127-13 Merrick Boulevard

QUEENS COUNTY

JAMAICA, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: 241128

Prepared for:
Myrtle/Irving Realty Associates, LLC
102-10 Metropolitan Avenue
Forest Hills, New York 11375

Prepared by:
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Commack, New York
631 629-5373

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date
1	8/10/17	Revise As-Built drawings, add progress report for 3/11/15, add SSDS effluent samples	5/20/16

DECEMBER 2015

(REVISED AUGUST 2017)

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List of Acronyms

ASP	Analytical Services Protocol
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ELAP	Environmental Laboratory Approval Program
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operations and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Soil Management Plan
SOP	Standard Operating Procedures
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
VCP	Voluntary Cleanup Program

CERTIFICATION

I, Karen G. Tyll, PE, certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Karen G. Tyll, PE	10/20/17	
NYS Professional Engineer # 079520	Date	Signature

ES EXECUTIVE SUMMARY

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

Site Identification: Site **241128** 127-13 Merrick Boulevard

Institutional Controls:	1. The property may be used for commercial use;	
	2. All ECs must be operated and maintained as specified in this SMP. 3. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the NYC Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department. 4. Vegetable gardens and farming on the site are prohibited.	
	5. All ECs must be inspected at a frequency and in a manner defined in the SMP.	
Engineering Controls:	1. Cover system	
	2. Sub Slab depressurization system (SSDS)	
Inspections:		Frequency
1. Cover inspection		Annually
2. SSDS inspection		Annually
Monitoring:		
1. SSDS blowers		Annually
2. SSDS effluent sampling		Annually
3. Off-site residence sub-slab vapor sampling		As needed

Site Identification: Site **241128** 127-13 Merrick Boulevard

Maintenance:	
1. SSDS blower maintenance	As needed
3. Cover System Maintenance	As needed
Reporting:	
1. SSDS and Off-site Residence Data	As needed
2. Periodic Review Report	Annually

Further description of the above requirements is provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the 127-13 Merrick Boulevard site located in Jamaica, New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently listed as a potential hazardous waste site, Site No. 241128 which is administered by New York State Department of Environmental Conservation (NYSDEC).

Myrtle/Irving Realty Associates, LLC entered into an Order on Consent, on March 7, 2011 with the NYSDEC to remediate the site. A figure showing the site location and boundaries of this site is provided as Figure 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix 4.

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

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

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Order on Consent (Index #R2-0661-03-11; Site #241128) for the site, and thereby subject to applicable penalties.

- All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Appendix 1 of this SMP.

This SMP was prepared by Tyll Engineering and Consulting P.C. and Seacliff Environmental, Inc., on behalf of Myrtle/Irving Realty Associates, LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

In late 2015, Myrtle/Irving Realty Associates, LLC sold the property to The Management of Jackson Heights, New York. Myrtle/Irving Realty Associates, LLC is going to get the site through the SMP and CCR approval phase but the new owners will be responsible for the Site Management Phase

1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 Notifications

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

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent.
- 7-day advance notice of any field activities associated with the remedial program.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

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

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

Table 1 on the following page includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix 1.

Table 1: Notifications*

Name	**Contact Information**
Dana Mecomber P.E.	(718) 482-7851 dana.mecomber@dec.ny.gov
Jane O'Connell P.E.	(718) 482-4973 jane.oconnell@dec.ny.gov
Kelly Lewandowski, Chief, Site Control Section	(518)402-9543 kelly.lewandowski@dec.ny.gov

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

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in Jamaica, Queens County, New York and is identified as Block 12488 and Lot 001 on the Queens Tax Map (see Figure 1]). The site is an approximately 0.35-acre area and is bounded by residential properties to the north, Merrick Boulevard to the south, Anderson Road to the east, and Selover Road to the west (see Figure 2). The boundaries of the site are more fully described in Appendix 4 –Environmental Easement. The owner(s) of the site parcel(s) at the time of issuance of this SMP is: Myrtle/Irving Realty Associates, LLC.

2.2 Physical Setting

2.2.1 Land Use

The Site consists of a store with a basement located within a strip mall. The Site is zoned commercial, and is currently a wig shop. Strip mall occupants include fast food, stationary, religious, and hair cutting establishments.
The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial properties. The properties immediately south of the Site include commercial properties; the properties immediately north of the Site include residential properties; the properties immediately east of the Site include commercial properties; and the properties to the west of the Site include commercial properties.

2.2.2 Geology

The elevation of the property is approximately 25 feet mean sea level and the depth to groundwater is approximately 15 feet below land surface. The stratigraphy of the site, from the surface down, consists of fine to medium grained sand with quartz pebbles. There is very little fill present. The depth to bedrock is approximately 525 feet at the Site.

2.2.3 Hydrogeology

Water levels have been measured in the six on-site monitoring wells prior to purging and sampling. Using the survey data, relative groundwater elevations were obtained; unfortunately the data is anomalous and does not allow for precise contouring and determination of groundwater flow. If the consistently low elevation in MW-2 is ignored, then groundwater flow appears to be southwesterly (regional direction). Based on the groundwater elevations in the two co-located (outside) wells there appears to be a slight downward gradient.

2.3 Investigation and Remedial History

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

As part of a potential property transaction, the previous owner wanted to determine if the former dry cleaning operation affected the environmental integrity of the property. The site was inspected initially on September 12, 2006. A tattoo and body piercing business occupied the building at that time. The basement, however, was empty and a floor drain was identified. The floor drain was stuffed with rags and other debris. When these items were removed, a strong perchloroethylene (perc) -odor was evident.

In September 2006, soil samples were collected inside the floor drain using a hand auger with extensions. Soil samples were collected at 1.5, 4.0 and 6.0 feet below grade (defined as the top of the basement slab). The 1.5-foot sample consisted of a heterogeneous mix of rags, plastic, glass and sand with a strong perc odor. This fill was underlain by brown, medium to coarse-grained sand with sub rounded quartz pebbles and rock fragments. The sand unit was encountered at approximately 1.9 feet below grade with groundwater observed at 4.3 feet below grade. There was a strong perc-odor in the 4.0 and 6.0-foot samples collected in the native sand deposits. The 6.0-foot sample was collected from the saturated zone.

Because of the shallow water table below basement grade, a two-inch diameter monitoring well (MW-1) was installed in the floor drain and a groundwater sample collected. Due to low clearance, the four- foot long stainless steel well point (.010 slots) was placed in the hand auger boring and driven to a depth of nine feet below the top of the basement slab. The well was finished with two-inch diameter black steel riser; cemented in place with a locking cap and protective curb box. The entire floor drain was sealed around the top of the well casing.

Perc a/k/a tetrachloroethene was detected at 26,200 mg/kg or parts per million (ppm) in the 1.5-foot soil sample; 3,098 ppm in the 4.0-foot sample: and 4,737 ppm in the 6.0-foot sample. The NYSDEC Recommended Soil Clean-up Objective (RSCO) for the compound at the time was 1.4 ppm, therefore, the detected soil concentrations were high. Please note that because concentrations were high the method detection limits for all analyzed compounds were raised so it is not clear whether other compounds are present in the soil (particularly daughter or degradation products of perchloroethylene).

The groundwater sample indicated 30,827 ug/l or parts per billion (ppb) of perc. The New York State Groundwater Standard is 5 ppb. There were no other compounds detected in the water sample.

Site Characterization was performed under the Consent Order in the fall of 2011. The work consisted of the collection of soil, groundwater, and sub-slab vapor samples in the basement of 127-13 Merrick Boulevard (as well as in adjacent basements). Two soil borings were also drilled outside of the basement and monitoring wells installed in those borings and sampled. A Site Characterization Report (SCR) was submitted to the NYSDEC.

Because of the high perchloroethylene concentrations in sub slab vapor and basement air samples as well as documented soil contamination under the basement slab in the area of the former floor drain, interim remedial action was recommended. This remedial action included the removal and proper disposal of contaminated soil, the installation of a sub-slab depressurization system (SSDS), and confirmatory soil and groundwater sampling.

The contaminated floor drain was roughly in the center of the 127-13 basement. To remove the contaminated soil around the drain, Brookside Environmental of Copiague, New York excavated and removed a volume of soil 6 feet by 6 feet by 6 feet deep on April 3, 2013. This volume was based on the site characterization data and was adjusted to 5 foot depth because of groundwater intrusion and slumping of the excavation walls.

A vactor unit (a/k/a Supersucker Vacuum Unit) operated by an OSHA HAZWOPER-trained field crew was used to remove the contaminated soil. The vactor truck was parked outside of the building on Merrick Boulevard with vacuum hose and hard pipe running into the side walk basement entrance- the shortest distance to the work area. The perc- contaminated soil and debris was removed by the vactor through the hose and directly into the vactor tank. Vactor exhaust was HEPA filtered.

The ceiling of the basement was lined with polyethylene sheeting to prevent the migration of potential vapors upwards into the store above.

The concrete slab around the floor drain was broken up and removed for disposal. Excavation with the vactor removed contaminated soil in and around the floor drain. When the soil was removed, the vactor hosing was disconnected and the load was shipped to the disposal facility.

As the excavation was deepened, groundwater was encountered at approximately 4.5 feet below grade. Soil straddling the water table was removed to the extent possible by the vactor as well as any water that accumulated in the excavation.

Excavation continued horizontally and vertically to below the water table until contaminated soil has been removed. Confirmatory endpoint soil samples were collected. Methods of collection followed the Quality Assurance Plan attached to the approved Site Characterization Work Plan. Five endpoint samples were collected under the oversight of NYSDEC –four on the sidewalls at

approximate three foot depth and one at the bottom of the excavation, approximately five feet below grade and below the water table (see Figure 2).

The endpoint samples were hand delivered to American Analytical Laboratories, Farmingdale, New York (NYSDOH ID #11418) and analyzed for the complete list of TCL VOCs via EPA Method 8260. The results are summarized on Table 2. Endpoint soil sample analytical results were compared to 6 NYCRR Part 375-6.8 Restricted- Commercial Soil Cleanup Objectives (SCOs). Perc was detected in all five endpoint samples (Figure 2) but at concentrations significantly below the Commercial SCO.

When sufficient soil and water were removed, backfill was placed and compacted in the excavation. Crushed concrete was used below the water table and RCA blend was used above it. This backfill material was in compliance with DER 10 Section 5.4(e) 5. The excavation was returned to grade level.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the IRM Work Plan dated March 2012 included source area soil removal and installation of a sub-slab depressurization system (SSDS).

2.5 Remaining Contamination

2.5.1 Soil

The analytical results for soil samples collected pre-remediation are summarized on Tables 3, 4, and 5. Soil analytical results were compared to 6 NYCRR Part 375-6.8 Restricted Commercial Soil Cleanup Levels (SCOs).

No VOCs were detected above SCOs beyond the floor drain area. There were trace detections of several VOCs in the three basement soil samples. Perchloroethylene was detected at a laboratory estimated concentration of 2.4 ug/l in the sample from boring MW-4 and at 35 ug/l in the sample from boring MW-3. Methylene chloride was detected at very low concentrations in all three samples but was flagged as a laboratory contaminant because of its presence in the associated analytical method blank sample.

No SVOCs were detected in the three 127-13 basement boring samples and metals concentrations did not exceed SCOs.

There were no detections of VOCs and SVOCs in the soil sample collected from the deep outside monitoring well boring, MW-5. Metals concentrations did not exceed SCOs in this sample.

Post-remediation endpoint soil sample analytical results were compared to 6 NYCRR Part 375-6.8 Restricted- Commercial SCOs. Perc was detected in all five endpoint samples ranging from 840 to 7,600 ppb which are significantly below the NYSDEC Part 375 Commercial SCO of 150000 ppb (see Table 2). Remaining soil contamination is addressed by this SMP.

2.5.2 Groundwater

Tables 6, 7, and 8 summarize the laboratory data for the six groundwater samples collected pre-remediation. Groundwater analytical results were compared to the New York State Groundwater Standards specified in the NYSDEC Addendum to June 1998 Division of Water Technical and Operational Guidance Series (TOGS) No. 1.1.1.

Perchloroethylene or perc was detected in five of the six pre-remediation groundwater samples. Perc was detected in the samples collected from all four basement monitoring wells as follows: MW-1 (41 ug/l); MW-2 (1.9 ug/l); MW-3 (190 ug/l); and MW-4 (35 ug/l). Perc was detected at a laboratory estimated concentration of 0.67 ug/l in the deep outside monitoring well but was not detected in the sample from the shallow outside well.

There were minor detections of petroleum constituents in some of the monitoring well samples but all at concentrations below their respective Groundwater Standards. Methylene chloride was also detected at very low concentrations but was flagged as a laboratory contaminant because of its presence in the associated analytical method blank sample.

There were minor detections of SVOCs in several of the monitoring well samples but at concentrations below their respective Groundwater Standards.

Total concentrations for some metals were detected above their respective New York State Groundwater Standards in all six samples. However, dissolved concentrations were much lower and exceedances were for manganese and sodium in the sample collected from MW-4 and iron and sodium in the sample from MW-5.

The four monitoring wells in the 127-13 Merrick Boulevard basement (MW-1 through MW-4) and adjacent to the former floor drain were sampled post-remediation on May 1, 2014 and July 24, 2015. Perchloroethylene and degradates were not detected above New York State Groundwater

Standards in the four monitoring well samples in both sampling events (see Table 10). These data indicate the success of the remediation.

2.5.3 Soil Vapor

Table 9 summarizes the pre-remediation laboratory data for the vapor samples. The concentrations of perchloroethlene were extremely high in the sub-slab samples collected from VP-1 and VP-2 in the 127-13 basement unit and the laboratory had to dilute the samples.

Perc was detected undiluted at a concentration over 500,000 ug/m^3 in the sample from VP-1 and at a concentration of over 270,000 ug/m^3 in the sample from VP-2. Perc was also elevated in the sample from VP-3 (over 13,000 ug/m^3). High concentrations of two perchloroethylene daughter products, cis-1, 2-dichloroethene and trichloroethene, were also detected. A petroleum compound, 2, 2, 4 trimethylpentane, was detected in VP-2 at an elevated concentration.

The NYSDOH recommends that the average air concentration in a *residential* community not exceed 30 ug/m^3 of perc, considering *continuous lifetime* exposure and sensitive people. Similarly, the NYSDOH set a guideline of 2 ug/m^3 for trichloroethylene in air.

Due to the elevated levels of perc in the sub slab and indoor air samples in the 127-13 basement, sub slab and indoor air samples were collected in the two adjacent basements on June 5, 2012. The samples were designated VP-4 (east) and VP-5 (west). Elevated perc was detected in the sub slab air and in the indoor air samples.

The SSDS was installed to address these elevated vapor concentrations and it began operation in July 2013. It has run continuously since.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

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

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix 2) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

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

- The property may be used for commercial use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.

- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the NYC Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.

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

3.3 Engineering Controls

3.3.1 Cover (or Cap)

Exposure to remaining contamination at the site is prevented by a cover system over the site. This cover system is comprised of concrete-covered sidewalks, concrete-building basement slabs, and a narrow concrete walkway behind some of the building units. Figure 2 presents the location of the cover system and applicable demarcation layers. This cover system will be repaired as necessary. Cracks will be sealed and concrete replaced should any damage or disruption occur.

The Excavation Work Plan (EWP) provided in Appendix 2 outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined

in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in Appendix 6.

3.3.2 Sub-Slab Depressurization System

Procedures for operating and maintaining the Sub-slab depressurization system (SSDS) are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). The attached As-Built Drawings show the location of the SSDS for the site.

3.3.3 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

3.3.3.1 - Cover (or Cap)

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

3.3.3.2 - Sub-Slab Depressurization (SSD) System

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

4.0 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included in the Quality Assurance Project Plan provided in Appendix 5.

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

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

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

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site – wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or

monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix 7 – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

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

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

Reporting requirements are outlined in Section 7.0 of this plan.

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

4.3 Treatment System Monitoring and Sampling

4.3.1 Remedial System Monitoring

Monitoring of the SSDS will be performed on a routine basis, as identified in Table 10 Remedial System Monitoring Requirements and Schedule (see below). Modification to the frequency or sampling requirements will require approval from the NYSDEC. A visual inspection of the complete system will be conducted during each monitoring event. Unscheduled inspections and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system. SSDS components to be monitored include, but are not limited to, the components included in Table 10 below.

Table 10 – Remedial System Monitoring Requirements and Schedule

Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
SSDS Fans and piping	Flow Rate	N/A	Annually

A complete list of components to be inspected is provided in the Inspection Checklist, provided in Appendix 7 - Site Management Forms. If any equipment is observed to be malfunctioning or the system is not performing within specifications; maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.3.2 Remedial System Sampling

Detailed sample collection and analytical procedures and protocols are provided in Appendix 5 – Field Sampling Plan and Quality Assurance Project Plan.

4.4 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the SSDS effluent on an as needed basis based upon annual screening with PID. Sampling locations, required analytical parameters and schedule are provided in Table 11 – Remedial System Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Detailed sample collection and analytical procedures and protocols are provided in Appendix 5 – Field Sampling Plan and Appendix 5 – Quality Assurance Project Plan.

4.4.1 Soil Vapor Sampling

Soil vapor sampling will be performed on an as-needed to assess the performance of the remedy. Any proposed sampling to be conducted will be discussed in advance with the NYSDEC.

On-site (127-13 basement) and off-site (residential) soil vapor sample locations were established during site characterization. Procedures for operating and maintaining the SSDS and more detailed information regarding the SSDS are documented in the Operation and Maintenance Plan (Section 7.0 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 7.0). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition occurs which may affect controls at the site.

As per the New York State Department of Health, October 2006, "Guidance for Evaluating Soil Vapor Intrusion in the State of New York", the following activities (at a minimum) should be conducted during routine maintenance:

a. A visual inspection of the complete system (e.g., vent fans, piping, etc.);

b. Identification and repair of leaks; and

c. Inspection of the exhaust or discharge point to verify no air intakes have been located nearby.

As appropriate preventative maintenance (e.g., replacing the fans), repairs and/or adjustments should be made to the system to ensure its continued effectiveness at mitigating exposures related to soil vapor intrusion. The need for preventative maintenance will depend upon the life expectancy and warranty for the specific part, as well as visual observations and PID readings over time. The need for repairs and/or adjustments will depend upon the results of a specific activity compared to that obtained when system operations were initiated.

In addition to the routine O&M activities described here, the building owner and occupant will be given information sheets that explain the system's operation, maintenance and monitoring. Therefore, at any time during the system's operation, the building owner may check that the system is operating properly.
Records will be maintained by the Owner and the proper operation of the sub-slab depressurization system will be certified by a P.E. on an annual basis.

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

Deliverables for the soil vapor sampling program are specified in Section 7.0 – Reporting Requirements.

4.4.2 Soil Vapor Intrusion Sampling

Soil vapor intrusion sampling will be performed as needed to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The scope of work for any required sub slab vapor and indoor air sampling will consist of:

- The completion of a building inspection/survey as per NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York;
- As needed: Inside 127-13 Merrick Boulevard: The collection of one indoor air samples, one sub-slab vapor sample, and one ambient/background air sample for laboratory analyses to be completed during the heating season (November 1 – March 31);
- As needed: The off-site residence: The collection of one indoor air sample, one sub-slab vapor samples, and one ambient/background air sample for laboratory analyses to be completed during the heating season (November 1 – March 31);
- As needed: Obtain Photoionization Detector (PID) measurements from the sampling ports on the roof while the blower is in operation;
- Prior to sub slab sample collection, the tubing will be purged of a minimum of one and a maximum of three times the volume of the sampling tube, ensuring that the samples are representative of the sub-slab material. Flow rate for the purge will be kept below 0.2 liters/minute;

- After the purge is completed, the tubing will be attached to a 6-Liter Summa® canister fitted with an 8-hour flow regulator. Prior to sample collection, the initial pressure (vacuum readings) will be recorded. After eight hours, the canister will be closed and the end pressure recorded; and
- Obtain pressure and PID measurements from the sub-slab extraction points while the SSDS is in operation.

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

Deliverables for the soil vapor intrusion sampling program are specified in Section 4.4.7.

4.4.3 Monitoring and Sampling Protocol

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be subject to approval by NYSDEC and submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report or by letter report which will also be prepared, if required by NYSDEC, subsequent to each sampling event. The report (or letter) will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc.);
- Copies of all field forms completed (chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format); and
- Any observations, conclusions, or recommendations;

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 6 (below).

Table 12 Schedule of Monitoring/Inspection Reports

Task	**Reporting Frequency***
Sub-slab Soil Vapor/ Indoor Air	As needed
Sub-slab Depressurization System Inspection	Annual
Sub-slab Depressurization System Inspection (effluent)	Annual
Site-wide Inspection Report	Annually, to be submitted with Annual Certification Report

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

5.0 OPERATION AND MAINTENANCE PLAN

5.1 General

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

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

Further detail regarding the Operation and Maintenance of the SSDS is provided in Appendix 8 - Operation and Maintenance Manual. A copy of this Operation and Maintenance Manual, along with the complete SMP, is maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

5.2 Remedial System (or other Engineering Control) Performance Criteria

The SSDS will operate until the threat of fugitive vapors is gone.

5.3 Operation and Maintenance of the Sub-slab Depressurization System.

The following sections provide a description of the operations and maintenance of SSDS.

5.3.1 System Start-Up and Testing

Effluent samples were collected from the first installed fan on July 3, 2013 and then again on July 17, 2013. The samples were analyzed for perchloroethylene and daughter products by American Analytical laboratories. An effluent air sample was collected from the second fan installed on August 23, 2013.

Monitoring points were installed at each corner of the building to determine the influence of the SSDS. Pressure readings taken on multiple occasions from 127-01 (northernmost unit) and 127-21 (second to last southernmost unit) confirmed that the subsurface under all basement units was under the influence of the SSDS.

The effluent of the system (both fans) was sampled on September 26, 2013. The air samples were analyzed using the USEPA's TO-15 gas chromatograph/mass spectrometer (GC/MS) methodology. The process described in the Division of Air Policy DAR-1 was used to calculate annual and short-term concentrations, and compare them to the Annual and Short-term Guideline Concentrations. It was determined that treatment of effluent was not necessary. The spread sheet calculations are provided in Appendix F of the CCR.

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

5.3.2 Routine System Operation and Maintenance

The requirements for the SSDS consisted of the initial startup testing, routine maintenance and monitoring activities, and non-routine maintenance activities. A copy of the Operations and Maintenance Manual specific to the SSDS is provided in Appendix 8, which provides further detail on the above.

The SSDS was last inspected on March 11, 2015 (Progress report can be found in Appendix 9). All visible system components were checked including system piping, the two blowers, alarm, and control panel. The system was operating quietly and the alarm was working.

The basement slab and walls were intact-there were no cracks or gaps observed in the basements accessed. There were no changes in surrounding property use. The building use, occupants, and structure were the same or very similar to when the system was installed.

There have been no changes to the heating/ventilation system since the installation of the system.

A MiniRae Model 2000 photoionization detector (PID) was used to check for the presence of volatile organic compounds (VOCs) at roof discharge. Readings were 0.0 parts-per million at the roof level as well at street level and in the driveway of the adjacent residence.

5.3.3 Non-Routine Operation and Maintenance

The system includes a vacuum gauge that has a visual and audible alarm that illuminates a red light if the fan fails to operate. The alarm light is located in the basement of the 127-03

Merrick Boulevard basement next to a sign that includes the phone number to call if the light turns on or alarm sounds.
Table 11 provides a summary and schedule of routine maintenance.

5.3.4 System Monitoring Devices and Alarms

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

In the future, two Dwyer Instruments, Inc., Magnahelic® Differential Pressure gages (Series 2000) will be installed in the vertical black pipe leading from the two SSDS points to the roof. This will enable the Site Owner and occupants to monitor the system more easily.

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 Climate Change Vulnerability Assessment

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

This section provides a summary of vulnerability assessments that will be conducted for the site during periodic assessments, and briefly summarizes the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

- The site is not located in a flood plain, low-lying, or low-groundwater recharge area.
- The basement units of the site do not flood during severe rain events.
- Erosion: not applicable due to indoor environment.
- High Wind: the fans are located on the roof but high winds have not affected them since they were installed in July 2013.
- Electricity: Power has not been lost since the fans stated operation in July 2013.

6.2 Green Remediation Evaluation

NYSDEC's DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the Periodic Review Report (PRR).

- No waste is generated.
- Energy usage is electric and energy efficient fans were installed.
- Emissions above roof level are not an issue as per sampling and DAR-14 calculations.

- No water is used.
- No earth outside the building basements has been disturbed.

6.2.1 TIMING OF GREEN REMEDIATION EVALUATIONS

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.
Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

6.2.2 BUILDING OPERATIONS

The SSDS is contained within the existing footprint of the building and does not take up tenant space. There are no special needs for the SSDS other than electricity.

6.2.3 FREQUENCY OF SYSTEM CHECKS, SAMPLING AND OTHER PERIODIC ACTIVITIES

Transportation to and from the Site and use of consumables in relation to visiting the Site in order to conduct system checks and or collect samples and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.
Consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits and system checks;
- Installation of remote sensing/operations and telemetry;
- Coordination/consolidation of activities to maximize foreman/labor time; and
- Use of mass transit for site visits, where available.

6.2.4 METRICS AND REPORTING

As discussed in Section 7.0 and as shown in Appendix 7 – Site Management Forms, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be recorded to facilitate and document consistent implementation of green remediation during site management and to identify corresponding benefits; a set of metrics has been developed.

6.3 Remedial System Optimization

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

The RSO study will focus on overall site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals are to be considered when performing the RSO.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix 7. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 13 and summarized in the Periodic Review Report.

Table 13: Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Inspection Report	Annually
Periodic Review Report	Annually

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

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

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);

- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

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

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

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

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and

- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

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

7.2 Periodic Review Report

A Periodic Review Report will be submitted to the Department every year, beginning sixteen (16) months after the Certificate of Completion is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix 4 -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (indoor air, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.

- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
  - Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
  - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
  - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.
  - The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

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

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*

- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practice; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative].

- *No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and*
- *The assumptions made in the qualitative exposure assessment remain valid.*

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

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

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed, (see Section 6.3, upon completion of an RSO, an RSO report will be prepared following NYSDEC guidelines and must be submitted to the Department for approval. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

- Site Characterization Report (SCR) dated November 30, 2014 prepared by Seacliff Environmental, Inc.
- Construction Completion Report (CCR) dated April 1, 2015 prepared by Tyll Engineering and Consulting P.C.
- 6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.
- NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".
- NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

APPENDIX 1 – LIST OF SITE CONTACTS

Name	Phone/Email Address
David Koptiev, Former Owner	718 -268-1200 david@platinumrealty.com
Mrs. Chabra, Current Owner The Management 34-29 83rd Street Jackson Heights, NY 11372	(516) 455-6086 cell
James DeMartinis QEP	631-828-5994 seacliffenvironmental@aol.com
Dana Mecomber P.E.	718-482-7851 dana.mecomber@dec.ny.gov
Jane O' Connell P.E.	718-482- 4973 jane.oconnell@dec.ny.gov
Karen G. Tyll P.E. Project Engineer	631- 629-5373 karen@tyllengineering.com
Joseph Misk Esq. Owner Attorney	718-468-0500 jmisk@gmlawyers.net

APPENDIX 2 – EXCAVATION WORK PLAN (EWP)

2-1 Notification

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

Table 1: Notifications*

Dana Mecomber P.E.	(718) 482-7851 dana.mecomber@dec.ny.gov
Jane O'Connell P.E.	(718) 482-4973 jane.oconnell@dec.ny.gov
Kelly Lewandowski, Chief, Site Control Section	(518)402-9543 kelly.lewandowski@dec.ny.gov

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

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;

- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix 6 of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

2-2 Soil Screening Methods

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

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section 2.6 of this Appendix.

2-3 Soil Staging Methods

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

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

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

2-4 Materials Excavation and Load-Out

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

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

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

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

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-site in an appropriate manner.

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

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

2-5 Materials Transport Off-Site

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

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

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

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

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

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

2-6 Materials Disposal Off-Site

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

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

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

2-7 Materials Reuse On-Site

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

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

2-8 Fluids Management

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

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

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

2-9 Cover System Restoration

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the Record of Decision. The existing cover system is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete covered sidewalks and concrete basement slab]. The demarcation layer, consisting of orange snow fencing material, white geotextile or equivalent material, etc. will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

2-10 Backfill from Off-Site Sources

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

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

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

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

2-11 Stormwater Pollution Prevention

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

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

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

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

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

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

2-12 Excavation Contingency Plan

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

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

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC’s Project Manager.

Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

2-13 Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during site clearing and site grubbing, and during all remedial work.

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

APPENDIX 3

RESPONSIBILITIES of

OWNER and REMEDIAL PARTY

Responsibilities

The responsibilities for implementing the Site Management Plan ("SMP") for the 127-13 Merrick Boulevard site (the "site"), number 241128, are divided between the site owner(s) and a Remedial Party, as defined below. The owner(s) is/are currently listed as: Myrtle/Irving Realty Associates LLC.

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to any of the following: certificate of completion holder, volunteer, applicant, responsible party, and, in the event the New York State Department of Environmental Conservation ("NYSDEC") is carrying out remediation or site management, the NYSDEC and/or an agent acting on its behalf. The RP is: Myrtle/Irving Realty Associates LLC.

Nothing on this page shall supersede the provisions of an Environmental Easement, Consent Order, Consent Decree, agreement, or other legally binding document that affects rights and obligations relating to the site.

Site Owner's Responsibilities:

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the site.

2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in an Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.

3) In the event the site is delisted, the owner remains bound by the Environmental Easement, and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.

4) The owner shall grant access to the site to the RP and the NYSDEC and its agents for the purposes of performing activities required under the SMP and assuring compliance with the SMP.

5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the site's RP and the NYSDEC in accordance with the timeframes indicated in Section 1.3-Notifications.

6) In the event some action or inaction by the owner adversely impacts the site, the owner must notify the site's RP and the NYSDEC in accordance with the time frame indicated in Section 1.3. Notifications and (ii) coordinate the performance of necessary corrective actions with the RP.

7) The owner must notify the RP and the NYSDEC of any change in ownership of the site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the site. 6 NYCRR Part contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.4 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html.

8) Until such time as the NYSDEC deems the vapor mitigation system unnecessary, the owner shall operate the system, pay for the utilities for the system's operation, and report any maintenance issues to the RP and the NYSDEC.

9) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.

2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.

3) Before accessing the site property to undertake a specific activity, the RP shall provide the owner advance notification that shall include an explanation of the work expected to be completed. The RP shall provide to (i) the owner, upon the owner's request, (ii) the NYSDEC,

and (iii) other entities, if required by the SMP, a copy of any data generated during the site visit and/or any final report produced.

4) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC. Within 5 business days after NYSDEC approval, the RP shall submit a copy of the approved SMP to the owner(s).

5) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control and of any changes in the party/entity responsible for the operation, maintenance, and monitoring of and reporting with respect to any remedial system (Engineering Controls). The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html .

6) The RP shall notify the NYSDEC of any damage to or modification of the systems as required under Section1.3- Notifications of the SMP.

7) The RP is responsible for the proper maintenance of any installed vapor intrusion mitigation systems associated with the site, as required in Appendix 8 (Operation, Monitoring and Maintenance Manual) of the SMP.

8) The RP is responsible for the proper monitoring and maintenance of any installed drinking water treatment system associated with the site, as required in Appendix 8 (Operation, Monitoring and Maintenance Manual).

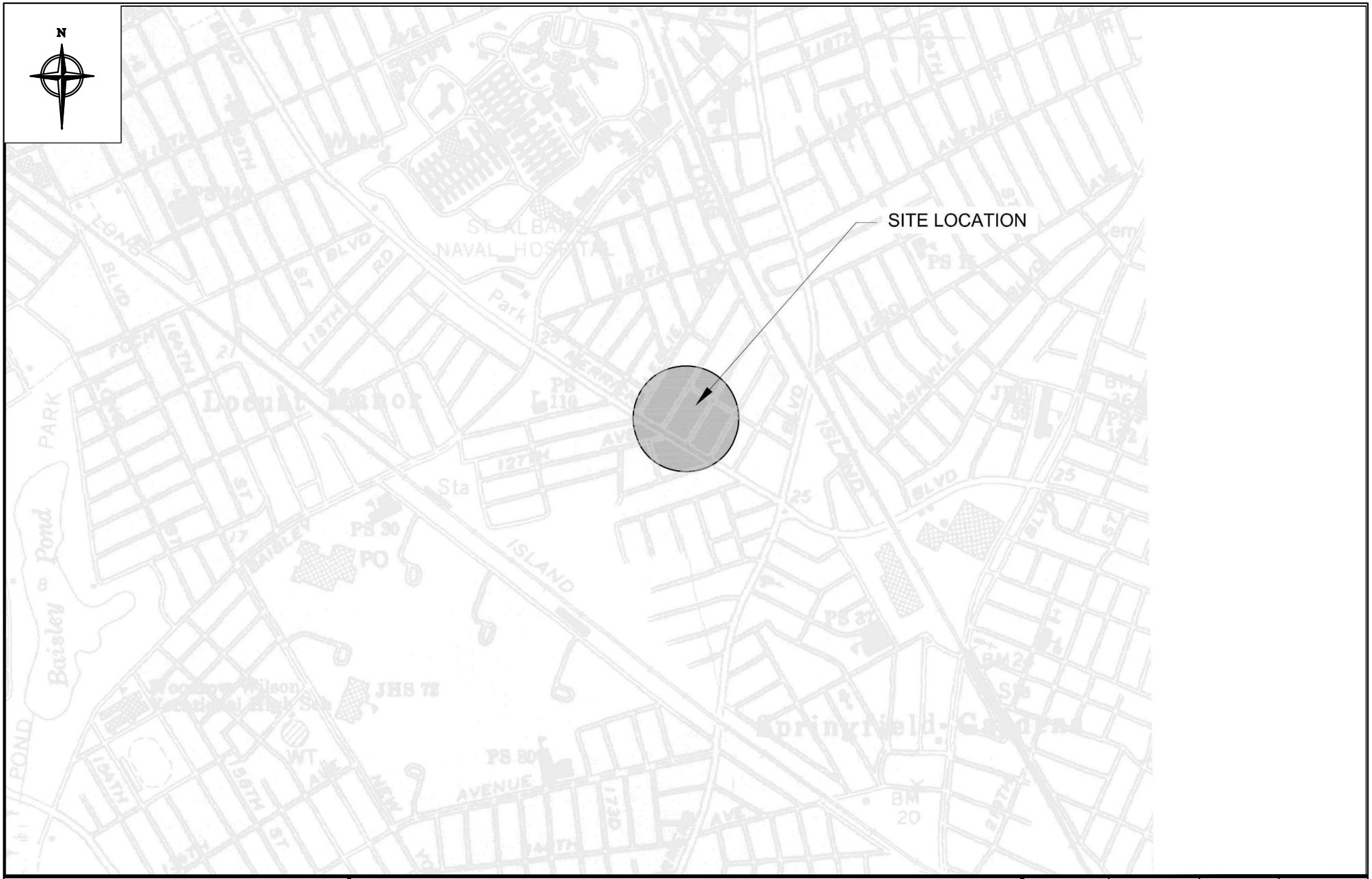
9) Prior to a change in use that impacts the remedial system or requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.

10) Any change in use, change in ownership, change in site classification (*e.g.*, delisting), reduction or expansion of remediation, and other significant changes related to the site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP shall contact the Department to discuss the need to update such documents.

Change in RP ownership and/or control and/or site ownership does not affect the RP's obligations with respect to the site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future site owners and RPs and their successors and assigns are required to carry out the activities set forth above.

Figures



PREPARED BY:

Seacliff ENVIRONMENTAL

Seacliff Environmental, Inc.
P.O. Box 2085
Miller Place, NY 11764
Office # (631) 828-5994
Cell # (631) 742-6948

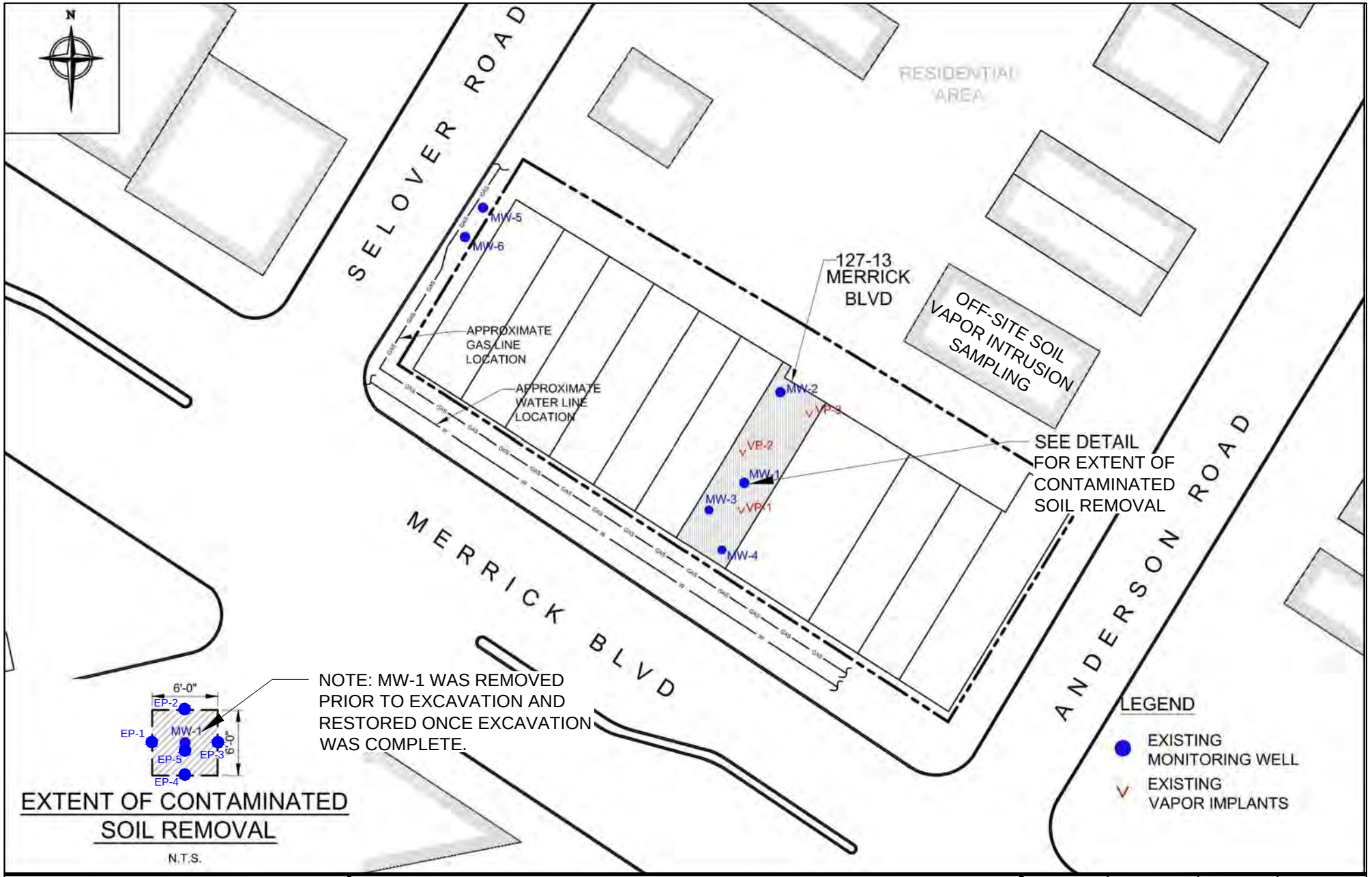
TITLE:

SITE LOCATION MAP

127-13 Merrick Boulevard
Jamaica, New York

DWN:	SCALE:	DATE:	PROJECT NO.:
LR	1" = 1200'	04-30-15	Merrick
CHKD:	APPD:	REV.:	NOTES:
JMD	JMD	-	-

FIGURE NO.: 1



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Office # (631) 828-5994
Cell # (631) 742-6948

TITLE:

AREA OF REMEDIATION

127-13 Merrick Boulevard
Jamaica, New York

DWN:	SCALE:	DATE:	PROJECT NO.:
LR	1" = 40'	04-30-15	Merrick
CHKD:	APPD:	REV.:	NOTES:
JMD	JMD	-	-

FIGURE NO.: 2

GENERAL NOTES-
SUB-SLAB DEPRESSURIZATION SYSTEM
(Soil Gas Mitigation)

I. PURPOSE

The intent of the Sub-Slab Depressurization System described in this plan is to promote public safety and welfare by controlling soil gas intrusion potentially emanating from beneath the existing building sub grade. The system is not intended to regulate flammable vapors that may originate in and propagate from other sources, which include, but are not limited to, ruptured hazardous material transmission lines, underground atmospheric tanks, or similar installations.

II. GENERAL REQUIREMENTS

CODES:
All work shall be in compliance with the current Building Code and policies of the Department of Building and all applicable County, State, and Federal Codes.

INSPECTION:
All work, requiring inspection by the Department of Building, shall be available to the Inspector prior to being covered by subsequent work.

III. MITIGATION REQUIREMENTS

A. MAINTENANCE OF MITIGATION SYSTEMS

All mechanical ventilation systems shall be maintained and serviced in proper working condition and meet all requirements of the Department of Building Electrical and Mechanical Code. The testing, maintenance and service procedure for gas detection and mechanical ventilation systems shall be performed in accordance with the manufacturer's current written instructions and the following:

1. The manufacturer's instructions shall be approved by the Fire Department. A person certified by the Fire Department shall perform testing and servicing of each system.

IV. CONSTRUCTION CRITERIA

A. ACTIVE SYSTEM

The Active System consists of the following: Sub-Slab Vent System and Mechanical Extraction System including controls and alarms.

1. Sub-Slab Vent System

   Sub-Slab Vent System shall consist of Perforated Horizontal Pipes, Under portions of existing cellar slabs, Gravel Blanket Around Perforated Horizontal Pipes, and Vent Risers.

   a. Perforated Horizontal Pipes:
      i. Perforated Horizontal Pipes shall be listed, minimum Schedule 40, slotted or perforated High Density Polyethylene (HDPE) or Polyvinyl Chloride (PVC) pipe or other materials approved by the Department of Building for the intended use.
      ii. Perforated Horizontal Pipe shall be installed as follows:
      - Spacing and location of Perforated Horizontal Pipes shall be as indicated on the plans.
      - Pipes used only as vents may be installed in the horizontal position.
      - Undulations in the Perforated Horizontal Pipes, which may impede the passage of gas, shall be avoided (e.g. Perforated Horizontal Pipes shall not be deformed to pass below interior footings).

   b. Gravel Thickness Around Perforated Horizontal Pipes:
      i. Gravel thickness around Perforated Horizontal Pipes shall be as indicated on the plan details.
      ii. Gravel shall be composed entirely of particles that have no more than one fractured face.
      iii. The gradations of gravel shall conform to Table 1 shown on this sheet.

   c. Vent Risers:
      i. Vent Risers shall be connected to Perforated Horizontal Pipes and constructed of cast or ductile iron. Exception:
      ii. Vent Risers shall be spaced and located as per plan layout.
      iii. Vent Riser outlets shall be located at least:
      - 10 feet above grade,
      - 10 feet away from any window, doors, roof hatch, opening or air intake into the building,
      - 3 feet above highest point of roof within a 10' radius of outlet,
      - 3 feet away from any parapet,
      - 4 feet away from the property line and
      - 5 feet away from any electrical device.

      iv. If rain guards are provided, they shall be non-restricting.

2. Seals at Concrete Slab Penetrations:
   a. To retard soil gas entry, all control joints, isolation joints, construction joints, and any other joints in concrete slabs or between slabs and foundation walls shall be sealed. A continuous formed gap (for example, a "tooled edge") which allows the application of a sealant that will provide a continuous, airtight seal shall be created along all joints. When the slab has cured, the gap shall be cleared of loose material and filled with an elastomeric joint sealant, as defined in ASTM C920-97, and applied in accordance with the manufacturer's recommendations.

3. Mechanical Extraction System

   The Mechanical Extraction System shall consist of Pressure Sensors in Vent Risers, Control/Alarm Panel and Gas extraction powered devices and shall be constructed for the migration of subsurface gas.

   a. Sensors in Vent Risers
      i. Sensors and associated transmitters shall be listed by a recognized testing laboratory for the intended use.
      ii. Sensors and associated wiring shall be immune to radio frequency and infrared remote-transmitters frequency interference.
      iii. Sensors shall be fitted within the vent pipe so that no gas may leak through the fittings.
      iv. The associated wiring and associated raceways shall be:
      - Mounted to a secure surface independent of sensors and their associated transmitter.
      - Protected from physical damage.

   b. Gas Extraction Powered Devices
      i. Gas extraction powered devices shall consist of fans, blowers, or other powered devices to exhaust the space below the concrete slab and shall be capable of ventilating the Perforated Horizontal Pipes spaces to create a negative pressure below the slabs.

4. Alarm Systems
   a. Alarm Systems shall consist of audible and visual signals to notify buildings Superintendent or occupants of mechanical malfunction or failure of active system components.
   b. Audible alarms shall be at least 15dB above ambient noise level.
   c. Visual alarms shall be a minimum of 15-candela output and be located at each audible device.
   d. The audible signal shall be distinctively different from the fire alarm systems.

5. Control Panel
   a. General Installation
      i. Control Panel shall be listed by a recognized testing laboratory.
      ii. Control Panel shall have the following characteristics:
      - Designed not to override the building fire alarm, smoke control and ventilation systems.
      - A manual shall be provided with the Control Panel describing the installation, wiring, operation, maintenance and testing.
      - Control Panel shall monitor the power to Pressure Sensors, annunciator and associated components.

   b. Power Source
      i. Primary Power Source
      - Control Panel shall be hard wired to the building normal power.
      - The circuits supplying power to the Control Panel shall be lockable in the open position.

      ii. Back-Up Power Supply (for control panel and alarm)
      - Back-Up battery or emergency power shall be rated for a minimum of 24 hours for standby mode plus 5 minutes of alarm under full load condition.
      - This Back-Up power shall be available within 60 seconds of primary power loss.

   c. Panel Operation
      i. Device Activation
      - Control Panel shall recognize alarm conditions, and then activate required audible devices, visual devices and Gas Extraction Powered Devices.

B. MISCELLANEOUS SYSTEMS

1. Wiring

   The wiring system shall be in accordance with the NYCDOB Electrical Code, International Building Code, NEC and as required herein, including latest code revisions.

   a. Outdoor Enclosures
      All outdoor enclosures shall be NEMA rated for each particular situation, (wet, submerged or gasous vapors).

   b. Conduit Seal Fittings and Cable Seal Fittings
      Conduit Seal Fittings and Cable Seal Fittings are designed to prevent the passage of gases, vapors, or flames inside the electrical conduits.
      i. Any conduit or cable that penetrates the Concrete Slab shall be provided with a conduit or cable seal.
      ii. Conduit Seal Fittings shall be installed in the vertical portion of conduit where the PVC conduit emerges from a sub-slab location. Rigid material shall be rigid metal that has the same trade size as conduit runs.

   c. Grounding Electrical Systems
      Electrical systems required to be grounded shall be connected to earth using approved methods in accordance with the NYCDOB Electrical Code.

V. SYSTEMS MAINTENANCE

A. PROCEDURES

The test, maintenance and service procedure for the Mechanical Ventilation System shall be performed in accordance with the manufacturer's instructions. Maintenance personnel for the development, shall perform testing and arrange for servicing of the Mechanical Ventilation System, if required.

B. SCHEDULE

Notwithstanding the recommendations of the manufacturer, testing, maintaining and servicing of each system shall be performed in accordance with the stipulations set fourth by the governing regulatory agency, (NYSDEC).

C. REPAIRS

All components required to mitigate soil gases shall be repaired or replaced to the manufacturer's original specification.

D. OCCUPANT NOTIFICATION

A permanent notification shall be provided indicating the presence of the Sub Slab Depressurization System. This notification shall be posted at the entrance to each cellar access, be visible and be legible as approved by the Engineer. See Detail this sheet.

SUB SLAB DEPRESSURIZATION SYSTEM
DO NOT PENETRATE CELLAR
CONCRETE SLAB

Notes:
1. This notification is to be permanently placarded at the cellar access points or other location approved by the Building Inspector at the time of construction.
2. All letters 1/2" (min.) in height.
3. At least one required per individual building unit cellar.
4. This notification shall be posted and maintained.

SSDS Notification Placard

FORM 1 - SUB SLAB DEPRESSURIZATION SYSTEM (SSDS)
INSTALLATION CERTIFICATE
***After installation of the SSDS, a copy of this certificate shall be given to the Building Inspector.**

Site Address:_____
Legal Description:
Section:_____Block:_____Lot:_____
Building
Use:_____

Name:

Mailing Address:

Telephone:

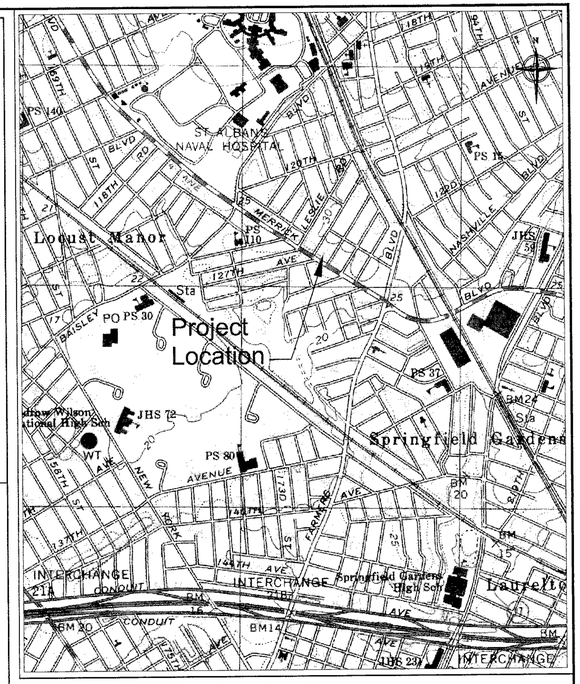
I hereby certify that I have inspected the installation and reviewed the test results of the Sub Slab Depressurization System at the above described property. On the basis of these inspections and tests it is my conclusion that the system was installed in conformity with the recommendations of the manufacturer and the requirements of this Plan. Where the inspection and testing of all or part of the work above is delegated, full responsibility shall be assumed by the Certified Installer whose signature is affixed thereon.

Signed:_____Date:_____

Table 1 - SPECIFICATIONS FOR GRAVEL

SIEVE SIZE	PERCENTAGE PASSING SIEVE	
	3/4" Gravel	3/8" Gravel
1-1/2" (37.5 mm)	100	-
1" (25.0 mm)	90-100	-
3/4" (19.0 mm)	55-85	100
3/8" (9.5 mm)	8-20	85-100
No. 4 (4.75 mm)	0-5	0-30
No. 8 (2.36 mm)	0-5	0-10
No. 200 (75um)	0-2	0-2
ASTM C 131 TEST GRADING	B	C

New York State Dept. of Health Soil Vapor Intrusion Guidance, October 2006.
Once a mitigation system is installed in a building, an information package must be given to the building's owner and tenants, if applicable, to facilitate their understanding of the system's operation, maintenance and monitoring. This package must include the following:
a description of the mitigation system installed and its basic operating principles;
how the owner or tenant can check that the system is operating properly;
how the system will be maintained and monitored and by whom;
a list of appropriate actions for the owner or tenant to take if the system's warning device (e.g., pressure gauge, alarm, etc.) indicates system degradation or failure; and
contact information (e.g., names, telephone numbers, etc.) if the owner or tenant has questions, comments or concerns.
The building's owner should also receive the following information:
any building permits required by local codes;
copies of contracts and warranties; and
a description of the proper operating procedures of any mechanical or electrical system installed, including manufacturer's operation and maintenance instructions and warranties.



Location Map
SCALE: NTS

BUILT AS DESIGNED
*REVISIONS SHOWN ON PLANS
REGARDING LOCATION OF PANELS

STATE OF NEW YORK
KAREN GAIL TYLL
LICENSED PROFESSIONAL ENGINEER
075522

CERTIFIED BY:
KAREN G. TYLL, PE
TYLL ENGINEERING &
CONSULTING, PC
169 COMMACK ROAD, SUITE H173
COMMACK, NY 11725
AUGUST 10, 2017

REV	DATE	CK	DESCRIPTION

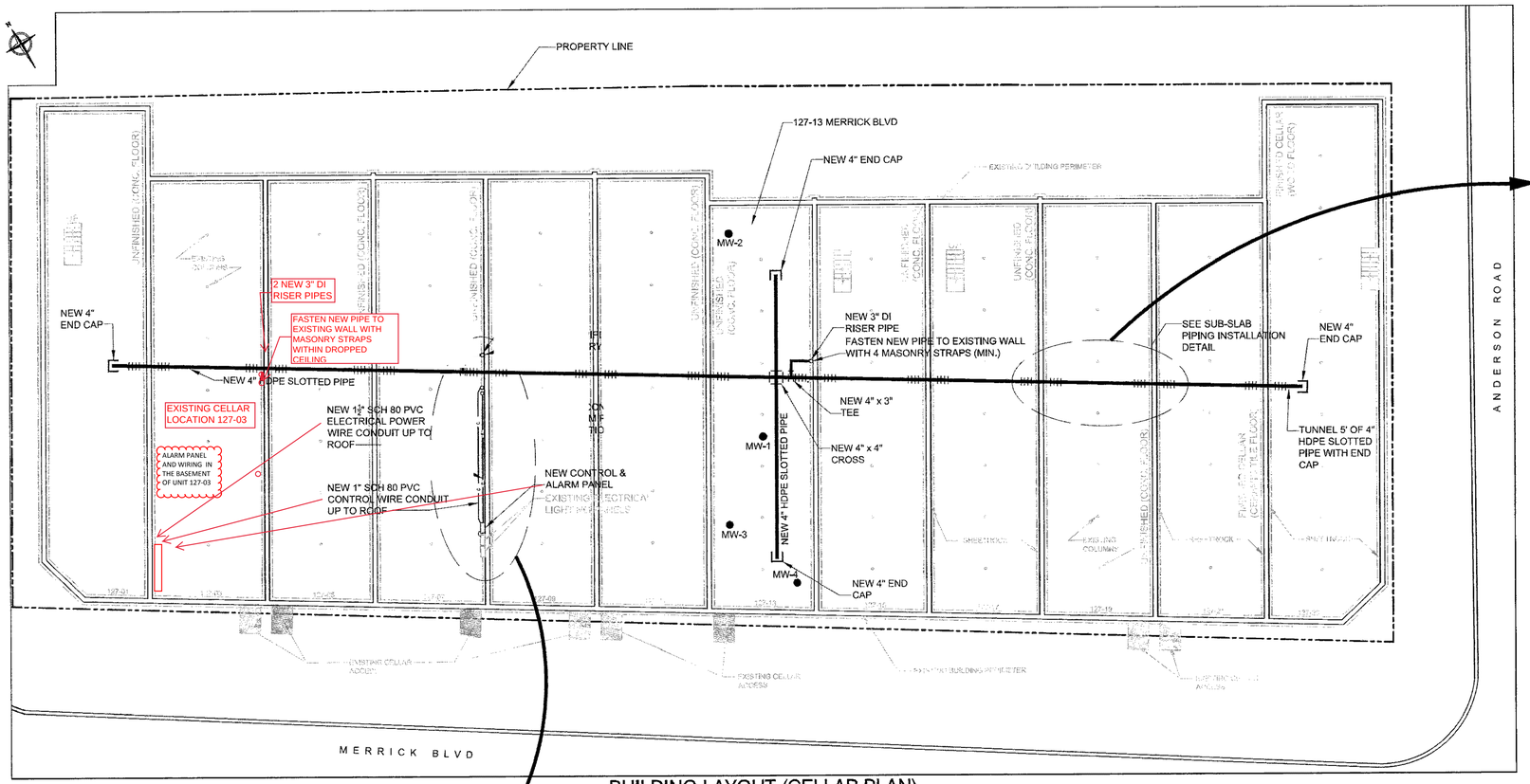
REVISIONS

127-13 Merrick Blvd
Queens, New York
SUB-SLAB DEPRESSURIZATION SYSTEM

J.R. HOLZMACHER P.E., LLC
The Third Generation of Excellence
In Water Supply, Water Resources,
Civil and Environmental Engineering
300 Wheeler Road, Suite 402, Hauppauge, NY 11788
PHONE: (631) 234-2220 FAX: (631) 234-2221 E-MAIL: info@holzmacher.com

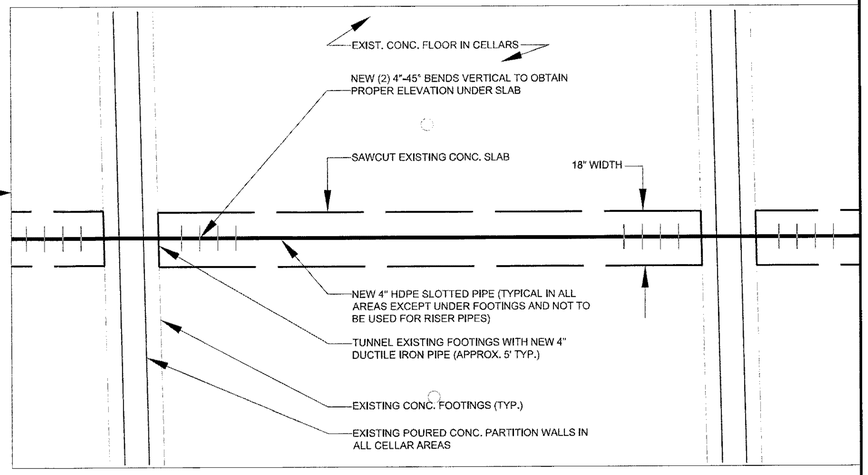
SHEET TITLE:	CONSTRUCTION NOTES		
DESIGNED BY:	AJZ	SCALE:	AS SHOWN
REVIEWED BY:	JRH	DATE:	September 19, 2012
PLAN SHEET BY:	DGH	PROJECT NO:	KoptD 12-01

SHEET 1



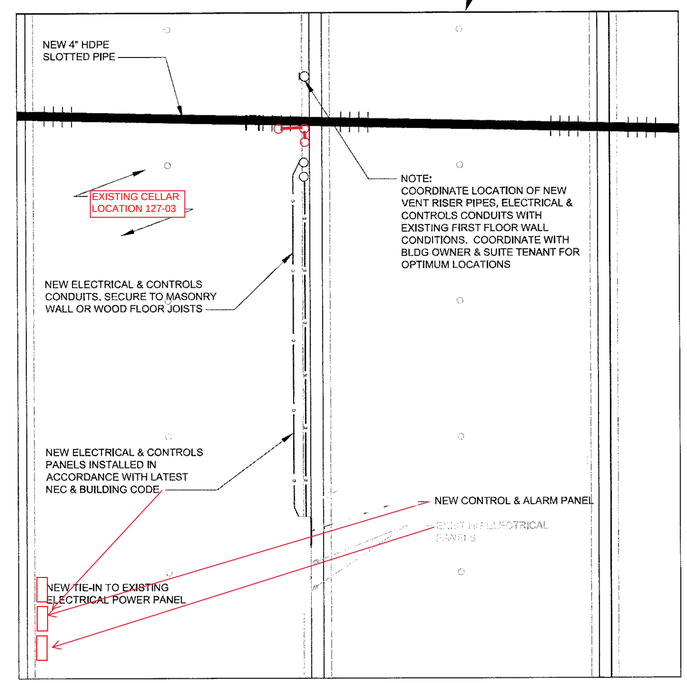
BUILDING LAYOUT (CELLAR PLAN)

SCALE: 1" = 10'



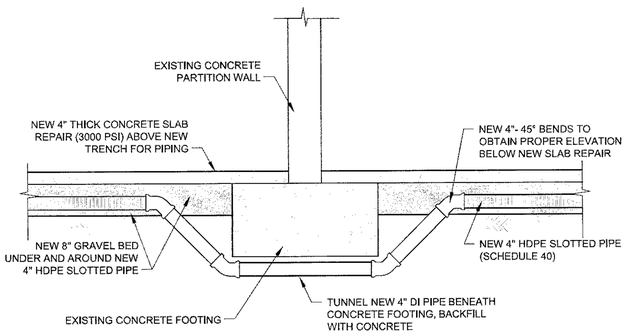
TYPICAL SUB-SLAB PIPING INSTALLATION

SCALE: 1" = 2'



NEW CONTROL AND ALARM PANEL LOCATION

SCALE: 1" = 4'



TYPICAL SECTION AT CELLAR SLABS

SCALE: N.T.S.

BUILT AS DESIGNED
*REVISIONS SHOWN ON PLANS
REGARDING LOCATION OF PANELS

STATE OF NEW YORK · KAREN GAIL TYLL · 079623 · LICENSED PROFESSIONAL ENGINEER

CERTIFIED BY:
KAREN G. TYLL, PE
TYLL ENGINEERING & CONSULTING, PC
169 COMMACK ROAD, SUITE H173
COMMACK, NY 11725
AUGUST 10, 2017

REV	DATE	CK	DESCRIPTION
			REVISIONS

127-13 Merrick Blvd.

Queens, New York

SUB-SLAB DEPRESSURIZATION SYSTEM

J.R. HOLZMACHER P.E., LLC

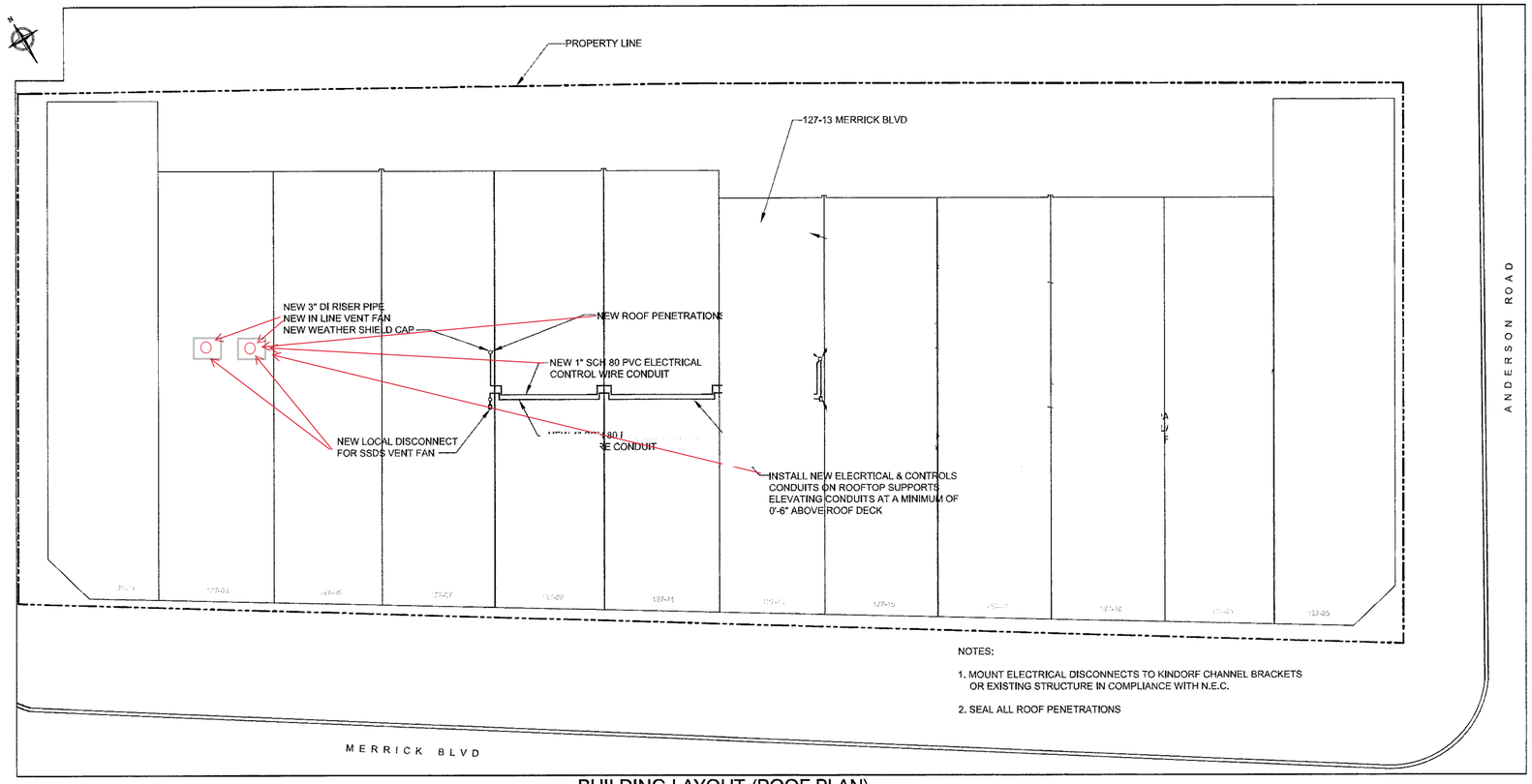
The Third Generation of Excellence In Water Supply, Water Resources, Civil and Environmental Engineering

300 Wheeler Road, Suite 402, Hauppauge, NY 11788

PHONE: (631) 234-2220 FAX: (631) 234-2221 E-MAIL: info@holzmacher.com

SHEET TITLE:	CELLAR SSDS LAYOUT		
DESIGNED BY:	AJZ	SCALE:	AS SHOWN
REVIEWED BY:	JMD	DATE:	September 19, 2012
PLAN SHEET BY:	DGH	PROJECT NO:	KoptD 12-01

SHEET 2

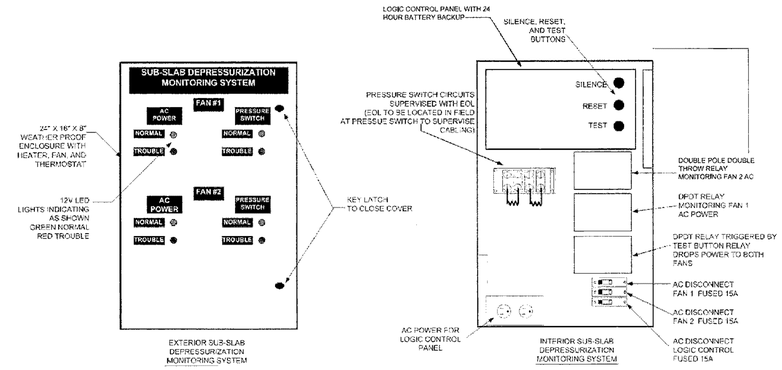


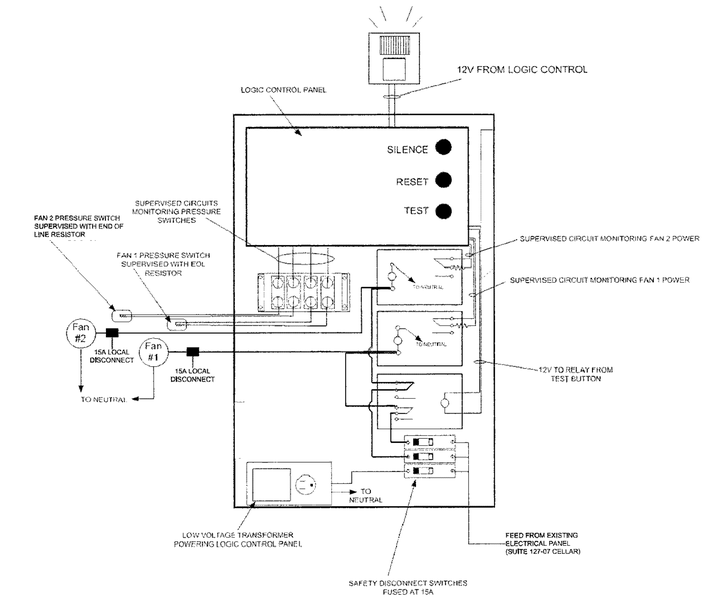
NOTES:

1. MOUNT ELECTRICAL DISCONNECTS TO KINDORF CHANNEL BRACKETS OR EXISTING STRUCTURE IN COMPLIANCE WITH N.E.C.
2. SEAL ALL ROOF PENETRATIONS

BUILDING LAYOUT (ROOF PLAN)

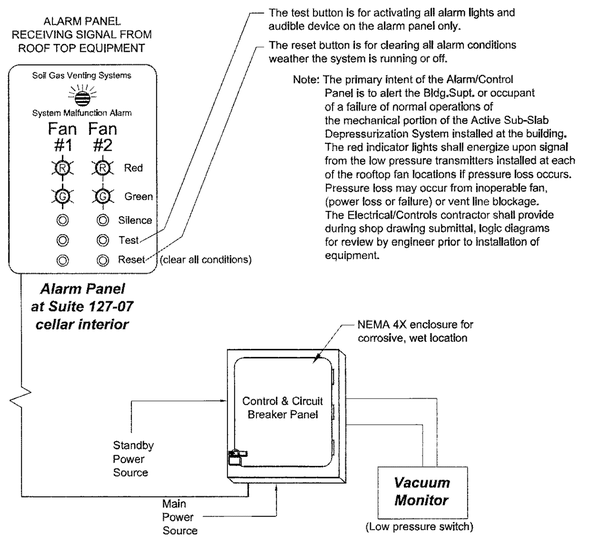
SCALE: 1" = 10'





ELECTRICAL SINGLE LINE DIAGRAM

SCALE: N.T.S.

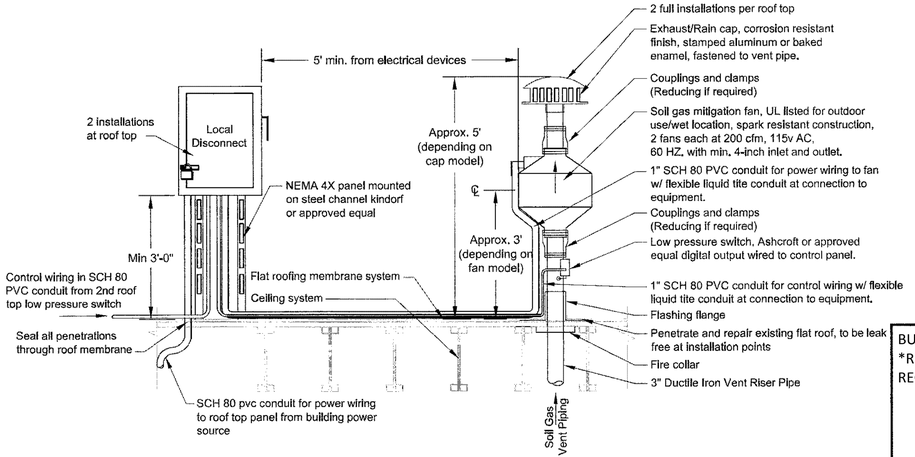


Notes:

1. The Soil Gas Venting System Shall Operate 24 HR./Day Continuously.
2. Building Strobe/Alarms to Sound Simultaneously Upon Any System Malfunction.
3. Standby power shall provide sufficient power to the control panel for 24 hours.

SOIL GAS VENTING SYSTEM ELECTRICAL AND CONTROL PANELS

SCALE: N.T.S.



TYPICAL ROOF TOP EQUIPMENT INSTALLATION

SCALE: N.T.S.

BUILT AS DESIGNED
*REVISIONS SHOWN ON PLANS
REGARDING LOCATION OF PANELS

CERTIFIED BY:
KAREN G. TYLL, PE
TYLL ENGINEERING & CONSULTING, PC
169 COMMACK ROAD, SUITE H173
COMMACK, NY 11725
AUGUST 10, 2017

REV	DATE	CK	DESCRIPTION
			REVISIONS

127-13 Merrick Blvd.

Queens, New York

SUB-SLAB DEPRESSURIZATION SYSTEM

J.R. HOLZMACHER P.E., LLC

The Third Generation of Excellence In Water Supply, Water Resources, Civil and Environmental Engineering

300 Wheeler Road, Suite 402, Hauppauge, NY 11788

PHONE: (631) 234-2220 FAX: (631) 234-2221 E-MAIL: info@holzmacher.com

SHEET TITLE:	ROOF SSDS LAYOUT		
DESIGNED BY:	AJZ	SCALE:	AS SHOWN
REVIEWED BY:	JMD	DATE:	September 19, 2012
PLAN SHEET BY:	DGH	PROJECT NO:	KoptD 12-01

SHEET 3

drawing location on the server: P:\2012\Kopt\D12-01 127-13 Merrick Blvd- Brownfields\Task 2 SSDS Design\CadSSDS Plan Sht 2 rev 3 09-18-12.dwg

Tables

127-13 Merrick Blvd.
Queens, New York 11413
Site Code 241128

Table 1
Volatile Organic Chemicals
Endpoint samples via EPA Method 8260

Client Sample ID:		**SCOs**	**EP-1**	**EP-2**	**EP-3**	**EP-4**	**EP-5**
		Commercial	**3 ft**	**3 ft**	**3 ft**	**3 ft**	**Bott. Sample ~5ft. BG**
Sampling Date:			**04/03/2013**	**04/03/2013**	**04/03/2013**	**04/03/2013**	**04/03/2013**
Analyte:	**Units:**						
1,1,1,2-Tetrachloroethane	PPB	NA	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	PPB	500000	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	PPB	NA	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	PPB	NA	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	PPB	NA	ND	ND	ND	ND	ND
1,1-Dichloroethane	PPB	240000	ND	ND	ND	ND	ND
1,1-Dichloroethene	PPB	500000	ND	ND	ND	ND	ND
1,1-Dichloropropene	PPB	NA	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	PPB	NA	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	PPB	NA	ND	ND	ND	ND	ND
1,2,4,5-Tetramethylbenzene	PPB	NA	ND	ND	ND	ND	440
1,2,4-Trichlorobenzene	PPB	NA	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	PPB	190000	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	PPB	NA	ND	ND	ND	ND	ND
1,2-Dibromoethane	PPB	NA	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	PPB	500000	ND	ND	ND	ND	ND
1,2-Dichloroethane	PPB	30000	ND	ND	ND	ND	ND
1,2-Dichloropropane	PPB	NA	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	PPB	190000	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	PPB	280000	ND	ND	ND	ND	ND
1,3-dichloropropane	PPB	NA	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	PPB	130000	ND	ND	ND	ND	ND
1,4-Dioxane	PPB	130000	ND	ND	ND	ND	ND
2,2-Dichloropropane	PPB	NA	ND	ND	ND	ND	ND
2-Butanone	PPB	500000	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	PPB	NA	ND	ND	ND	ND	ND
2-Chlorotoluene	PPB	NA	ND	ND	ND	ND	ND
2-Hexanone	PPB	NA	ND	ND	ND	ND	ND
2-Propanol	PPB	NA	ND	ND	ND	ND	ND
4-Chlorotoluene	PPB	NA	ND	ND	ND	ND	ND
4-Isopropyltoluene	PPB	NA	ND	ND	ND	ND	21J
4-Methyl-2-pentanone	PPB	NA	ND	ND	ND	ND	ND
Acetone	PPB	500000	56B	49B	59B	43JB	84B
Acrolein	PPB	NA	ND	ND	ND	ND	ND
Acrylonitrile	PPB	NA	ND	ND	ND	ND	ND
Benzene	PPB	44000	ND	ND	ND	ND	ND
Bromobenzene	PPB	NA	ND	ND	ND	ND	ND
Bromochloromethane	PPB	NA	ND	ND	ND	ND	ND
Bromodichloromethane	PPB	NA	ND	ND	ND	ND	ND
Bromoform	PPB	NA	ND	ND	ND	ND	ND
Bromomethane	PPB	NA	ND	ND	ND	ND	ND
Carbon disulfide	PPB	NA	ND	ND	ND	ND	ND
Carbon tetrachloride	PPB	22000	ND	ND	ND	ND	ND

127-13 Merrick Blvd.
Queens, New York 11413
Site Code 241128

Table 1
Volatile Organic Chemicals
Endpoint Samples via EPA Method
8260

Client Sample ID:		**SCOs**	**EP-1**	**EP-2**	**EP-3**	**EP-4**	**EP-5**
		Commercial	**3 ft**	**3 ft**	**3 ft**	**3 ft**	**Bott. Sample ~5ft. BG**
Sampling Date:			**04/03/2013**	**04/03/2013**	**04/03/2013**	**04/03/2013**	**04/03/2013**
Analyte:	**Units:**						
Chlorobenzene	PPB	500000	ND	ND	ND	ND	ND
Chlorodifluoromethane	PPB	NA	ND	ND	ND	ND	ND
Chloroethane	PPB	NA	ND	ND	ND	ND	ND
Chloroform	PPB	350000	ND	ND	ND	ND	ND
Chloromethane	PPB	NA	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	PPB	500000	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	PPB	NA	ND	ND	ND	ND	ND
Dibromochloromethane	PPB	NA	ND	ND	ND	ND	ND
Dibromomethane	PPB	NA	ND	ND	ND	ND	ND
Dichlorodifluoromethane	PPB	NA	ND	ND	ND	ND	ND
Diisopropyl ether	PPB	NA	ND	ND	ND	ND	ND
Ethanol	PPB	NA	ND	ND	ND	ND	ND
Ethylbenzene	PPB	390000	ND	ND	ND	ND	ND
Freon-114	PPB	NA	ND	ND	ND	ND	ND
Hexachlorobutadiene	PPB	NA	ND	ND	ND	ND	ND
Isopropylbenzene	PPB	NA	ND	ND	ND	ND	ND
m,p-Xylene	PPB	500000	ND	ND	ND	ND	ND
Methyl Acetate	PPB	NA	ND	ND	ND	ND	ND
Methyl tert-butyl ether	PPB	500000	ND	ND	ND	ND	ND
Methylene chloride	PPB	500000	23JB	19JB	20JB	20JB	32B
Naphthalene	PPB	500000	12JB	ND	6.5JB	5.9JB	ND
n-Butylbenzene	PPB	500000	ND	ND	ND	ND	ND
n-Propylbenzene	PPB	500000	ND	ND	ND	ND	ND
o-Xylene	PPB	500000	ND	ND	ND	ND	ND
p-Diethylbenzene	PPB	NA	ND	ND	ND	ND	32
p-Ethyltoluene	PPB	NA	ND	ND	ND	ND	ND
sec-Butylbenzene	PPB	500000	ND	ND	ND	ND	31
Styrene	PPB	NA	ND	ND	ND	ND	ND
t-Butyl alcohol	PPB	NA	ND	ND	ND	ND	ND
tert-Butylbenzene	PPB	500000	ND	ND	ND	ND	ND
Tetrachloroethene	PPB	150000	4900	960	840	3700	7600
Toluene	PPB	500000	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	PPB	500000	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	PPB	NA	ND	ND	ND	ND	ND
Trichloroethene	PPB	200000	ND	ND	ND	ND	ND
Trichlorofluoromethane	PPB	NA	ND	ND	ND	ND	ND
Vinyl acetate	PPB	NA	ND	ND	ND	ND	ND
Vinyl chloride	PPB	13000	ND	ND	ND	ND	ND

Notes:
ND - Not detected
NA-Not Available
J- Estimated Concentration
B- Analyte detected in blank
SCOs- Commercial Soil Cleanup Objectives as per Part 375-6.8(b)

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Queens, New York 11413
Site Code 241128

Table 3
Volatile Organic Chemicals for Soils
EPA Method 8260

Client Sample ID:		RSCOs	**MW-2**	**MW-3**	**MW-4**	**MW-5**
Laboratory ID:						
Sampling Date:			**10/05/2011**	**10/05/2011**	**10/04/2011**	**10/05/2011**
Analyte:	**Units:**					
1,1,1,2-Tetrachloroethane	PPM	NA	ND	ND	ND	ND
1,1,1-Trichloroethane	PPM	500	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	PPM	0.6	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	PPM	NA	ND	ND	ND	ND
1,1,2-Trichloroethane	PPM	NA	ND	ND	ND	ND
1,1-Dichloroethane	PPM	240	ND	ND	ND	ND
1,1-Dichloroethene	PPM	500	ND	ND	ND	ND
1,1-Dichloropropene	PPM	NA	ND	ND	ND	ND
1,2,3-Trichlorobenzene	PPM	NA	ND	ND	ND	ND
1,2,3-Trichloropropane	PPM	NA	ND	ND	ND	ND
1,2,4,5-Tetramethylbenzene	PPM	NA	ND	ND	ND	ND
1,2,4-Trichlorobenzene	PPM	NA	ND	ND	ND	ND
1,2,4-Trimethylbenzene	PPM	190	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	PPM	NA	ND	ND	ND	ND
1,2-Dibromoethane	PPM	NA	ND	ND	ND	ND
1,2-Dichlorobenzene	PPM	500	ND	ND	ND	ND
1,2-Dichloroethane	PPM	30	ND	ND	ND	ND
1,2-Dichloropropane	PPM	NA	ND	ND	ND	ND
1,3,5-Trimethylbenzene	PPM	190	ND	ND	ND	ND
1,3-Dichlorobenzene	PPM	280	ND	ND	ND	ND
1,3-dichloropropane	PPM	NA	ND	ND	ND	ND
1,4-Dichlorobenzene	PPM	130	ND	ND	ND	ND
1,4-Dioxane	PPM	130	ND	ND	ND	ND
2,2-Dichloropropane	PPM	NA	ND	ND	ND	ND
2-Butanone	PPM	100	ND	ND	ND	ND
2-Chloroethyl vinyl ether	PPM	NA	ND	ND	ND	ND
2-Chlorotoluene	PPM	NA	ND	ND	ND	ND
2-Hexanone	PPM	NA	ND	ND	ND	ND
2-Propanol	PPM	NA	ND	ND	ND	ND
4-Chlorotoluene	PPM	NA	ND	ND	ND	ND
4-Isopropyltoluene	PPM	10	ND	ND	ND	ND
4-Methyl-2-pentanone	PPM	1.0	ND	ND	ND	ND
Acetone	PPM	500	ND	ND	ND	ND
Acrolein	PPM	NA	ND	ND	ND	ND
Acrylonitrile	PPM	NA	ND	ND	ND	ND
Benzene	PPM	44	ND	ND	ND	ND
Bromobenzene	PPM	NA	ND	ND	ND	ND
Bromochloromethane	PPM	NA	ND	ND	ND	ND

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Queens, New York 11413
Site Code 241128

Table 3
Volatile Organic Chemicals for Soils
EPA Method 8260

Client Sample ID:		RSCOs	**MW-2**	**MW-3**	**MW-4**	**MW-5**
Laboratory ID:						
Sampling Date:			**10/05/2011**	**10/05/2011**	**10/04/2011**	**10/05/2011**
Analyte:	**Units:**					
Bromodichloromethane	PPM	NA	ND	ND	ND	ND
Bromoform	PPM	NA	ND	ND	ND	ND
Bromomethane	PPM	NA	ND	ND	ND	ND
Carbon disulfide	PPM	2.7	ND	ND	ND	ND
Carbon tetrachloride	PPM	22	ND	ND	ND	ND
Chlorobenzene	PPM	500	ND	ND	ND	ND
Chlorodifluoromethane	PPM	NA	ND	ND	ND	1.6J
Chloroethane	PPM	NA	ND	ND	ND	ND
Chloroform	PPM	350	ND	ND	ND	ND
Chloromethane	PPM	NA	ND	ND	ND	ND
cis-1,2-Dichloroethene	PPM	500	ND	ND	ND	ND
cis-1,3-Dichloropropene	PPM	NA	ND	ND	ND	ND
Dibromochloromethane	PPM	NA	ND	ND	ND	ND
Dibromomethane	PPM	NA	ND	ND	ND	ND
Dichlorodifluoromethane	PPM	NA	ND	ND	ND	ND
Diisopropyl ether	PPM	NA	ND	ND	ND	ND
Ethanol	PPM	NA	ND	ND	ND	ND
Ethyl acetate	PPM	NA	ND	ND	ND	ND
Ethylbenzene	PPM	390	ND	ND	ND	ND
Freon-114	PPM	NA	ND	ND	ND	ND
Hexachlorobutadiene	PPM	NA	ND	ND	ND	ND
Isopropyl acetate	PPM	NA	ND	ND	ND	ND
Isopropylbenzene	PPM	2.3	ND	ND	ND	ND
m,p-Xylene	PPM	500	ND	ND	ND	ND
Methyl Acetate	PPM	NA	ND	ND	ND	ND
Methyl tert-butyl ether	PPM	500	ND	ND	ND	ND
Methylene chloride	PPM	500	0.007B	0.0071B	0.0065B	0.0087B
n-Amyl acetate	PPM	NA	ND	ND	ND	ND
Naphthalene	PPM	12	ND	ND	ND	ND
n-Butyl acetate	PPM	NA	ND	ND	ND	ND
n-Butylbenzene	PPM	12	ND	ND	ND	ND
n-Propyl acetate	PPM	NA	ND	ND	ND	ND
n-Propylbenzene	PPM	500	ND	ND	ND	ND
o-Xylene	PPM	500	ND	ND	ND	ND
p-Diethylbenzene	PPM	NA	ND	ND	ND	ND
p-Ethyltoluene	PPM	NA	ND	ND	ND	ND
sec-Butylbenzene	PPM	500	ND	ND	ND	ND
Styrene	PPM	NA	ND	ND	ND	ND

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Table 3
Volatile Organic Chemicals for Soils
EPA Method 8260

Client Sample ID:		RSCOs	**MW-2**	**MW-3**	**MW-4**	**MW-5**
Laboratory ID:						
Sampling Date:			**10/05/2011**	**10/05/2011**	**10/04/2011**	**10/05/2011**
Analyte:	**Units:**					
t-Butyl alcohol	PPM	NA	ND	ND	ND	ND
tert-Butylbenzene	PPM	500	ND	ND	ND	ND
Tetrachloroethene	PPM	150	ND	0.035	0.0024J	ND
Toluene	PPM	500	ND	ND	ND	ND
trans-1,2-Dichloroethene	PPM	500	ND	ND	ND	ND
trans-1,3-Dichloropropene	PPM	NA	ND	ND	ND	ND
Trichloroethene	PPM	200	ND	ND	ND	ND
Trichlorofluoromethane	PPM	NA	ND	ND	ND	ND
Vinyl acetate	PPM	NA	ND	ND	ND	ND
Vinyl chloride	PPM	13	ND	ND	ND	ND

Notes:
All results in ppm
ND - Not detected
NA-Not Available
J- Estimated Concentration
B- Analyte detected in blank
SCOs- Commercial Soil Cleanup Objectives as per Part 375-6.8(b)

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Queens, New York 11413
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Table 4
Semi Volatile Organic Chemicals (SVOCs) for Soils
EPA Method 8270

Client Sample ID:		**SCOs**	**MW-2**	**MW-3**	**MW-4**	**MW-5**
Sampling Date:			**10/05/2011**	**10/05/2011**	**10/04/2011**	**10/05/2011**
Analyte:	**Units:**					
Acenaphthene	PPM	20	ND	ND	ND	ND
Acenaphthylene	PPM	100	ND	ND	ND	ND
Anthracene	PPM	100	ND	ND	ND	ND
Benzo(a)anthracene	PPM	1	ND	ND	ND	ND
Benzo(a)pyrene	PPM	1	ND	ND	ND	ND
Benzo(b)fluoranthene	PPM	1	ND	ND	ND	ND
Benzo(g,h,i)perylene	PPM	100	ND	ND	ND	ND
Benzo(k)fluoranthene	PPM	0.8	ND	ND	ND	ND
Chrysene	PPM	1	ND	ND	ND	ND
Dibenzo(a,h)anthracene	PPM	0.33	ND	ND	ND	ND
Fluoranthene	PPM	100	ND	ND	ND	ND
Fluorene	PPM	30	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	PPM	0.5	ND	ND	ND	ND
Phenanthrene	PPM	100	ND	ND	ND	ND
Pyrene	PPM	100	ND	ND	ND	ND

Notes:
All results in parts per million (ppm)
ND - Not detected
SCOs- Commercial Soil Cleanup Objectives as per Part 375-6.8(b)

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Table 5
TAL Metals Analysis for Soil

Client Sample ID:		SCOs	MW-2	MW-3	MW-4	MW-5
Sampling Date:			**10/05/2011**	**10/05/2011**	**10/04/2011**	**10/05/2011**
Analyte:	**Units:**					
Aluminum	PPM	SB	1440	1790	1620	850
Antimony	PPM	SB	ND	ND	ND	ND
Arsenic	PPM	16	0.414J	0.617	0.573	0.682
Barium	PPM	400	10.1	12.0	10.5	6.71
Beryllium	PPM	590	ND	ND	ND	ND
Cadmium	PPM	9.3	ND	ND	ND	ND
Calcium	PPM	SB	98.7	1060	148	431
Chromium	PPM	400	5.03	6.68	5.40	6.11
Cobalt	PPM	SB	ND	ND	ND	ND
Copper	PPM	270	3.69	5.89	5.05	3.10
Iron	PPM	SB	5520	7380	6930	5360
Lead	PPM	1000	1.43	1.87	1.61	1.80
Magnesium	PPM	SB	521	618	527	384
Manganese	PPM	10000	57.6	112	119	68.3
Mercury	PPM	2.8	0.0134	0.00651J	ND	0.0104
Nickel	PPM	310	5.59	7.74	6.57	4.33
Potassium	PPM	SB	321	394	302	232
Selenium	PPM	1500	ND	ND	ND	ND
Silver	PPM	1500	ND	ND	ND	ND
Sodium	PPM	SB	13.2	19.0	13.9	20.6
Thallium	PPM	SB	ND	ND	ND	ND
Vanadium	PPM	SB	5.05	6.39	5.62	5.85
Zinc	PPM	10000	8.62	11.9	8.56	7.23

Notes:
All results in parts per million (ppm)
ND - Not detected
SCOs- Commercial Soil Cleanup Objectives as per Part 375-6.8(b)

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Table 6
Volatile Organic Chemicals for GW
EPA Method 8260

Client Sample ID:		NYS Groundwater Standards	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	Trip Blank
Sampling Date:			10/27/2011	10/27/2011	10/27/2011	10/27/2011	10/27/2011	10/27/2011	10/27/2011
Analyte:	**Units:**								
1,1,1,2-Tetrachloroethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	PPB	0.2	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	PPB	1	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	PPB	0.04	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-Tetramethylbenzene	PPB	5	ND	ND	1.7	ND	ND	ND	ND
1,2,4-Trichlorobenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	PPB	0.04	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	PPB	3	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	PPB	0.6	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	PPB	3	ND	ND	ND	ND	ND	ND	ND
1,3-dichloropropane	PPB	0.4	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	PPB	NR	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	PPB	3	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	PPB	1	ND	ND	ND	ND	ND	ND	ND
2-Butanone	PPB	50*	ND	ND	ND	ND	ND	ND	ND
2-Chloroethyl vinyl ether	PPB	50*	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	PPB	5	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	PPB	50*	ND	ND	ND	ND	ND	ND	ND
2-Propanol	PPB	7	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	PPB	5	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	PPB	5	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Acetone	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Acrolein	PPB	20	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	PPB	5	ND	ND	ND	ND	ND	ND	ND
Benzene	PPB	1	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Bromoform	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Bromomethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	PPB	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Chlorodifluoromethane	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Chloroethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
Chloroform	PPB	7	ND	ND	ND	ND	ND	ND	ND
Chloromethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	PPB	5	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	PPB	0.4	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	PPB	5	ND	ND	ND	ND	ND	ND	ND

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Table 6
Volatile Organic Chemicals for GW
EPA Method 8260

Client Sample ID:		NYS Groundwater Standards	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	Trip Blank
Sampling Date:			**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**
Analyte:	**Units:**								
Dichlorodifluoromethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
Diisopropyl ether	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Ethanol	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Ethyl acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Freon-114	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	PPB	0.5	ND	ND	ND	ND	ND	ND	ND
Isopropyl acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
m,p-Xylene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Methyl Acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	PPB	10	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	PPB	5	3.8B	5.0B	5.0B	5.3B	6.0B	6.3B	8.0B
n-Amyl acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Naphthalene	PPB	10	ND	ND	ND	ND	ND	ND	ND
n-Butyl acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
n-Propyl acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
o-Xylene	PPB	5	ND	ND	ND	ND	ND	ND	ND
p-Diethylbenzene	PPB	50*	ND	ND	ND	ND	ND	ND	ND
p-Ethyltoluene	PPB	50*	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Styrene	PPB	5	ND	ND	ND	ND	ND	ND	ND
t-Butyl alcohol	PPB	50*	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	PPB	5	**41**	1.9	**190**	**35**	0.67J	ND	ND
Toluene	PPB	5	ND	ND	1.1	ND	0.83J	ND	ND
trans-1,2-Dichloroethene	PPB	5	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	PPB	0.4	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	PPB	5	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	PPB	5	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	PPB	50*	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	PPB	2	ND	ND	ND	ND	ND	ND	ND

Notes:
All results in ppm
ND - Not detected
J- Estimated Concentration
B- Analyte detected in blank
** - Guidance Value*

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Table 7
Semi Volatile Organic Chemicals (SVOCs) for Groundwater
EPA Method 8270

Client Sample ID:		NYS Groundwater Standards	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
Sampling Date:			**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**
Analyte:	**Units:**							
1,2,4-Trichlorobenzene	PPB	5	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	PPB	3	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	PPB	3	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	PPB	3	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	PPB	5	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	PPB	5	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	PPB	10	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	PPB	4.7	ND	ND	ND	ND	ND	ND
2-Nitroaniline	PPB	5	ND	ND	ND	ND	ND	ND
3,3´-Dichlorobenzidine	PPB	5	ND	ND	ND	ND	ND	ND
3-Nitroaniline	PPB	5	ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	PPB	NS	ND	ND	ND	ND	ND	ND
4-Chloroaniline	PPB	5	ND	ND	ND	ND	ND	ND
4-Chlorophenyl phenyl ether	PPB	NS	ND	ND	ND	ND	ND	ND
4-Nitroaniline	PPB	5	ND	ND	ND	ND	ND	ND
Acenaphthene	PPB	20	ND	ND	0.68J	ND	ND	ND
Acenaphthylene	PPB	NS	ND	ND	ND	ND	ND	ND
Aniline	PPB	5	ND	ND	ND	ND	ND	ND
Anthracene	PPB	50	0.89J	ND	ND	ND	ND	ND
Azobenzene	PPB	5	ND	ND	ND	ND	ND	ND
Benzidine	PPB	5	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	PPB	0.002	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	PPB	NS	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	PPB	0.002	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	PPB	5	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	PPB	0.002	ND	ND	ND	ND	ND	ND
Benzyl alcohol	PPB	NS	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy)methane	PPB	NS	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl)ether	PPB	1	ND	ND	ND	ND	ND	ND
Bis(2-chloroisopropyl)ether	PPB	NS	ND	ND	ND	ND	ND	ND
Carbazole	PPB	NS	ND	ND	ND	ND	ND	ND
Chrysene	PPB	0.002	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	PPB	NS	ND	ND	ND	ND	ND	ND
Dibenzofuran	PPB	NS	ND	ND	ND	ND	ND	ND
Fluoranthene	PPB	50	ND	ND	ND	ND	ND	ND
Fluorene	PPB	50	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	PPB	0.04	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	PPB	0.5	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	PPB	5	ND	ND	ND	ND	ND	ND
Hexachloroethane	PPB	5	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	PPB	0.002	ND	ND	ND	ND	ND	ND
Isophorone	PPB	50	ND	ND	ND	ND	ND	ND
Naphthalene	PPB	10*	ND	ND	ND	ND	ND	ND
Nitrobenzene	PPB	0.4	ND	ND	ND	ND	ND	ND
N-Nitrosodimethylamine	PPB	50	ND	ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	PPB	NS	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	PPB	50	ND	ND	ND	1.1J	ND	ND

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Table 7
Semi Volatile Organic Chemicals (SVOCs) for Groundwater
EPA Method 8270

Client Sample ID:		**NYS Groundwater Standards**	**MW-1**	**MW-2**	**MW-3**	**MW-4**	**MW-5**	**MW-6**
Sampling Date:			**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**	**10/27/2011**
Analyte:	**Units:**							
Phenanthrene	PPB	50	0.96J	ND	0.68J	0.85J	ND	ND
Pyrene	PPB	50	ND	ND	ND	ND	ND	ND
Pyridine	PPB	50	ND	ND	ND	ND	ND	ND

Notes:
All results in ppb
ND - Not detected
NS - No Standard
J - Laboratory Estimated Concentration
** - Guidance Value*

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Table 8
TAL Metals Analysis for Groundwater

Client Sample ID:		NYS Groundwater Standards	MW-1	MW-1	MW-2	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-5	MW-6	MW-6
			Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Sampling Date:														
Analyte:	**Units:**													
Aluminum	PPM	SB	6.72	0.0200	43.1	0.0360	38.3	0.0170J	129	0.0670	0.923	0.157	4.30	0.0320
Antimony	PPM	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	PPM	25.0	ND	ND	0.0230J	ND	0.0220J	ND	0.0600	ND	ND	ND	ND	ND
Barium	PPM	1000.0	0.271	0.120	0.292	0.0600	0.430	0.107	1.09	0.113	0.132	0.181	0.107	0.0790
Beryllium	PPM	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	PPM	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	PPM	SB	28.1	30.1	48.5	45.6	32.2	30.9	43.6	32.6	28.6	40.5	32.6	33.5
Chromium	PPM	50.0	0.102	ND	0.160	ND	0.155	ND	0.409	ND	0.0280	0.00600J	0.0440	ND
Cobalt	PPM	SB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	PPM	200.0	0.0280	ND	0.194	ND	0.190	ND	0.508	ND	0.0110J	0.00500J	ND	ND
Iron	PPM	300.0	300	0.289	141	0.0620	131	0.0190J	546	0.141	3.96	3.38	21.3	0.0980
Lead	PPM	25.0	0.0470	ND	0.0760	ND	0.0600	ND	0.165	ND	ND	ND	0.00800	ND
Magnesium	PPM	35000.0	3.45	2.80	11.0	4.51	8.54	2.93	29.0	3.08	5.32	7.36	3.33	2.97
Manganese	PPM	300.0	1.28	0.138	3.39	0.0220	3.45	0.0860	10.8	0.475	0.196	0.273	0.303	0.0510
Mercury	PPM	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	PPM	100.0	0.0690	ND	0.176	0.0210	0.174	ND	0.427	ND	0.0270	0.0150J	ND	ND
Potassium	PPM	SB	7.84	7.98	8.07	2.90	8.84	4.75	28.4	4.80	3.24	4.89	3.34	3.21
Selenium	PPM	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	PPM	50.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	PPM	20000.0	14.2	16.0	13.9	14.2	17.0	17.2	27.2	26.4	46.2	42.8	ND	14.4
Thallium	PPM	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	PPM	SB	0.0170J	ND	0.114	ND	0.0990	ND	0.407	ND	ND	ND	ND	ND
Zinc	PPM	2000.0	0.281	0.0190J	0.481	0.0210	0.330	0.0100J	0.582	0.0110J	0.0800	0.0270	0.129	0.0200

Notes:
All results in parts per million (ppm)
ND - Not detected
J - Laboratory Estimated Concentration

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Table 9
Vapor Sampling

Sample ID	VP-1	VP-1DL	VP-2	VP-2DL	VP-3	VP-3DL
Sampling Date	10/4/2011	10/4/2011	10/4/2011	10/4/2011	10/4/2011	10/4/2011
Matrix	AIR	AIR	AIR	AIR	AIR	AIR
Dilution Factor	120	1200	60	1200	10	400
Units	Ug/M3	Ug/M3	Ug/M3	Ug/M3	Ug/M3	Ug/M3
COMPOUND						
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND
1,1,2-Trichlorotrifluoroethane	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	25.1	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND
1,3-Butadiene	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	ND	ND	ND
2,2,4-Trimethylpentane	ND	ND	3082	3456D	ND	ND
2-Butanone	ND	ND	ND	ND	32.4	ND
2-Chlorotoluene	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	ND	7.37J	ND
4-Methyl-2-Pentanone	ND	ND	ND	ND	18.8J	ND
Acetone	211	ND	427	ND	163	ND
Allyl Chloride	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND
Bromoethene	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	1308	1466JD	396	ND	36.1	ND
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
Cyclohexane	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND
Dichlorotetrafluoroethane	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	8.69J	ND
Heptane	ND	ND	ND	ND	11.1J	ND
Hexachloro-1,3-Butadiene	ND	ND	ND	ND	ND	ND
Hexane	ND	ND	ND	ND	ND	ND
m/p-Xylene	ND	ND	ND	ND	32.6J	ND
Methyl Methacrylate	ND	ND	ND	ND	ND	ND
Methyl tert-Butyl Ether	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	12.5J	ND
o-Xylene	ND	ND	ND	ND	10.4J	ND
Styrene	ND	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	60.6J	ND	57.6J	ND	42.4	ND
Tetrachloroethene	515370E	1966540ED	271247E	1288430ED	13562E	52893ED

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Volatile Compounds in Groundwater
by Method SW 846 8260C

Table 10

Client Sample ID:		*NYS Groundwater Standards Part 703*	MW-1	MW-1	MW-2	MW-2
Sampling Date:			**7/24/2015**	**5/1/2014**	**7/24/2015**	**5/1/2014**
Analyte:	**Units:**					
1,1,1,2-Tetrachloroethane	PPB	5.0	ND	ND	ND	ND
1,1,1-Trichloroethane	PPB	5.0	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	PPB	5.0	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	PPB	5.0	ND	ND	ND	ND
1,1,2-Trichloroethane	PPB	1.0	ND	ND	ND	ND
1,1-Dichloroethane	PPB	5.0	ND	ND	ND	ND
1,1-Dichloroethene	PPB	5.0	ND	ND	ND	ND
1,1-Dichloropropene	PPB	1.0	ND	ND	ND	ND
1,2,3-Trichlorobenzene	PPB	5.0	ND	ND	ND	ND
1,2,3-Trichloropropane	PPB	5.0	ND	ND	ND	ND
1,2,4,5-Tetramethylbenzene	PPB	5.0	ND	ND	ND	ND
1,2,4-Trichlorobenzene	PPB	5.0	ND	ND	ND	ND
1,2,4-Trimethylbenzene	PPB	NA	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	PPB	5.0	ND	ND	ND	ND
1,2-Dibromoethane	PPB	NA	ND	ND	ND	ND
1,2-Dichlorobenzene	PPB	3.0	ND	ND	ND	ND
1,2-Dichloroethane	PPB	0.6	ND	ND	ND	ND
1,2-Dichloropropane	PPB	5.0	ND	ND	ND	ND
1,3,5-Trimethylbenzene	PPB	5.0	ND	ND	ND	ND
1,3-Dichlorobenzene	PPB	3.0	ND	ND	ND	ND
1,3-dichloropropane	PPB	5.0	ND	ND	ND	ND
1,4-Dichlorobenzene	PPB	3.0	ND	ND	ND	ND
1,4-Dioxane	PPB	NA	ND	ND	ND	ND
2,2-Dichloropropane	PPB	5.0	ND	ND	ND	ND
2-Butanone	PPB	NA	ND	ND	ND	ND
2-Chloroethyl vinyl ether	PPB	NA	ND	ND	ND	ND
2-Chlorotoluene	PPB	NA	ND	ND	ND	ND
2-Hexanone	PPB	NA	ND	ND	ND	ND
2-Propanol	PPB	NA	ND	ND	ND	ND
4-Chlorotoluene	PPB	NA	ND	ND	ND	ND
4-Isopropyltoluene	PPB	5.0	ND	ND	ND	ND
4-Methyl-2-pentanone	PPB	NA	ND	ND	ND	ND
Acetone	PPB	50.0	1.8 B	2.1 BJ	1.3 B	2.2 BJ
Benzene	PPB	1.0	ND	ND	ND	ND
Bromobenzene	PPB	5.0	ND	ND	ND	ND
Bromochloromethane	PPB	NA	ND	ND	ND	ND
Bromodichloromethane	PPB	5.0	ND	ND	ND	ND
Bromoform	PPB	50.0	ND	ND	ND	ND
Bromomethane	PPB	5.0	ND	ND	ND	ND
Carbon disulfide	PPB	NA	ND	ND	ND	ND
Carbon tetrachloride	PPB	5.0	ND	ND	ND	ND
Chlorobenzene	PPB	5.0	ND	ND	ND	ND

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Volatile Compounds in Groundwater
by Method SW 846 8260C

Table 10

Client Sample ID:		*NYS Groundwater Standards Part 703*	MW-1		MW-1		MW-2		MW-2	
Sampling Date:			**7/24/2015**		**5/1/2014**		**7/24/2015**		**5/1/2014**	
Analyte:	**Units:**									
Chlorodifluoromethane	PPB	NA	ND		ND		ND		ND	
Chloroethane	PPB	5.0	ND		ND		ND		ND	
Chloroform	PPB	7.0	ND		ND		ND		ND	
Chloromethane	PPB	NA	ND		ND		ND		ND	
cis-1,2-Dichloroethene	PPB	5.0	ND		ND		ND		ND	
cis-1,3-Dichloropropene	PPB	0.4	ND		ND		ND		ND	
Cyclohexane	PPB	NA	ND		ND		ND		ND	
Dibromochloromethane	PPB	50.0	ND		ND		ND		ND	
Dibromomethane	PPB	5.0	ND		ND		ND		ND	
Dichlorodifluoromethane	PPB	NA	ND		ND		ND		ND	
Diisopropyl ether	PPB	NA	ND		ND		ND		ND	
Ethanol	PPB	NA	ND		ND		ND		ND	
Ethylbenzene	PPB	5.0	ND		ND		ND		ND	
Freon-114	PPB	NA	ND		ND		ND		ND	
Hexachlorobutadiene	PPB	0.5	ND		ND		ND		ND	
Isopropylbenzene	PPB	5.0	ND		ND		ND		ND	
m,p-Xylene	PPB	5.0	ND		ND		ND		ND	
Methyl Acetate	PPB	NA	ND		ND		ND		ND	
Methyl tert-butyl ether	PPB	10.0	ND		ND		ND		ND	
Methylene chloride	PPB	5.0	6.1	B	4.2	B	6.8	B	6.2	B
Naphthalene	PPB	10.0	ND		ND		ND		ND	
n-Butylbenzene	PPB	5.0	ND		ND		ND		ND	
n-Propylbenzene	PPB	5.0	ND		ND		ND		ND	
o-Xylene	PPB	5.0	ND		ND		ND		ND	
p-Diethylbenzene	PPB	NA	ND		ND		ND		ND	
p-Ethyltoluene	PPB	NA	ND		ND		ND		ND	
sec-Butylbenzene	PPB	5.0	ND		ND		ND		ND	
Styrene	PPB	5.0	ND		ND		ND		ND	
t-Butyl alcohol	PPB	NA	ND		ND		ND		ND	
tert-Butylbenzene	PPB	5.0	ND		ND		ND		ND	
Tetrachloroethene	PPB	5.0	0.64	J	ND		ND		ND	
Toluene	PPB	5.0	ND		ND		ND		ND	
trans-1,2-Dichloroethene	PPB	5.0	ND		ND		ND		ND	
trans-1,3-Dichloropropene	PPB	NA	ND		ND		ND		ND	
Trichloroethene	PPB	5.0	ND		ND		ND		ND	
Trichlorofluoromethane	PPB	5.0	ND		ND		ND		ND	
Vinyl acetate	PPB	NA	ND		ND		ND		ND	
Vinyl chloride	PPB	5.0	ND		ND		ND		ND	

Standards listed per NYCRR Part 703

Notes:
B - Analyte detected in Method Blank
J - Laboratory Estimated Concentration
NA - Not Analyzed
ND - Not Detected

continued on next page

127-13 Merrick Blvd.
Queens, New York 11413
NYS DEC Site Code 241128

Volatile Compounds in Groundwater
by Method SW 846 8260C

Table 10

Client Sample ID:		*NYS Groundwater Standards Part 703*	MW-3	MW-3	MW-4	MW-4
Sampling Date:			**7/24/2015**	**5/1/2014**	**7/24/2015**	**5/1/2014**
Analyte:	**Units:**					
1,1,1,2-Tetrachloroethane	PPB	5.0	ND	ND	ND	ND
1,1,1-Trichloroethane	PPB	5.0	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	PPB	5.0	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	PPB	5.0	ND	ND	ND	ND
1,1,2-Trichloroethane	PPB	1.0	ND	ND	ND	ND
1,1-Dichloroethane	PPB	5.0	ND	ND	ND	ND
1,1-Dichloroethene	PPB	5.0	ND	ND	ND	ND
1,1-Dichloropropene	PPB	1.0	ND	ND	ND	ND
1,2,3-Trichlorobenzene	PPB	5.0	ND	ND	ND	ND
1,2,3-Trichloropropane	PPB	5.0	ND	ND	ND	ND
1,2,4,5-Tetramethylbenzene	PPB	5.0	ND	ND	ND	ND
1,2,4-Trichlorobenzene	PPB	5.0	ND	ND	ND	ND
1,2,4-Trimethylbenzene	PPB	NA	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	PPB	5.0	ND	ND	ND	ND
1,2-Dibromoethane	PPB	NA	ND	ND	ND	ND
1,2-Dichlorobenzene	PPB	3.0	ND	ND	ND	ND
1,2-Dichloroethane	PPB	0.6	ND	ND	ND	ND
1,2-Dichloropropane	PPB	5.0	ND	ND	ND	ND
1,3,5-Trimethylbenzene	PPB	5.0	ND	ND	ND	ND
1,3-Dichlorobenzene	PPB	3.0	ND	ND	ND	ND
1,3-dichloropropane	PPB	5.0	ND	ND	ND	ND
1,4-Dichlorobenzene	PPB	3.0	ND	ND	ND	ND
1,4-Dioxane	PPB	NA	ND	ND	ND	ND
2,2-Dichloropropane	PPB	5.0	ND	ND	ND	ND
2-Butanone	PPB	NA	ND	ND	ND	ND
2-Chloroethyl vinyl ether	PPB	NA	ND	ND	ND	ND
2-Chlorotoluene	PPB	NA	ND	ND	ND	ND
2-Hexanone	PPB	NA	ND	ND	ND	ND
2-Propanol	PPB	NA	ND	ND	ND	ND
4-Chlorotoluene	PPB	NA	ND	ND	ND	ND
4-Isopropyltoluene	PPB	5.0	ND	ND	ND	ND
4-Methyl-2-pentanone	PPB	NA	ND	ND	ND	ND
Acetone	PPB	50.0	1.9 B	2.2 BJ	1.5 B	2.3 BJ
Benzene	PPB	1.0	ND	ND	ND	ND
Bromobenzene	PPB	5.0	ND	ND	ND	ND
Bromochloromethane	PPB	NA	ND	ND	ND	ND
Bromodichloromethane	PPB	5.0	ND	ND	ND	ND
Bromoform	PPB	50.0	ND	ND	ND	ND
Bromomethane	PPB	5.0	ND	ND	ND	ND
Carbon disulfide	PPB	NA	ND	ND	ND	ND
Carbon tetrachloride	PPB	5.0	ND	ND	ND	ND
Chlorobenzene	PPB	5.0	ND	ND	ND	ND

Notes:
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J - Laboratory Estimated Concentration
NA - Not Analyzed
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continued on next page

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Volatile Compounds in Groundwater
by Method SW 846 8260C

Table 10

Client Sample ID:		***NYS Groundwater Standards Part 703***	**MW-3**	**MW-3**	**MW-4**	**MW-4**
Sampling Date:			**7/24/2015**	**5/1/2014**	**7/24/2015**	**5/1/2014**
Analyte:	**Units:**					
Chlorodifluoromethane	PPB	NA	ND	ND	ND	ND
Chloroethane	PPB	5.0	ND	ND	ND	ND
Chloroform	PPB	7.0	ND	ND	ND	ND
Chloromethane	PPB	NA	ND	ND	ND	ND
cis-1,2-Dichloroethene	PPB	5.0	ND	ND	ND	ND
cis-1,3-Dichloropropene	PPB	0.4	ND	ND	ND	ND
Cyclohexane	PPB	NA	ND	ND	ND	ND
Dibromochloromethane	PPB	50.0	ND	ND	ND	ND
Dibromomethane	PPB	5.0	ND	ND	ND	ND
Dichlorodifluoromethane	PPB	NA	ND	ND	ND	ND
Diisopropyl ether	PPB	NA	ND	ND	ND	ND
Ethanol	PPB	NA	ND	ND	ND	ND
Ethylbenzene	PPB	5.0	ND	ND	ND	ND
Freon-114	PPB	NA	ND	ND	ND	ND
Hexachlorobutadiene	PPB	0.5	ND	ND	ND	ND
Isopropylbenzene	PPB	5.0	ND	ND	ND	ND
m,p-Xylene	PPB	5.0	ND	ND	ND	ND
Methyl Acetate	PPB	NA	ND	ND	ND	ND
Methyl tert-butyl ether	PPB	10.0	ND	ND	ND	ND
Methylene chloride	PPB	5.0	7 B	5.7 B	6.7 B	5.8 B
Naphthalene	PPB	10.0	ND	ND	ND	ND
n-Butylbenzene	PPB	5.0	ND	ND	ND	ND
n-Propylbenzene	PPB	5.0	ND	ND	ND	ND
o-Xylene	PPB	5.0	ND	ND	ND	ND
p-Diethylbenzene	PPB	NA	ND	ND	ND	ND
p-Ethyltoluene	PPB	NA	ND	ND	ND	ND
sec-Butylbenzene	PPB	5.0	ND	ND	ND	ND
Styrene	PPB	5.0	ND	ND	ND	ND
t-Butyl alcohol	PPB	NA	ND	ND	ND	ND
tert-Butylbenzene	PPB	5.0	ND	ND	ND	ND
Tetrachloroethene	PPB	5.0	ND	ND	ND	ND
Toluene	PPB	5.0	ND	ND	ND	ND
trans-1,2-Dichloroethene	PPB	5.0	ND	ND	ND	ND
trans-1,3-Dichloropropene	PPB	NA	ND	ND	ND	ND
Trichloroethene	PPB	5.0	ND	ND	ND	ND
Trichlorofluoromethane	PPB	5.0	ND	ND	ND	ND
Vinyl acetate	PPB	NA	ND	ND	ND	ND
Vinyl chloride	PPB	5.0	ND	ND	ND	ND

Standards listed per NYCRR Part 703

Notes:
B - Analyte detected in Method Blank
J - Laboratory Estimated Concentration
NA - Not Analyzed
ND - Not Detected

APPENDIX 4 – ENVIRONMENTAL EASEMENT/NOTICE/ DEED RESTRICTION

APPENDIX 5 – FIELD SAMPLING AND QUALITY ASSURANCE PROJECT PLAN

APPENDIX 6 – HEALTH AND SAFETY PLAN AND CAMP

APPENDIX 7 - SITE MANAGEMENT FORMS

APPENDIX 8 - O&M MANUAL (SSDS)

APPENDIX 9 – PROGRESS REPORT TO NYSDEC

DATED

MARCH 12, 2015