

**Former Rochester Metal Etching Company
State Superfund Project
Monroe County, New York**

Final Engineering Report

NYSDEC Site Number: 828100

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
Albany, New York 12233-7013

Prepared by:

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DECEMBER 2017

CERTIFICATIONS

I, Mark A. Boorady, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department approved Remedial Action Work Plan.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in for the remedy.

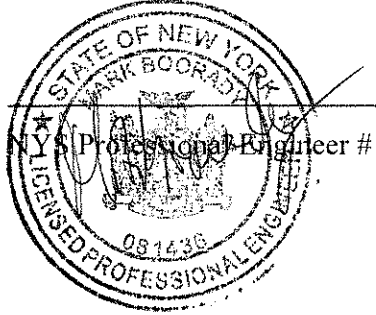
I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an Environmental Notice created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by Department.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

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, Mark A. Boorady, of Groundwater &

Environmental Services, Inc., am certifying as the Department's Designated Site Representative for the site.



12/22/17
Date

[Handwritten Signature]
Signature

NO ALTERATION PERMITTED HEREON EXCEPT AS
PROVIDED UNDER ARTICLE 145 SECTION 7209
SUBDIVISION 2 OF THE NEW YORK STATE
EDUCATION LAW.

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LIST OF ACRONYMS

Acronym	Definition
CVOC	Chlorinated Volatile Organic Compound
EPA	Environmental Protection Agency
FER	Final Engineering Report
GAC	Granular Activated Carbon
GES	Groundwater & Environmental Services, Inc.
HASP	Health and Safety Plan
In H ₂ O	Inches of Water Column
IRM	Interim Remedial Measure
NYCRR	New York Codes Rules and Regulations
NYSDEC The Department	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
ppb	Parts Per Billion
ppm	Parts Per Million
RAOs	Remedial Action Objectives
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SCO	Site Cleanup Objective
SMP	Site Management Plan
SOP	Site Operation Plan
SSD	Sub-Slab Depressurization
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
VOC	Volatile Organic Compound

FINAL ENGINEERING REPORT

1.0 BACKGROUND AND SITE DESCRIPTION

1.1 Introduction

This document is required as an element of the remedial program at the Former Rochester Metal Etching Company (hereinafter referred to as the “Site”) under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with New York State Environmental Conservation Law (ECL) and Title 6 of the official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375, Site #828100 Record of Decision (ROD), which was executed on March 29, 2011.

Groundwater & Environmental Services, Inc. (GES) entered into a Mitigation Services Contract with the NYSDEC to mitigate the 0.22 acre site located in Monroe County, Rochester, New York, provided in Appendix A. This Mitigation Services Contract required GES, on behalf of the NYSDEC, to fulfill the response actions and engineering and institutional controls listed in the ROD. A Remedial Action Work Plan (RAWP) dated January 14, 2013 specified the scope of work and is provided in Appendix B. The site location and boundaries are shown on Figure 1. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Notice included in Appendix C.

After completion of the remedial work described in the ROD and the RAWP, residual contamination was left in the subsurface at this site, which is hereafter referred to as “remaining contamination.” A Site Management Plan (SMP) was prepared to manage remaining contamination at the site until the Environmental Notice is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the site can be

viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This Final Engineering Report (FER) was prepared by GES on behalf of NYSDEC, in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This FER addresses the summary of site remedy chosen, interim remedial measures (IRMs), and a description of remedial actions performed.

1.2 Site Background

1.2.2 Site Location and Description

The Site is located at 100 Lake Avenue in Rochester, Monroe County, New York. The main feature of the site is a two story building surrounded by paved parking areas and walkways. The site, located within the Community Center zoning district, is near the intersection of Lake Avenue (south-west border) and Spencer Street (north-west border). The Site is located on the side of a hill that slopes down east from Lake Avenue. The surrounding properties include commercial and industrial parcels which are covered by buildings and pavement (paved parking or roads). The site is currently bounded to the north by a mixed use building (commercial first floor/apartments upper floors) and a vehicle rental location across Spencer Street; to the west across Lake Avenue by parking lots; to the east by a frozen food facility; and to the south by a diner. The site is currently used for commercial purposes by a recreational club.

1.2.2 Site History

The Site was used for the manufacture of etched and lithographed metal nameplates from 1967 until 1996 when manufacturing operations ceased. Ferric chloride was reportedly used to etch stainless steel and brass, and hydrofluoric acid and hydrochloric acid solutions were used to etch aluminum. Chlorinated volatile organic

compounds (VOCs) consisting of tetrachloroethene (PCE), trichloroethylene (TCE), and 1,1,1-trichloroethane (1,1,1-TCA) were used for degreasing. Prior uses that appear to have led to site contamination include metal plating, machining and etching, along with the improper disposal of process wastewater into a series of sumps, drains and trenches.

1.2.3 Previous Investigations

A Site Characterization was performed at the site in 1999-2000. Based on the remedial investigations at the site, it was determined that the disposal or release of hazardous wastes at this site has contaminated various environmental media, resulting in a threat to public health and the environment. The investigation data led to the listing of the Site as a Class 2 Inactive Hazardous Waste Disposal Site in 2001 and the subsequent completion of the Site remedial investigation/feasibility study (RI/FS) in 2007. Based on the RI/FS, the NYSDEC, in consultation with the New York State Department of Health (NYSDOH), issued the ROD document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. The remedy selected in the ROD is intended to attain the remedial action objectives (RAOs) identified for this site for the protection of public health and the environment.

1.2.4 Geologic and Hydrologic Conditions

The Site is underlain by unconsolidated glacial till deposits (fine sand and silt with varying amounts of fine to coarse gravel), which is underlain by the Lockport Group bedrock. The overburden soil is generally unsaturated with localized occurrence of water at the overburden/bedrock interface. The thickness of overburden/depth to bedrock ranges from 3.5 feet beneath the site building to approximately 13 feet in the parking lot on the west side of the building.

Based on the monitoring well data and site topography, the Site drains primarily toward the Genesee River located approximately 500 feet to the east. The Genesee River flows north and discharges into Lake Ontario, approximately 6 miles downstream.

2.0 SUMMARY OF SELECTED REMEDY

2.1 Remedial Action Objectives

Based on the results of the Remedial Investigation, the following RAOs were identified for this site as described in the ROD. The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to chlorinated VOCs and metals in soil and groundwater;
- the release of residual contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from groundwater beneath structures into indoor air of overlying structures through soil vapor intrusion.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards; and
- air guidelines provided in the Final Soil Vapor Intrusion Guidance (NYSDOH, 2006).

The RAOs described above are tabulated below:

Remedial Objective	Remedial Action
1. Eliminate or reduce to the extent practicable exposures of persons at or around the site to CVOCs and metals in soil and groundwater.	A cover system including asphalt parking lot, the building, and sidewalks. Groundwater use restrictions.

Remedial Objective	Remedial Action
2. Eliminate or reduce to the extent practicable the release of residual contaminants from soil into groundwater that may create exceedances of groundwater.	The cover system. A Site Management Plan that includes cover maintenance and drainage controls.
3. Attain to the extent practicable ambient groundwater quality standards.	The cover system.
4. Eliminate or reduce to the extent practicable the release of contaminants from groundwater beneath structures into indoor air of overlying structures.	The installation of a sub-slab depressurization (SSD) system at the on-site building. Provision to evaluate the potential for vapor intrusion for off-site buildings, including provision for implementing actions recommended to address exposures.
5. Attain to the extent practicable the air guidelines provided in the Final Soil Vapor Intrusion Guidance (NYSDOH, 2006).	A provision for evaluation of the potential for soil vapor intrusion should the on-site building use or nature change. A provision for evaluating off-site soil vapor intrusion.

2.2 Description of selected remedy

The Site was remediated in accordance with the ROD dated March, 2011, and as described in the RAWP dated January, 2013. The factors considered during the selection of the remedy are those listed in 6NYCRR 375. The following are the components of the selected remedy were completed:

1. A sub-slab depressurization system (SSDS)/soil vapor extraction (SVE) system was installed at the Site following the Final Soil Vapor Intrusion Guidance (NYSDOH, 2006);

2. The existing site cover system consisting of building footprint, sidewalks, and site pavement installed by the owner prior to the ROD will continue to be maintained to prevent human exposure to remaining contaminated soil/fill remaining at the site;
3. Imposition of an institutional control in the form of an Environmental Notice for the controlled property that (a) limits the use and development of the controlled property to: commercial and/or industrial use; (b) restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH; (c) prohibits agriculture or vegetable gardens on the controlled property; (d) requires compliance to the Department approved SMP; and (e) requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
4. Development and implementation of a SMP including plans for: (a) Institutional and Engineering Controls, (b) monitoring, (c) operation and maintenance and (d) reporting; and
5. Periodic certification of the institutional and engineering controls listed above.

3.0 INTERIM REMEDIAL MEASURES AND REMEDIAL CONTRACT

3.1 Interim Remedial Measures

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. Although no IRMs were approved by the Department, The Brotherhood, MC Inc. (the current site property owner) completed the following remedial activities prior to the issuance of the ROD:

3.1.1 Concrete Filling of Basement Sumps and Collection Trenches

The sumps and the trench associated with the Site provided the primary preferential pathways identified for the transport and migration of site constituents to subsurface soil and groundwater. In 2005, the owners of the Site filled in the sumps and the trench with concrete, eliminating these structures as potential pathways for the transport of materials from inside the facility to subsurface media. It is unknown if the trenches were properly cleaned prior to filling with concrete.

3.1.2 Site Cover

In 2009, the owners of the Site paved the entire site with asphalt, including the previously exposed surface soil area located in the southeast corner of the site. The boundaries of the site are either covered by asphalt paving or the site building, thus eliminating the potential of direct contact with contaminated soils on site.

3.2 Remedial Contract

The remedial project completed by GES was under NYSDEC Contract No. C100900. See Appendix A for work assignment issued under the contract.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site (i.e., the installation of an SSD/SVE system in the building) were conducted in accordance with the NYSDEC-approved RAWP dated January, 2013 (see Appendix B). GES's contract was then amended to include the characterization and disposal of waste and equipment associated with the collection and treatment system that was deactivated in 1996 when Rochester Metal Etching operations at the site ceased. As described in the RI, the system consisted of a collection trench to collect groundwater from the site and direct it to an outdoor sump, which was then pumped to a tank in the basement of the building where it was treated and then discharged to the sewer system. The system components removed during the remedial activities included the storage/treatment tank and a drum of granular activated carbon (GAC), as described in the following sections.

4.1 Governing Documents

4.1.1 Site-Specific Health & Safety Plan (HASP)

All remedial work performed under this Remedial Action was in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

A GES HASP was compiled for all remedial and intrusive work performed at the Site. The HASP is included in Appendix D.

4.1.2 Community Air Monitoring Plan (CAMP)

The New York State Department of Health Generic Community Air Monitoring Plan in Appendix 1A of DER-10 was in place in the event of disturbance of the existing cover system. The CAMP is attached as Appendix E.

4.1.3 Contractor Site Operations Plans

The Remediation Engineer reviewed all plans and submittals for this remedial project (i.e. those listed above plus contractor and subcontractor submittals) and confirmed that they were in compliance with the RAWP. All remedial documents were submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of work.

4.2 Remedial Program elements

4.2.1 Contractors and Consultants

- Mitigation Tech – Soil vapor intrusion contractor
- Trec Environmental Inc. (TREC) – Environmental contractor (treatment system dismantling and soil drum disposal)
- Encotech – Granular activated carbon service and equipment company (CSEC)
- Groundwater & Environmental Services Inc. (GES) – Consultants and Engineer of Record

4.2.2 Site Preparation

- Mobilization activities were coordinated with Mitigation Tech and The Brotherhood M.C.
- TREC obtained a Tank Removal Permit for the treatment system tank

A pre-construction meeting was held with NYSDEC, GES and MT on October 9, 2012.

All SEQRA requirements and all substantive compliance requirements for attainment of applicable natural resource or other permits were achieved during this Remedial Action.

4.2.3 Summary of General Site Controls

- The site is enclosed by a steel gate that is locked anytime the owner or owner's representative is not on site. The building is locked at all times, with access allowed through owner or owner's representative. The site is equipped with an alarm and video camera system.
- Equipment decontamination and residual waste management – All equipment used to break through the concrete slab was decontaminated at the end of the work day. Soil generated in the installation of the SVE/SSDS system were drummed and disposed as documented. A total of 3 (55 gallon) steel drums of soil was generated.
- Soil test results – Soil removed during the SSD/SVE system installation was sampled for disposal. The analytical results are found in Appendix F.

4.2.4 Reporting

Daily field notes and photographs were used to document remedial activities and system performance testing. Field notes are included in Appendix G and project photographs are included in Appendix H.

4.3 Contaminated Materials Removal

4.3.1 Granular Activated Carbon Removal

- GAC remaining from previously operated groundwater treatment system was identified on-site during pre-construction activities;
- The GAC waste was stored in (1) 55 gallon steel/lined drum located in the north room of the Site;
- Waste characterization samples were collected. See results and summary in attached Appendix I;

- Under bill of lading #15447-C-1 approximately 340 pounds of GAC was collected by Encotech Inc. (Rochester, New York). The GAC was then transported under bill of lading #133736 to Norit Americas Inc. (Pryor, Oklahoma) for reactivation and potential future use. Bills of lading are included in Appendix E.
- The Certificate of Regeneration is included in Appendix E.

4.3.2 Soil Generated from SSD/SVE system Installation Removal

- Soil was generated during the installation of the SSDS/SVE suction points throughout the facility from January 8-14, 2013;
- Soil was stockpiled in three (3) 55-gallon steel drums (each 2/3 filled);
- Waste characterization samples were collected and the results are provided in Appendix F;
- Approximately 600 pounds of soil was transported by New York Environmental Technologies, Inc. (Rochester, New York) to Cycle Chem, Inc. (Lewisberry, Pennsylvania) for disposal;
- Non-Hazardous Waste Manifest and Certification of Receipt are found in Appendix F.

4.4 Remedial Performance

4.4.1 SSD/SVE system Pre-Design Communication Testing

Prior to design and installation of the site specific SSD/SVE systems, Mitigation Tech performed communication testing throughout the basement of the Site. The objective was to assess the consistency of the sub-slab material, sub-slab obstruction locations, and to determine the vacuum influence and air flow throughout the footprint of the building. Communication testing results showed that the best solution would be to install two multi-point SSD/SVE systems. The pre-design communication testing results and system installation work plan are provided in Appendix J.

4.4.2 SSD/SVE system Post-Installation Testing

The SSD/SVE system is divided into 2 systems, as described below:

- System 1 consists of two suction points located in the North Room of the Site;
- System 2 consists of 12 suction points spread throughout the remaining footprint of the Site.

For more details and construction information on the SSD/SVE systems refer to Section 4.8.

Post-installation testing was completed by Mitigation Tech on February 20, 2013. All testing was conducted in accordance with following the Final Soil Vapor Intrusion Guidance (NYSDOH, 2006) and direct guidance of the NYSDEC. To verify the effectiveness and performance of the both SSD/SVE systems installed, twelve (12) test points were used. These points were placed at various distances from specific suction points in order to prove that a negative pressure of at least 0.004 inches H₂O is maintained below the slab. Negative pressures observed throughout the slab ranged from 0.020 inches H₂O to 0.314 inches H₂O. A full performance evaluation is included in Appendix J. Figure 4 shows the location and magnitude of the negative pressure at each point.

4.5 Imported Backfill

Suction points were backfilled with clean all-purpose gravel. The gravel was packaged by Sakrete[®] and purchased at a retail center. No other backfill was used in the remedy.

4.6 Contamination Remaining at the Site

As described in the remedial investigation report, many waste, surface soil, subsurface soil, groundwater, indoor air, soil vapor and outdoor air samples were collected to characterize the nature and extent of contamination. The primary contaminants of concern at the site are volatile organic compounds (VOCs) trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA) and tetrachloroethene (PCE), and inorganic compounds (metals) chromium and copper. VOCs are present in on-site groundwater and indoor air at concentrations exceeding the respective standards, criteria and guidance values (SCGs). No VOCs exceeded SCGs in on-site soils (with the exception of acetone) or in downgradient off-site bedrock groundwater. Metals were detected above the SCGs in the on-site soils and overburden groundwater as well as in the downgradient off-site bedrock groundwater. Ground water data indicates a source(s) in the vicinity of MW-2. A source was not specifically identified in soils although the levels of chlorinated VOCs detected in groundwater at MW-2 suggest that one exists nearby. In addition to inorganic constituents and chlorinated VOCs, several semi-volatile organic compounds (SVOCs) were found in localized areas of the Rochester Metal Etching Site, particularly phenol, phthalates, and polycyclic aromatic hydrocarbons (PAHs). The contaminants of concern for the site are listed below. Tables and figures summarizing the SCG exceedances are available in the RI/FS report.

VOCs	Metals
1,1,1-Trichloroethane (1,1,1-TCA)	Arsenic
Trichloroethene (TCE)	Barium
Tetrachloroethylene (PCE)	Cadmium
	Chromium
	Copper
	Lead
	Mercury
	Nickel
	Silver
	Zinc

Since contaminated soil and groundwater/soil vapor remains beneath the site after completion of the Remedial Action, Institutional and Engineering Controls are required to protect human health and the environment. These Engineering and Institutional Controls (Ecs/Ics) are described in the following sections. Long-term management of these EC/Ics and residual contamination will be performed under the SMP (under separate cover) approved by the NYSDEC.

4.7 Engineering Controls

Since remaining contamination remains at the site, Engineering Controls (Ecs) are required to protect human health and the environment. The site has the following primary Engineering Controls, as described in the following subsections.

4.7.1 Cap System

Exposure to remaining contamination in soil/fill at the site is prevented by a soil cover system placed over the site. This cover system is comprised of asphalt pavement, concrete-covered sidewalks, and the building footprint. Figure 1 shows the location of cover built at the Site. The cover system will be maintained to prevent infiltration and exposure to contamination remaining in the subsurface. An Excavation Work Plan, which outlines the procedures required in the event the cover system and/or underlying residual contamination are disturbed, is provided in Appendix A of the SMP.

4.7.2 Sub-Slab Depressurization/Soil Vapor Extraction System

An SVE/SSD system has been installed at the Site following the Final Soil Vapor Intrusion Guidance (NYSDOH, 2006). The SVE/SSD system consists of suction points installed through the concreted floor that draw air out from underneath the building. This in turn creates a negative pressure gradient beneath the building that will draw any soil vapor from the subsurface into these suction points, and prevent it from entering the building. The SVE/SSD system uses approximately 2.5-foot sections of perforated pipe

below the building slab to extract soil vapor that may be contaminated below the building.

Two systems, each utilizing a separate fan, were installed in order to achieve total sub-slab coverage. The systems are outlined individually below:

- **System 1 (North Room)**

- one (1) RADONAWAY RP-145 in-line fan (see Appendix L for fan specifications), sidewall exterior mounted;
- 4" Schedule 40 PVC to roof exhaust;
- weatherproof electrical conduit was used from fan housing to electrical junction box;
- interior MC wiring and electrical connection to existing breaker panel;
- two (2) suction points composed of 3" Schedule 40 PVC pipe, surface mounted at designated side walls, to cavity in sub-slab with masonry seal (access to suction cavity by 7" core drill);
- suction cavity consists of 24"-36" length of 3" Schedule 40 PVC 10 slot screen set horizontally in the cavity;
- approximately 1 cu. Ft. of material surrounding the screen was excavated from the sub-slab to promote flow and influence;

- **System 2 (Main System)**

- one (1) RADONAWAY RP-265 in-line fan (see Appendix L for fan specifications), sidewall exterior mounted;
- 3" and 4" Schedule 40 PVC pipe to roof exhaust;
- weatherproof electrical conduit used from fan housing to electrical junction box;
- interior MC wiring and electrical connection to existing breaker panel;
- twelve (12) suction points composed of 3" Schedule 40 PVC pipe, surface mounted at designated side walls, to cavity in sub-slab with masonry seal (access to suction cavity by 7" core drill);

- suction cavity consists of 24"-36" length of 3" Schedule 40 PVC 10 slot screen set horizontally in the cavity;
- Approximately 1 cu. Ft. of material surrounding the screen was excavated from the sub-slab to promote flow and influence;

Suction point details are shown on Figure 2. Figure 3 shows the suction point and fan locations and suction point screen depths and Figure 4 shows system influent readings.

Procedures for monitoring, operating and maintaining the Site SSD/SVE system are provided in the Operation and Maintenance Plan in Section 4 of the SMP. The Operation and Monitoring Plan also addresses inspection procedures that must occur after any severe weather condition has taken place that may affect on-site Ecs.

4.8 Institutional Controls

The site remedy requires that an Environmental Notice be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to commercial and/or industrial uses only including groundwater restrictions.

The Environmental Notice for the site was executed by the Department on February 10, 2017, and filed with the Monroe County Clerk on March 1, 2017. The County Recording Identifier number for this filing is 201703010634. A copy of the easement and proof of filing is provided in Appendix C.

5.0 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

There were no significant deviations from the RAWP.

6.0 REFERENCES

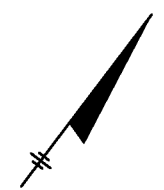
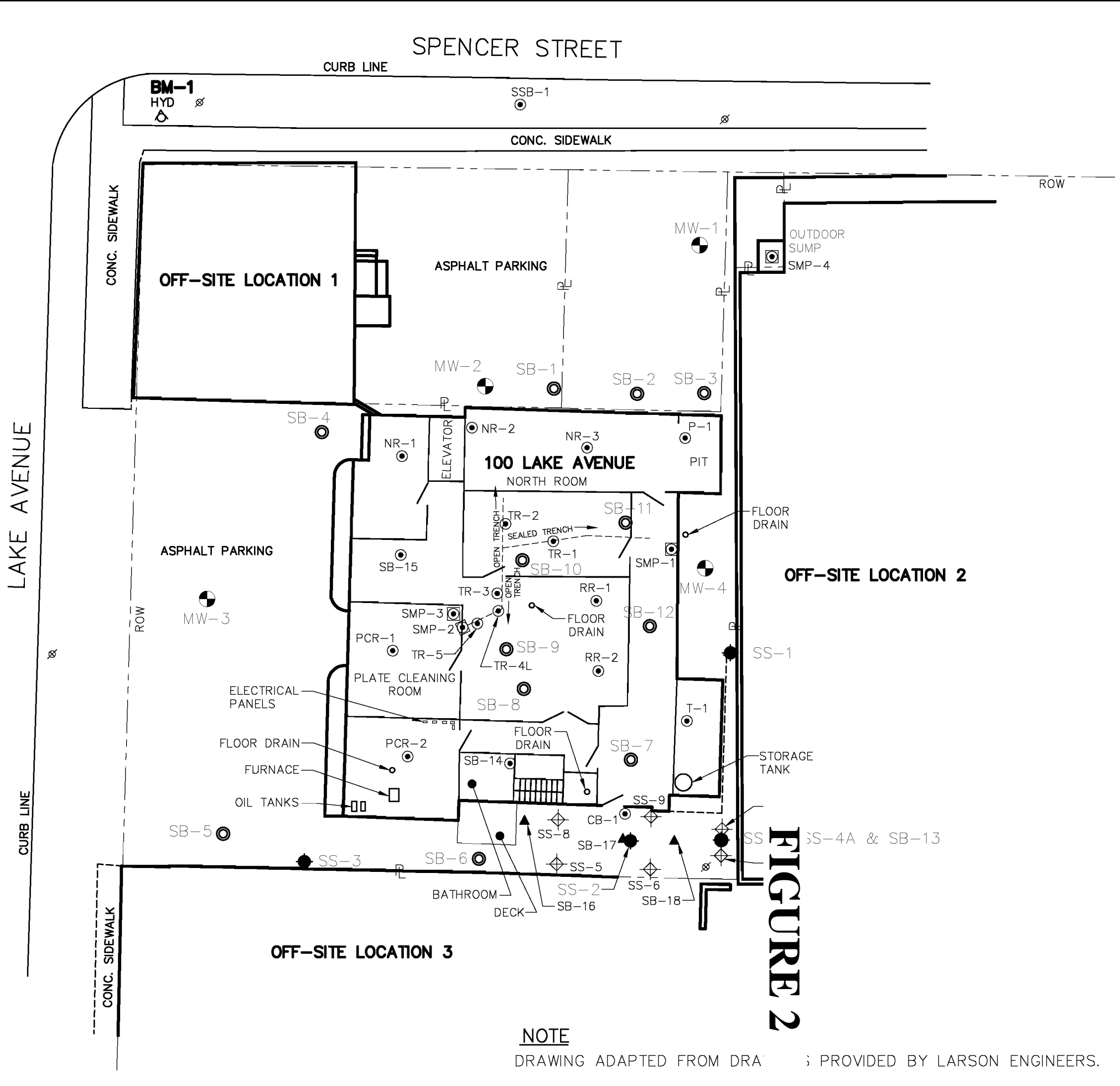
New York State Department of Environmental Conservation. “DER-10 Technical Guidance for Site Investigation and Remediation.” Division of Environmental Remediation. May 2010.

New York State Department of Environmental Conservation. “6 NYCRR Part 375 Environmental Remediation Programs.” Division of Environmental Remediation. December, 2006.

New York State Department of Health. 2006. “Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York”, October 2006.

New York State Department of Environmental Conservation. “Site Investigation Report, Former Rochester Metal Etching Site #828100P, City of Rochester, Monroe County”. September 2000.

O’Brien and Gere Engineers. “Final Report, Rochester Metal Etching Site Remedial Investigation/Feasibility Study.” September, 2007.



LEGEND

- MONITORING WELL
- ◆ 1998-1999 SOIL SAMPLE
- 1998-1999 SOIL BORING
- ◇ 2006 SOIL SAMPLE
- ▲ 2006 SOIL BORING
- ⊗ UTILITY POLE
- N/F NOW OR FORMERLY
- FLOOR DRAIN
- ⊙ RI SAMPLE LOCATION
- - - TRENCH
- - - PROPERTY LINE

Figure 1

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK

**ON-SITE AND SPENCER ST.
SAMPLE LOCATIONS**



FILE NO. 10653.33909.001
AUGUST 2007

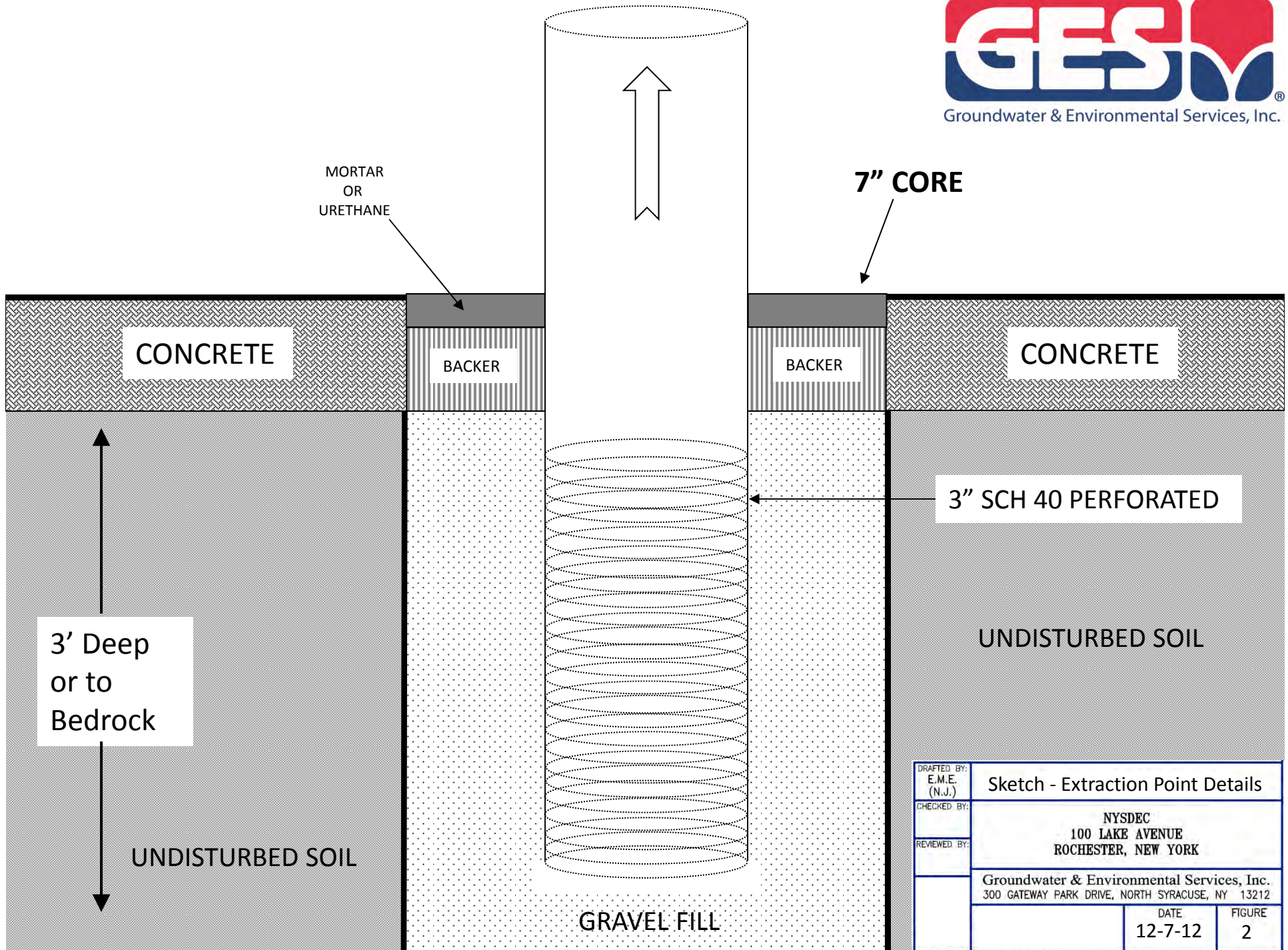


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NOTE

DRAWING ADAPTED FROM DRA... PROVIDED BY LARSON ENGINEERS.

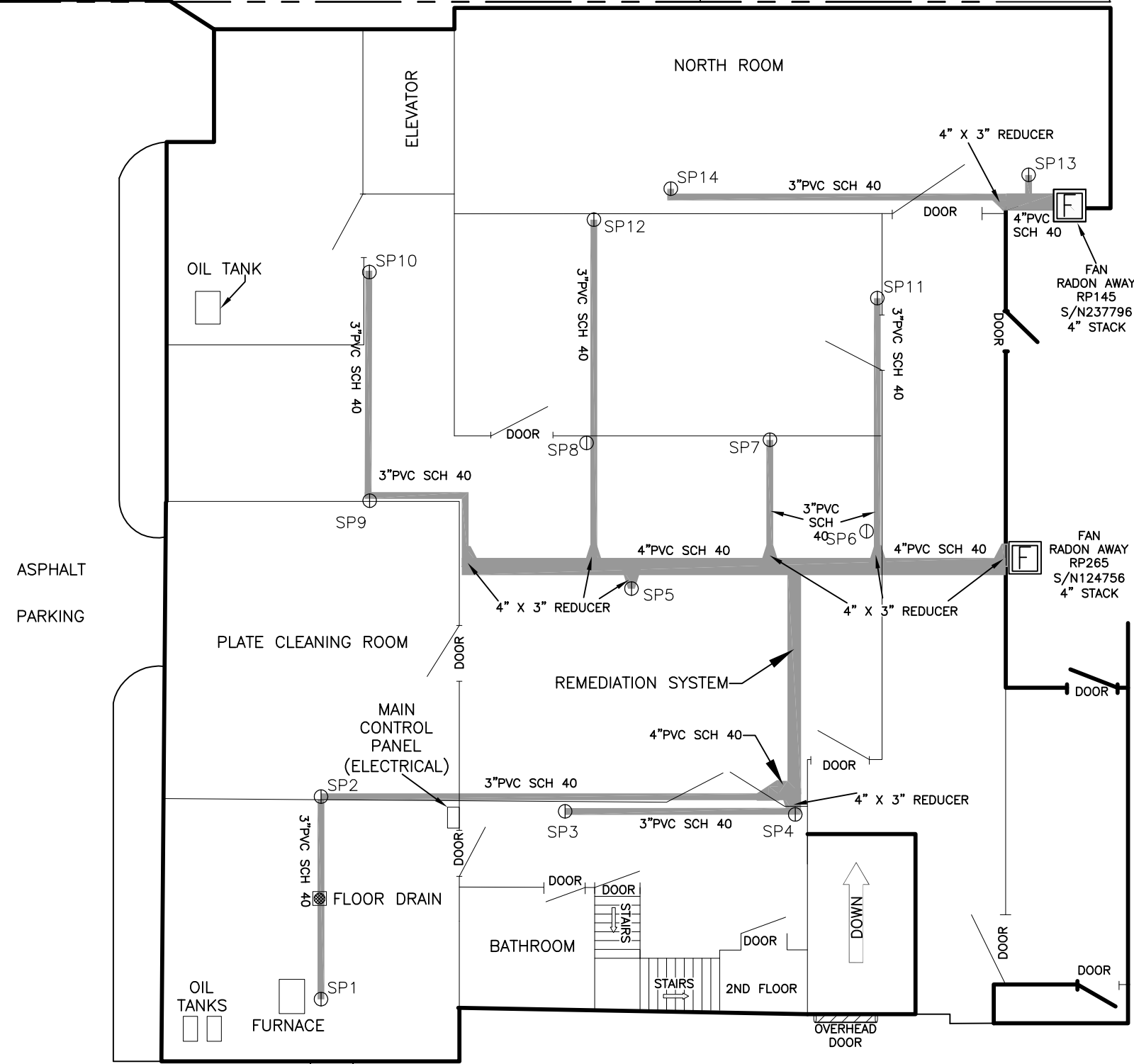
FIGURE 2



DRAFTED BY: E.M.E. (N.J.)	Sketch - Extraction Point Details	
CHECKED BY:	NYSDEC 100 LAKE AVENUE ROCHESTER, NEW YORK	
REVIEWED BY:		
	Groundwater & Environmental Services, Inc. 300 GATEWAY PARK DRIVE, NORTH SYRACUSE, NY 13212	
	DATE 12-7-12	FIGURE 2

LEGEND

- PROPERTY BOUNDARY
- ⊕ SYSTEM SUCTION POINT
- SYSTEM PIPING



DEPTH OF EXTRACTION POINTS		
SAMPLE LOCATION	INCHES BELOW GRADE SURFACE	OBSTRUCTIONS ENCOUNTERED
SP1	36"	
SP2	36"	
SP3	36"	
SP4	32"	rock
SP5	35.5"	rock
SP6	24"	rock
SP7	36"	
SP8	24"	rock
SP9	28.5"	rock
SP10	30.5"	rock
SP11	34.5"	
SP12	24"	rock
SP13	36"	
SP14	30"	rock

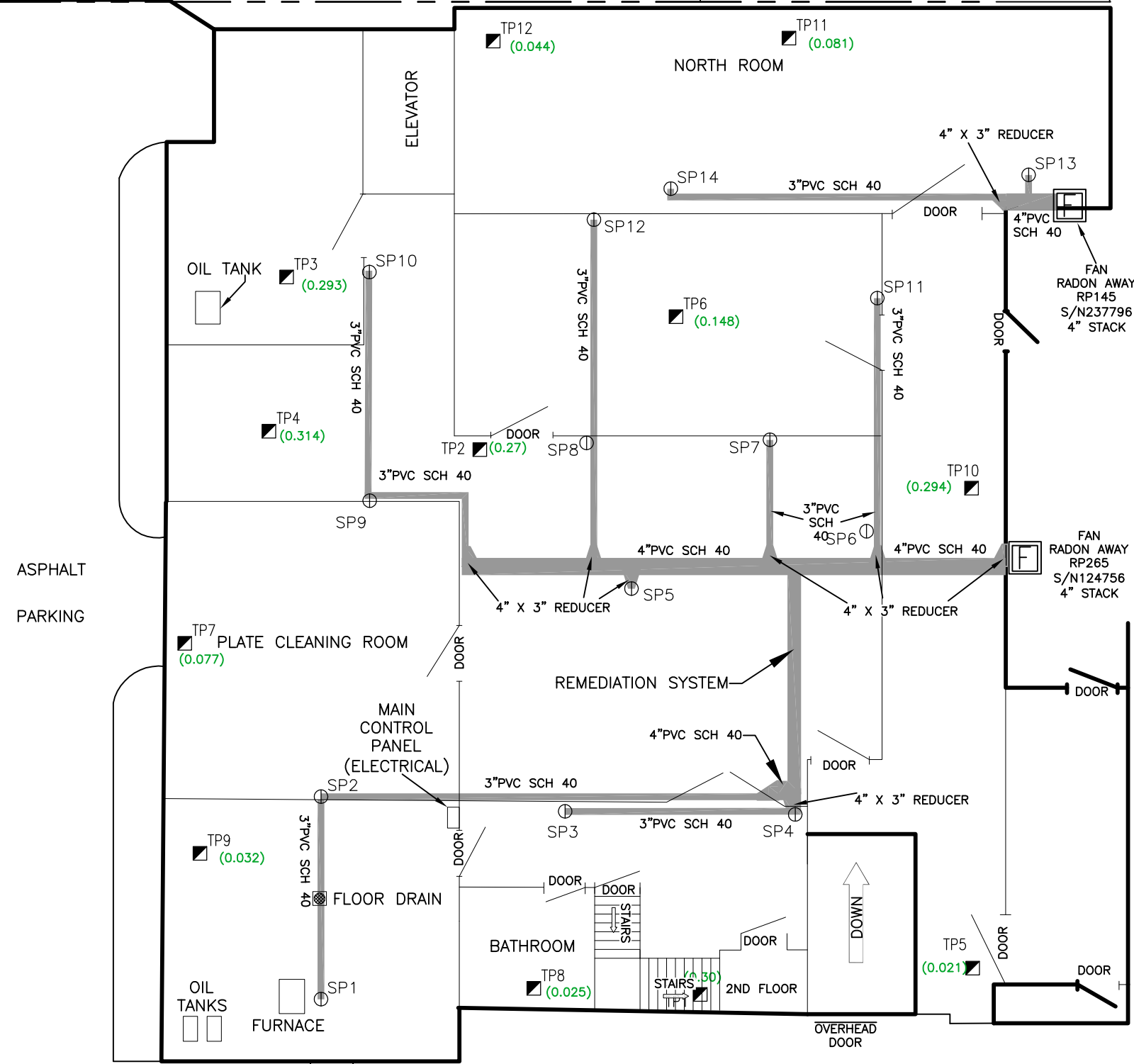
NOTES:
 FIGURE CREATED FROM DRAWING FROM OBIEN & GERE, WHICH WERE ADAPTED FROM DRAWINGS PROPOSED BY LARSON ENGINEERS (1999) AS PRESENTED IN THE SITE INVESTIGATION REPORT (NYSDEC 2000).

DRAFTED BY: E.M.E. (N.J.)	SYSTEM LAYOUT & EXTRACTION POINT DETAILS	
CHECKED BY:	NYSDEC 100 LAKE AVENUE ROCHESTER, NEW YORK	
REVIEWED BY:		
NORTH 	Groundwater & Environmental Services, Inc. 300 GATEWAY PARK DRIVE, NORTH SYRACUSE, NY 13212	
	SCALE IN FEET 0 APPROXIMATE 10	DATE 2-20-13

M:\Graphics\10600-Syracuse\Misc\NYSDEC\Rochester (100 Lake Avenue)\Rochester (100 Lake Avenue) S.M.dwg, B-10, 2/20/2013 1:10:21 PM, eedwards

LEGEND

- PROPERTY BOUNDARY
- ⊖ SYSTEM SUCTION POINT
- SYSTEM PIPING
- (0.030) INFLUENT (inches of water vacuum)



INFLUENT READINGS	
SAMPLE LOCATION	INCHES OF WATER
TP1	0.030
TP2	0.027
TP3	0.293
TP4	0.314
TP5	0.021
TP6	0.148
TP7	0.077
TP8	0.025
TP9	0.032
TP10	0.294
TP11	0.081
TP12	0.044

NOTES:

FIGURE CREATED FROM DRAWING FROM OBIEN & GERE, WHICH WERE ADAPTED FROM DRAWINGS PROPOSED BY LARSON ENGINEERS (1999) AS PRESENTED IN THE SITE INVESTIGATION REPORT (NYSDEC 2000).

DRAFTED BY: E.M.E. (N.J.)	INFLUENT READINGS		
CHECKED BY:			
REVIEWED BY:			
NORTH 	NYSDEC 100 LAKE AVENUE ROCHESTER, NEW YORK		
	Groundwater & Environmental Services, Inc. 300 GATEWAY PARK DRIVE, NORTH SYRACUSE, NY 13212		
	SCALE IN FEET 0 APPROXIMATE 10	DATE 2-20-13	FIGURE 4

APPENDIX A – NYSDEC CONTRACT NO.:C100900



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION

STANDBY CONTRACTOR AUTHORIZATION FORM
For Response & Containment, Investigation & Remediation
and Laboratory Services Contractors

General Information

Region: 8 **Site No.:** 828100 **CallOut ID:** 121213

CallOut 09/26/2012

Contract No.: C100900 **PIN (if applicable):**

Contractor Selected: GROUNDWATER & ENVIRONMENTAL SERVICES, INC (REM)

Location of Site: Former Rochester Metal Etching Company, 100 Lake Avenue, Rochester (Monroe Co.)

SCOPE OF WORK (Provide brief detailed description):

See Attached Summary Page.

- 1.0 Project Planning
- 2.0 SVE/SSDS System Design
- 3.0 Contract/Oversee System Installation
- 4.0 Prepare and submit Site Management Plan (SMP)
- 5.0 Prepare and submit Final Engineering Report (FER)

ESTIMATED BUDGET: \$ 30,000.00

This serves as authorization to incur costs up to the budgeted amount indicated, to perform the scope of work outlined above in connection with the above-referenced spill/site call out number. The contractor is responsible for immediately notifying the DER project manager if it becomes apparent that the scope of work can not be completed within the budget and/or the scope of work should be amended. The contractor should not incur costs that exceed the budget or perform activities outside the scope of work without the verbal or written approval of the DER project manager. The DER project manager must confirm that approval in writing in an amended Standby Contractor Authorization Form signed by the DER project manager and Rep within two business days.

DER Project Manager Name/Title:

Edward Hampston

(Print)

(Signature)

Edward Hampston
2012.09.26 13:13:26 -04'00'

Date: 9/26/12

Authorized DER Representative Name/Title:

(Print)

Digitally signed by A. Joseph White
DN: cn=A. Joseph White, o=DER, ou=Bureau E Section C,
email=ajwhite@gw.dec.state.ny.us, c=US
Date: 2012.09.26 13:48:07 -04'00'

(Signature)

Date: _____

Rochester Metal Etching (8-28-100)
ROD Implementation Scope of Work
Call-Out Contractor

0.0 Review Scope with NYSDEC

1.0 Project Planning

- Owner, NYSDEC, GES, Prospective Sub-contractor Site Visit
- Prepare Standard Health and Safety Plan (HASP)
- Prepare Letter Work Plan
- Prepare Cost Estimate

2.0 SVE/SSDS System Design (Preparation with Subcontractor)

- Additional building inspection to determine conditions which may affect the design, construction and operation of the SSD system
- Examine floor for material defects and potential leaks that would diminish the effectiveness of the system.
- Backdraft testing
- Sufficient vacuum sample ports and differential pressure measurements at various neighboring test points to estimate the expected radius of influence for suction points.
- Evaluation of sub-slab air communication data obtained per above procedure
- Professional design analysis to optimize fan and piping configuration and to minimize disturbance to existing or planned interior improvements and operation.
- Prepare and submit a work plan in accordance with NYS DOH Guidance Document on Mitigation of Soil Vapor Intrusion to be approved by DEC Project Manager
- Field and experience assessment to propose location and number of points
- Size of blower
- Finalize detail
- Finalize proposed location
- GES/NYSDEC to approve details

3.0 Contract/Oversee Install System

- Field Supervision by GES of remedial action
- Contract with satisfactory SSDS/SVE subcontractor
- Final placements of all components of remedial system subject to approval by NYSDEC
- Preliminary system configuration
- Obtain permits and electrical inspection as required
- Final repair and sealing of joints, cracks, sumps and penetrations
- At completion, perform backdraft testing, measure pressure differentials and document; label components and provide system description and operational instructions

4.0 Prepare and submit Site Management Plan (SMP)

- GES to utilize DER SMP template and complete a draft SMP for review by PM.
- Utilize SVE contractor information for system O&M.
- Finalize SMP and provide PDF copy on approval by PM.

5.0 Prepare and submit Final Engineering Report (FER)

- GES to utilize DER FER
- At conclusion of construction, a draft FER will be submitted. This report will include an as-built drawing, showing SSDS locations and components. The CCR will include measurements of created sub-slab to ambient air static pressure differentials, detailed descriptions of SSDS components, etc.
- Finalize FER after review by NYSDEC Project Manager and provide PDF copy

Rochester Metal Etching
Remedial Action Implementation

WORK ASSIGNMENT TASKS	Unit	Rate	Number	Multiplier*	Total Cost	ASSUMPTIONS
-----------------------	------	------	--------	-------------	------------	-------------

1) Site Visit, Work Plan, HASP, and Cost Estimate						
Professional Engineer	Hr	72	2	0.85	\$122.40	
Project Manger	Hr	66	12	0.85	\$673.20	
Environmental Scientist	Hr	52	4	0.85	\$176.80	
LVE	Hr	1.25	16	0.85	\$17.00	
Heavy Duty Vehicle	Hr	24	8	0.85	\$163.20	
Supplies/Misc.	LS	200	1	1	\$200.00	
Task 1 Total					\$1,352.60	

2) System Design and Selection						
Professional Engineer	Hr	72	4	0.85	\$244.80	
Project Manger	Hr	66	12	0.85	\$673.20	
Miscellaneous	LS	250	1	1	\$250.00	
LVE	Hr	1.25		0.85	\$0.00	
Technician	Hr	46	8	0.85	\$312.80	
Field equipment (PID)	Day	17.57	1	0.85	\$14.93	
Heavy Duty Vehicle	Hr	24	8	0.85	\$163.20	
Subcontractor Evaluation	LS	500	1	1	\$500.00	
Task 2 Total					\$990.93	

3) System Installation and Oversight						
3.1 Installation Oversight	Unit	Rate	Number	Multiplier*	Total Cost	
Project Manager	Hr	66	8	0.85	\$448.80	Overall Coordination
Technician	Hr	46	32	0.85	\$1,251.20	Assume 4 days oversight
Heavy Duty Vehicle	Hr	24	32	0.85	\$652.80	
Field equipment (PID)	Day	18	4	0.85	\$61.20	
Misc. Supplies/Equipment	LS	987.06	1	1	\$987.06	
3.1 Subtotal					\$3,401.06	
3.2 Subcontracted SVE Installation						
Site Visit/Planning/Pre-Design	LS	2500	1	1	\$2,500.00	Building visit and visual inspection with pre-design communication test
Mobilization	LS	400	1	1	\$400.00	
SVE Installation/Startup	LS	10600	1	1	\$10,600.00	Estimate min. 4 suction points
Installation Documentation	LS	500	1	1	\$500.00	
Warranty/Annual Inspection	LS	1000	1	1	\$1,000.00	
3.2 Subtotal					\$15,000.00	
Task 3 Total					\$18,401.06	

Rochester Metal Etching
Remedial Action Implementation
Cost Estimate

4) FER and SMP Preparation

Professional Engineer	Hr	72	8	0.85	\$489.60
Project Manager	Hr	66	20	0.85	\$1,122.00
Environmental Scientist	Hr	52	20	0.85	\$884.00
Technician	Hr	46	10	0.85	\$391.00
Drafts Person	Hr	60	8	0.85	\$408.00
Miscellaneous	LS	1500	1	1	\$1,500.00
4.1 Subtotal					\$4,794.60
Project Manager	Hr	66	20	0.85	\$1,122.00
Professional Engineer	Hr	72	4	0.85	\$244.80
Environmental Scientist	Hr	52	16	0.85	\$707.20
Technician	Hr	46	8	0.85	\$312.80
Drafts Person	Hr	60	4	0.85	\$204.00
Miscellaneous	LS	875	1	1	\$875.00
4.2 Subtotal					\$3,465.80
Task 4 Total					\$8,260.40
Project Subtotal					\$29,004.99
Subcontract Costs					\$15,500.00
Amt. Subject to CPI					\$13,504.99
CPI Adjustment					\$14,500.00
PROJECT TOTAL					\$30,000.00

CPI 2009 2.7
CPI 2010 1.5
CPI 2011 3.0

GES Region 8 Remedial Services Contract Multiplier = 0.85

APPENDIX B – REMEDIAL ACTION WORK PLAN



January 14, 2013

Mr. Edward Hampston.
Environmental Engineer
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway – 12th Floor
Albany, New York 12233-7017

**Re: Remedial Action Work Plan
Former Rochester Metal Etching Company
100 Lake Avenue
Rochester, NY
Site No. 828100**

Dear Mr. Hampston

Groundwater & Environmental Services, Inc. (GES) is pleased to submit to you the attached Remedial Action Work Plan (RAWP) for the former Rochester Metal Etching Site (No. 828100) located at 100 Lake Avenue in Rochester, New York. This work is being done in accordance with Call Out ID 121213.

GES performed a pilot test with Mitigation Technologies (MT) on November 30, 2012, and came up with a design for a SSD/SVE. The design is included in the RAWP.

Estimates for the installation of the system were provided by both MT and GES. GES' estimate was compiled using the rates in our NYSDEC Standby Remedial Services Contract. A comparison of the estimates indicated that MT's price was approximately 18% lower than GES'. Based on this comparison, GES recommends that MT be awarded the work based on their lower cost estimate.

GES appreciates the opportunity to provide the above services to the NYSDEC. If you have any questions or comments, please contact us (800) 220-3069 ext. (4065).

Sincerely,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Mark Boorady
Senior Engineer

Attachment:
Remedial Action Work Plan

REMEDIAL ACTION WORK PLAN

**Former Rochester Metal Etching Company
100 Lake Avenue
Rochester, New York (Monroe County)
Site #828100**

Prepared For:

**NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
Division of Environmental Remediation
625 Broadway- 12th Floor
Albany, New York 12233-7017

**Report Date
January 14, 2013**

**Prepared by: _____
Jason Sgarlata
Environmental Engineering Technician**

**Prepared/Reviewed by: _____
Mark Boorady
Senior Engineer**



GROUNDWATER & ENVIRONMENTAL SERVICES, INC.
300 Gateway Park Drive
North Syracuse, New York 13212
(800) 220-3069

Table of Contents

1) Introduction	1
2) Description	1
3) Objectives.....	2
A. Remedial Response Action	2
B. Engineering Controls	2
C. Institutional Controls.....	2
4) Health and Safety Plan	3
5) Detailed Scope of Work	3
6) Schedule.....	5
7) Institutional Controls.....	5
8) Site Management plan	5
9) Final Engineering Report	5

Drawings and Figures

Figure 1- Site Location Map

Figure 2- Proposed System Layout

Figure 3- Extraction Point Detail

Appendices

Appendix A- Health and Safety Plan

Appendix B- Mitigation Tech Estimate (12/3/2012)



1) Introduction

Groundwater & Environmental Services, Inc., (GES) of North Syracuse, New York, has prepared this Remedial Action Work Plan (RAWP) for the New York State Department of Environmental Conservation (NYSDEC) for the former Rochester Metals Etching Company (site #828100) located at 100 Lake Avenue, Rochester, Monroe County, New York. This RAWP is written in accordance with DER-10 and is based on the Record of Decision dated March 2011.

2) Description

The Rochester Metal Etching Company (RME) site is located at 100 Lake Avenue in Rochester, Monroe County, New York. The main feature of the 0.22 acre site is a two story building surrounded by paved parking areas and walkways. The site, located within the Community Center zoning district, is near the intersection of Lake Avenue and Spencer Street within a developed urban area of downtown Rochester. The site property, currently used for commercial purposes, is generally flat with the exception of the of the east corner of the property, which dips to the east. Based on the monitoring wells and site topography, the groundwater flows to the east/northeast towards the Genesee River, located approximately 500 ft to the east of the RME site. At this location, the Genesee River is located within a gorge which is 100 feet below the elevation of the RME site.

The surrounding properties include commercial and industrial parcels which are covered by buildings and pavement (paved parking or roads). The site is bounded to the north by a mixed use building (commercial first floor/apartments upper floors) and a vehicle rental location across Spencer Street, to the west across Lake Avenue by parking lots, to the east by a frozen food facility, and to the south by a diner.

From 1998 to 1999, the NYSDEC conducted a preliminary investigation of the RME facility. The investigation data led to the listing of the Rochester Metal Etching (RME) Company site as a Class 2 Inactive Hazardous Waste Disposal Site in 2001 and the subsequent completion of the RME site remedial investigation/feasibility study (RI/FS) in 2007.

In order to address conditions at the site associated with potential environmental contamination, the Brotherhood, MC Inc. (the current site property owner) conducted the following work:

- Concrete Filling of Basement Sumps and Collection Trenches:

The sumps and the trench associated with the RME site facility were identified as the primary preferential pathways identified for the transport and migration of site constituents to subsurface soil and groundwater. In 2005, the owners of the RME site filled in the sumps and the trench with concrete, eliminating these structures as potential pathways for the transport of materials from inside the facility to subsurface media.



- **Site Cover:**

In 2009, the owners of the RME site paved the entire site with asphalt, including the previously exposed surface soil area located in the southeast corner of the site. The boundaries of the site are either covered by asphalt paving or the site building, thus eliminating the potential of direct contact with contaminated soils on site. The cover will be maintained under the SMP as one of the components of the selected remedy.

A site location map is attached as **Figure 1**.

3) Objectives

The primary components of the remedial action, as selected in the Record of Decision, include:

A. Remedial Response Action

A soil vapor intrusion mitigation system (sub-slab depressurization system) will be installed within the site building located at 100 Lake Avenue. The guidelines for soil vapor intrusion mitigation can be found in NYSDOH's "Guidance for Evaluating Soil Vapor Intrusion in the State of New York."

B. Engineering Controls

1. Maintain the cover over the limits of the site property which includes asphalt paving, concrete paving, sidewalks, and the building footprint.
2. Maintain a soil vapor intrusion mitigation system (sub-slab depressurization) that mitigates the current exposure of vapor intrusion within the on-site building.
3. The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

C. Institutional Controls

1. Imposition of an institutional control in the form of an environmental easement for the controlled property that would include:
 - (a) limit the use and development of the controlled property to: commercial and/or industrial use;
 - (b) restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;
 - (c) prohibit agriculture or vegetable gardens on the controlled property;
 - (d) require compliance to the Department approved Site Management Plan;
 - (e) require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3).



2. The remedy would require the development, Department approval, and implementation of a Site Management Plan for the site which would include the following:
 - (a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering systems for the site and manages future development of the site including:
 - (i) provisions for management of future excavations in area of residual contamination,
 - (ii) groundwater restrictions,
 - (iii) management and inspection of the final engineering cover system,
 - (iv) and maintaining site access controls and Department notification
 - (b) an Operation and Maintenance Plan to assure continued operation, maintenance, monitoring, inspection, and reporting of the active components of the remedy.
 - (i) provision to maintain all active components of the operation, maintenance, monitoring plan.
 - (ii) maintain site access controls and Department notification;
 - (iii) providing the Department access to the site and O&M records.

4) Health and Safety Plan

A Health and Safety Plan (H&SP) has been developed for the site and for the proposed work that is to take place. This is included in **Appendix A**. The H&SP does not include a community air monitoring plan (CAMP) because the work will be completed inside the structure and engineering controls will be used to eliminate any air particulates caused during construction. If remedial activities occur outside the building with the potential to generate particulates or other contamination, the generic CAMP included in DER-10 will be implemented to monitor conditions. Included in the H&SP will be exposure monitoring of the work space, specific job safety analysis, incident reporting and directions to the hospital.

5) Detailed Scope of Work

Mitigation Technologies has been selected to install the SSD/SVE system at the facility. **Appendix B** has a copy of the cost estimate and scope of work from Mitigation Tech. Based on the communication testing that was performed on November 30, 2012, it was determined that two separate systems (fans) will be used for the SSDS/SVE. The elements of the systems are described below and shown in **Figure 2**.

System 1 (North Room):

- System configuration - (1) RADONAWAY RP-145 (80 watts) in-line fan, sidewall exterior mount at east side, to provide sub-slab depressurization via 4" schedule 40 PVC pipe to roof exhaust
- Electrical weatherproof conduit from fan housing to electrical junction box; interior MC wiring and electrical connection to existing panel



- (2) Suction points (**Figure 3**) as follows: connection via 3” Schedule 40 PVC pipe, surface mount at designated side wall, to cavity in sub-slab, with urethane and/or masonry seal; access hole to suction cavity by 5”core drill; suction cavity to consist of approximately 1 cu. ft. excavated material in sub-slab
- (1) U-tube vacuum indicator on vertical pipe run

System 2 (Main System):

- System configuration - (1) OBAR GBR 76 Radial Blower (250 watts), sidewall exterior mount at east side, to provide sub-slab depressurization via 4 and 3” schedule 40 PVC pipe to roof exhaust
- Electrical weatherproof conduit from fan housing to electrical junction box; interior MC wiring and electrical connection to existing panel
- (12) Suction points (**Figure 3**) as follows: connection via 3” Schedule 40 PVC pipe, surface mount at designated side wall, to cavity in sub-slab, with urethane and/or masonry seal; access hole to suction cavity by 5”core drill; suction cavity to consist of approximately 1 cu. ft. excavated material in sub-slab; (4) main room; (4) storage room; (1) Meter room; (1) Former plate cleaning room; (2) rooms adjacent to former oil tank room; adjust quantity and locations as necessary to achieve performance objective
- (1) U-tube vacuum indicator or Magnahelic dial gauge on vertical pipe run

Common Elements:

- Urethane sealant at slab joints, cracks and penetrations to prevent “short circuiting” of pressure field
- Horizontal pipe at ceiling with metal Autogrip hangers, on 6’ spacing, sloped as required, with valves or restrictor plates as required; all pipe runs for minimum intrusion on occupied space as practicable
- At completion, perform backdraft testing, measure pressure differentials and document; label components and provide system description and operational instructions
- Consult with client engineering representatives to develop operation, maintenance and periodic inspection plan
- Two year warranty; labor and installed components; although system design is informed by field air communication testing and is based on achieving a sufficient pressure differential, no specific warranty of effectiveness is provided – effectiveness shall be determined by continuing field measurement provided by others



Post Installation Pressure Field Extension Testing:

- A digital micromanometer will be used to measure pressure differentials and values will be recorded on a floor plan. All test holes will be repaired with urethane caulk (MSDS available) applied over a closed cell backer rod. Smoke tubes will be used to identify floor cracks and other openings to the sub-slab that could “short circuit” the pressure field. Backdrafting testing will also be performed.

6) Schedule

Upon approval by the NYSDEC Project Manager, we will schedule the work with the property owners and the contractor. The NYSDEC Project Manager will be notified when that date is established.

7) Institutional Controls

As covered in Section 3 C, the institutional controls will include an environmental easement as well as a Site Management Plan (SMP). The Department is working with the property owners and will complete the required site control (environmental easement or other approved alternative) outside the scope of this RAWP.

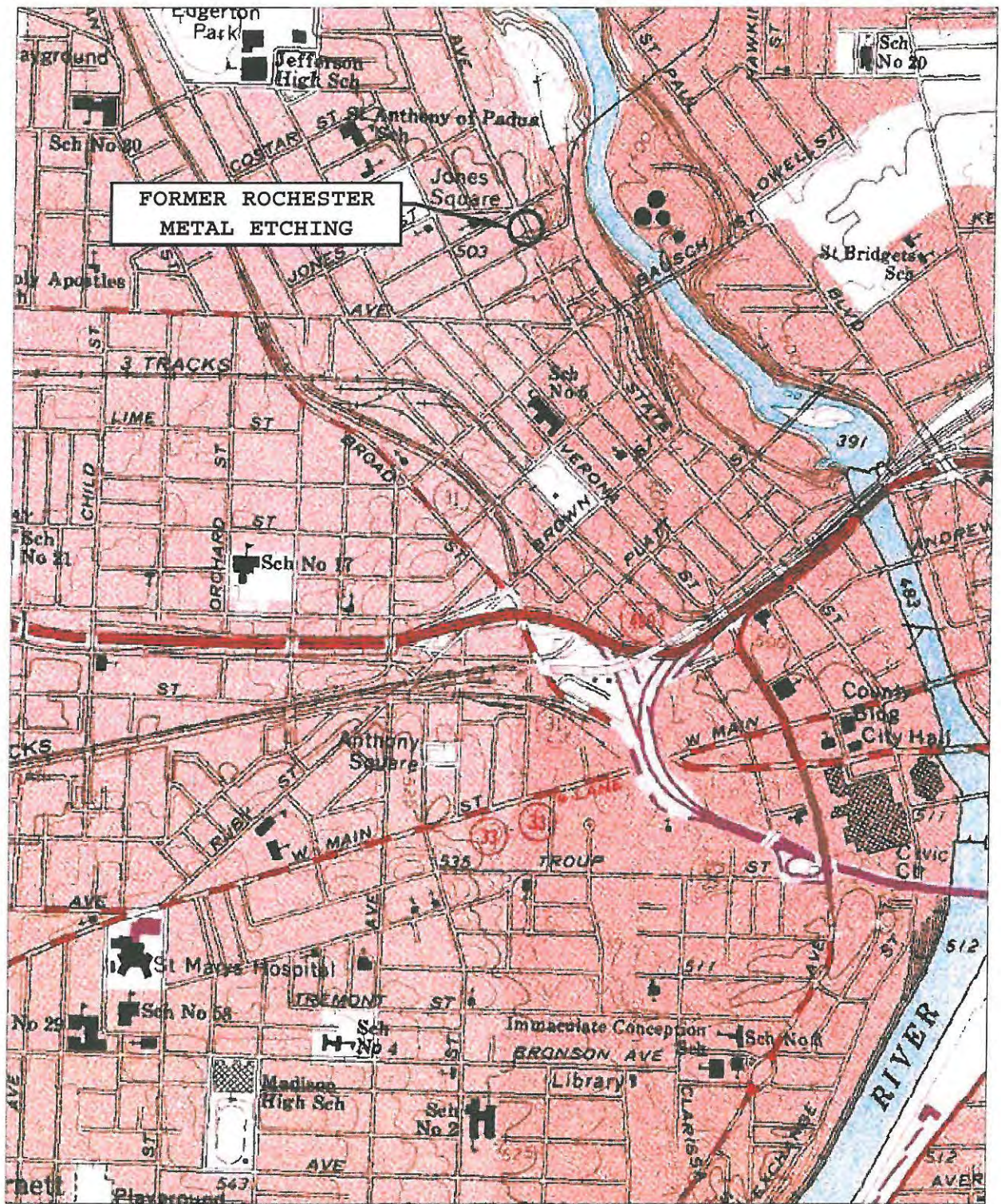
8) Site Management plan

GES will prepare a Site Management Plan (SMP) utilizing the DER SMP template. It will include future O&M requirements for the system. GES will provide a final PDF copy once it is approved by the NYSDEC Project Manager. The SMP will be placed in the Division of Environmental Remediation’s (DER’s) Electronic Document Management System (EDMS) e-Docs system with a hard copy provided to the current site owner.

9) Final Engineering Report

GES will prepare a Final Engineering Report (FER) utilizing the DER FER template. It will include as-built drawings and final vacuum measurements for the system. The Final version of the FER will be certified as required in DER 10-1.5. GES will provide a final PDF once it is approved by the NYSDEC Project Manager.

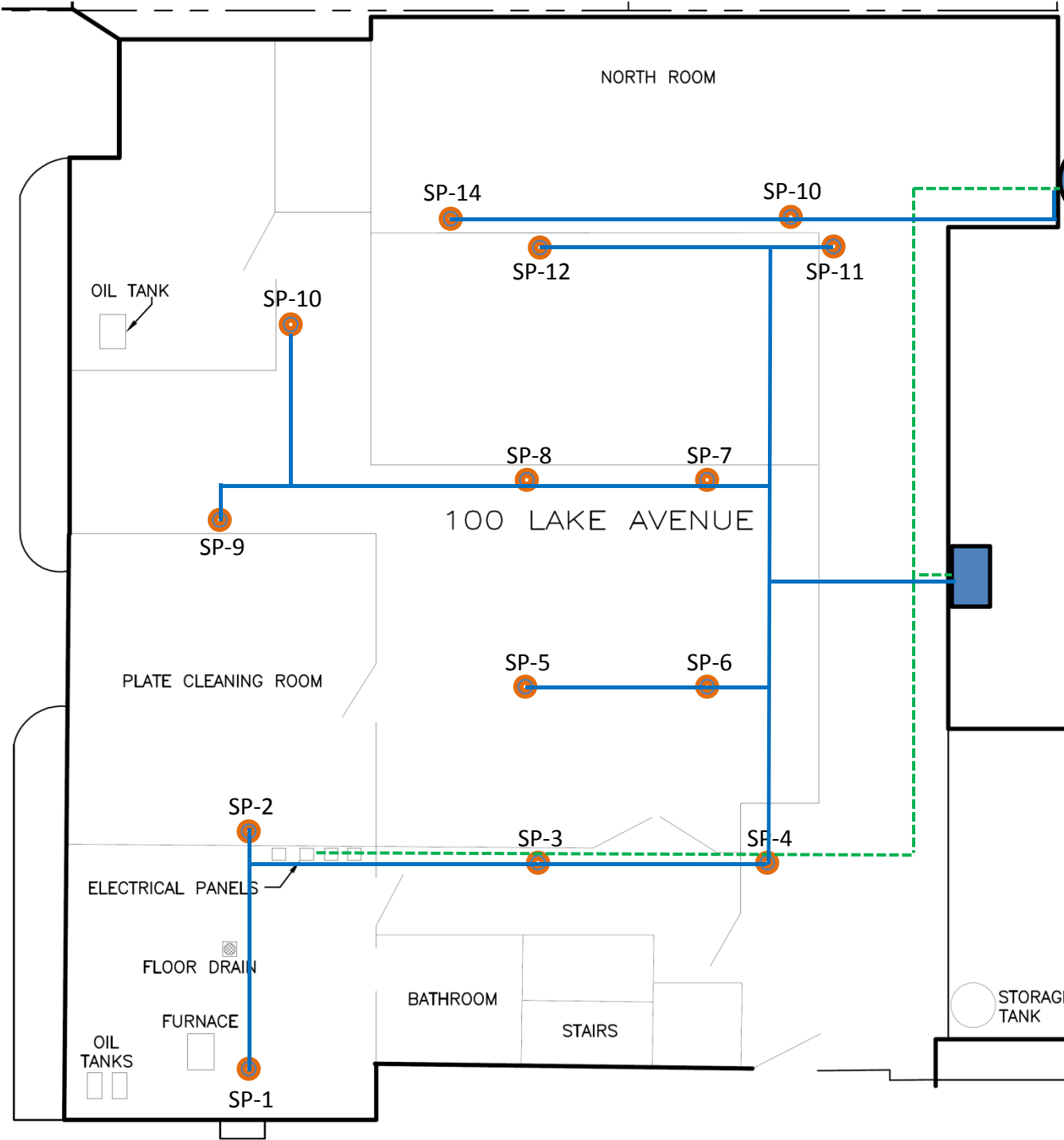
Drawings & Figures










FORMER ROCHESTER
METAL ETCHING

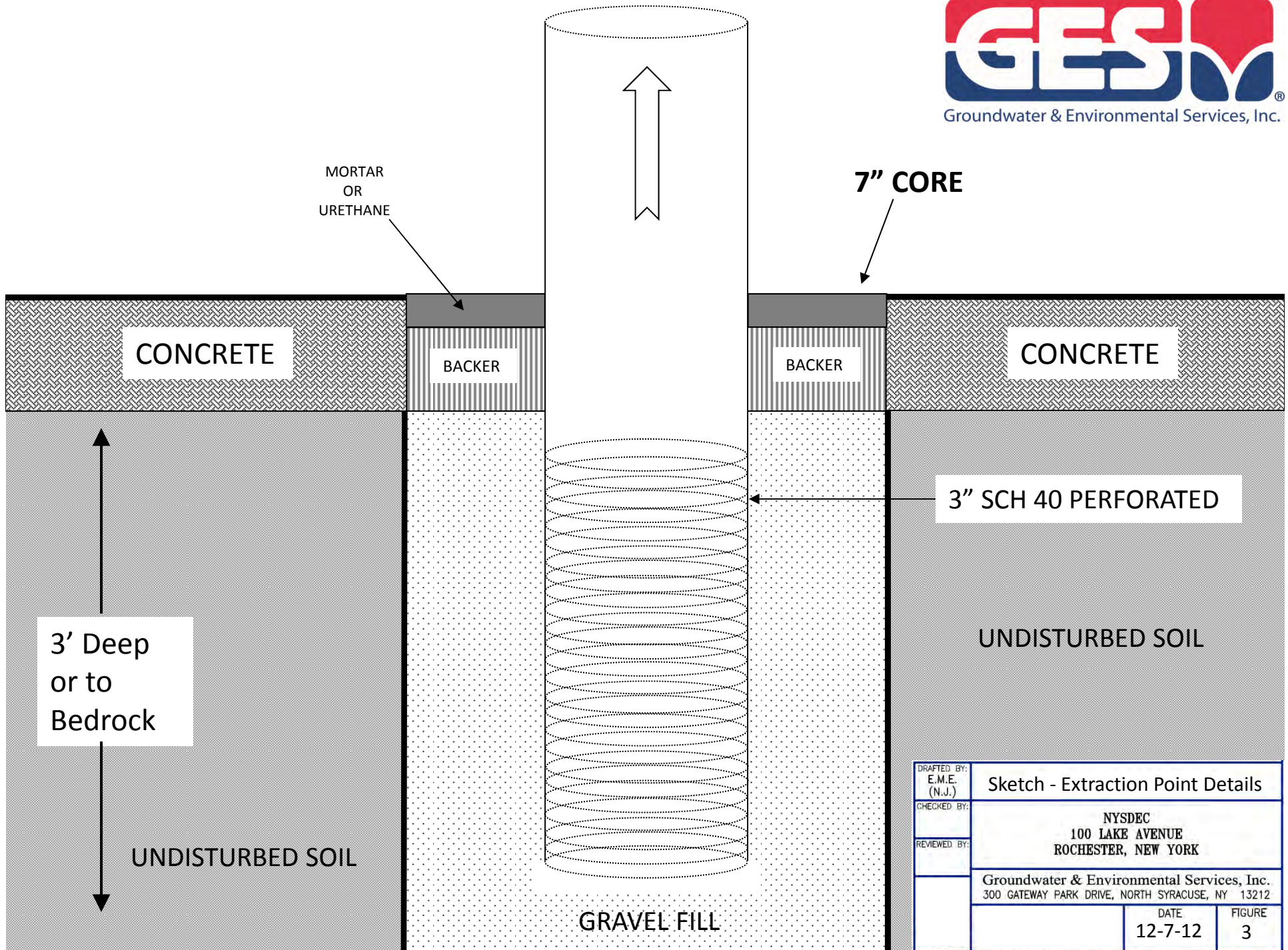
FIGURE 1

NYSDEC
 FORMER ROCHESTER METAL ETCHING FACILITY
 ROCHESTER, NEW YORK
 SITE LOCATION MAP
 NOT TO SCALE



- Suction Point  SP-7
- RP-145 Fan 
- HS-2000 Fan 
- System Piping 
- System Electrical 

DRAFTED BY: E.M.E. (N.J.)	Sketch – Proposed System Layout		
CHECKED BY:	NYSDEC 100 LAKE AVENUE ROCHESTER, NEW YORK		
REVIEWED BY:			
NORTH 	Groundwater & Environmental Services, Inc. 300 GATEWAY PARK DRIVE, NORTH SYRACUSE, NY 13212		
SCALE IN FEET  0 APPROXIMATE 20	DATE 12-7-12	FIGURE 2	



DRAFTED BY: E.M.E. (N.J.)	Sketch - Extraction Point Details				
CHECKED BY:	<p>NYSDEC 100 LAKE AVENUE ROCHESTER, NEW YORK</p>				
REVIEWED BY:					
<p>Groundwater & Environmental Services, Inc. 300 GATEWAY PARK DRIVE, NORTH SYRACUSE, NY 13212</p>					
	<table border="1"> <tr> <td>DATE</td> <td>FIGURE</td> </tr> <tr> <td>12-7-12</td> <td>3</td> </tr> </table>	DATE	FIGURE	12-7-12	3
DATE	FIGURE				
12-7-12	3				

APPENDIX C – ENVIRONMENTAL NOTICE

APPENDIX D – HEATH AND SAFETY PLAN

GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

***NYSDEC
100 Lake Avenue
Rochester, NY 14613***

EMERGENCY PHONE NUMBERS

Local Police **911**

Local Fire **911**

Local Rescue **911**

Local Hospital: Name, Telephone Number & Address:

ROCHESTER GENERAL HOSPITAL (585) 922-4000

1425 PORTLAND AVE.

ROCHESTER, NY 14621

Directions to Hospital: **See Attached Map and Directions**

National Response Center (NRC): **1-800-424-8802**

The NRC should be contacted in the event of a significant chemical release. Once notified, the NRC will activate a federal response to the spill. *Please confirm with the client and project manager to determine if the spill should be reported.*

Poison Control Center: **1-800-222-1222**

The Poison Control Center should be contacted in the event of accidental poisoning. They will provide information on immediate treatment for the poisoning.

Nearest Telephone: **Company Cell Phone With Staff**

Groundwater & Environmental Services, Inc. Contacts:

Vin Maresco
Sr. Site Operations Manager

Office: **800.220.3069 x 4050**
Cell Phone: **315.374.6319**

Tom Baylis
VP of Corporate HSSE

Office: **800.426.9871**
Cell Phone: **610.587.1124**

Wendy Smith
Local HSSE Officer

Office: **800.220.3069 x 4053**
Cell Phone: **315.427.1746**

Client Representative:
Edward Hampston

Office: **(518) 505-6991**

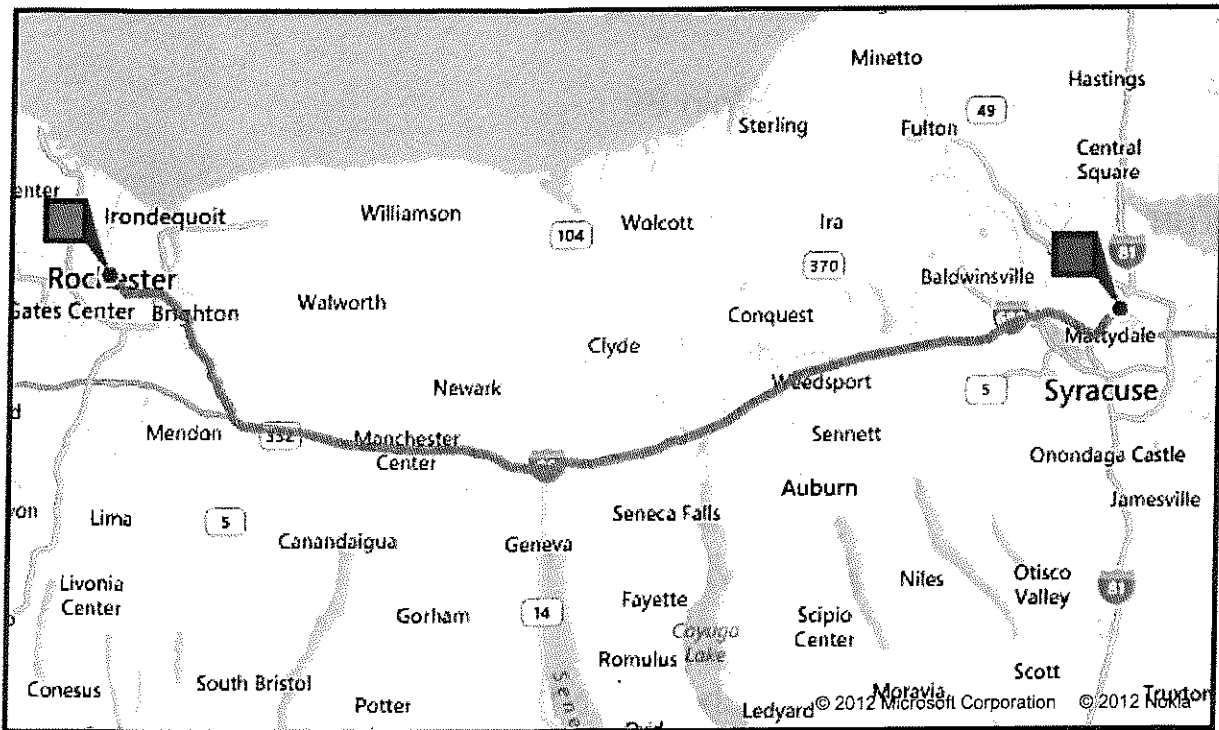
State Agency Representative:
Region 8

Office: **(518) 357-2234**

**DO NOT TRANSPORT SERIOUSLY INJURED
CALL LOCAL RESCUE**

DIRECTIONS TO SITE FROM OFFICE

Print this page in a more readable format: Click **Print** next to the upper-right corner of the map.



A 300 Gateway Park Dr, Syracuse, NY 13212

Depart Gateway Park Dr toward E Taft Rd / CR-19

0.3 mi

Turn left onto E Taft Rd / CR-19

0.1 mi

Take ramp right for I-81 South toward Thruway / Syracuse

2.5 mi

At exit 25A, take ramp right for I-90 West toward Buffalo

Toll road

68.2 mi

At exit 45, take ramp right for I-490 toward Rochester

Stop for toll booth

At exit 14, take ramp right toward Plymouth Ave /
Broad St

0.1 mi

Keep straight onto S Washington St

0.1 mi

Turn right onto RT-33 / W Main St

348 ft

Turn left onto N Plymouth Ave

0.4 mi

Turn right onto Morrie Silver Way

491 ft

Turn left onto State St

0.4 mi

Keep straight onto Lake Ave

0.1 mi

Arrive at 100 Lake Ave, Rochester, NY 14613

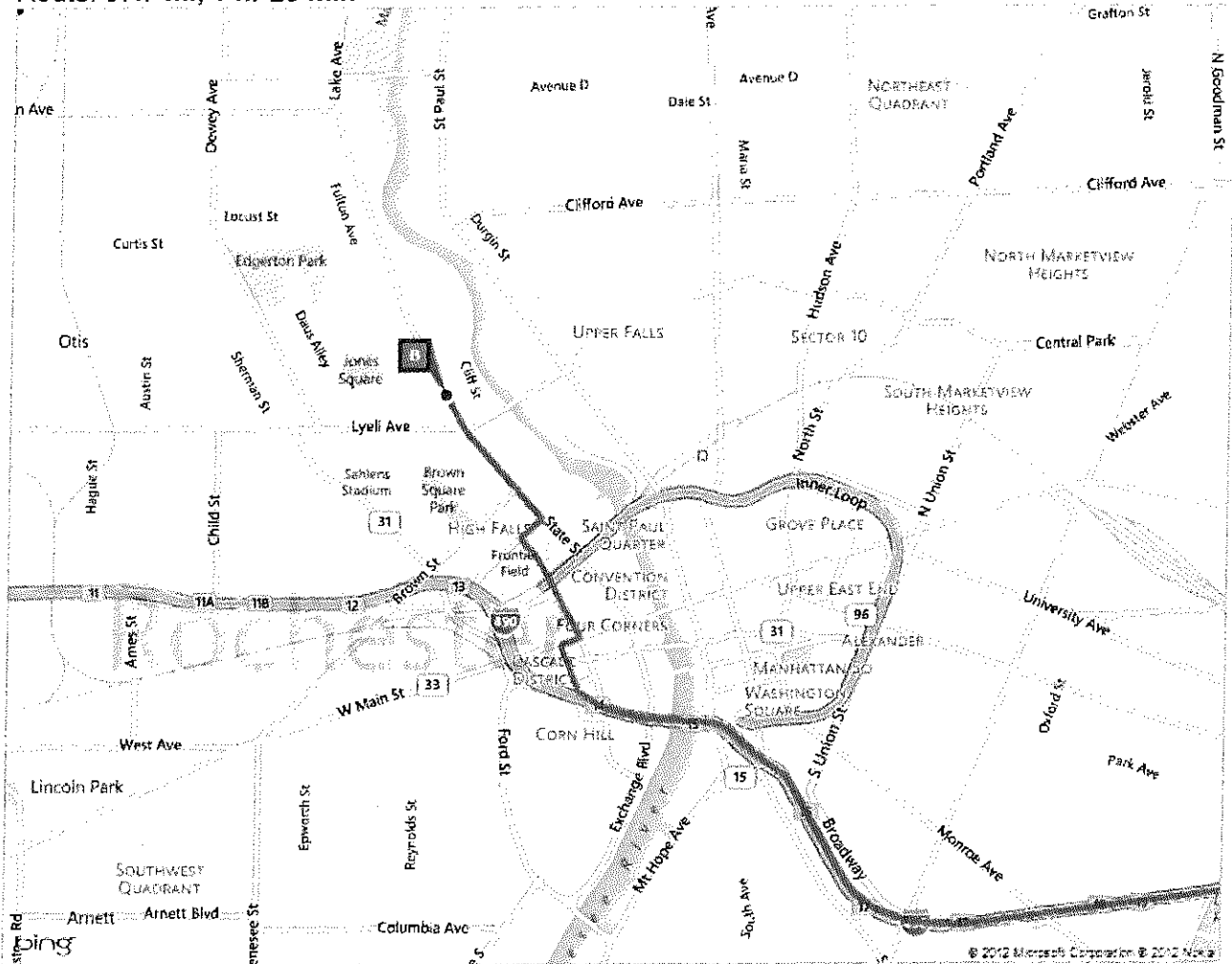
The last intersection is White St

If you reach Spencer St, you've gone too far

B 100 Lake Ave, Rochester, NY 14613

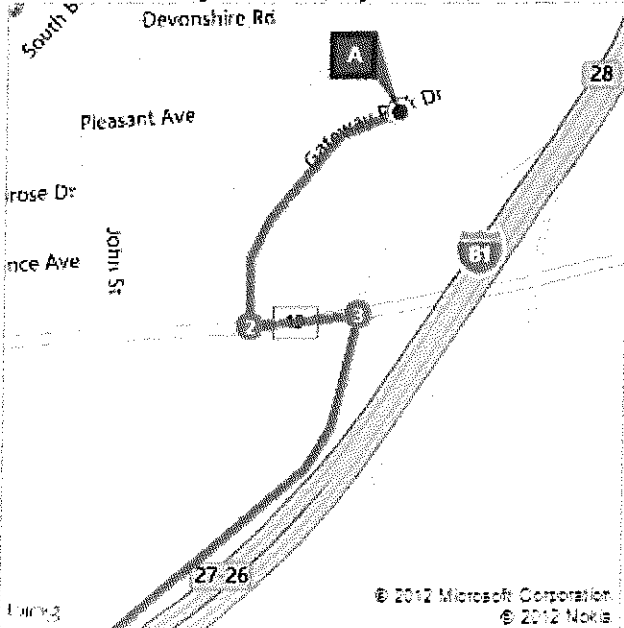
These directions are subject to the Microsoft® Service Agreement and for informational purposes only. No guarantee is made regarding their completeness or accuracy. Construction projects, traffic, or other events may cause actual conditions to differ from these results. Map and traffic data © 2012 NAVTEQ™.

Route: 87.7 mi, 1 hr 23 min

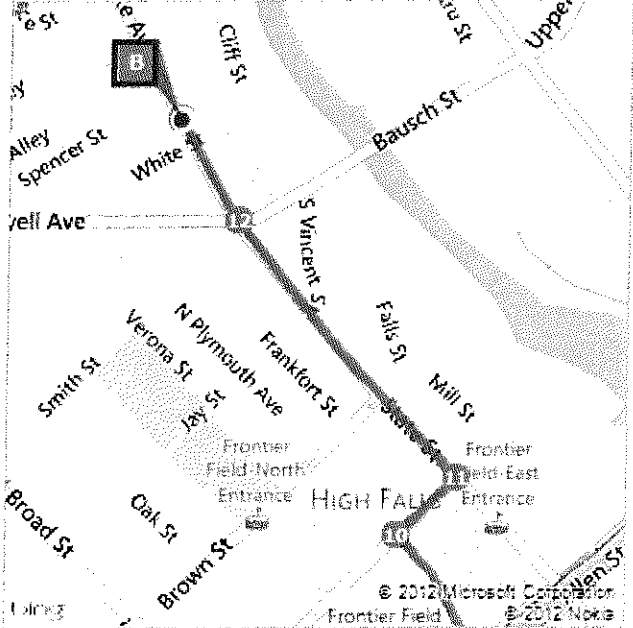


This was your map view in the browser window.

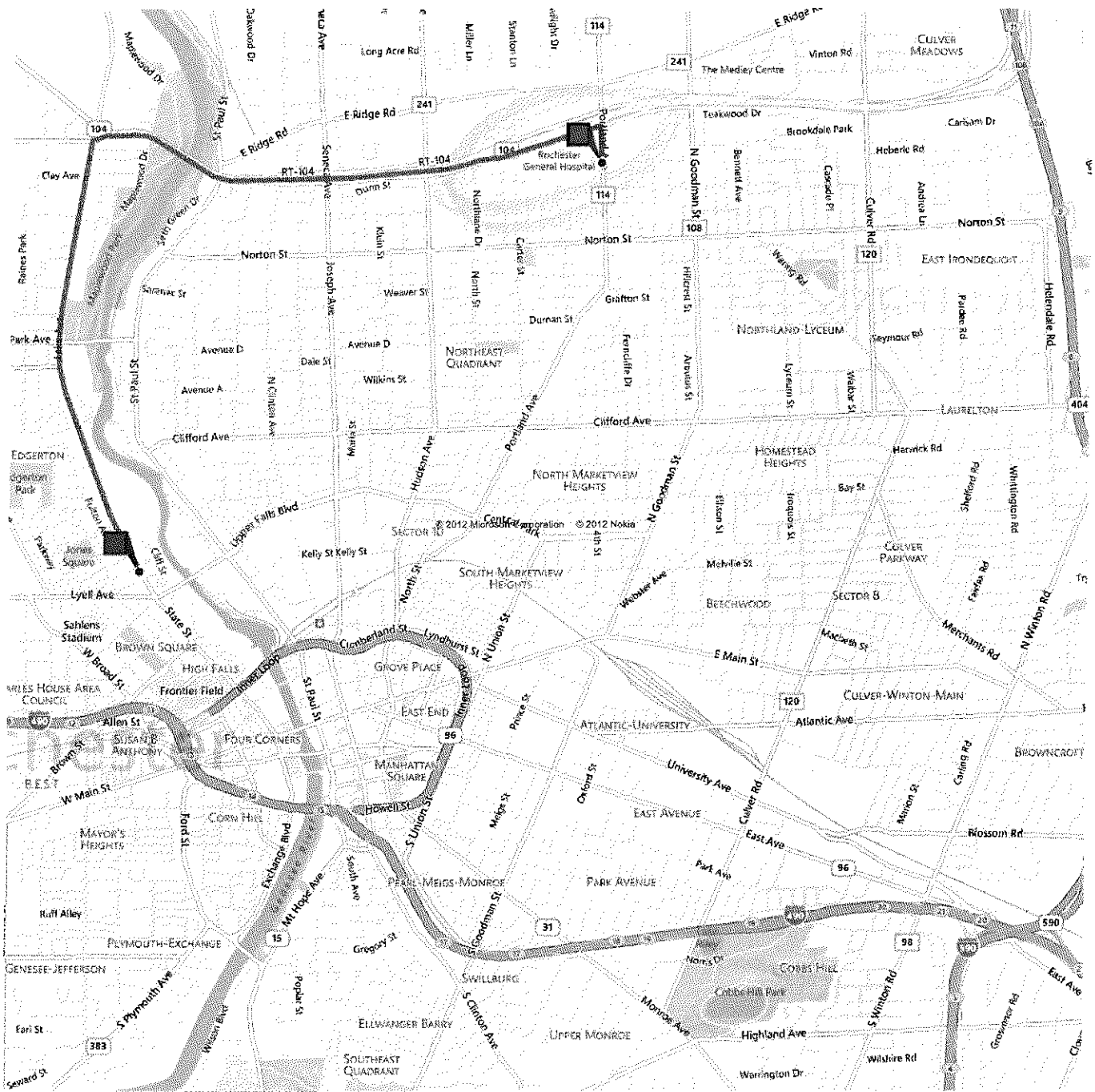
A: 300 Gateway Park Dr, Syracuse, NY 13212



B: 100 Lake Ave, Rochester, NY 14613



HOSPITAL ROUTE MAPS



- Guset Valentin G, MD
- Guzman Jeanette, MD
- Habbu Armit A, MD
- Heinig Robert E, MD
- Henderson C Michael, MD
- Hollander Joshua, MD
- Huiatt Kelly R, MD
- Iftikharuddin Sarah, MD
- Imran Farhan S, MD
- Jaffe Edith, MD
- Job Anil V, MD
- Jones Denis M, MD
- Kadam Sarika R, MD
- Kanapathy Kalyana, MD
- Kenjarski Brian M, MD
- Kerley Deborah Lyn, MD
- Kilbury Taylor Laurie, DO
- Kothari Nirmal D, MD
- Kovachev Georgi A, MD
- Krishnamurthy Pramod B, MD
- Landstrom Linda, MD
- Lanni Alan F, MD
- Liu Linda, MD
- Malhotra Siddhant, MD

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FIGURES

Figure 1 Route to Local Hospital Map

LIST OF ATTACHMENTS

Attachment A	Site Maps
Attachment B	Exposure Monitoring Program for the Contaminants of Concern
Attachment C	Material Safety Data Sheets (If available for client)
Attachment D	Job Safety Analysis Sheets and Daily Site Safety Checklists
Attachment E	Pre-entry Meeting Notes
Attachment F	Sign-off Sheet
Attachment G	Incident/Injury Case Management
Attachment H	Site Specific Decontamination Plan

1.0

INTRODUCTION

1.1 APPROVALS

Prepared By: Wendy Smith – Local HSSE Officer Date: 27-March-2013
(Employee - title)

Reviewed by: _____ Date: _____
(Employee - Project Manager)

Approved By: _____ Date: _____
(Employee - Local Health and Safety Officer)

1.2 SITE BACKGROUND

Project Name: NYSDEC Rochester

Site Address: 100 Lake Ave, Rochester, NY 14613

Nearest Intersection: Lake Ave and Spencer Street

Township/Municipality: Rochester

County: Monroe

Additional Site Information: Former Rochester Metal Etching Company

1.3 SCOPE OF WORK

Task 1 - General Site Activities

Task 2 - Consultant Oversight

Task 3 - _____

Task 4 - _____

Task 5 - _____

Task 6 - _____

Task 7 - _____

Task 8 - _____

Task 9 - _____

Task 10 - _____

2.0

PROJECT ORGANIZATION AND RESPONSIBILITIES

<u>Responsibility</u>	<u>Name</u>	<u>Task Description</u>
Project Manager	<u>Justin Domago</u>	Oversee and coordinate all budget and technical aspects for the project
Local Health & Safety Officer	<u>Wendy Smith</u>	Coordinate all health and safety operations for the project site
Site Supervisor	<u>GES Personnel</u>	Oversee and coordinate all health and safety aspects from the project site

3.0 OSHA TRAINING REQUIREMENTS

3.1 GENERAL TRAINING REQUIREMENTS

All personnel performing activities covered by this plan must be trained in accordance with the requirements of 29 CFR 1910.120(e). The Project Manager will verify and document that all GES personnel meet the applicable training requirements prior to the start of site work, including:

- OSHA 1910.120 initial 40-hour training
- OSHA annual eight-hour refresher training within the last year
- OSHA eight-hour supervisory training for on-site managers and supervisors and GES requirements
- At least one GES employee will have American Red Cross (or equivalent) first aid and CPR training, and will be present on-site at all times

Documentation for training certification will be maintained by the Local HSO.

Subcontractors chosen to perform well drilling, excavation, materials disposal, utility installation in trenches, and any other site activities where the potential exists for contact with contaminants must provide written documentation of HAZWOPER training, for each of his employees who will be involved in activities at this site, before the start of work.

3.2 PRE-ENTRY MEETING

A Pre-entry meeting reviewing the Site Specific Health and Safety Plan for all proposed work location personnel shall be held and documented in this HASP and in the site log. This meeting shall be prior to the commencement of any on-site work activities.

A site-specific briefing is provided to all site visitors who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

3.3 FIRST AID/CPR TRAINING

At least one member of the GES staff assigned to the project will have American Red Cross (or equivalent) First Aid and cardiopulmonary resuscitation (CPR) training. At least one trained individual will be present on-site at all times. The Local HSO will maintain all training documentation.

4.0 MEDICAL SURVEILLANCE REQUIREMENTS

4.1 GENERAL MEDICAL SURVEILLANCE REQUIREMENTS

All personnel performing activities requiring the use of an air-purifying respirator covered by this plan must be active participants in an ongoing medical monitoring program in accordance with the requirements of 29 CFR 1910.120(f). Subcontractors chosen to perform selected site activities must provide written documentation of such, for each employee who will be involved in activities at this site, before the start of work.

4.2 DRUG AND ALCOHOL COMPLIANCE

All personnel performing activities covered by this plan must have had a negative drug and alcohol screen performed within the last 12 months.

4.3 ACCIDENT / INCIDENT MEDICAL SURVEILLANCE

As a follow-up to a work-related injury, all employees are entitled and encouraged to seek medical attention. All accidents and potential exposures must be reported **immediately** to the Local HSO, who will coordinate with CHSSE to arrange for appropriate medical attention. Depending on the type of incident, it may be critical to perform tests within 24 to 48 hours. *Failure to report an injury or incident immediately will result in disciplinary action.* **The GES Incident/Injury Case Management Procedure can be found in Attachment G.**

Events surrounding near-miss accidents/injuries will be recorded in the daily log and documented in accordance with the GES Incident Reporting Procedures.

5.0

HAZARD ASSESSMENT

Job Safety Analyses (JSAs) are required for all appropriate site activities. Each JSA must identify and quantify the health and safety hazards associated with each task and site operation, and to evaluate risks to workers. Using this information, appropriate control methods are selected to mitigate or (preferably) eliminate the identified risks.

5.1 CHEMICAL HAZARDS

5.1.1 Contaminant Characterization and Potential Routes of Exposure

The main routes of exposure for field personnel include:

- Inhalation of contaminant vapors;
- Inhalation of contaminated particulate matter;
- Ingestion of contaminated material; or
- Dermal absorption of contaminated material.
- Injection of contaminated material

Site personnel can reduce their exposure potential by:

- Using the proper PPE;
- Practicing contamination avoidance;
- Following proper decontamination procedures; and
- Observing good personnel hygiene.

5.1.2 General Chemical Data

In order to protect site personnel from the hazards associated with site contaminants of concern found during projects at **GES** Sites, an Exposure Monitoring Program will be implemented to control potential chemical exposures. **Attachment B** contains this program along with data tables on the contaminants of concern. These tables provide information on each contaminant's characteristics, such as routes of exposure, health hazards, ionization potentials, exposure limits, etc. All hazardous chemicals brought on-

site by GES personnel or its subcontractors will be managed in accordance with 29 CFR 1910.1200 and the GES Hazard Communication Program. This will include: proper labeling, an inventory list of all hazardous materials brought onsite, and a copy of each chemical's Material Safety Data Sheet (MSDS) will be maintained on-site. **Attachment C** contains MSDSs of hazardous substances generally used by GES personnel.

5.2 PHYSICAL HAZARDS

A variety of physical hazards may be present, but these hazards are similar to those associated with any field project.

5.2.1 Slips/Trips/Falls/Cuts

- * Utilize proper housekeeping practices, such as removal of debris and tools from the work area to keep the area clear of trip hazards.
- * Use caution tape or barricade fencing where warranted to keep unauthorized personnel from entering the work area.
- * Replace manhole covers securely to prevent tripping and vehicle accidents.
- * Use hose cutters when cutting piping.
- * Walkways and work spaces will be kept clear of cords, hoses, pipes, etc. that cause trip hazards.
- * If trip hazards cannot be removed from the work area, they shall be taped down and cones shall be placed to identify the hazard.

5.2.2 Excessive Noise

- * Use hearing protection during loud mechanical operations such as drilling, Geoprobng and excavating operations, inside a remedial shed when equipment is operating loudly or in other high decibel situations in accordance with the *GES Hearing Protection Policy*.

5.2.3 Airborne Particulate (ears, eyes, nose, mouth, inhalation)

- * Eye protection is to be worn at all times on site.
- * Respiratory protection is to be worn when site activities cause excessive particulates, such as performing carbon change-outs.

5.2.4 On-site Traffic

- * Safety vest shall be worn and safety cones placed around the worksite as specified in the *GES Traffic Control Procedures*.
- * Use caution tape or barricade fencing where warranted to keep unauthorized personnel from entering the work area.

5.2.5 Ladder Safety

- * Ladders must be inspected prior to use. Any damaged ladder will be discarded immediately.
- * Painted ladders are forbidden.
- * Never stand on the top step of the ladder.
- * Extension ladders must extend 36" beyond work area.
- * Pitch ladders at a 4:1 ratio.
- * Extension and straight ladders must be tied off.
- * Fall protection must be worn when working at heights six (6) feet or more above ground.

5.2.6 Air Compressor

- * Eye protection is to be worn at all times on site.
- * Hot steam will burn skin upon contact.
- * Use proper pressure relief valves before performing O&M on an air compressor.

5.2.7 Electrical

- * Inspect all electrical equipment and extension cords prior to use.
- * All electrical circuits and equipment must be grounded in accordance with the NEC regulations.
- * Spark producing equipment is not to be used in operating remedial system sheds.
- * Lockout/Tagout procedures will be in effect if equipment is to be repaired. **Refer to the GES Lockout Tagout Procedures for full details.**
- * Use three-pronged plugs and heavy-duty extension cords.
- * A GFCI is required when using an extension cord.
- * Workers must not have wet hands or be standing in water while plugging/unplugging energized equipment.
- * **Plugs and receptacles will be kept out of water (unless they are approved for submersion).**

5.2.8 Power Tools

- * Equipment will be inspected for defects prior to use.
- * Eye protection is to be worn at all times on site.
- * Employees using tools that may subject their hands to an injury, such as cuts, abrasions, punctures, or burns will wear protective gloves.
- * Loose or frayed clothing, dangling jewelry, or loose long hair will not be worn when working with power tools.
- * A GFCI will be used with all power tool operations.
- * Shielding or guarding will be in effect if applicable.

5.2.9 Back Strain

- * Utilize proper lifting procedures when loading and unloading heavy equipment.
- * Bend down at the knees rather than bending the back.
- * Use a mechanical lifting device or a lifting aid such as hand carts, drum dollies or lift gates when lifting heavy objects.

5.2.10 Site Security

- * Do not permit anyone who is not properly trained and outfitted with the appropriate PPE to enter the Exclusion or Contamination Reduction Zones (this includes GES personnel, clients, etc.)
- * Use caution tape or barricade fencing where warranted to keep unauthorized personnel from entering the work area.
- * On sites where it is believed that security is an issue, two employees will be used for all field work. The “buddy-system” will be in place and the two employees will be in constant communication and within each others line of sight. There will be a cellular phone available to call 911 if a violent condition presents itself.
- * When acts of violence occur or when an employee(s) feels that they are being placed in a threatening position they must immediately leave the site.
- * All potential acts of violence or threats by non-GES personnel must be immediately reported to the Site Operations Manager and the Local Health and Safety Officer. The situation will be discussed to determine future action on the site in question.
- * If any GES employee notices suspicious persons or activities in a GES office or in the vicinity of a work area, he or she should immediately report the observation to his or her supervisor or Site Operations Manager.

5.2.11 Biological Hazards (insects, snakes, poisonous plants and animals)

- * Do not touch or contact poisonous plants, such as poison ivy/poison oak.
- * If available, apply an over-the-counter barrier cream, such as Ivy Block® to prevent contact with plant oils.
- * Wash hands and arms immediately with soap and water if skin contacts the plants.
- * Wear long pants with socks pulled over legs to prevent skin contact with plants and insects.
- * Inspect yourself carefully for insects or ticks after being outdoors.
- * Spray any wasp/hornet nests with an insect repellent from a safe distance recommended by the product’s manufacturer.

- * **Do not antagonize snakes or wild animals.**

5.2.12 Heat Stress

- * Know and recognize the signs and symptoms of heat-related illnesses, as follows:
 - Heat cramps
 - Heat exhaustion:
 - Cool, moist, pale, or flushed skin
 - Headache
 - Nausea
 - Dizziness, weakness and exhaustion
 - Heat stroke:
 - Red, hot, dry, skin
 - Changes in consciousness
 - Rapid, weak pulse
 - Rapid, shallow breathing
- * Adjust work schedules to provide time intervals for intake of juices, juice products and water in an area free from contamination.

5.2.13 Cold Stress

- * Know and recognize the signs and symptoms of cold-related illnesses, as follows:
 - Frostbite:
 - Lack of feeling in the affected area
 - Skin that appears waxy, is cold to the touch or is discolored (flushed, white, yellow or blue)
 - Hypothermia:
 - Shivering
 - Numbness
 - Glassy stare
 - Apathy
 - Loss of consciousness
- * Have appropriate clothing available and dress in layers to protect against cold weather.
- * Adjust work schedules to provide sufficient rest periods in a heated area for warming up during operations conducted in cold weather.

5.2.14 Confined Space (CS) Entry

- * Confined Space Entry is prohibited unless authorized by the project manager or local health and safety officer.
- * **The *GES Confined Space Entry Requirements* must be followed, including but not limited to air monitoring, presence of attendant and permit completion.**

5.2.15 Fall Hazards

- * OSHA-approved man-lifts and ladders will be used for access to elevated locations.
- * Employees must wear a safety belt with a lanyard attached to the boom or basket when working from a man-lift.
- * If the elevated location is inaccessible by a man-lift, CHSSE shall be contacted to determine the appropriate fall protection.
- * **Complete details are found in the *GES Fall Protection Program*.**

5.2.16 Hot Work

- * A hot work permit will be completed prior to the start of the work.
- * The Site Supervisor will conduct a safety briefing on hot work rules and procedures, and all hot work participants will sign the permit.
- * Hot work will not be performed if there is a possibility of an explosive atmosphere or an oxygen-enriched atmosphere.
- * The Site Supervisor will designate a person for fire watch duty, who will have access to a properly rated fire extinguisher and will remain on-duty for one-half hour after the hot work is complete.
- * All hot work equipment will be inspected daily, prior to use. If the equipment is found to be defective, it will be removed from the site, or tagged with a "Do Not Use" sign until it is repaired.
- * All welding and cutting personnel will be trained in the safe operation of their equipment.
- * **Refer to the *GES Hot Work Requirement Policy* for complete details.**

5.3 RADIOLOGICAL HAZARDS

If site-specific potential radiological information becomes available, the hazards will be addressed in an addendum to the HASP. **Ionizing Radiation action levels can be found in Attachment B, Table 2.**

6.0 SITE CONTROL MEASURES

6.1 SITE ZONES

A controlled work area should be established in the immediate vicinity of the site activities covered by this plan. Only those persons who can comply with the requirements of this plan should be allowed into this area during any work activities,

which may result in exposure to the hazards associated with the specific task being performed. The work site should be marked off with at least the following items from the GES Traffic Control Procedures: Four (4) traffic cones with flags reaching 70 inches in combined height, caution tape, two (2) work area signs or barricades at the site entrances and a flashing amber light on the company vehicle.

When activities involve invasive activities on sites in which the Project Manager, Local HSO or the CHS have determined the area to be highly-contaminated, a three-zone system will be used to control the potential spread of contamination. These zones are characterized by the presence or absence of chemical and biological hazards and the activities contained within them.

Zone boundaries should clearly marked at all times and the flow of personnel among the zones must controlled. The site should be monitored for changing conditions that may warrant adjustment of zone boundaries. Zone boundaries are adjusted as necessary to protect personnel and clean areas. Whenever boundaries are adjusted, zone markings must also be changed and workers immediately notified of the change.

For the purpose of this plan, the following definition of terms is provided:

Exclusion Zone - The immediate area of the work activity to be performed or an area fully enclosing the hazards present. Personnel and equipment will enter and exit the Exclusion Zone from the designated access points in the Contamination Reduction Zone (CRZ).

Contamination Reduction Zone - The transition area between the contaminated and uncontaminated area. Based on monitoring results, the CRZ boundaries may be adjusted to ensure that the Support Zone remains uncontaminated. Workers and equipment exit the Exclusion Zone through the designated access point(s) into the CRZ. Workers and equipment are then decontaminated in the CRZ, according to the procedures specified in the Decontamination section of this HASP. Workers and equipment then exit the CRZ into the Support Zone through the designated access points.

If necessary, emergency decontamination procedures are implemented. Emergency decontamination procedures are described in Section 9.2 of this HASP and in Attachment H (if necessary).

Support Zone - The Support Zone is the clean area of the site, beyond the outer boundary of the CRZ. There should be no contamination in this zone. Administrative,

clerical, and other support functions are based in the Support Zone.

Air and surface monitoring are conducted in the Support Zone as needed to ensure that it remains uncontaminated. If contamination is detected, zone boundaries are adjusted until corrective action is taken and monitoring results indicate that this zone is again uncontaminated.

6.2 COMMUNICATIONS

Emergency numbers are listed on the cover of this HASP. Work will not be conducted on-site without access to a telephone, and site personnel will be informed of its location. If a telephone is not available on site, a cell phone will be made available for emergency use.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 GENERAL

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices, and PPE are used to protect employees.

The level of protection worn by site personnel will be enforced by the Site Supervisor. Levels of protection may be upgraded or downgraded at the discretion of the Local HSO, or CHS, based on real-time air monitoring data and prior site experience. Any changes in the level of protection will be documented. Levels of protection less than those designated in this HASP must first be approved by the CHS.

7.2 LEVEL D PROTECTION

Level D PPE provides minimal protection against chemical hazards. A respirator is not required. Level D PPE includes:

- Cotton coveralls or long pants and a shirt with sleeves
- Reflective safety vest or hi-visibility shirt.
- Safety glasses
- Steel-toe/steel-shank work boots
- Work gloves
- Hearing protection (as required by task)
- Hard Hat (as required by task)
- Chemical resistant gloves (as required by task)

7.3 MODIFIED LEVEL C PROTECTION

Modified Level C PPE includes the items listed in Section 7.2 above, and the following items:

- Full-face APR or Half-face APR respirator equipped with the appropriate chemical cartridges

7.4 LEVEL C PROTECTION

Level C PPE provides a higher level of respiratory and skin protection against chemical hazards than Level D. Level C PPE includes the items listed in Section 7.2 above, and the following items:

- Poly-coated Tyvek (yellow) or Saranex® (shiny white)
- Steel-toe/steel-shank work boots and chemical resistant over-boots, or chemical resistant steel-toe/steel shank boots
- Chemical resistant inner gloves
- Chemical resistant outer gloves
- Seal arm, leg, and zipper joints with tape, as required
- Half-face or full-face, air-purifying respirator equipped with appropriate cartridges

7.5 LEVEL A AND B PROTECTION

Level A PPE should be worn when the highest level of respiratory and skin protection is needed, or if the contaminants of concern are unknown. Level B PPE should be worn when the highest level of respiratory protection is required, but a lesser level of skin protection is needed. The tasks covered under this HASP do not require the use of Level A or B PPE.

Separate Health and Safety Plans will be developed for Level A/Level B investigations and for Emergency Responses, which may involve the use of Level A and/or Level B health and safety measures.

8.0 DECONTAMINATION

8.1 GENERAL

At a minimum, the procedures outlined below shall be followed for decontamination:

- Remove gross contamination from tools, respirator, monitoring equipment, boots, etc., prior to leaving the “exclusion zone”, using paper towels, handi-wipes, etc.
- Completely decontaminate soiled equipment in the Contamination Reduction Zone using detergent and water and dispose of all cleaning materials as follows.

1. Due to the small quantity of waste generated during decontamination, it is allowable in most states to dispose of lightly contaminated materials in the site dumpster. It is important, however, to ensure that there is no chance of vapor generation or fluid leaking from the dumpster. At no time are materials containing free product to be disposed of in this manner. In this case, arrangements must be made for use of labeled drums and proper disposal.
2. All decontamination materials including protective sheeting, rags, sorbents, disposable personal protective equipment, and decontamination fluids should be carefully screened with a Photo-ionization Detector (PID) prior to disposal to determine relative levels of contamination.
3. Lightly contaminated decontamination fluids should either be treated via the site treatment system prior to discharge or disposed of via the sanitary sewer system. Highly contaminated decontamination fluids must be stored in labeled drums and proper disposal arrangements must be made.

Note: All Federal, State, County and/or City requirements regarding disposal must be complied with.

- Dispose of contaminated gloves, Tyvek suits, used cartridges, paper towels, etc., by placing in a plastic bag and discarding in accordance with applicable standards.
- Wash hands and face thoroughly with soap and water before lunch or coffee breaks, and as soon as practical after finishing work for the day.
- Particular care should be taken to protect any skin injuries. If open wounds exist on hands or forearms, handling chemicals should be restricted or eliminated.
- Shower as soon as possible.
- A site-specific decontamination plan (if required) is located in **Attachment H**.

9.0

EMERGENCY ACTION PLAN

9.1 PERSONAL INJURY WITHIN THE EXCLUSION ZONE

Site operations shall be temporarily halted and all site personnel shall assemble in the Contamination Reduction Zone. The Site Supervisor shall evaluate the nature of the injury and, if indicated by the hazards present on site, the injured person shall be decontaminated to the extent possible prior to movement to the Support Zone.

Contact shall be made for an ambulance and with the designated medical facility (if required). An individual certified in Standard First Aid and Adult CPR may choose to initiate the appropriate first aid. No persons shall reenter the Exclusion Zone until:

- a. The conditions resulting in the emergency have been corrected;
- b. The hazards have been reassessed;
- c. The Site Safety Plan has been reviewed; and
- d. Site personnel have been briefed on any changes in the Site Safety Plan.

9.2 PERSONAL INJURY WITHIN THE DECONTAMINATION ZONE

The Site Supervisor shall evaluate the nature of the injury and, if indicated by the hazards present on site, the injured person shall be decontaminated to the extent possible prior to movement to the Support Zone.

Contact shall be made for an ambulance and with the designated medical facility (if required). An individual certified in Standard First Aid and Adult CPR may choose to initiate the appropriate first aid.

If the injury increases risk to other site workers, all site personnel shall move to the Contamination Reduction Zone and site activities will stop until the risks can be assessed and either removed or minimized.

9.3 PERSONAL INJURY WITHIN THE SUPPORT ZONE

The Site Supervisor will assess the nature of the injury and determine if the cause of injury or loss of the injured person will affect continuation of site

operations. If the injury will not affect the safety or performance of other site workers, operations may continue, with the person certified in first aid initiating the appropriate first aid and necessary follow up as stated above.

If the injury increases risk to other site workers, all site personnel shall move to the Contamination Reduction Zone and site activities will stop until the risks can be assessed and either removed or minimized.

9.4 FIRE/EXPLOSION

If a fire is observed in the incipient phase (i.e., when it begins) and if the site personnel witnessing the fire feel secure in attempting to control the fire, the individual can attempt to extinguish the fire by using the onsite fire extinguisher. The fire extinguisher should be a 10 or 20 pound (lb) dry chemical, Class A, B, and C extinguisher and is adequate for paper and wood based products (A), flammable and combustible liquids (B), and electrical (C) type fires.

If there is no fire extinguisher available or if site personnel do not feel secure in attempting to extinguish the fire, site personnel shall perform the following:

- Secure the site, if possible.
- Evacuate the area using the nearest safe pathway from the area.
- Proceed to the nearest phone and call 911 and provide the emergency operator all required information. This will activate the emergency response system.

If more than one individual is on the site team, the individual activating the evacuation plan shall verbally communicate to the other site personnel that there is an emergency condition and that they should evacuate from the work area. If contact cannot be made verbally with the other site personnel, any of the following systems can be used as long as the system is audible above background noise. The system can be the site vehicle horn, a whistle, an air horn, or other acceptable device. The system used for initiating an evacuation from the site shall be discussed during the tailgate meeting with the other site personnel prior to beginning the workday. The system that is decided upon shall be documented in the site logbook.

If an explosion or other unsafe condition occurs that the site supervisor had determined will place the other site personnel at risk, then the evacuation system described above should be activated immediately.

9.5 PERSONAL PROTECTIVE EQUIPMENT FAILURE

If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy, if applicable, shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

9.6 EQUIPMENT FAILURE

If any other equipment on site fails to operate properly, the Site Supervisor shall be notified and then determine the effect of this failure on continuing operations. If the failure will affect the safety of personnel, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions are taken.

10.0 STANDARD OPERATING SAFETY PROCEDURES, ENGINEERING CONTROLS, AND WORK PRACTICES

10.1 WORK PERMITS

Work permits will be required for Confined Space Entry, and Hot Work. These permits must be obtained from the Local Health and Safety Officer prior to site work.

10.2 GENERAL SITE RULES

The following general site rules apply to all personnel while on the site:

- Before daily site operations begin, the daily site safety checklist will be completed, the subcontractor's training documentation will be reviewed (as required by section 3 of this plan), and a pre-entry briefing will be held to review the site's health and safety plan concerns and emergency procedures. This meeting will be registered in this Health and Safety Plan. Attendance will be documented.

- One site worker will be assigned to keep the daily log for all health and safety-specific site activities, unless otherwise specified.
- All personnel will wear steel-toe safety boots. Hard hats will be worn when working near heavy equipment (drill rigs, excavating equipment, etc.), when individuals are working overhead, when required in the Job Safety Analysis (JSA), or when required by the client.
- Eye protection and high visibility clothing/reflective safety vests will be worn at all times while on site.
- Possession of alcohol or illegal substances on the job site or consumption during hours of site operations is strictly prohibited.
- Food and/or beverages are not permitted in the site's Exclusion or Contamination Reduction Zones. Food and/or beverages will be permitted in the Support Zone, if proper decontamination procedures are being followed.
- Smoking is not permitted on site. Chewing tobacco, snuff, application of cosmetics and/or lip balm are not permitted in the site's Exclusion or Contamination Reduction Zones.
- A change in level of protection will be based on air monitoring equipment readings taken in the breathing zone.
- Field personnel will use air monitoring equipment and not their nose to determine site contamination (i.e., sniffing sampled soils or water in jars, confined spaces, open bore holes or trenches, etc.). Odors detected during the course of standard operating procedures, however, should be noted in the daily log.
- Field personnel should not stand with their head directly over a well when it is being opened.
- First Aid Kit(s) and Fire Extinguisher(s) will be available in all company vehicles and/or within 50 feet of the working area.

Note: Hot work activities require that a person onsite shall act as a fire watch with a Class A, B, C dry chemical extinguisher within 10 feet of the activity, and all necessary work requirements are satisfied.

Any revisions to the final Site-Specific Health and Safety Plan must be reviewed by the Project/Case Manager and approved by the Local Health and Safety Officer or a Principal Hydrogeologist, at a minimum.

10.3 ADDITIONAL STANDARD OPERATING SAFETY PROCEDURES

TRAFFIC CONTROL PROCEDURES

HSSE Policy, Procedure & Guidance

Policies and Procedures



Policy #: 0038
Revision #: 1
Date: 03-25-10

SECTION 38: TRAFFIC CONTROL PROCEDURES

The following have reviewed and authorized the issuance of the Policy, Procedure, & Guidance.

	<u>Name and Title</u>	<u>Date</u>
Initiator:	<i>Thomas Baylis, Director HSSE</i>	6-21-09
Guidance Committee:	<i>Ken Smith, Sr. Regional VP of Operations</i>	6-23-09
Guidance Committee:	<i>Jeffrey Gaal, Sr. VP Petroleum Services</i>	8-19-09
President:	<i>Edward Van Woudenberg</i>	8-21-09

General Definitions

Policies prescribe certain behaviors or courses of action deemed expedient, prudent, and advantageous to the function of GES (“Policy”). As such, Policies are non-discretionary, the violation of which may result in severe consequences including, without limitation, termination of employment. As an analogy, Policies are to GES, as statutes are to a governed body.

Procedures prescribe certain behavior or courses of action deemed expedient, prudent, and advantageous to achieve compliance with Policy (“Procedures”). As such, Procedures are non-discretionary, the violation of which may result in severe consequences including, without limitation, termination of employment. As an analogy once again, Procedures are to GES, as regulations are to a governed body, meaning they describe how to comply with statutory requirements.

Guidance provides suggested methodologies to achieve compliance with Policies and Procedures that are non-mandatory, or discretionary, in the reasonable judgment of the actor. The use of Guidance is designed to create efficiencies where the relevant circumstances may require a more flexible approach to compliance, allowing the actor to use his/her reasonable judgment.

Procedure for policy approval

1. Policy Recommendations shall be submitted via electronic mail to the Company’s General Counsel (“Counsel”).
2. Counsel shall, thereafter, upon gathering any other information required, if any, present the Recommendation to a Policy, Procedure and Guidance Committee (“Committee”) for consideration.
3. The Committee’s members shall be chosen by the President of the Company or his/her designee, with the roles and responsibilities of the same established collectively.
4. The Committee shall be empowered, as required, to take all necessary action to either draft such Recommendation for presentation and approval, or recommend rejection of such Recommendation, to the President who shall either approve the newly created Policy, Procedure, or Guidance, or reject the Recommendation.
5. Initiator records approval date and revision number in version identification block on document and signature page (revision number and date must match on both documents).

Note: GES will comply with the most stringent HSSE requirements whether that is from the Client or GES, Inc. This will include but not be limited to BP Control of Work (CoW), Exxon Mobil Operation Integrity Management System (OIMS), and Shell Safe System of Work.

HSSE Policy, Procedure & Guidance

Policies and Procedures



Policy #: 0038
Revision #: 1
Date: 03-25-10

GES performs many tasks on site (e.g., groundwater sampling, gauging and bailing monitoring wells, drilling, etc.) that place employees at increased risk of injury from vehicular traffic, particularly on retail service station sites (active or abandoned), and in, or along the shoulder of, active roadways. Each site and well location must be assessed individually, and the appropriate traffic control measures must be implemented, in accordance with the following guidelines:

1.0 Retail Service Stations (and other “on-site” locations)

As there are no lanes marked out for traffic flow through these sites, and numerous entry points onto them, employees are vulnerable to traffic from all sides. In order to minimize the risk of being struck by a vehicle while performing tasks on site, it is imperative that employees strictly adhere to the following procedures:

- 1.1 Review the site-specific HASP for additional details for the site you will be working on and the tasks you will be performing.
- 1.2 Verify that all necessary traffic-control devices are in the vehicle assigned for the day.
- 1.3 Don the appropriate PPE for the work to be performed, including reflective safety vests. Employees are required to wear their reflective safety vests at all times on site, this includes during set-up, work activities, and clean-up prior to leaving the site. T-shirts, sweatshirts, jackets, coveralls, etc., that are “safety orange” will be considered an acceptable alternative to wearing a safety vest as long as: (1) the safety orange is the outermost layer of clothing and (2) they are only worn during daylight/afternoon hours when there is sufficient light and good visibility. When low visibility conditions exist such as during all dusk and dawn hours, and during snowy, rainy, or foggy weather, a safety vest with reflective strips must be worn.
- 1.4 Assess the work location for potential traffic exposure. Stay alert at all times because vehicle traffic is often continuous and uncontrolled on standard GES sites. Be sure to look at all possible directions from which traffic may approach. **Never assume any potential pathway to be “safe”. Attempt to set up the work area on site with the employee facing/looking toward the highest potential for traffic.**
- 1.5 Conduct the site pre-entry meeting, complete the Daily Site Checklist included in the HASP and sign-off on both the checklist and the HASP.
- 1.6 Using the traffic control devices assigned, establish your work zone as per the specifications detailed within this plan.
- 1.7 Perform all work to be completed within the work zone before breaking down the traffic control system.
- 1.8 Clear the work area and break down the traffic control devices.

2.0 Traffic Control Devices/Use

Each GES vehicle will be equipped with an amber flashing light that plugs into the cigarette lighter, 2-32” high “Work Area” signs, 6-28” high orange traffic cones with 36” high attachable orange vinyl flags, and a 150-foot roll of 2” wide, reusable barricade webbing (caution tape.) The cones and flags must be assembled so that the combined height of each cone/flag assembly used to delineate the work zone will be at least 70”, and barricade webbing must be used to connect the cones placed around the work zone. For each well location, a minimum of four (4) cones with flags must be placed at the corners of the work zone and be connected with barricade webbing. The area encompassed by the barrier must provide sufficient space for the employee to complete the assigned task entirely within the perimeter. The section of the perimeter that poses the lowest risk for traffic, as determined by on-site personnel, will be left “open” (not

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connected with barricade webbing) to allow for quick egress from the work zone if necessary. The “Work Area” signs must be placed at the site entrance closest to the work area to provide warning to oncoming traffic before they approach the established work zone. If there is enough space, the vehicle will be placed along the perimeter of the work zone with the amber flashing light on.

Alternate work zone configurations will be evaluated and must be approved by the Local Site Operations Manager prior to implementation on site. In all cases a minimum 70” flag height must be maintained as well as a minimum of 4 corners and 3 enclosed sides. If you are unsure of the proper set up for a specific site, call your local health and safety officer to work with you in establishing a safe work zone.

Note: If work is being performed at a location that is not a retail gas station (i.e. private residence, wooded area, adjacent building) the work area signs should be placed at a location that is appropriate for alerting both pedestrian and vehicular traffic that work is being performed in that area.

3.0 Work in or along the shoulder of Active Roadways

If traffic can be successfully redirected around the work zone without interfering with the flow of traffic (such as work along the curb within the shoulder of the road) one employee is permitted on-site. If only one employee is on-site, the employee must, in addition to the traffic control procedures and work zone set up detailed above, place the company vehicle in such a manner that the vehicle will protect the employee from oncoming traffic, without interfering with the flow of traffic. Each GES vehicle will be equipped with a flashing amber light that will also be utilized during work activities to further alert the general public to use caution in the area.

In addition to the above procedures, a two-person crew, at a minimum, is required when the location of the well to be sampled:

- 3.1 Requires traffic to be redirected into another lane, a traffic lane to be temporarily closed, or work to be done along the shoulder of a heavily trafficked roadway, or
- 3.2 Is deemed, by GES on-site personnel, in conjunction with management and client review of the site, to be necessary for their safety.
- 3.3 Safety Vests with reflective stripes must be worn by all staff.

In this case, one employee will perform the specific task, while the other employee directs traffic away from the work area with the use of additional traffic-control devices such as orange flags and additional cones. A traffic control plan specific to the site and/or well must be developed, approved by the Site Operations Manager, local Health and Safety Officer, or Corporate Health and Safety. This plan must be included in the site-specific HASP, prior to performing the task. Local and state requirements should also be consulted for possible permitting or additional traffic control requirements. Alternative means may be elected, such as hiring a traffic detail through a subcontractor or local police.

If there are any questions about the number of personnel required, a two-person crew must be dispatched for the first site visit. Subsequent review with these employees will determine if the site remains a two-person job.

Traffic control set-up while working with a construction vehicle and large traffic control areas (i.e. drill rigs, excavators, vac trucks, DAPL, bioremediation vehicles and during trenching/excavation, etc.) Wheel chocks should be used when vehicles are parked on uneven or sloped terrain. This is especially important when vehicles are left unattended.

When a vehicle of construction is used and/or if a large area of traffic control is required, the amount of traffic control items should increase appropriately to define the work area. A “large traffic control area” is defined as an area greater than 5 feet square (5’ x 5’). In addition to the above requirements:



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3.4 The maximum distance allowed between flags is 5 feet. Additional cones should be placed between the flags to increase visibility.

3.5 Caution tape or reusable webbing should be strung between the cones to increase visibility and to function as a barrier to pedestrians.

If a vehicle or pedestrian violates the established traffic control setup, then additional traffic control devices and/or a traffic detail should be considered prior to continuing work.

4.0 Traffic Control Setup for Private Utility Locate Services and other Mobile Work Tasks

Effective traffic control is essential during mobile work tasks (e.g. Private Utility Locate) when the task dictates that the employee must move across large areas of the site. In order to minimize the risk of being struck by a vehicle while performing mobile tasks on site, it is imperative that employees strictly adhere to the following procedures:

4.1 Assess the work site prior to beginning work to define the work scope. Work “zones” must be established to break the site into manageable areas for the purpose of completely surrounding the “zone” with traffic control devices. Each “zone” designed must include allowances for 3rd party traffic if the site has the potential for vehicle travel. The purpose of this step is to ensure that employees are able to protect themselves from contact with vehicles and pedestrians.

Note: This approach is recommended because it may be impractical to construct smaller traffic controlled zones which need to constantly move to protect the employee.

4.2 “Zones” must be protected using the Traffic Control Procedure for Construction Vehicles and Large Work Areas (as defined above) if the “zone” defined by the employee is larger than 5’ x 5’.

“Inactive” sites require the same level of traffic control if the potential exists for vehicle or pedestrian traffic. ***In the case that no vehicular or pedestrian traffic is possible (e.g. a work location surrounded with fence), alternate traffic control methods may be used following approval from the Office Site Manager or Corporate HSSE Officer.***

ATTACHMENT A

SITE MAPS

ATTACHMENT B

EXPOSURE MONITORING PROGRAM FOR THE CONTAMINATES OF CONCERN

EXPOSURE MONITORING PROGRAM

REAL-TIME MONITORING

Photo-ionization Detector (PID): Real-time monitoring for volatile organic compounds (VOCs) will be conducted using a photo-ionization detector (PID). The PID will be used to monitor employee breathing zones during all invasive activities. **Table 1** lists PID action levels and response requirements

Combustible Gas Indicator/Oxygen Level Meter: Real-time monitoring for combustible gases and oxygen levels will be conducted using a Combustible Gas Indicator (CGI)/Oxygen Level Meter. The CGI will test for the presence of combustible gases by continuously monitoring the lower explosive limit (LEL) of organic vapors. The CGI will be used to monitor the LEL prior to, and during, Confined Space (CS) entries and during work near an excavation in contaminated soil. The Oxygen Level Meter will detect an oxygen-deficient or oxygen-enriched atmosphere, and will be used prior to, and during, all CS entry activities. **If ionizing radiation is suspected at a site, a Geiger counter will be used to measure exposure under guidance of a Health Physicist. Table 2 lists CGI, Oxygen Level Meter, and ionizing radiation action levels and response requirements.**

Depending on the Contaminants of Concern, other forms of real-time monitoring equipment may be required to quantify chemical hazards and protect workers from exposure. These may include, but are not limited to bio-aerosol monitors, detector tubes, dust monitors, etc.

- Calibration of Real-Time Monitoring Equipment: Monitoring and calibration protocols will be performed in accordance with the manufacturer's guidelines. Calibration will be performed, at a minimum, prior to each day's use.
- Calibration logs will be maintained by the Local HSO.

ACTION LEVELS

Tables 1 and 2 list the action levels and response requirements for a PID and CGI/Oxygen Level Meter. Changing levels of protection, upgrading respiratory protection, or changing work practices is based on maintaining the upper limit of the action level for approximately 10 minutes sustained in the breathing zone (i.e., a non-transient reading) or at the discretion of the Site Supervisor. If changes in protection levels are required, the Site Supervisor will first notify the Local HSO or the CHS to determine if administrative or engineering controls can be implemented to mitigate or eliminate the hazard.

Table 1 provides action levels that must be complied with when petroleum products such as gasoline are the known site contaminants. If the site contains other potential site contaminants, appropriate action levels must be determined based on established chemical exposure limits and monitoring instrument response factors.

**TABLE 1
OVM ACTION LEVELS**

Meter Response (Breathing Zone)	Action Required
PID response <5 units above background	No respiratory protection required (i.e., Level D)
PID response >5 units above background (Bkgd) and < 50 units above Bkgd.	Stop work. Investigate the cause of elevated VOC measurements. Contact the Project Manager or office and determine if administrative or engineering controls can be implemented to mitigate or eliminate the elevated readings. If not medically qualified to wear respiratory protection, leave work zone. If the elevated readings cannot be reduced below 5 units above background or eliminated, and if medically qualified, fit tested and trained to wear respiratory protection, then upgrade to Modified Level C, half-face respiratory protection.
PID response >50 units and < 250 units above Bkgd.	Stop work. Investigate the cause of elevated VOC measurements. Contact the Project Manager or office and determine if administrative or engineering controls can be implemented to mitigate or eliminate the elevated readings. If not medically qualified to wear respiratory protection, leave work zone. If the elevated readings cannot be reduced below 5 units above background or eliminated, and if medically qualified, fit tested and trained to wear respiratory protection, then upgrade to Modified Level C, full-face respiratory protection.
PID response > 250 above Bkgd.	Retreat from site*

*Note 1: If a retreat becomes necessary, the Local HSO or CHS will be consulted in regard to adding mechanical ventilation or possible changes in work practices. Work will not resume until appropriate corrective measures are implemented.

*Note 2: Because direct reading instruments cannot indicate or are not compound specific, concentrations shown on the instruments shall be related to units above background and not parts per million (ppm).

TABLE 2
CGI/O₂/RADIATION LEVEL ACTION LEVELS

Meter Response	Action
CGI response < 10 % LEL	Continue normal operations.
CGI response > 10 % and <20 % LEL	Eliminate all sources of ignition from the work area; implement continuous monitoring. However if work is being done in a confined space, retreat from work area.*
CGI response > 20 % LEL	Discontinue operations; allow to vent; retreat from work area.*
Oxygen level < 19.5%	Retreat from work area.*
Oxygen level > 23.5%	Retreat from work area.*
3X background to <2 mR/hr	Radiation above background levels (normally 0.01-0.02 mR/hr) signifies possible source(s) radiation present. Continue investigation with caution. Perform thorough monitoring. Consult with a health physicist.
>2mR/hr	Potential radiation hazard. Evacuate site. Continue investigation only upon the advice of a health physicist

TABLE 3 RETAIL PETROLEUM MATERIALS OF CONCERN					
Contaminant	OSHA TWA (ppm)	ACGIH TLV (ppm)	Hazards	Entry Routes	IP
Benzene	1	10	1,2,4,5,6,9	Inh, Abs, Ing, Con	9.24
Xylene	100	100	1,2,3,4,5,6,7,10	Inh, Abs, Ing, Con	8.56
Ethylbenzene	100	100	1,2,3,10	Inh, Ing, Con	8.76
Toluene	200	50	1,2,3,4,5,7,10	Inh, Abs, Ing, Con	8.82

TWA = Time Weighted Average in parts per million (ppm)

C = Ceiling

IP = Ionization Potential

1 = irritant to skin

2 = irritant to eyes

3 = irritant to respiratory system

4 = may cause headache

5 = may cause dizziness, lightheadedness

6 = may cause nausea and vomiting

7 = may cause liver and kidney damage

8 = irritant to GI tract

9 = carcinogen/possible carcinogen

10 = may cause damage to CNS

*Note: If a retreat becomes necessary, the Local HSO or CHS will be consulted about adding mechanical ventilation, or possible changes in work practices.

TABLE 4 INORGANIC GASES AND VAPORS OF CONCERN					
Contaminant	OSHA TWA (ppm)	ACGIH TLV (ppm)	Hazards	Entry Routes	IP

TWA = Time Weighted Average in parts per million (ppm)

C = Ceiling

IP = Ionization Potential

1 = irritant to skin

2 = irritant to eyes

3 = irritant to respiratory system

4 = may cause headache

5 = may cause dizziness, lightheadedness

6 = may cause nausea and vomiting

7 = may cause liver and kidney damage

8 = irritant to GI tract

9 = carcinogen/possible carcinogen

10 = may cause damage to CNS

Notes: Consult standard reference manuals for air concentration/toxicity data. Action level depends on PEL/REL/TLV.

These Action Levels, if not defined by regulation, is some percent (usually 50%) of the applicable PEL/REL/TLV. That number must also be adjusted to account for instrument response factors.

ATTACHMENT C

SITE MATERIAL SAFETY DATA SHEETS (MSDS)

ATTACHMENT D

**JOB SAFETY ANALYSIS SHEETS AND DAILY SITE
SAFETY CHECKLISTS**



GES DAILY SITE SAFETY CHECKLIST

Site Name: _____

Address: _____

Individual's Name: _____ Date: _____

Task and date of entry: _____

This checklist is to be completed on a daily basis. The date should be noted in the space provided. The employee completing the checklist should verify that each item is correct and initial in the last space provided.

Date:

1. Proper training certificates have been obtained from all onsite personnel.
2. The site-specific HASP has been reviewed and signed by GES employees and GES-hired subcontractors.
3. The daily site-safety meeting has been conducted.
4. Applicable JSAs are onsite, reviewed by staff to ensure all tasks/jobs are covered, and site specific JSA modifications occur when needed.
5. Fire extinguishers are available for use and are fully charged.
6. A fully-stocked first aid kit & eye wash bottle is readily available.
7. Any potential tripping hazards have been removed from site.
8. All vessels containing flammable or corrosive material are properly labeled.
9. Proper personal protective equipment is being used for present conditions.
10. Equipment onsite is checked and in safe working order.
11. Safety cones and flags or barricades have been utilized to mark out work area along with all required signage (No Smoking, No Trespassing, Work Area...).
12. No person onsite has the appearance of being under the influence of motor skill altering substances.
13. All workers onsite are clothed in an appropriate manner (highly visible clothing, no tank tops, muscle shirts or shorts).
14. Electrical power-operated tools shall be properly grounded and used with a Ground-Fault Circuit Interrupter (GFCI).
15. All required permits (GES and/or client) are completed by an authorized individual.
16. When working alone, has a phone call been placed to the PM to discuss site conditions, review the Scope of Work, LPS requirements, and coordinate communications for the day? Note: The frequency/amount of additional calls from the field should be established during the PM's discussion with the individual. A call must always occur prior to leaving the site.
17. Prior to leaving the site for the day, the GES site supervisor has conducted a meeting with onsite staff to review worker conditions (possible injuries), JSA revisions, discuss possible Near Losses/ Losses, and activities scheduled for the next day.
18. All health and safety concerns have been communicated to the Local Health and Safety Officer and Project Manager

I verify and initial that the above information is correct by initialing in the boxes to the right:



GES DAILY SITE SAFETY CHECKLIST

Site Name: _____
 Address: _____

Individual's Name: _____ Date: _____

Task and date of entry: _____

This checklist is to be completed on a daily basis. The date should be noted in the space provided. The employee completing the checklist should verify that each item is correct and initial in the last space provided.

Date:

1. Proper training certificates have been obtained from all onsite personnel.
2. The site-specific HASP has been reviewed and signed by GES employees and GES-hired subcontractors.
3. The daily site-safety meeting has been conducted.
4. Applicable JSAs are onsite, reviewed by staff to ensure all tasks/jobs are covered, and site specific JSA modifications occur when needed.
5. Fire extinguishers are available for use and are fully charged.
6. A fully-stocked first aid kit & eye wash bottle is readily available.
7. Any potential tripping hazards have been removed from site.
8. All vessels containing flammable or corrosive material are properly labeled.
9. Proper personal protective equipment is being used for present conditions.
10. Equipment onsite is checked and in safe working order.
11. Safety cones and flags or barricades have been utilized to mark out work area along with all required signage (No Smoking, No Trespassing, Work Area...).
12. No person onsite has the appearance of being under the influence of motor skill altering substances.
13. All workers onsite are clothed in an appropriate manner (highly visible clothing, no tank tops, muscle shirts or shorts).
14. Electrical power-operated tools shall be properly grounded and used with a Ground-Fault Circuit Interrupter (GFCI).
15. All required permits (GES and/or client) are completed by an authorized individual.
16. When working alone, has a phone call been placed to the PM to discuss site conditions, review the Scope of Work, LPS requirements, and coordinate communications for the day? Note: The frequency/amount of additional calls from the field should be established during the PM's discussion with the individual. A call must always occur prior to leaving the site.
17. Prior to leaving the site for the day, the GES site supervisor has conducted a meeting with onsite staff to review worker conditions (possible injuries), JSA revisions, discuss possible Near Losses/ Losses, and activities scheduled for the next day.
18. All health and safety concerns have been communicated to the Local Health and Safety Officer and Project Manager

I verify and initial that the above information is correct by initialing in the boxes to the right:

ATTACHMENT E

PRE-ENTRY MEETING NOTES

PRE-ENTRY MEETING NOTES/ATTENDANCE (Include date, length of meeting, names of personnel in attendance, topics of discussion, comments and concerns, etc.)

ATTACHMENT F
SIGN OFF SHEET

SITE SAFETY AND HEALTH PLAN COMPLIANCE AGREEMENT

All project personnel, including visitors, must follow the requirements of this Site Safety Plan. In order to document individual agreement with this requirement, all personnel must complete this “Site Safety and Health Plan Compliance Agreement.” These agreements will be kept in this Site Safety Plan and will become part of the permanent project record upon completion of site activities.

By signing below, I have read the Site Health and Safety Plan (HASP), or I have been verbally advised of its contents. I understand, and I agree to comply with all of its provisions. I understand that I could be prohibited from working on the project, and I may be subject to disciplinary actions for violating any of the health and safety requirements specified in the HASP.

NAME	SIGNATURE	DATE	(TIME IN/OUT)
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
13. _____	_____	_____	_____
14. _____	_____	_____	_____
15. _____	_____	_____	_____
16. _____	_____	_____	_____
17. _____	_____	_____	_____
18. _____	_____	_____	_____
19. _____	_____	_____	_____
20. _____	_____	_____	_____
21. _____	_____	_____	_____
22. _____	_____	_____	_____

ATTACHMENT G

INCIDENT/INJURY CASE MANAGEMENT

ALL accidents, injuries, property damages, or releases (Loss or Near Loss) shall be reported to GES' on-site supervisor ASAP but no later than the end of the shift.

Injury Case Management is a collaborative process which:

- Helps ensure prompt, adequate, and appropriate medical care is provided
- Assesses, plans, implements, coordinates, monitors, and evaluates options
- Can minimize the impact of an impairment (resulting from potentially work-related injury or illness)
- Preserves as much as practicable the individual's functional capacity.

Medical injuries or emergencies within each field location will be managed by the following method:

- If an injury or medical condition occurs that cannot be treated by providing basic first aid to the individual, the GES PM and Site Operations Manager are notified by the GES Oversight person.
- Onsite, individuals who are certified in cardiopulmonary resuscitation (CPR)/First Aid will be requested to respond to the individual's location.
- Following this evaluation the GES VP, HSSE and client program manager, must be contacted regarding the individual's condition and injury management approach onsite and offsite.

Following an assessment of the individual's condition, if responding GES personnel feel that outside medical response personnel (emergency care) are necessary:

- The 911 emergency response system will be activated, if necessary.
- Provide the 911 emergency operator all of the information that is requested.
- The injured individual (GES or subcontractor employee) will be accompanied by other GES staff (i.e., PM, LHSO, Site Supervisor) so that desired injury management information will be communicated to the attending physician.

If an individual requires medical treatment *beyond basic first aid*, but the initial assessment determines that the individual does not require emergency care, then:

- The PM, Site Operations Manager, and CHSSE will be contacted PRIOR to leaving the site.
- The individual will be scheduled for an appointment at the occupational clinic near each office.
- If the injured individual is a subcontractor, then the individual will be directed to visit an occupational clinic established by the subcontracting company.
- If there is no clinic established, the individual will be scheduled at a GES clinic.

The individual will be accompanied to their examination by the GES LHSO or other GES or subcontractor management staff. Desired injury management information will be communicated to the attending physician that will include but not be limited to:

- Any required or alternative medication (over the counter medication)
- Any workplace restrictions versus lost time are discussed with the attending physician.
- The GES VP, HSSE will also contact the attending physician regarding the examination, diagnosis and the GES injury management approach.

ATTACHMENT H

SITE-SPECIFIC DECONTAMINATION PLAN

DECONTAMINATION PLAN

1. Personnel Decontamination

Section 7 lists the specific levels of protection required. Consistent with the levels of protection required, step by step procedures for personnel decontamination for each Level of Protection are attached.

2. Levels of Protection Required for Decontamination Personnel

The levels of protection required for personnel assisting with decontamination will be:

Level B Level C Level D

Modifications include:

3. Disposition of Decontamination Wastes

(Provide a description of daily, weekly, and end of project waste disposition including identification of storage area, hauler, and final disposal site if applicable.)

4. Equipment Decontamination

A procedure for decontamination steps required for non-sampling equipment and heavy machinery follows:

5. Sampling Equipment Decontamination

Sampling equipment will be decontaminated in accordance with the following procedure:

LEVEL C DECONTAMINATION PROCEDURES (if required)

[Check indicated Functions or add steps as necessary]:

STEP	FUNCTION	DESCRIPTION OF PROCESS, SOLUTION AND CONTAINER
<input type="checkbox"/>	Segregated equipment drop	_____
<input type="checkbox"/>	Boot cover and glove wash	_____
<input type="checkbox"/>	Boot cover and glove rinse	_____
<input type="checkbox"/>	Tape removal - outer glove/boot	_____
<input type="checkbox"/>	Boot cover removal	_____
<input type="checkbox"/>	Outer glove removal	_____
-----HOT-LINE-----		
<input type="checkbox"/>	Suit/safety boot wash	_____
<input type="checkbox"/>	Suit/boot/glove rinse	_____
<input type="checkbox"/>	Safety boot removal	_____
<input type="checkbox"/>	Suit Removal	_____
<input type="checkbox"/>	Inner glove wash	_____
<input type="checkbox"/>	Inner glove rinse	_____
<input type="checkbox"/>	Face piece removal	_____
<input type="checkbox"/>	Inner glove removal	_____
<input type="checkbox"/>	Inner clothing removal	_____
-----CRC/SAFE ZONE BOUNDARY-----		
<input type="checkbox"/>	Field wash	_____
<input type="checkbox"/>	Redress	_____

APPENDIX E – GENERIC CAMP

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 $150 \text{ mcg}/\text{m}^3$ 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 $150 \text{ mcg}/\text{m}^3$ 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 $150 \text{ mcg}/\text{m}^3$ 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.

December 2009

APPENDIX F – WASTE SOIL MANIFEST AND ANALYTICAL DATA

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone

4. Waste Tracking Number

5. Generator's Name and Mailing Address

NYSDEC - DIV OF ENV REMEDIATION
625 BROADWAY, 12TH FLOOR
ALBANY NY 12233

At: KEITH HAMBLEY @ TREC ENV.

Generator's Site Address (if different than mailing address)

NYSDEC - DIV OF ENV REMEDIATION
100 LAKE AVE
ROCHESTER NY 14614

13 - 0049

Generator's Phone:

6. Transporter 1 Company Name

NEW YORK ENVIRONMENTAL TECHNOLOGIES, INC.

U.S. EPA ID Number

NYD986983229

7. Transporter 2 Company Name

8. Designated Facility Name and Site Address

CYCLE CHEM, INC.
550 INDUSTRIAL DR.
LEWISBERRY PA 17339
 Facility's Phone: **717 938-4700**

U.S. EPA ID Number

PAD067098822

9. Waste Shipping Name and Description

1. **NON RCRA NON DOT SOLIDS, NOS (SOIL CUTTINGS)**

10. Containers

No. Type

11. Total Quantity

12. Unit Wt./Vol.

003

DM

00600

P

13. Special Handling Instructions and Additional Information

a. NYE140-1-1.D

Job #R4696 / PO#35777

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offlor's Printed/Typed Name

WASON SEARATT on Behalf of NYSDEC

Signature

Wason Searatt on Behalf of NYSDEC

Month Day Year

10 21 24 3

15. International Shipments

Import to U.S.

Export from U.S.

Transporter Signature (for exports only):

Port of entry/exit:

Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

John Hanabik

Signature

John Hanabik

Month Day Year

12 12 13

Transporter 2 Printed/Typed Name

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

17b. Alternate Facility (or Generator)

Manifest Reference Number:

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Adele Stehley

Signature

Adele Stehley

Month Day Year

03 05 13

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-31833-1

Client Project/Site: Rochester Metal Etching #8281000

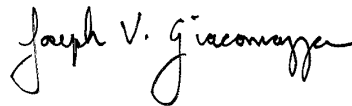
For:

Groundwater & Environmental Services Inc

300 Gateway Park Drive

North Syracuse, New York 13212

Attn: Justin Domago



Authorized for release by:

1/29/2013 2:57:19 PM

Joe Giacomazza

Project Administrator

joe.giacomazza@testamericainc.com

Designee for

Sally Hoffman

Project Manager II

sally.hoffman@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Job ID: 480-31833-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative 480-31833-1

Receipt

The sample was received on 1/19/2013 7:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8° C.

GC/MS VOA

Method 8260B: The following samples was diluted due to the nature of the TCLP matrix: (LB 480-100380/1-A), Waste Sample (480-31833-1). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

Metals

Method6010B: The analyte barium was detected in the TCLP Extractor Blank Waste Sample (480-31833-1), from batch 480-100534, at a concentration above the TestAmerica Laboratories standard quantitation limit. Sample Waste Sample (480-31833-1) associated with the blank was evaluated and determined to be at least five times less than the TCLP Regulatory Limit. The sample data was therefore accepted and no corrective action was performed.

Method 6010B: The TCLP Extractor Blank LB 480-100345 for batch 480-100534 contained chromium and selenium above the method detection limits. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of sample Waste Sample (480-31833-1) was not performed.

No other analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.



Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Client Sample ID: Waste Sample

Lab Sample ID: 480-31833-1

Date Collected: 01/17/13 15:00

Matrix: Solid

Date Received: 01/19/13 07:30

Method: 8260B - TCLP Volatiles - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.010	0.0041	mg/L			01/22/13 14:38	10
Carbon tetrachloride	ND		0.010	0.0027	mg/L			01/22/13 14:38	10
Chlorobenzene	ND		0.010	0.0075	mg/L			01/22/13 14:38	10
Chloroform	ND		0.010	0.0034	mg/L			01/22/13 14:38	10
1,2-Dichloroethane	ND		0.010	0.0021	mg/L			01/22/13 14:38	10
1,1-Dichloroethene	ND		0.010	0.0029	mg/L			01/22/13 14:38	10
2-Butanone (MEK)	ND		0.050	0.013	mg/L			01/22/13 14:38	10
Tetrachloroethene	ND		0.010	0.0036	mg/L			01/22/13 14:38	10
Trichloroethene	ND		0.010	0.0046	mg/L			01/22/13 14:38	10
Vinyl chloride	ND		0.010	0.0090	mg/L			01/22/13 14:38	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 137		01/22/13 14:38	10
Toluene-d8 (Surr)	104		71 - 126		01/22/13 14:38	10
4-Bromofluorobenzene (Surr)	98		73 - 120		01/22/13 14:38	10

Method: 6010B - TCLP RCRA Metals - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0079	J	0.010	0.0056	mg/L		01/22/13 08:40	01/22/13 19:36	1
Barium	0.37	B	0.0020	0.00070	mg/L		01/22/13 08:40	01/22/13 19:36	1
Cadmium	0.038		0.0010	0.00050	mg/L		01/22/13 08:40	01/22/13 19:36	1
Chromium	0.34	B	0.0040	0.0010	mg/L		01/22/13 08:40	01/22/13 19:36	1
Lead	0.27		0.0050	0.0030	mg/L		01/22/13 08:40	01/22/13 19:36	1
Selenium	0.0093	J B	0.015	0.0087	mg/L		01/22/13 08:40	01/22/13 19:36	1
Silver	ND		0.0030	0.0017	mg/L		01/22/13 08:40	01/22/13 19:36	1

Method: 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		01/22/13 09:10	01/22/13 16:00	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Free Liquid	passed				mL/100g			01/25/13 10:29	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>176.0		50.0	50.0	Degrees F			01/23/13 11:21	1

Lab Chronicle

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Client Sample ID: Waste Sample

Lab Sample ID: 480-31833-1

Date Collected: 01/17/13 15:00

Matrix: Solid

Date Received: 01/19/13 07:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			100380	01/21/13 09:19	TR	TAL BUF
TCLP	Analysis	8260B		10	100555	01/22/13 14:38	RL	TAL BUF
TCLP	Leach	1311			100345	01/21/13 07:59	TR	TAL BUF
TCLP	Prep	7470A			100538	01/22/13 09:10	JRK	TAL BUF
TCLP	Analysis	7470A		1	100637	01/22/13 16:00	JRK	TAL BUF
TCLP	Prep	3010A			100534	01/22/13 08:40	JM	TAL BUF
TCLP	Analysis	6010B		1	100730	01/22/13 19:36	AH	TAL BUF
Total/NA	Analysis	1010		1	100791	01/23/13 11:21	KJ	TAL BUF
Total/NA	Analysis	9095A		1	101041	01/25/13 10:29	KS	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Groundwater & Environmental Services Inc
 Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-13
California	NELAP	9	1169CA	09-30-13
Connecticut	State Program	1	PH-0568	09-30-14
Florida	NELAP	4	E87672	06-30-13
Georgia	State Program	4	N/A	03-31-13
Georgia	State Program	4	956	06-30-13
Georgia	State Program	4	956	06-30-13
Illinois	NELAP	5	200003	09-30-13
Iowa	State Program	7	374	03-01-13
Kansas	NELAP	7	E-10187	01-31-13
Kentucky	State Program	4	90029	12-31-13
Kentucky (UST)	State Program	4	30	04-01-13
Louisiana	NELAP	6	02031	06-30-13
Maine	State Program	1	NY00044	12-04-13
Maryland	State Program	3	294	03-31-13
Massachusetts	State Program	1	M-NY044	06-30-13
Michigan	State Program	5	9937	04-01-13
Minnesota	NELAP	5	036-999-337	12-31-13
New Hampshire	NELAP	1	2973	09-11-13
New Hampshire	NELAP	1	2337	11-17-13
New Jersey	NELAP	2	NY455	06-30-13
New York	NELAP	2	10026	03-31-13
North Dakota	State Program	8	R-176	03-31-13
Oklahoma	State Program	6	9421	08-31-13
Oregon	NELAP	10	NY200003	06-09-13
Pennsylvania	NELAP	3	68-00281	07-31-13
Rhode Island	State Program	1	LAO00328	12-31-13
Tennessee	State Program	4	TN02970	04-01-13
Texas	NELAP	6	T104704412-11-2	07-31-13
USDA	Federal		P330-11-00386	11-22-14
Virginia	NELAP	3	460185	09-14-13
Washington	State Program	10	C784	02-10-13
West Virginia DEP	State Program	3	252	09-30-13
Wisconsin	State Program	5	998310390	08-31-13

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Method	Method Description	Protocol	Laboratory
8260B	TCLP Volatiles	SW846	TAL BUF
6010B	TCLP RCRA Metals	SW846	TAL BUF
7470A	TCLP Mercury	SW846	TAL BUF
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW846	TAL BUF
9095A	Paint Filter	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600



Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-31833-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-31833-1	Waste Sample	Solid	01/17/13 15:00	01/19/13 07:30

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Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 480-31833-1

Login Number: 31833

List Source: TestAmerica Buffalo

List Number: 1

Creator: Kinecki, Kenneth

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

APPENDIX G – DAILY FIELD NOTES

11/30/2012

A SHAP VAC - REAGED
3/4" HOLES NOT DRY

SLAB ~ 6"

GILTY WAY BELOW SLAB,
DRY/LOW MOISTURE

PILOT TEST
RESULTS

VAC ON TP1 SHOWS .002" WC ON TP2

VAC ON TP1 SHOWS .009" WC ON TP3

VAC ON TP3 SHOWS .000" WC ON TP4

VAC ON TP4 SHOWS .000" WC ON TP3

VAC ON TP2 SHOWS .000" WC ON TP5

VAC ON TP6 SHOWS .300" WC ON TP5

VAC ON TP5 SHOWS .180" WC ON TP7

V_{on} TP8 S/ .001" WC ON TP5

V_{on} TP8 S/W .000" WC ON TP3

V_{on} TP8 SHOWS .075" WC ON TP9

V_{on} TP11 SHOWS .000" WC ON TP10

V_{on} TP12 SHOWS .000" WC ON TP13

V_{on} TP13 SHOWS .000" WC ON TP12

V_{on} TP13/TP13A SHOWS .001" WC ON TP12

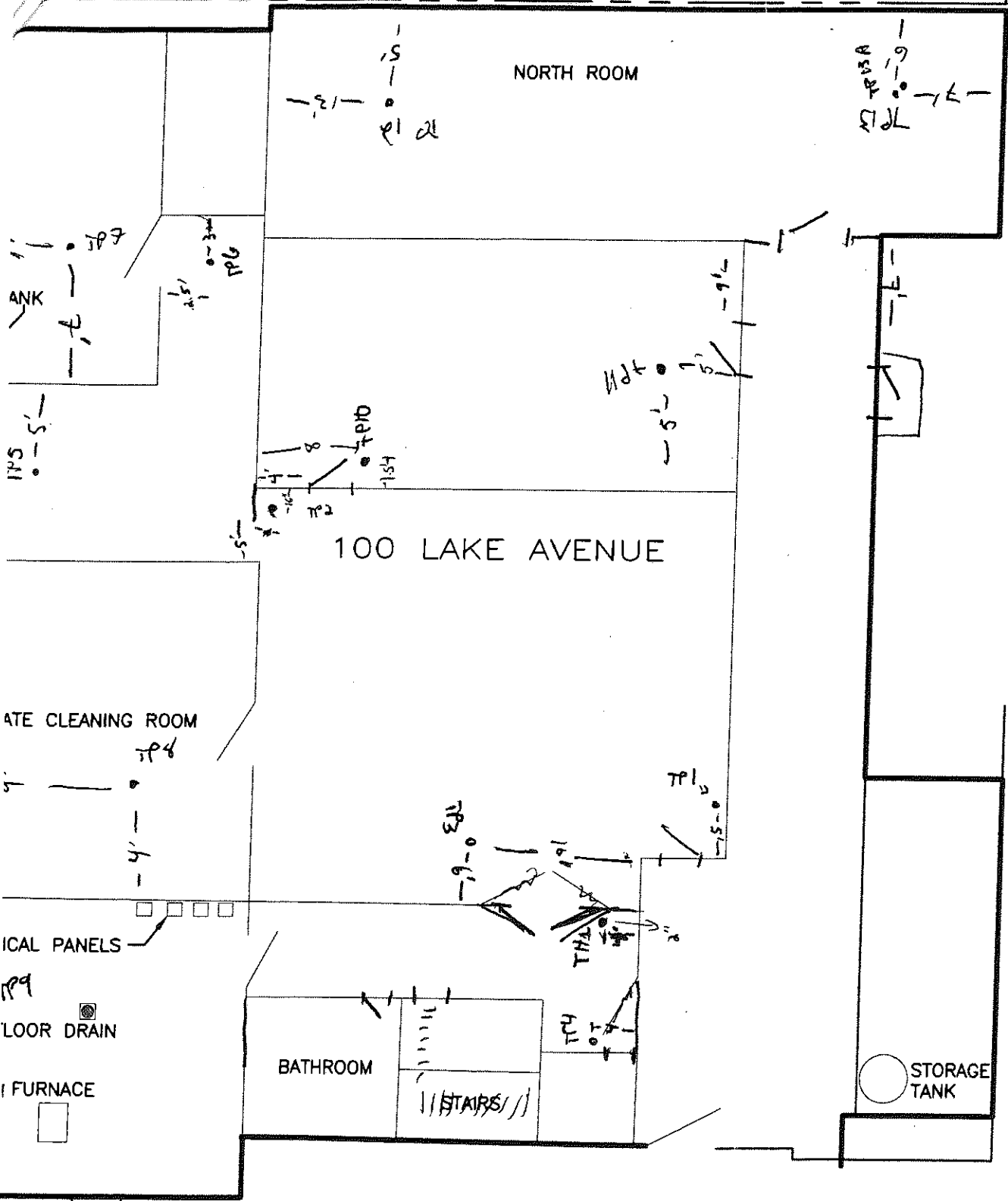
CADY SECTION → V_{on} TH1 SHOWS .019" WC ON TP1

.068" WC ON TP3

.000" WC ON TP9

.000" WC ON TP2

11/30/2012

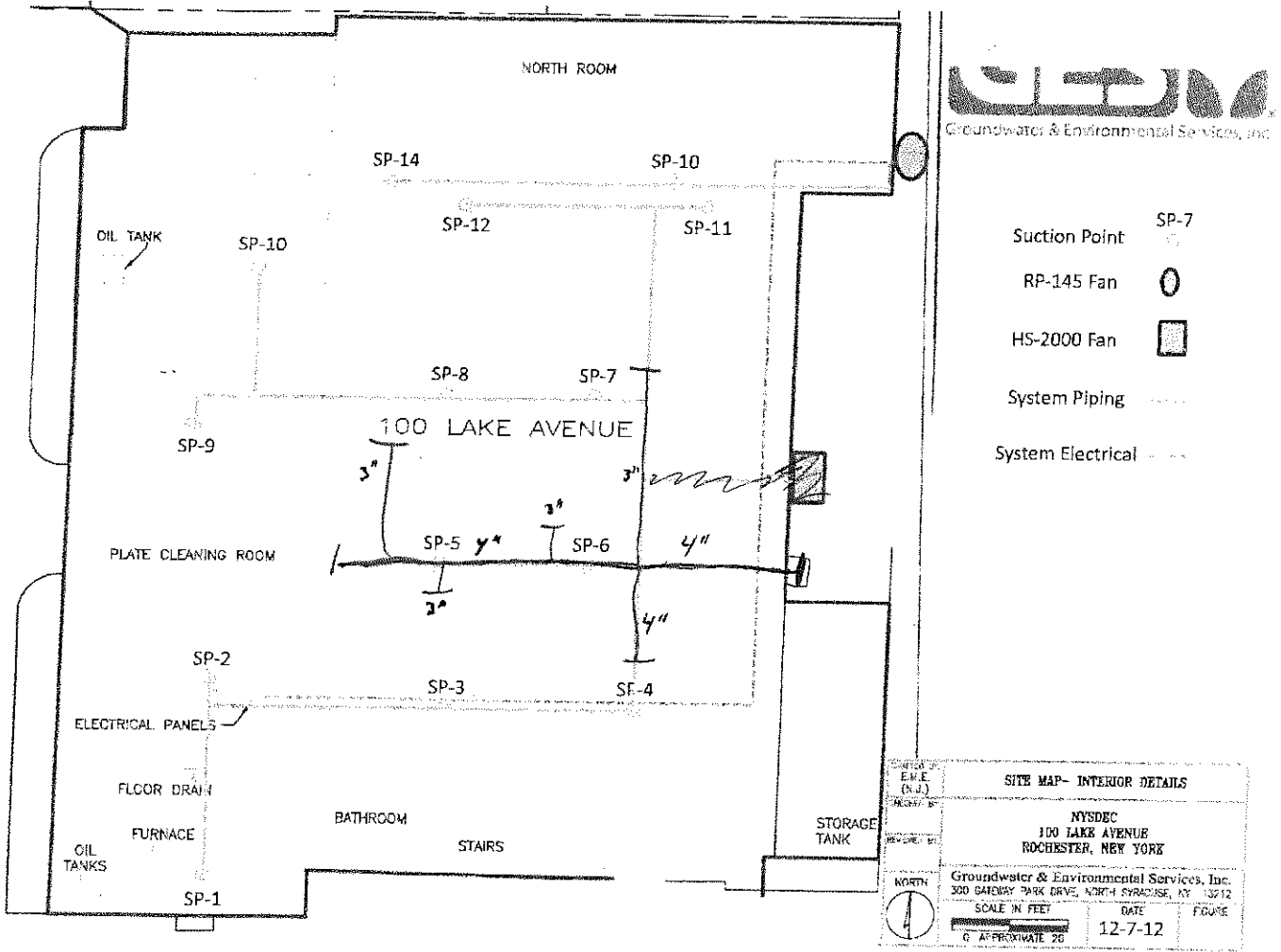


3/4" A
FLUKE
SHOP

EN & GERE,
POSED BY
THE SITE

1/3/13

SYSTEM PIPING INSTALLED TO DATE.



~ 35' row of 4"

1/8/13

0830 - BH ON SITE

0900 - MITIGATION TECH ON SITE 2 GUYS, HAD H'S MEETING

0930 - BEGAN HANING PIPE A

1000 - MB, NICK FROM MIT TECH, ED FROM DEC ON SITE

1030 - STARTING COILING HOLES, WILL NOT BE ABLE TO CORE DUE TO ROCK
IN MOST HOLES, STARTED AT SP 6 HIT BED ROCK @ 2' BG

1600 MIT TECH OFF SITE

1615 BH OFF SITE

1/9/13

0830 - BH ON SITE

0900 - MITIGATION TECH ON SITE 2 GUYS, BEGAN H'S MEETING

10'00 - ED FROM DEC ON SITE, DISCUSSED HOLES & HITTING ROCKS IN HOLES
& WHEN TO CALL A HOLE DEEP ENOUGH, COMPLETED SP-4, STARTED
SP-3,

1300 - CORED HOLES TO GET ALL CONCRETE OFF & CUT CONCRETE FOR HOLES
THAT NEED TO BE TRENCHED)

1615 - MIT TECH OFF SITE

1630 - BH OFF SITE

1/11/13

0830 - BH ON SITE

0900 - MITIGATION TECH ON SITE, CONDUCTED H'S MEETING, HAVE A NEW
GUY ON SITE NOT LPS TRAINED, HAS BEEN W/ COMPANY BEFORE SINCE
2009 CONDUCTED LPS LITE

1030 - STARTED SP 9 HIT A CLAY LAYER APPROX 16" BE CONTINUED

THEN & STARTED TO SMELL A SOLVENT LIKE WD-40 OR PB BLASTOC
STOPPED GLANCED WITH FID 2.9 DPM HEADSPACE & 85.5 DPM IN HOLE

1/11/13

SP-6 - DUG DOWN TO 2' B6 HIT BEDROCK

SP-4 - DOWN TO 32" B6 HIT ANOTHER ROCK STOPPED THERE

SP-3 - ALL THE WAY DOWN TO 3' B6

SP-7 - MADE IT ALL THE WAY DOWN TO 36"

SP-9 - STARTED DIGGING HIT CLAY LAYER @ APPROX 16" BROKE THEM

THEN STARTED SMELLING SOLVENT LIKE WD-40 OR PB BUSTER

SCANNED HOLE WITH MULTI RAE HEADSPACE - 2.9 PPM IN THE

HOLE WAS 25.5 PPM, DUG DOWN TO 33.5" B6 ROCK TAKING UP ENTIRE HOLE

SP-10 - DOWN TO 30.5" B6 HITTING ROCKS

SP-2 - DUG DOWN TO 36" B6 HOLE COMPLETE

SP-5 - HOLE DUG TO 33.5" B6 HIT ROCK BOTTOM

SP-11 - HIT ROCK @ 34.5" B6

SP-8 - DUG DOWN TO 24" B6 HIT BIG ROCK IN CENTER OF HOLE

ATTEMPTED TO TAKE IT & /OR BREAK UP WAS NOT SUCCESSFUL

HOLE ENDED AT 24" B6

SP-1 - FULL 36" B6 DOWN

SP-12 - DUG DOWN 18" B6 HIT HARD CLAY LAYER GOT THEM THAT TO 2' B6

& HIT BEDROCK

1/11/13 (CONTINUED)

1030 - CALLED MPA & DISCUSSED MADE NOTES & WILL CONTINUE TO SCAN

1100 - STARTED STACK & FAN HANDLING FOR SMALLER FAN

1300 - SHANE FROM MID TECH ON SITE TO HELP

1545 - 17 OF 14 HOLES DUG, BEGAN CLEANING UP

1600 - MIT TECH OFF SITE

1615 - BN OFF SITE

1/14/13

09:15 - BH ON SITE, MIB TECH ON SITE (2) HAD H'S MEETING

10:00 - STARTED DIGGING SP 13 & 14, SHANE FROM MIB TECH ON SITE

15:30 - NICK FROM MIT TECH ON SITE

16:15 - STARTED CLEAN UP COMPLETED ALL BVE PIPING &
16:30 COMPLETED IN

16:30 - MIB TECH OFF SITE

16:45 - BH OFF SITE

1/15/13

08:30 - BH ON SITE

09:00 - MIB TECH ON SITE (2) HAS H'S ~~WORK~~ MEETING

09:30 - BEGAN HANGING RA STALL ON RP 265 FAN, & PERFORMED
PROOF TESTING (SEE MAP)

12:45 - MB ON SITE

13:30 - MB OFF SITE

14:00 - PATCHED HOLES & CLEAN UP

15:00 - MIB TECH OFF SITE, BH RA TOOK BROTHERHOOD DOWN
& SHOWED SYSTEM & BARGES & WHO TO CALL IF GOES DOWN

15:30 - BH OFF SITE

FAN SPECS

MODEL #

RP 145

(BIGGER FAN) MODEL #

RP 265

SERIAL #

237796

~~124756~~ SERIAL #

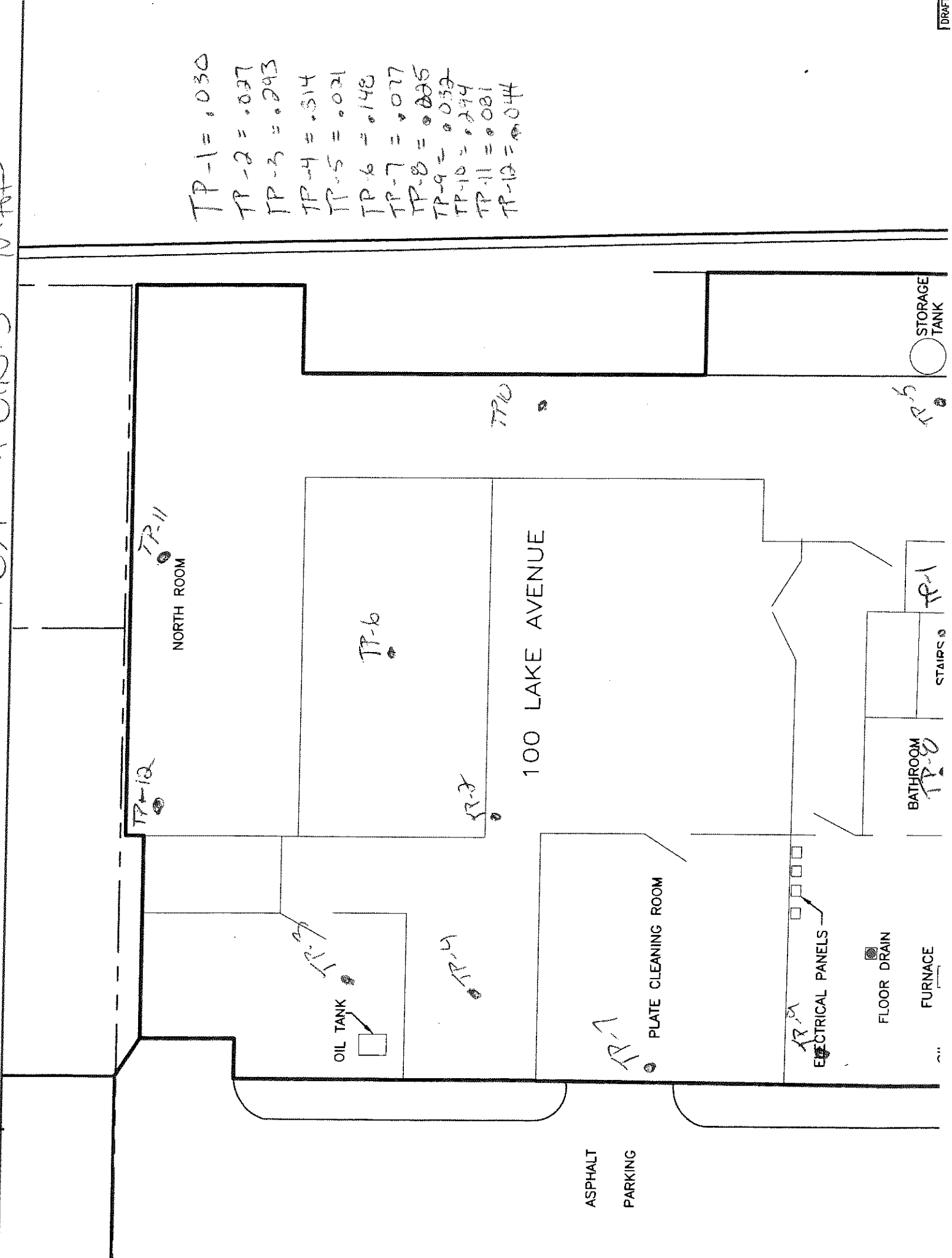
124756

1/15/13

TEST POINTS MAP

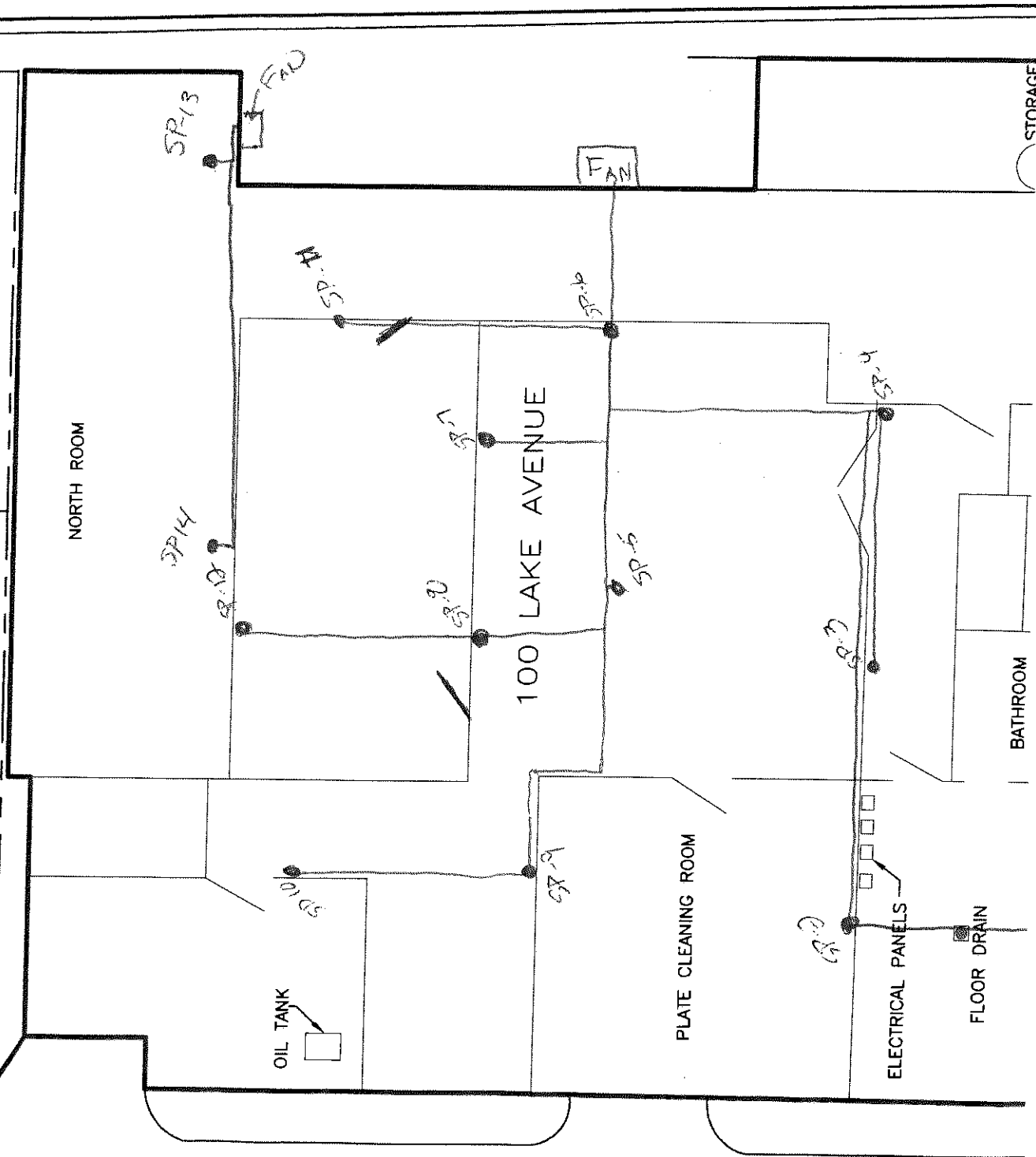
- TP-1 = .030
- TP-2 = .027
- TP-3 = .293
- TP-4 = .514
- TP-5 = .021
- TP-6 = .148
- TP-7 = .077
- TP-8 = .005
- TP-9 = .032
- TP-10 = .294
- TP-11 = .081
- TP-12 = .044

DRAFT



1/14/13

TRENCHING DIAGRAM NE



ASPHALT
PARKING

NORTH ROOM

100 LAKE AVENUE

PLATE CLEANING ROOM

BATHROOM

STORAGE

SP-14

SP-13

OIL TANK

SP-15

SP-16

SP-17

SP-18

SP-19

SP-18

FAN

ELECTRICAL PANELS

FLOOR DRAIN

SP-14

SP-17

SP-19

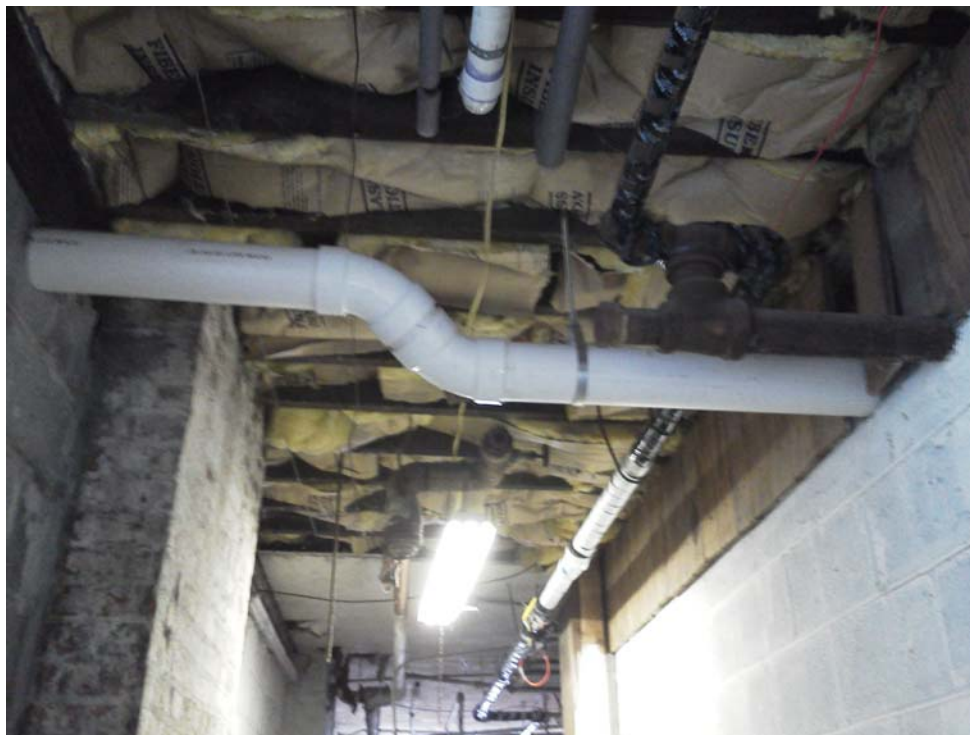
APPENDIX H – PHOTO LOG

Photo Logs

January 3, 2013: SSD/SVE System install - System 2 (Main System)



Main header entering east side of Former RME facility.



Main header crossing east hallway and entering main room.



Main header entering main room. Also shown; SP6 and SP11 legs branching off.



Main header in main room. Legs shown (back of picture to front):
SP6, SP11, Header to SP1-SP4, SP7, SP5 and SP8/SP12



System 2 (Main System) header supported via pipe hanger, anchored to floor joist.



System 2 (Main System), SP5 branching off along beam.



SP4 branching off header.



SP9 and SP10 branching off header.



SP9 pre-vertical suction point connection and SP10 branching off to right.



SP10



Header branching out to SP1 and SP2



SP2 pre-connection to suction point and SP1 going through ceiling to furnace/electrical room.



SP1



From left to right: System piping entering east side of Former RME facility, SP13 branching off and SP14 continuing.



From top to bottom: SSD/SVE system entering east side of former RME facility, SP13 branching off and SP14 continuing.



Typical core drill hole for suction points, pre-soil removal.



Typical core drill hole for suction points, pre-soil removal. #2



Suction Point 1



Suction Point 2



Suction Point 3



Suction Point 3



Suction Point 4



Suction Point 5



Suction Point 5



Suction Point 5



Suction Point 6



Suction Point 7



Suction Point 8



Suction Point 8



Suction Point 9



Suction Point 10



Suction Point 11



Suction Point 12



Suction Point 12



Suction Point 13



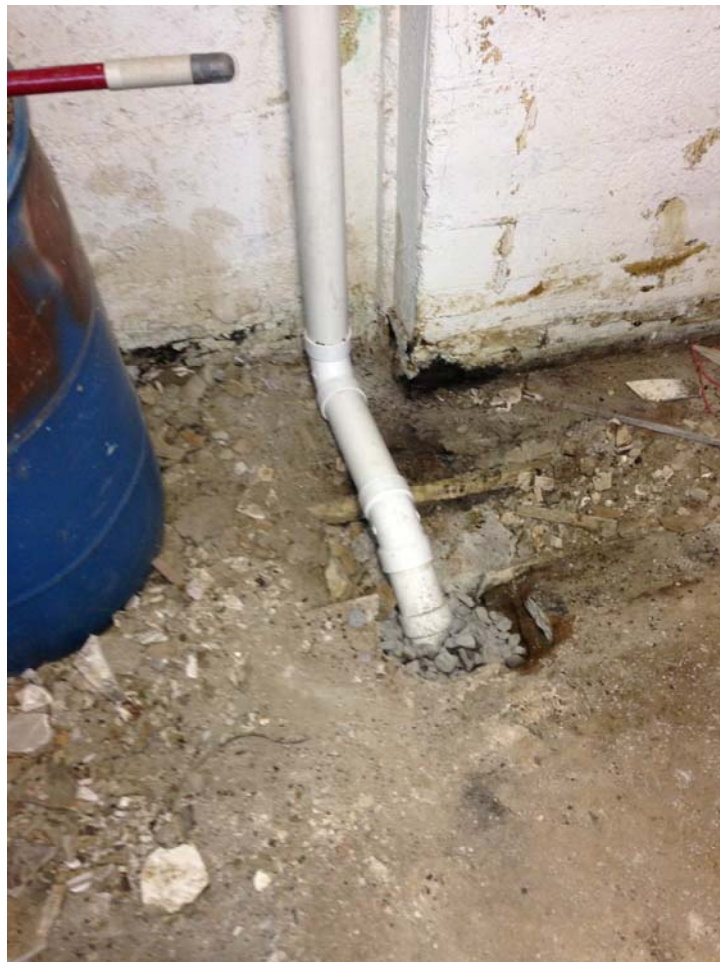
Suction Point 13



Suction Point 14



Suction Point 14



Suction Point 14



Suction Point 1



Suction Point 2



Piping to Suction Point 1 & 2



Suction Point 3



Suction Point 4



Suction Point 5



Suction Point 6



Suction Point 7



Suction Point 8



Suction Point 9



Suction Point 10



Suction Point 11



Suction Point 12



Suction Point 13



Suction Point 14



System 1 (North Room) Header and electrical



System 1 (North Room) RP 145 fan and switch



System 1 (North Room) RP 145 fan and effluent stack



System 2 (Main System) RP 265 fan and switch



System 2 (Main System) RP 265 fan and exhaust stack

APPENDIX I – GAC ANALYTICAL DATA, MANIFESTS,
& CERTIFICATE OF REGENERATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-29107-1

Client Project/Site: Rochester Metal Etching #8281000

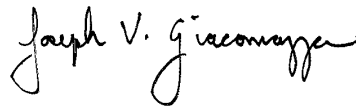
For:

Groundwater & Environmental Services Inc

300 Gateway Park Drive

North Syracuse, New York 13212

Attn: Jason Sgariata



Authorized for release by:

12/5/2012 8:35:35 AM

Joe Giacomazza

Project Administrator

joe.giacomazza@testamericainc.com

Designee for

Sally Hoffman

Project Manager II

sally.hoffman@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Table of Contents

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Definitions/Glossary

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Job ID: 480-29107-1

Laboratory: TestAmerica Buffalo

Narrative

**Job Narrative
480-29107-1**

Receipt

The sample was received on 11/28/2012 9:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

GC/MS VOA

Method 8260B: The following sample was diluted due to the nature of the TCLP matrix: DRUM (480-29107-1). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

GC/MS Semi VOA

No analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.



Client Sample Results

Client: Groundwater & Environmental Services Inc
 Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Client Sample ID: DRUM

Lab Sample ID: 480-29107-1

Date Collected: 11/27/12 09:15

Matrix: Solid

Date Received: 11/28/12 09:00

Method: 8260B - TCLP Volatiles - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.010	0.0041	mg/L			12/03/12 23:50	10
Carbon tetrachloride	ND		0.010	0.0027	mg/L			12/03/12 23:50	10
Chlorobenzene	ND		0.010	0.0075	mg/L			12/03/12 23:50	10
Chloroform	ND		0.010	0.0034	mg/L			12/03/12 23:50	10
1,2-Dichloroethane	ND		0.010	0.0021	mg/L			12/03/12 23:50	10
1,1-Dichloroethene	ND		0.010	0.0029	mg/L			12/03/12 23:50	10
2-Butanone (MEK)	ND		0.050	0.013	mg/L			12/03/12 23:50	10
Tetrachloroethene	ND		0.010	0.0036	mg/L			12/03/12 23:50	10
Trichloroethene	ND		0.010	0.0046	mg/L			12/03/12 23:50	10
Vinyl chloride	ND		0.010	0.0090	mg/L			12/03/12 23:50	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		66 - 137		12/03/12 23:50	10
Toluene-d8 (Surr)	95		71 - 126		12/03/12 23:50	10
4-Bromofluorobenzene (Surr)	89		73 - 120		12/03/12 23:50	10

Method: 8270C - TCLP Semivolatiles - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.010	0.00046	mg/L		11/30/12 06:39	12/03/12 21:37	1
2,4-Dinitrotoluene	ND		0.0050	0.00045	mg/L		11/30/12 06:39	12/03/12 21:37	1
Hexachlorobenzene	ND		0.0050	0.00051	mg/L		11/30/12 06:39	12/03/12 21:37	1
Hexachlorobutadiene	ND		0.0050	0.00068	mg/L		11/30/12 06:39	12/03/12 21:37	1
Hexachloroethane	ND		0.0050	0.00059	mg/L		11/30/12 06:39	12/03/12 21:37	1
3-Methylphenol	ND		0.010	0.00040	mg/L		11/30/12 06:39	12/03/12 21:37	1
2-Methylphenol	ND		0.0050	0.00040	mg/L		11/30/12 06:39	12/03/12 21:37	1
4-Methylphenol	ND		0.010	0.00036	mg/L		11/30/12 06:39	12/03/12 21:37	1
Nitrobenzene	ND		0.0050	0.00029	mg/L		11/30/12 06:39	12/03/12 21:37	1
Pentachlorophenol	ND		0.010	0.0022	mg/L		11/30/12 06:39	12/03/12 21:37	1
Pyridine	ND		0.025	0.00041	mg/L		11/30/12 06:39	12/03/12 21:37	1
2,4,5-Trichlorophenol	ND		0.0050	0.00048	mg/L		11/30/12 06:39	12/03/12 21:37	1
2,4,6-Trichlorophenol	ND		0.0050	0.00061	mg/L		11/30/12 06:39	12/03/12 21:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	108		52 - 132	11/30/12 06:39	12/03/12 21:37	1
2-Fluorobiphenyl	84		48 - 120	11/30/12 06:39	12/03/12 21:37	1
2-Fluorophenol	45		20 - 120	11/30/12 06:39	12/03/12 21:37	1
Nitrobenzene-d5	86		46 - 120	11/30/12 06:39	12/03/12 21:37	1
p-Terphenyl-d14	108		67 - 150	11/30/12 06:39	12/03/12 21:37	1
Phenol-d5	34		16 - 120	11/30/12 06:39	12/03/12 21:37	1

Method: 6010B - TCLP RCRA Metals - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010	0.0056	mg/L		11/29/12 09:00	11/30/12 01:27	1
Barium	0.22	B	0.0020	0.00070	mg/L		11/29/12 09:00	11/30/12 01:27	1
Cadmium	0.0029		0.0010	0.00050	mg/L		11/29/12 09:00	11/30/12 01:27	1
Chromium	0.015	B	0.0040	0.0010	mg/L		11/29/12 09:00	11/30/12 01:27	1
Lead	0.020		0.0050	0.0030	mg/L		11/29/12 09:00	11/30/12 01:27	1
Selenium	ND		0.015	0.0087	mg/L		11/29/12 09:00	11/30/12 01:27	1
Silver	ND		0.0030	0.0017	mg/L		11/29/12 09:00	11/30/12 01:27	1

TestAmerica Buffalo

Client Sample Results

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Client Sample ID: DRUM

Lab Sample ID: 480-29107-1

Date Collected: 11/27/12 09:15

Matrix: Solid

Date Received: 11/28/12 09:00

Method: 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/29/12 09:15	11/29/12 15:15	1

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Lab Chronicle

Client: Groundwater & Environmental Services Inc
 Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Client Sample ID: DRUM

Lab Sample ID: 480-29107-1

Date Collected: 11/27/12 09:15

Matrix: Solid

Date Received: 11/28/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			25.00 g	500 mL	93131	11/28/12 13:55	MRB	TAL BUF
TCLP	Analysis	8260B		10	5 mL	5 mL	93861	12/03/12 23:50	TRB	TAL BUF
TCLP	Leach	1311			100.02 g	2000 mL	93138	11/28/12 14:21	MRB	TAL BUF
TCLP	Prep	3510C			250 mL	1 mL	93486	11/30/12 06:39	TR	TAL BUF
TCLP	Analysis	8270C		1			93884	12/03/12 21:37	RMM	TAL BUF
TCLP	Leach	1311			100.02 g	2000 mL	93138	11/28/12 14:21	MRB	TAL BUF
TCLP	Prep	7470A			30 mL	50 mL	93316	11/29/12 09:15	JRK	TAL BUF
TCLP	Analysis	7470A		1			93407	11/29/12 15:15	JRK	TAL BUF
TCLP	Prep	3010A			50 mL	50 mL	93314	11/29/12 09:00	SS	TAL BUF
TCLP	Analysis	6010B		1			93543	11/30/12 01:27	AH	TAL BUF
Total/NA	Analysis	Moisture		1			93167	11/28/12 14:11	MD	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: Groundwater & Environmental Services Inc
 Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-13
California	NELAC	9	1169CA	09-30-13
Connecticut	State Program	1	PH-0568	09-30-14
Florida	NELAC	4	E87672	06-30-13
Georgia	State Program	4	N/A	03-31-13
Georgia	State Program	4	956	06-30-13
Georgia	State Program	4	956	06-30-13
Illinois	NELAC	5	200003	09-30-13
Iowa	State Program	7	374	03-01-13
Kansas	NELAC	7	E-10187	01-31-13
Kentucky	State Program	4	90029	12-31-12
Kentucky (UST)	State Program	4	30	04-01-13
Louisiana	NELAC	6	02031	06-30-13
Maine	State Program	1	NY00044	12-04-12
Maryland	State Program	3	294	03-31-13
Massachusetts	State Program	1	M-NY044	06-30-13
Michigan	State Program	5	9937	04-01-13
Minnesota	NELAC	5	036-999-337	12-31-12
New Hampshire	NELAC	1	2973	09-11-13
New Hampshire	NELAC	1	2337	11-17-13
New Jersey	NELAC	2	NY455	06-30-13
New York	NELAC	2	10026	03-31-13
North Dakota	State Program	8	R-176	03-31-13
Oklahoma	State Program	6	9421	08-31-13
Oregon	NELAC	10	NY200003	06-09-13
Pennsylvania	NELAC	3	68-00281	07-31-13
Rhode Island	State Program	1	LAO00328	12-31-13
Tennessee	State Program	4	TN02970	04-01-13
Texas	NELAC	6	T104704412-11-2	07-31-13
USDA	Federal		P330-11-00386	11-22-14
Virginia	NELAC	3	460185	09-14-13
Washington	State Program	10	C784	02-10-13
West Virginia DEP	State Program	3	252	09-30-13
Wisconsin	State Program	5	998310390	08-31-13

Method Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Method	Method Description	Protocol	Laboratory
8260B	TCLP Volatiles	SW846	TAL BUF
8270C	TCLP Semivolatiles	SW846	TAL BUF
6010B	TCLP RCRA Metals	SW846	TAL BUF
7470A	TCLP Mercury	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600



Sample Summary

Client: Groundwater & Environmental Services Inc
Project/Site: Rochester Metal Etching #8281000

TestAmerica Job ID: 480-29107-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-29107-1	DRUM	Solid	11/27/12 09:15	11/28/12 09:00

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Login Sample Receipt Checklist

Client: Groundwater & Environmental Services Inc

Job Number: 480-29107-1

Login Number: 29107

List Number: 1

Creator: Stau, Brandon

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GES
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Chain of Custody Record

Client Information Client Contact: Jason Sgarlata Company: Groundwater & Environmental Services Inc Address: 300 Gateway Park Drive City: North Syracuse State, Zip: NY, 13212 Phone: 14004603069 Email: jsgarlata@gesonline.com Project Name: Rochester Metal Etching #6281000 Site:		Lab PM: Hoffman, Sally E-Mail: sally.hoffman@testamericainc.com Carrier Tracking No(s): 480-28712-7498.1 Page: Page 1 of 1 Job #:	
Due Date Requested: PO #: CallOut ID: WO #: Project #: SSOW#:		Analysis Requested Total Number of Containers: 3 Special Instructions/Note:	
Sample Identification Sample Date: 11-27-12 Sample Time: 0915 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=oil, B=BI-Tissue, A=Air): Solid Preservation Code:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2S2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 X - EDA Z - other (specify) Other:	
Sample Disposal Return To Client: <input type="checkbox"/> Disposal By Lab: <input type="checkbox"/> Archive For: _____ Months Special Instructions/QC Requirements:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client: <input type="checkbox"/> Disposal By Lab: <input type="checkbox"/> Archive For: _____ Months	
Possible Hazard Identification Non-Hazard: <input type="checkbox"/> Flammable: <input type="checkbox"/> Skin Irritant: <input type="checkbox"/> Poison B: <input type="checkbox"/> Unknown: <input type="checkbox"/> Radiological: <input type="checkbox"/> Deliverable Requested: I, II, III, IV, Other (specify)		Method of Shipment:	
Empty Kit Relinquished by:		Date:	
Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:		Received by: [Signature] Received by: [Signature] Received by:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Date/Time: 11-27-12 / 1500 Date/Time: Date/Time:	
Cooler Temperature(s) °C and Other Remarks: 3.0A		Date/Time: 11/28/12 0900 Date/Time: Date/Time:	



STRAIGHT BILL OF LADING- SHORT FORM - Original - Not Negotiable

RECEIVED, subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

BOL#: 15447-C-1

Date: 3/22/2013

Page: 1 of 1

CSEC

Carrier SCAC: C.CODE 3056E

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in the Uniform Freight Classification in effect on the date hereof, if this is a rail, or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of said bill of lading, including those on the attachment thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER (FROM)

GES (N. SYRACUSE)
300 GATEWAY PARK DRIVE
N. SYRACUSE, NY 13212

PRO #:

CONSIGNEE (SHIP TO)

ENCOTECH, INC.
1037 RT. 519
EIGHTY FOUR, PA 15330

CUST. ORDER#: WO# 0242355

OUR ORDER#: 15447-C-1

DEPT:

ROUTE:

Special Instructions:

SEND FREIGHT BILL TO: (if different than shipper above)

Freight charges are:

COLLECT

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

C.O.D. _____ AMOUNT

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

C.O.D. FEE _____

Prepaid Collect

(Signature of Consignor)

NO. PKGS	UM	HM (X)	DESCRIPTION OF ARTICLES, KIND OF PACKAGE, SPECIAL MARKS AND EXCEPTIONS	*WEIGHT	CLASS	NMFC	SUB
			ONE(1) DRUM OF SPENT LIQUID PHASE CARBON	460			50

0				460 LBS			TOTALS
MARK "X" IN THE HM COLUMN TO DESIGNATE HAZARDOUS MATERIALS AS DEFINED IN DOT REGULATIONS							

Trailer Number:

Seal Number:

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."

NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby stated by the shipper to be not exceeding PER

+ "The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Uniform Freight Classifications."

+ Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.

SHIPPER'S CERTIFICATION This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per _____

EMERGENCY RESPONSE NUMBER:
CONTACT:
REGISTERED COMPANY:
PLACARDS REQUIRED SUPPLIED BY DRIVER

SHIPPER: GES (N. SYRACUSE)

Received by: ENCOTECH, INC.

PER: _____

Carrier/Driver: CSEC

Shipper Phone # / Fax # / E-mail

1

Receiving & Carrier Signatures

Date



BILL OF LADING

ORDER NUMBER 133736

TO: CONSIGNEE Cabot Norit Americas Inc. STREET 1432 6 th Street MAIP DESTINATION CITY/STATE/ZIP Pryor, OK 74361		TRAILER/CAR NUMBER B/L DATE 5-2-2013
FROM: SHIPPER Encotech STREET 1037 ROUTE 519 CITY/STATE/ZIP Eight Four, PA		ROUTE SWIFT CARRIER INSTRUCTIONS CONTACT: PETE KANDRAVY @ 724-222-3334 Pickup at 84PA on 5-2 -2013 AM
FOR PAYMENT, SENT BILL TO: NAME Cabot Norit Americas Inc. STREET 1432 6 th Street MAIP CITY/STAT/ZIP Pryor, OK 74361-4434		#64810 HX 35644 GARY SOFCO 15 SOFCO 2

Number of Shipping Units	HM	Packaging Type, Description of Articles, Special Marks & Exceptions	Weight (Subject To Correction)
20		Bulk bags SPENT CARBON, (NON RCRA, NON REGULATED) Various TSR #'s	35,000 LBS
<div style="border: 1px solid red; padding: 5px; display: inline-block;"> This is the 340 lbs. of spent from the Former Rochester Metal Etching Company Site in Rochester, NY. </div>			
		TSR#96-090 8 bags - 5	
		TSR#98-027 2 bags - 6	
		TSR#94-012 8 bags - 7	
		TSR#98-109 3 bags - 8	
		TSR#2012-017 1 partial bag - 9	
		TSR#2013-003 1 partial bag - 10	
		TSR#2004-013 1 partial bag - 11	
<div style="border: 2px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> TSR 2006-046 1 partial BB TSR 2007-082 1 partial BB </div>			
Seal 458889 5-03-13 <i>[Signature]</i>			

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER Encotech	CARRIER SWIFT
PER <i>[Signature]</i>	PER <i>[Signature]</i>
DATE 5-1-13	DATE 5-1-13

RECEIVER agrees to the classification and lawfully find truth in effect on the issue of the Bill of Lading the property described above as presented upon order except as noted (quantities and number of packages unknown), marked, consigned and destined as indicated above which said carrier (the said carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if an item is otherwise to deliver to another carrier on the route to the said destination. It is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route, destination and as to either party at any time indicated in all or any said property that every action to be performed hereunder shall be subject in all the bill of lading terms and conditions on the back hereof in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.



CABOT

NORIT ACTIVATED CARBON

CERTIFICATE OF REGENERATION

NORIT Americas Inc. hereby certifies that 340 lbs of Spent Activated Carbon described in manifest/bill-of-lading No. 133736 was regenerated in compliance with all applicable federal, state, and municipal laws and regulations.

Generator

Encotech / NYSDEC / Rochester Metal Etching Co.
Rochester, NY

TSR No: P2013-003

NORIT AMERICAS INC.

BY



DATE June 4, 2013

APPENDIX J - SSD/SVE SYSTEM DOCUMENTATION

PRE-DESIGN TEST

mitigation tech *vapor intrusion specialists*

December 3, 2012

Jason M. Sgarlata
Remediation Scientist
Groundwater & Environmental Services, Inc.
300 Gateway Park Drive
North Syracuse, NY 13212
Via email: JSgarlata@gesonline.com

Re: 100 Lake Ave., Rochester, NY 14608
Sub-slab air communication testing report
Sub-slab Depressurization System Proposal

Dear Jason,

For you review and comment, we submit the following work plan:

1.0 Introduction

Soil vapor containing chlorinated volatile organic compounds has been detected at this site. This document presents a Work Plan that consists of the installation and operation of a sub-slab depressurization system (SSDS) that is designed to mitigate the migration or potential migration of sub surface vapors into the building interiors. The SSDS is intended to protect the occupants of the building and is not intended to remove or diminish the source of the contamination. After start-up, demonstration of SSDS effectiveness will be confirmed and thereafter, periodic maintenance and monitoring will be performed.

2.0 Objectives

This work plan was developed in general accordance with the NYS DOH document, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

The objective of each SSDS is to achieve and maintain a minimum negative pressure differential of .004 inches of water column (wci) below all concrete slabs which function as boundaries between sub-slab space and occupied interior space. Once the SSDS have been installed, testing will be performed to determine the extent of the pressure field and results will be presented for review. Post installation air sampling will be conducted by others in a manner and frequency to be determined.

3.0 Work Plan Design and Specifications

3.1 Overview

Work descriptions are based on certain assumptions identified herein and are subject to modification based on further field observations and measurements before and during construction. In the interest of achieving efficiency of design and optimized cost, this Work Plan is presented on a Design/Build basis which allows for adjustment to quantity and type of system components. This provides optimal cost and design efficiency, informed by predictive analysis of data continuously obtained and easily modifiable in the field, so that the owner's value is maximized as objectives are being met. The subject area is the entire footprint of the building excluding the elevator shaft and the annex storage take building.

3.2 Predesign Communication Testing

On November 30, 2012, we performed sub-slab air communication testing to inform system design. The objective was to assess consistency of sub-slab material, footer placement, and to determine expected areas of vacuum influence that could be created from given suction points. We obtained the following data.

<u>Vacuum point</u>	<u>Test point</u>	<u>Value in -wci</u>
1	2	.002
1	3	.009
3	4	0
4	3	0
2	5	.002
5	6	.300
9	5	.075
10	11	0
A	9	0
A	2	0
A	3	.060
A	1	.019

3.3 Scope of Work

The Scope of Work is to furnish and install multi-point active sub-slab depressurization systems at designated locations in the existing building on a design/build basis. The Scope of Work is based on the minimum construction necessary to achieve the design objective of furnishing a minimum .004 wci pressure differential at all areas of the sub -slab.

Furnish and Install:

- Professional design and supervision
- Final placements of all components subject to approval by client
- Final quantities of all components subject to continuing field measurements during construction – although design is informed by air communication testing and site assessment, final configuration subject to modification

System 1 (North Room):

- System configuration - (1) RADONAWAY RP-145 (80 watts) in-line fan, sidewall exterior mount at east side, to provide sub-slab depressurization via 4" schedule 40 PVC pipe to roof exhaust
- Electrical weatherproof conduit from fan housing to electrical junction box; interior MC wiring and electrical connection to existing panel
- (2) Suction points as follows: connection via 3" Schedule 40 PVC pipe, surface mount at designated side wall, to cavity in sub-slab, with urethane and/or masonry seal; access hole to suction cavity by 5" core drill; suction cavity to consist of approximately 1 cu. ft. excavated material in sub-slab
- (1) U-tube vacuum indicator on vertical pipe run

System 2 (Main System):

- System configuration - (1) OBAR SOE 79 Radial Blower (250 watts), sidewall exterior mount at east side, to provide sub-slab depressurization via 4 and 3" schedule 40 PVC pipe to roof exhaust
- Electrical weatherproof conduit from fan housing to electrical junction box; interior MC wiring and electrical connection to existing panel
- (12) Suction points as follows: connection via 3" Schedule 40 PVC pipe, surface mount at designated side wall, to cavity in sub-slab, with urethane and/or masonry seal; access hole to suction cavity by 5" core drill; suction cavity to consist of approximately 1 cu. ft. excavated material in sub-slab; (4) main room; (4) storage room; (1) Meter room; (1) Former plate cleaning room; (2) rooms adjacent to former oil tank room; adjust quantity and locations as necessary to achieve performance objective
- (1) U-tube vacuum indicator or Magnahelic dial gauge on vertical pipe run

Common Elements:

- Urethane sealant at slab joints, cracks and penetrations to prevent "short circuiting" of pressure field
- Horizontal pipe at ceiling with metal *Autogrip* hangers, on 6' spacing, sloped as required, with valves or restrictor plates as required; all pipe runs for minimum intrusion on occupied space as practicable
- At completion, perform backdraft testing, measure pressure differentials and document; label components and provide system description and operational instructions
- Consult with client engineering representatives to develop operation, maintenance and periodic inspection plan
- Two year warranty; labor and installed components; although system design is informed by field air communication testing and is based on achieving a sufficient pressure differential, no specific warranty of effectiveness is provided – effectiveness shall be determined by continuing field measurement provided by others

3.4 Post Installation Pressure Field Extension Testing

A digital micromanometer will be used to measure pressure differentials and values will be recorded on a floor plan. All test holes will be repaired with urethane caulk (MSDS available) applied over a closed cell backer rod. Smoke tubes will be used to identify floor cracks and other openings to the sub-slab that could "short circuit" the pressure field. Backdrafting testing will be performed.

3.5 System Operation Following Power Loss

The systems will restart automatically after power restoration.

3.6 General Work Plan Provisions

- Daily tailgate meeting for safety review
- Hazwoper trained personnel to perform drilling operations
- PID monitoring during drilling by supervising engineer, if required
- Level 4 PPE for on site personnel
- Procedures to follow site specific HASP

3.7 IRM Construction Completion Report

At conclusion of construction, a Construction Completion Report (CCR) will be submitted. This report will include an as-built drawing, showing SSDS locations and components. The CCR will include measurements of created sub-slab to ambient air static pressure differentials, detailed descriptions of SSDS components, and post-installation sampling results.

An Operations, Maintenance, and Monitoring (OM&M) Plan will be submitted with the CCR. The OM&M Plan will be provided to the owner and occupants to facilitate their understanding of the system's operation, maintenance and monitoring. The OM&M Plan will include the following:

- a description of the SSDS Installed and its basic operating principles, with diagram;
- how the owner or tenant can check that the SSDS is operating properly;
- how the SSDS will be maintained and monitored and by whom;
- a description of long-term reporting and annual SSDS certification requirements;
- a list of appropriate actions for the owner or tenant to take if a SSDS warning device (manometer) indicates system degradation or failure;
- a description of the proper operating procedures for the SSDS, including manufacturer's operation and maintenance instructions and warranties; and
- contact information if the owner or tenant has questions, comments, or concerns.

3.8 Maintenance and Monitoring

Future monitoring will be proposed to monitor system communication via differential pressure measurements. The monitoring will be performed annually until a less-frequent monitoring frequency is approved. This routine monitoring will include:

- visual inspection of the equipment and piping;
- inspection of exhaust points to verify that no air intakes have been located nearby;
- identification and subsequent repair of any leaks;
- audible operational status check of vent fans;
- damper adjustments as required to balance parallel branches of system;

- measurement of differential pressure between the indoor air and the sub-slab to ensure a lower pressure is being maintained in the sub-slab relative to indoor ambient, as indicated by the pressure gauge on the fan suction pipe.

In addition, non-routine maintenance may be conducted should it appear that the SSDS has reduced its effectiveness due to malfunction, renovation, or other unplanned circumstance. Examples of such circumstances include the following:

- the building's owner or tenants report that a warning device indicates that the SSDS is not operating properly;
- the system is accidentally damaged;
- the building has undergone renovations that may reduce the effectiveness of the system.

The SSDS will be operated until such time as permission in writing is received from NYSDEC to terminate operation of the system and remove the equipment.

3.9 Schedule

It is anticipated that work can be completed within thirty days of receipt of order.

3.10 Discharge Permitting

It is understood that an air discharge permit to discharge treated vapors will not be required. It is further understood that all discharges will be direct to the atmosphere and that a Community Air Monitoring Plan is not required.

3.11 Health and Safety Plan

Mitigation Tech has prepared a Health and Safety Plan (HASP) for personnel who will be involved with the construction at this Site.

Labor and material.....\$12,400.00

MITIGATION TECH, INC.

Qualifications

NEHA NRPP ID certification #100722 RMT (mitigation)
 NYS Listed for Radon Mitigation
 AARST Membership
 Installers are HAZWOPER and OSHA trained
 20 years direct experience in Soil Vapor Intrusion Mitigation

December 4, 2012

Page 6

Over 8,000,000 square feet accumulated depressurized sub-slabs

Over 4,000 completed work sites since 1991

Extensive experience with high suction fans (to 50 wci) and manifolded SSD systems

Expertise in ASTM E-2121-03 and NYS DOH VI Guidance

Comprehensive Insurance

- \$5,000,000 General Liability
- \$2,000,000 Pollution Liability
- \$2,000,000 Professional Liability
- \$1,000,000 Automobile Liability
- Statutory Worker's Comp

If you have any questions, please contact me.

Thank you.

Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

55 SHUMWAY ROAD, BROCKPORT, NEW YORK, 14420 * OFFICE/FAX 585-637-7430

SSD/SVE SYSTEM CCR

March 11, 2013

Mr. Jason M. Sgarlata
Remediation Scientist
Groundwater & Environmental Services, Inc.
300 Gateway Park Drive
North Syracuse, NY 13212
Via email: JSgarlata@gesonline.com

Re: 100 Lake Ave., Rochester, NY 14608
Construction of sub-slab depressurization system

CONSTRUCTION COMPLETION REPORT

1. OVERVIEW

This document presents a construction report, performance evaluation, O&M advice and certification of effectiveness for the sub-slab depressurization (SSD) system installed by *Mitigation Tech* at 100 Lake Ave., Rochester, NY 14608 as commissioned February 20, 2013.

The subject area is the area in the entire footprint of the building occupied by The Brotherhood Motorcycle Club, excluding the elevator shaft and the annex storage building. Based on an analysis of sub-slab air communication data and a general building assessment, a manifolded SSD System was installed using principles and equipment typically used for radon mitigation in buildings. The primary objective of implementing this preemptive measure was to mitigate potential intrusion of vapors related to former manufacturing operations that could migrate into occupied space from beneath the slab. This would be achieved by maintaining a negative pressure of at least .004 water column inches (wci) below the slab relative to the air pressure above the slab. All work is in compliance with the NYS DOH document, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006".

2. BUILDING ASSESSMENT

Prior to construction, *Mitigation Tech* conducted a site visit for the purpose of building assessment, collection of sub-slab air communication data and system design. Significant findings:

- Most efficient design was to construct two separate multi-point SSD systems with externally located vacuum fans
- Sub-slab air flow testing indicated moderate to good sub-slab porosity in the north extension and poor to fair porosity in the main basement. Suction cavity configuration was determined in part based on comparable applications and created areas of influence.
- Certain slab defects would require sealing.

Work began with an analysis of appropriate locations for fan, suction cavities and other SSD system components. Both for physical protection and minimum impact on active use areas, riser pipes were installed on existing columns or on permanent walls; horizontal pipe was installed as close to the ceiling as possible. Work was coordinated with tenant to minimize disturbance of work areas, relocate obstacles and control dust. Vacuum and air flow measurements were performed continuously during construction to ensure integrity of design. Various fans were evaluated in place and in combination to determine the most effective configuration. At commissioning, all components inspected for condition and proper operation. Premises left in clean condition.

3. SUB-SLAB DEPRESSURIZATION SYSTEM GENERAL DESCRIPTION

3.1. Introduction. The system consists of (2) SSD systems operating independently. Each individual system consists of a sidewall mounted fan and several vapor extraction points. The systems were constructed using principles and equipment typically used for radon mitigation in buildings as detailed in the United States Environmental Protection Agency (EPA) EPA 402-K-03-007 (May 2006), and the final NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The SSD systems were installed as a permanent, integral addition to the structure. The key components of the SSD system are described below.

3.2. Suction Points. The location of each suction point (vapor extraction point) is shown on the attachment to this document titled "System Layout and Extraction Point Details". Each suction point consists of a 7" core boring into the slab to a depth of 3' or until rock was encountered, through which appx. 2 cubic feet of sub-slab material has been removed. Perforated pipe extending to the core base has been backfilled with #2 washed stone. Mechanically suspended Schedule 40 3" PVC pipe has been inserted into the boring and sealed with urethane sealant. There are a total of (12) suction cavities for the main basement and (2) for the north extension.

3.3. Riser Piping. The riser piping consists of 3" schedule 40 PVC pipe that follows a route from the extraction point to a manifold then to an exterior mounted vacuum fan, through a sidewall penetration. Weatherproof flashing or sealant has been applied to all penetrations. Vent pipes were installed at a pitch that ensures that any rainwater or condensation within the pipes drains downward into the ground beneath the slab. Piping is independently supported, and not supported from existing building mechanical systems. Piping is labeled at each level as "Sub-Slab Vent" with column designation.

3.4. Exhaust Fans. Exhaust fans consist of (1) RADONAWAY RP-265 centrifugal fan on the main system and (1) RADONAWAY RP-145 for the north system. Fans consume approximately 150w and 80w of electricity respectively, and were field selected for efficiency and minimum maintenance. Fans have an adjacent disconnect switch connected to a circuit in the vicinity. Fans are mounted with rubber Fernco couplings, for simplified replacement.

3.5. Instrumentation and Control. There is no centralized instrumentation or control for the SSD System. Individual fans can be switched either from the fan positioned disconnect or at the breaker. Each exhaust fan system is equipped with a vacuum indicator mounted in a visible location on or near the riser pipe. The indicator consists of an oil filled U-tube style manometer. The indicator is inspected by observing the level of colored fluid. This indicator is designed primarily to give a simple visual check that vacuum is present in the riser pipe, specifically by

observation that the fluid levels on each side of the indicator are not even. Indicators are marked at levels observed on February 20, 2013.

3.7. Sealing measures. Polyurethane sealants and mechanical barriers have been applied to floor cracks, slab penetrations and other openings to enhance the barriers between sub-slab and ambient air and improve the efficiency of the SSD System. Sealant has been applied primarily in the vicinity of suction points and at cracks in concrete bases of columns.

3.6. Monitoring Points. There are 12 sub-slab vacuum test points, As shown on the included drawing “Influent readings”.. These consist of 3/4” drill points through the slab into which a digital micromanometer probe can be inserted. They are semi-permanently closed with closed cell backer rod and polyurethane sealant. These were established to aid in original system design and confirmatory testing. The primary future use is in annual recertification of system effectiveness.

3.7. PERFORMANCE EVALUATION

(Measurement date – February 20, 2013) In order to verify system effectiveness and as a performance evaluation, test points were established at various distances from the suction cavities suitable to determine that the sub-slab of the entire subject area was being depressurized at least to the objective, as shown in the following table: (locations per schematic)

Test Point	Vacuum in negative wci
1	.020
2	.027
3	.293
4	.314
5	.021
6	.148
7	.077
8	.025
9	.032
10	.294
11	.081
12	.044

4. SUB-SLAB DEPRESSURIZATION SYSTEM OPERATION

4.1. All fans should be kept in continuous operation. New York State Soil Vapor Intrusion Guidance (2006) specifies that operation, maintenance and monitoring of the SSD system should be included as part of site management. Until subsurface remediation efforts eventually address VOCs in soil and/or groundwater to acceptable levels (i.e. SSD operation no longer required) operation of the SSD system should continue. At that point, the vapor mitigation system may be shut down and/or removed and O&M requirements would cease.

4.2. Reset. Fans restart automatically in event of power loss.

March 12, 2013

Page 4

4.3. In the event of unusual fan noise, failure to start, physical damage, or repeated circuit breaker trip, turn fan off and call for service. MITIGATION TECH –585- 637-7430

4.4. Regularly inspect fan gauge to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid or, in the case of a dial gauge, the position of the indicator needle.

4.5. Normal system operation requires unchanged structural conditions. Report any changes in structure, HVAC systems, slab conditions, etc., so that the change can be evaluated for impact on the SSD System. For service, call MITIGATION TECH at 637-7430

4.6. Ensure that a periodic inspection is performed

5. SUB-SLAB DEPRESSURIZATION SYSTEM PERFORMANCE MONITORING

5.1. Monthly Monitoring

5.1.1. Inspect each fan vacuum indicator to verify that value, indicated by a mark on the gauge, has not changed significantly from the position of the mark. Gauge is inspected by observing the level of colored fluid.

5.1.2. Record the observed measurement for each fan vacuum indicator on form labeled “SSD System Vacuum Gauge Record”. Store all forms in the facility maintenance office.

5.1.3. Inspect visible components of SSD system in vicinity of gauge for degraded condition.

5.1.4. Investigate and report any gauge reading that deviates significantly from its historical average, or any degraded condition of visible components. For reporting, call MITIGATION TECH at 585-637-7430.

5.2. Annual Inspection

5.2.1. Conduct a visual inspection of the complete System (e.g., vent fans, piping, warning devices, labeling)

5.2.2. Inspect all components for condition and proper operation;

5.2.3. Identify and repair any leaks in accordance with Sections 4.3.1(a) and 4.3.4(a) of the NYS DOH VI Guidance (i.e.; with the systems running, use smoke sticks to check for leaks through concrete cracks, floor joints and at the suction points; any leaks will be resealed until smoke is no longer observed flowing through the opening).

5.2.4. Inspect the exhaust or discharge point of each exhaust fan to verify that no air intakes have been located within 10 feet

5.2.5. Conduct pressure field extension testing (to ensure that the system is maintaining a vacuum beneath the entire slab). Perform at least one differential pressure reading for each building slab section enclosed by a separate footer

5.2.6. Interview appropriate building occupants seeking comments and observations regarding the operation of the System

5.2.7. Check to see that the circuit breakers controlling the circuits on which the soil vapor vent fans operate are labeled "Soil Vapor System"

5.3. Annual Certification of Effectiveness

5.3.1. Upon completion of the tasks outlined in section 5.2 above, the installing contractors shall submit a Certification of Effectiveness document, stating that the SSD system continues to perform to the purpose for which it was designed.

6. SUB-SLAB DEPRESSURIZATION SYSTEM MAINTENANCE

6.1. Routine Maintenance

6.1.1. Perform procedures as specified in sections 5.2 and 5.3

6.1.2. There are no routine component replacement procedures; Replace components upon findings of damage or failure

6.1.3. All routine and non-routine maintenance activities should be documented and reported to the agencies, as appropriate

6.2. Non-Routine Maintenance

6.2.1. Non-routine maintenance may also be appropriate during the operation of the mitigation system. Examples of such situations include the following:

6.2.2. It is determined through inspection or notification by others that the warning device indicates the mitigation system is not operating properly

6.2.3. the mitigation system becomes damaged

6.2.4. the building has undergone renovations that may reduce the effectiveness of the mitigation system.

6.2.5. Activities conducted during non-routine maintenance visits will vary depending upon the reason for the visit. In general, building-related activities may include examining the building for structural or HVAC system changes, or other changes that may affect the performance of the depressurization system (e.g., new combustion appliances, deterioration of the concrete slab, or other significant changes). Depressurization system-related activities may include examining the operation of the warning device or indicator and the vent fan, or measurement of the extent of sub-slab depressurization. Repairs or adjustments should be made to the system as appropriate.

Certification

I hereby certify that the SSD System at this location is installed properly and is effective in achieving its above stated purpose.

Nicholas E. Mouganis EPA listing # 15415-I; NEHA ID# 100722

RADON FAN SPECIFICATIONS



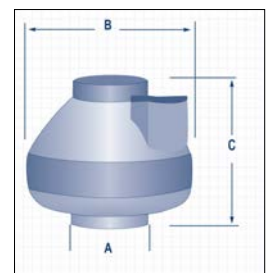
Radon Mitigation Fan

All RadonAwayTM fans are specifically designed for radon mitigation. RP Series Fans provide superb performance, run ultra-quiet and are attractive. They are ideal for most sub-slab radon mitigation systems.

Features

- Energy efficient
- Ultra-quiet operation
- Meets all electrical code requirements
- Water-hardened motorized impeller
- Seams sealed to inhibit radon leakage (RP140 & RP145 double snap sealed)
- RP140 and RP260 Energy Star[®] Rated
- ETL Listed - for indoor or outdoor use
- Thermally protected motor
- Rated for commercial and residential use

MODEL	P/N	FAN DUCT DIAMETER	WATTS	MAX. PRESSURE ^{WC}	TYPICAL CFM vs. STATIC PRESSURE WC				
					0"	.5"	1.0"	1.5"	2.0"
RP140*	23029-1	4"	15-21	0.8	135	70	-	-	-
RP145	23030-1	4"	41-72	2.1	166	126	82	41	3
RP260*	23032-1	6"	50-75	1.6	272	176	89	13	-
RP265	23033-1	6"	91-129	2.3	334	247	176	116	52
RP380*	28208	8"	95-152	2.3	497	353	220	130	38



Model	A	B	C
RP140	4.5"	9.7"	8.5"
RP145	4.5"	9.7"	8.5"
RP260	6"	11.75"	8.6"
RP265	6"	11.75"	8.6"
RP380	8"	13.41"	10.53"



*Energy Star[®] Rated



Made in USA with US and imported parts



ETL Listed



All RadonAway inline radon fans are covered by our 5-year, hassle-free warranty

For Further Information Contact