectection limit (MDL).
8. P = The RPD between the results for the two columns exceeds the method-specified criteria.
9. Shading indicates: exceeds New York Groundwater Standards

Table 7
Soil Vapor Intrusion Analytical Testing Results
155 Chandler Street, Buffalo, NY
September 2017

Parameter	Guidance Values- Indoor Air: Table C2 Commercial Indoor Air Background (90%)	Guidance Values- Indoor Air: NYSDOH Air Guideline Value	SS-1 Sub-Slab	IA-1 Indoor Air	SS-2 Sub-Slab	IA-2 Indoor Air	SS-3 Sub-Slab	IA-3 Indoor Air	SS-4 Sub-Slab	IA-4 Indoor Air	SS-5 Sub-Slab	IA-5 Indoor Air	SS-6 Sub-Slab	IA-6 Indoor Air	OA001 Outdoor Air	Table C2 Outdoor Air Guidance Values
1,1,1-Trichloroethane	20.6		ND	ND	ND	ND	ND	ND	62	ND	Sample destroyed due to construction activity	ND	ND	ND	ND	2.6
1,2,4-Trichlorobenzene	<6.8		ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	0.98	<6.4
1,2,4-Trimethylbenzene	9.5		8.4 J	0.88	5.8 J	0.98	47	1.5	7.1	5.9		4.7	5.6 J	75	ND	5.8
1,3,5-Trimethylbenzene	3.7		1.9 J	ND	3.0 J	ND	12	0.54 J	3.2 J	1.9		1.2	1.7 J	31	ND	2.7
2,2,4-trimethylpentane	NV		ND	ND	ND	ND	ND	ND	ND	ND		3.1	ND	ND	0.98	NV
4-ethyltoluene	3.6		2.1 J	ND	3.2 J	ND	13	ND	2.9 J	1.4		1	1.9 J	34	ND	3.0
Acetone	98.9		52	28	230	33	380	49	180	150		40	390	290	30	43.7
Benzene	9.4		4.9	1.1	18	0.89	23	2.9	80	6.3		9.3	110	6.1	1.1	6.6
Bromomethane	<1.7		ND	ND	ND	ND	ND	ND	ND	ND		ND	1.2 J	ND	ND	<1.6
Carbon disulfide	4.2		0.81	ND	4.9	ND	9.0	ND	6.7	ND		ND	25	ND	ND	3.7
Carbon tetrachloride	<1.3		2.0	0.63	ND	0.69	41	0.63	23	0.57		ND	1.4 J	0.63	0.63	0.7
Chloroethane	<1.1		ND	ND	ND	ND	ND	ND	ND	ND		ND	1.1 J	ND	ND	<1.2
Chloroform	1.1		2.5	ND	0.78	ND	35	ND	28	ND		ND	3.5 J	ND	ND	0.6
Chloromethane	3.7		ND	1.3	0.33	1.3	ND	1.4	ND	1.8		1.3	5.9	1.9	1.7	3.7
cis-1,2-Dichloroethene	<1.9		ND	ND	ND	ND	ND	ND	3.3 J	ND		ND	ND	ND	ND	<1.8
Cyclohexane	NV		5.9	ND	39	ND	48	0.52	210	1.4		1.9	610	1.9	0.55	NV
Ethylbenzene	5.7		5.0 J	1.3	7.7 J	2.8	34	2	9.8	2.8		2.3	8.9 J	2.3	1.3	3.5
Freon 11	NV		1.2	1.8	1.6	1.6	1.7	1.5	2.0 J	1.6		1.5	1.5 J	1.5	1.6	NV
Freon 113	NV		ND	ND	ND	ND	ND	ND	0.84 J	ND		ND	ND	ND	ND	NV
Freon 12	NV		2.5	3	2.7	2.9	2.7	2.7	3.0 J	2.6		2.7	2.5 J	2.6	2.7	NV
Heptane	NV		6.8	1.2	78	ND	75	1	410	2.9		3.7	690	3.9	0.98	NV
Hexane	NV		17	2.9	79	14	60	36	560	31		7.4	680	220	6.8	6.4
Isopropyl alcohol	NV		3.9	7.4	4.1	2.2	19	1.1	ND	13		1.9	ND	17	4.9	NV
m&p-Xylene	22.2		18.0 J	4.9	17	3.6	140	7.5	27	12		9.6	27	11	4.7	12.8
Methyl Ethyl Ketone	12		3	2.2	11	4.7	51	23	8.5	47		2.4	18	2	2.2	11.3
Methyl Isobutyl Ketone	NV		ND	0.53 J	ND	0.57 J	ND	ND	ND	ND		ND	ND	ND	ND	NV
Methylene chloride	10	60	2	3	2.9	2.2	2.4	1.6	2.6 J	150		2.5	2.4 J	3.9	1.8	6.1
o-Xylene	7.9		7.1 J	2	6.3	3.6	48	3	8.6	3.9		3.3	9.1 J	6.1	2	4.6
Styrene	1.9		0.51 J	ND	ND	ND	0.47 J	ND	0.77 J	0.81		0.89	ND	0.77	ND	1.3
Tetrachloroethylene	15.9	30	1.3 J	0.75	0.95 J	1	9.7 J	1.2	340	0.95		0.68	ND	0.81	ND	6.5
Tetrahydrofuran	NV		0.53	1.3	0.94	4.7	3.7	40	0.8 J	91		0.85	ND	0.71	1.1	NV
Toluene	43		35	6.2	31	6.3	170	12	110	15		22	110	31	3.9	33.7
trans-1,2-Dichloroethene	NV		ND	ND	ND	ND	ND	ND	2.6 J	ND		ND	ND	ND	ND	NV
Trichloroethene	4.2	2	ND	ND	2.2 J	0.38	730	0.27	3,500	1.7		ND	ND	0.64	ND	1.3
Vinyl chloride	<1.9		ND	ND	ND	ND	ND	ND	ND	ND		ND	0.66 J	ND	ND	<1.8

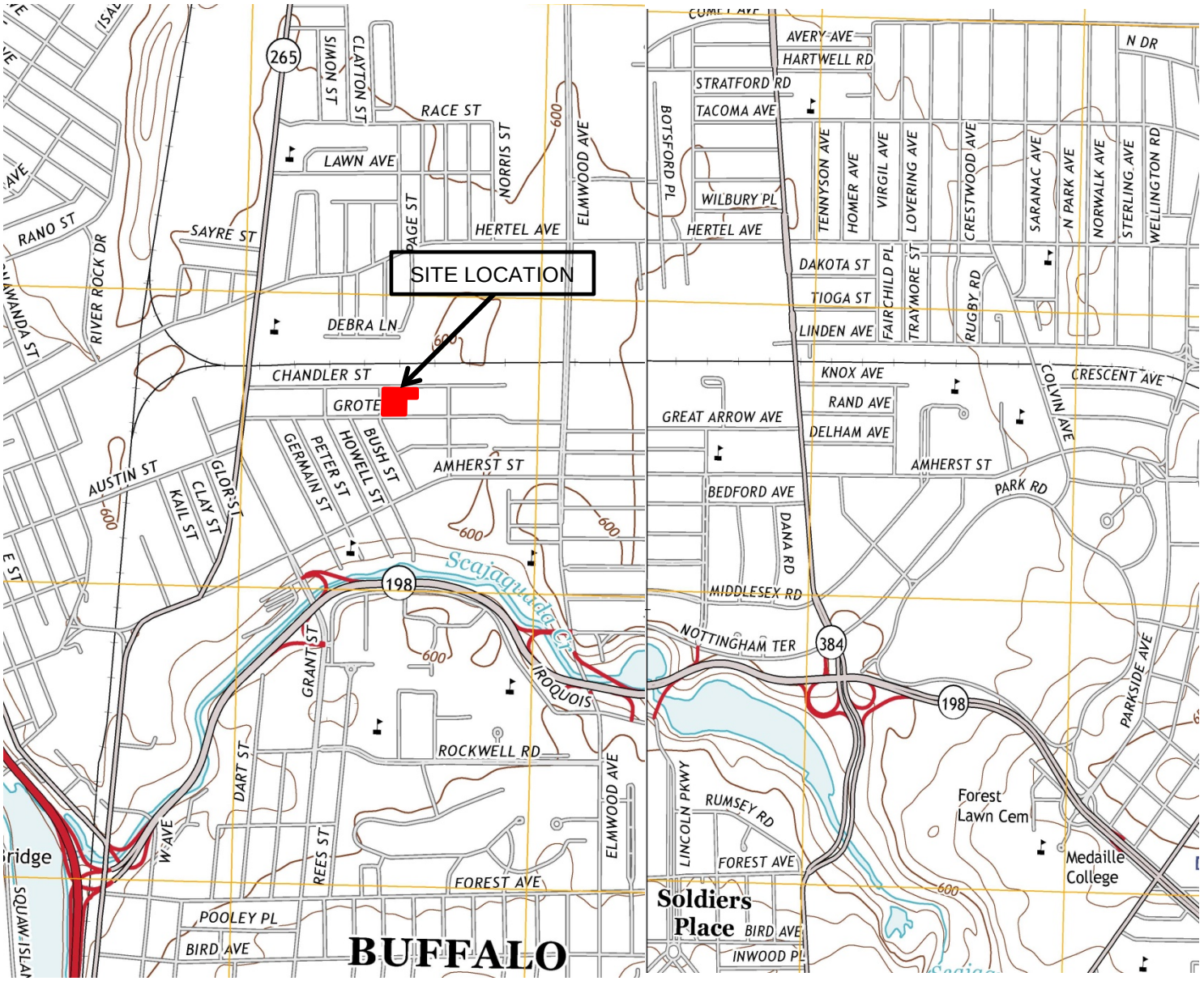
Notes:

1. Compounds detected in one or more samples included in this table. For a list of all compounds, refer to analytical report in Attachment C.
2. Analytical testing for VOCs via TO-15 completed by Centek Laboratories in Syracuse, New York.
3. Results present in ug/m^3 or microgram per cubic meter.
4. Samples were collected during a 24-hour sample duration.
5. 90th percentile values as presented in C2 (EPA 2001: Building assessment and survey evaluation (BASE) database) Appendix C, in the NYSDOH Guidance Manual, as indicated for Indoor and Outdoor air only.
6. Air Guidance Values from "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006, prepared by New York State Department of Health.
7. NYSDOH does not currently have standards, criteria or guidance values for concentrations in sub-slab vapor. The detection of VOCs in sub-slab vapor samples does not necessarily indicate soil vapor intrusion is occurring or action should be taken to address exposures.
8. Grey shaded values represent exceedance of table C2 guidance values; yellow shaded values represent exceedance of NYSDOH Air Guidance Values
9. Qualifiers: J = result is less than the reporting limit but greater or equal to the method detection limit and the concentration is an approximate value.
10. ND = Non Detect; NV = No Value

Table 8
Soil Vapor Intrusion Decision Matrices
155 Chandler Street, Buffalo, NY

Sample ID	Parameter	Sub-slab Vapor Concentrations (ug/m^3)	Indoor Air Concentration (ug/m^3)	Recommended Action
Matrix A Trichloroethene (TCE); cis-1,2-dichloroethene (cis-DCE); 1,1-dichloroethene (1,1-DCE); Carbon Tetrachloride				
SS-1/IA-1	TCE	ND	ND	No further action
	cis-DCE	ND	ND	No further action
	1,1-DCE	ND	ND	No further action
	Carbon Tetrachloride	2	0.63	No further action
SS-2/IA-2	TCE	2.2 J	0.38	No further action
	cis-DCE	ND	ND	No further action
	1,1-DCE	ND	ND	No further action
	Carbon Tetrachloride	ND	0.69	No further action
SS-3/IA-3	TCE	730	0.27	Mitigate
	cis-DCE	ND	ND	No further action
	1,1-DCE	ND	ND	No further action
	Carbon Tetrachloride	41	0.63	Monitor
SS-4/IA-4	TCE	3500	1.7	Mitigate
	cis-DCE	3.3 J	ND	No further action
	1,1-DCE	ND	ND	No further action
	Carbon Tetrachloride	23	0.57	Monitor
SS-5/IA-5	TCE	Sample destroyed	ND	No further action
	cis-DCE		ND	No further action
	1,1-DCE		ND	No further action
	Carbon Tetrachloride		ND	No further action
SS-6/IA-6	TCE	ND	0.64	No further action
	cis-DCE	ND	ND	No further action
	1,1-DCE	ND	ND	No further action
	Carbon Tetrachloride	1.4 J	0.63	No further action
Matrix B Methylene Chloride (MC); 1,1,1- Trichloroethane (1,1,1-TCA); Tetrachloroethylene (PCE)				
SS-1/IA-1	MC	2	3	No further action
	1,1,1-TCA	ND	ND	No further action
	PCE	1.3	0.75	No further action
SS-2/IA-2	MC	2.9	2.2	No further action
	1,1,1-TCA	ND	ND	No further action
	PCE	0.95	1.0	No further action
SS-3/IA-3	MC	2.4	1.6	No further action
	1,1,1-TCA	ND	ND	No further action
	PCE	9.7	1.2	No further action
SS-4/IA-4	MC	2.6 J	150	Identify source(s) and Resample or Mitigate
	1,1,1-TCA	62	ND	No further action
	PCE	340	0.95	No further action
SS-5/IA-5	MC	Sample destroyed	2.5	No further action
	1,1,1-TCA		ND	No further action
	PCE		0.68	No further action
SS-6/IA-6	MC	2.4 J	3.9	No further action
	1,1,1-TCA	ND	ND	No further action
	PCE	ND	0.81	No further action
Matrix C Vinyl Chloride (VC)				
SS-1/IA-1	VC	ND	ND	No further action
SS-2/IA-2	VC	ND	ND	No further action
SS-3/IA-3	VC	ND	ND	No further action
SS-4/IA-4	VC	ND	ND	No further action
SS-5/IA-5	VC	Sample destroyed	ND	No further action
SS-6/IA-6	VC	0.66J	ND	No further action

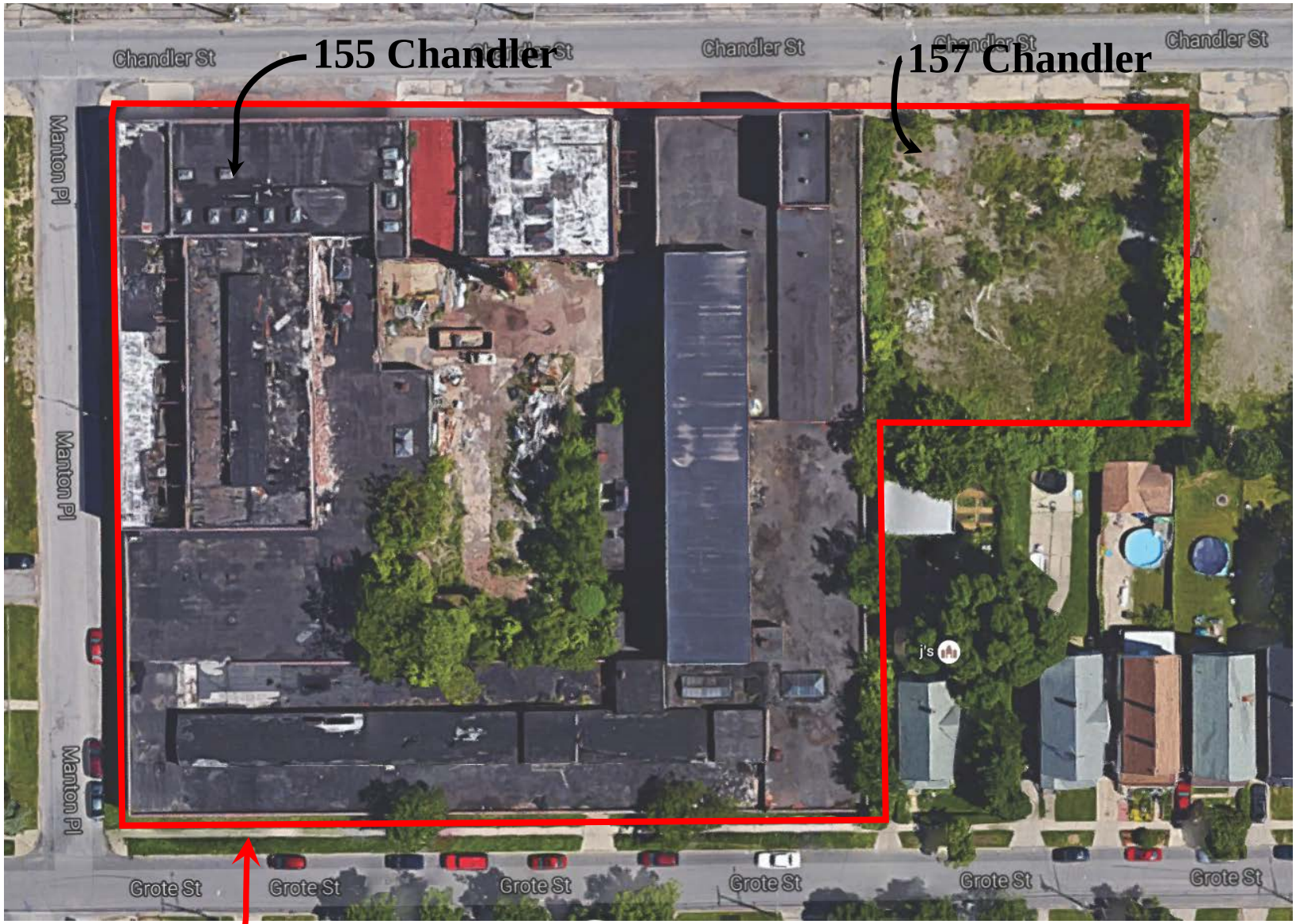
FIGURES



THIS DRAWING IS FOR ILLUSTRATIVE AND INFORMATIONAL PURPOSES ONLY
AND WAS ADAPTED FROM USGS, BUFFALO NE & NW, NEW YORK 2013 QUADRANGLE.

N

HAZARD EVALUATIONS, INC. *Phase I/II Audits – Site Investigations – Facility Inspections*		
SITE LOCATION MAP 155 and 157 CHANDLER STREET BUFFALO, NEW YORK		
R & M LEASING LLC BUFFALO, NEW YORK		
DRAWN BY: LSH	SCALE: NOT TO SCALE	PROJECT: e1601
CHECKED BY: EB	DATE: 11/17	FIGURE NO: 1



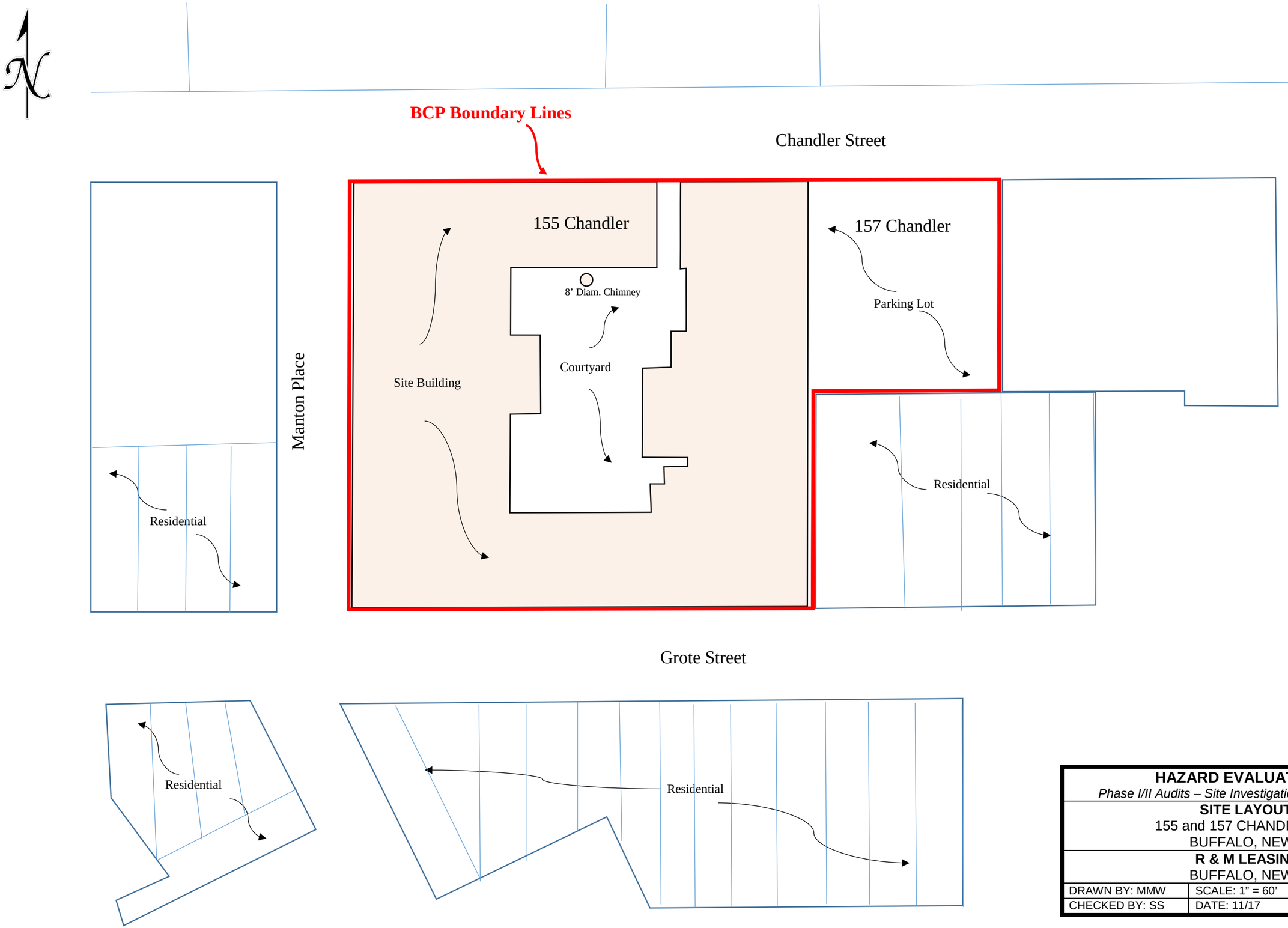
BCP Boundary Limits

N

HAZARD EVALUATIONS, INC. *Phase I/II Audits – Site Investigations – Facility Inspections*		
SITE BOUNDARY LIMITS 155 and 157 CHANDLER STREET BUFFALO, NEW YORK		
R & M LEASING LLC BUFFALO, NEW YORK		
DRAWN BY: LSH	SCALE: NOT TO SCALE	PROJECT: e1601
CHECKED BY: EB	DATE: 11/17	FIGURE NO: 2

Notes:
1 – Base map adapted from Erie County Department of Environment & Planning Office of GIS
2 – Boundaries of Site correspond with tax boundaries for SBL #77.84-1-4 (155 Chandler) and SBL #77.84-1-5 (157 Chandler)

HAZARD EVALUATIONS, INC. *Phase I/II Audits – Site Investigations – Facility Inspections*		
ERIE COUNTY TAX MAP 155 and 157 CHANDLER STREET BUFFALO, NEW YORK		
R & M LEASING LLC BUFFALO, NEW YORK		
DRAWN BY: MMW	SCALE: NOT TO SCALE	PROJECT: e1601
CHECKED BY: SS	DATE: 11/17	FIGURE NO: 3



HAZARD EVALUATIONS, INC.		
Phase I/II Audits – Site Investigations – Facility Inspections		
SITE LAYOUT MAP 155 and 157 CHANDLER STREET BUFFALO, NEW YORK		
R & M LEASING LLC BUFFALO, NEW YORK		
DRAWN BY: MMW	SCALE: 1” = 60’	PROJECT: e1601
CHECKED BY: SS	DATE: 11/17	FIGURE NO: 4

Legend

⊕ = Monitoring well location

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

MONITORING WELL LOCATION MAP
155 and 157 CHANDLER STREET
BUFFALO, NEW YORK

R & M LEASING LLC
BUFFALO, NEW YORK

DRAWN BY: MMW	SCALE: 1" = 60'	PROJECT: e1601
CHECKED BY:	DATE: 11/17	FIGURE NO: 5

CHANDLER ST (60' ROW)

MANTON PL (50' ROW)

GROTE ST (60' ROW)

SB128/MW-4
96.70
SB135
SS-5/IA-5
SB127
SS-6/IA-6
SB134
SB121/MW-1
OA-1
SS-1/IA-1
SB117
97
97.36
94.97
SB126/MW-3
95
SB129
SB123
SB122
SS-2/IA-2
SS-4/IA-4
SB132
SB124
SB133
97.10
SB131/MW-5
SB130
SS-3/IA-3
SB125/MW-2

Legend

- Monitoring well location
- Soil boring location
- Soil vapor sub-slab / Indoor & Outdoor air sample location

89.59 Groundwater Elevation on July 26, 2017

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

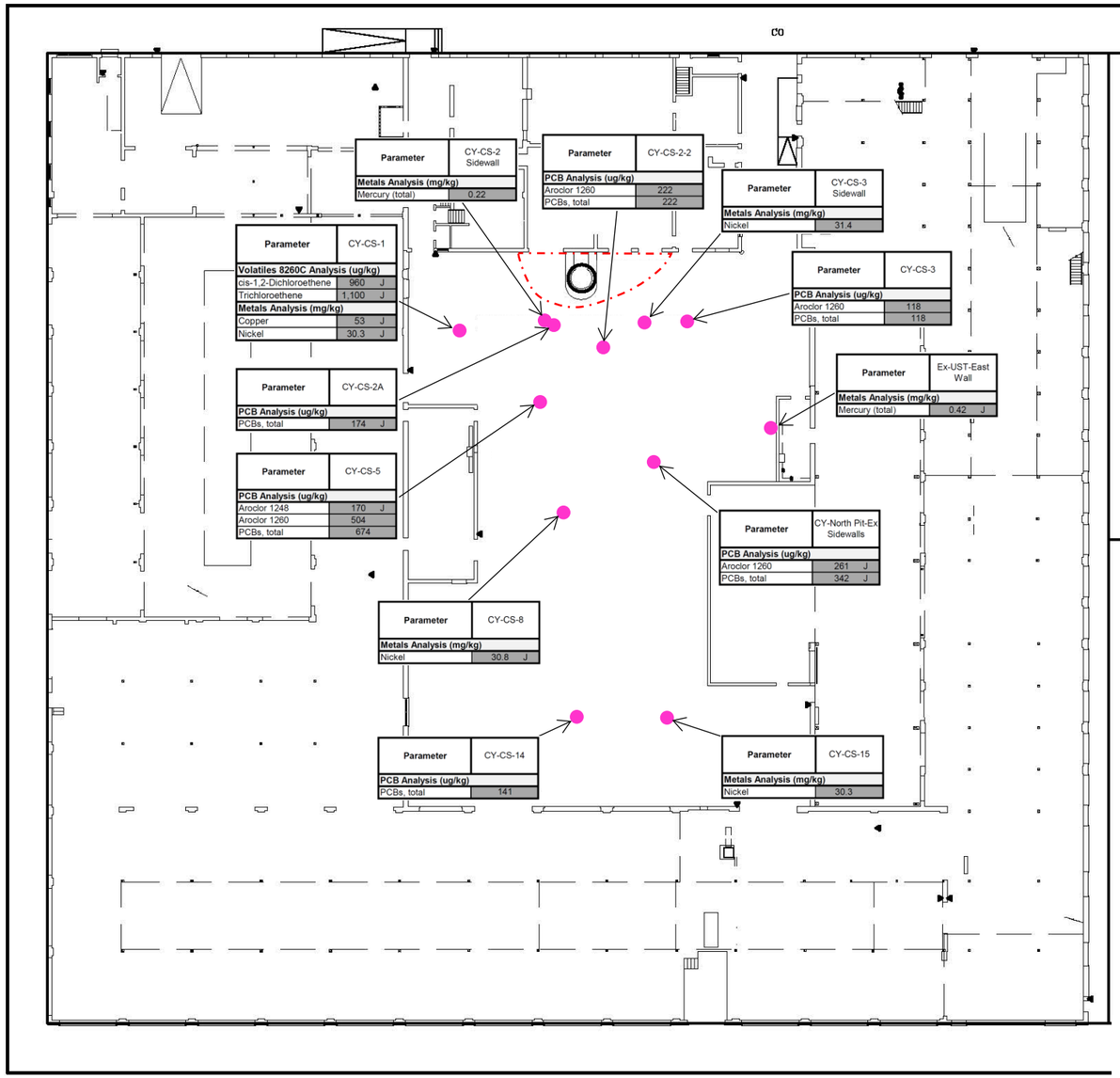
GROUNDWATER ISOPOTENTIAL MAP
OCTOBER 6, 2017
155 and 157 CHANDLER STREET
BUFFALO, NEW YORK

R & M LEASING LLC
BUFFALO, NEW YORK

DRAWN BY: LSH	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 6

CHANDLER ST (60' ROW)

MANTON PL (50' ROW)



GROTE ST (60' ROW)

Legend

- exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
- exceeds RUSCO - Residential Use Soil Cleanup Objective
- exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

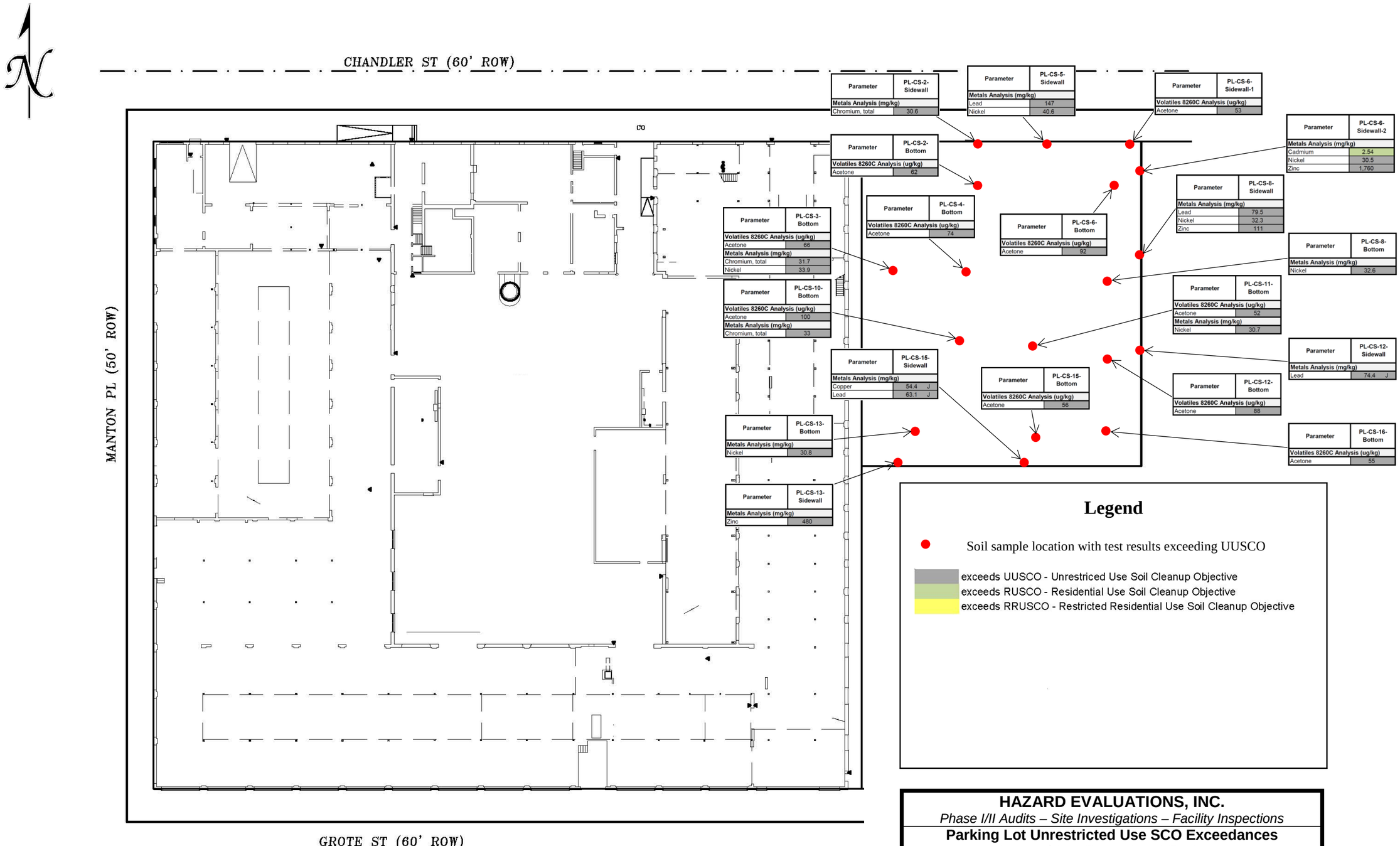
- Soil Sample location with test results exceeding UUSCO
- Concrete area surrounding chimney to remain in place due to chimney structural requirements

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

Courtyard Unrestricted Use SCO Exceedances
155 and 157 CHANDLER STREET
BUFFALO, NEW YORK

R & M LEASING LLC
BUFFALO, NEW YORK

DRAWN BY: SS	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 7



Legend

- Soil sample location with test results exceeding UUSCO
- exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
- exceeds RUSCO - Residential Use Soil Cleanup Objective
- exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

Parking Lot Unrestricted Use SCO Exceedances

155 and 157 CHANDLER STREET

BUFFALO, NEW YORK

R & M LEASING LLC

BUFFALO, NEW YORK

DRAWN BY: SS	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 8

CHANDLER ST (60' ROW)

MANTON PL (50' ROW)

GROTE ST (60' ROW)

SB-127

Parameter	WLT-001 (6-10")	WLT-001 (10-14")
Metals Analysis (mg/kg)		
Copper	64.4	81.3
Lead	172	34.2
Zinc	157	113

Parameter	EB-ECC-SS-1
PCB Analysis (ug/kg)	
PCBs, total	159

Parameter	WLT-002 Southeast wall (0.5-2.5')
Metals Analysis (mg/kg)	
Copper	70
Nickel	31
Zinc	459

Parameter	Interior Ex-1 North Wall
Metals Analysis (mg/kg)	
Copper	189
Mercury (total)	0.41
Zinc	464

Parameter	Interior Ex-1 West Wall
Metals Analysis (mg/kg)	
Copper	112
Lead	91.3
Zinc	411

Parameter	Interior Ex-1 East Wall
Metals Analysis (mg/kg)	
Zinc	252

Parameter	Interior Ex-1 South Wall 090717
Metals Analysis (mg/kg)	
Nickel	33.2 J

Parameter	WLT-003b Bottom
Nickel	30.8 J

Legend

Soil Sample location with test results exceeding UUSCO

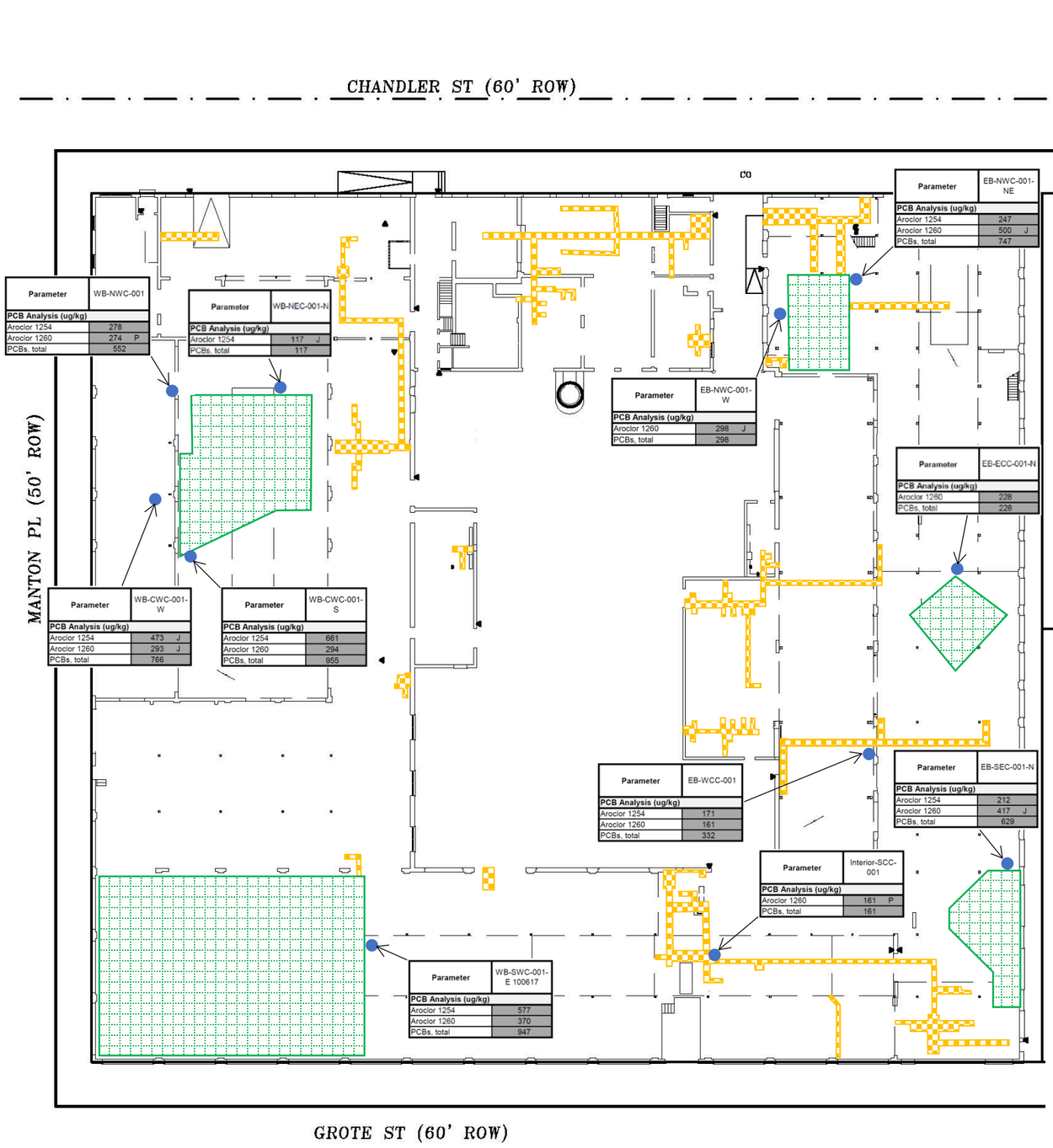
exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
exceeds RUSCO - Residential Use Soil Cleanup Objective
exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

Unrestricted Use SCO Exceedances under Building Slab
155 and 157 CHANDLER STREET
BUFFALO, NEW YORK

R & M LEASING LLC
BUFFALO, NEW YORK

DRAWN BY: SS	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 9



Legend

- PCB Exceedances above UUSCO on Building Floor Slab
- IRM concrete areas removed
- Plumbing trench

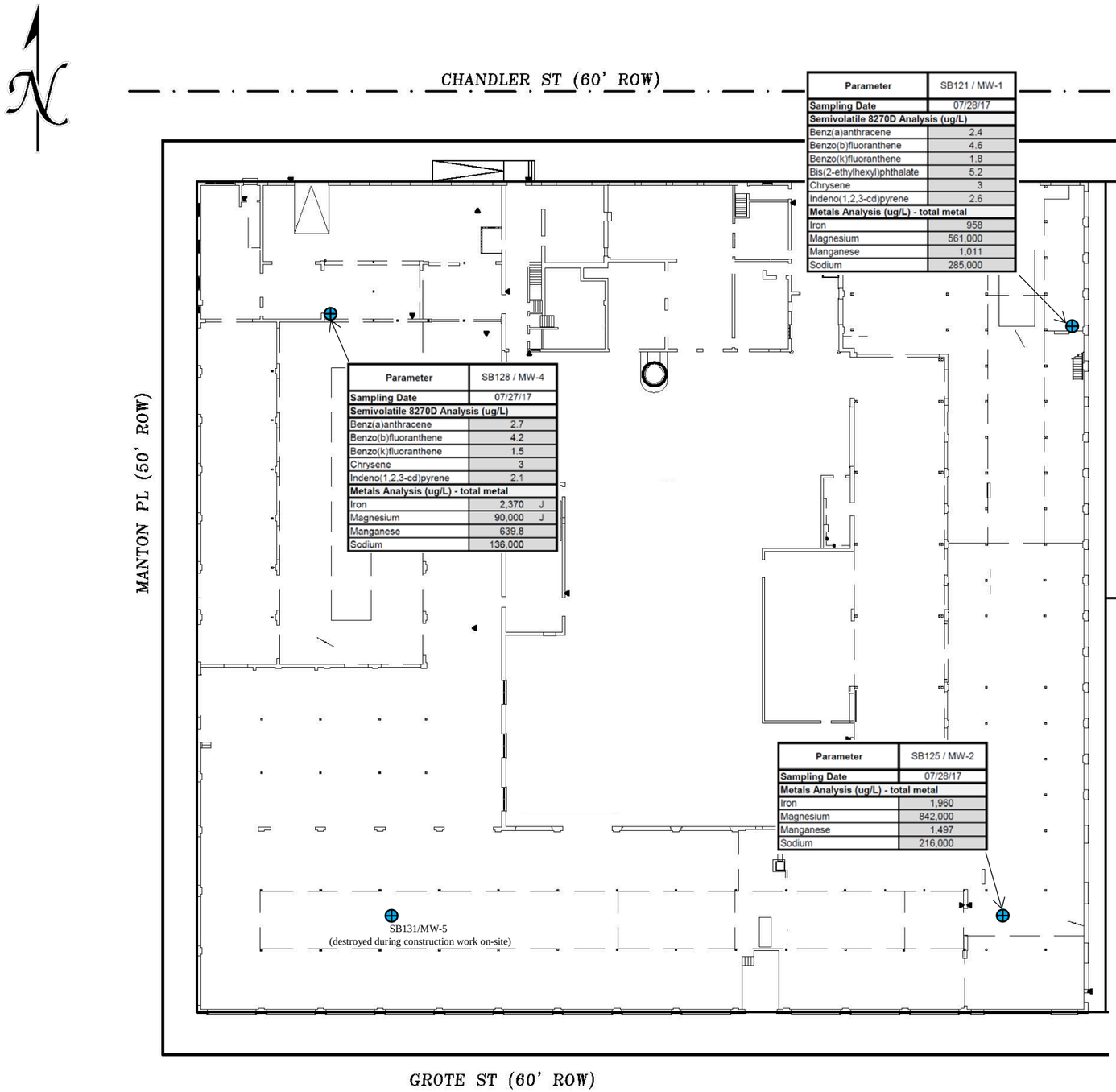
exceeds UUSCO - Unrestriced Use Soil Cleanup Objective
exceeds RUSCO - Residential Use Soil Cleanup Objective
exceeds RRUSCO - Restricted Residential Use Soil Cleanup Objective

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

PCB Unrestricted Use SCO Exceedances - Concrete Slab
155 and 157 CHANDLER STREET
BUFFALO, NEW YORK

R & M LEASING LLC
BUFFALO, NEW YORK

DRAWN BY: SS	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 10



Parameter	SB121 / MW-1
Sampling Date	07/28/17
Semivolatile 8270D Analysis (ug/L)	
Benz(a)anthracene	2.4
Benzo(b)fluoranthene	4.6
Benzo(k)fluoranthene	1.8
Bis(2-ethylhexyl)phthalate	5.2
Chrysene	3
Indeno(1,2,3-cd)pyrene	2.6
Metals Analysis (ug/L) - total metal	
Iron	958
Magnesium	561,000
Manganese	1,011
Sodium	285,000

Parameter	SB126 / MW-3	SB126 / MW-3
Sampling Date	07/27/17	10/19/17
Volatiles 8260C Analysis (ug/L)		
Acetone	24 J	88 J
2-butanone	7.5	130 J
Benzene	2.2	1.2
Trichloroethene	ND	11 J
Semivolatile 8270D Analysis (ug/L)		
Benzo(b)fluoranthene	0.15	ND
Benzo(k)fluoranthene	0.05 J	ND
Bis(2-ethylhexyl)phthalate	6.9	ND
Chrysene	0.09 J	ND
Indeno(1,2,3-cd)pyrene	0.1 J	ND
Pentachlorophenol	84 E	3.0
Metals Analysis (ug/L) - total metal		
Iron	4,840	19.7
Magnesium	971,000	1,410
Manganese	1,634	2,037
Sodium	300,000	334

Parameter	SB128 / MW-4
Sampling Date	07/27/17
Semivolatile 8270D Analysis (ug/L)	
Benz(a)anthracene	2.7
Benzo(b)fluoranthene	4.2
Benzo(k)fluoranthene	1.5
Chrysene	3
Indeno(1,2,3-cd)pyrene	2.1
Metals Analysis (ug/L) - total metal	
Iron	2,370 J
Magnesium	90,000 J
Manganese	639.8
Sodium	136,000

Parameter	SB125 / MW-2
Sampling Date	07/28/17
Metals Analysis (ug/L) - total metal	
Iron	1,960
Magnesium	842,000
Manganese	1,497
Sodium	216,000

Legend

Monitoring well location

Shading indicates parameter exceeds Class GA Criteria

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

Groundwater Monitoring Well Exceedances

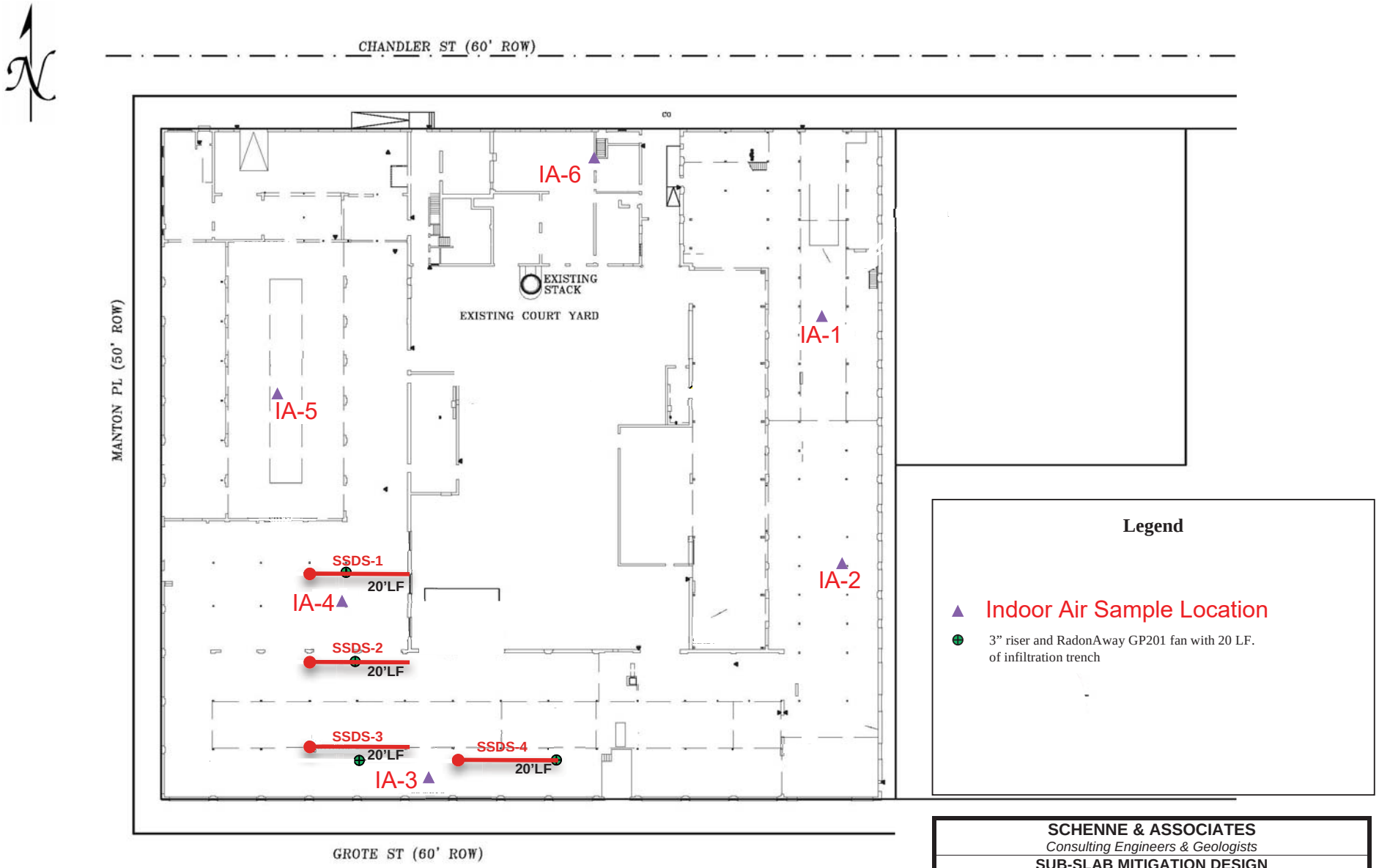
155 and 157 CHANDLER STREET

BUFFALO, NEW YORK

R & M LEASING LLC

BUFFALO, NEW YORK

DRAWN BY: SS	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 11

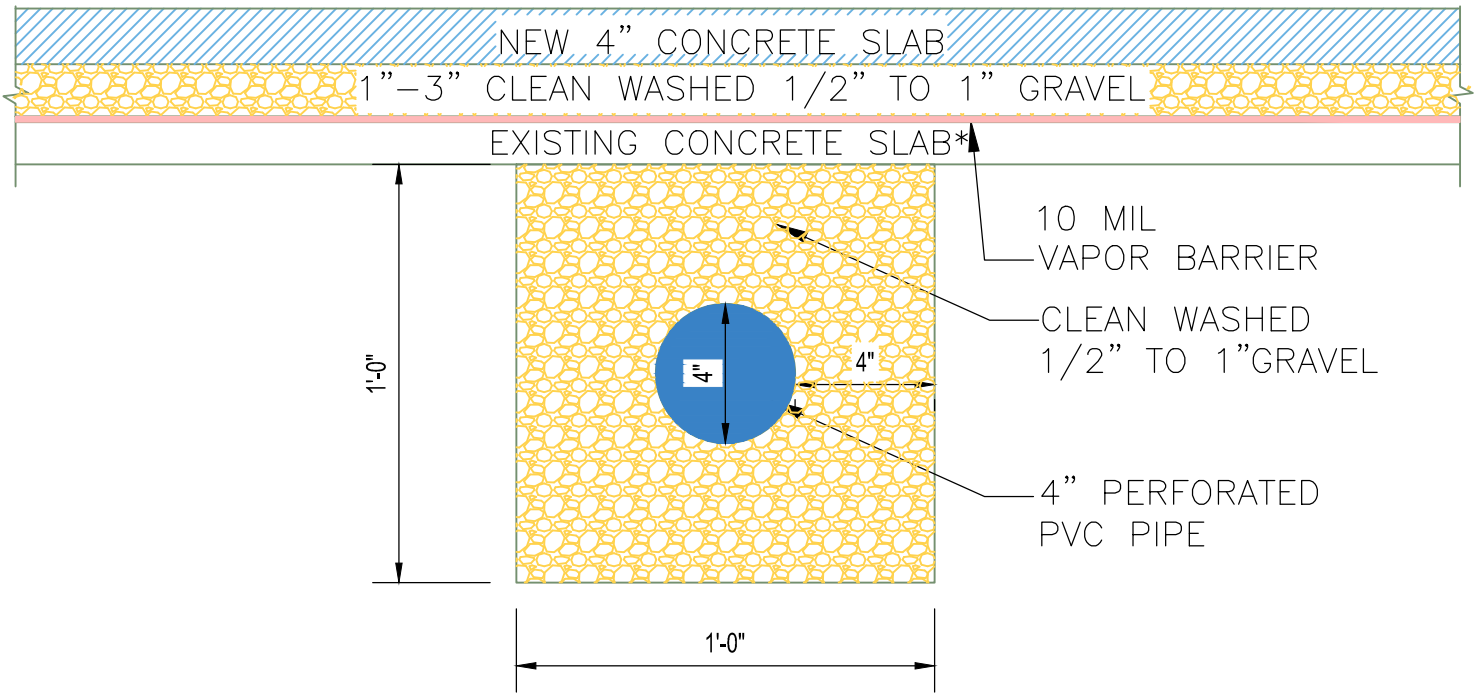


SUB-SLAB MIGRATION SYSTEM

N.T.S.

AS-BUILT

SCHENNE & ASSOCIATES *Consulting Engineers & Geologists*
SUB-SLAB MITIGATION DESIGN 155 and 157 CHANDLER STREET BUFFALO, NEW YORK
R & M LEASING LLC BUFFALO, NEW YORK
Figure 12

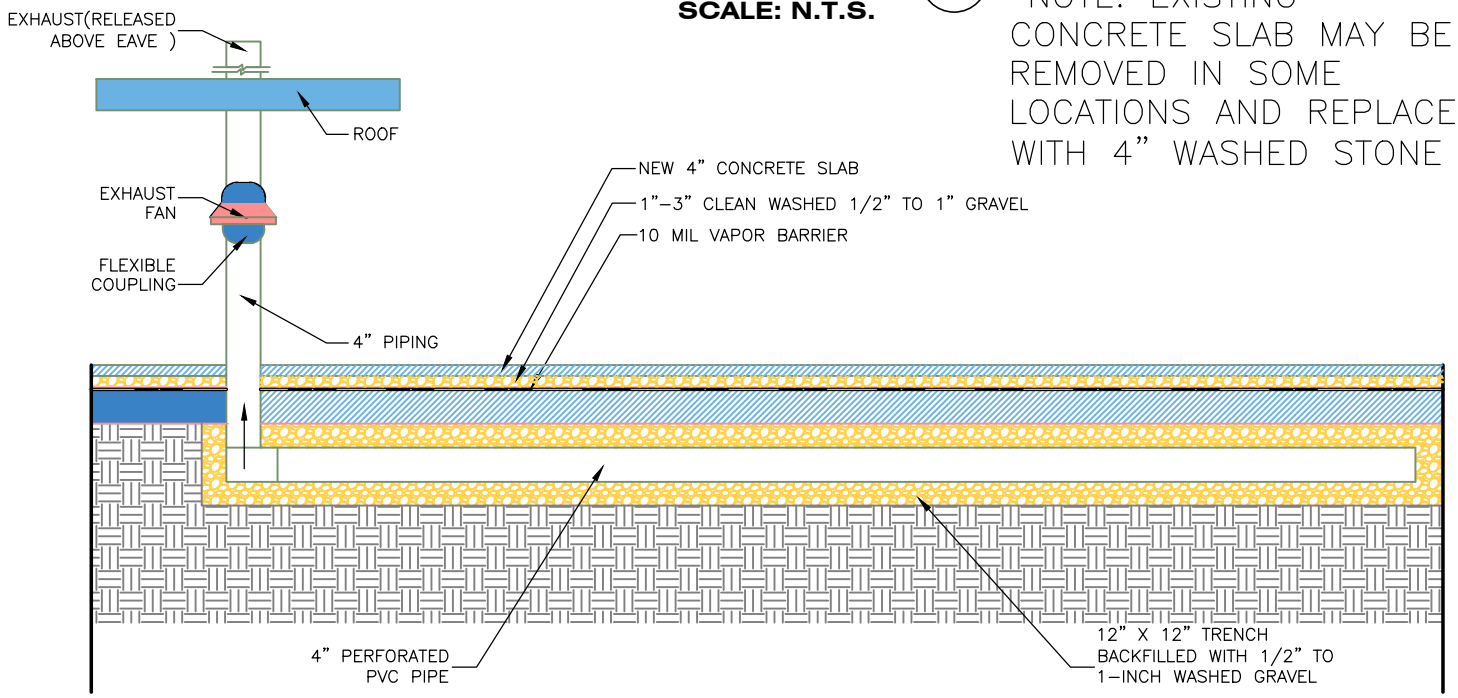


TYPICAL CROSS-SECTION OF SSDS TRENCH AND PIPING

1 SK-1

SCALE: N.T.S.

*NOTE: EXISTING CONCRETE SLAB MAY BE REMOVED IN SOME LOCATIONS AND REPLACED WITH 4" WASHED STONE



TYPICAL SSDS TRENCH PROFILE

2 SK-1

SCALE: N.T.S.

SCHENNE & ASSOCIATES
CONSULTING ENGINEERS
391 Washington Street Suite 800
Buffalo, NY 14203
(716) 655-4991 JOHN@SCHENNE.COM

OWNER
166 CHANDLER HOLDINGS LLC
391 WASHINGTON ST,
SUITE 800
BUFFALO NY

PROJECT
PIERCE ARROW BUSINESS PARK
155 CHANDLER ST
BUFFALO NY

JOB:17-1725 DRAWN BY WX

SUB-SLAB MITIGATION DESIGN

DWG. Figure 13

SCALE: AS NOTED

DATE: 12/05/2017

APPENDIX A – ENVIRONMENTAL EASEMENT

The Environmental Easement was executed and filed with the Erie County Clerk on November 29, 2017 at Liber 11322, Page 1373.

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 20th day of November, 2017 between Owner(s) R & M Leasing, LLC, having an office at 391 Washington Street, Suite 800, Buffalo, New York 14203-2108, County of Erie, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 155 Chandler Street in the City of Buffalo, County of Erie and State of New York, known and designated on the tax map of the County Clerk of Erie as tax map parcel numbers: Section 77.84 Block 1 Lot 4, being a portion of the property conveyed to Grantor by deed dated January 4, 2017 and recorded in the Erie County Clerk's Office in Liber and Page 11310/7306. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.96 +/- acres, and is hereinafter more fully described in the Land Title Survey dated September 21, 2016 and last revised September 1, 2017 prepared by Mark J. Andrews. L.L.S. of GPI Engineering, Landscape Architecture and Surveying, LLP, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, Grantor, is the owner of real property located at the address of 157 Chandler Street in the City of Buffalo, County of Erie and State of New York, known and designated on the tax map of the County Clerk of Erie as tax map parcel numbers: Section 77.84 Block 1 Lot 5,

being a portion of the property conveyed to Grantor by deed dated January 4, 2017 and recorded in the Erie County Clerk's Office in Liber and Page 11310/7306. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.39 +/- acres, and is hereinafter more fully described in the Land Title Survey dated September 21, 2016 and last revised September 1, 2017 prepared by Mark J. Andrews. L.L.S. of GPI Engineering, Landscape Architecture and Surveying, LLP, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C915312-02-17, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without

necessary water quality treatment as determined by the NYSDOH or the Erie County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement

is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C915312
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

R & M Leasing, LLC:

By: _____

Print Name: Rocco Termini

Title: Managing member Date: 11-8-17

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Erie)

On the 8th day of November in the year 2017, before me, the undersigned, personally appeared Rocco Termini, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Katherine M Lonsbery
Notary Public - State of New York

KATHERINE M. LONSBERY
Notary Public, State of New York
Qualified in Erie County
My Commission Expires 12/27/2017

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 20th day of November, in the year 2017, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

DEED AND EASEMENT DESCRIPTION
155 CHANDLER STREET, TAX MAP # 77.84-1-4

All that tract or parcel of land, together with building and improvements erected thereon, situate in the City of Buffalo, County of Erie and State of New York, being Lots Nos, 1 to 10 inclusive and Lots Nos. 23 to 32 inclusive, in Block "I", of the subdivision of a part of Lot 88, Black Rock, Township 11, Range 8, of the Holland Land Company's Survey, as shown on Cover Map No. 196, filed in the Erie County Clerk's Office, Buffalo, New York and more particularly described as follows:

Beginning at the intersection of the southerly line of Chandler Street and the easterly line of Manton Place, said point of beginning being also the northwesterly corner of Lot No. 1 in the above referred to subdivision, running thence southerly along the easterly line of Manton Place a distance of 280 feet to the northerly line of Grote Street, which point is also the southwesterly corner of Lot No. 23 in the above referred to subdivision; thence easterly along the northerly line of Grote Street, 305.27 feet to the easterly line of Lot No. 32 in said subdivision, which point is also the southwesterly corner of lands owned now or formerly by Anthony Young and Caroline Young his wife; thence northerly along the easterly line of Lots 32 and 10, being also along the westerly line of land now or formerly of Anthony Young and wife and lands of Barcola Manufacturing Company a distance of 280.00 feet to the southerly line of Chandler Street, said point being also the northeasterly corner of Lot No. 10 and the northwesterly corner of lands now or formerly of Barcola Manufacturing Company; thence westerly along the southerly side of Chandler Street a distance of 306.70 feet to the easterly line of Manton Place, the point and place of beginning, containing 1.96 acres of land, being the same more or less.

DEED AND EASEMENT DESCRIPTION
157 CHANDLER STREET, TAX MAP # 77.84-1-5

All that tract or parcel of land, situate in the City of Buffalo, County of Erie and State of New York, being part of Lot No. 88, Township 11 and Range 8 of the Holland Land Company's Survey, and according to a map filed in the Erie County Clerk's Office under Cover No. 228 is known and distinguished as Subdivision Lots Nos. 16, 17, 18 and the westerly part of Subdivision Lot No. 19 in Block "I", bounded and described as follows:

Beginning at a point in the southerly line of Chandler Street 392.21 feet west of its intersection with the westerly line of Bridgeman Street, which point of beginning is the northwesterly corner of subdivision Lot No. 16; running thence easterly along the southerly line of Chandler Street 120.48 feet; thence southerly and parallel with the westerly line of Bridgeman Street 140 feet; thence westerly and parallel with Chandler Street and along the southerly line of Subdivision Lots Nos. 16, 17, 18 and the westerly part of Lot No. 19, 120.48 feet to the southwesterly corner of Subdivision Lot No. 16; and thence northerly and along the westerly line of Subdivision Lot No. 16, 140 feet to the southerly line of Chandler Street at the point or place of beginning, containing 0.39 acres more or less.

PEGGY A. LAGREE, ACTING ERIE COUNTY CLERK
REF:

DATE:11/29/2017
TIME:2:15:05 PM
RECEIPT: 17208510

HOPKINS SORGI & ROMANOWSKI PLLC- BOX 460
ACCOUNT #: 9074

ITEM - 01 785
RECD: 11/29/2017 2:17:31 PM
FILE: 2017240959 BK/PG D 11322/1373
Deed Sequence: TT2017009359
R&M LEASING LLC
PEOPLE OF THE STATE OF NEW YORK (THE)

Recording Fees	90.50
TP584	10.00

Subtotal 100.50

TOTAL DUE	$100.50
PAID TOTAL	$100.50
PAID CHECK	$100.00
Check #2934:	100.00
PAID ESCROW	$0.50

REC BY: David RB
COUNTY RECORDER

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE.

● SET OR EX. 5/8" REBAR

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

LIBER 11098 OF DEEDS AT PAGE 859

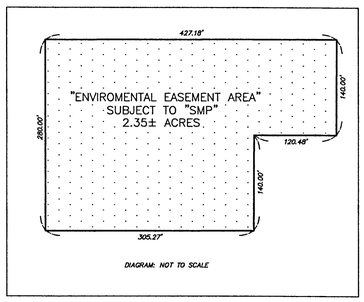
All that tract or parcel of land, together with building and improvements erected thereon, situate in the City of Buffalo, County of Erie and State of New York, being Lots Nos. 1 to 10 inclusive and Lots Nos. 23 to 32 inclusive, in Block "7", of the subdivision of a part of Lot 88, Block Rock, Township 11, Range 8, of the Holland Land Company's Survey, as shown on Cover Map No. 196, filed in the Erie County Clerk's Office, Buffalo, New York and more particularly described as follows:

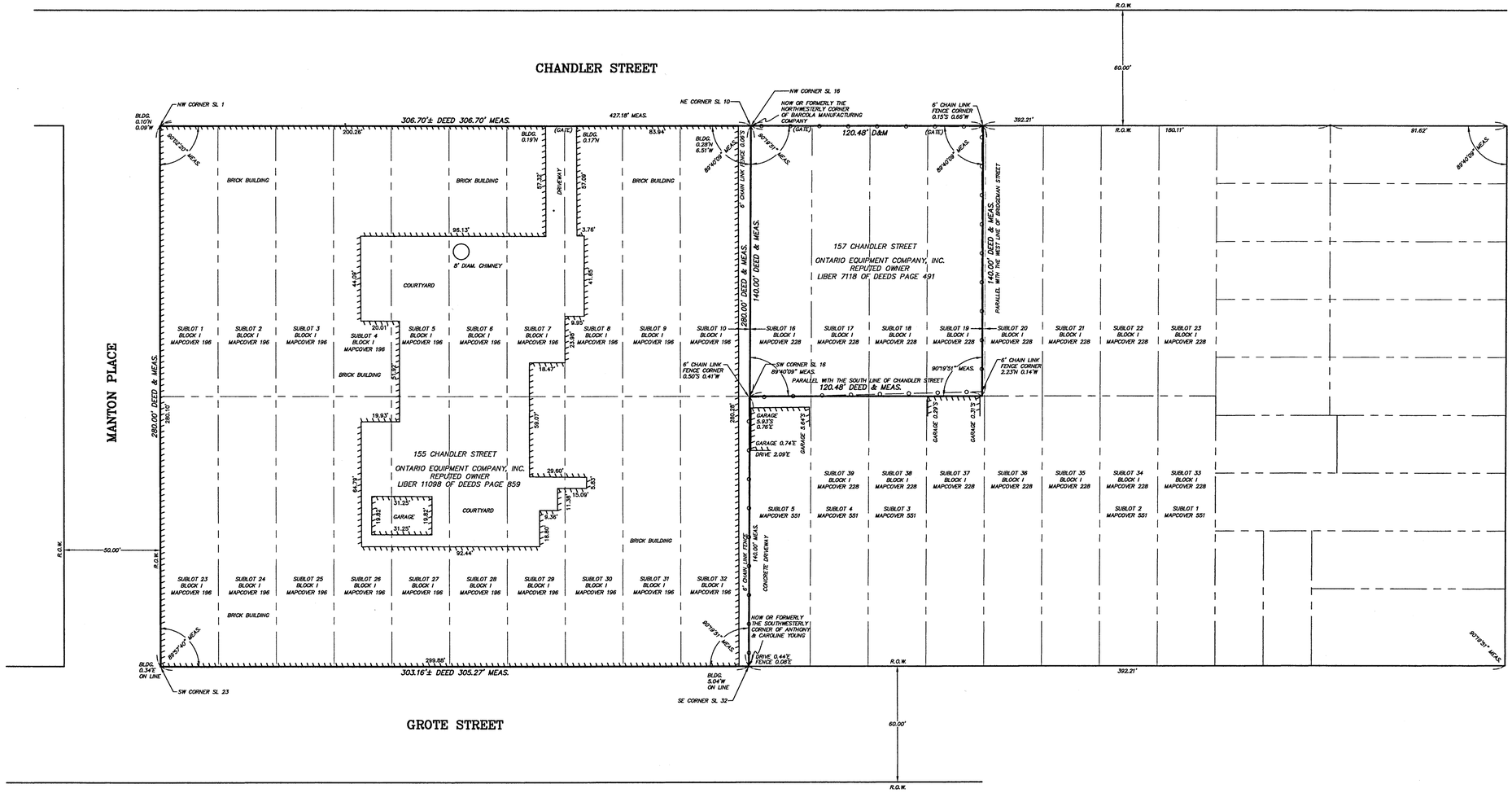
Beginning at the intersection of the southerly line of Chandler Street and the easterly line of Manton Place, said point of beginning being also the northwesterly corner of Lot No. 1 in the above referred to subdivision, running thence southerly along the easterly line of Manton Place a distance of 280 feet to the northerly line of Grote Street, which point is also the southwesterly corner of Lot No. 23 in the above referred to subdivision; thence easterly along the northerly line of Grote Street, 305.27 feet to the easterly line of Lot No. 32 in said subdivision, which point is also the southwesterly corner of lands owned now or formerly by Anthony Young and Caroline Young his wife; thence northerly along his easterly line of Lots 32 and 10, being also along the westerly line of land now or formerly of Anthony Young and wife and lands of Barcola Manufacturing Company a distance of 280.00 feet to the southerly line of Chandler Street, said point being also the northeasterly corner of Lot No. 10 and the northwesterly corner of lands now or formerly of Barcola Manufacturing Company; thence westerly along the southerly side of Chandler Street a distance of 306.70 feet to the easterly line of Manton Place, the point and place of beginning, containing 1.96 acres of land, being the same more or less.

LIBER 7118 OF DEEDS AT PAGE 491

All that tract or parcel of land, situate in the City of Buffalo, County of Erie and State of New York, being part of Lot No. 88, Township 11 and Range 8 of the Holland Land Company's Survey, and according to a map filed in the Erie County Clerk's Office under Cover No. 228 is known and distinguished as Subdivision Lots Nos. 16, 17, 18 and the westerly part of Subdivision Lot No. 19 in Block "7", bounded and described as follows:

Beginning at a point in the southerly line of Chandler Street 392.21 feet west of its intersection with the westerly line of Bridgeman Street, which point of beginning is the northwesterly corner of subdivision Lot No. 16; running thence easterly along the southerly line of Chandler Street 120.48 feet; thence southerly and parallel with the westerly line of Bridgeman Street 140 feet; thence westerly and parallel with Chandler Street and along the southerly line of Subdivision Lots Nos. 18, 17, 18 and the westerly part of Lot No. 19, 120.48 feet to the southwesterly corner of Subdivision Lot No. 16; and thence northerly and along the westerly line of Subdivision Lot No. 16, 140 feet to the southerly line of Chandler Street at the point or place of beginning, containing 0.39 acres more or less.





THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THE EASEMENT ARE SET FORTH IN MORE DETAIL IN THE SITE MANAGEMENT PLAN ("SMP"). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP MAY BE OBTAINED FROM NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT DERWEB@DEC.NY.GOV.

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law.

DATE	REVISION/TYPE
9/1/17	ADDITIONAL ENVIRONMENTAL NOTES

I HEREBY CERTIFY:

THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE CURRENT CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS AND AS AMENDED BY THE NIAGARA FRONTIER LAND SURVEYORS ASSOCIATION.
THIS CERTIFICATION DOES NOT EXTEND TO SUBSEQUENT OWNERS, MORTGAGEES, OR TITLE INSURORS, UNLESS THIS SURVEY HAS BEEN RESURVEYED FOR THIS PURPOSE BY THE SURVEYOR.

MARK J. ANDREWS, L.S.
LICENSE NO. 050455
DATE: 9/1/2017

LEGEND
BUILDING LINE
FENCE LINE

30' 0' 30' 60'
GRAPHIC SCALE 1" = 30'

SURVEY OF
PART OF LOT 88 (BLACK ROCK), TOWNSHIP 11 RANGE 8
HOLLAND LAND SURVEY
CITY OF BUFFALO, ERIE COUNTY, NEW YORK

GPI ENGINEERING, LANDSCAPE ARCHITECTURE & SURVEYING, LLP
ENGINEERING - SURVEYING - LANDSCAPE ARCHITECTURE
4950 GENESEE STREET, SUITE 100
BUFFALO, NEW YORK 14225
(716) 633-4944 FAX 633-4940

Job No. 6055 Date: 9/21/2016
Scale: 1" = 30' TAX No. 77.84-1-4

APPENDIX B – LIST OF SITE CONTACTS

Name	Phone/	Email Address
R&M Leasing, LLC Rocco Termini	716-861-5385	rtermini@wnylofts.com
R&M Leasing, LLC Rocco Termini	716-861-5385	rtermini@wnylofts.com
Qualified Environmental Professional Hazard Evaluations, Inc. Michele Wittman	716-667-3130	mwittman@hazardevaluations.com
Site Engineer Schenne and Associates John Schenne, P.E.	716-655-4991	john@schenne.com
[YSDEC DER Project Manager Jaspal Walia	716-851-7220	jaspal.walia@dec.ny.gov
NYSDEC Regional HW Engineer Chad Staniszewski, P.E.	716-851-7220	chad.staniszewski@dec.ny.gov
NYSDEC Site Control Kelly A. Lewandowski, P.E.	518-402-9543	kelly.lewandowski@dec.ny.gov
Pierce Arrow Business Center Rocco Termini	716-861-5385	rtermini@wnylofts.com
Remedial Party Attorney – Hopkins Sorgi & Romanownski PLLC – Marc Romanowski	716-427-7100	mromanowski@hsr-legal.com

APPENDIX C – SOIL BORING LOGS

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB117

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/12/2017	End Date	7/12/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Brown f/c Sand, some Gravel, little Slag, little Silt, moist (FILL)	0
1				Grades to … some Slag, little Glass.	
				Grades to … Dk. Brown	
2					
				Dk. Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0
3					
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
4	2	4-8	48		
5					0
6					
7					
					0
8	3	8-12	48		
9					
					0
10					
11					
					0
12	4	12-16	48		
13					
					0
14					
15					
16	5	16-20	48	Grades to … wet	0
18					0
20	6	20-22.5	48		0
22					0
24				Refusal encountered at 22.5' bg	0

Notes:	Sample 3.5-5.5' Full Suite Clay becomes soft from 16-22.5' bg. Sampled 0-2' & 2-3' for TCLP Lead & T. Lead
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB118

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/12/2017	End Date	7/12/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Brown f/c Sand, little Gravel, little Slag, little Silt, moist (FILL)	0
1				Grades to … Dk Brown, some Slag	
2				Grades to … little Slag	0
3				Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0.2
4				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
				Bottom of Boring 4' bg	

Notes:	For disposal characterization purposes collected representative Sample 0-3', Slag interval from 1-2' bg
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB119

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/12/2017	End Date	7/12/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	30	Brown f/c Sand, little Gravel, little Slag, little Silt, tr. Concrete, moist (FILL)	0
1				Grades to … Dk Brown, some Slag	
2				Grades to … little Slag	0
				Grades to … tr. Slag	
3					0
4				Red/Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	
				Bottom of Boring 4' bg	0
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:	For disposal characterization purposes collected representative Sample 0-3', Slag interval from 1-2' bg
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB120

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/12/2017	End Date	7/12/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	40	Light Brown f/c Sand, some Silt, tr. Gravel, moist (FILL)	0
1				Grades to … Dk Brown, some Slag	
2				Grades to … Brown, some Slag	0
				Grades to … Brown, tr. Slag	
3					0
4				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
				Bottom of Boring 4' bg	
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:	For disposal characterization purposes collected representative Sample 0-3', Slag interval from 1-2' bg
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB121/ MW-1

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	24	Concrete	
1				Brown Clay & Silt, little Gravel, little f/c Sand, moist (FILL)	0
2					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
3					0
4	2	4-8	30		0
5					0
6					0
7					0
8	3	8-12	48		0
9					0
10					0
11					0
12	3	12-16	48		0
13					0
14					0
15					0
16	4	16-20	48		0
18				Grades to … wet	0
20					0
22				Refusal at 20' bg	
24					

Notes:	Installed MW to 20'bg
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB122

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Concrete	
1				Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist	0
2					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
3					0
	2	4-8	48		
4					0
5					0
6					0
7					0
	3	8-12	48		
8					0
9					0
10					0
11					0
12					0
				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB123

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	24	Concrete	
1				Brown Clay & Silt, little Sand, tr. Gravel, moist (FILL)	0
2					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
3					0
	2	4-8	48		
4					0
5					0
6					0
7					0
	3	8-12	48		
8					0
9					0
10					0
11					0
12					0
				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB124

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Concrete	
1				Brown Clay & Silt, some f/c Sand, some Gravel, moist (FILL)	0
				Grades to … little f/c Sand, little Gravel	
2					0
				Grades to … tr. f/c Sand, tr. Gravel	
3				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
	2	4-8	48		
4					0
5					0
6					0
7					0
	3	8-12	48		
8					0
9					0
10					0
11					0
12					0
				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB125/ MW-2

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	4.5			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Concrete	
1				Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0
2					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
3					0
	2	4-8	48	Grades to … wet	0
4				Grades to … Saturated	
5					0
				Grades to … moist	
6					0
7					0
	3	8-12	48		0
8					
9					0
10					0
11					0
12					0
				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB126-MW-3

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	12'			Drilling Contractor	TREC Env.
GW Depth at Completion				Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	40	Dk. Brown f/c Sand, little Gravel, little Slag, moist (FILL)	0
1				Grades to … some Slag	0
2				Grades to … little Slag	
				Grades to … tr. Slag, tr. Gravel, odor, stained	25
3					100
	2	4-8	48		
4				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	500
5					200
6					1
7					1
	3	8-12	48		
8					0
9					0
10					0
11					0.5
	4	12-16	48		
12				Grades to … wet	0.5
13					0.2
14					0.2
15					0.2
	5	16-20	48	Grades to … moist	
16					0.2
18					0.1
20					0.1
22					0.1
24				Refusal encountered at 22.5' bg	

Notes:	MW installed to 20' bg - 7/13/17
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB127

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	NWWD			Drilling Contractor	TREC Env.
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	40	Concrete	
1				Sub-base Gravel, moist (FILL)	0
				Brown Clay & Silt, little Gravel, tr. f/c Sand, moist (FILL)	
2				Grades to … tr. Gravel	0
3					
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
	2	4-8	48		
4					0
5					
6					
7					
	3	8-11.5	48		
8					
9					
10					
11					
12				Refusal encountered at 11.5' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB128-MW-4

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo			HEI Representative	E. Betzold
Project Number:	e1601				
Start Date	7/13/2017	End Date	7/13/2017	Type of Drill Rig	Track Mount
GW Depth While Drilling	8'			Drilling Contractor	TREC Env.
GW Depth at Completion				Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	24	Concrete	
1				Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0
2					0
3				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
4	2	4-8	48		0
5					0
6					0
7					0
8	3	8-11.5	48	Grades to … wet	0
9				Grades to … moist	0
10					0
11					0
12				Refusal encountered at 11.5' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:	MW installed to 15' bg
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB129

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date	7/14/2017	End Date 7/14/2017	Type of Drill Rig: Track Mount
GW Depth While Drilling			Drilling Contractor: TREC Env.
GW Depth at Completion			Sampler Type: MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0.5-4	36	Brick	
1				Dk Gray f/c Sand and Gravel, tr. Silt, odor, stained, moist (FILL)	40
				Red/Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	15
2					
					2
3				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
					0.5
4	2	4-8	48		
					0
5					
					0
6					
					0
7					
					0
8	3	8-12	48		
9					
10					
11					
12	4	12-16	48		
				Grades to … little Gravel	
13					
				Grades to … tr. Gravel	
14					
				Grades to … wet	
15					
16	5	16-19	48		
18					
20				Refusal at 19' bg	
22					
24					

Notes:	1 ft. of VOC impacted granular fill below pavers
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB130

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date		End Date	
		Type of Drill Rig	Track Mount
GW Depth While Drilling		Drilling Contractor	TREC Env.
GW Depth at Completion		Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
				Concrete	
1	1	0.5-3	24	Gray sub-base Gravel and f/c Sand, some Concrete, moist	0.1
2				Grades to … little f/c Sand	0
				Grades to … and Concrete	
3					0
4				Refusal @ 3' bg	
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB131/ MW-5

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date	8/28/2017	End Date 8/28/2017	Type of Drill Rig: Track Mount
GW Depth While Drilling			Drilling Contractor: TREC Env.
GW Depth at Completion			Sampler Type: MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
				Concrete	
1	1	0.5-4	40	Brown f/c Sand, tr. Slag, tr. Gravel, moist (FILL)	0
				Grades to … Dk Brown and Slag	
2				Red/Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0
				Grades to … Dk Brown	
3				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
4	2	4-8	40		0
5					0
6					0
7					0
8	3	8-12	48		0
9					0
10					0
11					0
12	4	12-16	48		0
13					0
14					0
15					0
16	5	16-20	48		0
18				Grades to … wet	0
20					0
22				Bottom of Boring 20' bg, Monitoring well installed to 20' bg	
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB132

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date		End Date	
Type of Drill Rig	Track Mount		
GW Depth While Drilling		Drilling Contractor	TREC Env.
GW Depth at Completion		Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
				Concrete	
1	1	0.5-4	30	Gray sub-base Gravel and f/c Sand, moist (FILL)	0.1
				Dk Brown f/c Sand, little Concrete, moist (FILL)	
2				Red/Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0
3					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
4	2	4-8	48		0
5					0
6					0
7					0
8	3	8-12	48		0
9					0
10					0
11					0
12					0
				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB133

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date		End Date	
		Type of Drill Rig	Track Mount
GW Depth While Drilling		Drilling Contractor	TREC Env.
GW Depth at Completion		Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	40	Dk Brown f/c Sand, little Gravel, little Silt, moist (FILL)	
1					0
				Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	
2					0
3					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
	2	4-8	48		
4					0
5					
6					
7					
	3	8-12	48		
8					
9					
10					
11					
12				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB134

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date		End Date	
		Type of Drill Rig	Track Mount
GW Depth While Drilling		Drilling Contractor	TREC Env.
GW Depth at Completion		Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
				Asphalt	
1	1	0.5-4	40	Brick (FILL)	0
				Brown f/c Sand, some Concrete, moist (FILL)	
2				Red/Brown Clay & Silt, tr. f/c Sand, tr. Gravel, moist (FILL)	0
3				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	0
4	2	4-8	48		0
5					0
6					0
7					0
8	3	8-12	48		0
9					
10					
11					
12				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3636 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB135

Project Name & Location	Remedial Investigation; 155-157 Chandler Street, Buffalo	HEI Representative	E. Betzold
Project Number:	e1601		
Start Date		End Date	
		Type of Drill Rig	Track Mount
GW Depth While Drilling		Drilling Contractor	TREC Env.
GW Depth at Completion		Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	30	Brown f/c Sand, some Gravel, little Concrete, moist (FILL)	
1					0
				Brown Clay & Silt, little Gravel, little f/c Sand, moist (FILL)	
2					0
				Grades to … tr. Gravel, tr. f/c Sand	
3					0
	2	4-8	48		
4					0
				Red/Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist	
5					0
6					0
7					0
	3	8-12	48		
8					0
9					
10					
11					
12				Bottom of Boring 12' bg	
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

APPENDIX D – MONITORING WELL BORING AND CONSTRUCTION LOGS

Hazard Evaluations, Inc.

Hole No.: SB 121/MW-1
Sheet 1 of 1

Date started: 7/14/17
Date Finished: 7/14/17

Client: R& M Leasing

Location: 155-157 Chandler Street

Method of Investigation: Advance 3.25" hollow-stem tubes to depth of boring. Set 2-inch well at total depth of boring.

Project No.: e1601
Project Manager: Eric Betzold

Drilling Co.: Trec Environmental
Driller: Jim and Eric
Drill Rig: Geoprobe

Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows/6"	Sample Description	Field Analytical Readings	Well Details	Groundwater and Other Observations
	1	0-4	N/A: Well Completed with Geoprobe drill rig	Cement/Bentonite mix (0-2')			
4	2	4-8		2" sch. 40 PVC riser (0'-10')			
8	3	8-12		Bentonite pellets (2-8')			
12	3	12-16		2" sch. 40 PVC (0.10 slot screen)			
16	4	16-20		#0 sand (8-20')			
				Bottom of screen 20' bg			
20				Bottom of borehole 20' bg			
24							
30							

Sample Types:
S=Split Spoon: _____ T= Shelby Tube: _____
R= Rock Core: _____ O = _____
N = ASTM D1586

Backfill Well Key
Cement/Bentonite
Native Fill
Sand
Bentonite

Hazard Evaluations, Inc.

Hole No.: SB 125/MW-2
Sheet 1 of 1

Date started: 7/14/17
Date Finished: 7/14/17

Client: R& M Leasing

Location: 155-157 Chandler Street

Method of Investigation: Advance 3.25" hollow-stem tubes to depth of boring. Set 2-inch well at total depth of boring.

Project No.: e1601
Project Manager: Eric Betzold

Drilling Co.: Trec Environmental
Driller: Jim and Eric
Drill Rig: Geoprobe

Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows/6"	Sample Description	Field Analytical Readings	Well Details	Groundwater and Other Observations
	1	0-4	N/A: Well Completed with Geoprobe drill rig	Cement/Bentonite mix (0-2')			
4	2	4-8		Bentonite pellets (2-4')			
				2" sch. 40 PVC riser (0'-5')			
8	3	8-12		2" sch. 40 PVC (0.10 slot screen)			
12	3	12-16		#0 Sand (4-15')			
				Bottom of screen 15' bg			
				Bottom of borehole 15' bg			
16							
20							
24							
30							

Sample Types:
S=Split Spoon: _____ T= Shelby Tube: _____
R= Rock Core: _____ O = _____
N = ASTM D1586

Backfill Well Key
Cement/Bentonite
Native Fill
Sand
Bentonite

Hazard Evaluations, Inc.

Hole No.: SB 121/MW-1
Sheet 1 of 1

Date started: 7/13/17
Date Finished: 7/13/17

Client: R& M Leasing

Location: 155-157 Chandler Street

Method of Investigation: Advance 3.25" hollow-stem tubes to depth of boring. Set 2-inch well at total depth of boring.

Project No.: e1601
Project Manager: Eric Betzold

Drilling Co.: Trec Environmental
Driller: Jim and Eric
Drill Rig: Geoprobe

Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows/6"	Sample Description	Field Analytical Readings	Well Details	Groundwater and Other Observations
	1	0-4	N/A: Well Completed with Geoprobe drill rig	Cement/Bentonite mix (0-2')			
4	2	4-8		2" sch. 40 PVC riser (0'-10')			
8	3	8-12		Bentonite pellets (2-8')			
12	3	12-16		2" sch. 40 PVC (0.10 slot screen)			
16	4	16-20		#0 sand (8-20')			
				Bottom of screen 20' bg			
20				Bottom of borehole 20' bg			
24							
30							

Sample Types:
S=Split Spoon: _____ T= Shelby Tube: _____
R= Rock Core: _____ O = _____
N = ASTM D1586

Backfill Well Key
Cement/Bentonite
Native Fill
Sand
Bentonite

Hazard Evaluations, Inc.

Hole No.: SB 128/MW-4
Sheet 1 of 1

Date started: 7/14/17
Date Finished: 7/14/17

Client: R& M Leasing

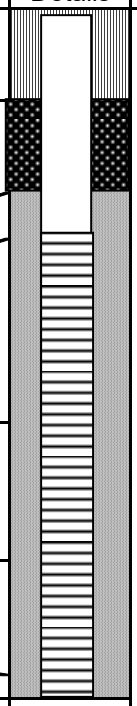
Location: 155-157 Chandler Street

Method of Investigation: Advance 3.25" hollow-stem tubes to depth of boring. Set 2-inch well at total depth of boring.

Project No.: e1601
Project Manager: Eric Betzold

Drilling Co.: Trec Environmental
Driller: Jim and Eric
Drill Rig: Geoprobe

Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows/6"	Sample Description	Field Analytical Readings	Well Details	Groundwater and Other Observations
	1	0-4	N/A: Well Completed with Geoprobe drill rig	Cement/Bentonite mix (0-2')			
4	2	4-8		Bentonite pellets (2-4')			
				2" sch. 40 PVC riser (0'-5')			
8	3	8-12		2" sch. 40 PVC (0.10 slot screen)			
12	3	12-16		#0 Sand (4-15')			
				Bottom of screen 15' bg			
				Bottom of borehole 15' bg			
16							
20							
24							
30							

Sample Types:
S=Split Spoon: _____ T= Shelby Tube: _____
R= Rock Core: _____ O = _____
N = ASTM D1586

Backfill Well Key
Cement/Bentonite
Native Fill
Sand
Bentonite

Hazard Evaluations, Inc.

Hole No.: SB 131/MW-5
Sheet 1 of 1

Date started: 8/28/17
Date Finished: 8/28/17

Client: R& M Leasing

Location: 155-157 Chandler Street

Method of Investigation: Advance 3.25" hollow-stem tubes to depth of boring. Set 2-inch well at total depth of boring.

Project No.: e1601
Project Manager: Eric Betzold

Drilling Co.: Trec Environmental
Driller: Jim and Eric
Drill Rig: Geoprobe

Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Blows/6"	Sample Description	Field Analytical Readings	Well Details	Groundwater and Other Observations
	1	0-4	N/A: Well Completed with Geoprobe drill rig	Cement/Bentonite mix (0-2')			
4	2	4-8		2" sch. 40 PVC riser (0'-10')			
8	3	8-12		Bentonite pellets (2-8')			
12	3	12-16		2" sch. 40 PVC (0.10 slot screen)			
16	4	16-20		#0 sand (8-20')			
				Bottom of screen 20' bg			
20				Bottom of borehole 20' bg			
24							
30							

Sample Types:
S=Split Spoon: _____ T= Shelby Tube: _____
R= Rock Core: _____ O = _____
N = ASTM D1586

Backfill Well Key
Cement/Bentonite
Native Fill
Sand
Bentonite

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/20/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 20.2' TOC

Initial *Phase* Level:

Initial *Water* Level: 16.05' TOC

Volume Calculation: 4.15 X .163 X 3 = 2.02 gal

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity
3:00pm	2 gal				Med

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: 7/28/2017 Volume:

Time: Analysis:

Crew: Eric Betzold/Greg Bittner Chain of Custody #:

Method: Low Flow Pump Sample Type:

Sample ID: SB121/MW-1

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments: OVM headspace - 0.0 ppm

TOC - Top of casing

Signature: Eric J Betzold

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/20/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 23.07' TOC

Initial *Phase* Level:

Initial *Water* Level: 21.97' TOC

Volume Calculation: 1.1 X .163 X 3 = 0.54 gal

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity
3:25pm	0.5 gal				Low

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: 7/28/2017 Volume:

Time: Analysis:

Crew: Eric Betzold/Greg Bittner Chain of Custody #:

Method: Low Flow Pump Sample Type:

Sample ID: SB126/MW-3

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments: OVM headspace - 6.6 ppm

Well casing sticks up 3' above grade level

TOC - Top of casing

Signature: Eric J Betzold

HAZARD EVALUATIONS

Well Data Sheet

Date: 8/30/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 20.3' TOC

Initial *Phase* Level:

Initial *Water* Level: 14.95' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity
9:35 AM	2.61 gal				

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/26/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 15.29' TOC

Initial *Phase* Level:

Initial *Water* Level: 6.90' TOC

Volume Calculation: .

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method:

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

SB121/MW-1

HAZARD EVALUATIONS

Well Data Sheet

Date: 10/6/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 20.2' TOC

Initial *Phase* Level:

Initial *Water* Level: 1.55' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method:

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

SB126/MW-3

HAZARD EVALUATIONS

Well Data Sheet

Date: 10/6/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 23.07' TOC

Initial *Phase* Level:

Initial *Water* Level: 8.97' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

SB131/MW-5

HAZARD EVALUATIONS

Well Data Sheet

Date: 10/6/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 20.3' TOC

Initial *Phase* Level:

Initial *Water* Level: 2.20' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method:

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/20/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 15.29' TOC

Initial *Phase* Level:

Initial *Water* Level: 9.10' TOC

Volume Calculation: 6.19 X .163 X 3 = 3.02 gal

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity
3:10pm	3 gal				Low

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: 7/28/2017 Volume:

Time: Analysis:

Crew: Eric Betzold/Greg Bittner Chain of Custody #:

Method: Low Flow Pump Sample Type:

Sample ID: SB125/MW-2

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments: OVM headspace - 0.0 ppm

Purging - 1.3 ppm

TOC - Top of casing

Signature: Eric J Betzold

SB128/MW-4

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/26/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 15.20' TOC

Initial *Phase* Level:

Initial *Water* Level: 3.35' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

SB121/MW-1

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/26/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 20.2' TOC

Initial *Phase* Level:

Initial *Water* Level: 9.30' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method:

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

SB126/MW-3

HAZARD EVALUATIONS

Well Data Sheet

Date: 7/26/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 23.07' TOC

Initial *Phase* Level:

Initial *Water* Level: 21.30' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

HAZARD EVALUATIONS

Well Data Sheet

Date: 10/6/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 15.29' TOC

Initial *Phase* Level:

Initial *Water* Level: 2.60' TOC

Volume Calculation: .

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method:

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

SB128/MW-4

HAZARD EVALUATIONS

Well Data Sheet

Date: 10/6/2017 Job #: e1601

Crew: Eric Betzold

Well Depth: 15.20' TOC

Initial *Phase* Level:

Initial *Water* Level: 2.52' TOC

Volume Calculation:

DTB-DTW*0.163=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date: Volume:

Time: Analysis:

Crew: Chain of Custody #:

Method: Sample Type:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

TOC - Top of casing

Signature: Eric J Betzold

APPENDIX E – EXCAVATION WORK PLAN (EWP)

E-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Table E-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix B.

Table E-1: Notifications*

Jaspal Walia	716-851-7220 jaspal.walia@dec.ny.gov
Chad Staniszewski, P.E.	716-851-7220 chad.staniszewski@dec.ny.gov
Kelly A. Lewandowski, P.E.	518-402-9543 kelly.lewandowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix I of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

E-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil.

E-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

E-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements), as necessary.

A truck wash will be operated on-site, as appropriate and if necessary. The qualified environmental professional will be responsible for ensuring that all outbound

trucks will be washed at the truck wash before leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

E-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Truck transport routes are as follows:

- From the site, take Chandler Street west
- Turn left (south) on Military
- Vere left onto Grant Street
- Take ramp on left to Route 198 West
- Use the left lane to merge onto 190-south toward Downtown
- Use the right two lanes to take Exit 54-61 and merge on I-90 W toward Erie
- Use the right two lanes to take Exit 54 and merge onto NY-400 toward East Aurora
- At end of expressway, keep straight onto SR-16 South/Olean Road
- End at 10860 Olean Road, Chaffee, NY

All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

E-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

E-7 MATERIALS REUSE ON-SITE

On-site reuse of material is acceptable, provided that the material does not exhibit visual or olfactory evidence of contamination and photoionization detector (PID) measurement of the soil do not exceed 5 parts per million (ppm). The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

E-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development

fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

E- 9 COVER SYSTEM RESTORATION

Due to the site remedial goals of Restricted Residential, a cover system is not required in the site remedy. However, following soil excavation activities, the existing surfaces will be restored or replaced with similar structural cover.

E- 10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table C-1. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

E-11 STORMWATER POLLUTION PREVENTION

If construction activities disturb more than one acre of land, then appropriate federal and state guidelines will be followed. Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

E-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

E-13 COMMUNITY AIR MONITORING PLAN

Excavation work is required as part of utility construction. Analytical testing results and remaining contamination have limited VOCs present. Should excavation be needed, the following criterial shall be followed for protection of the community.

Volatile Organic Compound Air Monitoring

VOCs will be monitored at the downwind perimeter of the work area on a continuous basis during intrusive/excavation work and periodically during non-intrusive activities. VOC monitoring will be done using an organic vapor meter (OVM) equipped with a photoionization detector (PID) to provide real-time recordable air monitoring data.

VOCs will also be monitored and recorded at the downwind perimeter of the immediate work area(s) periodically. Upwind concentrations will be measured at the beginning of each day before activities begin and periodically throughout the day to establish background conditions. The downwind VOC monitoring device will also be checked periodically throughout the day to assess emissions and the need for corrective action. VOC monitoring action levels as per *DER-10 Technical Guidance for Site Investigations and Remediation* is as follows:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If the organic vapor level at the perimeter of the work area persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions take to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less; but in no case than that 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down.

Particulate Air Monitoring

The remediation crew will make all efforts to suppress dust and particulate matter during the handling of contaminated soil. Due to site conditions, remaining on-site soil is clay material, with limited dust generation. Fugitive dust and particulate monitoring will be completed in accordance with DER-10, if needed. The following techniques have been shown to be effective for the controlling the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and/or
(g) Reducing the excavation size and/or number of excavations.

Care will be taken not to use excess water, which can result in unacceptably wet site conditions. Use of atomizing sprays will prevent overly wet conditions, conserve water and provide an effective means of suppressing fugitive dust.

Weather conditions will be evaluated during remedial work. When extreme wind conditions make dust control ineffective, as a last resort, remedial actions may need to be suspended.

Dust and particulate monitoring will be conducted near approximate upwind and downwind perimeters of the work area, when possible. If visual evidence of dust is apparent in other locations, monitoring equipment will be placed where necessary. Dust monitoring may be suspended during period of precipitation and snow cover.

Particulate air monitoring will be done with a DataRAM-4 (or similar), which will be capable of reading particles less than 10 micrometers in size (PM-10) and equipped with an audible alarm feature which will indicate exceedances. Dust monitoring devices will be recorded periodically throughout the day to assess emissions and the need for corrective actions. Particulate monitoring action levels as per *DER-10 Technical Guidance for Site Investigations and Remediation* is as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 ($\mu g/m^3$) above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ($\mu g/m^3$) above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.
  A will be generated, if needed.

The locations will be adjusted on a daily or more frequent basis based on actual wind directions and site conditions to provide an upwind and downwind monitoring stations, as needed.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers on the day of exceedance. All data is to be reported in the final report for the excavation activity.

E-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Specific odor control methods to on an as needed basis. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor

events within one day of the odor event and notified of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Excavation Activities Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

E-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

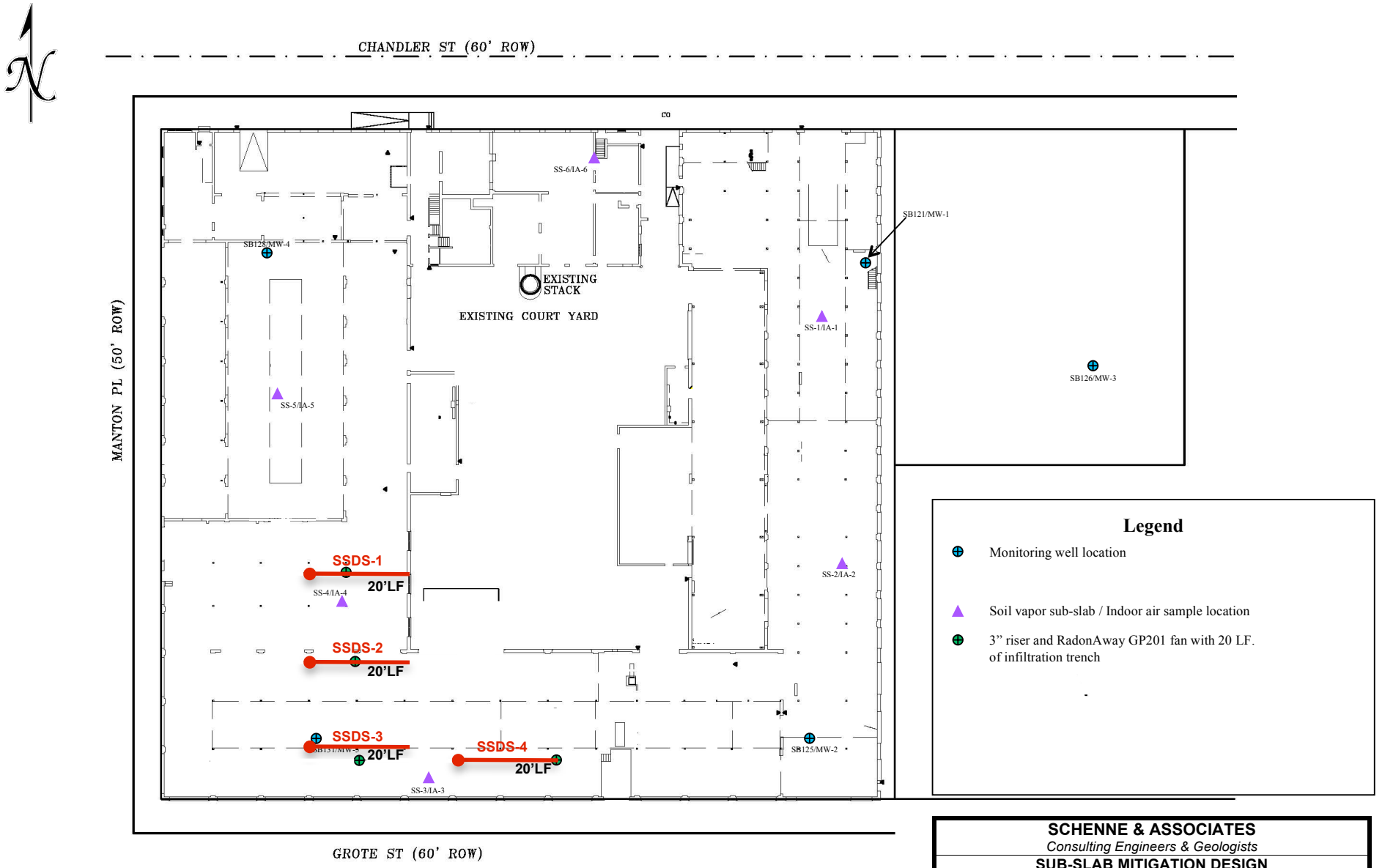
E-16 OTHER NUISANCES

A plan will be developed and utilized by the contractor for all remedial work to ensure compliance with local noise control ordinances, as needed.

E-17 REPORTING

A report is to be submitted to the NYSDEC within 90 days of completion of the activities performed under this EWP. This report shall contain a summary of the activities performed; a summary of all data gathered and results; information about any media that was removed from the site: volume, contamination levels, area from which removed; and any other information that may be indicate a change to the "remaining contamination" that is at the site. Such changes may require revision of the SMP.

APPENDIX F – SUB-SLAB DEPRESSURIZATION SYSTEM – OPERATION AND MAINTENANCE PLAN (Includes As-Built Drawings)

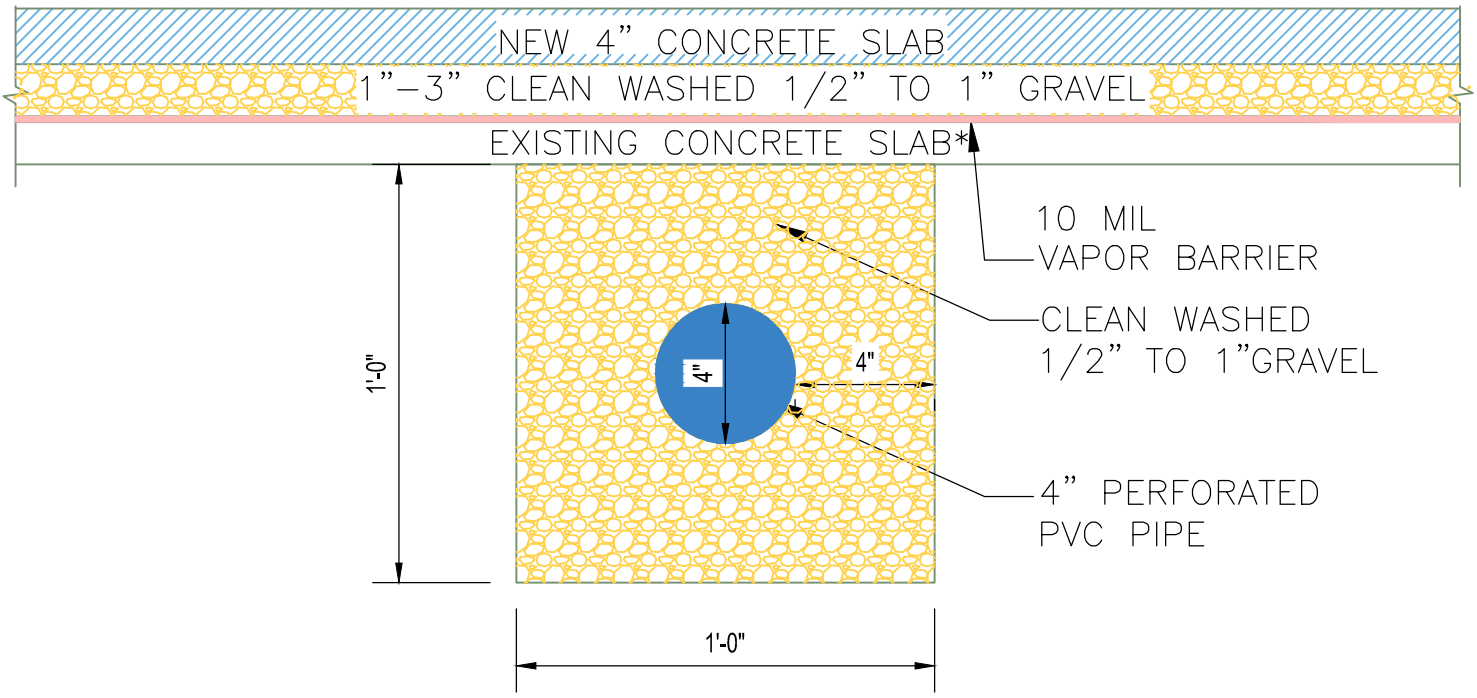


SUB-SLAB MIGRATION SYSTEM

N.T.S.

AS-BUILT

SCHENNE & ASSOCIATES *Consulting Engineers & Geologists*		
SUB-SLAB MITIGATION DESIGN 155 and 157 CHANDLER STREET BUFFALO, NEW YORK		
R & M LEASING LLC BUFFALO, NEW YORK		
DRAWN BY: SS	SCALE: 1" = 40'	PROJECT: e1601
CHECKED BY: MMW	DATE: **11/17/2017**	FIGURE NO: 1

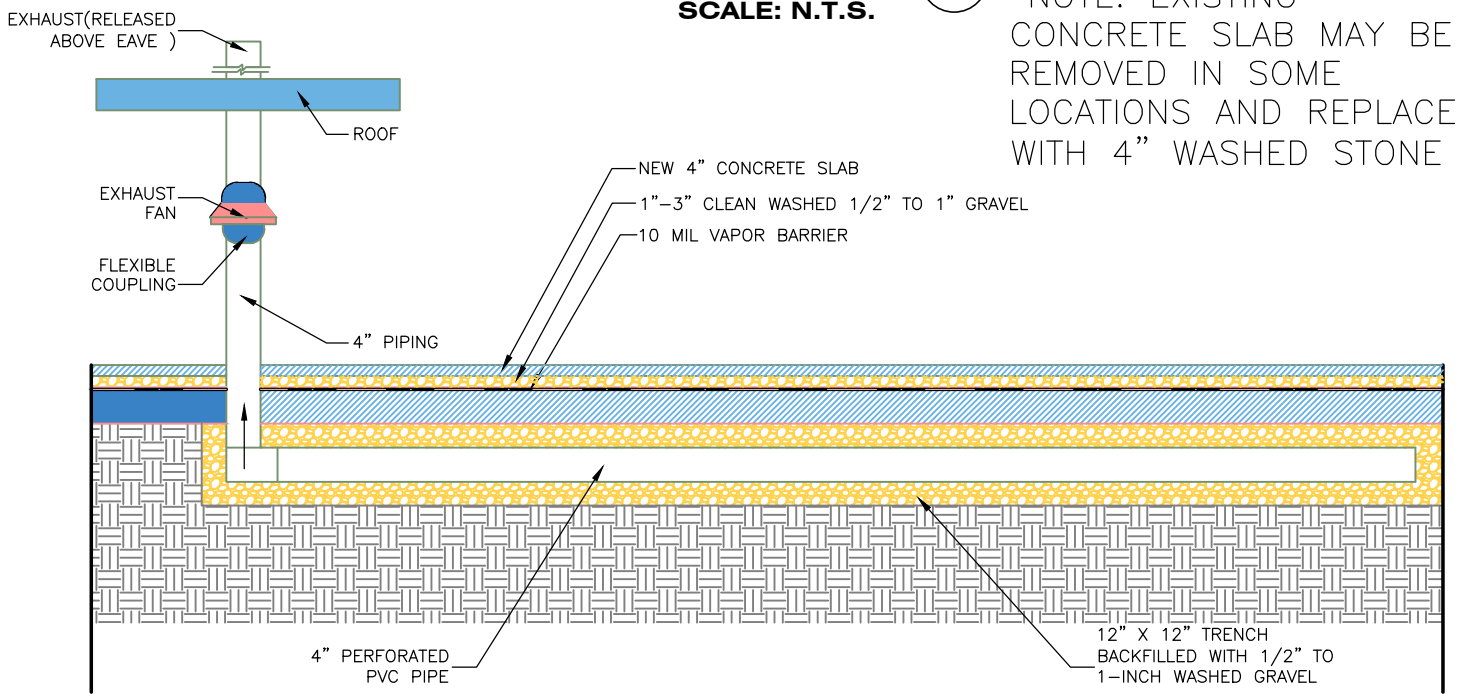


TYPICAL CROSS-SECTION OF SSDS TRENCH AND PIPING

1 / SK-1

SCALE: N.T.S.

*NOTE: EXISTING CONCRETE SLAB MAY BE REMOVED IN SOME LOCATIONS AND REPLACED WITH 4" WASHED STONE



TYPICAL SSDS TRENCH PROFILE

2 / SK-1

SCALE: N.T.S.

SCHENNE & ASSOCIATES
CONSULTING ENGINEERS
391 Washington Street Suite 800
Buffalo, NY 14203
(716) 655-4991 JOHN@SCHENNE.COM

OWNER
166 CHANDLER HOLDINGS LLC
391 WASHINGTON ST,
SUITE 800
BUFFALO NY

PROJECT
PIERCE ARROW BUSINESS PARK
155 CHANDLER ST
BUFFALO NY

JOB:17-1725 DRAWN BY WX

SUB-SLAB MITIGATION DESIGN

DWG. SK-7

SCALE: AS NOTED

DATE: 12/05/2017

SUB-SLAB DEPRESSURIZATION SYSTEM
OPERATIONS AND MAINTENANCE PLAN
155 CHANDLER STREET
BUFFALO, NEW YORK

November 2017

Prepared for:

Signature Development of WNY LLC
391 Washington Street
Buffalo, New York 14203

Prepared by:

SCHENNE & ASSOCIATES
ENGINEERS & GEOLOGISTS
HOTEL LAFAYETTE
391 Washington Street - Suite 800
Buffalo, New York 14203
Phone (716) 655-4991

CONTENTS

1.1 General

This operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for this site. This Operation and Maintenance Plan includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the SSD, and will be updated periodically to reflect changes in site conditions or the manner in which the SSD system is operated and maintained.

1.2 Purpose

The purpose of this document is to ensure the proper operation and maintenance of the active sub-slab depressurization system (SSDS) installed at the Pierce Arrow Business park located at 155-157 Chandler St Buffalo, NY 14207

1.3 System Startup and Testing

Pre start-up inspection

See to it that the on/off switch for exhaust fan operation is in the "off" position.

Pre Startup System Tests – Leak Detection

Operators of unit are instructed to use a spray bottle of water with dish soap in it to spray around areas where seals may exist in order to visually inspect systems and determine if a leak is present in the system.

- Warning device: An alarm will emit noise and a pilot light will illuminate when system has malfunctioned or is in need of service.

The system testing described above will be conducted if, in the course of the [specify EC] system lifetime, the system goes down or significant changes are made to the system and the system must be restarted.

The SSD system has a warning devices to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period

1.4 Routine System Operation and Maintenance

Troubleshooting guide

Ensure that, if the system fails to operate, that the on/off switch is in the "on" position.

In the event of a system failure or malfunction, operators are instructed to inspect to see if the warning pilot light has been illuminated, and listen for a perceptible alarm.

If warning indicators indicate troubleshooting is necessary, operators are instructed to use a spray bottle filled with water and dish soap in order to determine if a leak is present in the seals in the system by spraying the soapy water on the seals. If bubbles appear around system seals, there is a leak in the seals in the system.

If there are no signs of leaks in the system seals, operators are instructed to replace fan units with new fan units.

The SSD system has a warning devices to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period

Operating Schedule

The system should be operating at all times, 24 hours a day, indefinitely.

Inspection Schedule

Remedial System Component	**Monitoring Parameter**	**Operating Range**	**Monitoring Schedule**
Vacuum blower	Flow Rate	5 – 10 GPM	Continuous
General system piping	Piping condition	-	Yearly

Inspection

- System Test – Leak Detection
- Operators of unit are instructed to use a spray bottle of water with dish soap in it to spray around areas where seals may exist in order to visually inspect systems and determine if a leak is present in the system.

- Routine maintenance activities and minimum schedules.

1.5 Non-Routine Operation and Maintenance

The SSD system has a warning devices to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period

1.6 System Monitoring Devices and Alarms

The system is equipped with an alarm system that will alert operators of system failure. This includes an audible alarm, and a pilot light that will emit light in the event of a system failure.

The SSD system has a warning devices to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSD system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

Appendix A

O&M Manual

The four (4) OBAR fans are proposed to be individually monitored in real time by a Sensaphone SCADA 3000 Remote Terminal Unit (RTU). The SCADA 3000 will monitor the SSDS 24 hours per day through receivers mounted on the building that receive continuous wireless signals from the transmitters mounted on each fan. Each fan will also include an interior mounted monometer installed at eye level to provide a visual indication to tenants that the system is operating. In the event that a fan loses power or vacuum an alarm will be initiated by the SCADA 3000 that notifies the administrator through a telephone call.

The piping network will consist of 3 -inch diameter schedule 40 polyvinyl chloride (PVC) piping originating at four vacuum trench floor locations and connecting to 4”-inch diameter risers.

The proposed vacuum trench locations are depicted on Figure 1. The trench locations were located near building column lines with the intent for the interior columns to provide a level of protection for the vertical PVC risers.

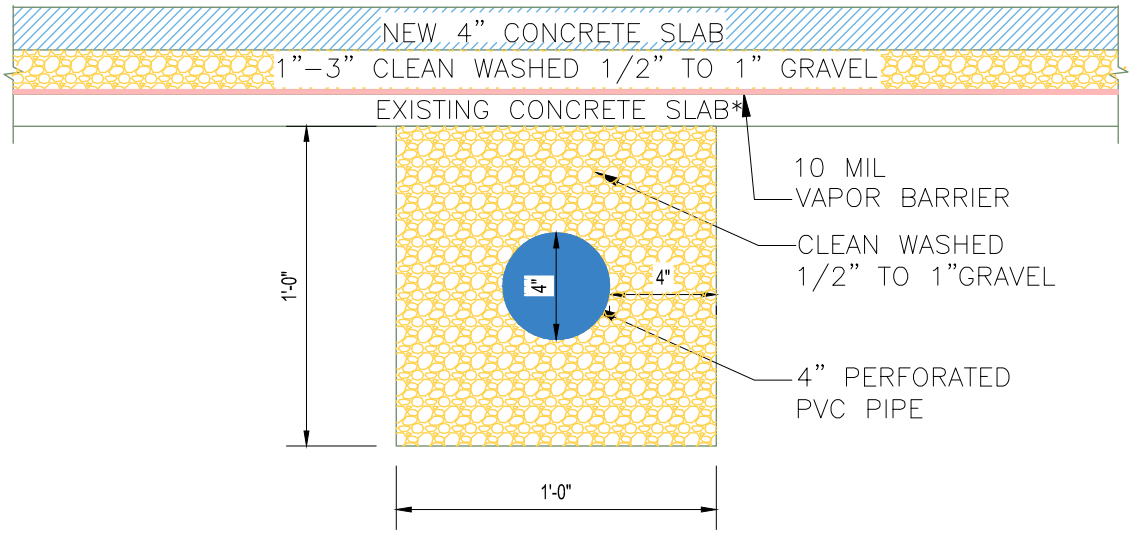
The horizontal pipes runs are to be installed with a minimum slope returning to the vacuum trenches of 1-inch per 20-feet. All 4 vacuum trenches will include 2-inch ball valves for balancing the system, where required. Trenches would be backfilled with washed #2 stone and covered with a new 4” concrete floor. Each vacuum trench will be sealed with foam backer rod and polyurethane self-leveling caulk and allowed to sufficiently dry according to manufacturer specifications prior to activation of the system.

The horizontal pipe under the roof are to be where necessary supported with pipe hangers within two feet of couplings and a maximum hanger spacing of six feet per New York State Plumbing Code. Vertical 4” PVC piping (SCH.40) will be raised to the underside of the roof and penetrate the roof diaphragm.

Depending on the location it may be necessary to run horizontally a short distance to avoid structural framing a rain cap will be mounted to the pipe on the roof to allow exhaust and control ram water.

In order to operate the sub slab depressurization system, operators must familiarize themselves with functions of the Sensaphone SCADA 3000 remote terminal unit (RTU).

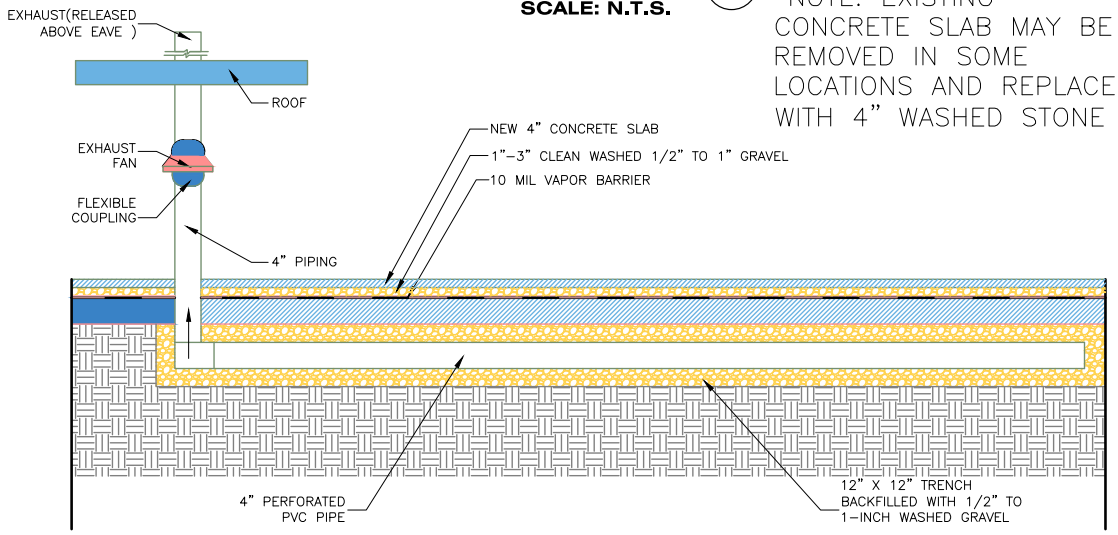
For questions regarding the controller unit, refer to the Sensaphone SCADA 3000 User’s Manual found at this link: **https://www.sensaphone.com/pdf/LIT-0020_Manual_v2.4_WEB.pdf**



TYPICAL CROSS-SECTION OF SSDS TRENCH AND PIPING (1 / SK-1)

SCALE: N.T.S.

*NOTE: EXISTING CONCRETE SLAB MAY BE REMOVED IN SOME LOCATIONS AND REPLACED WITH 4" WASHED STONE



TYPICAL SSDS TRENCH PROFILE (2 / SK-1)

SCALE: N.T.S.

SCHENNE & ASSOCIATES
CONSULTING ENGINEERS
391 Washington Street Suite 800
Buffalo, NY 14203
(716) 655-4991 JOHN@SCHENNE.COM

166 CHANDLER HOLDINGS LLC
391 WASHINGTON ST,
SUITE 800
BUFFALO NY

PIERCE ARROW BUSINESS PARK
155 CHANDLER ST
BUFFALO NY

SUB-SLAB MITIGATION DESIGN

DWG. SK-7

SCALE: AS NOTED

DATE: 12/05/2017

Appendix B

Inspection Checklist

Inspection Item	Inspection Schedule
Sensaphone SCADA 3000 Monitoring System	Continuous
Vacuum blower	Continuous
General system piping	Yearly

APPENDIX G – QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

BROWNFIELDS CLEANUP PROGRAM
For
Pierce Arrow Business Center
155-157 Chandler, Buffalo, New York 14207
BCP #C915312

Prepared For:
R & M Leasing LLC and Signature Development LLC
391 Washington Street, Buffalo, New York 14203
HEI Project No: e1601

Prepared By:

Hazard Evaluations, Inc.
3752 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

Schenne & Associates
391 Washington Street, Suite 800
Buffalo, NY 14203
(716) 655-4991

November 11, 2016 – Revised May 22, 2017

HAZARD EVALUATIONS

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1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been cooperatively developed by Hazard Evaluations Inc. (HEI) and Schenne & Associates (S&A) as prepared for the proposed Pierce Arrow Business Center at 155 Chandler Street, Buffalo, New York. The QAPP was prepared in general accordance with the requirements of Section 2.4 of the NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation, dated May 2010 (DER-10).

The QAPP is designed to produce data of the quality necessary to achieve the project objectives. The objective of the QA/QC protocol and procedures is to ensure the information, data, and decisions associated with the project are technically sound and properly documented.

1.1 Project Scope

This QAPP presents the project scope, objectives, organization, planned activities, data quality objectives, quality assurance/quality control (QA/QC) procedures and sampling procedures. This project involves test borings, monitoring well installation, monitoring well development, subsurface soil and groundwater sample collection, and subslab vapor and ambient air sample collection, as well as interim remedial measures (IRM) to include soil excavation and surveying. Proposed sampling locations are included on Figure 1 and a summary of the anticipated number of samples and analytical testing is included on Table 1. The project goal associated with the RI/IRM includes the following:

- Define the nature and extent of on-site contamination in both soil and groundwater.
- Identify on-site source areas of contamination, if any.
- Collect data of sufficient quantity and quality to evaluate potential threats to the public health and environment.
- Collect data of sufficient quantity and quality to evaluate remedial alternatives.
- The IRM will mitigate risks at the site associated with the fill soils as well as potential USTs. The planned IRM includes tank removal, excavation and off-site disposal of impacted fill soils in the vacant lot and courtyard area.

1.2 Project Organization

The general responsibilities of key project personnel are listed below. Resumes are included in Attachment A.

Project Manager	Ms. Michele Wittman, HEI Director of Site Services, will have responsibility for overall program/project management and coordination with NYSDEC and subcontractors.
Technical Coordinator	Mr. John Schenne, PE, is responsible for review of project documents and all engineering aspects and responsibilities.

Field Team	Mr. Eric Betzold will have overall responsibility for on-Site implementation of the Site Investigation project activities. The technical team will consist of experienced professionals (engineers, geologists, scientists) to gather and analyze data, prepare project documentation and collection of various soil and groundwater samples.
QA Officer	Mr. Mark Hanna, CHMM, will serve as Quality Assurance Officer (QAO), and will be responsible for laboratory and data validation subcontractor procurement and assignment, as well as data usability reports. The QA may conduct audits of the operations at the site to ensure that work is being performed in accordance with the QAAP.

1.3 Project Sub-Contractors

Subcontractor specialists will be contracted for services relating to drilling and monitoring well installation, laboratory/analytical services, data validation services, field surveying, and waste transportation and disposal. The subcontractors will be determined approved by NYSDEC prior to beginning of site work:

Laboratory Analysis -	Alpha Analytical - A laboratory certified under the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) will perform the analysis
Data Validation -	Data Validation Services
Exploration Services -	To be determined.
Surveying -	To be determined

2.0 FIELD INVESTIGATION PROCEDURES

Field sampling at the proposed Pierce Arrow Business Center site has been designed to obtain representative samples of various environmental media to assess impact that the site may have to human health and the environment. The field investigation procedures include sampling for subsurface soils, groundwater, air and vapor samples.

Proposed sampling locations are included within the RI/IRM/AAR Work Plan. Environmental sampling and other field activities will be performed in general accordance with the appropriate techniques presented in the following guidance document.

- DRAFT DER-10: Technical Guidance for Site Investigations and Remediation; NYSDEC Division of Environmental Remediation, May 2010.

Field activities are described in the following sections and in the RI/IRM/AAR Work Plan.

2.1 Air Monitoring

Air monitoring/screening of volatile compounds for health and safety concerns will be performed with a portable organic vapor meter (OVM) equipped with a photoionization detector (PID) that is using a 10.6 electron volt (eV) bulb. Monitoring will be done during invasive activities such as soil borings, monitoring well installation, well development, sampling, and IRM activities. Detections above background during air monitoring will require that the work be stopped until air monitoring levels decrease to background levels or until health and safety protocol are upgraded and approved by NYSDEC. On-site personnel will be outfitted in modified Level D personnel protection (hardhat, safety glasses, work boots and gloves).

2.2 Soil Screening and Logging

Subsurface soil samples will be collected from direct push macro-core samplers in general accordance with American Society for Testing and Material (ASTM) D6282-98 Standard Guide for Direct Push Soil Samples for Environmental Site Characteristics. Subsurface soil sampling from split-spoon samples advanced ahead of hollow steam augers will be completed in general accordance with ASTM D1586-99. A soil boring log will be prepared for each location to include date, boring location, drill rig type, blow counts, sample identification, sample depth interval, percent recovery, OVM reading, stratigraphic boundaries, and well installation information.

Subsurface soil will be sampled by opening the split spoon sampler (borings) or slicing the core vertically down the middle with a sharp blade. Soil samples will be visually examined for evidence of suspect contamination (e.g., staining, odor) and field screened with a calibrated OVM. Portions of the soil samples may be placed in containers for future analytical testing. Different portions of the soil samples will be placed within sealable plastic bags and will be field screened the same day as collected. Prior to screening, the soil samples will be allowed to equilibrate to ambient temperature. The OVM sampling port will be placed within a corner of the bag. The peak reading will be recorded on the boring log.

2.3 Soil Sample Collection

Soil samples selected for VOC analysis will be collected using an Encore or Terracore sampling kit, limiting headspace by compacting the soil into the container. Samples for VOC will be placed into the appropriate container immediately after opening of sampler, prior to making any field measurements or sample homogenization.

Remaining soil samples will be homogenized using a "coning and quartering" procedure. The soil will be removed from the sampling equipment and transferred to

a clean surface (metal foil, steel pan, bowl, etc.) and thoroughly mixed to provide a more homogeneous sample to the lab. An aliquot of the sample will then be transferred to the required sample containers and sealed with the appropriate cap.

2.4 Soil Borings

Soil borings will be completed using either direct push subsurface investigation techniques or rotary drilling with continuous split spoon sampling and hollow stem augers. Drilling cuttings will be visually inspected and screened with an OVM and managed consistent with DER-10 requirements. Soil sampling will be conducted to define the subsurface conditions. During continuous sampling process, soil samples will be field screened for the presence of VOCs using an OVM. Soil samples for laboratory analysis will be selected in the field based on visual/olfactory observations and OVM screening results.

The drill rig/ soil probe rig, tools, augers, etc. will be decontaminated between holes at an on-site temporary decontamination pad or area. Decontamination will be accomplished using steam cleaning or high pressure wash equipment. Direct push sampling equipment and split spoon sampling devices will be cleaned manually with non-phosphate detergent (i.e., Alconox) wash and potable water followed by a potable water rinse or a second steam cleaning followed by a distilled/deionized water rinse. All equipment will be cleaned prior to leaving the Site.

2.5 Monitoring Well Installation

Monitoring wells will be constructed of 2-inch ID flush coupled Schedule 40, polyvinyl chloride (PVC) riser and screen. The actual installation depth and screen depth will be selected based groundwater depth, observation of subsurface materials and headspace screening test results. In general, the screen will consist of a maximum 10 foot length of 0.010-inch machine slotted well screen. A schematic of the well construction detail is provided as Figure 2.

Following placement of the assembled screen and riser, the borehole will be backfilled. The well screen depth will be backfilled with silica sand filter pack (estimated at size #0) from the base to a minimum of one (1) foot above the well screen. A minimum 1-foot layer of bentonite pellets will be placed above the sand filter and allowed to hydrate. A mixture of cement/bentonite water will be placed above the bentonite seal. The monitoring well will be completed by placing a locking steel casing or road box over the riser. Concrete will be then placed in the borehole around the protective casing and sloped away from the casing.

2.6 Monitoring Well Development and Sampling

2.6.1 Monitoring Well Development

Monitoring wells will be developed by utilizing either a dedicated tubing or new dedicated disposable bailer, depending on the field conditions. Fluids will not be added during development process. New, dedicated well development equipment will be utilized prior to development of each well. The well development procedure is listed below.

- Well cover will be unlocked. OVM will be used to survey the ambient air and air directly at the top of the well.
- A pre-development static water level measurement will be taken.
- Sound the bottom of the well and agitate/loosen accumulated sediment.
- Calculate water volume in the well.
- Obtain initial field water quality measurements, including pH, specific conductance, turbidity, and temperature obtained using a Horiba U-22 water quality meter (or equivalent).
- Alternate water agitation methods such as moving a bailer or pump tubing up and down inside screened interval coupled with water removal methods (pumping or bailing) in order to suspend and remove solids/sediment from the wells.
- Water quality meter measurements should be recorded every one to three gallons of water removed. Record water quantities removed and water quality measurements.
- Development can cease when the following water quality criteria are met, or at least 5 well volumes have been removed.
    - Water is clear and free of sediment and turbidity is less than 50 nephelometric turbity units (NTUs)
    - pH is +/- 0.1 standard unit between readings
    - Specific conductivities is +/-3% between readings
    - Temperature is +/-10% between readings
- Record post-development water level readings. Development information will be recorded on well development logs.

After the water level has returned to its pre-purge level (or within a maximum of two hours, if the well has recharged sufficiently to allow sampling), samples will be collected from the middle of the screened portion of the well for overburden wells. If the water level is slow to recharge and does not reach to its pre-purge level within two hours, then samples can be collected after sufficient water has recharged, and the degree of recharge indicated in field notes with time and depth to water noted.

2.6.2 Groundwater Sampling

Groundwater samples will be collected by utilizing low-flow sampling techniques with dedicated tubing or by conventional methods using a new dedicated disposable bailer. A peristaltic pump and new disposable high density polyethylene (HDPE) tubing will be used at each location. Tubing and sampling equipment will be clean upon arrival at the Site. After removal of three well volumes or well purging, the well should be sampled.

A Well Data Sheet should be completed during groundwater sampling. Each well to be sampled will have designated pre-labeled, certified clean, sample bottles. The following steps describe the groundwater sample procedure.

- Unlock and remove well cap. Test the air at the wellhead with the OVM.
- Measure the static water level. Determine the total well volume.
- Slowly lower the dedicated bailer or tubing into the well. Purge the well, minimum of three well volumes. If the well goes dry during bailing, allow for full recovery and sample. If recovery takes longer than 20 minutes, proceed to next well but return to sample within 24 hours.
- Fill the appropriate sample bottles. Two or three (depending on laboratory-specific requirements) 40-ml glass vials (with Teflon septa) will be used to collect samples for VOCs. Sample collection with the following sample collection order: volatile organic compounds, semi-volatile organic compounds, PCBs/pesticides/herbicides and metals. If the well should go dry during sampling, the well should to be re-sampled the next day. The second attempt to sample the well will proceed with the same sample order.
- Preservative for the various sampling preservatives will be added by the laboratory provided jars. The following parameters required additional special handling.
  - VOC samples must be free of air bubbles. When the container is determined to be bubble free, the sample containers should be immediately chilled.
  - Metals analysis should be preserved with nitric acid to a pH less than 2.
- Record pertinent information in the field logbook and well data sheet.
- Lock well, inspect well site, and note any maintenance required.
- Purge water will be containerized for future disposal.

2.7 Soil Vapor Intrusion Sampling

Soil vapor intrusion (SVI) investigation will be completed to assess potential for soil vapor intrusion concerns associated with the current on-site building. The SVI work will be in done in general accordance with NYDOH Final document entitled “Guidance for Evaluating Soil Vapor Intrusion in the State of New York” dated October 2006. Specifically, the scope of work will include the following:

2.7.1 Pre-Sampling Building Inspection and Product Inventory

An inspection of the existing onsite building and product inventory will be conducted to assess the current conditions and determine the likelihood of existing chemicals of concern that may be present that would influence the vapor test results. The inspection should evaluate the type of structure, floor layout, air flows and physical conditions of the building. An example inventory form is included in Attachment B.

The presence and description of odors will be identified and a portable photoionization detector (PID) will be used to monitor indoor air and help evaluate potential sources. Any potential sources identified inside the building will be removed prior to conducting the vapor test.

2.7.2 Site Preparation

Sub-slab vapor samples and indoor air samples should be collected during the heating season as soil vapor intrusion is more likely to occur when buildings heating system is in operation and doors/windows are closed. In accordance with NYDOH recommendations, the HVAC system should be activated. However, the HVAC system is not operational at the site. Additionally, due to the past fire, a portion of the roofing is missing in the eastern portion of the building. Therefore, the most of the building will not be heated at the time of sampling.

The southern portion of the building is occupied by a warehouse with limited heating available. A determination will be made if HVAC system is operational in warehousing area, and if activation is possible. The HVAC system will be operate for 24-hours prior to sampling.

2.7.3 Vapor Sampling

Three types of air samples will be collected, including sub-slab, ambient indoor air and ambient outdoor air samples, as follows:

Sub-Slab Vapor Sample: The building floor should be inspected and any cracks, floor drains, sums, etc. should be noted and recorded. Sample locations should be installed where the potential for ambient air infiltration via floor penetrations is minimal.

Temporary sub-slab vapor sampling points will be installed. A vacuum should not be used to remove debris from sampling port area. The sub-slab vapor points should be installed as follows:

- The sampling port will be accessed through core-drilled holes into a competent portion of the concrete floor, away from cracks or drains.
- Clean, dedicated 1/8 to ¼-inch inside diameter inert tubing (e.g. polyethylene, nylon, Teflon, etc.) will be placed into the hole and will not extend further than 2 inches into the sub-slab material.

- Porous, inert backfill (e.g. glass beads, washed #1 crushed stone, etc.) should be added to cover about 1-inch of the probe tip.
- The hole annulus will be sealed at the floor surface with non-VOC-containing, non-shrinking products (e.g. permagum grout, melted beeswax, putty, etc.)
- Once it is determined that the sampling system is sealed, the sample probe and tube will be purged of one to three volumes. Flow rates for purging should not exceed 0.2 liters per minute to minimize ambient air infiltration during sampling.
- Samples should be collected, using conventional methods. The sampling canister and flow rate should allow for an 8-hour sample collected at a rate not to exceed 0.2 liters per minute. Sample canisters should be low-flow rate, summa canisters (1 to 6-liter in size) for analysis via EPA Method TO-15.
- A sample data sheet should be completed for each sampling location. Sample sub-slab vapor probe sampling data sheet is included in Attachment B.

Ambient Indoor Air: An ambient indoor air sample will be collected concurrently with each sub-slab sample. Samples will be collected from a height to represent the breathing zone, approximately 3 to 5 feet above the slab floor.

The sampling duration should be set to an 8-hour sample due to future usage as commercial/light industrial. Samples should be collected, using conventional methods. The sampling canister and flow rate should allow for an 8-hour sample collected at a rate not to exceed 0.2 liters per minute. Sample canisters should be low-flow rate, summa canisters (1 to 6-liter in size) for analysis via EPA Method TO-15. After setup of sampler, personal should avoid lingering in the immediate area of the sample. A sample data sheet should be completed for each sampling location. Sample sub-slab vapor probe sampling data sheet is included in Attachment B.

Ambient Outdoor Air: One ambient outdoor sample will be collected at an upwind location, away from wind obstructions (trees, bush) and at a height above the ground to represent breathing zones, approximately 3 to 5 feet above the ground surface. Samples should be collected, using conventional methods. The sampling canister and flow rate should allow for an 8-hour sample collected at a rate not to exceed 0.2 liters per minute. Sample canisters should be low-flow rate, summa canisters (1 to 6-liter in size) for analysis via EPA Method TO-15. A sample data sheet should be completed for each sampling location. Sample sub-slab vapor probe sampling data sheet is included in Attachment B. Since the ambient outdoor air sample is dependent on

wind flow direction, that sample location will be determined the day of the test.

2.7.4 Soil Vapor Sampling Leak Testing Procedures

When collected soil vapor samples, a tracer gas can serve as a QA/QC measure to verify the integrity of the soil vapor probe seal. Leak testing will be completed prior to collection of the sub-slab sample locations using a tracer gas. The tracer gas (i.e. helium) will be released at the ground surface immediately around the sub-slab sampling location prior to sample collection. The following procedure will be used:

- A helium meter will be used to monitor the presence of helium during purging and soil gas sample collection.
- A containment unit will be constructed to cover the sub-slab sampling system. In general, the containment will include a shroud set into bentonite to create a seal. The shroud will have a hole to allow for introduction of helium and a second to allow trapped air to escape.
- Prior to soil gas purging, helium will be introduced into the shroud and helium confirmed to be present.
- The helium meter will be connected in-line with the sub-slab sampling assembly to assess for presence of helium. Should the helium meter detect the presence of helium greater than 10 percent of the source concentration (measured under the shroud), then probe seal will be enhanced to reduce the infiltration of ambient air.
- Tracer gas confirmation should be completed at each temporary soil vapor probe location.

2.8 Background Samples

Due to the historical industrial usage of the site and industrial nature of the site contaminants, soils and groundwater samples have not been pre-designed as likely to characterize site background conditions.

2.9 Equipment Decontamination

In order to reduce the potential for cross-contamination of samples collected during the project, sampling equipment will be decontaminated to ensure that data is acceptable. It is anticipated that most of the materials used in sample collection will be disposable one-time use materials, such as sampling containers, bailers, tubing, gloves, etc.

Non-dedicated material such as split spoon samples, stainless steel mixing bowls, drill rig, water-level indicator, etc., will be decontaminated by the following methods:

- Steam clean the equipment within a dedicated decontamination area; or
- Decontamination typically involves scrubbing/washing with a laboratory grade detergent (e.g. alconox) to remove visible contamination, followed by potable (tap) water and analyte-free water rinses. Tap water may be used from any treated municipal water system.

The effectiveness of the equipment decontamination of non-dedicated sampling equipment will be evaluated via analytical testing of rinsate blanks. Decontamination liquids, disposable equipment, and PPE will be containerized for future disposal.

2.10 IRM Activities

IRM activities are planned as part of the RI/IRM field activities to include UST removal and soil excavation. Specific information on location and depth of excavation areas are include within the RI/IRM/AAR Work Plan.

2.10.1 UST Excavation

If USTs are identified during IRM excavation, the UST will be removed to prevent further movement of contaminants. The following general procedures will be followed.

- DEC will be notified of tank removal at least 10-days in advance.
- Tank removal will be completed in general conformance with NYSDEC Memorandum for Permanent Closure of Petroleum Storage Tanks, dated January 20, 1987.
  - Remove all product, if present. Drain and flush piping lines into tank. Remove entire tank contents including tank bottom, product, water and sediments.
  - Expose tank and lines. Remove fill and vent lines. Temporarily plug tank openings.
  - Complete excavation on sides of tank, removed tank and place in a secure location.
  - The tank atmosphere should be made save (via dry ice, or other acceptable method). The tank atmosphere must be tested to ensure it is safe with an oxygen meter. For save condition, the reading should be 6-7% oxygen and/or lower explosive limit (LEL) of 10-20%.
  - The tank will be cleaned on-site. Tank cleaning waste will be containerized and disposed off-site. The certified clean tank will be taken to a scrap yard for recycling.
- If there is evidence of impacted soil, the excavation will continue until all contaminated soil is removed or until further excavation is no longer feasible. Once excavation is complete, confirmation soil samples will be taken.

2.10.2 IRM Confirmation Samples

IRM confirmation soil samples are anticipated to be collected from the UST excavation and soil excavation areas. IRM confirmation samples will be collected using disposable or dedicated stainless steel spoons or hand trowels from excavation walls and floor. Based on DER-10 requirements, one sample will be collected every 30 linear feet of sidewall and one sample for every 900 square feet of excavation bottom. To minimize volatilization, confirmation samples will be collected from the soils located two to four inches inside the

walls or floor of the excavation. The retrieved soil sample will be placed directly into parameter specific glass containers. Each sample container will be appropriately labeled and transported to the contracted laboratory.

Underground storage tank (UST) excavation confirmation samples will be collected after extent of impacted soil has been removed. A minimum of five (5) soil samples will be collected, including four sidewall and one bottom sample for every complete 15 linear feet of trench. The samples will be biased based on field screening toward the suspected location of greatest contamination.

2.11 Storage and Disposal of Investigation-Derived Waste

The sampling methods and equipment have been selected to limit the need for decontamination and the volume of waste material to be generated. Investigation-derived material (e.g., drill cuttings and purge water) generated will be presumed to be non-hazardous waste and will be disposed at the boring or well from which the material was derived. Excess auger cuttings will be drummed and stored on-Site for future disposal. Monitoring well development/purge water will be containerized in 55-gallon drums for testing and future off-site disposal.

Personal protective equipment and disposable sampling equipment will be placed in plastic garbage bags for disposal as a non-hazardous waste.

Decontamination water used in steam cleaning and/or spoon washing, and rinse water, including detergent, may be generated during Site work. Tap and analyte-free water used for rinsing will be allowed to percolate back into the ground, or will be disposed into a sanitary system. Non-phosphate detergent and water rinse will be disposed into a sanitary system.

2.12 Survey/Site Mapping

A topographic base map will be prepared by a New York State licensed surveyor. This will allow measurement of the actual exploration locations and elevations. The base map will include property lines, buildings, fence lines, and other key site features. The surveyor will establish the horizontal location and vertical elevations. The map will include the RI investigation/sampling locations, as well as completed IRM work excavation limits. Monitoring well vertical measurements will include the ground surface at exploration locations, plus the top of casing and top of riser at monitoring well locations. The top of riser will serve as the water level monitoring point. Soil/fill boring locations will be field located and incorporated within the survey. Elevations of the ground surface and top of PVC riser will be measured for each monitoring well.

3.0 SAMPLE HANDLING and MANAGEMENT

Various environmental samples will be collected during the RI/IRM investigation work. The procedures below will assist in documentation and tracing of the various samples. During sampling, field personnel will wear disposable or latex or nitrile gloves. Gloves will be changed and discarded between sampling locations.

Laboratory analysis samples will be placed in new laboratory-grade containers. Appropriate sample preservatives will be added to the sample containers by the laboratory prior to delivery to the project site. The specific volume and preservation of samples, if any, is summarized on Table 2. Samples will be shipped to the laboratory within 48-hours from sample collection. Samples will be kept in coolers, on ice, for shipment to the analytical laboratory.

3.1 Sample Label and Identification

Each field and QC sample will be identified by a self-adhesive, non-removable label placed on the sample containers. The label information will include, at a minimum, client name, site location, data and time of collection, sample identification number, sampler's name, and notes, as needed recorded in waterproof ink. All sample bottles within each shipping container will be individually labeled with the laboratory provided label.

Each sample will with a unique identification using the following test location designations:

Designation	Media Type	Sample Location	Example
SB	Soil	Soil boring number with sample depth interval (x-x')	SB1 (8-10')
MW	Groundwater	Monitoring well with well number	MW2
EX	Soil	Excavation confirmation sample with sample depth interval	EX3 (1-2')
SSV	Sub-slab vapor	Sub-slab vapor intrusion sample	SSV4
AA	Ambient air	Indoor air sample, concurrent with SSV	AA4
OA	Outdoor air	Outdoor air sample	OA1
TB	Trip blank	None – include day/month/year	TB1 – 10/25/16
RB	Rinsate blank	Any – rinsate of sampling equipment; include day/month/year	RB2 – 10/25/16
MS/MSD	Matrix spike/ matrix spike duplicate	Any – identify original sample location	SB1 MS MW2 MSD

Quality control (QC) field duplicate samples will be submitted blind to the laboratory; a fictitious sample identification will be created using the same system as the original. The sample identifications (of the original sample and its field duplicate) will be marked in the project specific field book and on the copy of the chain-of-custody kept by the sampler and copied to the project manager.

3.2 Chain of Custody

A chain-of-custody form will trace the path of sample containers from the project site to the laboratory. An example Chain of Custody is included in Attachment 2. The chain-of-custody documentation will accompany the samples from their inception until analysis. Pertinent field information will be included on the chain-of-custody, including client name, project name/location, sampler name, sample identification number, date, time, media, grab/composite, number of containers, analysis required, and preservation.

Samples will be packaged into coolers used for shipment. The cooler will be packed with ice (or equivalent) to maintain sample temperature at 4 ^{o}C. The chain of custody forms will be signed and placed in a sealed plastic bag in the cooler. The cooler will be sealed and custody seal placed over the cooler opening, designed to break if opened or disturbed. The custody seal will be signed and dated. Shipping tape will be wrapped around the cooler and over the custody seal. Sample receipt personnel at the laboratory will document whether the custody seals remained intact upon arrival and lab personnel will sign the chain-of-custody form.

4.0 FIELD DOCUMENTATION

Daily field activities will be recorded in a bound field notebook. The field notebook will include the following daily information for Site activities:

- Date, time of arrival, time of departure, weather conditions.
- Field staff, sub-contractors or other personnel on site.
- Description of field activities and location of work area.
- Equipment used on site (such as drill rig, operator)
- Field observations and descriptions, such as soil descriptions, well/piezometer installation information, evidence of contamination, staining, odors, etc.
- Field measurements (OVM, water quality readings) and calibration
- Sampling locations, depths, identification numbers, time, etc.
- Sampling location measurements.
- Chain of custody information
- Modifications to scope of work or issues encountered.

Field notes may be transferred to soil boring logs, or monitoring well forms as part of the RI/IRM/AAR. Typical forms to be utilized during the field investigation are presented in Attachment 2 and include:

- Daily Field Report
- Soil Boring Log
- Monitoring Well Installation Log
- Well Development Data Sheet
- Chain of Custody
- Building Inventory
- SVI Sampling Data Sheet

5.0 ANALYTICAL LABORATORY QA/QC PROTOCOLS

This section describes the analytical methods, principles and procedures that will be used to generate quality data. These protocols include laboratory calibration, field equipment calibration, QC sample collection and analysis, quantitative evaluation of data quality protocols and data qualification, if necessary.

5.1 Analytical Methods, Procedures and Calibration

Chemical analysis for samples collected during the field work will be completed by a laboratory capable of performing project specific analysis as included in this QAAP.

5.1.2 Analytical Methods

Sample analytical analysis will be consistent with the NYSDEC ASP Category B requirements. Specific methods and references for each parameter including sample preservation and holding times are shown on Table 2. Quantification and detections limits for all analysis are those specified under the appropriate test methods.

5.1.3 Laboratory Instrumentation & Equipment

Laboratory instruments and equipment will be calibrated following SW-846 analytical methods protocol and laboratory requirements.

5.1.3 Field Equipment

Various field equipment will be used during the project. Calibration of the field equipment will be complete in accordance with manufacture's specifications, prior to the start of each day.

Organic Vapor Meter – Real-time monitoring for VOCs will be done with an organic vapor meter (OVM) equipped with a photoionization detector (PID) to evaluate the nature and extent of potential petroleum or solvent impacts at the site. The OVM will be calibrated on a daily basis in accordance with manufacturer's specifications.

Particulate Monitoring Equipment – Particulate air monitoring will be completed during soil excavation activities as part of the IRM as noted in the Community Air Monitoring Program (CAMP). Measurements will be collected along the upwind perimeter of the excavation areas to assess the amount of particulates naturally occurring in the air. The particulate meter will be regularly calibrated in accordance with the manufacturer's specifications.

Additional Field Equipment – Additional field equipment will be used as part of the project including an electric static water level indicator and Horiba U-22 water quality meter that measures pH, specific conductivity, temperature, dissolved oxygen, oxygen reduction potential and turbidity. The meters will be calibrated in accordance with the manufacturer's specifications.

5.2 Quality Control Samples

Analytical methods, summarized on Table 2, to be utilized for laboratory sample analysis address the quality control to be used and the frequency of replicates, blanks and calibration standards for laboratory analytical equipment. Several types of field QC samples will be collected and submitted for laboratory analysis including trip blanks, sample duplicate, matrix spike and matrix spike duplicate.

Trip blanks – A trip blank sample monitors for potential impacts due to handling, transport, cross contamination from other samples during storage or laboratory contamination. The trip blanks, for aqueous VOCs only, will consist of analyte free reagent grade water in VOC sampling containers to be used for the project. Trip blanks will be prepared at the laboratory, sealed, transported to the Site and returned without being opened to assess contamination that may have occurred during transport. Trip blanks will be submitted at a rate of one per cooler when aqueous VOCs are shipped to the laboratory.

Blind duplicates – Blind duplicate samples are used to monitor field and laboratory precision, as well as matrix heterogeneity. The samples are separate aliquots of the same sample, collected from the same location, at the same time, in the same manner as the first, and placed into a separate container. Each duplicate sample will be analyzed for the same parameters as the original sample collected that day. Blind duplicates will be collected at a frequency of 1 per 20 environmental samples of a given matrices (i.e. soil or groundwater).

Matrix spike/matrix spike duplicate (MS/MSD) are used to monitor precision and accuracy of the analytical method on various matrices. The samples are spiked with known quantities of target analytes at the laboratory. The MS/MSD will be collected at a frequency of 1 pair per 20 environmental samples of a given matrices (i.e. soil or groundwater).

Rinsate Blanks – Rinsate blank is used to indicate potential contamination from sample instruments used to collect and/or transfer samples. The rinsate blank will be generated by passing distilled water through and over cleaned sampling equipment. Rinsate blank samples will not be performed when dedicated disposal equipment is used. The rinsate blank will be collected at a frequency of 1 per 20 environmental samples of a given matrices (i.e. soil or groundwater).

5.3 Corrective Actions

If instrument performance or data fall outside acceptable limits, then corrective actions will be taken to resolve problems and restore proper functioning of the analytical system. Actions may include recalibration or standardization of instruments, acquiring new standards, replacing equipment, repairing equipment, and reanalyzing samples or redoing sections of work. Subcontractors providing analytical

services should perform their own internal laboratory audits and calibration procedures with data review conducted at a frequency so that errors and problems are detected early, thus avoiding the prospect of redoing large segments of work.

6.0 DATA USABILITY

The main objective of the DUSR is to determine whether the data presented meets the project-specific needs for data quality and data use. Data validation will be performed and a Data Usability Summary Report (DUSR) will be prepared to meet the NYSDEC requirements for analytical data generated during the RI/IRM. The DUSR will be completed in general accordance with Appendix 2B of DER-10. The findings of the DUSR will be incorporated in the RI/IRM/AAR report. Waste characterization samples will not be validated.

TABLES

TABLE 1
Analytical Testing Program Summary
155 and 157 Chandler
Buffalo, NY
NYSDEC Brownfield Cleanup Program

Location	Number of Proposed Locations	Matrix	TCL VOCS	TCL SVOCs	TAL METALS Total	TAL METALS dissolved	PCBs	Pest/ Herbs	VOC - TO-15
Surface Soil Samples									
Soil Boring	0	Soil	-	-	-	-	-	-	-
Duplicate		Soil	-	-	-	-	-	-	-
MS/MSD		Soil	-	-	-	-	-	-	-
Rinsate		Water	-	-	-	-	-	-	-
Total			**0**	**0**	**0**	**0**	**0**	**0**	**0**
Soil Borings - Subsurface Samples									
Soil Boring	15	Soil	15	15	15	-	8	4	-
Duplicate		Soil	1	1	1	-	1	1	-
MS/MSD		Soil	2	2	2	-	2	2	-
Rinsate		Water	1	1	1	-	1	1	-
Total			**19**	**19**	**19**	**0**	**12**	**8**	**0**
Monitoring Wells									
Monitoring Well	5	Groundwater	5	5	5	5	5	5	-
Duplicate		Groundwater	1	1	1	1	1	1	-
MS/MSD		Groundwater	2	2	2	2	2	2	-
Rinsate		Water	1	1	1	1	1	1	-
Trip Blank		Water	1	-	-	-	-	-	-
Total			**10**	**9**	**9**	**9**	**9**	**9**	**0**
Sub-slab/Ambient Air samples									
Sub-slab	6	Air	-	-	-	-	-	-	6
Ambient Air	6	Air	-	-	-	-	-	-	6
Outdoor		Air	-	-	-	-	-	-	1
Duplicate		Air	-	-	-	-	-	-	1
MS/MSD		Air	-	-	-	-	-	-	2
Rinsate		Air	-	-	-	-	-	-	-
Trip Blank		Air	-	-	-	-	-	-	1
Total			**0**	**0**	**0**	**0**	**0**	**0**	**17**
IRM Confirmation Sampling - Courtyard Area									
Sidewall Samples	25	Soil	25	25	25	-	40	4	-
Bottom Samples	15	Soil	15	15	15	-	8	2	-
Duplicate		Soil	2	2	2	-	2	1	-
MS/MSD		Soil	4	4	4	-	4	2	-
Rinsate		Water	2	2	2	-	2	1	-
Total			**48**	**48**	**48**	**0**	**56**	**10**	**0**
IRM Confirmation Sampling - Vacant Lot									
Sidewall Samples	18	Soil	18	18	18	-	4	4	-
Bottom Samples	19	Soil	19	19	19	-	2	2	-
Duplicate		Soil	2	2	2	-	1	1	-
MS/MSD		Soil	4	4	4	-	2	2	-
Rinsate		Water	2	2	2	-	1	1	-
Total			**45**	**45**	**45**	**0**	**10**	**10**	**0**
IRM Confirmation Sampling - 2,000-gallon UST Excavation									
Sidewall Samples	4	Soil	4	4	4	-	0	0	-
Bottom Samples	1	Soil	1	1	1	-	0	0	-
Duplicate		Soil	0	0	0	-	0	0	-
MS/MSD		Soil	0	0	0	-	0	0	-
Rinsate		Water	0	0	0	-	0	0	-
Total			**5**	**5**	**5**	**0**	**0**	**0**	**0**
IRM Confirmation Sampling - 10,000-gallon UST Excavation									
Sidewall Samples	6	Soil	6	6	6	-	0	0	-
Bottom Samples	2	Soil	2	2	2	-	0	0	-
Duplicate		Soil	1	1	1	-	0	0	-
MS/MSD		Soil	2	2	2	-	0	0	-
Rinsate		Water	1	1	1	-	0	0	-
Total			**12**	**12**	**12**	**0**	**0**	**0**	**0**
			VOCs	SVOCs	METALS	METALS	PCBs	Pest/ Herbs	VOC - TO-15
	TOTAL SAMPLES		**139**	**138**	**138**	**9**	**87**	**37**	**17**

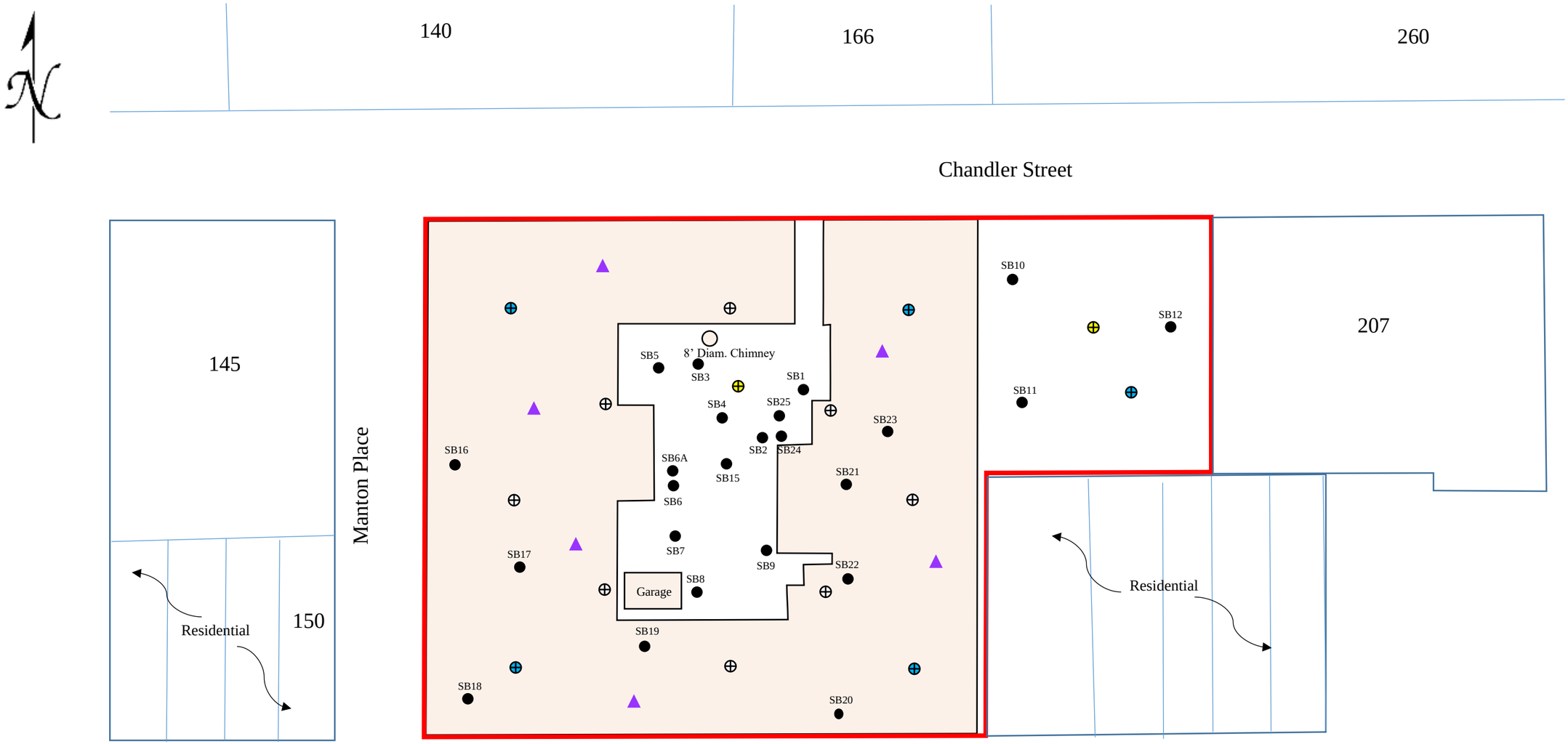
Notes:

TCL VOCs - Target Compound List Volatile Organic Compounds.
TCL SVOCs - Target Compound List Semi-volatile Organic Compounds.
TAL Metals - Target Analyte List Metals.
TCL PCBs - Target Compound List Polychlorinated Biphenyls.
VOC TO-15 - sub-slab, ambient air and soil vapor probe analysis

TABLE 2
Sample Container, Volume, Preserving and Holding Time Requirements
155 and 157 Chandler
Buffalo, NY
NYSDEC Brownfield Cleanup Program

PARAMETER DESCRIPTION	MATRIX	METHOD NO.	Quantity/ Bottle Type	Preservation	Holding Time
Soil Samples					
Volatiles, TCL list	Soil	5035/3035A/8260	Encore or Terracore Samplers	Freeze withint 48 hours	Freeze within 48 hours 14 days
Semi-Volatiles, TCL list	Soil	8270	(1) 4oz glass jar	Cool, 4 C	14 days
Metals, TAL (no CN)	Soil	6010/7000	(1) 4oz glass jar	none	180 days, Mercury 28 days
PCBs	Soil	8082	(1) 4oz glass jar	Cool, 4 C	365 days/40 days from extraction
Pesticides	Soil	8081	(1) 4oz glass jar	Cool, 4 C	14 days/40 days from extraction
Herbicides	Soil	8151	(1) 4oz glass jar	Cool, 4 C	14 days/40 days from extraction
Monitoring Wells					
Volatiles, TCL list	Water	8260	(3) 40ml vial	Cool, 4 C, HCL	14 days
Semi-Volatiles, TCL list	Water	8270	(2) 1 liter amber	Cool, 4 C	7 days
PCBs	Water	8082	(2) 1 liter amber	Cool, 4 C	7 days/40 days from extraction
Pesticides	Water	8081	(2) 500ml amber	Cool, 4 C	7 days/40 days from extraction
Herbicides	Water	8151	(2) 1 liter amber	Cool, 4 C	7 days/40 days from extraction
Metals, TAL	Water	6010	(1) 250ml plastic	HNO3	180 days
Mercury, Total	Water	7000	(1) 250ml plastic	HNO3	28 days
Metals, TAL (dissolved) field filtered	Water	6010	(1) 250ml plastic	HNO3	180 days
Mercury, Dissolved	Water	7000	(1) 250ml plastic	HNO3	28 days

FIGURES



Legend

- ● = Soil boring done 09/2016
- ⊕ = Proposed soil boring location (depth of 12 feet)
- ⊕ = Proposed monitoring well location
- ⊕ = Proposed deep soil boring (depth of 20 feet)
- ▲ = Proposed soil vapor sub-slab sample location

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

PROPOSED SAMPLING LOCATIONS
155 and 157 CHANDLER STREET
BUFFALO, NEW YORK

R & M LEASING LLC
BUFFALO, NEW YORK

DRAWN BY: MMW	SCALE: 1" = 60'	PROJECT: e1601
CHECKED BY:	DATE: 10/16	FIGURE NO: 1

Hazard Evaluations, Inc.	Date started: Date finished:	Hole No.: Sheet 1 of 1
Client: Location:		
Project No.: Proj. Mgr:	Drilling Co. Driller: Drill Rig:	Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Sample Blows /6"	Well Construction Details	Field Analytical Readings	Well Details	Groundwater and Other Observations
				1" well completed w/ flush road box			
				Cement/bentonite mix (1' - 2')			
4	2	4-8		Bentonite pellets (2'-4')			
				1" sch. 40 PVC riser (0'-5')			
8	3	8-12		#0 sand (4'-15')			
12	4	12-15	N/A: Well completed w/ geoprobe drill rig	1" sch. 40 PVC (.010 slot screen).			
				Bottom of screen 15 feet bg.			
				Bottom of borehole 15 feet bg.			
16							
24							
30							

S=Split Spoon: _____ T= Shelby Tube: _____

R= Rock Core: _____ WH = Weight of Hammer

N = ASTM D1586

Backfill Well Key:

Grout

Cement/ Bentonite

Sand

Bentonite

Attachment 1

Resumes

JOHN A. SCHENNE, P.E.

REGISTRATION

Registered Professional Engineer -- Texas, New York and Florida
Licensed Fire Protection II Contractor - Florida

EDUCATION/ TRAINING

BS - Civil Engineering - Clarkson University (1975)
BA - Geology - State University of New York at Potsdam (1976)
MS - Environmental Engineering - Clarkson University (1977)
Architectural and Planning Courses - State University of New York at Buffalo (1982-87)
U.S. Army Corps of Engineers – Engineer Officer Basic Course (1977)
Earth and Rock fill Dam Construction (1979)
Contract Management (1979)
Oil Field and Hazardous Environment Safety (1986)
Petroleum Production Repair (1984-1986)
Engineer Officer Advanced Course (1987)
U.S. Army Medical Service Corps – Officer Advanced Course (1993)

PUBLICATIONS

Earthen Manure Storage Design Considerations, US NRCS, 1997, co Author

MILITARY EXPIERENCE

23 years of experience, 2LT thru LTC, USAR officer, retired 1999 as 0-5. Various staff and command positions including Equipment officer responsible the maintenance of 4000 Army vehicles, to include Humves, Trucks to 80 ton, heavy equipment, bridging equipment, NBC decontamination equipment, repair equipment, generators air compressors, and various other diesel and gas fire equipment. I was also a safety engineer for the US Army for 12 years.

EXPERIENCE SUMMARY

Thirty five years of professional experience in design, construction, and management of multi-disciplined projects involving major earthworks, tunnels, buildings, treatment plants, and site developments. Responsibility as Project Engineer/Manager for feasibility, environmental, and design studies, supervision of field and laboratory investigations, field inspections, providing technical support, and liaison with regulatory agencies. Areas of experience and training include: Environmental Engineering,

Sanitary Engineering, Hydrology, Geological Exploration and Mapping; Site Investigation and Assessment, Hazardous Waste Remediation & Testing; Earthwork; Rock Excavation and Blasting; Concrete Design and Construction; Structural Design; Mechanical Design, Corrosion Protection; Facility Planning and Design, and Construction Management.

As a Licensed Fire Protection Contractor I have designed hundreds of water and chemical based fire sprinkler systems and coordinated the work with various fire departments and water utilities. I am familiar with NFPA specifications and codes including rating and testing of potable water systems and fire services. I am very familiar with the New York State Building Code as it relates to fire safety in structures.

KEY PROJECTS

Project-Engineer - Responsible for Draft Environmental Impact Study for 100 unit Residential Development in Orchard Park, New York. Work included traffic studies and investigation of Electro-Magnetic Radiation near power lines.

Project Engineer-Responsible for completion of a chrominum contamination study on twenty (20) miles of Cattaraugus Creek.

Project Engineer – Phase II Environmental hazardous waste investigation and remediation for the Seneca Nation of Indians Elderly Housing Complex, (former U.S. Leather Tannery Site).

Project Engineer - Responsible for the design and construction certification for the U. S. Army Corps of Engineers for over 80 miles of small diameter (four to eight inch) water and sewer lines. Work included approximately 50 lift stations, three 50,000 gpd package water treatment plants, and five land application sewage treatment systems.

Design Engineer - Responsible for the structural design of a high capacity sewage lift station handling extremely corrosive industrial sewage. Project was designed using 8000 psi chemically resistant concrete.

Project Engineer - Responsible for repairs to a 200 mgd water intake in Buffalo Harbor for the City of Buffalo. Repairs included underwater grouting of a 110 year old concrete foundation and installation of a zebra mussel suppression system.

Senior Design Engineer - Erie County Water Authority Sturgeon Point Water Treatment Plant, upgrade of sedimentation basins, sludge removal system and rehabilitation of rapid sand filters at a 100 mgd water plant.

Senior Design Engineer - Responsible for plant and structural design of slow sand water filtration plants at Ripley and Woodridge, New York. Plant sizes 0.3 mgd and 0.5 mgd

Project Engineer - Underwater inspection and emergency repairs to 70 mgd, 90 year old concrete and timber drinking water intake in the Niagara River for the City of Niagara Falls. Work included analysis of intake structure to resist dynamic water and ice loads

Design Engineer - Responsible for investigations and preparation of Phase I Site Assessments for Residential and Commercial Properties in Western New York.

Design Engineer - Responsible for foundation design for a 100 foot tall 300,000 gallon elevated water storage tank.

Design Engineer – Prepared design specifications for more than 50 fire pumps and more than 200 fire sprinkler systems in New York and Florida.

Design Engineer – Prepared designs for 10 –FM 200 fire suppression systems

Design Engineer – Prepared designs for s more than 250 commercial fire detection and alarms systems.

HAZARD EVALUATIONS

Michele M. Wittman, P.G.
Director of Site Services

Ms. Wittman is a Geologist with over 24 years of professional experience in conducting a variety of environmental projects for both private and public clients. Clients have included industry, governmental agencies, developers, legal firms, financial institutions, and engineering firms. Project work has included conducting and managing Phase I and Phase II Environmental Site Assessments throughout New York and surrounding states, Brownfield Cleanup Program project investigations and site remediation, hydrogeologic investigations, remedial option evaluation and cost estimating, and remediation of soil and groundwater.

Ms. Wittman's responsibilities have ranged from supervising field and technical activities, completion of field work including soil classification, well installation, collection of environmental laboratory samples, excavation oversight; training staff, data analysis, report preparation and review, and client contact. Additionally, responsible for developing and maintaining client relationships, account and project management, bidding, contracting and scheduling and financial management including budgets, proposals, profit/loss assessment. Ms. Wittman has also acted as business manager which included business development and client management, generation of marketing materials; supervising administration staff, and office management.

Ms. Wittman also previously held the position as Assistant Vice President and Environmental Risk Analysis Officer at an international financial institution. During her tenure at this position, Ms. Wittman reviewed hundreds of environmental reports and provided remedial cost estimates to evaluate the potential risk and future losses.

Education

B.A., 1994, Geology, State University of New York at Buffalo

B.S., 1994, Social Sciences-Environmental Studies, State University of New York at Buffalo

Professional Registrations

2002, Professional Geologist, Washington, #29940

Key Skills

- Brownfield Cleanup Program
- Environmental Site Assessments
- Remedial Investigations
- Feasibility Studies
- Geologic Evaluations
- Hydrogeologic Investigations
- Soil Testing
- Budgeting & Cost Controls
- Bidding/Estimating/Proposals
- Subcontractor/Crew Management

Affiliations and Certifications

New York State Council of Professional Geologists, Member
Buffalo Association of Professional Geologists, Member
Air and Waste Management Association of Western New York, Member
OSHA 40 Hour 29 CFR 1910. (HAZWOPER) Certification

Project Highlights

Brownfield Cleanup Program - Commercial Facility, North Tonawanda, New York
Reviewed previous Phase I and II work done by others for a client that purchased property and held responsible for previous owner spill associated with historic gasoline station. Completed additional investigation and provided remedial recommendations and cost estimate. After discussion regarding property development, completed Brownfield Cleanup Program application and approval. Field work anticipated for Winter 2014/2015.

Remedial Action Plan Evaluation – Former Bulk Petroleum Terminal, Rochester, New York
Developed Remedial Action Plan for former terminal property that underwent extensive subsurface investigations resulting in over 70 borings and 80 soil sample analyses. Initial remedial estimates (by others) included significant soil excavation and remedial costs. Our evaluation included comparison to NYSDEC CP-51 soil guidance for assessment of potential remediation. As such, based on minimal groundwater contamination and identification of significant impacts at greater depths, and negotiation with NYSDEC, no soil remediation was needed.

Management of Environmental Conditions – Retail Gasoline Chain, Western New York
Evaluated environmental concerns associated with 75 different retail gasoline stations. Reviewed regulatory information, previous reports, and data analysis to assess current environmental status. Developed a summary of findings and recommendation of action for each property. Further evaluations included Phase II investigation and continued monitoring of remedial efforts. Developed remedial cost estimate ranges for locations current undergoing remedial work.

Voluntary Cleanup Program - Commercial Facility, Hamburg, New York
Completed a Phase I ESA and identified historical dry cleaner. Conducted investigation and identified contamination beneath the building floor slab and behind the building (i.e. back door). Interim remedial measures (IRM) included soil removal, resulting in approximately 200 tons of soil that was disposed at a hazardous waste landfill. A soil vapor intrusion study was done and identified the presence of compounds To achieve site closure, negotiated a remedial solution that included confirmation sampling of soils around the building structure and installation of a sub-slab depressurization/vent system.

Contract to Closure, Remedial Activities, Commercial Facility, Rochester, New York.
Two former gasoline stations were located at adjoining properties. Our client wanted to develop the Site for commercial use. Completed a Site Investigation and identified subsurface soil contamination, groundwater contamination and separate phase product. Developed a Remedial Work Plan that included removal of separate phase product and implementation of in-situ chemical oxidation via hydrogen peroxide injections to further reduce contaminants in soil and groundwater. Remedial action also included asbestos abatement and building. The Site received a “no further action” letter and has been developed as a retail bank.

True Bethel Baptist Church – Technical Consultant
Senior Project Manager on the NYSDEC first ever Technical Assistance Grant (TAG) to a community group impacted by a brownfield site. Reviewed site technical documents, attended public meetings and interacted on behalf of the community with NYSDEC and its representatives and contractors on the Site.

Other Environmental Projects
Managed and completed hundreds of Phase I, Phase II, and remediation projects for variety of clients, including lawyers, financial institutions, retail clients and municipal agencies throughout WNY

HAZARD EVALUATIONS

C. Mark Hanna, CHMM
President, Principal

Mr. Hanna has over 34 years of experience in environmental pollution control and health/safety services. As principal for Hazard Evaluations, Inc., Mr. Hanna is responsible for all technical services. He specializes in hazardous materials/wastes management, site assessment and remediation, industrial compliance auditing, chemical exposure assessment, safety program development and implementation, and Process Safety Management and Risk Management Planning programs.

Mr. Hanna's career has included over 40 federal/state Superfund projects and over 1,500 due diligence projects. His industrial experience focuses on air, water, waste and chemical management compliance aspects at metal working, wood working, foundry, electroplating, printing and food production facilities.

Education

B.A., 1975, Biology, S.U.C. at Oswego, N.Y.

M.S., 1977, Natural Sciences (Toxicology Concentration), S.U.N.Y. at Buffalo, N.Y.

MEPC, 1982, Pollution Control, Pennsylvania State University

M.S., 1983 Forest Hydrology (Hydrogeology Minor), Pennsylvania State University

Professional Registrations

1985, Certified Hazardous Materials Manager, Senior Level

1989-1998, Registered Environmental Professional

1997, Certified Hazardous Materials Manager, Master Level

Key Skills

- Industrial Emission Permits and Controls
- Hazardous/Solid Waste Management
- Industrial Wastewater Pretreatment and Discharge Permits
- Waste Reduction and Pollution Prevention Programs
- Petroleum and Chemical Bulk Storage
- Industrial Stormwater Management
- Environmental Site Assessments
- Environmental Compliance Assessment
- Industrial Risk Management Program and Audit
- Remedial Investigations
- Brownfield Cleanup Program
- Budgeting & Cost Controls

Affiliations and Certifications

Academy of Hazardous Materials Management, Member
Erie County Local Emergency Planning Committee, Member
New York Water Environment Association, Member
International Institute of Ammonia Refrigeration, Member
OSHA 40 Hour 29 CFR 1910. (HAZWOPER) Certification

Environmental Project Highlights

- Performed site characterization for subsurface TCE contamination from historical improper disposal via septic system. Developed Interim Remedial Measures and Remedial Alternatives Reports and Work Plan for this Voluntary Brownfield Cleanup. Installed two banks of piezometers to allow both extraction of contaminated groundwater and injection of Potassium permanganate using continuously operating metering pumps. Recovered over 60 gallons of free product and significantly reduced contamination in groundwater in one year.

- Project Manager for the remediation of numerous (85+) underground petroleum storage tank sites located throughout Western New York. The primary method of remediation has been excavation/removal with appropriate management of tank contents and/or residues, cleaning and scrapping of the tanks and piping, and site restoration. Where petroleum releases were detected, excavation/removal of contaminated soil/fill was completed the majority of the time, with soil management including off-site disposal or on-site bio-treatment. In several cases, on-site vapor extraction systems or chemical oxidation systems with groundwater monitoring have been installed as the recommended remedial method.

- Project Manager for industrial site restoration project which involved the characterization of Lead-contaminated kiln brick surfaces. Appropriate characterization allowed demolition debris from kiln to be disposed of in-place on-site as solid waste material as authorized by NYSDEC. Area was then backfilled with structural flowable fill to allow reuse of floor space for manufacturing.

- Completed investigation and remediation (excavate and remove) of subsurface Lead contamination at an historical industrial site in Buffalo (NY).

- Project Manager for non-hazardous aspects of site remediation at former Frontier Chemical-Pendleton Site. Remedial tasks included sampling/analysis of wastes, emptying, cleaning and scrapping of bulk storage tanks and collecting/disposing of various on-site residuals.

- Project Manager for the installation of groundwater monitoring wells at AL Tech Specialty Steel's solid waste management unit located in Watervliet, NY. Prepared Closure Plan and Bid Specifications for the related RCRA surface impoundment. Addressed technical impact of surface run-off from adjacent landfill, steep terrain and on-site source for cover material. Prepared response package required by NYSDEC regarding the basis of design and construction practices completed during closure.

- Project Manager for the remediation of a cutting oil spill at a Lockport, NY machine shop. Cleanup activities included an underground storage tank removal, scarification of surface soils and inoculation of contaminated soils with petroleum biodegrading bacteria. Responsibilities included coordination of subcontractors, soil sampling, and preparation of report certifying contamination removal.

- Project Manager for industrial site restoration project for solid waste materials abandoned on-site in the on-site production of flowable fill as authorized by a NYSDEC Beneficial Use Determination. Flowable fill produced was used as structural fill to backfill subfloor tanks and large vaults to grade within the facility to allow reuse of the floor space. Tasks included CBS-registered process tank fluid removal and management, basement vault water management, chemical lab packing and disposal, PCBs-contaminated concrete characterization and disposal, UST closure and soil management, scrap and demolition debris management, and subsequent SEQR filing and Phase I Environmental Site Assessment.

Regulatory Compliance Project Highlights

- Project Manager for the development of numerous Process Safety Management and/or Risk Management Plan programs utilizing anhydrous ammonia for refrigeration, including Sorrento Lactalis, Inc.'s South Park (Buffalo, NY), Goshen, NY, Nampa, ID and San Jose, CA facilities, Upstate Niagara Cooperative, Inc.'s Culture (West Seneca, NY), Dale Road (Cheektowaga, NY) and Fulton (Rochester, NY) facilities, as well as Rosina Foods, Inc. (West Seneca, NY), Steuben Foods, Inc. (Elma, NY), Elmhurst Dairy, Inc. (Jamaica, NY), and Sodus Cold Storage, Inc. (Sodus, NY). Responsibilities included coordinating written program preparation, Process Hazard Analysis development, preparing release scenarios, evaluating and upgrading SOPs, developing MOC methods, etc.

- Provided consulting services to over 75 facilities nationwide regarding SARA Title III reporting requirements. Services included regulations and process reviews, mass balance calculations, purchasing and process data evaluation, database development and USEPA Tier Two and Form R preparation.

- Project Manager for numerous environmental compliance audits including, Mod-Pac Corp., Buffalo, NY (commercial printing), Sahlen Packing Co., Inc., Buffalo, NY (meat packing), Upstate Niagara Cooperative, Inc., Buffalo, NY (dairy products), MoldTech, Inc., Lancaster, NY (plastics), Sorrento Lactalis, Inc., Buffalo, NY (cheese manufacturing), Chautauqua Hardware Corp., Jamestown, NY (brass hardware), Thomson Professional Publishing, Webster, NY (printed media), Buffalo China, Inc., Buffalo, NY (lead glazed china), Brainerd Manufacturing Co., East Rochester, NY (electroplating and finishing), Falconer Die Casting Co., Inc., Lakewood, NY (aluminum and zinc casting), and Jensen Fittings Corp., North Tonawanda, NY (stainless pipe fittings). These audits emphasized the inspection of all manufacturing operations, hazardous materials and hazardous waste handling, wastewater treatment operations, air emissions and facility records to evaluate current practices with regard to RCRA, SARA, New York State Parts 200 (air), 360 (solid waste) and 370 (hazardous waste) regulations, USEPA Categorical Pretreatment Standards, UIC NESHAP & CFATS regulations, New York State SPDES regulations, and local sewer authority and fire and building department codes.

- Oversaw the modification of an industrial wastewater pre-treatment system for Whiting Door Manufacturing. Evaluated plant manufacturing wastewater sources, modified existing pretreatment system, developed wastewater pretreatment schedule, and completed wastewater discharge monitoring. Developed a Toxic Organics Management Plan to reduce cost of wastewater monitoring. Evaluated and assisted with the revision of municipal Industrial User Permit.

- Project Manager for Title V Clean Air Act permit development for Whiting Door Manufacturing Corp., Dinaire, Inc., Metalico Aluminum Recovery, Inc. and Flexo Transparent, Inc. Continued services include annual emission statements, 12-month rolling emissions determinations and semi-annual compliance reporting.

- Project Manager for Clean Air Act and/or NYSDEC Part 228 determinations and State Air Facility Permit or Air Facility Registration development for numerous industrial clients including Niagara Ceramics Corporation, Buffalo Metal Casting Co., Inc., ITT Standard/XYLEM, Metalico Rochester, Inc., Ulrich Planfiling Equipment Corp., United Silicone, Inc., U.S. Chrome Corp., Metalico Aluminum Recovery, Inc., Truck-Lite Co., Inc., Jensen Fittings Corp., API Delavan, Inc., Tapecon Inc., Dura-Plating, Inc., Buffalo China, Inc., Forsyth Industries, Inc., Jamestown Laminating Co., Classic Brass Inc., Ivaco Steel Processing (New York), LLC, Innovative Tool & Machine Co., Inc., and Whiting Door Manufacturing, Inc.

HAZARD EVALUATIONS

Eric J. Betzold
Project Geologist

Mr. Betzold is a Geologist with over four years of experience in conducting a variety of environmental investigations and remediation at various types of properties. As a Project Geologist, Mr. Betzold has performed Phase I Environmental Site Assessments to include historical review, site reconnaissance and report preparation. Mr. Betzold's responsibilities with Phase II Environmental Site Assessments include soil borings, test pits, soil sampling, groundwater monitoring well installation and samplings. Additionally, Mr. Betzold completed evaluation and reporting requirements.

In addition to his duties in the site assessment field, Mr. Betzold is involved in local Western New York Stormwater and Wastewater compliance work, including sampling and data interpretations. Mr. Betzold plays a key role in report preparation under a multitude of environmental compliance requirements.

Education

B.A., Geology, 2012, State University of New York at Buffalo

Key Skills

- Environmental Site Assessments
- NYSDEC Stormwater Compliance
- BSA & ECSA Wastewater Compliance
- NYSDEC MSGP Compliance
- Geologic Interpretation
- Soil Testing
- Field Technology
- Project Management
- Assessment of Vapor Intrusion

Affiliations and Certifications

OSHA 40 Hour 20 CFR 1910. (HAZWOPER) Certification

Attachment 2

Field Forms

HAZARD EVALUATIONS

Date: _____ Project No.: _____

Client: _____

Project: _____

Site: _____

Weather: _____

3752 N. Buffalo Rd.
Orchard Park, NY 14127
P (716) 667-3130
F (716) 667-3156

FIELD INVESTIGATION REPORT

(Start typing here making sure underline is on and text is justified. Hit tab at the end of the very last row to extend the underline to the right margin).

Signature _____ Title _____

Well Data Sheet

Date: Job #:

Crew:

Well Depth:

Initial *Phase* Level:

Initial *Water* Level:

Volume Calculation:

DTB-DTW*_____=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer/Submersible Pump

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date:

Time:

Crew:

Method:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Volume:

Analysis:

Chain of Custody #:

Sample Type:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

Signature:

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No:

Project Name & Location _____ HEI Representative: _____

Project Number: _____

Start Date _____ End Date _____ Type of Drill Rig _____

GW Depth While Drilling _____ Drilling Contractor _____

GW Depth at Completion _____ Sampler Type: _____

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page
of

Date Rec'd in Lab

ALPHA Job #

Client Information
Client:
Address:
Phone:
Fax:
Email:

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ **Done**
☐ **Lab to do**
Preservation
☐ **Lab to do**
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	**Sample Specific Comments**

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Soil Vapor Intrusion - Structure Sampling Building Questionnaire **Structure ID :** _____

Site No. : _____ **Site Name** : _____

Date: _____ **Time:** _____

Structure Address : _____

Preparer's Name & Affiliation : _____

Residential ? ☐ **Yes** ☐ **No** **Owner Occupied ?** ☐ **Yes** ☐ **No** **Owner Interviewed ?** ☐ **Yes** ☐ **No**

Commercial ? ☐ **Yes** ☐ **No** **Industrial ?** ☐ **Yes** ☐ **No** **Mixed Uses ?** ☐ **Yes** ☐ **No**

Identify all non-residential use(s) : _____

Owner Name : _____ **Owner Phone** : ( ) _____ - _____

Secondary Owner Phone : ( ) _____ - _____

Owner Address (if different) : _____

Occupant Name : _____ **Occupant Phone** : ( ) _____ - _____

Secondary Occupant Phone : ( ) _____ - _____

Number & Age of All Persons Residing at this Location : _____

Additional Owner/Occupant Information : _____

Describe Structure (style, number floors, size) : _____

_____

Approximate **Year Built** : _____ Is the building **Insulated**? ☐ Yes ☐ No

Lowest level : ☐ Slab-on-grade ☐ Basement ☐ Crawlspace

Describe Lowest Level (finishing, use, time spent in space) : _____

_____

Floor Type: ☐ Concrete Slab ☐ Dirt ☐ Mixed : _____

Floor Condition : ☐ Good (few or no cracks) ☐ Average (some cracks) ☐ Poor (broken concrete or dirt)

Sumps/Drains? ☐ Yes ☐ No Describe : _____

Identify other floor penetrations & details : _____

_____

Wall Construction : ☐ Concrete Block ☐ Poured Concrete ☐ Laid-Up Stone

Identify any wall penetrations : _____

_____

Identify water, moisture, or seepage: location & severity (sump, cracks, stains, etc) : _____

_____

Heating Fuel : ☐ Oil ☐ Gas ☐ Wood ☐ Electric ☐ Other : _____

Heating System : ☐ Forced Air ☐ Hot Water ☐ Other : _____

Hot Water System : ☐ Combustion ☐ Electric ☐ Boilermate ☐ Other: _____

Clothes Dryer : ☐ Electric ☐ Gas Where is dryer **vented** to? _____

If combustion occurs, describe where air is drawn from (cold air return, basement, external air, etc.) : _____

_____

Fans & Vents (identify where fans/vents pull air from and where they vent/exhaust to) : _____

_____

Describe factors that may affect indoor air quality (chemical use/storage, unvented heaters, smoking, workshop):

Attached garage ? ☐ Yes ☐ No Air fresheners ? ☐ Yes ☐ No

New carpet or furniture ? ☐ Yes ☐ No What/Where ? _____

Recent **painting** or **staining** ? ☐ Yes ☐ No Where ? : _____

Any **solvent** or **chemical-like** odors ? ☐ Yes ☐ No Describe : _____

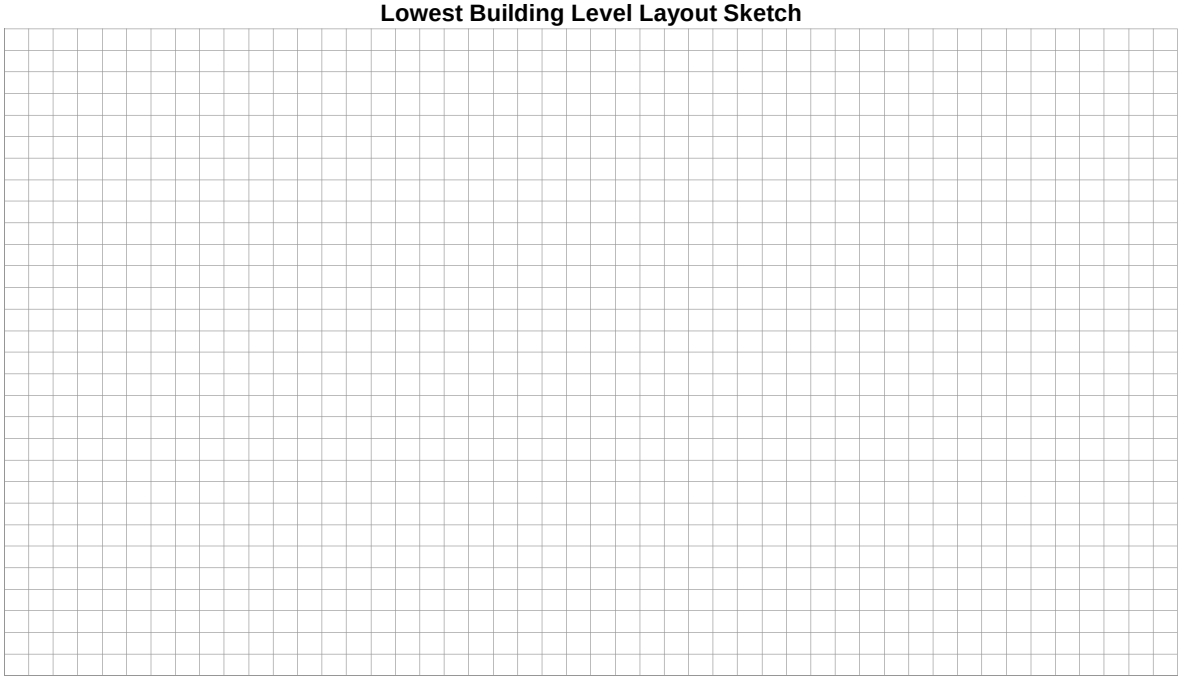
Last time **Dry Cleaned** fabrics brought in ? _____ What / Where ? _____

Do any building occupants use solvents at work ? ☐ Yes ☐ No Describe : _____

Any testing for Radon ? ☐ Yes ☐ No Results : _____

Radon System/Soil Vapor Intrusion Mitigation System present ? ☐ Yes ☐ No If yes, describe below

Lowest Building Level Layout Sketch



- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketch.
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	######	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab vapor samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling - Product Inventory

Homeowner Name & Address: _____ **Date:** _____

Samplers & Company: _____ **Structure ID:** _____

Site Number & Name: _____ **Phone Number:** _____

Make & Model of PID: _____ **Date of PID Calibration:** _____

Identify any Changes from Original Building Questionnaire : _____

Product Name/Description	Quantity	Chemical Ingredients	PID Reading	Location

HAZARD EVALUATIONS

AIR/VAPOR SAMPLING FIELD DATA SHEET

Client: _____ Project No.: _____

Site Name & Address: _____

Person(s) Performing Sampling: _____

Sample Identification: _____

Sample Type: ☐ Indoor Air (ambient) ☐ Outdoor Air ☐ Soil Vapor ☐ Sub-slab Vapor

Date of Collection: _____ Setup Time: _____ Stop Time: _____

Sample Depth: _____

Sample Height: _____

Sampling Method(s) & Device(s): _____

Purge Volume: _____

Sample Volume: _____

Sampling Canister Type & Size (if applicable): _____

Canister # _____ Regulator # _____

Vacuum Pressure of Canister Prior to Sampling: _____

Vacuum Pressure of Canister After Sampling: _____

Temperature in Sampling Zone: _____

Apparent Moisture Content of Sampling Zone: _____

Soil Type in Sampling Zone: _____

Standard Chain of Custody Procedures Used for Handling & Delivery of Samples to Laboratory:

☐ Yes ☐ No. If no, provide reason(s) why? _____

Laboratory Name: _____

Analysis: _____

Comments:

_____

_____

_____

_____

Sampler's Signature _____ Date: _____

APPENDIX H – SITE MANAGEMENT FORMS

Enclosure 1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No.

Site Name

Site Address: Zip Code:
City/Town:
County:
Allowable Use(s) (if applicable, does not address local zoning):
Site Acreage:
Owner:
, , NY

Reporting Period: to

Verification of Site Details **Box 2**

	YES	NO
1. Is the information in Box 1 correct?	☐	☐
If NO, are changes handwritten above or included on a separate sheet?	☐	
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☐
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☐
If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification?	☐	
4. If use of the site is restricted, is the current use of the site consistent with those restrictions?	☐	☐
If NO, is an explanation included with this certification?	☐	
5. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☐
If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☐	☐
If NO, are changes in the assessment included with this certification?	☐	

SITE NO. Box 3

Description of Institutional Controls

Box 4

Description of Engineering Controls

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☐	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☐	☐

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

   I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

YES	NO
☐	☐

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

   I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES	NO
☐	☐

IC CERTIFICATIONS
SITE NO.

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner or Remedial Party Rendering Certification Date

IC/EC CERTIFICATIONS

Box 7

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as a Qualified Environmental Professional for the _____

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

_____ _____ _____
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification Stamp (if Required) Date

Enclosure 2

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the six questions in the Verification of Site Details Section. Questions 5 and 6 only refer to sites in the Brownfield Cleanup Program. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional / Engineering Controls (Boxes 3, 4, and 5)

1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party is to petition the Department requesting approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control and/or certify the other SM Plan components that are applicable, continue to complete the remainder of this **Certification** form. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

   If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) is to be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7):

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page. Where the only control is an Institutional Control on the use of the property the certification statement in Box 6 shall be completed and may be made by the property owner. Where the site has Institutional and Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional (see table below).

Table 1. Signature Requirements for Control Certification Page

Type of Control	Example of IC/EC	Required Signatures
EC which does not include a treatment system or engineered caps.	Fence, Clean Soil Cover, Individual House Water Treatment System, Vapor Mitigation System	A site or property owner or remedial party, and a QEP. (P.E. license not required)
EC that includes treatment system or an engineered cap.	Pump & Treat System providing hydraulic control of a plume, Part 360 Cap.	A site or property owner or remedial party, and a QEP with a P.E. license.

HAZARD EVALUATIONS

Date: _____ Project No.: _____

Client: _____

Project: _____

Site: _____

Weather: _____

3752 N. Buffalo Rd.
Orchard Park, NY 14127
P (716) 667-3130
F (716) 667-3156

FIELD INVESTIGATION REPORT

(Start typing here making sure underline is on and text is justified. Hit tab at the end of the very last row to extend the underline to the right margin).

Signature _____ Title _____

Well Data Sheet

Date: Job #:

Crew:

Well Depth:

Initial *Phase* Level:

Initial *Water* Level:

Volume Calculation:

DTB-DTW*_____=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer/Submersible Pump

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date:

Time:

Crew:

Method:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Volume:

Analysis:

Chain of Custody #:

Sample Type:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

Signature:

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No:

Project Name & Location _____ HEI Representative: _____

Project Number: _____

Start Date _____ End Date _____ Type of Drill Rig _____

GW Depth While Drilling _____ Drilling Contractor _____

GW Depth at Completion _____ Sampler Type: _____

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page
of

Date Rec'd in Lab

ALPHA Job #

Client Information
Client:
Address:
Phone:
Fax:
Email:

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ **Done**
☐ **Lab to do**
Preservation
☐ **Lab to do**
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	**Sample Specific Comments**

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Soil Vapor Intrusion - Structure Sampling Building Questionnaire **Structure ID :** _____

Site No. : _____ **Site Name** : _____

Date: _____ **Time:** _____

Structure Address : _____

Preparer's Name & Affiliation : _____

Residential ? ☐ **Yes** ☐ **No** **Owner Occupied ?** ☐ **Yes** ☐ **No** **Owner Interviewed ?** ☐ **Yes** ☐ **No**

Commercial ? ☐ **Yes** ☐ **No** **Industrial ?** ☐ **Yes** ☐ **No** **Mixed Uses ?** ☐ **Yes** ☐ **No**

Identify all non-residential use(s) : _____

Owner Name : _____ **Owner Phone** : ( ) _____ - _____

Secondary Owner Phone : ( ) _____ - _____

Owner Address (if different) : _____

Occupant Name : _____ **Occupant Phone** : ( ) _____ - _____

Secondary Occupant Phone : ( ) _____ - _____

Number & Age of All Persons Residing at this Location : _____

Additional Owner/Occupant Information : _____

Describe Structure (style, number floors, size) : _____

_____

Approximate **Year Built** : _____ Is the building **Insulated**? ☐ Yes ☐ No

Lowest level : ☐ Slab-on-grade ☐ Basement ☐ Crawlspace

Describe Lowest Level (finishing, use, time spent in space) : _____

_____

Floor Type: ☐ Concrete Slab ☐ Dirt ☐ Mixed : _____

Floor Condition : ☐ Good (few or no cracks) ☐ Average (some cracks) ☐ Poor (broken concrete or dirt)

Sumps/Drains? ☐ Yes ☐ No Describe : _____

Identify other floor penetrations & details : _____

_____

Wall Construction : ☐ Concrete Block ☐ Poured Concrete ☐ Laid-Up Stone

Identify any wall penetrations : _____

_____

Identify water, moisture, or seepage: location & severity (sump, cracks, stains, etc) : _____

_____

Heating Fuel : ☐ Oil ☐ Gas ☐ Wood ☐ Electric ☐ Other : _____

Heating System : ☐ Forced Air ☐ Hot Water ☐ Other : _____

Hot Water System : ☐ Combustion ☐ Electric ☐ Boilermate ☐ Other: _____

Clothes Dryer : ☐ Electric ☐ Gas Where is dryer **vented** to? _____

If combustion occurs, describe where air is drawn from (cold air return, basement, external air, etc.) : _____

_____

Fans & Vents (identify where fans/vents pull air from and where they vent/exhaust to) : _____

_____

Describe factors that may affect indoor air quality (chemical use/storage, unvented heaters, smoking, workshop):

Attached garage ? ☐ Yes ☐ No Air fresheners ? ☐ Yes ☐ No

New carpet or furniture ? ☐ Yes ☐ No What/Where ? _____

Recent **painting** or **staining** ? ☐ Yes ☐ No Where ? : _____

Any **solvent** or **chemical-like** odors ? ☐ Yes ☐ No Describe : _____

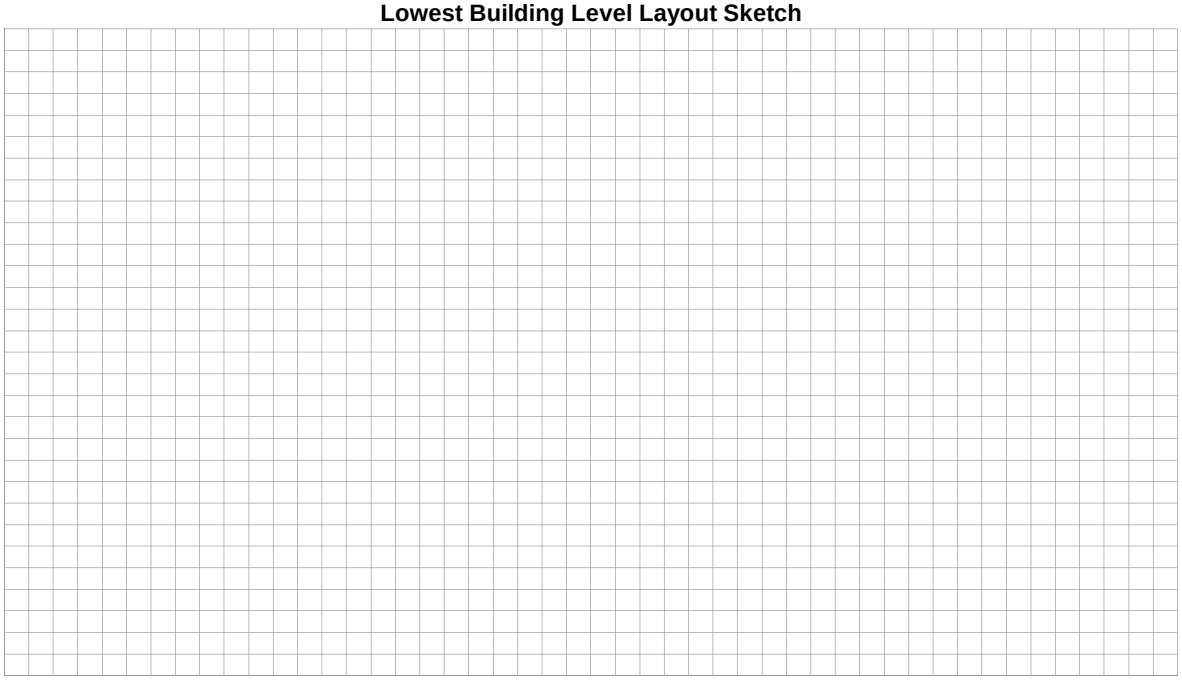
Last time **Dry Cleaned** fabrics brought in ? _____ What / Where ? _____

Do any building occupants use solvents at work ? ☐ Yes ☐ No Describe : _____

Any testing for Radon ? ☐ Yes ☐ No Results : _____

Radon System/Soil Vapor Intrusion Mitigation System present ? ☐ Yes ☐ No If yes, describe below

Lowest Building Level Layout Sketch



- Identify and label the locations of all sub-slab, indoor air, and outdoor air samples on the layout sketch.
- Measure the distance of all sample locations from identifiable features, and include on the layout sketch.
- Identify room use (bedroom, living room, den, kitchen, etc.) on the layout sketch.
- Identify the locations of the following features on the layout sketch, using the appropriate symbols:

B or **F**	Boiler or Furnace	o	Other floor or wall penetrations (label appropriately)
HW	Hot Water Heater	**xxxxxxx**	Perimeter Drains (draw inside or outside outer walls as appropriate)
FP	Fireplaces	######	Areas of broken-up concrete
WS	Wood Stoves	● SS-1	Location & label of sub-slab vapor samples
W/D	Washer / Dryer	● IA-1	Location & label of indoor air samples
S	Sumps	● OA-1	Location & label of outdoor air samples
@	Floor Drains	● PFET-1	Location and label of any pressure field test holes.

Structure Sampling - Product Inventory

Homeowner Name & Address: _____ **Date:** _____

Samplers & Company: _____ **Structure ID:** _____

Site Number & Name: _____ **Phone Number:** _____

Make & Model of PID: _____ **Date of PID Calibration:** _____

Identify any Changes from Original Building Questionnaire : _____

Product Name/Description	Quantity	Chemical Ingredients	PID Reading	Location

HAZARD EVALUATIONS

AIR/VAPOR SAMPLING FIELD DATA SHEET

Client: _____ Project No.: _____

Site Name & Address: _____

Person(s) Performing Sampling: _____

Sample Identification: _____

Sample Type: ☐ Indoor Air (ambient) ☐ Outdoor Air ☐ Soil Vapor ☐ Sub-slab Vapor

Date of Collection: _____ Setup Time: _____ Stop Time: _____

Sample Depth: _____

Sample Height: _____

Sampling Method(s) & Device(s): _____

Purge Volume: _____

Sample Volume: _____

Sampling Canister Type & Size (if applicable): _____

Canister # _____ Regulator # _____

Vacuum Pressure of Canister Prior to Sampling: _____

Vacuum Pressure of Canister After Sampling: _____

Temperature in Sampling Zone: _____

Apparent Moisture Content of Sampling Zone: _____

Soil Type in Sampling Zone: _____

Standard Chain of Custody Procedures Used for Handling & Delivery of Samples to Laboratory:

☐ Yes ☐ No. If no, provide reason(s) why? _____

Laboratory Name: _____

Analysis: _____

Comments:

_____

_____

_____

_____

Sampler's Signature _____ Date: _____

APPENDIX I – HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

BROWNFIELDS CLEANUP PROGRAM
For
Pierce Arrow Business Center
155-157 Chandler, Buffalo, New York 14207
BCP # C915312

Prepared For:
R & M Leasing LLC and Signature Development LLC
391 Washington Street, Buffalo, New York 14203
HEI Project No: e1601

Prepared By:

Hazard Evaluations, Inc.
3752 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

Schenne & Associates
391 Washington Street, Suite 800
Buffalo, NY 14203
(716) 655-4991

November 11, 2016 – Revised May 18, 2017

HAZARD EVALUATIONS

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1.0 INTRODUCTION

This Health & Safety Plan (HASP) has been developed for the Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Report (RI/IRM/AAR) to be completed by Hazard Evaluations, Inc. (HEI) and Schenne & Associates (S&A) for the Pierce Arrow Business Center at 155-157 Chandler Street, Buffalo, Erie County, New York as shown on Figure 1, on behalf of R & M Leasing LLC and Signature Development LLC (Applicants) as part of the Brownfield Cleanup Program (BCP). The proposed work will include completion of soil boring, installation of monitoring wells, soil and groundwater sampling, soil excavation and sampling, vapor intrusion sampling and report preparation. Such activities mandate the performance of tasks with a potential to expose remediation workers to various environmental contaminants previously identified on-site, primarily involving historical industrial fill potentially including semi-volatile organic compounds (SVOCs), PCBs and metals. In addition, low levels of the organic solvent trichloroethylene, was identified in shallow perched groundwater, and a possible gasoline underground storage tank (UST) may be present on-site. Limited exposure potential may be related to commercial substances used for equipment decontamination. A general listing of the work tasks to be completed is as follows:

1. Soil sampling using a direct push method (Geoprobe) and hollow stem auger equipment
2. Soil sample collection and analysis
3. Monitoring well installation, purging and development
4. Groundwater sampling using disposable bailers, and analysis
5. Soil vapor intrusion sampling and analysis
6. Excavation, stockpiling and off-site disposal of contaminated soil
7. Backfilling of excavated area with clean fill and regrading
8. Underground storage tank removal

The intent of this HASP is to identify and present appropriate safety procedures to be followed by investigation/remediation workers involved with project activities throughout the performance of the RI/IRM. Such procedures are designed to reduce the risk of remediation worker exposure to the primary substances of concern.

The procedures also address several other physical hazards that may be encountered during the RI/IRM activities. Recommended safety procedures presented herein may be modified as the RI/IRM proceeds based upon conditions encountered at the site, with the mutual agreement of HEI, S&A, NYSDEC, NYSDOH and Applicant. A copy of this HASP (including any modifications) will be maintained on-site throughout the RI/IRM field work to be used as a reference by HEI, S&A and their subcontractors. An initial safety meeting will be conducted at the site prior to the initiation of the sampling activities to inform all affected remediation workers of potential exposures and hazards.

2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Description

The site is addressed as 155-157 Chandler Street in the City of Buffalo, Erie County, New York and consists of two contiguous parcels totaling approximately 2.37 acres of land. The site is bound to the north by Chandler Street, to the west by Manton Place, and to the south by Grote Street. The property is located within an urban area, utilized for industrial, commercial, and residential purposes. The 155 Chandler parcel is improved with one 65,000 square foot building which surrounds a large 22,000 square foot brick and gravel courtyard. Various debris, fill, roofing and soil piles are present throughout the courtyard area as well as over 70% of the building. 157 Chandler parcel is vacant gravel lot which is overgrown and contains several fill/debris piles.

2.2 Site History

The structure was originally constructed in 1907 and utilized as a factory occupied by Linde Air Products until the early 1950s. Bell Aircraft Corp. was located at the site in the early/mid 1950s. In 1958, the building was purchased by Donald Rosen and utilized the property for G & R Machinery (machine shop) from approximately 1959 through at least the 1990s. The property was owned by Donald Rosen from 1958 through 1990, and by Irving Rosen from 1990 through 2005. The site was purchased by Ontario Equipment Co. in 2005 which currently retains the property. Prior uses that appear to have led to site contamination including machining, gas manufacturing, and manufacturing.

3.0 ASSIGNED RESPONSIBILITIES

Specific safety responsibilities have been established for the performance of the RI/IRM as indicated below:

3.1 Environmental Health & Safety Manager

The Environmental Health & Safety Manager (EHSM) has the authority to commit any resources necessary to implement an effective RI/IRM safety program, thereby protecting the health of affected site workers. The EHSM will delegate responsibilities, as necessary, to the Project Manager (PM) in order to facilitate various aspects of this HASP. The resolution of any on-site safety issues encountered during the RI/IRM will be coordinated by the EHSM.

3.2 Project Manager

The Project Manager (PM) will be responsible for the overall project including implementation of the HASP. The PM will coordinate with the Site Safety Officer (SSO) to ensure that project goals of the project are met in a manner consistent with the HASP requirements.

3.3 Site Safety Officer

The Site Safety Officer (SSO) will be responsible for ensuring that the recommended safety procedures are followed during sampling activities. The SSO will supervise HEI/S&A employees and subcontractors throughout the field work. The SSO is knowledgeable of general construction safety practices and remediation worker protection techniques. Responsibilities will include:

- Ensuring day to day compliance with HASP safety procedures;
- Maintaining adequate PPE supplies
- Calibration and maintenance of monitoring instruments
- Authority to stop work activities any time unsafe work conditions are identified;
- Implementing personnel decontamination procedures;
- Initiate emergency response procedures; and
- Maintain a diary of activities with safety relevance;
- Establishing and assuring adequate records of all:
  - Occupational injuries and illnesses;
  - Accident investigations;
  - Reports to insurance carrier or state compensation agencies;
  - Records and reports required by local, state and/or federal agencies;
  - Property or equipment damage.

3.4 Site Workers

Affected site workers will include HEI/S&A employee and subcontractor employees. Site workers must comply with aspects of the HASP and its safety procedures. Personnel entering the site will have completed training requirements for hazardous waste site operations in accordance with OSHA 29CFR 1910.120 (c); 29CRF 1910.146 (d) and 29CFR 1910.147 (c). Site workers and SSO must have completed appropriate medical surveillance as required by OSHA 29CRF 1910.120(f).

3.5 Subcontractors

Various subcontractors will be utilized on the site during RI/IRM activities, such as driller and excavation contractor. Subcontractors are responsible for development of their own HASP that is at least as stringent. A copy of this HASP will be provided to the subcontractors for information purposes. Subcontractors will be informed of potential health and safety hazards, as well as environmental monitoring data collected during field activities.

4.0 TRAINING and SAFTETY MEETINGS

4.1 Training

Site personnel assigned to the site will be in compliance with the training requirements of 29 CFR 1910and 1926 as listed below. Site personnel will have met one of the following requirements prior to the start of on-site activities.

- A 40 hour minimum hazardous materials safety and health course, as stipulated in 29 CFR 1926.65 e(3); and

- An 8 hour minimum refresher course per year after the 40 hour minimum training has occurred (29 CFR 1926.65.e[8]).

On-site managers and supervisors must be in compliance with the additional supervisory training requirements of 29 CFR 1926.65.e(4). Emergency responders must be in compliance with the additional training requirements of 29 CFR 1926.65.e(7). Appropriate certificates of participating in training programs will be maintained at HEI/S&A offices.

4.2 Safety Meetings

Site workers and subcontractors will be familiar with the site and facility layout, have an understanding of known and potential hazards, and details within this HASP. On-site safety meetings will occur daily, or as needed to assist site workers and subcontractors in conducting activities safely. Attending personnel must sign an attendance sheet. Site workers must attend a safety meeting prior to being allowed to work on-site.

5.0 PERSONAL PROTECTIVE EQUIPMENT

An important aspect for site worker safety is correct selection of personal protective equipment (PPE). The levels of protection listed below are based on 29 DFR 1910.120. The majority of site activities will be conducted in Level D protection. This level of protection was selected based on the types and measured concentrations of the hazardous substances in the samples previously collected and their associated hazards and/or toxicity; and potential or measured exposure to substances in air, splashes of liquids or others indirect contact with material due to the task being performed.

- Level D will generally consist of the following:
  - Coveralls; or long pants and long sleeve shirt to provide protection from dermal contact with soil
  - High visibility safety vest
  - Steel toe work boots
  - Safety glasses
  - Hard hat
  - Chemical-resistant gloves

  Additional equipment can be donned at SSO requirements, including disposable boots, hearing protection, safety vest, or disposable outer chemical coveralls (Tyvek suits).

- Level C will generally consist of the following:
  - Full or half face air purifying respirator (APR) equipped with appropriate organic vapor canisters and/or other chemical cartridges.
  - Chemical resistant clothing, such as Tyvek suit. Suits will be one piece with booties, hood, and elastic wristbands.

- High visibility safety vest (disposable)
- Outer chemical-resistant gloves (i.e. nitrile or neoprene) and inner latex gloves
- Steel toe work boots
- Hard hat

○ Level B will generally consist of the following:
- Self-contained breathing apparatus (SCBA) in a pressure demand mode, or supplied air with escape SCBA.
- Chemical resistant closing, such as Tyvek suit. Suits will be one piece with booties, hood, and elastic wristbands.
- High visibility safety vest (disposable)
- Outer chemical-resistant gloves (i.e. nitrile or neoprene) and inner latex gloves
- Chemical resistant tape over PPE as needed (i.e. at glove/Tyvek location)
- Steel toe work boots
- Hard hat

6.0 HAZARD ANALYSIS

Many hazards are associated with environmental work on a site. The hazards listed below deal specifically with those hazards associated with the management of potentially contaminated soil, air, and groundwater, physical hazards, as well as environmental hazards.

6.1 Chemical Hazards

The primary chemical hazard substance known or suspected at the subject site is Polychlorinated Biphenyls (PCBs), metals and semi-volatile organic compounds (SVOCs) that are present within the historical industrial fill due to former industrial operations. Additional contaminants that may be present include volatile organic compounds (VOCs) associated with past petroleum storage as well past industrial usage. A summary of hazards associated with these chemicals is include on Table 1. The list has been developed based on planned activities and potential site conditions. The most likely routes of chemical exposure during site work includes skin absorption and inhalation of airborne dust particles. The information was used to develop the levels of personal protective equipment (PPE).

6.2 Physical/General Hazards

Based on the proposed scope of work to be completed, the following potential physical hazards have been identified:

- Slip/Trip/Fall – Due to the timing of the project, some areas may have icy surfaces that will increase the possibility of accidental falls. Additionally, good housekeeping practices such as cleaning up garbage, and stored materials from the work area are essential to reduce the occurrence of trips and falls the trip hazards.

- Vehicle and machinery in motion hazards – A drill rig will be utilized for soil sample collection. To minimize potential hazards, the drilling subcontractor will be responsible for health and safety of its personnel, equipment and operations. Utilities must be called in via Dig Safely New York and/or site owner. Cones and flags will be set up around each work area, as necessary. Workers must be aware of pinch points when setting the rig and lowering mast/pull rods. PPE must be worn to prevent eye injury. All body parts, clothing and manual tools must be kept 3-5' from moving equipment when possible. Gloves and PPE must be worn when working with rods and cleaning equipment. Monitoring of the breathing zone will be completed as necessary to ensure vapors are below action levels. Each worker must have an awareness of muscle strain. All sampling liners must be opened in a motion away from body and hands. The rig cannot be moved with the mast in a raised position.

- Electrical – Heavy equipment (e.g., excavator, backhoe, drill rig) shall not be operated within 10 feet of high voltage lines. Working near wet areas should also be taken into consideration when working with electrical equipment; Surge protectors and ground fault protectors must be used in such conditions.

- Noise – Heavy machinery creates excessive and loud noise levels. Over exposure can result in hearing damage or loss. Proper hearing protection shall be worn during exposure to noise from heavy equipment.

- Underground utilities– The proper utility clearance will be obtained before conducting any digging or drilling operations.

- Excavation and soil sampling through use of heavy equipment – Excavations that are greater than 4 feet in depth require a protective system prior to entry into the excavation. The Project Manager will be responsible for determining if the excavation requires safety shoring. Personnel will not be permitted to work under suspended or raised loads, and shall always wear highly visible clothing. Personal protective equipment (PPE), including steel-toed boots, safety glasses, hard hats must be worn; personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge. Engineering controls can be implemented such as water for particulate control.

- Cold Stress – Site work is scheduled during the winter and early spring months; therefore cold weather may present hazards. Frostbite and hypothermia can occur quickly and the signs and symptoms of such should be known. Signs of hypothermia include slurred speech, confusion, and an overall warm

sensation. Frostbite can be identified by red/frozen skin, numbness, and lack of sensation on the skin. In each case, the victim should be moved to a warm place. With frostbite, the affected area should be placed in warm water and wrapped with a warm towel. Medical attention is necessary after initial treatment.

- Heat stress - Although not anticipated due to the time of year operations will occur, heat stress is a severe hazard that can result in heat fatigue or even heat stroke. Signs and symptoms of heat stroke include red, dry, and hot skin as well as confusion, a rapid pulse, and nausea. Adequate shade and drinking liquids should be provided to personnel working in hot weather conditions. If a person is suspected to be suffering from heat fatigue or stroke, transport to a cool place and place cold compresses on the neck and armpits; call 911 immediately.

- Weather (i.e. lightning storm) – On-site personnel shall cease operation at the first sign of a thunderstorm/lightning strike. Workers should seek shelter within a permanent building and stay away from tall structures trees, telephone poles, and drill rigs/equipment.

6.3 Biological Hazards

Biological hazards can be caused by contact with land animals, birds, insects, and plants. Irritation, illness, and, in extreme cases, permanent disability or death can occur. The site is located in an urban area within the City of Buffalo and field work will occur in winter/early spring. Rodents are considered the most likely biological hazards at this site. Contact with rodents, more specifically rats, shall be avoided. If bitten or scratched by any type of rodent or fur-bearing animal, medical treatment should be sought immediately. Insect bites and stings are not considered a serious threat due to time of year. Insect bites and stings can cause irritation and transmit disease. If stung by an insect, apply cold water and soap and immediately apply a cold compress to the area to limit swelling. If the victim is allergic to such bite or sting, immediate medical care may be necessary.

7.0 SITE MONITORING

Air monitoring will be performed on-site in order to track contamination levels. By knowing these levels, safety is insured for personnel working on-site. A Photoionization Detector (PID) equipped with a 10.6 eV lamp will be utilized during field monitoring.

7.1 Soil Borings and Monitoring Wells

On-site monitoring will be completed by the SSO or site worker assigned to oversee drilling operations, soil sampling and monitoring well installation/sampling. The PID will be utilized to monitor the breathing zone, the borehole, and subsurface samples for the presence of volatile organic compounds (VOCs). Auger spoils will

also be monitored. Fluids produced from monitoring well development and sampling will also be monitored with the PID.

7.2 Interim Remedial Measures

Interim remedial measures (IRM) are planned as part of the site remedy and expected to including soil excavation to depths of approximately 2 to 3 feet throughout the courtyard and parking lot area of the site. Monitoring will be done during excavation and sampling activities when HEI/S&A site workers are within the work zone. Historical investigation results did not identify VOCs within the fill material. However, the PID will be used during subsurface excavation activities.

7.3 Action Levels

Work area ambient air monitoring for VOCs will be completed within the breathing zone periodically. Action levels will be based on the PID readings. The action level assumes that background level of organics is close to non-detect. Background VOC readings will be recorded daily. Action levels are listed below.

Sustained PID Reading	Action	Minimum Respiratory Protection
0 to 10 ppm	None	None – Level D
10 to 25 ppm	Monitor for 15 minutes; if concentration does not decrease to under 10 ppm, upgrade PPE; consider venting area	Full-face Air-purifying respirator with organic vapor cartridges – Level C
>25 ppm	Monitor for 15 minutes; Consider venting area, upgrade PPE	Suspend work or supplied-air full face respirator – Level B

7.4 Particulate Monitoring

Monitoring for particulates will be completed periodically in the site worker breathing zone. The decision to upgrade levels of PPE will be made in conjunction with consideration for weather conditions, wind conditions and anticipated duration of field activity. Background particulate concentrations will be measured and recorded on a daily basis.

8.0 COMMUNITY AIR MONITORING PLAN

A Community Air Monitoring Program (CAMP) requires monitoring of VOCs and particulates at downwind locations and is intended to provide a level of protection for neighboring residences and businesses. Continuous monitoring will during ground intrusive activities. The completed CAMP is attached in Attachment A.

9.0 SITE ACTIVITY AREAS AND ACCESS CONTROL

Prior to the initiation of the RI/IRM, three work zones will be established to facilitate the implementation of the HASP. Prior to commencement of field work, a

further definition of where these zones will be set up will be established. Guidelines for establishing work areas follows.

- Exclusion Zone (EZ) – Primary exclusion zones will be established around each intrusive field activity, such as soil boring or excavation area. Locations will be identified by the placement of orange cones. Site workers in these areas must wear appropriate PPE. Upon leaving Work Zone, if PPE becomes contaminated, site workers must remove and dispose of gloves and any other disposable PPE. After removing the PPE, site workers should thoroughly wash their hands. Access to the EZ will be limited to site workers only for both safety and data integrity purposes.

- Contamination Reduction Zone (CRZ) – A CRZ will be established between the EX and property limit, and provides an area for decontamination of site equipment. The specific location of this pad will be field determined, but will be out of the way of site activities and sampling activities. Portable wash stations will be set up in the CRZ and will consist of a potable water supply, hand soap and disposable towels. An Alconox solution will be available to decontaminate equipment used in the sampling locations. The SSO will monitor equipment cleaning procedures to ensure their effectiveness. Equipment will be adequately cleaned and site workers will remove contaminated PPE prior to either entering the Support Zone or leaving the site for the day once sampling activities have been completed. A fire extinguisher and first aid kit will be located in this area.

- Support Zone (SZ) – The SZ is considered to be clean, and PPE are not required. The SZ will be an area on-site adjacent to the CRZ in which supplies or equipment are stored and maintained. PPE is donned in the SZ prior to entering the CRZ.

10.0 DECONTAMINATION PROCEDURES

Decontamination procedures for personal and equipment will be implemented when exiting work area. Decontamination involves physically removing contaminants and general include removal of contamination, avoiding spreading contamination from the work zone, and avoiding exposure of unprotected personnel outside the work zone to contaminants.

10.1 Prevention of Contamination

The first step in decontamination is to establish standard operating procedures that minimize contact with hazardous substances, and thereby the potential for contamination. Site workers should be aware of the importance of minimizing contact with hazardous substances and the use of appropriate practices and procedures for site operations. HEI/S&A utilizes this approach by ensuring site workers:

- Stress work practices that minimize contact with hazardous substances (e.g., do not walk through areas of obvious contamination, do not directly touch potentially hazardous substances, etc.);

- Protect sampling instruments from gross contamination by bagging; make openings in the bag for sample ports and sensors that contact site materials;

- Wear disposable outer garments and use disposable equipment where appropriate.

10.2 Personal Decontamination

The degree of contamination exposure is a function of both a particular task and the physical environment in which it takes place. The following decontamination procedures will remain flexible, thereby allowing the decontamination crew to respond appropriately to changing conditions at the site. It is expected that site workers will be exposed to soil/fill potentially contaminated with SVOCs, metals, PCBs, and petroleum compounds. On-site sampling activities will be carried out in such a manner as to avoid gross contamination of site workers, personal protective equipment, machinery and equipment.

Between sampling locations (or sometimes between samples at one sampling location), and upon the completion of the daily field activities, site workers will proceed to the CRZ. Equipment (e.g., sampling tubes, shovels, tools, etc.) will be decontaminated in this area. Prior to leaving the site for breaks, at the end of the work shift, or when PPE has been grossly contaminated, disposable boot covers, gloves, and suits will be removed and placed in a drum designated for the disposal of these materials. After removing PPE, each site worker will wash with soap and fresh water prior to donning new PPE or leaving the site for the day. All wash water and rinse water will be collected and disposed of in accordance with appropriate regulations.

10.3 Decontamination during Medical Emergencies

In the event of a minor, non-life-threatening injury or medical problem, site workers should follow the decontamination procedures as defined above and then administer first aid. If prompt, live-saving first aid is required, decontamination procedures should be omitted and immediate first aid should be administered, unless the environmental conditions are considered immediately dangerous to Life or Health (IDLH). In this case, the victim should be moved to a clean area and life-saving care should be instituted immediately without considering decontamination.

Outside garments can be removed (depending on the weather) if they do not cause delays, interfere with treatment or aggravate the problem. Respirators and backpacks must always be removed. Chemical-resistant clothing can be cut away. If the outer contaminated garments cannot be safely removed, the individual should be wrapped in plastic, rubber or blankets to help prevent contaminating the insides of

ambulances and medical personnel. Outside garments will then be removed at the medical facility. No attempt should be made to wash or rinse the victim at the site. One exception would be if it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life.

10.4 Decontamination of Equipment

Decontamination efforts will be conducted in the CRZ. Gross contamination will first be removed with plastic scrapers or other appropriate tools. The equipment will be decontaminated at a temporary equipment decontamination pad in the CRZ via hand washing or pressure washing. Alconox and water will then be used to wash the equipment with a cleaning brush. The equipment will then be rinsed with deionized water. The equipment will then be allowed to air dry for a sufficient time prior to reuse or removal from the site. Downhole tools and augers can be hand washed or pressure washed.

The decontamination of the direct push drilling rig will be undertaken (if necessary) when all on-site activities have been completed. Initially, scraping of the equipment will remove heavily caked materials prior to washing. Washing will then be accomplished Alconox and water or pressure washing. Water generated during decontamination activities will be collected, stored and profiled for future off-site disposal.

10.5 Disposal of the Contaminated Materials

Potentially contaminated materials (gloves, clothing, sample sleeves etc.) will be bagged and segregated for proper disposal. Investigation derived waste will be managed in accordance with NYSDEC guidance regulations. For this project, it is expected that soils will be disposed as part of the IRM. All fluids collected during groundwater sampling will be containerized and managed appropriately subsequent to field activities.

11.0 EMERGENCY RESPONSE

In the event of an emergency, the SSO will coordinate on-site emergency response activities. Appropriate authorities will be immediately notified of the nature and extent of the emergency. Emergency contact list is include on Table 2. The route and directions to the hospital are included as Figure 2.

11.1 Response Procedures

In the event of an emergency or acute exposure symptom, remediation workers will signal distress to the SSO. The SSO will be responsible for the response to emergencies and must:

- Have available a summary of the associated risk potential of the project so that it can be provided to any authorities or response personnel in the event of an emergency;
- Maintain an Emergency Contact List (Table 2) and post in a visible location a

map detailing directions to the nearest hospital (Figure 2); and

- Ensure appropriate safety equipment is available at the site.

11.2 Communications

Cell phones will be the primary means of communicating with emergency support services/facilities.

11.3 Evacuation

In the event of an emergency situation, such as fire, explosion, etc., all personnel will evacuate and assemble in a designated assembly area. The SSO will contact outside services (i.e. police, fire, etc.) as required. Under no circumstances will personnel be allowed to re-enter the area once the emergency signal has been given. The SSO must see that emergency equipment is available and emergency personnel notified.

11.4 Fire or Explosion

Immediately evaluate the site. The Buffalo Fire Department will then be notified immediately, and advised of the situation and the identification of any hazardous materials involved.

11.5 Personal Injury

Only basic emergency first aid will be applied on-site as deemed necessary. The SSO will supply available chemical specific information to appropriate medical personnel, as requested. First Aid kits supplied by HEI/S&A and its subcontractors will conform to Red Cross and other applicable good health standards, and will consist of a weatherproof container with individually sealed packages for each type of item. First Aid kits will be fully equipped before being sent to the site.

11.6 Adverse Weather Conditions

In the event of adverse weather conditions, the SSO will determine if work can continue without sacrificing the safety of remediation workers. Some of the items to be considered prior to determining if work should continue are the potential for heat stress, inclement weather-related working conditions (heavy snow) and the operation of field instruments.

11.7 Traffic, Heavy Equipment & Machinery

Site workers must remain aware of the heavy equipment and machinery being used during RI/IRM activities. Site workers will be required to wear a high visibility safety vest during on-site work activities.

11.8 Utilities

Prior to the beginning site activities, all available drawings of the facility will be examined to determine the presence of underground or sub-slab utilities. HEI anticipates that a magnetic pipe and cable locator will be effective in the prevention of encountering underground utilities.

11.9 Emergency Contingency Plan

In the case of a spill emergency (e.g., tank/drum release, spill, fire, etc.), this section will describe the procedures to be followed during the event.

11.9.1 Contamination Emergency

It is unlikely that a contamination emergency will occur; however, if such an emergency does occur, the specific work area shall be shut down and immediately secured. The area in which the contamination occurred shall not be entered until the arrival of trained personnel who are properly equipped with the appropriate PPE and monitoring instrumentation.

11.9.2 Spill/Air Release

In the event of a spill or air release of hazardous materials on-site, the specific area of the spill or release shall be shut down and immediately secured. The area in which the spill or release occurred shall not be entered until the cause can be determined and site safety can be evaluated. The NYSDEC Spill Response unit shall be notified immediately. The spilled material shall be immediately contained.

11.9.3 Unknown Drums or USTs

In the event that unidentified containerized substances, including USTs, are discovered during soil sampling or soil excavation, work will be ceased immediately until hazards are addressed. The SSO will then visually assess the situation and identify any leaks or releases from the container. If leaking is identified, the spilled material shall be immediately contained. Upon visual assessment of releases and safety, properly trained personnel will then sample and remove/dispose of the waste/container.

11.10 Additional Safety Practices

The following are important safety precautions and practices that will be enforced during the field activities.

- Eating, drinking, smoking, chewing gum or tobacco or any activity that increases the probability of hand-to mouth transfer and ingestion of hazardous substances is prohibited during the RI/IRM activities.
- Remediation worker hands and face must be thoroughly washed before leaving the CRZ or before eating, drinking or other activity.
- Contact with potentially contaminated surfaces should be avoided whenever possible.
- The number of remediation workers and the amount of equipment should be minimized.
- Alcoholic beverages will not be consumed during work hours by site personnel; Personnel using prescription drugs may be limited in performing specific task (i.e. operating heavy equipment) without written authorization from physician.

12.0 RECORDS AND REPORTING

The SSO will be responsible for establishing and maintaining adequate records of activities which take place at the site. The records will pertain to site workers

involved in the project, regardless of their employer, as well as any agency personnel. A basic list of the information to be maintained is as follows:

- Occupational injuries or illnesses.
- Accident investigations.
- Reports to insurance carrier or State Compensation agencies.
- Records and reports required by local, state and federal agencies.
- Property or equipment damage.
- Third party injury or damage claims.
- Environmental testing logs.
- Explosive and hazardous substances inventories and records.
- Records of inspections and citations.
- Related correspondence.
- Safety training level.

Tables

Table 1
Hazard Characteristics of Potential Contaminants of Concern

Contaminant	Potentially Impacted Media	Carcinogenicity/Symptoms of Acute Exposure	Occupational Exposure Values* ACGIH TLV OSHA PEL NIOSH IDLH
Benzene	Soil, Groundwater	Confirmed human carcinogen. Symptoms include irritation to eyes, skin, nose, respiratory system; headache; nausea; giddiness, fatigue.	PEL - 10 ppm; IDLH - 500 ppm; TLV - 0.5 ppm; STEL - 2.5 ppm
Chlorinated Organic Compounds	Soil, Groundwater	Exposure to the vapors of many chlorinated organic compounds such as vinyl chloride, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene and 1,2-dichloroethylene and other chlorinated hydrocarbons may result in various symptoms including irritation of the eyes, nose and throat, drowsiness, dizziness, headache, blurred vision, uncoordination, mental confusion, flushed skin, tremors, nausea, vomiting, fatigue and cardiac arrhythmia. The liquid if splashed in the eyes, may cause burning irritation and damage. Repeated or prolonged skin contact with the liquid may cause dermatitis. Some of these compounds are considered to be potential human car-cinogens.	Refer to 29 CFR 1910.1017 for exposure values
Toluene	Soil, Groundwater	Insufficient data from carcinogenic studies to classify substance as a potential carcinogen. Symptoms include irritation to eyes, nose; fatigue; weakness; euphoria; headache; lacrimation.	PEL - 10 ppm; IDLH - 500 ppm; TLV - 20 ppm; STEL - 150 ppm
Ethyl Benzene	Soil, Groundwater	Confirmed animal carcinogen with unknown relevance to humans. Symptoms include irritation to eyes, skin, mucous membranes; headache; narcosis.	PEL - 5 ppm; IDLH - 800 ppm; TLV - 20 ppm; STEL - 30 ppm
o-, m-, and p-Xylenes	Soil, Groundwater	Insufficient data from carcinogenic studies to classify substance as a potential carcinogen. Symptoms include irritation to eyes, nose, throat; dizziness; excitement; drowsiness; nausea; vomiting.	PEL - 100 ppm; IDLH - 900 ppm; TLV - 100 ppm; STEL - 150 ppm
Polynuclear Aromatic Hydrocarbons (PAH's)	Soil, Groundwater	Many PAH's found in fuel oil and coal tar pitch volatiles (creosote) are confirmed human carcinogens. Symptoms include dermatitis and bronchitis.	Some PAH's have no established exposure values. Others considered coal tar pitch volatiles have an ACGIH TLV and OSHA PEL value of 0.2 mg/m^3.
Cadmium	Soil	Suspected human carcinogen. Symptoms include pulmonary edema; difficulty breathing; cough; tightness in chest; substernal pain; headache; chills; nausea; vomiting; diarrhea; asnosmia.	PEL - 0.2 mg/m3; IDLH - 50 mg/m3; TLV - 0.01 mg/m3 (these limits are expressed for Cd dust)
Chromium	Soil	Hexavalent chromium compounds are confirmed human carcinogens. Symptoms include irritation to the respiratory system; nasal septum perforation; sensitization dermatitis (hexavalents). Irritation to the eyes; sensitization dermatitis (trivalents).	PEL - 0.5 mg/m3; IDLH - 250 mg/m3; TLV - mg/m3 (insoluable)
Lead	Soil	Confirmed animal carcinogen with unknown relevance to humans. Symptoms include weakness; tremor; irritation to eye; constipation; abdominal pain.	PEL - 0.05 mg/m3; IDLH - 100 mg/m3; TLV - 0.5 mg/m3
Mercury	Soil	Insufficient data from carcinogenic studies to classify substance as a potential carcinogen. Symptoms include irritation to eyes, skin; cough; chest pain; difficulty breathing; irritability; indecision; headache; fatigue; weakness; salivation.	PEL - 0.025 mg/m3 (acceptable ceiling concentration); IDLH - 2 mg/m3; TLV - 0.025 mg/m3 (elemental/inorganic)
Polychlorinated Biphenyl (PCBs)	Soil	Confirmed human carcinogen. Symptoms include dermal and ocular lesions, irregular menstrual cycles and a lowered immune response. Other symptoms included fatigue, headache, cough, and unusual skin sores	PEL - 1 mg/m3; IDLH - 5 mg/m3; TLV - 1 mg/m3

ACGIH TLV – American Conference of Governmental Industrial Hygienists Threshold Limit Value; Concentrations in ppm of mg/m3 based on an 8-hour TWA

OSHA PEL – Occupational Safety and Health Admiration Permissible Exposure Limits; Concentrations are shown in parts per million (ppm) or milligrams per cubic meter (mg/m3) based on an 8-hour time weighted average (TWA)

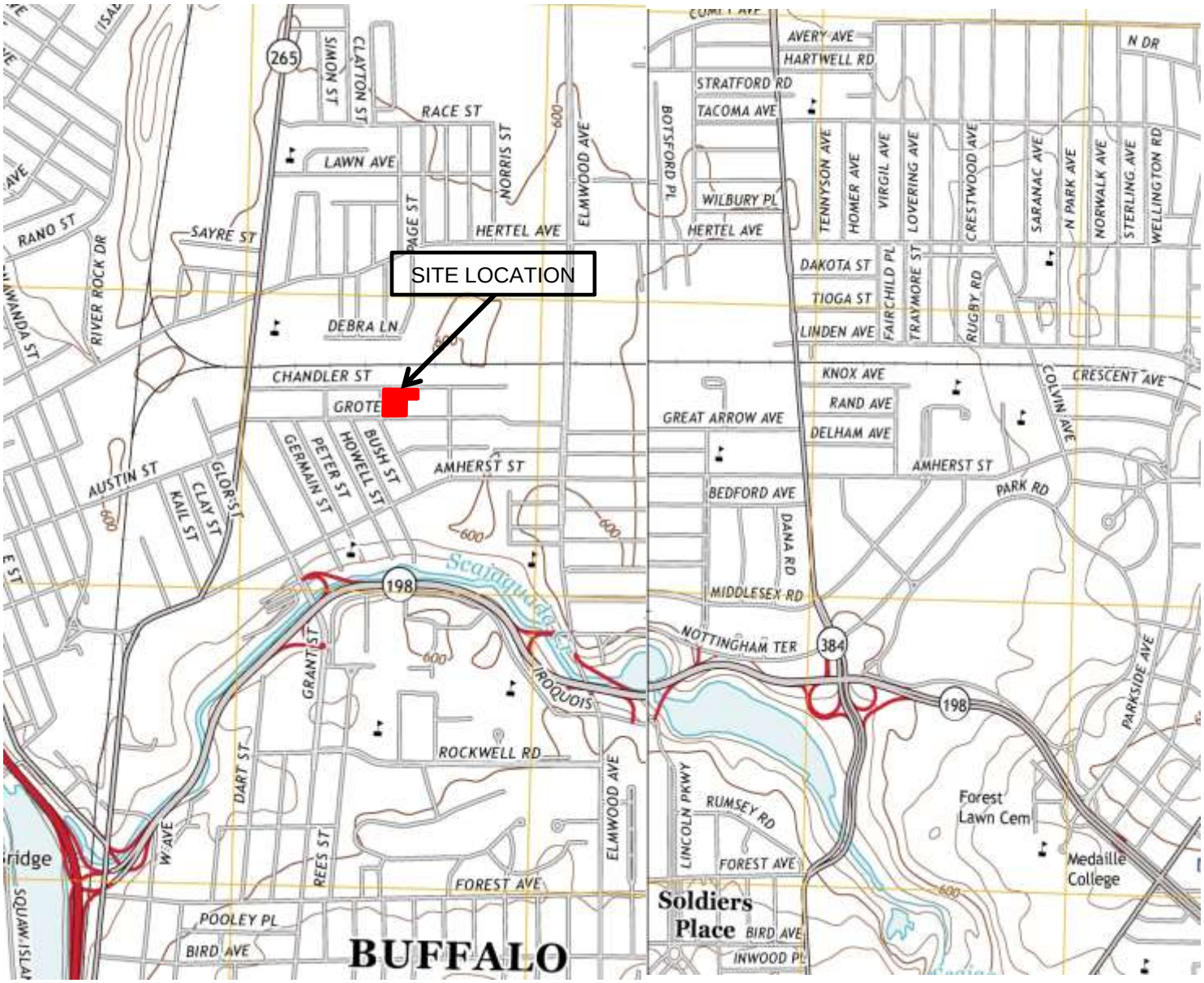
NIOSH IDLH – National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health; Concentrations in ppm or mg/m3

OSHA STEL - Short Term Exposure Limit

Table 2
Emergency Contacts

Agency	Contact	Phone Number
Buffalo Police	Emergency	911
Buffalo Fire/First Aid	Emergency	911
Ambulance	Emergency	911
Poison Control Center	-	
Hospital	Erie County Medical Center 462 Grider Street Buffalo, NY 14215	(716) 898-3000
NYSDOH	Matt Forcucci 582 Delaware Ave. Buffalo, NY 14202	(866) 881-2809
NYSDEC	Jaspal Walia 270 Michigan Ave. Buffalo, NY 14203	(716) 851-7220
NYSDEC	SPILL Hotline	(800) 457-7362
Hazard Evaluations	Michele Wittman 3752 N. Buffalo Rd. Orchard Park, NY 14127	Office: (716) 667-3130 Cell: (716) 574-1513
Schenne & Associates	John Schenne 391 Washington St. Suite 800, Buffalo, NY 14203	(716) 655-4991
R & M Leasing LLC (Owner)	Rocco Termini 391 Washington St. Buffalo, NY 14203	(716) 861-5385
Directions to Hospital - Erie County Medica Center: Head east on Chandler St. toward Bridgeman St. Turn right onto Bridgeman St. Turn left at the third cross street onto Amherst Street. Turn right onto Crescent Ave., Turn left onto Jewett. Turn right onto Fillmore Ave. Turn left onto Kensington Ave. ECMC entrance is located on the right.		

Figures



THIS DRAWING IS FOR ILLUSTRATIVE AND INFORMATIONAL PURPOSES ONLY
AND WAS ADAPTED FROM USGS, BUFFALO NE & NW, NEW YORK 2013 QUADRANGLE.

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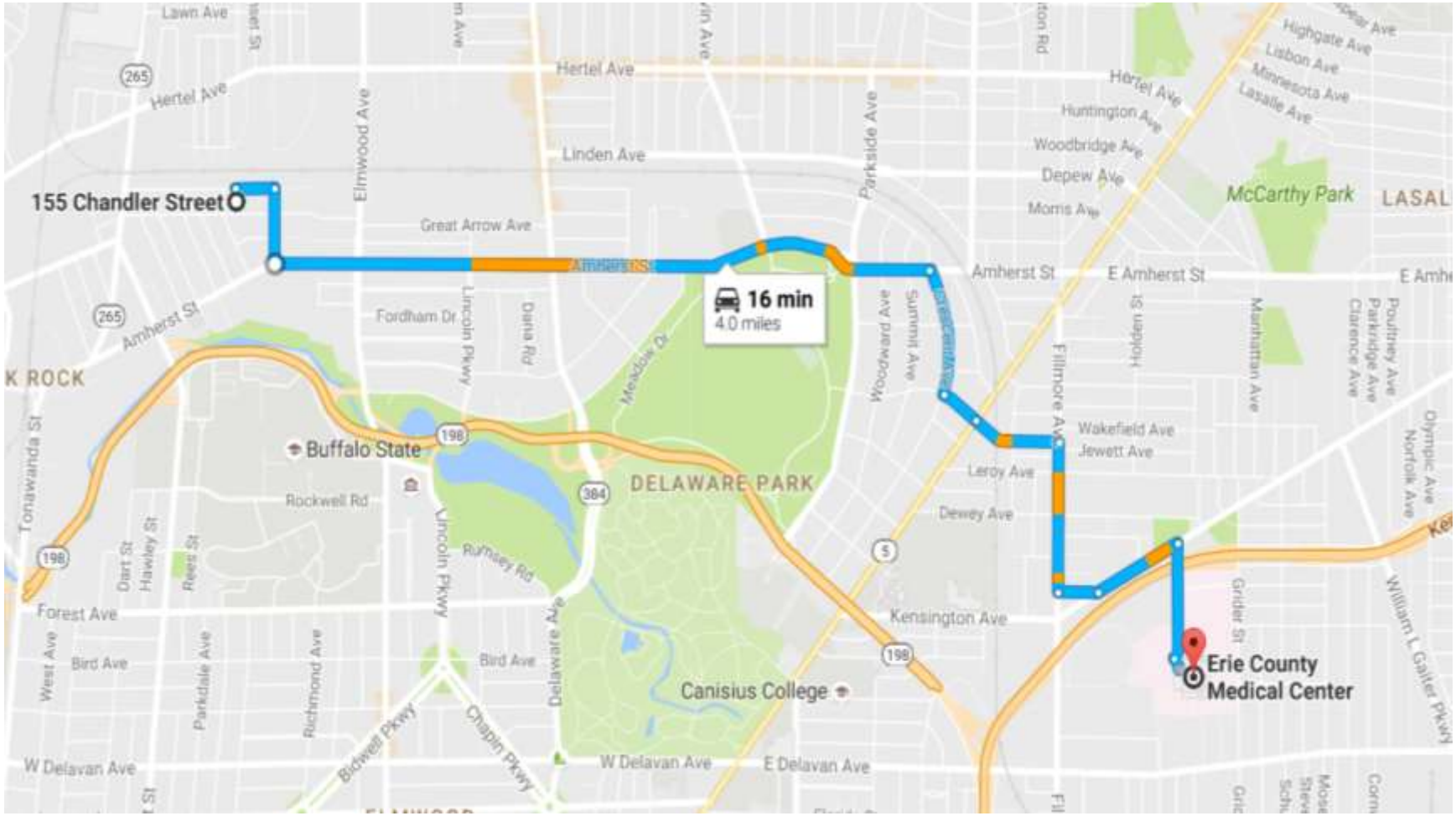
HAZARD EVALUATIONS, INC. *Phase I/II Audits – Site Investigations – Facility Inspections*		
SITE LOCATION 155 and 157 CHANDLER STREET BUFFALO, NEW YORK		
R & M LEASING LLC BUFFALO, NEW YORK		
DRAWN BY: LSH	SCALE: NOT TO SCALE	PROJECT: e1601
CHECKED BY: EB	DATE: 10/16	FIGURE NO: 1



Directions: Head east on Chandler St. toward Bridgeman St. Turn right onto Bridgeman St. Turn left at the third cross street onto Amherst Street. Turn right onto Crescent Ave., Turn left onto Jewett. Turn right onto Fillmore Ave. Turn left onto Kensington Ave. ECMC entrance is located on the right.

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

HOSPITAL DIRECTIONS
155-157 CHANDLER STREET
BUFFALO, NEW YORK

DRAWN BY: GB	SCALE: NOT TO SCALE	PROJECT: e1601
CHECKED BY: MW	DATE: 10/16	FIGURE NO: 1

Attachment A

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

BROWNFIELDS CLEANUP PROGRAM
For
Pierce Arrow Business Center
155-157 Chandler, Buffalo, New York 14207
BCP # C915312

Prepared For:
R & M Leasing LLC and Signature Development
391 Washington Street, Buffalo, New York 14203
HEI Project No: e1601

Prepared By:

Hazard Evaluations, Inc.
3752 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

Schenne & Associates
391 Washington Street, Suite 800
Buffalo, NY 14203
(716) 655-4991

November 11, 2016

HAZARD EVALUATIONS

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1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been developed Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Report (RI/IRM/AAR) to be completed by Hazard Evaluations, Inc. (HEI) and Schenne & Associates (S&A) for Pierce Arrow Business Center at 155-157 Chandler Street, Buffalo, Erie County, New York, on behalf of R & M Leasing LLC and Signature Development LLC (Applicants) as part of the Brownfield Cleanup Program (BCP).

The CAMP requires real-time monitoring of volatile organic compounds (VOCs) and particulates (dust) at downwind perimeter of each designated work area. The CAMP will be implemented during the excavation and removal of soils from the courtyard and vacant lot areas of the subject site. This CAMP will be completed in general accordance with NYSDEC DER-10 Appendix 1A, as included in Attachment A. A figure showing proposed monitoring points is included as Figure 1.

2.0 VOLATILE ORGANIC COMPOUND AIR MONITORING

VOCs will be monitored at the downwind perimeter of the work are on a continuous basis and periodically during non-intrusive activities. VOC monitoring will be done using an organic vapor meter (OVM) equipped with a photoionization detector (PID) to provide real-time recordable air monitoring data.

VOCs will also be monitored and recorded at the downwind perimeter of the immediate work area(s). Upwind concentrations will be measured at the beginning of each day before activities begin and periodically throughout the day to establish background conditions. The downwind VOC monitoring device will also be checked periodically throughout the day to assess emissions and the need for corrective action. VOC monitoring action levels as per *DER-10 Technical Guidance for Site Investigations and Remediation* is as follows:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If the organic vapor level at the perimeter of the work area persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions take to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half

the distance to the nearest potential receptor or residential/commercial structure, whichever is less; but in no case than that 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down.

3.0 PARTICULATE AIR MONITORING

The remediation crew will make all efforts to suppress dust and particulate matter during the handling of contaminated soil. Fugitive dust and particulate monitoring will be completed in accordance with DER-10 Appendix 1B, as included in Attachment B. The following techniques have been shown to be effective for the controlling the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and/or
(g) Reducing the excavation size and/or number of excavations.

Care will be taken not to use excess water, which can result in unacceptably wet site conditions. Use of atomizing sprays will prevent overly wet conditions, conserve water and provide an effective means of suppressing fugitive dust.

Weather conditions will be evaluated during remedial work. When extreme wind conditions make dust control ineffective, as a last resort, remedial actions may need to be suspended.

Dust and particulate monitoring will be conducted near approximate upwind and downwind perimeters of the work area, when possible. If visual evidence of dust is apparent in other locations, monitoring equipment will be placed where necessary. Dust monitoring may be suspended during period of precipitation and snow cover.

Particulate air monitoring will be done with a DataRAM-4 (or similar), which will be capable of reading particles less than 10 micrometers in size (PM-10) and equipped with an audible alarm feature which will indicate exceedances. Dust monitoring devices will be recorded periodically throughout the day to assess emissions and the need for corrective actions. Particulate monitoring action levels as per *DER-10 Technical Guidance for Site Investigations and Remediation* is as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 ($\mu g/m^3$) above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ($\mu g/m^3$) above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

4.0 DOCUMENTATION

All 15-minute readings will be recorded and be available for or State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

5.0 WIND DIRECTION

Prevailing wind direction will be recorded at the beginning of each work day by visual observations of an on-site windsock. As wind direction may change throughout the work day, direction will be reestablished if a significant change in direction is observed. The wind direction results will be utilized to determine the placement of the monitoring equipment.

Figures

KEY
Down-wind site perimeter monitoring location stations
Up-wind site perimeter monitoring location stations
Site limits

N

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

POTENTIAL AIR MONITORING DEVICE LOCATIONS
155-157 CHANDLER STREET
BUFFALO, NEW YORK

DRAWN BY: GB	SCALE: NOT TO SCALE	PROJECT: e1601
CHECKED BY: MW	DATE: 11/16	FIGURE NO: 2

Attachment A

NYSDEC DER-10 Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

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Attachment B

NYSDEC DER-10 Appendix 1B
Fugitive Dust and Particulate Monitoring

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Appendix 1C
DEC Permits Subject to Exemption

In accordance with section 1.10, exemptions from the following permit programs may be granted to the person responsible for conducting the remedial programs undertaken pursuant to section 1.2:

Air - Title 5 permits
Air - State permits
Air - Registrations
Ballast Discharge
Chemical Control
Coastal Erosion Hazard Areas
Construction of Hazardous Waste Management Facilities
Construction of Solid Waste Management Facilities
Dams
Excavation and Fill in Navigatable Waters (Article 15)
Flood Hazard Area Development
Freshwater Wetland
Hazardous Waste
Long Island Wells
Mined Land Reclamation
Navigation Law - Docks
Navigation Law - Floating Objects
Navigation Law - Marinas
Non-Industrial Waste Transport
Operation of Solid Waste Management Facilities
Operation of Hazardous Waste Management Facilities
State Pollution Discharge Elimination Systems (SPDES)
Stream Disturbance
Tidal Wetlands
Water Quality Certification
Water Supply
Wild, Scenic and Recreational Rivers