Popular Hand Laundry

KINGS, NEW YORK

Final Engineering Report

NYSDEC Site Number: V00170

Prepared for:

88 Ingraham Realty Corp.
7700 Bella Verde Way
Delray Beach, FL 33446

Prepared by:

EnviroTrac Engineering PE PC
5 Old Dock Road
Yaphank, NY 11980
631-924-3001

JULY 2017

CERTIFICATIONS

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

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

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

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

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

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

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Dale C. Konas, PE, of 5 Old Dock Road, Yaphank, NY 11980, am certifying as Owner's Designated Site Representative for the site.

081035
NYS Professional Engineer #

7/19/17
Date

Signature

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LIST OF ACRONYMS

AS	Air Sparging
CAMP	Community Air Monitoring Plan
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
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
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
SCO	Soil Cleanup Objective
SMP	Soil Management Plan
SSD	Sub-Slab Depressurization
SVE	Soil Vapor Extraction
VCA	Voluntary Cleanup Agreement

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FINAL ENGINEERING REPORT

1.0 BACKGROUND AND SITE DESCRIPTION

88 Ingraham Realty Corp., Popular Hand Laundry, and Cleaners of Richmond Hill, Inc. entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) in September 1998, to investigate and remediate a 0.2-acre property located in Brooklyn, Kings County, New York. Remedial measures were implemented at the Site to address soil, soil vapor, and groundwater contamination. The property is and will be used for commercial use.

The Site is located in the County of Kings, New York and is identified as Section 10, Block 2998 and Lot 19 on the City of New York Tax Map # 13B. The Site is situated on an approximately 0.2-acre area bounded by Ingraham Street to the north, a commercial property to the south, a commercial property to the east, and a commercial property to the west (see Figure 1). The boundaries of the Site are fully described in Appendix A: Survey Map, Metes and Bounds.

An electronic copy of this FER with all supporting documentation is included as Appendix B.

2.0 SUMMARY OF SITE REMEDY

2.1 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) were identified for this site.

2.1.1 Groundwater RAOs

RAOs for Public Health Protection

- Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater.

RAOs for Environmental Protection

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

2.1.2 Soil RAOs

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.1.3 **Soil Vapor RAOs**

RAOs for Public Health Protection

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

2.2 DESCRIPTION OF SELECTED REMEDY

The Site was remediated in accordance with the remedy selected by the NYSDEC in the RAWP dated August 1998, the Final Air Sparge (AS)/ Soil Vapor Extraction (SVE) System Design dated September, 2008, and the approval letter from NYSDEC dated June 17, 2016 (SSD Design Plan).

The factors considered during the selection of the remedy are those listed in 6NYCRR 375-1.8. The following are the components of the selected remedy:

1. Construction and maintenance of a soil cover system consisting of the building concrete floor slab to prevent human exposure to remaining contaminated soil/fill remaining at the site;

2. The operation of an Air Sparge (AS) / Soil Vapor Extraction (SVE) system to address groundwater contamination and provide a means of depressurization of the underlying building soil to prevent vapor migration into the occupied space of the building.;

3. Installation and operation of a Sub-Slab Depressurization (SSD) system as a replacement for the above mentioned AS/SVE system for the purpose of maintaining a negative pressure in the underlying soil of the building and prevent the migration of vapors into the building occupied space;

4. Execution and recording of a Declaration of Covenants and Restrictions to restrict land use and prevent future exposure to any contamination remaining at the site.

5. Institutional Controls (IC);

- The property subject to this Declaration of Covenants and Restrictions is as shown on Figure 1.
- Unless prior written approval by the NYSDEC or, if the NYSDEC shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, where contamination remains at the property subject to the provisions of the SMP, there shall be no construction, use or occupancy of the property that results in the disturbance or excavation of the property which threatens the integrity of the ECs or which results in unacceptable human exposure to contaminated soils.
- The owner of the property shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of the ECs required for the remedy, which are described in the SMP, unless in each instance the owner first obtains a written waiver of such prohibition from the NYSDEC or relevant agency.
- The owner of the property shall prohibit the property from ever being used for purposes other than for Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) without the express written waiver of such prohibition by the NYSDEC or relevant agency.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Kings County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain approval to do so from the NYSDEC.
- The owner of the property shall provide access to and cooperate with the responsible party to allow the responsible party to arrange for a

periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or relevant agency, which will certify that the ICs and ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

- The owner of the property shall continue in full force and effect any ICs and ECs required for the remedy and maintain such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or relevant agency, in compliance with the approved SMP, which is incorporated and made enforceable hereto, subject to modifications as approved by the NYSDEC or relevant agency.

- The Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the property, and shall provide that the owner and its successors and assigns consent to enforcement by the NYSDEC or relevant agency of the prohibitions and restrictions that the VCA requires to be recorded, and hereby covenant not to contest the authority of the NYSDEC or relevant agency to seek enforcement.

- Any deed of conveyance of the property, or any portion thereof, shall recite, unless the NYSDEC or relevant agency has consented to the termination of such covenants and restrictions that said conveyance is subject to the Declaration of Covenants and Restrictions.

- A sub-slab depressurization system (SSDS) installed at the Site will be certified and inspected on an annual basis.

6. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Declaration of Covenants and Restrictions, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

7. Periodic certification of the institutional and engineering controls listed above.

3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS

The remedy for this Site was performed as a single project, and no interim remedial measures, operable units or separate construction contracts were performed.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RAWP for the Popular Hand Laundry Site, dated August 1998 by Dvirka and Bartilucci (D&B), the Final Air Sparge (AS)/ Soil Vapor Extraction (SVE) System Design dated September, 2008 by Tyree, and the approval letter from NYSDEC dated June 17, 2016 for the SSD Design Plan. All deviations from the RAWP and SSD Design Plan are noted below.

4.1 GOVERNING DOCUMENTS

4.1.1 Site Specific Health & Safety Plan (HASP)

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

The Health and Safety Plan (HASP) was complied with for all remedial and invasive work performed at the Site.

4.2 REMEDIAL PROGRAM ELEMENTS

4.2.1 Contractors and Consultants

- EnviroTrac, Yaphank, NY: Operation, Maintenance, and Monitoring (OM&M) of AS/SVE system, installation of SSD system, and all groundwater, soil, soil gas, and indoor air sampling conducted from DATE to the time of this report.
- Blasko Electric, Long Island City, NY: Installation of all electrical components associated with the installation of the SSD system.
- Engineer of Record: Dale C. Konas, PE, EnviroTrac Engineering PE PC, Yaphank, NY

4.2.2 Site Preparation

- August 8, 2016 - Mobilization: EnviroTrac mobilized to the Site on this date in preparation of the installation of the SSD system and the decommissioning of the AS/SVE system. This included taking delivery of all equipment and machinery to be utilized;

- Agency Approvals and Permits;
    - August 1997 – NYSDEC approval of RAWP
    - June 17, 2016 – NYSDEC approval of SSD Remedial Design Plan.

4.2.3 Documentation of agency approvals required by the RAWP and SSD Design Plan are included in Appendix D. 4.2.3 General Site Controls

- Site security: The installation of the SSD system and decommissioning of the AS/SVE system was conducted over the course of one work day. The work zone was cordoned off using traffic cones, wooden barricades, and caution tape. At the conclusion of the construction related tasks, the work zone isolation devices were removed;
- Job site record keeping: All applicable job site records were recorded into a daily field log on an as needed basis. The log included personnel present onsite, logs of subcontractors onsite, tailgate safety meeting minutes, photo documentation of construction and demolition activities, and records of SSD system startup testing;

4.2.4 Reporting

- Photo Log: The digital photo log required by the RAWP is included in electronic format in Appendix E.

4.3 REMEDIAL PERFORMANCE/DOCUMENTATION SAMPLING

4.3.1 Previously Installed AS/SVE System

A SVE/AS remediation system, consisting of one (1) SVE well (SVE-1) and one (1) AS well (AS-1) located in the sidewalk to the north of the Site building, was previously installed and operated by Miller Environmental Group, Inc. (MEG) at the Site from 2001 to 2005. The controls for the system were installed in the partial basement of the building. Figure 2 shows the location of the MEG SVE/AS system. In 2005, Tyree demonstrated that the MEG SVE/AS system was designed insufficiently and replaced that system with a new SVE/AS system at the Site in 2008. The Tyree SVE/AS system consisted of two (2) SVE wells (SV-5 and SV-6) and two (2) AS wells (AS-3 and AS-4) that were installed beneath the building slab. The AS portion of the Tyree system operated from 2009 to August, 2015. The SVE portion of the Tyree system operated from 2009 to August, 2016.

Figure 3 shows the Tyree SVE/AS system. Based on SVE/AS system monitoring data, EnviroTrac recommended that the AS portion of the system be shut down since groundwater contaminants had reached asymptotic levels. The AS portion of the system was shut down in August, 2015. The SVE system remained in operation to address potential vapor intrusion concerns. The Status Report dated October, 2015 by EnviroTrac concluded that concentrations in groundwater did not rebound with the AS system off. Furthermore, although SVE emissions indicate trace recoverable chlorinated compounds were present, the SVE operation would continue pending a vapor intrusion investigation. The groundwater monitoring results reported in the following Status Reports from December, 2015 to June, 2016 showed an overall continued decreasing trend of target VOCs in wells located within the building footprint.

Influent and effluent air samples were collected from the SVE system by EnviroTrac in August, 2015 and October and November, 2016. Readings were also measured from the influent and effluent sampling ports using a photoionization detector (PID). Tables 1 and 2 summarize the SVE emissions in August, 2015 and in October and November, 2016. PID readings were reported in quarterly Status Reports, which were provided to the NYSDEC. PID readings measured from October, 2015 to July, 2016 for the SVE influent port ranged from 0.0 to 4.0 parts per million (ppm). PID readings measured from October, 2015 to July, 2016 for the SVE effluent port ranged from 0.0 to 1.6 ppm.

In August, 2016, the SVE system was shut down and replaced with a SSDS blower or fan that draw vapors from the existing SVE wells (SV-5 and SV-6) in the building. The SVE/AS system shed was then disconnected and removed from the Site.

4.4 CONTAMINATION REMAINING AT THE SITE

4.4.1 Soil

Remaining soil contamination is located beneath the Site near the former dry cleaning machine, near a washer and trough in the southern portion of the building, in the central portion of the garage, and in the basement near the sewer piping. The soil sample results indicated that DCE and VC were detected above the NYSDEC UUSCOs in shallow (6’-7’ below grade) soil and PCE was detected above the NYSDEC RUSCO near the washer machine and trough and RRUSCO within the central portion of the garage, both within the shallow soil (0’-4’ below grade). All soil sample concentrations were detected below the NYSDEC Commercial Use Soil Cleanup Objectives. The soil contamination

will remain in place to maintain the structural integrity of the building at the Site. Table 3 summarizes the remaining soil sample exceedances above the NYSDEC UUSCOs collected during 1996-1997 and 2005. Figure 2 shows the historical soil sample target CVOC results above NYSDEC UUSCOs.

4.4.2 Groundwater

Remaining groundwater contamination is present beneath the Site and downgradient of the Site along Ingraham Street. In June, 2015, EnviroTrac made the argument that contamination found in off-Site wells were likely attributable to an off-Site source of solvent groundwater contamination caused by other responsible parties located upgradient of the Site. The Status Report for the December, 2015 sampling requested that monitoring wells located within the building and off-Site along the northern portion of Ingraham Street should no longer be sampled due to poor well construction (small diameter size) for some of the wells, limited ability to gain access to the interior of the building, and an overall decrease in groundwater contamination levels when compared to previous groundwater monitoring events.

Based on the December, 2015 (last indoor groundwater sampling event), DCE is present in the wells SV-6 (20'), MW-6 (30'), G-2, AS-3, and AS-4 above the NYSDEC Groundwater Standard. DCE results range from 13 to 86 ug/l. The most recent groundwater sampling event performed for the wells located along the south side of Ingraham Street occurred in September, 2016 which shows an overall decrease in groundwater contamination levels for multi-level well NW-2 and MW-2 when compared to previous groundwater monitoring events. DCE, PCE, TCE, and VC were not detected in MW-2. The concentrations of DCE, PCE, TCE, and VC detected in NW-2@20', NW-2@30', NW-2@40', and NW-2@50' were detected above the NYSDEC Groundwater Standards, but were overall similar to the concentrations detected during the June, 2016 event. Table 4 summarizes the groundwater monitoring well sample target CVOC results collected from the interior wells within the building from 2009 to December, 2015. Table 5 summarizes the groundwater monitoring well sample target CVOC results collected from the exterior wells along the south side of Ingraham Street from 2005 to September, 2016. Figure 4 shows the groundwater sample target CVOC results above NYSDEC Groundwater Standards for the latest sampling event in September, 2016.

4.4.3 Soil Vapor and Indoor Air

Remaining soil gas contamination is present beneath the building at the Site. Based on the soil vapor intrusion investigation results performed at the Site in February, 2016,

mitigation is required for Site building due to the concentrations of PCE and TCE in the sub-slab soil vapor. In August, 2016, the previous SVE/AS system was disconnected and removed after reaching asymptotic levels for both soil and groundwater and replaced with a SSDS, which is the current operating mitigation system. Table 6 summarizes the soil gas sampling results from October, 2004, June, 2006, and February, 2016. Table 7 summarizes the indoor and outdoor/ambient air sampling results from October, 2004, June, 2006, and February, 2016. Figure 5 shows the historical and most recent soil gas well locations, sub-slab soil vapor sample locations, indoor air sample locations, and outdoor/ambient air locations with target CVOC results.

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

4.5 CAP SYSTEM

Exposure to remaining contamination in soil/fill at the Site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 12 inches of concrete building slabs. Figure 6 shows the location of each cover type built at the Site. An Excavation Work Plan, which outlines the procedures required in the event the cover system and/or underlying residual contamination are disturbed, is provided in Appendix B of the SMP.

4.6 OTHER ENGINEERING CONTROLS

Since remaining contaminated soil, groundwater, and soil vapor exists beneath the site, Engineering Controls (EC) are required to protect human health and the environment. The Site has the following primary Engineering Controls, as described in the following subsections.

4.6.1 SSD System

The results of a soil vapor intrusion investigation performed in February, 2016 at the Site, showed that PCE and TCE present in the sub-slab soil gas was elevated and mitigation was required. A letter dated June 17, 2016 from the NYSDEC approved

EnviroTrac's SSDS Design Plan dated June 16, 2016 and allowed the Tyree SVE/AS system to be disconnected, removed, and replaced with a SSDS. In August, 2016, the Tyree SVE/AS system shed was disconnected and removed from the Site and replaced with an SSDS blower/fan. Figure 2 shows the Engineering Controls for the Site, which include the SSDS Site Plan and SSDS Radius of Influence.

4.6.1.1 Conceptual Remedial Approach

The SSD system is comprised of a vacuum blower that was connected to the existing network of piping that is used to induce a vacuum at the two (2) existing SVE wells located within the building. The vacuum provides a negative pressure gradient under the entire extent of the floor slab, thereby eliminating the potential for soil vapor to migrate into the building.

4.6.1.2 System Design and Installation:

The SSD system uses the two (2) existing SVE wells, SV-5 and SV-6, which are constructed of 2-inch diameter schedule 40 PVC and consist of 5-feet of riser pipe and 15 feet of 0.02-slotted screen, located beneath the concrete slab floor within the building. The SVE well piping, which is routed up to and along the first-floor ceiling, exits the front, or north side, of the building. The individual lateral pipes, which are constructed of 2-inch schedule 40 PVC, are manifolded together into one (1) 4-inch schedule 40 PVC header prior to connecting to the inlet of the vacuum blower, which is mounted to the exterior wall of the building. The effluent connection of the blower was piped upward along the exterior wall of the building and discharges approximately 2-feet above the second story roof line. The vacuum blower utilized is a model HS2000E, manufactured by RadonAway and is capable of producing a minimum of 40cfm @ a vacuum of 15 "H2O. The blower consists of an integral enclosure rated for indoor/outdoor use and an internal condensate bypass. Electrical power is provided to the blower via the existing electrical service, which consists of a 100A distribution panel, located within the basement of the building. An outdoor rated 110V GFCI electrical outlet with a weather resistant cover was installed adjacent to the vacuum blower and the blower power cord in connected. As-built drawings for the installed SSD system are included as Figure 8 and Figure 9.

During the startup of the SSD system, the system was tested and found to be operating as designed, and providing adequate vacuum to the building sub-slab soils. Vacuum response readings were collected from the network of vacuum monitoring points located throughout the building. Readings collected ranged from 0.021 to 0.390 "H2O, which exceeds the minimum vacuum requirement of 0.020 "H2O (5 pascals). Recorded

results of the system startup testing can be seen in Appendix H. It should be noted that in order to maintain the minimum required vacuum response throughout the footprint of the building, a minimum operational vacuum of 11.0 “H2O and a flow rate of 20 cfm should be maintained at each of the two extraction points.

4.6.1.3 SSD System O&M

A copy of the SSD system O&M manual is included in Appendix G for reference. The O&M manual includes instructions relating to the startup, shutdown, and operation of the system, and includes specific component manufacturers instructions, manuals, and warrantee information.

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

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

4.7 INSTITUTIONAL CONTROLS

The Site remedy requires that a Declaration of Covenants and Restrictions be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to commercial or industrial uses only.

The Declaration of Covenants and Restrictions for the Site was executed by the Department on November 16, 2015, and filed with the New York City Clerk on November 16, 2015. The County Recording Identifier number for this filing is 2016010500232001. A copy of the Declaration and proof of filing is provided in Appendix C.

4.8 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

A SVE/AS remediation system, consisting of one (1) SVE well (SVE-1) and one (1) AS well (AS-1) located in the sidewalk to the north of the Site building, was previously installed and operated by MEG at the Site from 2001 to 2005. The controls for the system

were installed in the partial basement of the building. This system was installed to comply with the RAWP dated 1998 by D&B.

In 2005, Tyree demonstrated that the MEG SVE/AS system was designed insufficiently (was not addressing the on-Site soil and groundwater contamination) and replaced that system with a new SVE/AS system at the Site in 2008. Tyree submitted the Final AS/SVE System Design Including Operation, Maintenance and Monitoring Manual to the NYSDEC in September, 2008. The Tyree SVE/AS system consisted of two (2) SVE wells (SV-5 and SV-6) and two (2) AS wells (AS-3 and AS-4) that were installed beneath the building slab. The AS portion of the Tyree system operated from 2009 to August, 2015. The SVE portion of the Tyree system operated from 2009 to July, 2015 by Tyree, and by EnviroTrac in August, 2015. Based on SVE/AS system monitoring data, EnviroTrac recommended that the AS portion of the system be shut down since groundwater contaminants had reached asymptotic levels. Draft SMP and FER reports were submitted to the NYSDEC by Tyree in June, 2015.

The AS portion of the system was shut down in August, 2015. The SVE system remained in operation to address potential vapor intrusion concerns. The Status Report dated October, 2015 by EnviroTrac concluded that concentrations in groundwater did not rebound with the AS system off. Furthermore, although SVE emissions indicate trace recoverable chlorinated compounds were present, the SVE operation would continue pending a vapor intrusion investigation. The groundwater monitoring results reported in the December 2015 Status Report show a continued decreasing trend of target VOCs in wells located within the building footprint.

A soil vapor intrusion investigation was performed in February, 2016 by EnviroTrac to determine if a mitigation system was required to address any remaining vapors beneath the Site building. Based on the soil vapor intrusion investigation results, mitigation is required for the Site building due to the concentrations of PCE and TCE in the sub-slab soil vapor. In August, 2016, the SVE system was shut down and replaced with a SSDS blower that draw vapors from the existing SVE wells (SV-5 and SV-6) in the building. The SVE/AS system shed was then disconnected and removed from the Site. The SSDS Design Plan was submitted to the NYSDEC on June 16, 2016. Post mitigation indoor air sample results will be provided to the NYSDEC in a separate document.

TABLES

Table 1
SVE Vapor Sampling Results - VCP Site No. V00170
Popular Hand Laundry Site
88 Ingraham St.
Brooklyn, NY

Sample Date August 20, 2015

Air Emission VOCs- Pounds Per Hour

Emission rates in terms of pounds per hour (lbs/hr) for VOCs are calculated using the pollutant emission rate in parts per million (ppm/dry), flow rate in dscfm (Qs), molecular weight of the pollutant (MW), 60 minutes /hour, divided by 385.3x $10E^6$ dscf/lb-mole @ 68 F.

$$\text{Lbs/hr} = \frac{\text{PPM x Qs x MW x 60}}{385.3\text{x } 10E^6}$$

Pre-Carbon Filters

Compound	MW	PPBv	PPM	Q CFM	Lbs/Hr	Lbs/Hr	Tons/Yr
Acetone	58.08	26.60	0.0266	65	1.564E-05	0.00002	6.85E-05
Benzene	78.11	0.71	0.000708	65	5.598E-07	0.00000	2.45E-06
Carbon Disulfide	76.14	0.83	0.000828	65	6.381E-07	0.00000	2.80E-06
Carbon_tetrachloride	153.82	0.178	0.000178	65	2.771E-07	0.00000	1.21E-06
Chloroform	119.38	1.41	0.00141	65	1.704E-06	0.00000	7.46E-06
Cumene (isopropylbenzene)	120.2	1.49	0.00149	65	1.813E-06	0.00000	7.94E-06
Cyclohexane	84.16	0.716	0.000716	65	6.099E-07	0.00000	2.67E-06
1,4-Dichlorobenzene	147	1.56	0.00156	65	2.321E-06	0.00000	1.02E-05
Dichlorodifluoromethane	120.91	0.582	0.000582	65	7.123E-07	0.00000	3.12E-06
1,1-Dichloroethane	98.96	2.36	0.00236	65	2.364E-06	0.00000	1.04E-05
cis-1,2-Dichloroethylene	96.94	118	0.118	65	1.158E-04	0.00012	5.07E-04
trans-1,2-Dichloroethylene	96.94	11.2	0.0112	65	1.099E-05	0.00001	4.81E-05
Ethanol	46.07	73.4	0.0734	65	3.423E-05	0.00003	1.50E-04
Ethylbenzene	106.17	5.82	0.00582	65	6.254E-06	0.00001	2.74E-05
4-Ethyltoluene	120.19	2.73	0.00273	65	3.321E-06	0.00000	1.45E-05
Heptane	100.2	0.706	0.000706	65	7.160E-07	0.00000	3.14E-06
Hexane	86.18	1.42	0.00142	65	1.239E-06	0.00000	5.43E-06
Isopropyl alcohol	60.1	22.9	0.0229	65	1.393E-05	0.00001	6.10E-05
Methyl ethyl ketone	72.11	1.86	0.00186	65	1.358E-06	0.00000	5.95E-06
Methyl isobutyl ketone (MIBK)	100.16	0.654	0.000654	65	6.630E-07	0.00000	2.90E-06
Methylene_chloride	84.93	4.41	0.00441	65	3.791E-06	0.00000	1.66E-05
Styrene	104.15	0.508	0.000508	65	5.355E-07	0.00000	2.35E-06
Tetrachloroethylene	165.83	116	0.116	65	1.947E-04	0.00019	8.53E-04
Tetrahydrofuran	72.11	0.766	0.000766	65	5.591E-07	0.00000	2.45E-06
Toluene	92.14	15.6	0.0156	65	1.455E-05	0.00001	6.37E-05
1,2,4- trichlorobenzene	181.45	5.51	0.00551	65	1.012E-05	0.00001	4.43E-05
1,1,1-Trichloroethane	133.4	1.33	0.00133	65	1.796E-06	0.00000	7.87E-06
Trichloroethylene	131.39	53.3	0.0533	65	7.089E-05	0.00007	3.10E-04
Trichlorofluoromethane	137.37	0.376	0.000376	65	5.228E-07	0.00000	2.29E-06
1,3,5-Trimethylbenzene	120.19	1.44	0.00144	65	1.752E-06	0.00000	7.67E-06
Vinyl_chloride	62.5	1.71	0.00171	65	1.082E-06	0.00000108	4.74E-06
m/p-Xylene	106.17	21.3	0.0213	65	2.289E-05	0.00002	1.00E-04
o-Xylene	106.17	5.73	0.00573	65	6.158E-06	0.00001	2.70E-05
n-Butylbenzene	134.22	0.566	0.000566	65	7.690E-07	0.00000	3.37E-06
					Total Lbs/Hr:	**0.00055**	

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Table 2
Summary of Air Sparge Shutdown Testing
Former Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Sample ID	Influent (Pre-Carbon)			Effluent (Post-Carbon)
System Operation	SVE	SVE/AS	SVE/AS	SVE
Sample Date	10/1/2015	11/9/2015	11/11/2015	10/1/2015
Total VOCs (Lbs/Hr)	0.0005	0.0005	0.00024	0.00020

Notes:

Influent and effluent vapor samples collected on October 1, 2015 represent Soil Vapor Extraction (SVE) ba
Extraction (SVE) baseline concentrations.
With the SVE system operating, the Air Sparge (AS) was turned on and a vapor sample was collected on 11/9/15.
After allowing the SVE/AS systems to operate for 3 days, a second influent vapor sample was collected on 11/11/15.

Table 3
Remaining Soil Sample Exceedances Above NYSDEC UUSCOs
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Sample ID	GP1 (0'-2')	GP2 (0'-2')	GP3 (0'-2')	GP3 (0'-2')	GP4 (0'-2')	S1 (6'-7')	S2 (0'-2')	NYSDEC UUSCO	NYSDEC Residential USCO	NYSDEC Restricted Residential USCO	NYSDEC Commercial USCO
Sample Date	1996-1997										
Sample Units	ug/kg										
Trichloroethene	ND	ND	ND	ND	ND	ND	20	470	10,000	21,000	200,000
Cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	**9,500**	35	250	59,000	100,000	500,000
Tetrachloroethene	ND	**11,000**	33	ND	ND	ND	140	1,300	5,500	19,000	150,000
Vinly Chloride	ND	ND	ND	ND	ND	**140**	ND	20	210	900	13,000

Sample ID	G1 (0'-4')	G1 (4'-8')	G1 (8'-12')	G2 (0'-4')	G2 (4'-8')	G2 (8'-12')	G3 (0'-4')	G3 (4'-8)	G3 (8'-12')	NYSDEC UUSCO	NYSDEC Residential USCO	NYSDEC Restricted Residential USCO	NYSDEC Commercial USCO
Sample Date	12/1/2005												
Sample Units	ug/kg												
Trichloroethene	296	17	19	1.04	1.08	1.11	10	4	51	470	10,000	21,000	200,000
Cis-1,2-Dichloroethene	**325**	52	84	1.19	1.24	1.07	9	5	84	250	59,000	100,000	500,000
Tetrachloroethene	**19,400**	26	74	10	3	2.11	170	39	137	1,300	5,500	19,000	150,000
Vinly Chloride	2.87	1.17	1.17	1.08	1.12	1.16	1.25	1.1	1.16	20	210	900	13,000

Sample ID	B4 (0'-4')	B4 (4'-8')	B4 (8'-12')	B5 (0'-4')	B5 (4'-8')	B5 (8'-12')	B6 (0'-4')	B6 (4'-8')	B6 (8'-12')	NYSDEC UUSCO	NYSDEC Residential USCO	NYSDEC Restricted Residential USCO	NYSDEC Commercial USCO
Sample Date	12/1/2005												
Sample Units	ug/kg												
Trichloroethene	249	11	4	2	2	5	18	29	2.68	470	10,000	21,000	200,000
Cis-1,2-Dichloroethene	32.9	6	4	1.17	1.24	1.19	71	33.3	3.08	250	59,000	100,000	500,000
Tetrachloroethene	**5,730**	59	46	15	22	33	36	23.2	5.07	1,300	5,500	19,000	150,000
Vinly Chloride	32.9	1.12	1.12	1.06	1.12	1.08	2.84	33.3	2.79	20	210	900	13,000

Notes:
Reported sample results were limited to target chlorinated volatile organic compounds (CVOCs).
ug/kg = micrograms per kilogram
ND = Not Detected
Bolded values indicate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Part 375 Subpart 375-6 Unrestricted Use Soil Cleanup Objective.
Yellow shaded values indicate an exceedance of the NYSDEC Part 375 Subpart 375-6 Residential Use Soil Cleanup Objective.
Orange shaded values indicate an exceedance of the NYSDEC Part 375 Subpart 375-6 Restricted-Residential Use Soil Cleanup Objective.

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TABLE 4

INTERIOR GROUND WATER SAMPLE RESULTS FOR TARGET CVOCs

Popular Hand Laundry - VCP No. V00170, 88 Ingraham Street, Brooklyn, NY

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-4	9/23/09	**154**	**5.21**	**11.2**	NS
	11/15/10	**239**	4.54	**14.0**	**18.6**
	2/25/11	**167**	ND	**8.61**	**2.48**
	11/3/11	**80.6**	**6.85**	**19.8**	**2.93**
	2/28/12	**64.3**	2.46	**13.7**	ND
	5/30/12	**129**	1.40	**18.5**	**4.60**
	8/16/12	**111**	1.80	**13.6**	**3.60**
	11/19/12	**84.6**	1.10	**8.40**	**3.00**
	2/26/13	**86.2**	1.10	**9.50**	**3.20**
	5/29/13	**77.1**	0.80	**12.4**	**2.80**
	9/13/13	**60.5**	0.78	**8.40**	**3.20**
	12/13/13	**54.8**	ND	**6.40**	**3.40**
	3/25/14	**65.3**	ND	4.80	**4.10**
	7/8/14	**47.1**	0.31	4.80	**3.20**
	9/11/14	**56.4**	0.37	**6.00**	**3.50**
	1/16/15	**48.6**	ND	4.80	**6.20**
	5/14/15	**58.0**	ND	**7.50**	**5.60**
	8/21/15	**75.5**	ND	**5.20**	**7.70**
	12/03/15	ND	ND	ND	ND
	6/24/16	NS	NS	NS	NS
	9/07/16	NS	NS	NS	NS
SV/MW-5 (20')	9/23/09	**268**	**55.1**	**8.28**	NS
	11/15/10	NS	NS	NS	NS
	2/25/11	**165**	**6.94**	**6.13**	ND
	11/3/11	**80.0**	**14.9**	4.39	ND
	2/29/12	**100**	4.46	3.21	ND
	5/30/12	**136**	**15.5**	**6.10**	**2.40**
	8/16/12	**151**	**17.1**	**7.20**	**3.00**
	11/19/12	**85.7**	**10.8**	4.40	1.10
	2/26/13	NS	NS	NS	NS
	5/29/13	NS	NS	NS	NS
	9/13/13	NS	NS	NS	NS
	12/13/13	NS	NS	NS	NS
	3/25/14	NS	NS	NS	NS
	7/8/14	NS	NS	NS	NS
	9/11/14	NS	NS	NS	NS
	1/16/15	NS	NS	NS	NS
	5/14/15	NS	NS	NS	NS
	8/21/15	4.40	3.10	ND	ND
	12/3/2015	ND	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
AS-3	9/23/09	**221**	**8.46**	**33.1**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	2.56	0.60	ND	ND
	11/2/11	**43.6**	1.10	**6.54**	ND
	2/29/12	**55.2**	ND	**5.14**	ND
	5/30/12	**15.3**	0.81	2.40	ND
	8/16/12	**42.2**	2.50	2.30	**13.7**
	11/19/12	**32.4**	2.70	**7.40**	ND
	2/26/13	**62.3**	1.40	4.90	ND
	5/29/13	**21.3**	0.69	2.00	ND
	9/13/13	**45.8**	2.30	**8.10**	0.26
	12/13/13	**9.50**	ND	2.00	ND
	3/25/14	**22.5**	ND	2.17	ND
	7/8/14	**21.8**	1.70	3.90	ND
	9/11/14	**44.2**	0.97	**6.90**	ND
	1/16/15	**7.50**	ND	1.70	ND
	5/14/15	**9.10**	ND	1.90	ND
	8/21/15	**96.0**	**14.6**	**47.6**	1.20
	12/3/2015	**13**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
AS-4	9/23/09	**342**	**12.1**	**52.6**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	**257**	ND	3.27	**6.63**
	11/2/11	**84.0**	ND	1.65	1.58
	2/29/12	**158**	ND	4.70	**15.6**
	5/30/12	**218**	ND	3.10	**13.5**
	8/16/12	**238**	ND	2.30	**13.7**
	11/19/12	**195**	ND	1.70	**26.0**
	2/26/13	**265**	ND	2.10	**32.0**
	5/29/13	**246**	ND	2.80	**41.8**
	9/13/13	**215**	ND	1.40	**74.6**
	12/13/13	**185**	ND	1.10	**42.8**
	3/25/14	**282**	ND	1.53	**50.8**
	7/8/14	**234**	ND	1.10	**62.9**
	9/11/14	**239**	ND	1.50	**22.1**
	1/16/15	**190**	ND	1.40	**14.9**
	5/14/15	**290**	ND	**5.60**	**28.0**
	8/21/15	**329**	ND	5.00	**32.1**
	12/3/2015	**86**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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TABLE 4

INTERIOR GROUND WATER SAMPLE RESULTS FOR TARGET CVOCs

Popular Hand Laundry - VCP No. V00170, 88 Ingraham Street, Brooklyn, NY

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
SV/MW-5 (30')	9/23/09	ND	4.80	ND	NS
	11/15/10	**20.0**	**9.18**	**6.30**	**13.1**
	2/25/11	**8.89**	ND	0.75	**3.03**
	11/3/11	1.83	ND	ND	ND
	2/29/12	3.76	ND	ND	ND
	5/30/12	**10.3**	ND	ND	**3.70**
	8/16/12	**7.90**	ND	0.26	**3.40**
	11/19/12	**6.60**	ND	0.26	**2.60**
	2/26/13	**5.30**	ND	0.32	1.70
	5/29/13	**7.00**	ND	ND	1.90
	9/13/13	4.00	ND	ND	0.91
	12/13/13	**6.10**	ND	ND	**3.30**
	3/25/14	**8.05**	ND	ND	**4.20**
	7/8/14	4.90	ND	ND	**2.50**
	9/11/14	**7.20**	ND	ND	**2.80**
	1/16/15	**5.90**	ND	ND	**2.90**
	5/14/15	**6.00**	ND	ND	**2.80**
	8/21/15	ND	ND	ND	ND
	12/3/2015	ND	ND	ND	ND
	12/3/2015 Duplicate	ND	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
SV/MW-6 (20')	9/23/09	**437**	**32.5**	**19.5**	NA
	11/15/10	**240**	**23.1**	**19.9**	**9.00**
	2/25/11	**130**	**5.15**	3.53	ND
	11/3/11	**82.6**	**6.41**	4.10	ND
	2/28/12	**58.6**	4.47	2.83	ND
	5/30/12	**99.2**	**14.2**	4.40	0.3
	8/16/12	**59.4**	**8.30**	2.50	0.6
	11/19/12	**55.9**	4.70	2.40	0.3
	2/26/13	**54.5**	1.70	1.70	0.3
	5/29/13	**26.4**	**5.50**	2.80	ND
	9/13/13	**44.7**	**5.00**	3.90	ND
	12/13/13	**28.3**	2.40	2.40	ND
	3/25/14	**25.0**	3.68	2.00	ND
	7/8/14	**12.4**	1.90	1.40	ND
	9/11/14	**17.2**	1.60	1.70	ND
	1/16/15	**17.2**	0.61	1.10	ND
	5/14/15	**11.0**	1.40	1.00	ND
	8/21/15	**20.4**	ND	ND	ND
	12/3/2015	**19**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
SVMW-6 (30')	9/23/09	**672**	**12.8**	**92.3**	NA
	11/15/10	**658**	**10.5**	**77.8**	**10.0**
	2/25/11	**475**	**164**	2.70	1.53
	11/3/11	**395**	3.08	**36.3**	1.35
	2/28/12	**412**	**7.98**	**63.7**	**9.50**
	5/30/12	**763**	**8.70**	**101**	**11.3**
	8/16/12	**734**	**8.00**	**97.2**	**12.6**
	11/19/12	**569**	4.70	**63.6**	**5.90**
	2/26/13	**664**	**8.40**	**87.1**	**19.7**
	5/29/13	**603**	**5.70**	**76.8**	**11.3**
	9/13/13	**641**	**5.20**	**75.6**	**13.9**
	12/13/13	**468**	**7.10**	**74.4**	**34.7**
	3/25/14	**390**	**8.88**	**83.3**	**9.90**
	7/8/14	**557**	**6.20**	**72.0**	**5.50**
	9/11/14	**653**	**6.30**	**79.6**	**6.80**
	1/16/15	**363**	2.50	**40.7**	**8.90**
	5/14/15	**340**	ND	**50.0**	ND
	8/21/15	**572**	**6.00**	**69.7**	**8.60**
	12/3/2015	**63**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
G-2	9/23/09	**57.9**	2.04	**9.70**	NA
	11/15/10	**62.9**	**8.32**	**13.0**	**12.3**
	2/25/11	**32.6**	0.73	**5.51**	ND
	11/2/11	**38.3**	ND	**6.68**	ND
	2/29/12	**27.4**	ND	**5.70**	ND
	5/30/12	**39.0**	1.30	**7.50**	ND
	8/16/12	**60.7**	1.60	**10.9**	0.70
	11/19/12	**62.5**	1.70	**12.3**	0.59
	2/26/13	**83.4**	2.00	**15.6**	1.10
	5/29/13	**61.3**	1.60	**13.1**	0.59
	9/13/13	**68.8**	1.60	**11.7**	0.61
	12/13/13	**86.3**	2.10	**13.0**	ND
	3/25/14	**104.0**	ND	**10.1**	0.78
	7/8/14	**38.3**	1.10	**7.20**	0.46
	9/11/14	**94.5**	1.60	**13.9**	0.56
	1/16/15	**66.9**	0.83	**8.00**	0.51
	5/14/15	**61.0**	1.40	**11.0**	ND
	8/21/15	**97.9**	2.90	**20.3**	ND
	12/3/2015	**29**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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TABLE 4

INTERIOR GROUND WATER SAMPLE RESULTS FOR TARGET CVOCs

Popular Hand Laundry - VCP No. V00170, 88 Ingraham Street, Brooklyn, NY

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
AS-3	9/23/09	**221**	**8.46**	**33.1**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	2.56	0.60	ND	ND
	11/2/11	**43.6**	1.10	**6.54**	ND
	2/29/12	**55.2**	ND	**5.14**	ND
	5/30/12	**15.3**	0.81	2.40	ND
	8/16/12	**42.2**	2.50	2.30	**13.7**
	11/19/12	**32.4**	2.70	**7.40**	ND
	2/26/13	**62.3**	1.40	4.90	ND
	5/29/13	**21.3**	0.69	2.00	ND
	9/13/13	**45.8**	2.30	**8.10**	0.26
	12/13/13	**9.50**	ND	2.00	ND
	3/25/14	**22.5**	ND	2.17	ND
	7/8/14	**21.8**	1.70	3.90	ND
	9/11/14	**44.2**	0.97	**6.90**	ND
	1/16/15	**7.50**	ND	1.70	ND
	5/14/15	**9.10**	ND	1.90	ND
	8/21/15	**96.0**	**14.6**	**47.6**	1.20
	12/3/2015	**13**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
AS-4	9/23/09	**342**	**12.1**	**52.6**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	**257**	ND	3.27	**6.63**
	11/2/11	**84.0**	ND	1.65	1.58
	2/29/12	**158**	ND	4.70	**15.6**
	5/30/12	**218**	ND	3.10	**13.5**
	8/16/12	**238**	ND	2.30	**13.7**
	11/19/12	**195**	ND	1.70	**26.0**
	2/26/13	**265**	ND	2.10	**32.0**
	5/29/13	**246**	ND	2.80	**41.8**
	9/13/13	**215**	ND	1.40	**74.6**
	12/13/13	**185**	ND	1.10	**42.8**
	3/25/14	**282**	ND	1.53	**50.8**
	7/8/14	**234**	ND	1.10	**62.9**
	9/11/14	**239**	ND	1.50	**22.1**
	1/16/15	**190**	ND	1.40	**14.9**
	5/14/15	**290**	ND	**5.60**	**28.0**
	8/21/15	**329**	ND	5.00	**32.1**
	12/3/2015	**86**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**
Notes:	ND = Not Detected	NS = Not sampled D = Results for Dilution S = Recovery outside of control limits for this analyte	**Bolded** values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.		EnviroTrac

TABLE 5

EXTERIOR GROUNDWATER MONITORING WELL SAMPLE RESULTS FOR TARGET VOCs

Popular Hand Laundry, VCP 00170, 88 Ingraham Street, Brooklyn, New York

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-2	6/01/05	**14**	5	5	0.23
	9/28/09	NS	NS	NS	NS
	11/10/10	**83.9**	**182**	**67.6**	**50.1**
	2/28/11	**8.91**	2.17	2.46	ND
	11/3/11	**7.08**	ND	ND	ND
	2/28/12	4.81	ND	ND	ND
	5/29/12	**10.2**	ND	0.40	1.10
	8/16/12	**10.2**	ND	ND	ND
	11/20/12	**8.60**	ND	0.34	1.30
	2/21/12	**7.20**	ND	ND	ND
	5/30/13	**5.20**	ND	ND	0.61
	9/13/13	**6.90**	1.60	0.28	1.20
	12/12/13	**6.30**	ND	ND	1.00
	3/25/14	**6.72**	ND	ND	ND
	7/8/14	0.54	ND	ND	0.87
	9/11/14	0.55	ND	0.59	1.20
	1/15/15	4.30	ND	ND	ND
	5/14/15	4.10	ND	ND	ND
	8/21/15	**5.60**	ND	ND	ND
	12/03/15	ND	ND	ND	ND
	6/24/16	**12.0**	ND	ND	ND
	9/07/16	ND	ND	ND	ND
MW-3	9/28/09	NS	NS	NS	NS
	11/11/10	**1,420**	**12.4**	**56.5**	**253**
	2/28/11	**1,030**	**9.54**	**43.4**	**187**
	11/3/11	**1,270**	**11.0**	**70.3**	**281**
	2/28/12	**1,160**	**5.70**	**31.2**	**334**
	5/29/12	**1,940**	**91.8**	**266**	**441**
	8/15/12	**2,440**	**68.3**	**215**	**531**
	11/20/12	**1,980**	**12.1**	**62.6**	**415**
	2/21/13	**1,630**	**18.2**	**58.0**	**355**
	5/30/13	**1,280**	**7.40**	**13.6**	**187**
	9/13/13	**1,140**	4.90	ND	**283**
	12/12/13	**926**	**9.30**	ND	**212**
	3/25/14	**648**	**10.3**	ND	**199**
	7/8/14	**706**	**7.80**	**8.10**	**107**
	9/11/14	**616**	**9.60**	1.40	**137**
	1/15/15	**375**	**11.6**	2.90	**152**
	5/14/15	**330**	ND	ND	**57**
	8/21/15	**570**	**7.90**	**6.50**	**104**
	12/03/15	**250**	ND	ND	ND
	6/24/16	NS	NS	NS	NS
	9/7/16	NS	NS	NS	NS
NW-1 (20')	9/23/09	**962**	**60.1**	**68.0**	NA
	11/15/10	**5,480**	**607**	**746**	**6,000**
	2/28/11	**2,920**	**35.0**	**47.1**	**5,870**
	11/3/11	**65.7**	ND	**ND**	1.34
	2/28/12	**1,820**	**118**	**160**	**2,260**
	5/29/12	**6,040**	**367**	**871**	**4,000**
	8/15/12	**4,730**	**304**	**1,100**	**3,930**
	11/20/12	**4,440**	**233**	**1,160**	**3,450**
	2/21/13	**2,690**	**80.3**	**675**	**3,370**
	5/30/13	**2,900**	**377**	**1,200**	**1,950**
	9/13/13	**2,160**	**239**	**874**	**2,130**
	12/12/13	**3,960**	**463**	**1,680**	**3,920**
	3/28/14	**984**	**54**	**133**	**2,970**
	7/8/14	**530**	**31**	**67.9**	**812**
	9/11/14	**1,170**	**37**	**179**	**1,390**
	1/15/15	**1,480**	**80**	**380**	**1,560**
	5/15/15	**570**	**88**	**260**	**730**
	8/20/15	**2100**	**455**	**1270**	**1840**
	12/03/15	**3,000**	**760**	**2,300**	**2,500**
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NW-1 (30')	9/23/09	**4,140**	**200**	**333**	NA
	11/15/10	**8,870**	**1,190**	**1,230**	**6,160**
	2/28/11	**7,140**	**283**	**227**	**4,330**
	11/3/11	**2,140**	**203**	**248**	**2,510**
	2/28/12	**3,000**	**528**	**490**	**2,550**
	5/29/12	**7,870**	**790**	**1,000**	**4,240**
	8/15/12	**6,070**	**446**	**999**	**4,490**
	11/20/12	**6,460**	**489**	**975**	**3,340**
	2/21/13	**4,730**	**312**	**651**	**3,860**
	5/30/13	**4,220**	**370**	**1,020**	**2,350**
	9/13/13	**4,780**	**535**	**1,290**	**3,090**
	12/12/13	**6,460**	**837**	**1,550**	**3,720**
	3/28/14	**5,750**	**432**	**801**	**4,880**
	7/8/14	**2,420**	**284**	**491**	**1,240**
	9/11/14	**4,230**	**581**	**865**	**1,710**
	1/15/15	**3,790**	**491**	**721**	**1,910**
	5/15/15	**3,200**	**860**	**1,400**	**1,900**
	8/20/15	**4,500**	**1110**	**1,710**	**2,010**
	12/3/2015	**4,300**	**860**	**1,400**	**1,600**
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

EnviroTrac

TABLE 5

EXTERIOR GROUNDWATER MONITORING WELL SAMPLE RESULTS FOR TARGET VOCs

Popular Hand Laundry, VCP 00170, 88 Ingraham Street, Brooklyn, New York

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroetlene (ug/L)	Vinyl Chloride (ug/L)
NW-1 (40')	9/23/09	**11,000**	**1,240**	**1,200**	NA
	11/15/10	**10,000**	**1,910**	**1,050**	**4,700**
	2/28/11	**111**	**185**	**53.6**	**10.40**
	11/3/11	**3,200**	**260**	**330**	**2,840**
	2/28/12	**3,620**	**429**	**436**	**2,570**
	5/29/12	**7,510**	**535**	**667**	**3,740**
	8/15/12	**6,630**	**462**	**815**	**4,390**
	11/20/12	**5,430**	**572**	**1,200**	**3,430**
	2/21/13	**3,240**	**220**	**619**	**3,200**
	5/30/13	**3,720**	**433**	**1,210**	**2,390**
	9/13/13	**4,320**	**686**	**1,460**	**2,990**
	12/12/13	**5,780**	**987**	**1,770**	**3,780**
	3/28/14	**5,470**	**488**	**1,000**	**7,250**
	7/8/14	**1,810**	**281**	**440**	**1,080**
	9/11/14	**2,920**	**595**	**814**	**1,710**
	1/15/15	**2,830**	**466**	**744**	**1,880**
	5/15/15	**2,500**	**1,000**	**1,400**	**1,800**
	8/20/15	**4,110**	**1,760**	**2,230**	**2,140**
	12/3/2015	**5,800**	**2,800**	**3,600**	**2,600**
	6/24/16	NS	NS	NS	NS
	9/07/16	NS	NS	NS	NS
NW-1 (50')	9/23/09	**6,670**	**53.7**	**122**	NA
	11/15/10	**180**	**25.6**	**15.8**	**51.0**
	2/28/11	**8,330**	**5.41**	**2.64**	**3,780**
	11/3/11	**3,400**	**332**	**297**	**3,000**
	2/28/12	**3,280**	**325**	**283**	**2,340**
	5/29/12	**8,910**	**506**	**513**	**4,690**
	8/15/12	**7,450**	**509**	**715**	**4,610**
	11/20/12	**6,420**	**489**	**708**	**3,120**
	2/21/13	**5,000**	**409**	**601**	**3,840**
	5/30/13	**4,770**	**351**	**742**	**2,250**
	9/13/13	**4,950**	**380**	**973**	**2,940**
	12/12/13	**5,780**	**475**	**1,010**	**3,850**
	3/28/14	**5,190**	**459**	**747**	**4,000**
	7/8/14	**2,730**	**358**	**568**	**1,330**
	9/11/14	**4,570**	**366**	**665**	**1,620**
	1/15/15	**5,560**	**366**	**657**	**2,350**
	5/15/15	**3,400**	**590**	**1,100**	**1,800**
	8/20/15	**4,430**	**683**	**1,260**	**1,890**
	12/3/2015	**4,400**	**490**	**1,200**	**1,900**
	6/24/16	NS	NS	NS	NS
	9/07/16	NS	NS	NS	NS
NW-2 (20')	9/23/09	**28.7**	4.39	2.08	NA
	11/15/10	**60.3**	**25.6**	**17.6**	**16.4**
	2/24/11	**16.9**	**35.7**	**8.03**	1.02
	11/3/11	1.98	2.47	0.99	ND
	2/28/12	1.03	ND	ND	ND
	5/29/12	2.70	0.37	0.43	0.45
	8/15/12	**5.30**	0.48	0.76	1.00
	11/19/12	**8.10**	0.52	1.10	1.10
	2/21/13	**8.60**	ND	1.60	ND
	5/29/13	**9.00**	0.80	2.20	0.74
	9/13/13	**11.1**	1.00	2.80	0.99
	12/12/13	**18.9**	2.20	**6.20**	**2.20**
	3/25/14	**94.3**	**46.7**	**47.8**	**14.4**
	7/8/14	**101**	**112**	**92.1**	**16.2**
	9/11/14	**234**	**236**	**223**	**36.0**
	1/16/15	**251**	**290**	**251**	**50.6**
	5/14/15	**86**	**160**	**120**	**15.0**
	8/20/15	**284**	**418**	**316**	**46.7**
	12/3/2015	**60**	**37**	**64**	ND
	6/24/16	**120 *S***	**200 *D***	ND	**21**
	9/07/16	**120**	**210 *D***	**130**	**17**
NW-2 (30')	9/23/09	**42.6**	**2.89**	2.64	NA
	11/15/10	**113**	**219**	**58.9**	**52.1**
	2/24/11	**88.6**	**126**	**30.9**	**4.50**
	11/3/11	1.30	ND	ND	ND
	2/28/12	**5.20**	ND	ND	ND
	5/29/12	**10.5**	0.73	1.60	0.76
	8/15/12	**9.80**	0.62	1.70	1.30
	11/19/12	**11.5**	0.51	1.60	1.20
	2/21/13	**12.7**	ND	1.90	ND
	5/29/13	**14.6**	1.00	3.00	**1.10**
	9/13/13	**15.9**	0.86	3.40	1.40
	12/12/13	**18.7**	1.20	4.60	**2.10**
	3/25/14	**76.9**	**19.1**	**29.5**	**8.30**
	7/8/14	**135**	**128**	**117**	**23.0**
	9/11/14	**204**	**187**	**187**	**32.9**
	1/16/15	**262**	**301**	**261**	**59.7**
	5/14/15	**130**	**220**	**160**	**22.0**
	8/20/15	**244**	**187**	**223**	**24.2**
	12/3/2015	**88**	**17**	**86**	ND
	6/24/16	**170 *S***	**110**	**130**	ND
	9/07/16	**190**	**430 D**	**250 D**	**30**
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

EnviroTrac

TABLE 5

EXTERIOR GROUNDWATER MONITORING WELL SAMPLE RESULTS FOR TARGET VOCs

Popular Hand Laundry, VCP 00170, 88 Ingraham Street, Brooklyn, New York

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
NW-2 (40')	9/23/09	**56.1**	**6.49**	**5.50**	NA
	11/15/10	**195**	**263**	**82.2**	**77.8**
	2/24/11	**3,750**	**140**	**76.6**	**987**
	11/3/11	**1,840**	**128**	**205**	**2,710**
	2/28/12	**62.2**	ND	ND	**9.19**
	5/29/12	**173**	ND	0.51	**14.2**
	8/15/12	**185**	ND	0.48	**13.4**
	11/19/12	**131**	ND	ND	**32.9**
	2/21/13	**78.1**	ND	ND	**40.9**
	5/30/13	**93.1**	ND	ND	**9.20**
	9/13/13	**122**	ND	ND	**17.4**
	12/12/13	**141**	ND	ND	**37.1**
	3/25/14	**146**	ND	ND	**9.20**
	7/8/14	**1.7**	ND	ND	**8.70**
	9/11/14	**133**	ND	ND	**10.3**
	1/16/15	**143**	ND	0.34	**15.4**
	5/15/15	**120**	ND	ND	**5.5**
	8/21/15	**143**	ND	ND	ND
	12/3/2015	**160**	ND	ND	ND
	6/24/16	**32** *S*	**20**	ND	**93**
	9/07/16	**25**	ND	ND	**96**
NW-2 (50')	9/23/09	**48.4**	3.06	2.49	NA
	11/15/10	**7,190**	**115**	**166**	**3,890**
	2/24/11	**659**	**219**	**130**	**90.7**
	11/3/11	**11.0**	ND	ND	ND
	2/28/12	**6.60**	ND	ND	ND
	5/29/12	**12.5**	ND	ND	ND
	8/15/12	**14.1**	ND	0.29	ND
	11/19/12	**17.0**	ND	0.41	ND
	2/21/13	**14.2**	ND	**ND**	ND
	5/30/13	**12.7**	ND	ND	ND
	9/13/13	**9.50**	ND	ND	ND
	12/12/13	**17.0**	ND	ND	ND
	3/25/14	**22.1**	ND	ND	ND
	7/8/14	**7.50**	ND	ND	ND
	9/11/14	**8.30**	ND	ND	ND
	1/16/15	**8.70**	ND	0.26	0.57
	5/15/15	**7.40**	ND	ND	ND
	8/20/15	ND	**14.2**	**8.70**	ND
	12/3/15	**14**	ND	ND	ND
	6/24/16	**24**	ND	ND	ND
	9/07/16	**20**	ND	ND	ND
NYSDEC Groundwater Standards		5	5	5	2

Notes:

ND = Not Detected

NS = Not sampled

D = Results for Dilution

S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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Table 6
Soil Gas Sample Results
Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Sample ID	SG-1 (0'-8')	SG-2 (0'-8')	SG-3 (0'-8')	SG-4 (0'-8')
Sample Date	**10/21/2004**			
Sample Units	**ug/m3**			
Trichloroethene	2,526	18	81	123
cis-1,2-Dichloroethene	2,260	1,189	14	265
Tetrachloroethene	6,104	3,459	5,358	427
Vinyl Chloride	46	28	9	1

Compound	SS1	SS2	SS3	SS4
Sample Date	**6/22/2006**			
Sample Units	**ug/m3**			
1, 1-Dichloroethylene	858	112 J	ND	ND
trans-1, 2-Dichlorothylene	1,460	737	165	ND
cis-1,2-Dichlororethane	28,200	16,900	1,390	ND
1, 1, 1-Trichloroethane	2,010	ND	ND	8
Trichloroethene	45,200	37,100	2,880	44
Tetrachloroethene	75,300	572,000	43,000	1,270
Chloroform	400	874	77 J	39
Carbon Tetrachloride	ND	ND	ND	52

Sample ID	VP-1	VP-2	VP-3	VP-5
Sample Date	**2/10/2016**			
Sample Units	**ug/m3**			
Acetone	24.1 DS	93.8 DS	1,100 DS	176,000 DS*
Benzene	2.81 D	1.6 D	ND	ND
Chloroform	9.18 D	4.59 D	ND	ND
Chloromethane	ND	1.57 D	ND	ND
1,1-Dichloroethane	11 D	ND	27.5 D	ND
1,2-cis-Dichloroethene	55.7 D	ND	132 D	ND
1,2-trans-Dichloroethene	88.3 D	ND	24.6 D	ND
Dichlorodifluoromethane	2.18 D	8.31 D	ND	ND
Ethylbenzene	2.87 D	2.43 D	ND	ND
Methyl ethyl ketone	58.9 D	91.7 D	3,210 D	595,000 D*
Methyl isobutyl ketone	ND	3.93 D	ND	ND
Methylene Chloride	ND	3.57 D	ND	ND
Tetrachloroethene	1,010 D	8.14 D	63.8 D	ND
Toluene	14.4 D	17.5 D	ND	ND
1,1,1-Trichloroethane	ND	4.58 D	ND	ND
Trichloroethene	411 DcS	ND	57 DcS	ND
Trichlorofluoromethane	ND	5.62 D	ND	ND
1,2,4-Trimethylbenzene	ND	3.74 D	ND	ND
m&p-Xylenes	6.34 D	9.38 D	ND	ND
o-Xylenes	ND	3.56 D	ND	ND

Notes:
Only detected analytes are reported.
ug/m3 = micrograms per cubic meter of air
ND = Not Detected
D = Results for Dilution
c, S, J = Value estimated
* = Elevated levels due to use of PVC primer and glue during well installation.
Yellow shaded values indicate that mitigation is required as per the New York State Department of Health (NYSDOH) Matrices.

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Table 7
Indoor and Ambient Air Results
Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Compound	Air-1	NYSDOH Indoor Air Guidance Value
Sample Date	10/21/2004	
Sample Units	ug/m3	
1, 1, 1-Trichloroethane	0.7 J	-
Tetrachloroethene	0.9	30
Toluene	0.6 J	-
Methylene Chloride	**880 E**	60

Compound	Indoor 1	Indoor 2	Ambient	NYSDOH Indoor Air Guidance Value
Sample Date	6/22/2006			
Sample Units	ug/m3			
cis-1,2-Dichlororethane	2	1.4	0.63 J	-
1, 1, 1-Trichloroethane	0.43 J	0.65 J	ND	-
Trichloroethene	**3**	1	0.75 J	2
Tetrachloroethene	29	12	8	30
Chloroform	ND	0.35 J	0.37 J	-
Chloromethane	1.2	1.1	1.1	-
Carbon Tetrachloride	0.57 J	0.6	1	-
Methylene Chloride	4	5	4	60

Sample ID	IA-1	IA-2	IA-3	IA-5	OA-1	NYSDOH Indoor Air Guidance Values
Sample Date	2/10/2016					
Sample Units	ug/m3					
Acetone	660 DS	84 D	52.80	49.20	17.10	-
Benzene	1.98	1.73	1.60	1.57	1.15	-
Chloroform	2.98	1.03	ND	ND	0.98	-
Chloromethane	1.03	1.78	1.88	1.67	1.71	-
Dichlorodifluoromethane	7.12	4.10	4.01	4.10	4.50	-
Ethylbenzene	1.39	3.69	2.00	1.56	ND	-
Isopropanol	ND	66.60	ND	17.90	ND	-
Methyl ethyl ketone	2,240 D	14.00	3.57	3.19	1.86	-
Methyl isobutyl ketone	3.28	10.20	6.88	4.96	ND	-
Methylene Chloride	10.90	28.50	18.30	15.90	26.50	60
Methyl tert butyl ether	0.90	1.51	1.73	1.30	2.13	-
Styrene	ND	1.41	1.15	1.02	ND	-
Tetrachloroethene	10.70	16.10	ND	ND	ND	30
Toluene	11.80	37.40	28.40	26.70	7.57	-
Trichloroethene	**7.52 cS**	ND	ND	ND	ND	2
Trichlorofluoromethane	3.77	2.59	2.64	2.47	2.75	-
1,2,4-Trimethylbenzene	ND	3.24	1.97	1.62	ND	-
1,3,5-Trimethylbenzene	ND	1.43	ND	ND	ND	-
m&p-Xylenes	4.78	13.50	7.08	5.99	2.17	-
o-Xylenes	1.78	5.21	2.13	1.95	ND	-

Notes:
Only detected analytes are reported.
ug/m3 = micrograms per cubic meter of air
ND = Not Detected
c, S, J = Value estimated
E = Concentration exceeds instrument calibration limits. Value is estimated.
Bold values indicate an exceedance of the New York State Department of Health (NYSDOH) Indoor Air Guidance Value.
Yellow shaded values indicate that mitigation is required as per the NYSDOH Matrices.

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FIGURES

north

THREE STORY
BRICK BUILDING

ONE STORY BRICK
BUILDING

SIDEWALK

INGRAHAM STREET

SIDEWALK

E-VAULT

F.H.

ONE STORY BRICK
BUILDING

TWO STORY
BUILDING

GARAGE
(1-STORY)

ONE STORY FRAME
AND CONCRETE
BUILDING

TWO STORY
BUILDING

PARKING AREA

LEGEND:

PROPERTY BOUNDARY

F.H. FIRE HYDRANT

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

0 20
SCALE IN FEET

DATE: 8/31/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

SITE PLAN

FIGURE #
1

north

THREE STORY BRICK BUILDING

PARKING AREA

ONE STORY BRICK BUILDING

SIDEWALK

SB-1

SB-2

SB-3

SB-4

F.H.

SB-1A

SB-5/SB-3A

SB-2A

SB-4A

PARKING AREA

INGRAHAM STREET

E-VAULT

GP-4

SIDEWALK

SAMPLE ID:	S-1(6'-7')	NYSDEC
DATE SAMPLED:	1996-1997	
COMPOUND	RESULT	UUSCO
DCE	**9,500**	**250**
VC	**140**	**20**

SAMPLE ID:	GP-2(0'-2')	NYSDEC
DATE SAMPLED:	1996-1997	
COMPOUND	RESULT	UUSCO
PCE	**11,000**	**1,300**

ONE STORY BRICK BUILDING

GP-2

FORMER DRY CLEANER

STORM WATER PIPE

COMPRESSOR AND BLOWER

TO SEWER MAIN

LIFT AREA

WASHER

WASHER

S-1

BASEMENT

SS-3

G-3

S-2

DRYER

DRYER

GP-1

G-2

DRYER

SVE-1

AS-1

(2-STORY)

SS-4

B-5

B-4

SS-2

TROUGH

WASHER

WASHER

TROUGH

OVERHEAD PRESSING

DRYER

STORM WATER PIPE

PRESSING AREA

GARAGE (1-STORY)

G-1

SS-1

B-6

BOILER ROOM

GP-3

ABANDONED 3,000-GAL. UST

AIR COMPRESSOR

SAMPLE ID:	G-1(0'-4')	G-1(4'-8')	G-1(8'-12')	NYSDEC
DATE SAMPLED:	12/2005	12/2005	12/2005	
COMPOUND	RESULT	RESULT	RESULT	UUSCO
DCE	**325**	52	84	**250**
PCE	**19,400**	26	74	**1,300**
TCE	296	17	19	**470**
VC	2.87	1.17	1.17	**20**

SAMPLE ID:	B-4(0'-4')	B-4(4'-8')	B-4(8'-12')	NYSDEC
DATE SAMPLED:	12/2005	12/2005	12/2005	
COMPOUND	RESULT	RESULT	RESULT	UUSCO
DCE	32.9	6	4	**250**
PCE	**5,730**	59	46	**1,300**
TCE	249	11	4	**470**
VC	**32.9**	1.12	1.12	**20**

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- SOIL SAMPLE
- SOIL & GROUNDWATER SAMPLE
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS
- BOLDED VALUE EXCEEDS NYSDEC UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (UUSCOs)
- ALL RESULTS GIVEN IN µg/kg

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

0 15
SCALE IN FEET

DATE: 8/31/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

HISTORICAL SOIL SAMPLE TARGET CVOC RESULTS ABOVE NYSDEC UUSCOs

FIGURE # 2

north

THREE STORY
BRICK BUILDING

PARKING AREA

ONE STORY
BRICK BUILDING

SIDEWALK

MW-3

F.H.

NW-1

INGRAHAM STREET

SIDEWALK

SVE/AS
REMEDIATION
SHED

E-VAULT

OA-1

NW-2

MW-2

ONE STORY
BRICK BUILDING

VP-2/IA-2

G-2

VP-1/IA-1

AS-3

SV-6/MW-6

SV-5/MW-5

(2-STORY)

AS-4

VP-4

MW-4

GARAGE
(1-STORY)

VP-5/IA-5/IA-5D

VP-3/IA-3

PARKING AREA

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL
- GROUNDWATER SAMPLE
- VAPOR PROBE/INDOOR AIR/ OUTDOOR AIR SAMPLE

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

0 15
SCALE IN FEET

DATE: 8/31/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

RECENT SAMPLE LOCATIONS

FIGURE #
3

north

WELL ID:	MW-3	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**250**	**5**

WELL ID:	SV-6	MW-6	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	12/3/2015	
COMPOUND	RESULT	RESULT	
DCE	**19**	**63**	**5**

WELL ID:	G2	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**29**	**5**

WELL ID:	AS-3	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**13**	**5**

WELL ID:	NW-2(20')	NW-2(30')	NW-2(40')	NW-2(50')	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	9/7/2016	9/7/2016	9/7/2016	9/7/2016	
COMPOUND	RESULT	RESULT	RESULT	RESULT	
DCE	**120**	**190**	**25**	**20**	**5**
PCE	**210 D**	**430 D**	ND	ND	**5**
TCE	**130**	**250 D**	ND	ND	**5**
VC	**17**	**30**	**96**	ND	**2**

WELL ID:	NW-1(20')	NW-1(30')	NW-1(40')	NW-1(50')	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	12/3/2015	12/3/2015	12/3/2015	
COMPOUND	RESULT	RESULT	RESULT	RESULT	
DCE	**3,000**	**4,300**	**5,800**	**4,400**	**5**
PCE	**760**	**860**	**2,800**	**490**	**5**
TCE	**2,300**	**1,400**	**3,600**	**1,200**	**5**
VC	**2,500**	**1,600**	**2,600**	**1,900**	**2**

WELL ID:	MW-2	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	9/7/2016	
COMPOUND	RESULT	
DCE	ND	**5**
PCE	ND	**5**
TCE	ND	**5**
VC	ND	**2**

WELL ID:	AS-4	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**86**	**5**

PARKING AREA

SIDEWALK

MW-3

INGRAHAM STREET

SIDEWALK

E-VAULT

NW-2

SV/MW-6

AS-3

SV/MW-5

G-2

(2-STORY)

REGIONAL GROUNDWATER FLOW DIRECTION

AS-4

MW-4

MW-2

GARAGE (1-STORY)

ONE STORY BRICK BUILDING

F.H.

NW-1

PARKING AREA

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- S RECOVERY OUTSIDE OF CONTROL LIMITS FOR THIS ANALYTE
- D RESULTS FOR DILUTION
- ND NOT DETECTED
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ALL RESULTS GIVEN IN µg/L

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

0 15
SCALE IN FEET

DATE: 10/3/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

GROUNDWATER SAMPLE RESULTS
ABOVE NYSDEC GROUNDWATER STANDARDS

FIGURE #
4

north

SAMPLE ID:	SG-4(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	265
PCE	427
TCE	123
VC	0.87

SAMPLE ID:	SS-3
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	1,390
PCE	43,000
TCE	2,880

SAMPLE ID:	INDOOR-2
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	1.4
PCE	12
TCE	1

SAMPLE ID:	SG-3(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	14
PCE	5,358
TCE	81
VC	8.94

SAMPLE ID:	VP-2
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	8.14 D
TCE	ND

SAMPLE ID:	IA-2
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	16.1
TCE	ND

SAMPLE ID:	OA-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SAMPLE ID:	VP-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	55.7 D
PCE	1,010 D
TCE	411 DcS

SAMPLE ID:	IA-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	10.7
TCE	7.52 cS

SAMPLE ID:	AMBIENT
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	0.63 J
PCE	8
TCE	0.75 J

SAMPLE ID:	SS-4
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
PCE	1,270
TCE	44

SAMPLE ID:	SS-2
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	16,900
PCE	572,000
TCE	37,100

SAMPLE ID:	SS-1
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	28,200
PCE	75,300
TCE	45,200

SAMPLE ID:	SG-1(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	2,260
PCE	6,104
TCE	2,526
VC	46

SAMPLE ID:	SG-2(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	1,189
PCE	3,459
TCE	18.27
VC	28

SAMPLE ID:	VP-5
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SAMPLE ID:	IA-5
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SAMPLE ID:	INDOOR-1
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	2
PCE	29
TCE	3

SAMPLE ID:	VP-3
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	132 D
PCE	63.8 D
TCE	57 DcS

SAMPLE ID:	IA-3
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SIDEWALK

INGRAHAM STREET

SIDEWALK

ONE STORY BRICK BUILDING

E-VAULT

(2-STORY)

GARAGE (1-STORY)

SG-3 VP-2/IA-2 OA-1 SG-4 SS-3 AIR-1 VP-1/IA-1 INDOOR-2 AMBIENT SS-4 SS-2 VP-4 SG-1 INDOOR-1 SS-1 VP-5/IA-5/IA-5D SG-2 VP-3/IA-3

LEGEND:

- PROPERTY BOUNDARY
- SUB-SLAB SAMPLE
- VAPOR PROBE/INDOOR AIR/ OUTDOOR AIR SAMPLE
- AMBIENT AIR SAMPLE
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- J ESTIMATED VALUE
- c,S ESTIMATED VALUE
- D RESULTS FOR DILUTION
- ND NOT DETECTED
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ALL RESULTS GIVEN IN µg/m3

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

0 15
SCALE IN FEET

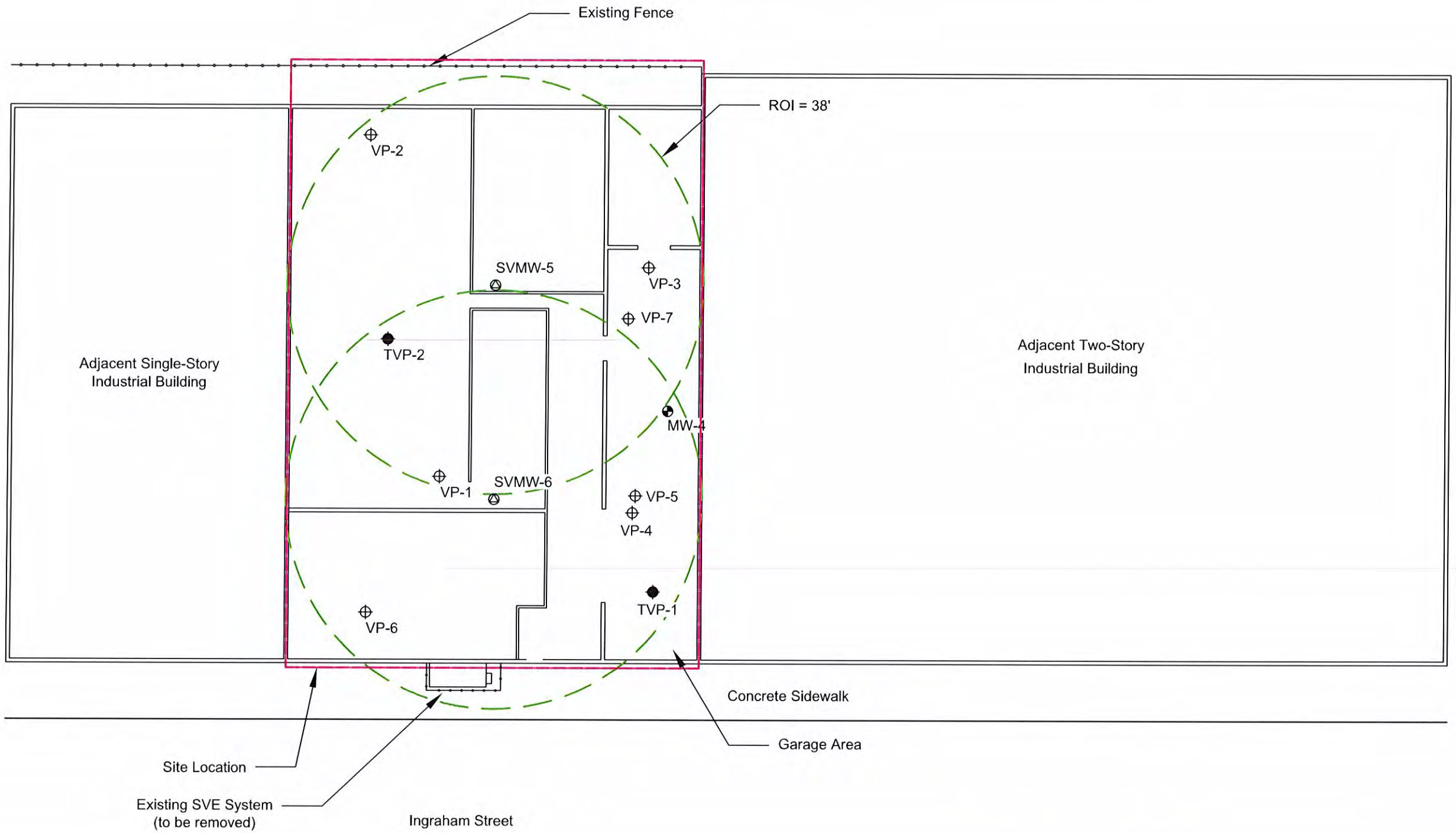
DATE: 9/6/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

HISTORICAL AND RECENT SOIL VAPOR SAMPLE AND INDOOR/AMBIENT AIR RESULTS

FIGURE # 5



STATE OF NEW YORK
DALE C. KONAS
LICENSED PROFESSIONAL ENGINEER
No. 081035

7/19/17

SCALE: 0 5' 10' 15' 20' SCALE IN FEET

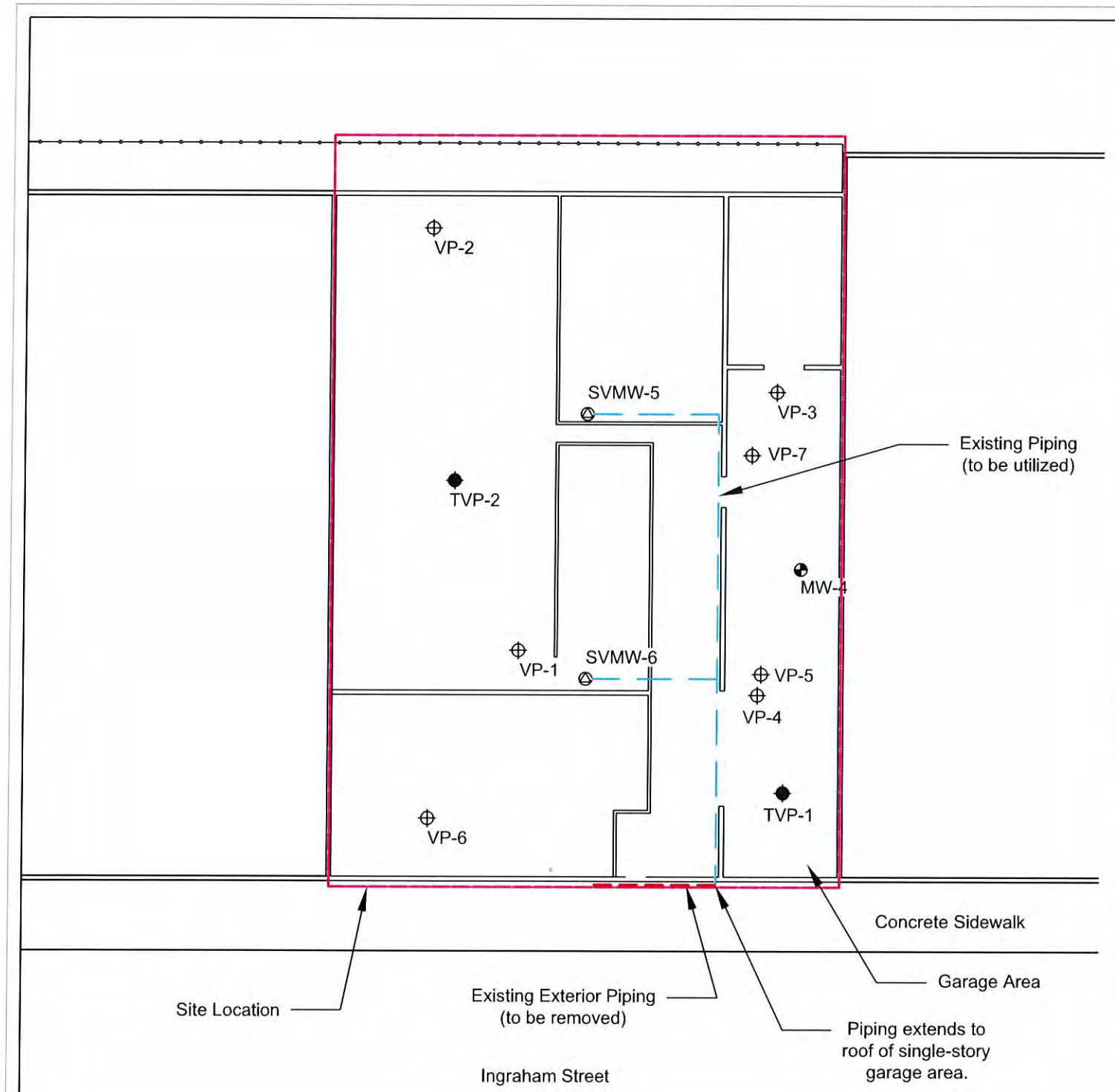
DATE:	FIGURE:	DRAFTED BY:
04/21/17	6	NC/DK

MAP: Detailed Site Plan with SSDS Radius of Influence

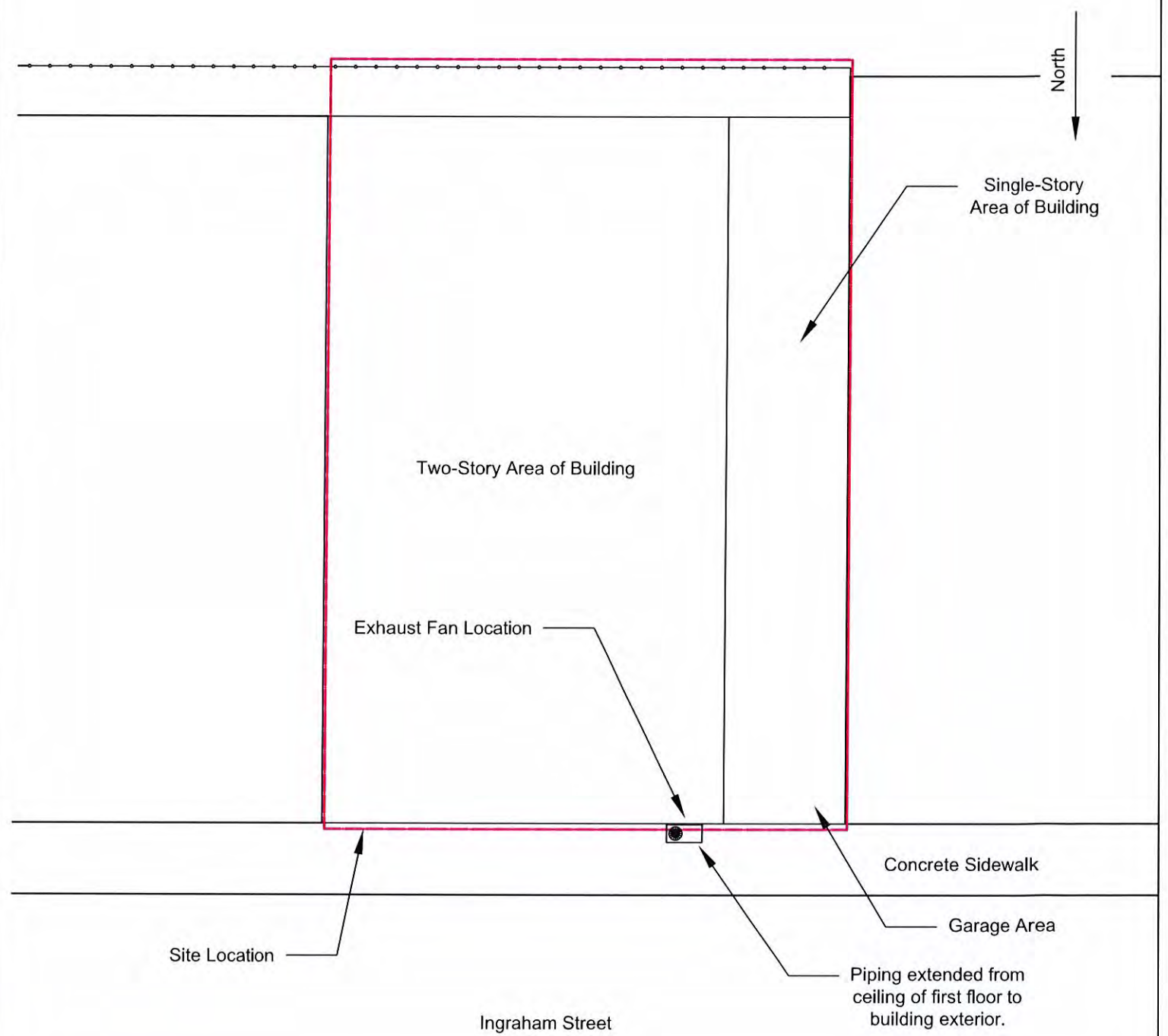
SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

LEGEND:
- Radius of Influence
- Existing Monitoring Well Location
- Existing Vapor Extraction Location
- Existing Vapor Point Location
- Temporary Vapor Point Location

EnviroTrac
Environmental Services
5 Old Dock Road
Yaphank, NY 11980
P: 631.924.3001 F: 631.924.5001



First Floor Piping Plan



Second Floor Piping Plan

STATE OF NEW YORK
DALE C. KONAS
No. 081035
LICENSED PROFESSIONAL ENGINEER
7/19/17

SCALE: 0 5' 10' 15' 20' SCALE IN FEET

LEGEND:
- SSDS Fan Location
- SSDS Piping
- Site Boundary

DATE:	FIGURE:	DRAFTED BY:
04/21/17	7	NC/DK

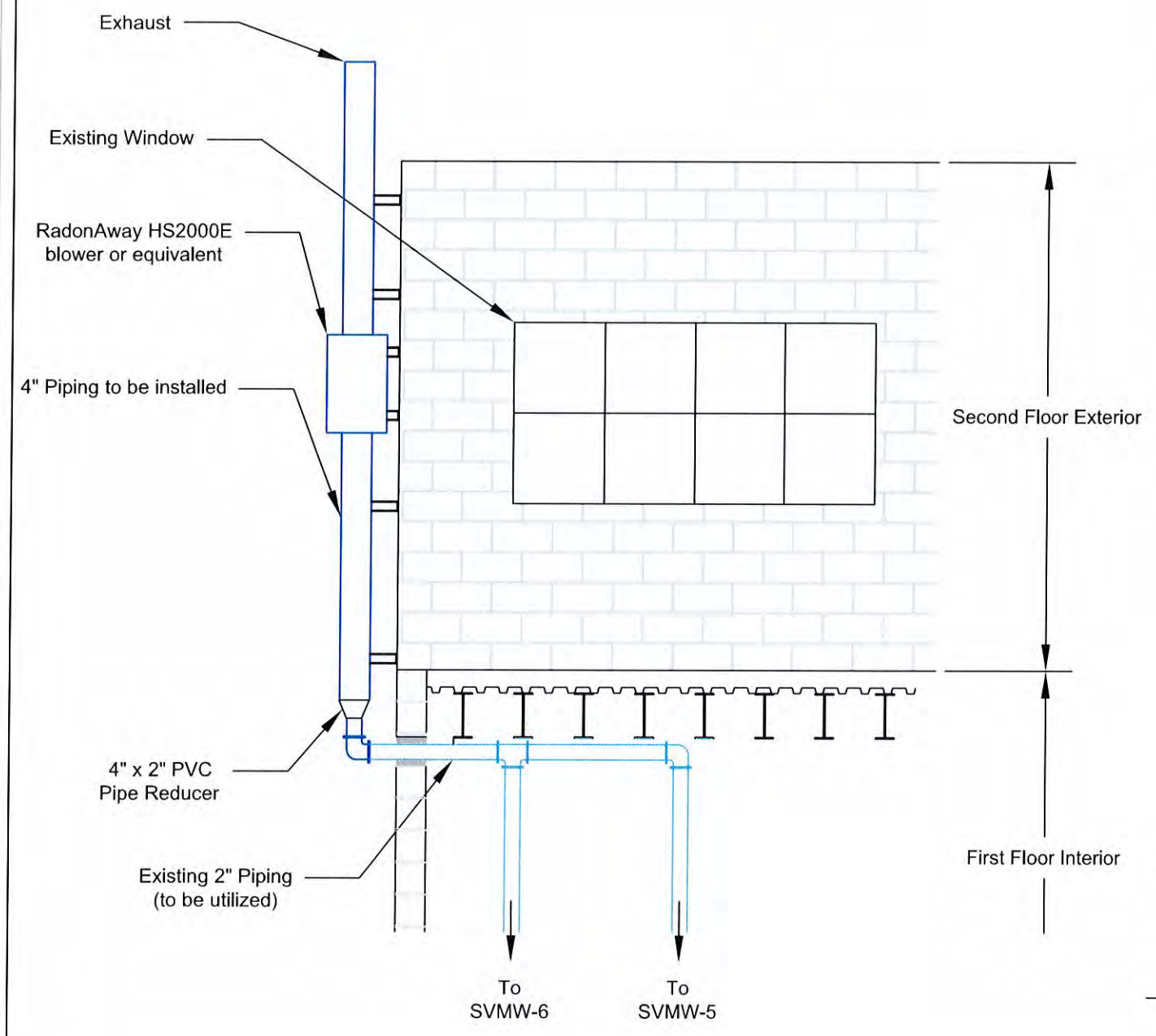
MAP: As-Built SSDS Piping Layout

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

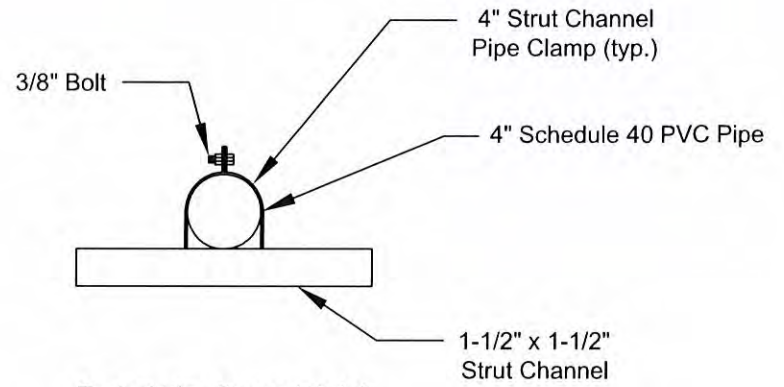
EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

General Notes:

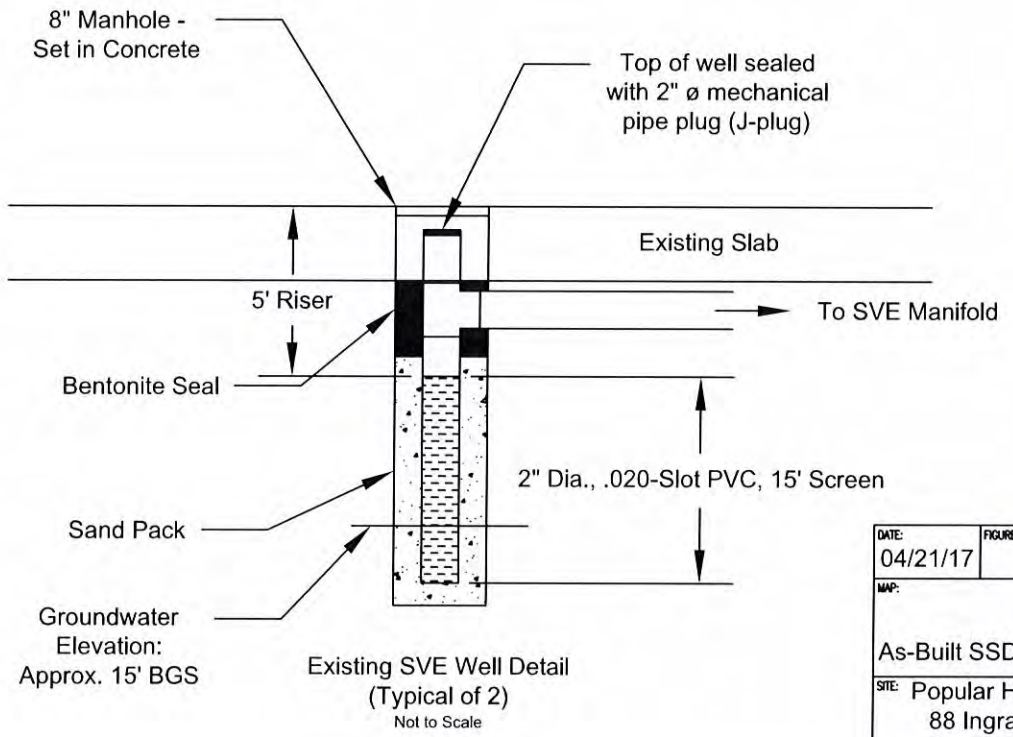
1. To retard soil gas entry, large openings through concrete slabs, wood, and other floor assemblies in contact with the soil, such as spaces around bathtub, shower, or toilet drains, will be filled or closed with materials that provide a permanent airtight seal such as non-shrink mortar, grouts, expanding foam, or similar material designed for such application. Smaller gaps around all pipes, wire, or other objects that penetrate the concrete slab or other floor assembly will be made airtight with an elastomer joint sealant or polyethylene tape, as defined in ASTM C920-87, and applied in accordance with the manufacturer's recommendations. All control joints, isolation joints and any other joints in concrete slabs or between slabs and foundation walls will be sealed. Joints, cracks, or other openings around all penetrations exterior walls below the ground surface will be sealed with an elastometric sealant that provides an airtight seal.
2. Exhaust piping will terminate at least 12 inches above the surface of the roof, in a location at least 10 feet away from any window or other opening into the conditioned spaces of the building or any adjoining or adjacent builing that is less than 2 feet below the exhaust point.
3. The in-line vacuum blower will be installed on the western exterior wall as depicted in "Proposed SSDS Piping Layout", Figure 2. The blower will be a RadonAway HS2000E blower with electrical switch box capable of 72 CFM at 10" WC, or equivalent. The fan is to be installed as per the manufacturer's specifications.
4. All components of the sub slab depressurization system will be in accordance with ASTM E 2121-12 "Standard Practice for Installing Radon Mitigation Systems in Existing Low-rise Residential Buildings".



SSDS Point Detail
(Typical of 2)
Not to Scale



Typical Pipe Support Detail
Not to Scale



Existing SVE Well Detail
(Typical of 2)
Not to Scale

STATE OF NEW YORK
DALE C. KONAS
LICENSED PROFESSIONAL ENGINEER
No. 081035

3/19/17

DATE:	FIGURE:	DRAFTED BY:
04/21/17	8	NC/DK

MAP:

As-Built SSDS Piping Details

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10542

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

APPENDIX A

INGRAHAM STREET

STEEL FACE CURB

CONCRETE SIDEWALK

POINT OF BEGINNING
STEP 1.0'N

ON LINE

ON LINE 75.00' ON LINE

300.00'

(PARALLEL WITH PORTER AVENUE)
100.00'

INDEPENDENT WALLS ALONG LINE

1 STORY BRICK & CONC. BLOCK WITH CELLAR

2 STORY BRICK WITH CELLAR No. 88

(PARALLEL WITH PORTER AVENUE)
100.00'

INDEPENDENT WALLS ALONG LINE

1 STORY MASONRY WITH CELLAR

HIGH 1 STORY BRICK WITH CELLAR

5.0'N

5.0'N

YARD

(PARALLEL WITH INGRAHAM STREET)
75.00' VACANT LOT

RECEIVED
DEC - 8 2015
NYS DEC REGION 2
ENVIRONMENTAL REMEDIATION

NOTES:
1. THIS SURVEY IS INTENDED TO BE USED FOR TITLE PURPOSES ONLY AND IS SUBJECT TO WHATEVER A MORE COMPLETE TITLE SEARCH MAY REVEAL.
2. NO GUARANTEE IS IMPLIED BY THIS MAP AS TO THE EXISTENCE OR NONEXISTENCE OF ANY EASEMENTS OF RECORD THAT WOULD EFFECT SUBJECT PROPERTY, UNLESS SURVEYOR HAS BEEN FURNISHED WITH A COMPLETE COPY OF TITLE REPORT.
3. IT IS NOT TO SCALE AND USING IT TO LOCATE AND DESIGN NEW CONSTRUCTION MAY RESULT IN PROBLEMS FOR WHICH THIS SURVEYOR WILL NOT BE LIABLE.
4. PROPERTY CORNER MONUMENTS WERE NOT PLACED AS PART OF THIS SURVEY.
5. IT IS A VIOLATION OF THE STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.
6. ARCHITECTS MUST ORDER A TOPOGRAPHICAL MAP SPECIFYING THEIR EXACT NEEDS.

CERTIFIED TO:

MARTIN ZIMMERMAN AND MELANIE ZIMMERMAN
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
LEX TERRAE, LTD.

DATE SURVEYED: NOVEMBER 10th, 2004

GERALD T. O'BUCKLEY
PROFESSIONAL LAND SURVEYORS
172-49 HENLEY ROAD
JAMAICA, N.Y. 11432-2742
TELEPHONE (718)658-7634
FAX (718)658-0048

TAX MAP		FILED MAP	
SECTION		SECTION	
BLOCK	2998	BLOCK	
LOT	19	LOT	

BOROUGH OF BROOKLYN
COUNTY OF KINGS
STATE OF NEW YORK

TITLE NO. KIN-235342-L

Gerald T. O'Buckley

GERALD T. O'BUCKLEY, P.L.S.
NEW YORK LICENSE 039834

APPENDIX B

APPENDIX C

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument.The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

2016010500232001001E980D

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 5**

Document ID: 2016010500232001 Document Date: 11-16-2015 Preparation Date: 01-05-2016
Document Type: AGREEMENT
Document Page Count: 4

PRESENTER:
SUPERIOR DATA SERVICES
188 MONTAGUE STREET
STE 1000***HOLD FOR PICKUP SDS********
BROOKLYN, NY 11201
718-404-0214
JLICARI@SUPERIOR-DATA.COM

RETURN TO:
SUPERIOR DATA SERVICES
188 MONTAGUE STREET
STE 1000***HOLD FOR PICKUP SDS********
BROOKLYN, NY 11201
718-404-0214
JLICARI@SUPERIOR-DATA.COM

PROPERTY DATA

Borough	Block	Lot		Unit	Address
BROOKLYN	2998	19	Entire Lot		88 INGRAHAM ST

Property Type: COMMERCIAL REAL ESTATE

CROSS REFERENCE DATA

CRFN_____ *or* DocumentID_____ *or* _____ Year_____ Reel____ Page_____ *or* File Number_____

PARTIES

PARTY 1:
BUSHWICKED LLC
88 IMGRHAM STREET
BROOKLYN, NY 11237

PARTY 2:
POPULAR HAND LAUNDRY
88 IMGRHAM STREET
BROOKLYN, NY 11237

FEES AND TAXES

Mortgage :		
Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	57.00
Affidavit Fee:	$	0.00

Filing Fee:		
	$	0.00
NYC Real Property Transfer Tax:		
	$	0.00
NYS Real Estate Transfer Tax:		
	$	0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 01-14-2016 09:38
City Register File No.(CRFN): **2016000013822**

City Register Official Signature

DECLARATION of COVENANTS and RESTRICTIONS

THIS COVENANT is made the 16th day of November 2015, by Bushwicked LLC, a limited liability corporation organized and existing under the laws of the State of New York and having an office for the transaction of business at 88 Ingraham Street, Brooklyn, New York 11237.

WHEREAS, Popular Hand Laundry (Site #V00170) is the subject of a Voluntary Cleanup Agreement executed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. as part of the New York State Department of Environmental Conservation's (the "Department's) Voluntary Cleanup Program, namely that parcel of real property located at the address of 88 Ingraham Street in the City of New York, County of Kings, State of New York, being the same as (or part of) that property conveyed to Bushwicked LLC by 88 Ingraham Realty Corp. by deed(s) dated January 28, 2005 and recorded on March 2, 2005 in the City Register of the City of New York in Instrument No. 2005020201743001, and being more particularly described in Schedule "A," attached to this declaration and made a part hereof, and hereinafter referred to as "the Property"; and

WHEREAS, the Department approved a remedy to eliminate or mitigate all significant threats to the environment presented by the contamination disposed at the Property and such remedy requires that the Property be subject to restrictive covenants.

NOW, THEREFORE, Bushwicked LLC, for itself and its successors and/or assigns, covenants that:

First, the Property subject to this Declaration of Covenants and Restrictions is as shown on a map attached to this declaration as Schedule "B" and made a part hereof.

Second, unless prior written approval by the Department or, if the Department shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, where contamination remains at the Property subject to the provisions of the Site Management Plan ("SMP"), there shall be no construction, use or occupancy of the Property that results in the disturbance or excavation of the Property which threatens the integrity of the engineering controls or which results in unacceptable human exposure to contaminated soils. The SMP may be obtained from the New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233.

Third, the owner of the Property shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of engineering controls required for the Remedy, which are described in the SMP, unless in each instance the owner first obtains a written waiver of such prohibition from the Department or Relevant Agency.

Fourth, the owner of the Property shall prohibit the Property from ever being used for purposes other than for Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) without the express written waiver of such prohibition by the Department or Relevant Agency.

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

Sixth, the owner of the Property shall provide access to and cooperate with the responsible party to allow the responsible party to arrange for a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the Department or Relevant Agency, which will certify that the institutional and engineering controls put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

Seventh, the owner of the Property shall continue in full force and effect any institutional and engineering controls required for the Remedy and maintain such controls, unless the owner first obtains permission to discontinue such controls from the Department or Relevant Agency, in compliance with the approved SMP, which is incorporated and made enforceable hereto, subject to modifications as approved by the Department or Relevant Agency.

Eighth, this Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the Property, and shall provide that the owner and its successors and assigns consent to enforcement by the Department or Relevant Agency of the prohibitions and restrictions that the Voluntary Cleanup Agreement requires to be recorded, and hereby covenant not to contest the authority of the Department or Relevant Agency to seek enforcement.

Ninth, any deed of conveyance of the Property, or any portion thereof, shall recite, unless the Department or Relevant Agency has consented to the termination of such covenants and restrictions, that said conveyance is subject to this Declaration of Covenants and Restrictions.

IN WITNESS WHEREOF, the undersigned has executed this instrument the day written below.

BUSHWICK LLC.

By: _____

Print Name: Martin Zimmerman

Title: managing member Date: 11/16/2015

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss.:
COUNTY OF Kings)

On the 16th day of November, in the year 2015, before me, the undersigned, personally appeared Martin Zimmerman, personally know to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

SEAL

CELIA M MUENTES
NOTARY PUBLIC-STATE OF NEW YORK
No. 01MU6327733
Qualified In New York County
My Commission Expires July 13, 2019

Notary Public, State of New York

SCHEDULE "A"

All that certain plot, piece or parcel of land, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and describe as follows:

BEGINNING at a point on the southerly side of Ingraham Street distant 300 feet westerly from the southwesterly corner of Ingraham Street and Porter Avenue;

RUNNING THENCE southerly parallel with Porter Avenue 100 feet;

THENCE westerly parallel with Ingraham Street 75 feet;

THENCE northerly parallel with Porter Avenue 100 feet to the Southerly side of Ingraham Street; and

THENCE easterly along the southerly side of Ingraham Street 75 feet to the point or place of BEGINNING.

INGRAHAM STREET

STEEL FACE CURB

CONCRETE SIDEWALK

POINT OF BEGINNING
STEP 1.0'N

ON LINE

ON LINE 75.00' ON LINE

300.00'

(PARALLEL WITH PORTER AVENUE)
100.00'

INDEPENDENT WALLS ALONG LINE

1 STORY BRICK & CONC. BLOCK WITH CELLAR

2 STORY BRICK WITH CELLAR No. 88

(PARALLEL WITH PORTER AVENUE)
100.00'

INDEPENDENT WALLS ALONG LINE

1 STORY MASONRY WITH CELLAR

HIGH 1 STORY BRICK WITH CELLAR

5.0'N

5.0'N

YARD

(PARALLEL WITH INGRAHAM STREET)
75.00' VACANT LOT

RECEIVED
DEC - 8 2015
NYS DEC REGION 2
ENVIRONMENTAL REMEDIATION

NOTES:
1. THIS SURVEY IS INTENDED TO BE USED FOR TITLE PURPOSES ONLY AND IS SUBJECT TO WHATEVER A MORE COMPLETE TITLE SEARCH MAY REVEAL.
2. NO GUARANTEE IS IMPLIED BY THIS MAP AS TO THE EXISTENCE OR NONEXISTENCE OF ANY EASEMENTS OF RECORD THAT WOULD EFFECT SUBJECT PROPERTY, UNLESS SURVEYOR HAS BEEN FURNISHED WITH A COMPLETE COPY OF TITLE REPORT.
3. IT IS NOT TO SCALE AND USING IT TO LOCATE AND DESIGN NEW CONSTRUCTION MAY RESULT IN PROBLEMS FOR WHICH THIS SURVEYOR WILL NOT BE LIABLE.
4. PROPERTY CORNER MONUMENTS WERE NOT PLACED AS PART OF THIS SURVEY.
5. IT IS A VIOLATION OF THE STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY.
6. ARCHITECTS MUST ORDER A TOPOGRAPHICAL MAP SPECIFYING THEIR EXACT NEEDS.

CERTIFIED TO:

MARTIN ZIMMERMAN AND MELANIE ZIMMERMAN
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
LEX TERRAE, LTD.

DATE SURVEYED: NOVEMBER 10th, 2004

GERALD T. O'BUCKLEY
PROFESSIONAL LAND SURVEYORS
172-49 HENLEY ROAD
JAMAICA, N.Y. 11432-2742
TELEPHONE (718)658-7634
FAX (718)658-0048

TAX MAP		FILED MAP	
SECTION		SECTION	
BLOCK	2998	BLOCK	
LOT	19	LOT	

BOROUGH OF BROOKLYN
COUNTY OF KINGS
STATE OF NEW YORK

TITLE NO. KIN-235342-L

Gerald T. O'Buckley

GERALD T. O'BUCKLEY, P.L.S.
NEW YORK LICENSE 039834

APPENDIX D

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 2
47-40 21st Street, Long Island City, NY 11101
P: (718) 482-4995
www.dec.ny.gov

June 17, 2016

Joseph Brynes
President/CEO
Enviro Trac Engineering PE PC
5 old Dock Road
Yaphank NY 11980

Re: Site Name: Popular Hand Laundry
NYSDEC Site No.: V00170
Sub-Slab Depressurization System (SSDS) Design Plan

Dear Mr. Brynes:

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has completed the review of the SSDS Design Plan (the Plan) dated June 16, 2016. The plan was prepared by Enviro Trac Engineering PE PC on behalf of 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. (collectively, the Volunteer). Based upon the information and representation given in the Plan, the document is deemed appropriate and is hereby approved.

The approved Plan must be placed by the Volunteer in all publicly accessible repositories for the project within 5 business days. A certification that this document has been placed in project repositories, and that the repositories are complete with all project documents, must be submitted to the NYSDEC project manager.

Please note that the Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under the approved Plan. In particular, the Volunteer and its contractors are responsible for the structural integrity of excavations, and protection of the structural integrity of buildings, utilities, and other structures both onsite and offsite that may be adversely affected by those excavation. The Volunteer and its contractors must obtain all local, state, or federal permits or approvals that may required to perform the work under the Plan. Further, the Volunteer and its contractors are solely responsible for the identification of utilities that might be affected by work during the Plan implementation of all required, appropriate, or necessary health and safety measures during performance of the work under the approved Plan.

Please provide a written schedule for implementing the activities in the approved Plan, including time frames for completion of various tasks, within 15 days of the date of this letter.

If there any questions regarding this matter, please call me at (718) 482-4905.

Sincerely,

Bryan Wong
Environmental Engineer

ec: Jane O'Connell – NYSDEC
Albert DeMarco – NYSDOH
Dale Konas, PE – Enviro Trac
William Eisen – 88 ingraham Realty Corp.

APPENDIX E

Appendix E
Project Photo Log: SSD System Installation

08/08/16: View of SSD System blower and discharge piping

08/08/16: SSD System blower mounted to exterior building wall

08/08/16: SSDS System piping penetration of exterior building wall

08/08/16: Installation of new disconnect switch and electrical distribution panel

APPENDIX F

Sub-Slab Depressurization System (SSDS) Design Plan

POPULAR HAND LAUNDRY SITE
88 Ingraham Street
Brooklyn, NY
VCP Site No. V00170

June 16, 2016

Prepared By:

EnviroTrac Engineering PE PC
5 Old Dock Road
Yaphank, NY 11980

CERTIFICATIONS

I, Dale Konas, certify that I am currently a NYS-registered Professional Engineer and that this Sub-Slab Depressurization System Design Plan was prepared in accordance with applicable statues and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

081035	6/16/16	
NYS Professional Engineer No.	Date	Signature

EnviroTrac

Table of Contents

Figures

Attachments

SUB-SLAB DEPRESSURIZATION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

Install a sub-slab depressurization system (SSDS) to allow the lateral movement, collection and venting of gas vapor from below the subject building. System components include an existing network of 2-inch schedule 40 PVC vent points installed at select locations throughout the building floor slab. Each vent point is routed through individual headers that are mounted along the first floor building ceiling and then routed through the exterior building wall. Each of the two (2) building penetrations will then combine into one 4-inch diameter common header and then continue up the exterior of the building wall. The common header will continue up to a location above the roof line, and then vent to atmosphere by mechanical means. The active sub-slab ventilation system shall be equipped with a wall mounted inline fan. All system components shall be installed as indicated, specified and required within the following sections. A site plan indicating the radius of influence of the proposed SSD system in shown in Figure 1.

This design was prepared based on the results of the SSD pilot study that was conducted on March 30, 2016. The results of this pilot test indicated that a full scale SSD system capable of a total flow rate of 40 cfm @ 14.0 “H2O vacuum would provide sufficient vacuum to the underlying soil to provide optimal coverage. With an extraction point network consisting of two (2) points, a 38-foot radius of influence would be generated. A copy of the SSDS Pilot Study Report (EnviroTrac, May 2016) is included in Attachment A.

1.02 STANDARDS AND REGULATIONS

A. Comply with applicable portions of the Building Code of the City of New York, regulations set forth by the New York State Department of Environmental Conservation (DEC), and New York State Department of Health (DOH). Where requirements for products, materials, equipment, methods and other portion of the work specified herein exceed minimum requirements of City of New York Building Code, contractor shall comply with such requirements specified herein, unless specifically approved otherwise.

B. Standards listed below are referenced in this section.

1. American Society for Testing and Materials (ASTM)

2. American Standards Association (ASA)

3. American National Standards Institute (ANSI)

1.03 AIR EMISSIONS

As per the memorandum issued by the NYSDEC ("Substantive Compliance with Air Requirements", February 28, 2003), any remedial system under a DEC program is exempt for air permitting. However, all systems must demonstrate that they comply with the substantive regulation. In the case of the proposed SSD system, based on historical emissions sampling results and the SSDS performance specification, off-gas treatment will not be required to satisfy this requirement. Although it is not anticipated, in the event that future sampling results indicate the need for off-gas treatment, the system can be retrofitted to accommodate treatment in in order to bring the system back into regulatory compliance. A copy of the NYSDEC memorandum, the site data sheet, and the calculation sheet for the anticipated emission calculations can be seen in Attachment D.

PART 2 - PRODUCTS

2.01 MATERIALS AND ACCESSORIES

A. SUBSURFACE GAS VAPOR COLLECTION PIPE NETWORK, APPURTANCES, AND BUILDING PENETRATION PIPE

1. Polyvinyl Chloride (PVC) Pressure Pipe:

   PVC pipe for gas vapor collection applications for underground installation shall be 2-inch diameter schedule 40 pipe for individual extraction point piping and 4-inch diameter Schedule 40 pipe for the common header. The solid header piping shall be constructed of Schedule 40 PVC and shall be installed as shown in within the design drawings. Raw, unslotted pipe shall have a wall thickness of 0.237-inches, a max working pressure of 220 psi @ 73 degrees F and weigh approximately 205 lbs/100-feet. Joints shall be solvent-welded.

B. VAPOR MONITORING POINTS

1. Monitoring Point:

   The vapor monitoring points shall be a 6-inch long, 0.25-inch inside diameter sampling implant by Geoprobe Systems (sample implant model AT-8625S) or approved equal. A sample manufacturer's cut sheet can be seen in Attachment B.

2. Teflon Tubing:

   The vapor monitoring point shall be connected to 0.25-inch inside diameter Teflon tubing supplied by Geoprobe Systems or approved equal.

3. Fine Sand:

   The sampling point shall be surrounded by sine sand. The fine sand shall be a Morie No. 02 or approved equal.

4. Bentonite:

   A 3-inch layer of bentonite shall be placed directly on top of the fine sand. The bentonite shall be Bariod Granular Bentonite or approved equal.

5. Access Manhole:

   Each vapor monitoring point shall have a cast iron manhole cover fit directly on top of each vapor monitoring point to provide access to the vapor point tubing. Each manhole shall be equipped with stainless steel bolts and a 7-1/2" galvanized steel skirt. The manhole be finished flush with the top of the concrete slab. The manhole will be a 5" diameter watertight monitoring well manhole as manufactured by Morris Industries, model 318002565, or equivalent.

C. INLINE VENTILATION FAN

The inline ventilation fan required for the riser shall be RadonAway HS2000E or approved equal and shall be installed within the riser located along the building exterior wall as shown in Figure 2 and Figure 3. The Blower will be capable of producing a minimum of 40cfm @ a vacuum of 15 "H2O. The blower will consist of an integral enclosure rated for indoor/outdoor use and an internal condensate bypass. The blower will include a 3-inch diameter PVC inlet and a 2-inch diameter PVC outlet. Contractor shall connect the inline ventilation fans to the existing building electrical service. A sample manufacturer's cut sheet can be seen in Attachment C.

D. FITTINGS

1. Fittings for PVC Pipe:

   a. All fittings shall be of the same manufacturer, material, class, and schedule as the pipe. Any required threaded joints shall be provided with Teflon tape or flange joints with nitrile or urethane gaskets.
   b. Solvent cement joints for the pipe and pipe installation shall be made in accordance with the manufacturer's recommendations and ASTM D2855.

E. SLEEVES FOR PIPES

1. Sheet metal sleeves shall be 20 gauge.
2. Pipe sleeves shall be service weight cast iron pipe or schedule 40 galvanized steel pipe.

3. Fire stop penetration materials for sealing sleeves shall be listed by Underwriters Laboratories and shall have Material and Equipment Acceptance (MEA) approval.
4. Material for sealing spaces between pipe and sleeve through foundation walls below grade shall be Link- Seal Type "C" as manufactured by Thunderline Corp; Belleville, Mich. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and sleeve. Links shall be loosely assembled with bolts to form a continuous rubber bolt around the pipe with a pressure plate under each bolt head and nut. Link-Seal pressure plates shall be Type "C" (insulating type) to provide for electrical insulation and cathodic protection.
5. Materials for sealing space between each pipe and sleeve through non-fire rated exterior walls above grade shall be Non-shrinking cement.
6. Waterproof sleeves shall be Link-Seal Wall Sleeve as manufactured by Thunderline Corp, or MetraSeal wall sleeve by the Metraflex Co.

F. GENERAL

Provide additional installation accessories as necessary.

Ensure accessories are from same manufacturer as product.

PART 3 - EXECUTION

3.01 INSTALLATION

All components of the SSDS shall be installed as specified in the within these Specifications and Plans.

A. INSTALLATION OF EXTRACTION POINTS

A total of two (2) existing soil vapor extraction (SVE) wells shall be converted and utilized as SSDS extraction points in the building as shown in Figure 1. At a minimum, each well will consist of a 2-inch diameter schedule 40 PVC pipe well riser that extends to a depth of 5-feet below the bottom elevation of the existing concrete basement floor slab at each location. From a depth of 5-feet to 20-feet bgs, the well will consist of 2-inch diameter schedule 40 PVC well slotted screen (0.020 slot). Further details of the existing well construction can be seen in Figure 3.

Any excess soil that is generated during the installation of the extraction points will be collected and then properly disposed of in accordance to any governing regulations.

B. INSTALLATION OF THE VENT RISER AND INLINE VENTILATION FAN

Vent risers shall extend from each of the extraction points and route to a common header located on the exterior of the building. The header will be routed along the first floor ceiling to a location near the north exterior wall of the building. Care will be

made to ensure that all interior piping is placed and routed in a best effort to reduce intrusion into the interior space of the building. Each of the two (2) extraction pipes will penetrate the exterior wall and will exit the building approximately 9-feet above the existing exterior grade on the north side (front) of the building. Each extraction pipe will then combine into one 4-inch diameter riser and then extend vertically up the exterior wall of the building, where it will connect to the inlet of the vent fan. The vent fan will be mounted to the exterior of the building at an elevation such that the fan will be accessible from the roof of the first floor garage section of the building. The outlet of the vent fan will then be extended to a location above the roof line of the building to its discharge point. The vent riser will terminate at least 1-foot above the surface of the roof at a location at least 10-feet away from any window or other opening into the conditioned space of the building that is less than 2-feet below the exhaust point, and 10-feet away from any adjoining or adjacent buildings. All piping shall be schedule 40 PVC pipe.

All interior riser pipe, beginning at the floor slab elevation and continuing to the point where the pipe penetrates the building exterior foundation wall, shall be clearly and permanently labeled and read as such:

"CAUTION: ACTIVE VENT SYSTEM"

C. INSTALLATION OF THE VAPOR MONITORING POINTS

It is estimated that no additional vapor monitoring points will be required for this installation. Testing of the proposed SSD system will utilize the existing network of vapor monitoring points in order to demonstrate adequate performance of the proposed system. The existing vapor monitoring point locations are shown in Figure 1. In the event additional vapor monitoring points are required, they shall be installed as specified below.

Each vapor monitoring point shall consist of one 6-inch long, 0.25-inch inside diameter sampling implant by Geoprobe Systems (sample implant model AT-8625S) or approved equal. The sample implant shall be attached to 0.25-inch inside diameter Teflon tubing from Geoprobe Systems. The Implant will be installed in accordance with the manufacturer's instructions. This will include driving a macrocore probe rod with a handheld unit, attaching the sample implant to the drive tip, and placing fine sand (Morie No. 02) around the sample implant while retracting the macrocore rods. The 5-inch manhole shall be placed over the tubing. Approximately 3-inches of hydrated bentonite will be placed within the curb box liner and directly on top of the fine sand. Concrete will be placed on top of the hydrated bentonite to within 3-inches of the top of the curb box.

D. PIPING (GENERAL)

1. The run and arrangements of all pipes shall be approximately as shown in the Figures or specified and as directed during installation, and shall be as straight and direct as possible, forming right angles or parallel lines with building walls and other pipes, and neatly spaced. No pipe shall be installed where the headroom will be interfered with unless the conditions

are such that it is unavoidable and permission is obtained from the property owner. Offsets will be permitted where walls reduce in thickness or beams interfere with direct runs; offsets shall be made at an angle of 45 degrees to the vertical; in no case shall the space between the pipes, partitions, walls, etc., exceed 5". All exposed risers shall be erected plumb, standing free, close to and parallel with walls and other pipes and be uniformly spaced. All horizontal runs of piping hung from structural floor, slab or floor beams shall be erected as closely as possible to bottom of floor slabs, ceilings, or I-beams as the case may be. In no case shall the headroom, beneath the pipe, be less than (7'-0") where the pipe is installed more than (1'-0") from wall, partition, etc., except where piping is required to be installed in Boiler Room and Mechanical spaces above floor. Horizontal piping shall be so graded as to drain back to each individual extraction point. All piping shall be installed with ample space for pipe covering.

2. Roughing underground or concealed in the floor or wall construction shall be properly installed, tested and inspected before any of the roughing is covered up. Should any work be covered up before being inspected and tested, it shall be uncovered and recovered at the expense of the Contractor. Plugged fittings shall be installed when called for. Reducer fittings or bushings shall be used in making reductions in sizes of pipes.

E. PIPING JOINTS

1. Threaded Joints

The joints piping shall be screwed joints of full length and threads shall be NPT. All pipes shall be screwed close up to their shoulders, not to leave more than 3 threads exposed. The use of lamp wick is prohibited in threaded joints. All burrs shall be removed. Pipe joint cement or Teflon tape shall be used only on male threads.

2. Solvent-cementing:

a) Remove all burrs, chips, filings, and other debris from the pipe i.d. and o.d. before joining.

b) All pipe ends should be beveled to minimize the chances of wiping the solvent cement from the i.d. of the fitting as the pipe is socketed. Beveling can be done with the coarse file or beveling tool.

c) Using a clean, dry cotton rag, wipe away all loose dirt and moisture from the i.d. and o.d. of the pipe end and the i.d. of the fitting. Do not attempt to solvent-cement wet surfaces.

d) Using a natural-bristle brush about one-half the width of the pipe diameter to be joined, apply primer freely to the inner fitting socket. Keep the surface wet by continuously brushing the entire surface for 5 to 15 seconds. Redip the applicators as necessary, but avoid puddling inside the fitting. Reapply primer to the fitting socket.

e) Apply primer to the pipe surface in the same manner, making sure that the length of pipe evenly covered is at least equal to the fitting socket depth.

f) Using a second clean natural-bristle brush one-half the size of the pipe diameter, apply a heavy coat of solvent cement to the male end of the pipe. Next apply a liberal coat of solvent cement to the inside of the socket using straight outward strokes to keep excess cement out of the socket.

g) While both surfaces are still wet with solvent cement, insert the pipe into the socket with a twisting motion. The pipe must go to the bottom of the socket. The application of solvent cement to pipe and fitting, and the insertion of pipe into the fitting, should be completed in less than 1 minute. Hold the joints together for approximately 30 seconds until both surfaces are firmly gripped.

h) After solvent-cementing, hold joints together for 30 seconds until both surfaces are firmly gripped. Allow proper set time before disturbing joints. The initial set time prior to installation is as follows:

Temperature Range	**Pipe Sizes 1/4”- 1/2”**	**Pipe Sizes 1½”-3”**	**Pipe Sizes 4”-8”**	**Pipe Sizes 10”-16”**	**Pipe Sizes 18”-24”**
60°-100°F	15 Min.	30 Min.	1 Hr.	2 Hr.	3 Hr.
40°-60°F	1 Hr.	2 Hr.	4 Hr.	8 Hr.	12 Hr.
0°-40°F	3 Hr.	6 Hr.	12 Hr.	24 Hr.	36 Hr.

F. SLEEVES FOR PIPES

1. General: All plumbing pipes passing through floors, roofs, walls, partitions, furring, beams, trenches, and wherever else indicated on the drawings shall be provided with sleeves. Where plumbing pipes pass through potentially wet floors that do not have membrane waterproofing such as toilet rooms, cafeteria kitchens, serving areas, dish washing room, janitor's sink closet, mechanical equipment rooms, pipe chases and areas that are provided with fire protection sprinkler systems, the Contractor shall install sleeves of galvanized steel pipe with welded clips or equivalent at bottom ends for securing sleeves to form work and shall project one inch above finished floors, and shall be caulked watertight.

2. For interior walls and floors and for pipes through roof, the space between each installed pipe and its sleeve shall be sealed with a three hour rated fire stop penetration material. Fire stop materials shall be installed in accordance with the instructions of the manufacturer.

3. Sheet Metal Sleeves

   a. Sleeves for pipes passing through floors, partitions, hung or furred ceilings, shall be installed with 1/2" maximum clearance all around pipes. Each sleeve for a pipe passing through an interior floor slab shall be fitted with a one-inch flange, or equivalent, at

the bottom end for the purpose of securing it to the form work or sheet metal deck.

The sleeve shall finish flush with the top of the finished floor. Sleeves for pipes passing through partitions, hung or furred ceilings shall be of one-piece construction and shall finish flush with the finished surface.

b. Sleeves installed for pipes passing through vent ducts shall be securely fastened, soldered and made airtight.

4. Pipe Sleeve: Install pipe sleeves for pipes passing through roofs, concrete beams, utility trenches, grade beams, brick walls, foundation walls and floor slabs on earth. Sleeves shall be installed with 1/2" maximum clearance all around pipe and shall finish flush with the surfaces penetrated. Pipe sleeves for pipes through roof shall be made of service weight cast iron only.

G. GENERAL

All system components shall be installed in accordance to ASTM 2121-12 “Standard Practices for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings”

3.02 PIPE AND FITTING SCHEDULE

A. Sub-Slab Depressurization System

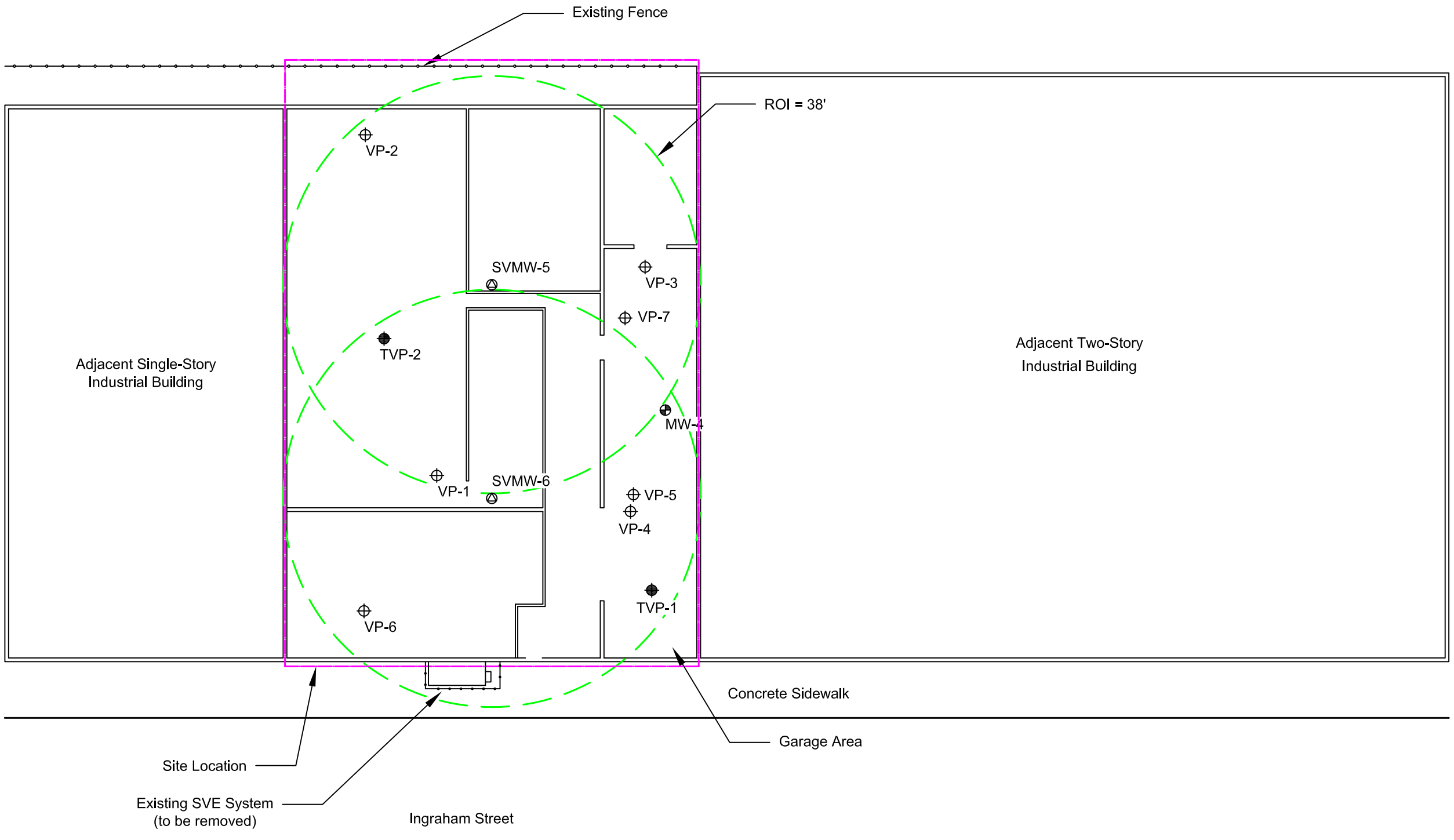
PVC pipe Schedule 40 with welded joints (Interior & Exterior)

3.03 PROTECTION

It is the responsibility of the Contractor to ensure that no damage occurs to components of the SSDS prior to, during or following installation of system, or during any subsequent performance of construction for the facility as identified on the drawings and specifications. This includes the installation of all subsurface utilities required for the operation of building systems.

END OF SECTION

FIGURES



SCALE:
0 5' 10' 15' 20'
SCALE IN FEET

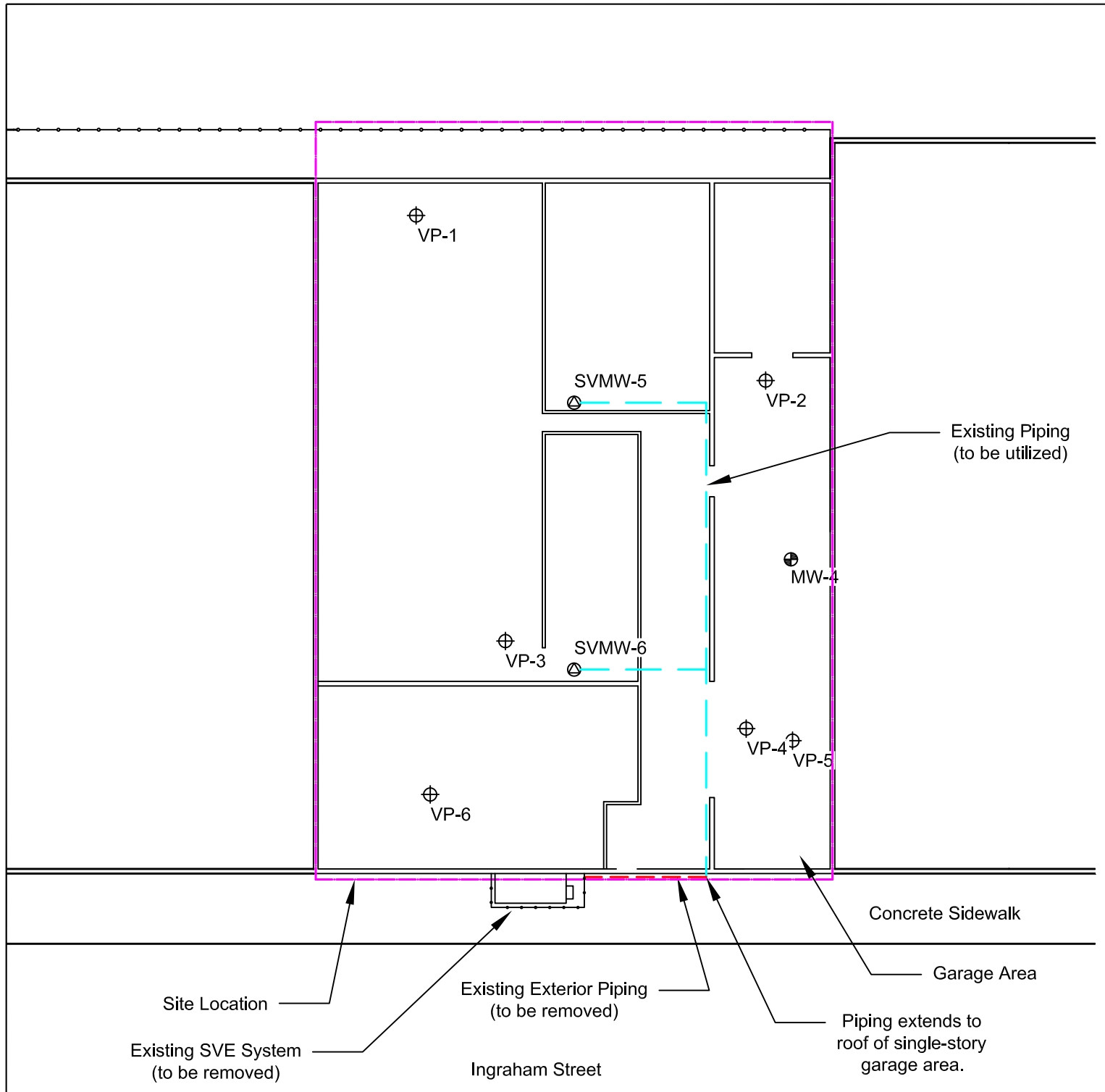
LEGEND:
- Radius of Influence
- Existing Monitoring Well Location
- Existing Vapor Extraction Location
- Existing Vapor Point Location
- Temporary Vapor Point Location

DATE:	FIGURE:	DRAFTED BY:
5/25/16	1	NC/DK

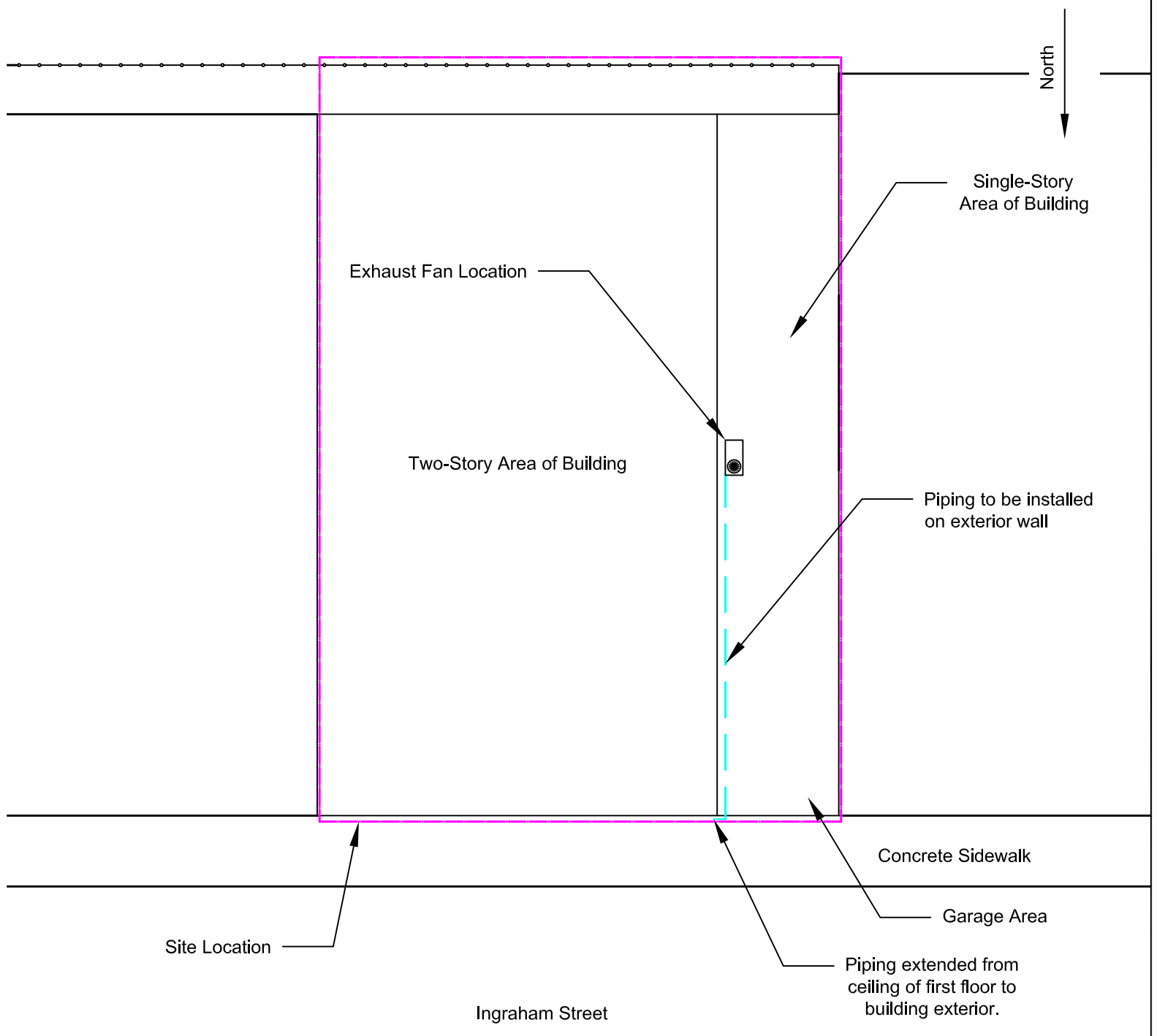
MAP: Site Plan with SSDS Radius of Influence

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

EnviroTrac
Environmental Services
5 Old Dock Road
Yaphank, NY 11980
P: 631.924.3001 F: 631.924.5001



First Floor Piping Plan



Second Floor Piping Plan

SCALE:
0 5' 10' 15' 20'
SCALE IN FEET

LEGEND:
SSDS Fan Location
SSDS Piping
Site Boundary

DATE:	FIGURE:	DRAFTED BY:
5/17/16	2	NC/DK

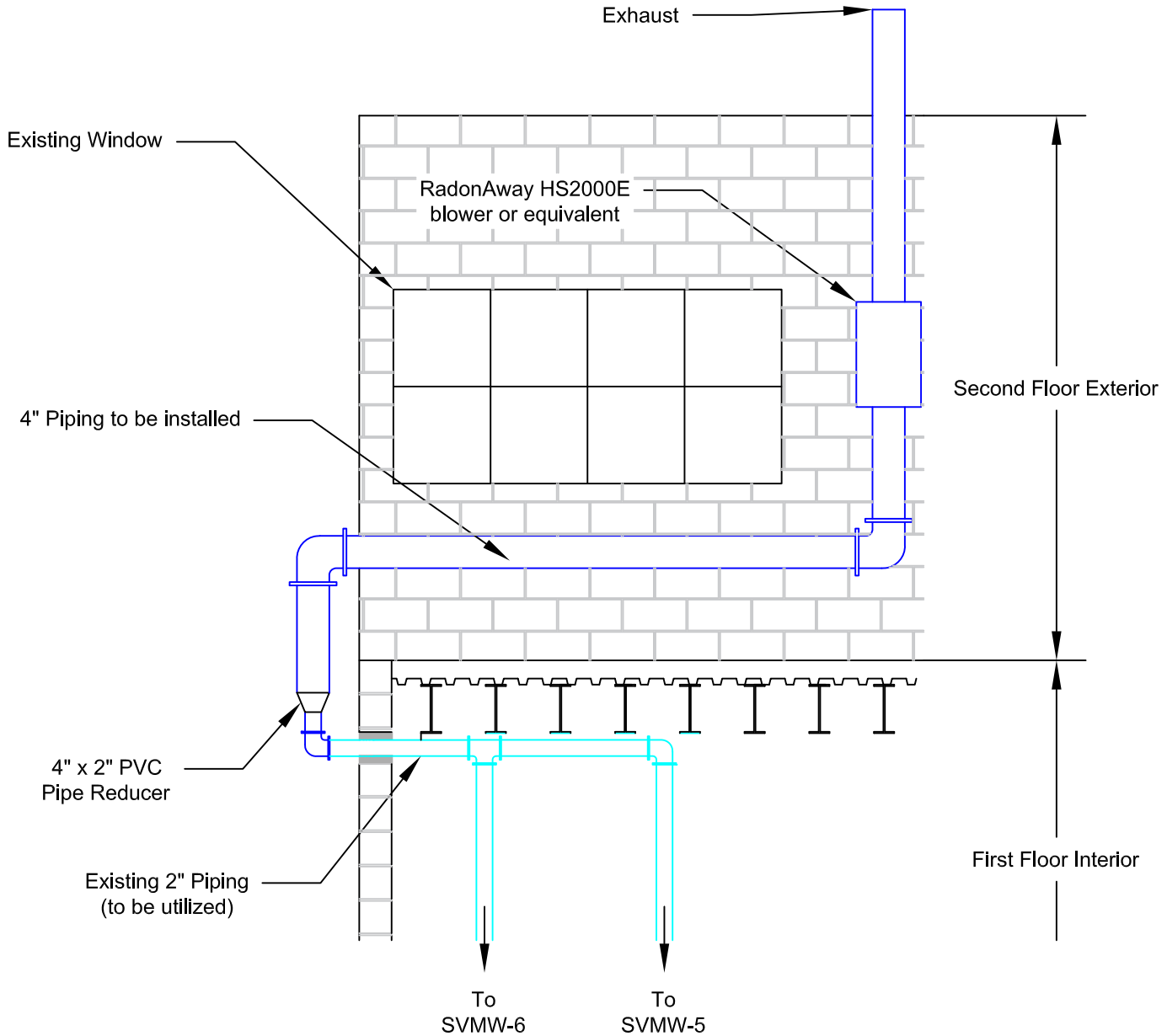
MAP: Proposed SSDS Piping Layout

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

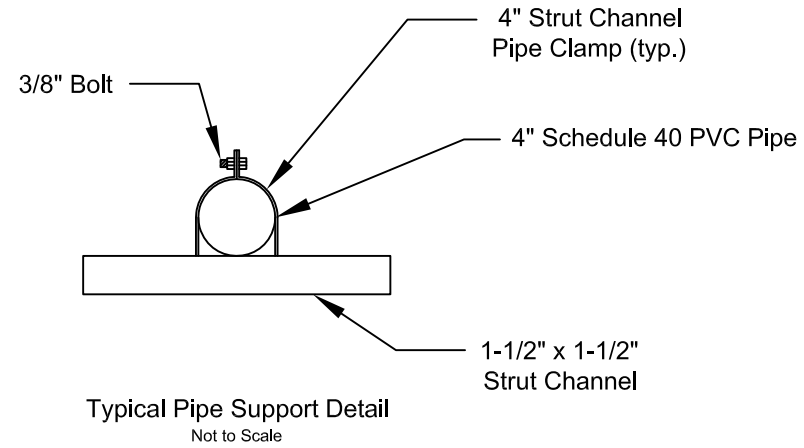
EnviroTrac
Environmental Services
5 Old Dock Road
Yaphank, NY 11980
P: 631.924.3001 F: 631.924.5001

General Notes:

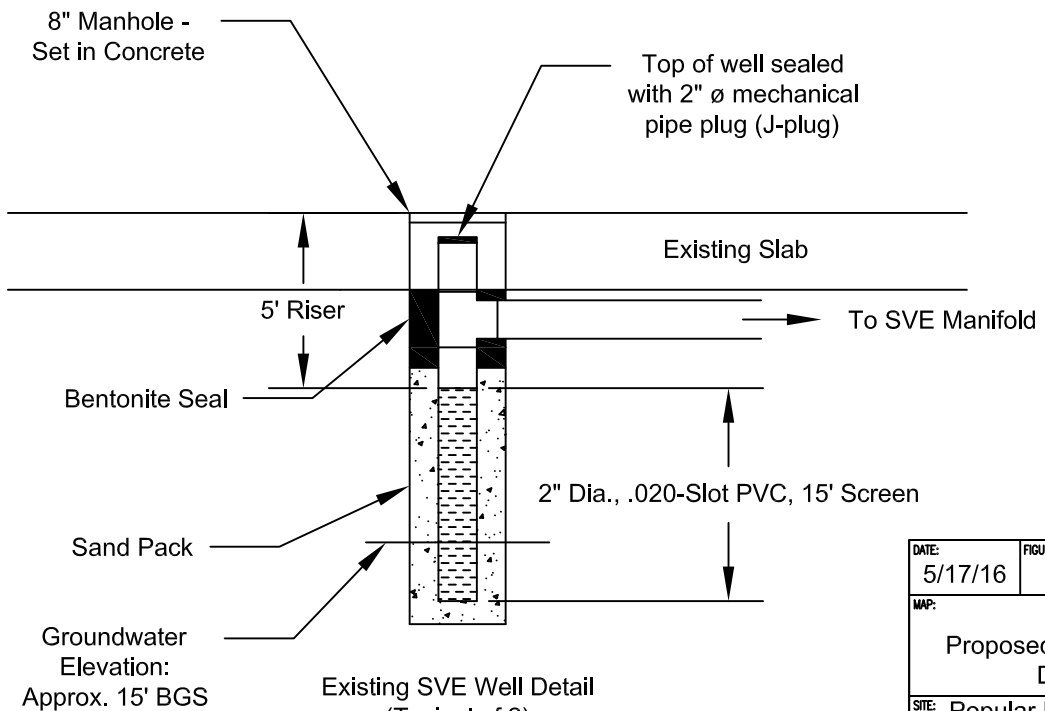
1. To retard soil gas entry, large openings through concrete slabs, wood, and other floor assemblies in contact with the soil, such as spaces around bathtub, shower, or toilet drains, will be filled or closed with materials that provide a permanent airtight seal such as non-shrink mortar, grouts, expanding foam, or similar material designed for such application. Smaller gaps around all pipes, wire, or other objects that penetrate the concrete slab or other floor assembly will be made airtight with an elastomer joint sealant or polyethylene tape, as defined in ASTM C920-87, and applied in accordance with the manufacturer's recommendations. All control joints, isolation joints and any other joints in concrete slabs or between slabs and foundation walls will be sealed. Joints, cracks, or other openings around all penetrations exterior walls below the ground surface will be sealed with an elastometric sealant that provides an airtight seal.
2. Exhaust piping will terminate at least 12 inches above the surface of the roof, in a location at least 10 feet away from any window or other opening into the conditioned spaces of the building or any adjoining or adjacent builing that is less than 2 feet below the exhaust point.
3. The in-line vacuum blower will be installed on the western exterior wall as depicted in "Proposed SSDS Piping Layout", Figure 2. The blower will be a RadonAway HS2000E blower with electrical switch box capable of 72 CFM at 10" WC, or equivalent. The fan is to be installed as per the manufacturer's specifications.
4. All components of the sub slab depressurization system will be in accordance with ASTM E 2121-12 "Standard Practice for Installing Radon Mitigation Systems in Existing Low-rise Residential Buildings".



SSDS Point Detail
(Typical of 2)
Not to Scale



Typical Pipe Support Detail
Not to Scale



Existing SVE Well Detail
(Typical of 2)
Not to Scale

DATE:	FIGURE:	DRAFTED BY:
5/17/16	3	NC/DK

MAP: Proposed SSDS Piping Details

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10542

EnviroTrac
Environmental Services
5 Old Dock Road
Yaphank, NY 11980
P: 631.924.3001 F: 631.924.5001

ATTACHMENT A

Sub-Slab Depressurization System (SSDS) Pilot Test Report

Popular Hand Laundry Site
88 Ingraham Street
Brooklyn, New York
VCP Site No. V00170

Prepared by:

EnviroTrac Engineering PE PC
5 Old Dock Road
Yaphank, NY 11980

May 2016

Sub-Slab Depressurization System (SSDS) Pilot Study Report
Popular Hand Laundry, Brooklyn, New York.

PURPOSE

This report is intended to summarize the results of the SSDS pilot study that was conducted by EnviroTrac on March 30, 2016. The purpose of the test was to determine the feasibility of implementing an SSD system as a viable means of mitigation throughout the existing building structure, as well as determining the required operating parameters and layout of such a system.

TECHNICAL SCOPE OF WORK PERFORMED

1. Pilot Test Equipment

For the purpose of the pilot test, the existing onsite Soil Vapor Extraction (SVE) system equipment was utilized to conduct the test at two representative locations. The existing system consists of two (2) SVE extraction points located on the interior of the building, which provides SVE coverage for the entire footprint of the building. Prior to starting the test, the system piping leading to the SVE wells was temporarily modified to allow for the operation of one single SVE point at a time. Major system components of the existing SVE system are described below.

Soil Vapor Extraction Equipment:

- Extraction Blower – Roots Model #: 47 URAI-J-DSL, Positive Displacement Rotary Lobe Vacuum Pump (10 HP, 230/460V, 3 Phase, 1740 RPM).
    - Max Flow: 523 SCFM
    - Max Vac: 15 “Hg

Additional Test Equipment

- TSI Handheld Air Velocity/Vacuum Meter – Model 8386A

SSDS TESTING METHODOLOGY

The existing SVE system currently consist two (2) SVE extraction wells that are connected to individual piping headers, that are routed to a single manifold located in the existing system shed that houses the vacuum blower. Each test location can be seen in Figure 1. For the purpose of the pilot study, each extraction well was isolated by temporarily modifying the system piping within the system shed, to allow for the bleeding of excess air flow. This allowed each extraction well to be exposed to a greater range of test air flow and vacuum. In order to monitor the sub-slab vacuum response of the test, several temporary vacuum monitoring points were installed through the concrete floor slab, extending radially outward from each test point. These newly installed temporary points were used in conjunction with the network of existing monitoring points. During the test, the vacuum blower was configured to operate at four different steps of increasing flow and vacuum. Throttling of the blower was carried out by making adjustments to the system manifold control valve as well as bleeding excess flow through the temporary system fresh air inlet valve. During each step, operating parameters such as applied flow and vacuum, and sub-slab vacuum responses were recorded. The applied extraction well flow and vacuum were measured from a monitoring point located in the extraction piping several feet above where the piping penetrates the floor slab. The wellhead vacuum and extraction flow rate for each step were recorded as the following:

SV/MW-5

- Step 1 – 4.0 "H_2O Wellhead Vacuum, 8.5 scfm Extraction Flow Rate.
- Step 2 – 8.0 "H_2O Wellhead Vacuum, 16.0 scfm Extraction Flow Rate.
- Step 3 – 15.0 "H_2O Wellhead Vacuum, 24.0 scfm Extraction Flow Rate.
- Step 4 – 20.0 "H_2O Wellhead Vacuum, 40.0 scfm Extraction Flow Rate.

SV/MW-6

- Step 1 – 4.0 "H_2O Wellhead Vacuum, 13.0 scfm Extraction Flow Rate.
- Step 2 – 8.0 "H_2O Wellhead Vacuum, 16.5 scfm Extraction Flow Rate.
- Step 3 – 15.0 "H_2O Wellhead Vacuum, 24.0 scfm Extraction Flow Rate.
- Step 4 – 20.0 "H_2O Wellhead Vacuum, 45.0 scfm Extraction Flow Rate.

During each step vacuum influence was recorded from all monitoring points utilizing a handheld digital manometer. For each step the operating conditions were allowed to sufficiently stabilize at a steady state condition prior to the recording of any readings.

PILOT TESTING RESULTS

The field data collected during the SSDS pilot test is included as an attachment to this report. Flow and vacuum readings were recorded during each step of the SSDS test, while vacuum influence was measured at each observation point. A copy of the pilot test data analysis from each test well, along with a plot of sub-slab vacuum response vs. distance, is also provided as an attachment. From this plot the effective Radius of Influence (ROI) of each of the four test steps of the pilot study is determined by finding the radial distance where a best fit logarithmic line plot of the data intersects the line y = 0.04 "H_20 (~1 pascal) vacuum response. For SVE/MW-5 a minimum of 11.0 "H2O vacuum at a minimum flow rate of 20 cfm and for SVE/MW-6 a minimum of 5.0 "H2O vacuum at a minimum flow rate of 12 cfm from each well, would be required to meet the minimum radius of influence (ROI) (~38 feet) to achieve complete coverage of the building footprint.

It should be noted, that during the analysis of the collected pilot test data, several data points were removed from the analysis due to outlying results which may have been skewed as a result of the construction of several existing wells. Details of the construction of these wells are unknown at this time, thus limiting the level of confidence in results generated for the data points. As an example data collected from VP-7 was eliminated from the analysis of both extraction wells.

CONCLUSIONS

Based on the results tabulated, the pilot testing performed demonstrates that a full scale SSD system can serve as an effective means of mitigation for the existing site building. If a target ROI of 38 feet is selected for each proposed extraction point, it was determined that a minimum vacuum of ~12.0 "H2O and an air flow rate of ~22 CFM would need to be applied at each point. Appropriate consideration will be addressed concerning the number and spacing of the extraction points.

Recommended Design Parameters (each extraction point):

- Target Radius of Influence (ROI): 38 feet
- Applied Vacuum: 11.0 "H2O
- Applied Flow Rate: 20 CFM

Recommended Design Parameters (Total System Performance):

- Target Radius of Influence (ROI): 38 feet (per well)
- Applied Vacuum: 14.0 "H2O (inc. 25% SF for system losses)
- Applied Flow Rate: 40 CFM

FIGURES

- Figure 1: Site Plan

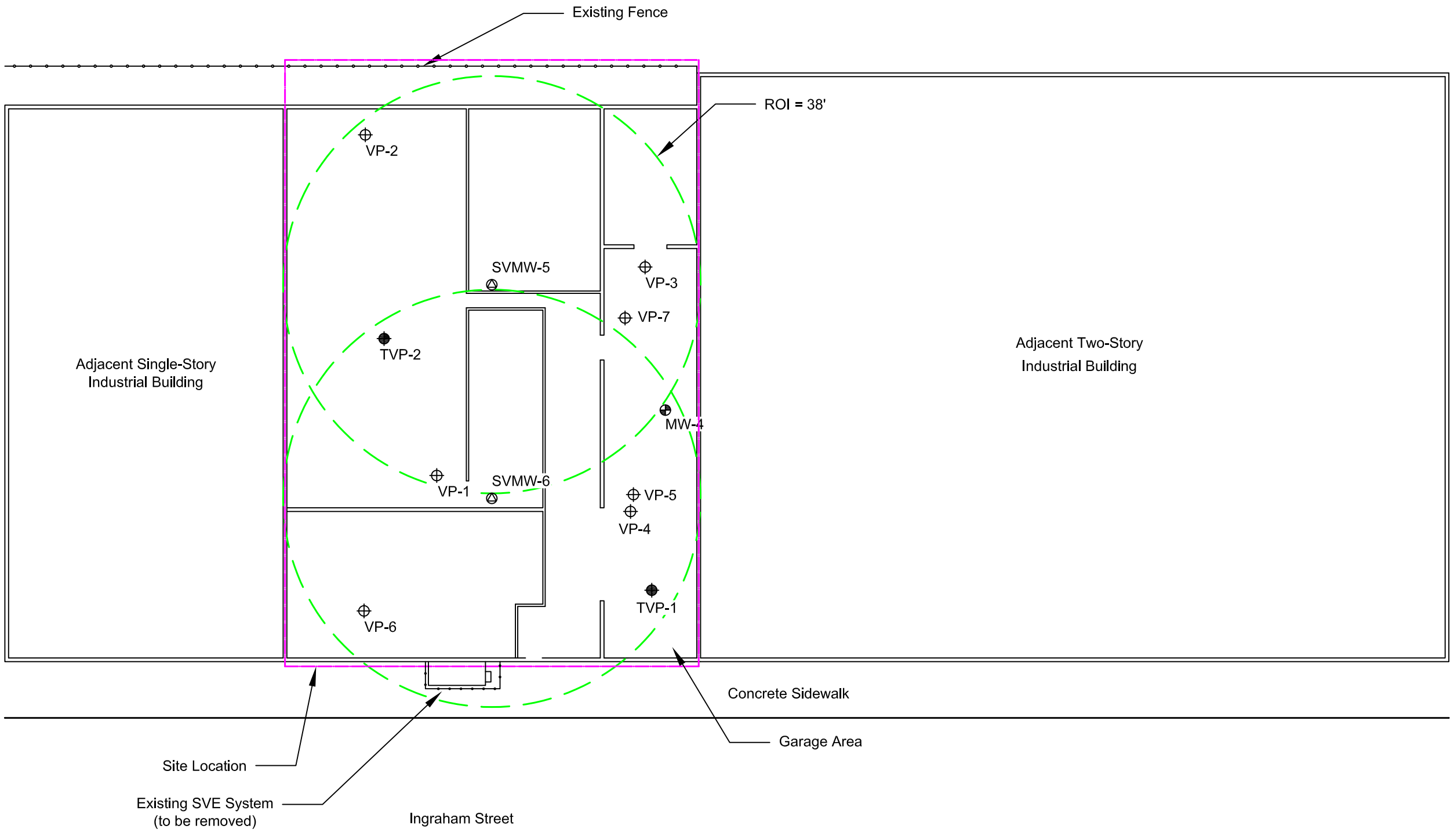
ATTACHMENTS

1. SVE/MW-5: Pilot Test Data – Field Measurements
2. SVE/MW-5: SSD Test Data Analysis
3. SVE/MW-5: Plot: Vacuum Response vs. Monitoring Point Distance
4. SVE/MW-5: Plot: Radius of Influence vs. Applied Vacuum
5. SVE/MW-5: Plot: Applied Flow vs. Applied Vacuum
6. SVE/MW-6: Pilot Test Data – Field Measurements
7. SVE/MW-6: SSD Test Data Analysis
8. SVE/MW-6: Plot: Vacuum Response vs. Monitoring Point Distance
9. SVE/MW-6: Plot: Radius of Influence vs. Applied Vacuum
10. SVE/MW-6: Plot: Applied Flow vs. Applied Vacuum

REFERENCES

1. ASTM E1465-08a “Standard Practice for Radon Control Options”
2. ASTM E2121-13 “Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings”

FIGURES



SCALE:
0 5' 10' 15' 20'
SCALE IN FEET

LEGEND:
- Radius of Influence
- Existing Monitoring Well Location
- Existing Vapor Extraction Location
- Existing Vapor Point Location
- Temporary Vapor Point Location

DATE:	FIGURE:	DRAFTED BY:
5/25/16	1	NC/DK

MAP: Site Plan with SSDS Radius of Influence

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

EnviroTrac
Environmental Services
5 Old Dock Road
Yaphank, NY 11980
P: 631.924.3001 F: 631.924.5001

ATTACHMENTS

(SSDS) Pilot Test Data

Site Name: 88 INGRAHAM ST. BROOKLYN, NY

Test Date: 3/30/2016

Personnel: DW

Weather: Clear 44 DEG F

Extraction Well: SV/MW 5

Time (elapsed)	Well Head Vac "H20		Flow (scfm)		Observation Well VP-2 Distance (ft) 35 Vacuum"H_20	Observation Well VP-3 Distance (ft) 28 Vacuum"H_20	Observation Well VP-5 Distance (ft) 45 Vacuum"H_20	Observation Well VP-7 Distance (ft) 25 Vacuum"H_20	Observation Well TVP-1 Distance (ft) 62 Vacuum"H_{21}	Observation Well TVP-2 Distance (ft) 25 Vacuum"H_{22}	Observation Well Distance (ft) Vacuum"H_{23}
30 min	4.0		8.5		0.000	-0.004	-0.005	-0.040	-0.009	-0.001	
60 min	8.0		16		-0.010	-0.011	-0.012	-0.062	-0.026	-0.019	
90 min	15.0		24		-0.003	-0.008	-0.014	-0.090	-0.019	-0.033	
120 min	20.0		40		-0.040	-0.022	-0.033	-0.122	-0.016	-0.056	

Comment / Notes: Used existing SVE System blower for test. Roots 47 URAI-J-DSL 10HP

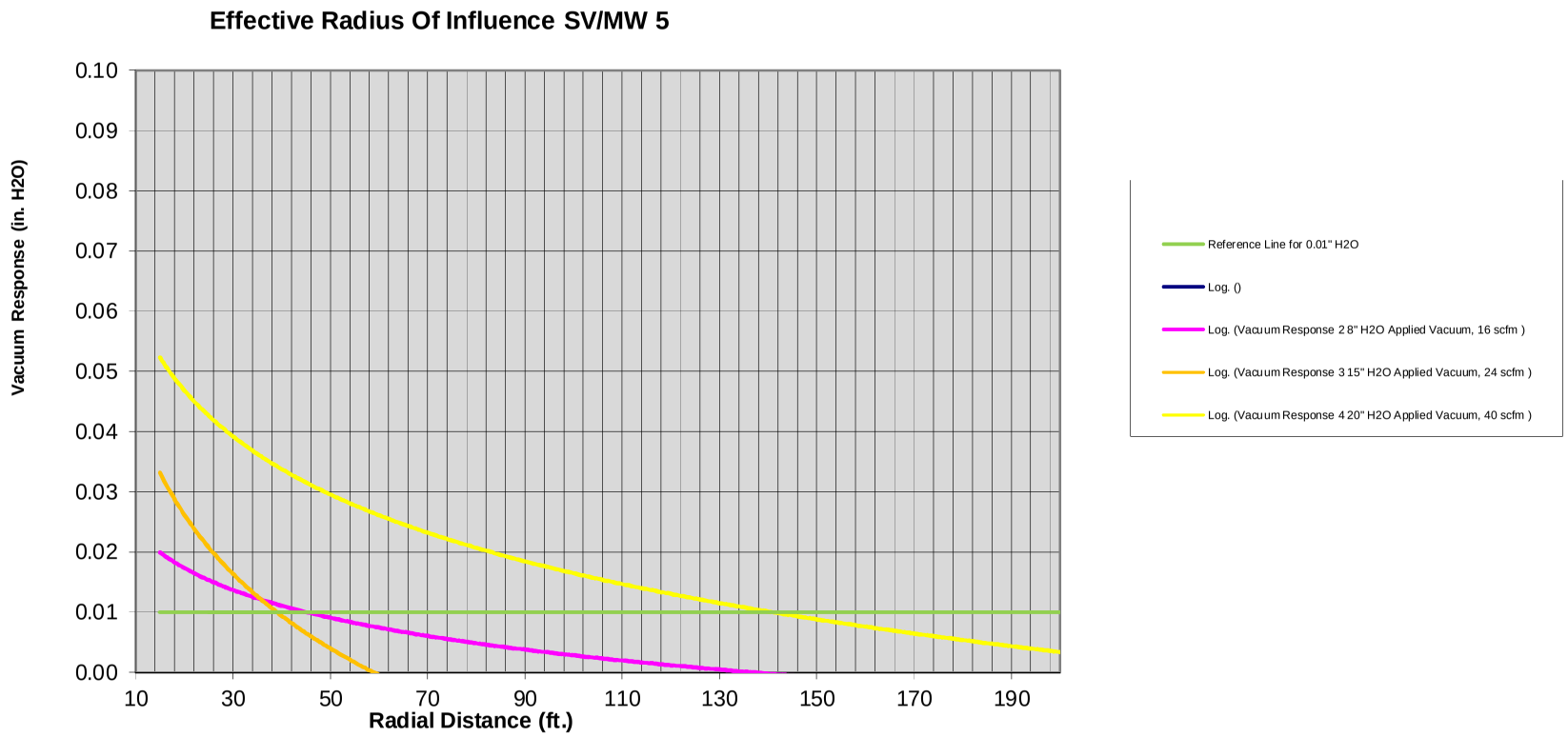
Test Date:	3/30/2016
Performed By:	EnviroTrac - DW
Extraction Point:	SV/MW-5
Test Duration (min.):	2 hrs
Wellhead Vacuum ("H2O):	8 to 20
Wellhead Flow (scfm):	16 to 40

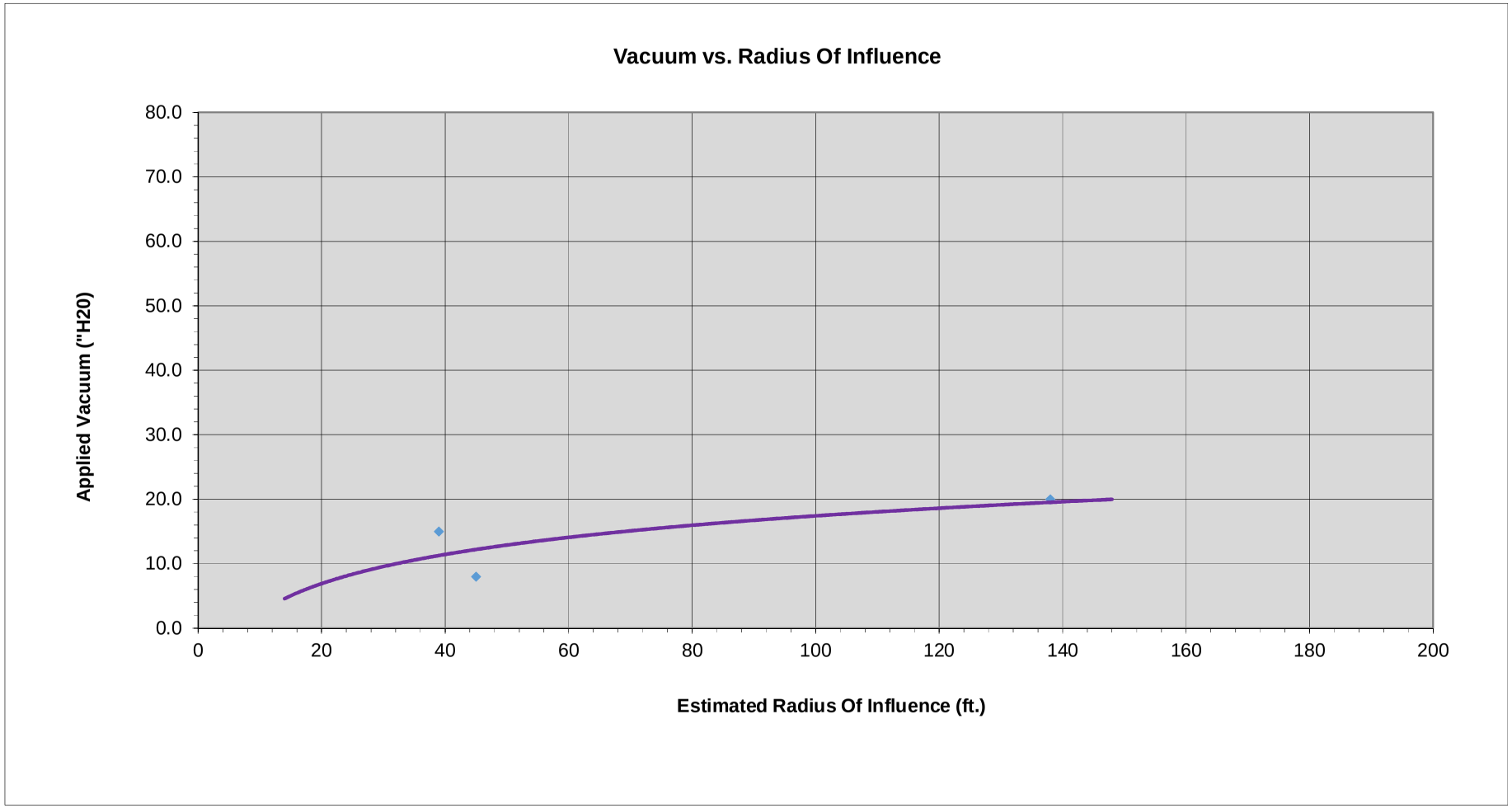
SSDS Design Data

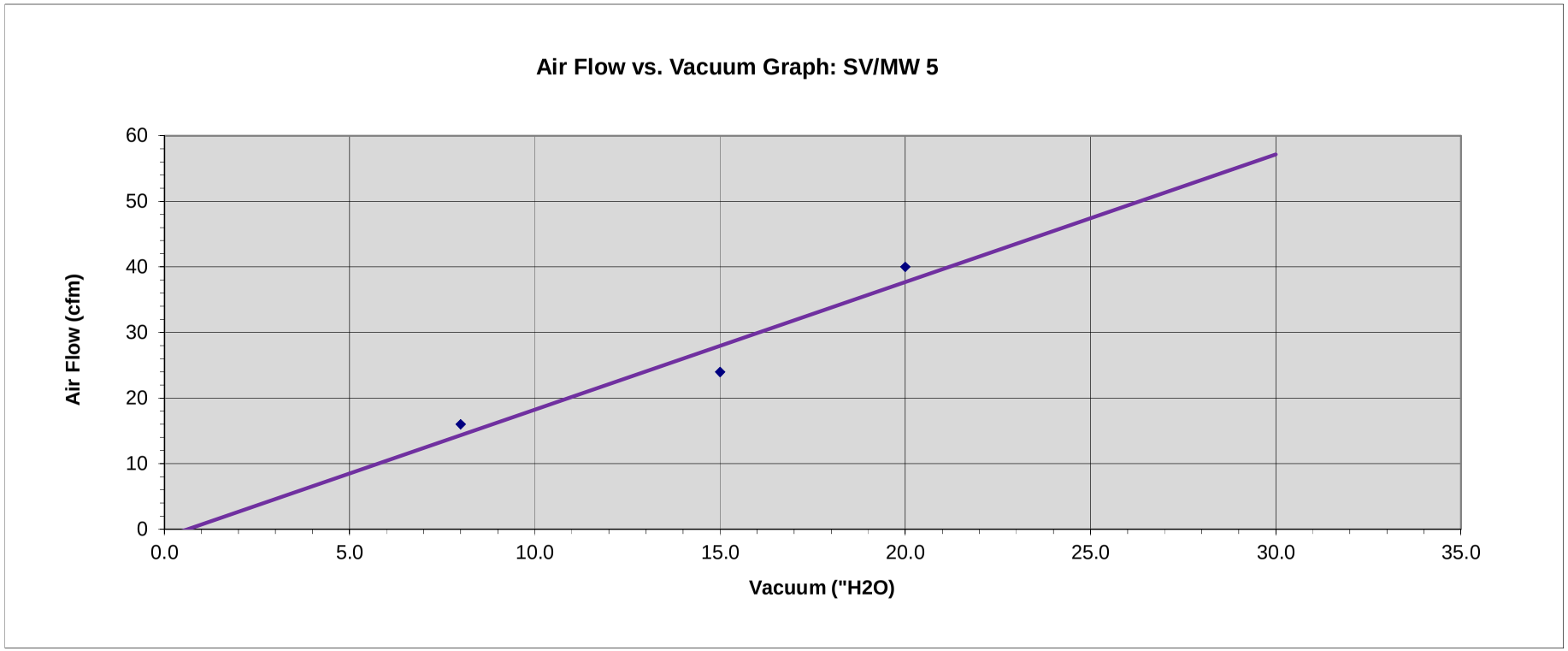
Radial Distance (ft.)	Vacuum Response 2 8" H2O Applied Vacuum, 16 scfm	Vacuum Response 3 15" H2O Applied Vacuum, 24 scfm	Vacuum Response 4 20" H2O Applied Vacuum, 40 scfm	Reference Line for 0.01" H2O	TEST POINT ID
25	0.019	0.033	0.056	0.01	TVP-2
28	0.011	0.008	0.022	0.01	VP-3
35	0.010	0.003	0.040	0.01	VP-2
45	0.012	0.014	0.033	0.01	VP-5

Est. ROI (ft.)	Vacuum ("H2O)	Flow (scfm)
39	15.0	24
45	8.0	16
138	20.0	40

Design Parameters	
Flow (cfm):	20
Vacuum ("H2O):	11


Effective Radius Of Influence SV/MW 5
Vacuum Response (in. H2O)
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
10
30
50
70
90
110
130
150
170
190
Radial Distance (ft.)
Reference Line for 0.01" H2O
Log. ()
Log. (Vacuum Response 2 8" H2O Applied Vacuum, 16 scfm)
Log. (Vacuum Response 3 15" H2O Applied Vacuum, 24 scfm)
Log. (Vacuum Response 4 20" H2O Applied Vacuum, 40 scfm)


Vacuum vs. Radius Of Influence
Applied Vacuum ("H20)
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0
20
40
60
80
100
120
140
160
180
200
Estimated Radius Of Influence (ft.)


Air Flow vs. Vacuum Graph: SV/MW 5
Air Flow (cfm)
60
50
40
30
20
10
0
0.0
5.0
10.0
15.0
20.0
25.0
30.0
35.0
Vacuum ("H2O)

(SSDS) Pilot Test Data

Site Name: 88 INGRAHAM ST. BROOKLYN, NY

Test Date: 3/30/2016

Personnel: DW

Weather: Clear 44 DEG F

Extraction Well: SV/MW 6

Time (elapsed)	Well Head Vac "H20		Flow (scfm)		Observation Well VP-2 Distance (ft) 69 Vacuum"H_20	Observation Well VP-3 Distance (ft) 50 Vacuum"H_20	Observation Well VP-5 Distance (ft) 25 Vacuum"H_20	Observation Well VP-7 Distance (ft) 42 Vacuum"H_20	Observation Well TVP-1 Distance (ft) 33 Vacuum"H_{21}	Observation Well TVP-2 Distance (ft) 35 Vacuum"H_{22}	Observation Well VP-6 Distance (ft) 32 Vacuum"H_{23}
30 min	4.0		13		0.000	0.000	-0.007	-0.012	-0.057	-0.002	-0.011
60 min	8.0		16.5		-0.012	0.000	-0.031	-0.021	-0.011	0.000	-0.011
90 min	15.0		24		0.000	-0.003	-0.032	-0.036	-0.029	-0.006	-0.012
120 min	20.0		45		-0.011	-0.021	-0.044	-0.064	-0.073	-0.024	-0.015

Comment / Notes: Used existing SVE System blower for test. Roots 47 URAI-J-DSL 10HP

Summary of Sub Slab Depressurization Pilot Test Data
88 INGRAHAM ST.
BROOKLYN, NY

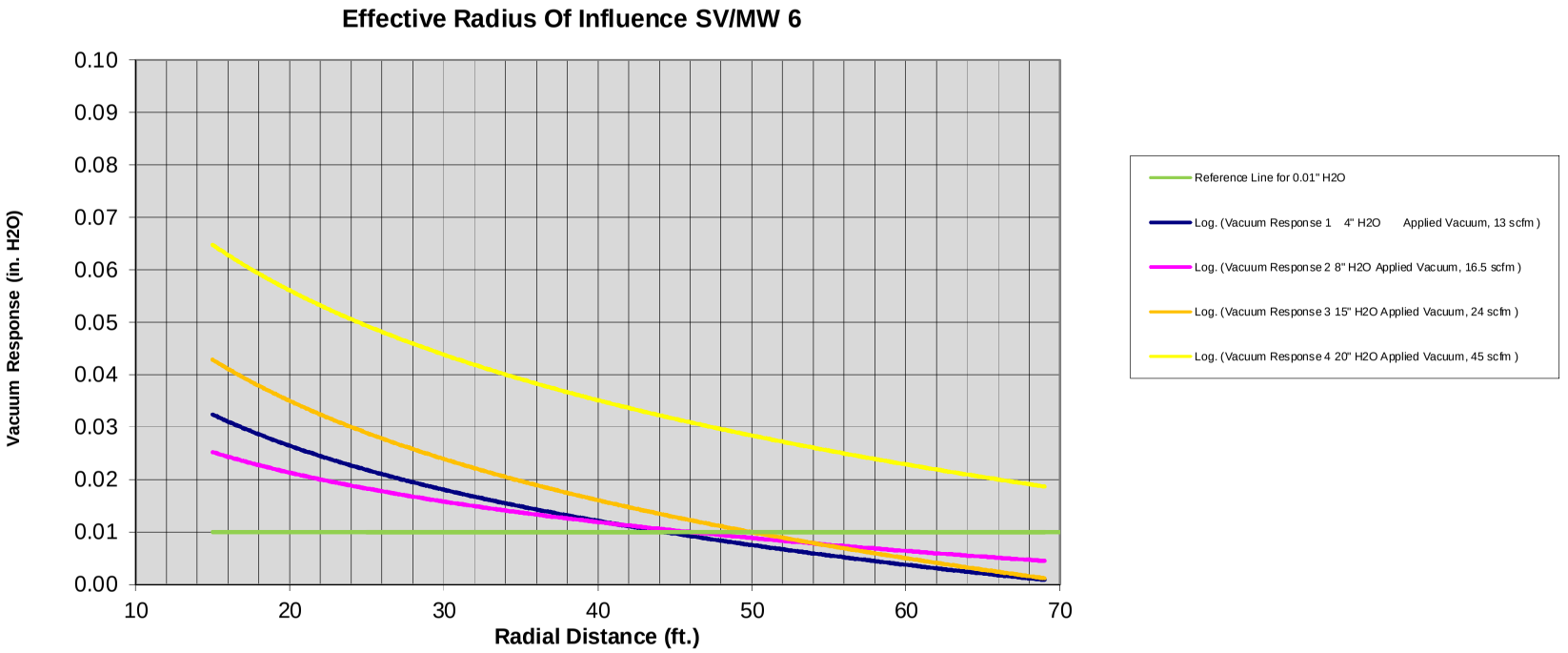
Test Date:	3/30/2016
Performed By:	EnviroTrac - DW
Extraction Point:	SV/MW-6
Test Duration (min.):	2 hrs
Wellhead Vacuum ("H2O):	4 to 20
Wellhead Flow (scfm):	13 to 45

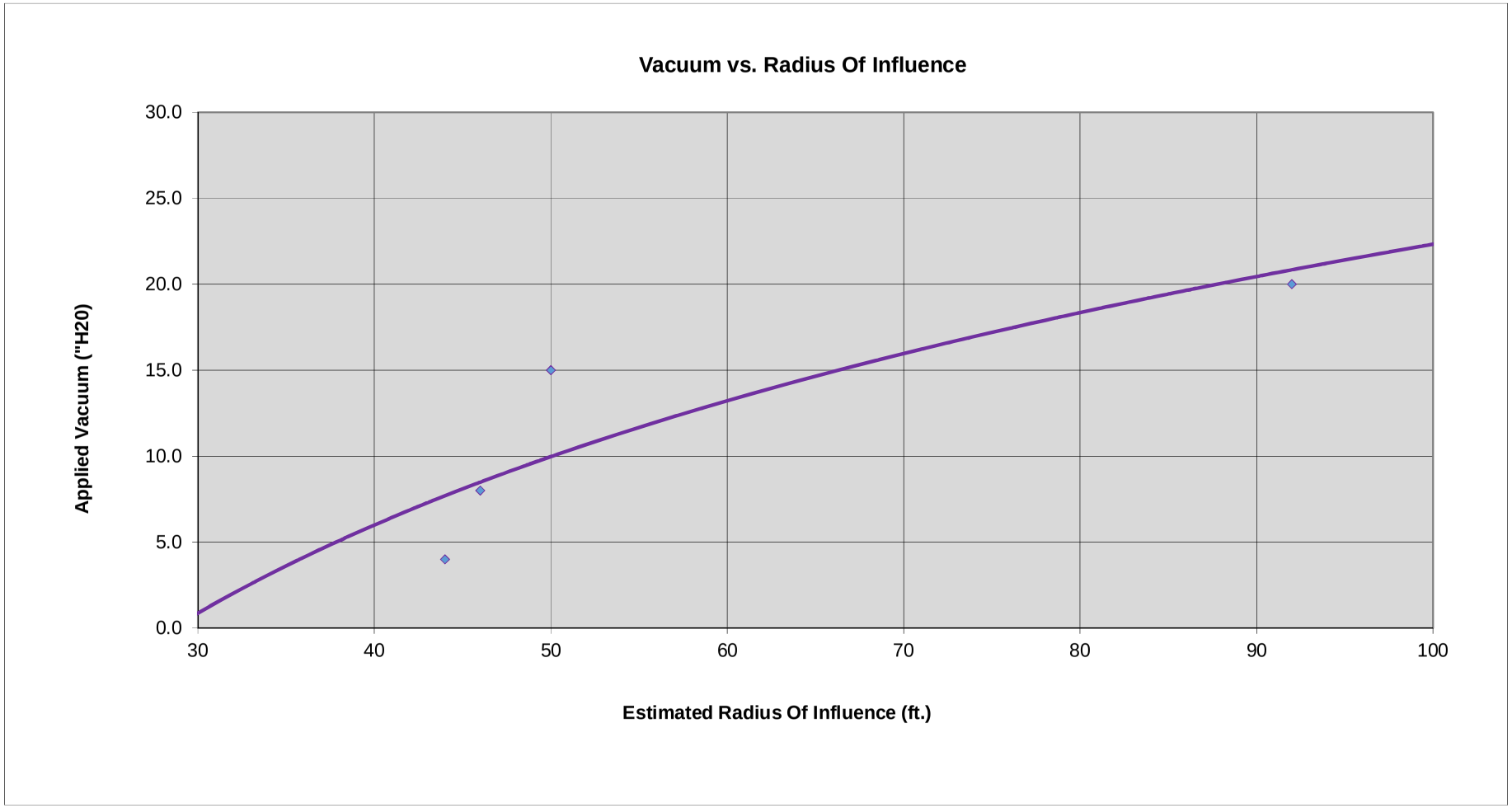
SSDS Design Data

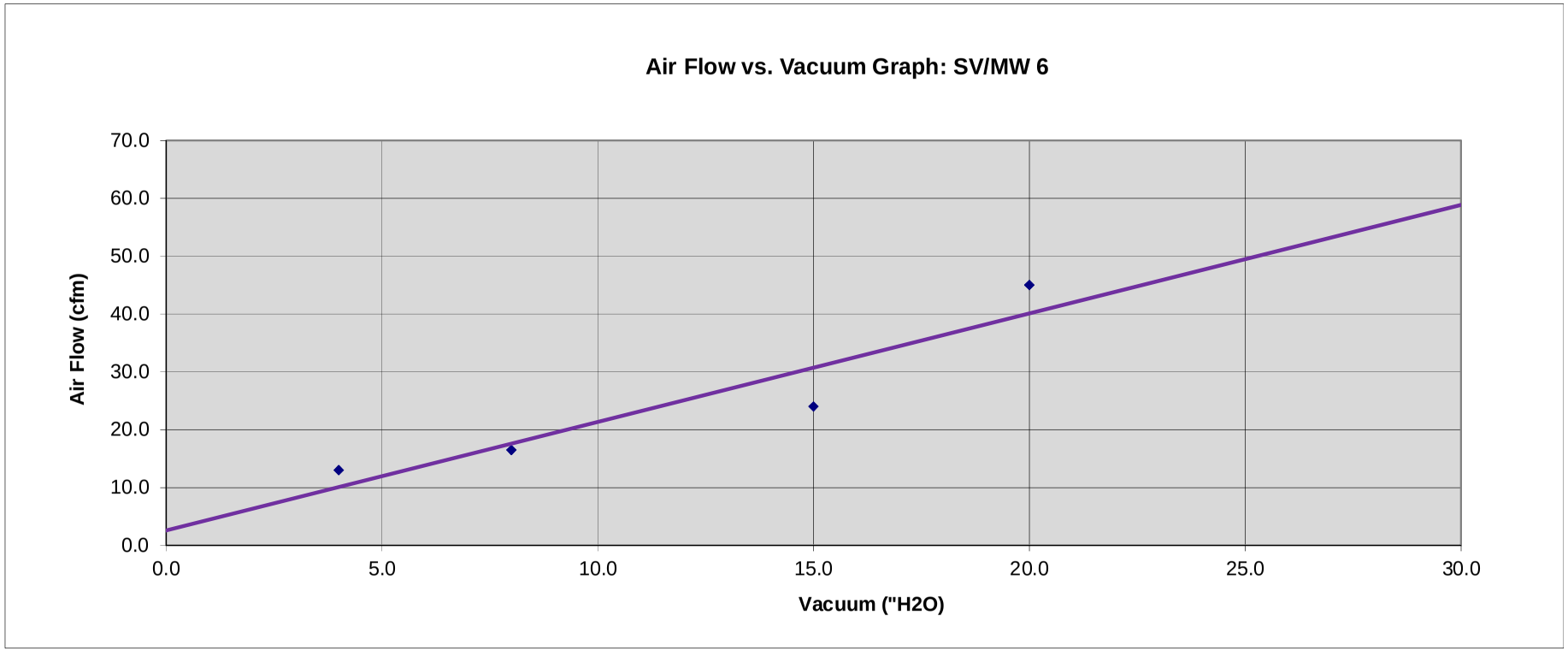
Radial Distance (ft.)	Vacuum Response 1 4" H2O Applied Vacuum, 13 scfm	Vacuum Response 2 8" H2O Applied Vacuum, 16.5 scfm	Vacuum Response 3 15" H2O Applied Vacuum, 24 scfm	Vacuum Response 4 20" H2O Applied Vacuum, 45 scfm	Reference Line for 0.01" H2O	TEST POINT ID
25	0.007	0.031	0.032	0.044	0.01	VP-5
32	0.011	0.011	0.012	0.015	0.01	VP-6
33	0.057	0.011	0.029	0.073	0.01	TVP-1
35	0.002	0.000	0.006	0.024	0.01	TVP-2
42	0.012	0.021	0.036	0.064	0.01	VP-7
50	0.000	0.000	0.003	0.021	0.01	VP-3
69	0.000	0.012	0.000	0.011	0.01	VP-2

Est. ROI (ft.)	Vacuum ("H2O)	Flow (scfm)
44.0	4.0	13.0
46.0	8.0	16.5
50.0	15.0	24.0
92.0	20.0	45.0

Design Parameters	
Flow (cfm):	12
Vacuum ("H2O):	5


Effective Radius Of Influence SV/MW 6
Vacuum Response (in. H2O)
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
10
20
30
40
50
60
70
Radial Distance (ft.)
Reference Line for 0.01" H2O
Log. (Vacuum Response 1 4" H2O Applied Vacuum, 13 scfm)
Log. (Vacuum Response 2 8" H2O Applied Vacuum, 16.5 scfm)
Log. (Vacuum Response 3 15" H2O Applied Vacuum, 24 scfm)
Log. (Vacuum Response 4 20" H2O Applied Vacuum, 45 scfm)


Vacuum vs. Radius Of Influence
Applied Vacuum ("H20)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
30
40
50
60
70
80
90
100
Estimated Radius Of Influence (ft.)

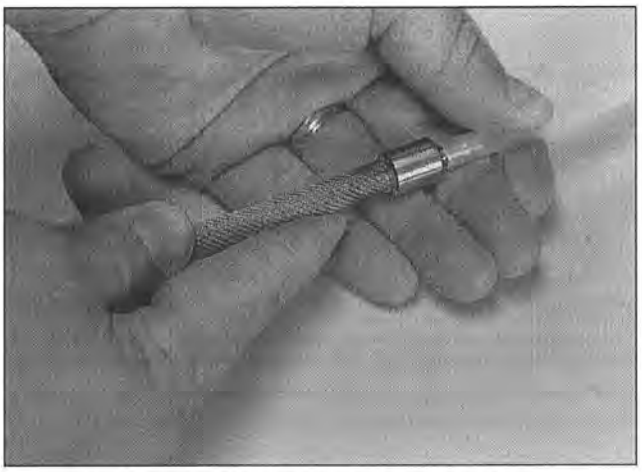

Air Flow vs. Vacuum Graph: SV/MW 6
Air Flow (cfm)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Vacuum ("H2O)

ATTACHMENT B

Implants Operation

from Geoprobe Systems®

www.geoprobe.com
1-800-436-7762



Attaching polyethylene tubing to the sampling implant.

Sampling Implants – Operation

Installation Instructions for Soil Gas Implants

1. Drive probe rods to the desired depth using a Point Holder (AT-13B) and an Implant Anchor/Drive Point (PR-14). DO NOT disengage the drive point when depth has been reached.

2. Attach appropriate tubing to the implant **(Figure 1)**. If tubing is pre-cut, allow it to be approximately 48 in. (1219 mm) longer than the required depth of the implant. Cover or plug the open end of the tubing.

3. Remove pull cap and lower the implant and tubing down inside the diameter of the probe rods until the implant hits the top of the Anchor/Drive Point. Note the length of the tubing to assure that proper depth has been reached.

4. Rotate tubing counterclockwise while exerting a gentle downward force to engage the PRT threads **(Figure 2)**. Pull up on the tubing lightly to test the connection. DO NOT cut excess tubing.

5. Position a Probe Rod Pull Plate or Manual Probe Rod Jack on the top probe rod. Exert downward pressure on the tubing while pulling the probe rods up. Pull up about 12 in. (305 mm).

6. If using 1/4-in. (6,4 mm) O.D. tubing or smaller, thread the excess tubing through the Implant Funnel and position it over the top probe rod. If using larger tubing, it may not be possible to install the glass beads.

Figure 1. Attaching tubing to the sampling implant.

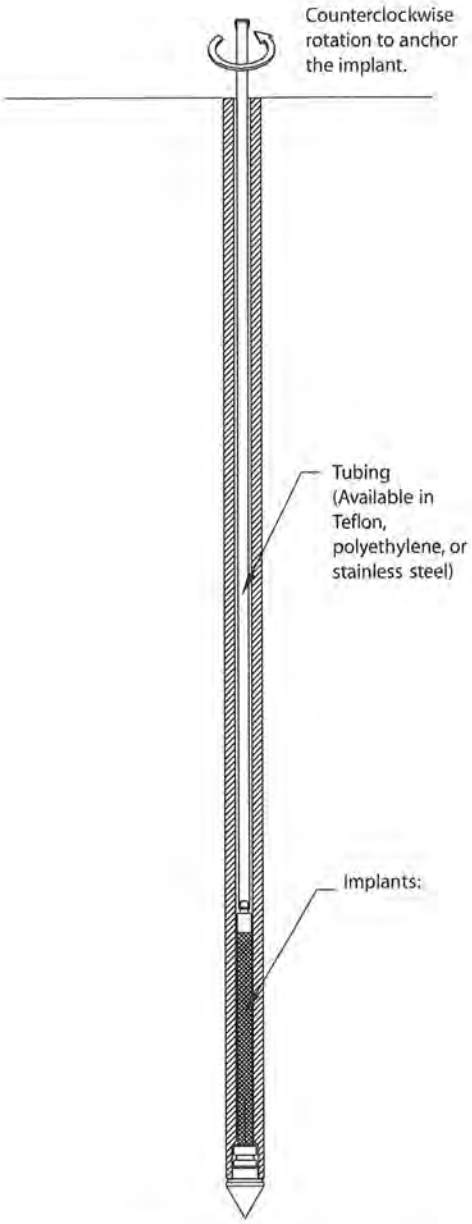


Figure 2. Once depth is achieved, the selected implant and tubing are inserted through the rods. The tubing is rotated to lock the implant into the drive point.

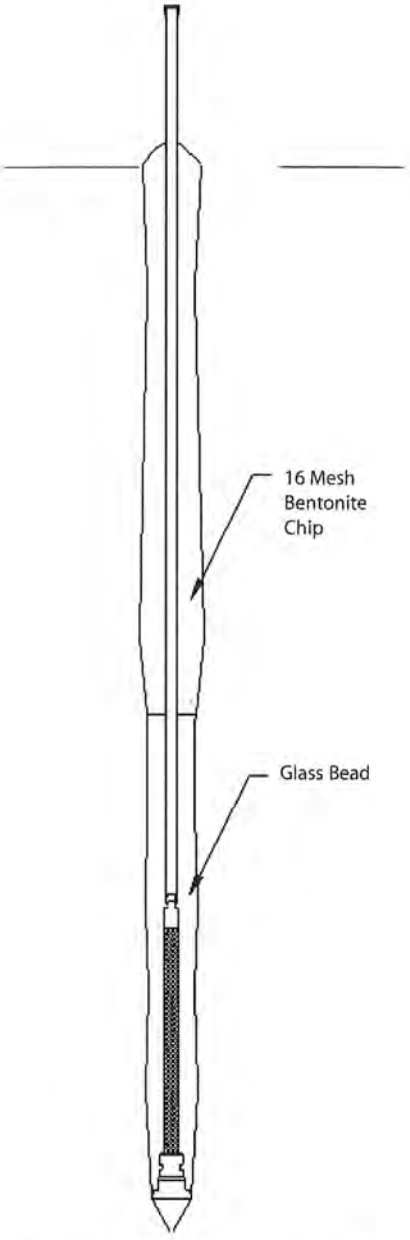


Figure 4. After the implant has been secured, the rods are removed and the annulus backfilled as appropriate.

7. Pour glass beads down the inside diameter of the probe rods around the outside of the tubing. Use the tubing to "stir" the glass beads into place around the implant. Do not lift up on tubing. It should take less than 150 mL of glass beads to fill the space around the implant.

   NOTE: Backfilling through the rods with glass beads or glass beads/bentonite mixes can only be performed in the Vadose Zone, not below the water table.

8. Lift up an additional 18 to 24 in. (457 to 610 mm) and pour the bentonite seal mixture into place as in Step 7. The volume to be filled is about 154 mL per foot. It may be necessary to "chase" the seal mixture with distilled water to initiate the seal.

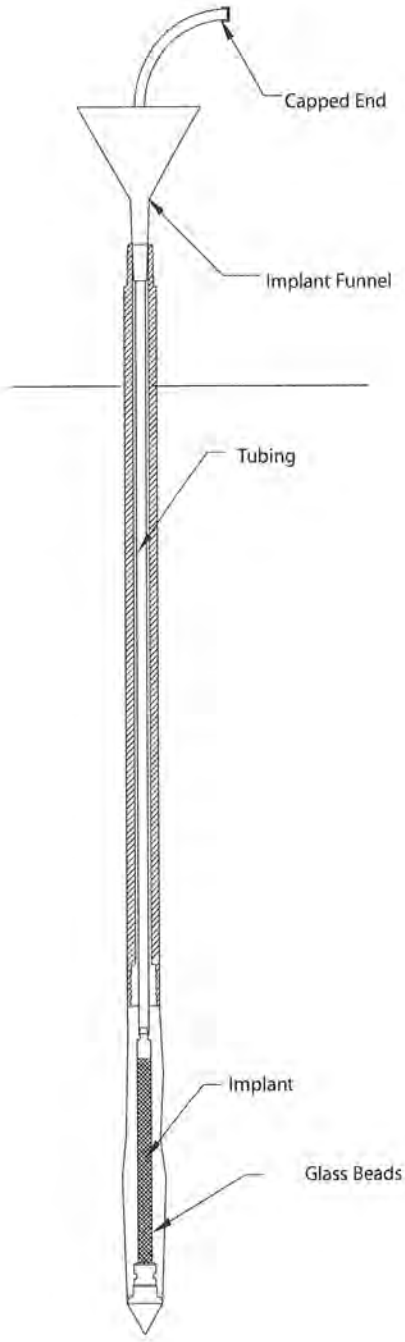
9. Pull the remaining rods out of the hole as in Step 5. Backfilling with sackcrete (cement/sand) or bentonite/sand may be done while removing the rods **(Figure 4)**. If the PR-14 Implant Anchor is used, the tubing may be cut flush with the top probe rod and a regular pull cap may be used to remove the remaining probe rods after Step 8.

10. After the probe rods have been removed, cut the tubing at the surface, attach a connector or plug, and mark the location with a pin flag or stake. The point is ready for sampling now.

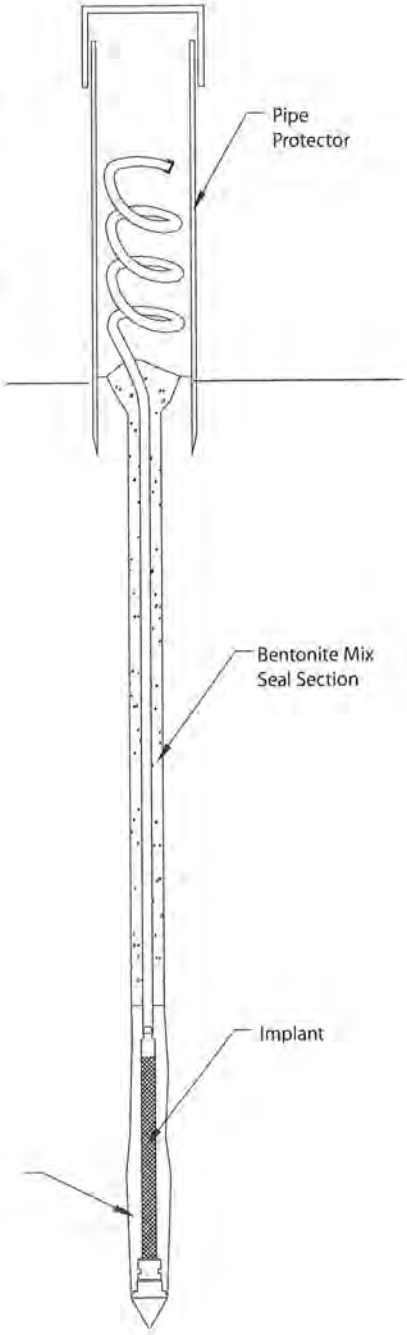
Figure 3. Glass Beads create a permeable layer around vapor sample implants.

A vapor implant location.

Sampling Implants – Operation



Backfill materials include glass beads and bentonite sealants.



Example of completed permanent soil gas monitoring point.

ATTACHMENT C

RadonAway®

The World's Leading
Radon Fan Manufacturer



HS Series

Installation & Operating Instructions

RadonAway
3 Saber Way | Ward Hill, MA 01835
www.radonaway.com

P/N IN007-REV K

10/15

RadonAway Ward Hill, MA.

HS Series Fan Installation & Operating Instructions

Please Read and Save These Instructions.

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.
2. **WARNING!** Do not use fan to pump explosive or corrosive gases.
   See Vapor Intrusion Application Note #AN001 for important information on VI applications. RadonAway.com/vapor-intrusion
3. **WARNING!** Check voltage at the fan to insure it corresponds with nameplate.
4. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.
5. **NOTICE!** There are no user serviceable parts located inside the fan unit.
   Do NOT attempt to open. Return unit to the factory for service.
6. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician.
7. **WARNING!** In the event that the fan is immersed in water, return unit to factory for service before operating.
8. **WARNING!** Do not twist or torque fan inlet or outlet piping as Leakage may result.
9. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.
10. **WARNING!** TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

    a) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

    b) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The HS Series Fan is intended for use by trained, certified/licensed, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of the HS Series Fan. This instruction should be considered as a supplement to EPA/Radon Industry standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The HS Series Fan is designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the HS Series Fan should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F. The HS Series Fan is thermally protected such that it will shut off when the internal temperature is above 104 degrees F. Thus if the HS Series Fan is idle in an area where the ambient temperature exceeds this shut off, it will not restart until the internal temperature falls below 104 degrees F.

1.3 ACOUSTICS

The HS Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. There are, however, some considerations to be taken into account in the system design and installation. When installing the HS Series Fan above sleeping areas, select a location for mounting which is as far away as possible from those areas. Avoid mounting near doors, fold-down stairs or other uninsulated structures which may transmit sound. Insure a solid mounting for the HS Series Fan to avoid structure-borne vibration or noise.

The velocity of the outgoing air must also be considered in the overall system design. With small diameter piping, the "rushing" sound of the outlet air can be disturbing. The system design should incorporate a means to slow and quiet the outlet air. The use of the RadonAway Exhaust Muffler, p/n 24002, is strongly recommended.

1.4 GROUND WATER

Under no circumstances should water be allowed to be drawn into the inlet of the HS Series Fan as this may result in damage to the unit. The HS Series Fan should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the HS Series Fan with water in installations with occasional high water tables.

In the event that a temporary high water table results in water at or above slab level, water will be drawn into the riser pipes thus blocking air flow to the HS Series Fan. The lack of cooling air will result in the HS Series Fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, it is recommended that the HS Series Fan be disconnected until the water recedes allowing for return to normal operation.

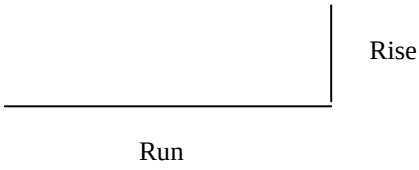
1.5 CONDENSATION & DRAINAGE

(WARNING!: Failure to provide adequate drainage for condensation can result in system failure and damage the HS Series Fan).

Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation.

The use of small diameter piping in a system increases the speed at which the air moves. The speed of the air can pull water uphill and at sufficient velocity it can actually move water vertically up the side walls of the pipe. This has the potential of creating a problem in the negative pressure (inlet) side piping. For HS Series Fan inlet piping, the following table provides the minimum recommended pipe diameters as well as minimum pitch under several system conditions. Use this chart to size piping for a system.

Pipe Diam.	Minimum Rise per Foot of Run*		
	@ 25 CFM	@ 50 CFM	@ 100 CFM
4"	1/32 "	3/32 "	3/8 "
3"	1/8 "	3/8 "	1 1/2 "



*Typical operational flow rates:

HS3000, or HS5000	20 - 40 CFM
HS2000	50 - 90 CFM

All exhaust piping should be 2" PVC.

1.6 SYSTEM MONITOR AND LABEL

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A Magnehelic pressure gauge is recommended for this purpose. The indicator should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the gauge with water in installations with occasional high water tables. A System Label (P/N 15022) with instructions for contacting the installing contractor for service and also identifying the necessity for regular radon tests to be conducted by the building occupants, must be conspicuously placed where the occupants frequent and can see the label.

1.7 SLAB COVERAGE

The HS Series Fan can provide coverage of well over 1000 sq. ft. per slab penetration. This will, of course, depend on the sub-slab aggregate in any particular installation and the diagnostic results. In general, sand and gravel are much looser aggregates than dirt and clay. Additional suction points can be added as required. It is recommended that a small pit (2 to 10 gallons in size) be created below the slab at each suction hole.

1.8 ELECTRICAL WIRING

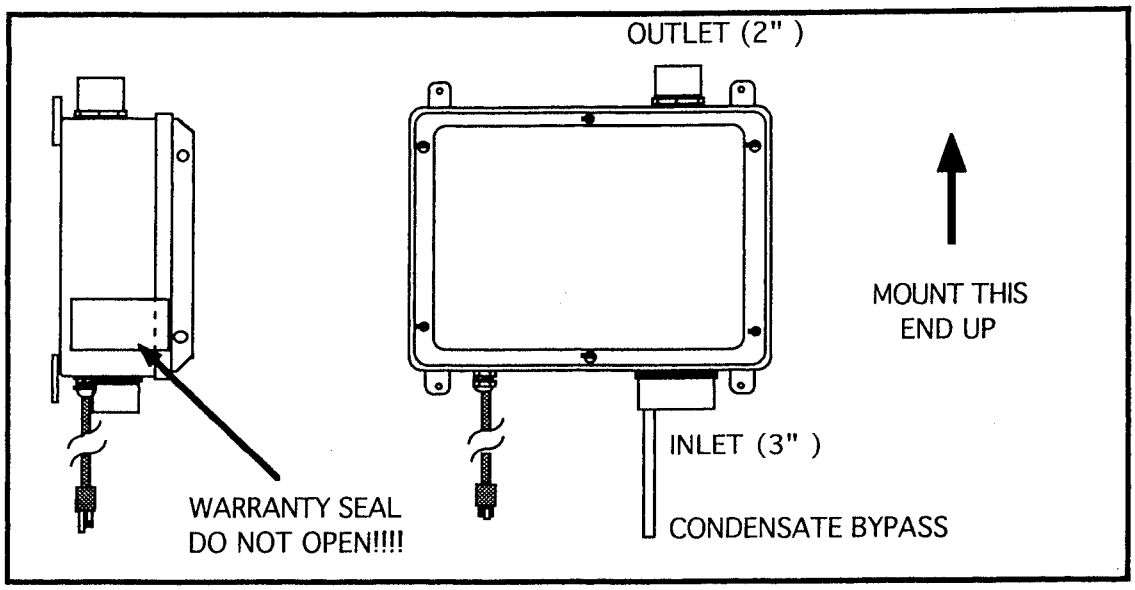
The HS Series Fan plugs into a standard 120V outlet. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a U.L. listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly caulked to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.8a ELECTRICAL BOX (optional)

The optional Electrical Box (p/n 20003) provides a weather tight box with switch for outdoor hardwire connection. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a U.L. listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly caulked to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.9 SPEED CONTROLS

Electronic speed controls can **NOT** be used on HS Series units.



2.0 INSTALLATION

2.1 MOUNTING

Mount the HS Series Fan to the wall studs, or similar structure, in the selected location with (4) 1/4" x 1 1/2" lag screws (not provided). Insure the HS Series Fan is both plumb and level.

2.2 DUCTING CONNECTIONS

Make final ducting connection to HS Series Fan with flexible couplings. Insure all connections are tight. Do not twist or torque inlet and outlet piping on HS Series Fan or leaks may result.

2.3 VENT MUFFLER INSTALLATION

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed above the roofline at the end of the vent pipe.

2.5 OPERATION CHECKS & ANNUAL SYSTEM MAINTENANCE

____ Make final operation checks by verifying all connections are tight and leak-free.

____ Insure the HS Series Fan and all ducting is secure and vibration-free.

____ Verify system vacuum pressure with Magnehelic. Insure vacuum pressure is within normal operating range and less than the maximum recommended as shown below:

HS2000	14" WC
HS3000	21" WC
HS5000	40" WC

(Above are based on sea-level operation, at higher altitudes reduce above by about 4% per 1000 Feet.) If these are exceeded, increase number of suction points.

____ Verify Radon levels by testing to EPA protocol.

PRODUCT SPECIFICATIONS

Model	Maximum Static Suction	Typical CFM vs Static Suction WC (Recommended Operating Range)						Power* Watts @ 115 VAC
		0"	10"	15"	20"	25"	35"	
HS2000	18"	110	72	40	-	-	-	150-270
HS3000	27"	40	33	30	23	18	-	105-195
HS5000	50"	53	47	42	38	34	24	180-320

*Power consumption varies with actual load conditions

Inlet: 3.0" PVC

Outlet: 2.0" PVC

Mounting: Brackets for vertical mount

Weight: Approximately 18 lbs.

Size: Approximately 15"W x 13"H x 8"D

Minimum recommended inlet ducting (greater diameter may always be used):

HS3000, HS5000 --- 2.0" PVC Pipe

HS2000 --- Main feeder line of 3.0" or greater PVC Pipe

Branch lines (if 3 or more) may be 2.0" PVC Pipe

Outlet ducting: 2.0" PVC

Storage temperature range: 32 - 100 degrees F.

Thermally protected

Locked rotor protection

Internal Condensate Bypass

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the HS Series Fan for shipping damage within 15 days of receipt. Notify **RadonAway® of any damages immediately**. RadonAway® is not responsible for damages incurred during shipping. However, for your benefit, RadonAway® does insure shipments.

There are no user serviceable parts inside the fan. **Do not attempt to open.** Return unit to factory for service.

Install the HS Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

Provide a copy of this instruction or comparable radon system and testing information to the building occupants after completing system installation.

WARRANTY

RadonAway® warrants that the HS Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of 90 days from the date of purchase (the "Warranty Term").

RadonAway® will replace any Fan which fails due to defects in materials or workmanship during the Warranty Term. The Fan must be returned (at Owner's cost) to the RadonAway® factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway®.

1 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION.

RadonAway® will extend the Warranty Term of the fan to one (1) year from date of purchase or fifteen (15) months from the date of manufacture, whichever is sooner, if the Fan is installed in a professionally designed and professionally installed active soil depressurization system or installed as a replacement fan in a professionally designed and professionally installed active soil depressurization system by a qualified installer. Proof of purchase and/or proof of professional installation may be required for service under this warranty. Outside the Continental United States and Canada the extended Warranty Term is limited to one (1) year from the date of manufacture.

RadonAway® is not responsible for installation, removal or delivery costs associated with this Warranty.

LIMITATION OF WARRANTY

EXCEPT AS STATED ABOVE, THE HS SERIES FANS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping costs, including insurance, to and from factory.

RadonAway® 3 Saber Way
Ward Hill, MA 01835 USA TEL (978) 521-3703
FAX (978) 521-3964
Email to: Returns@RadonAway.com

Record the following information for your records:

Serial No._____ Purchase Date_____

ATTACHMENT D

New York State Department of Environmental Conservation
Division of Environmental Remediation, 12th Floor
625 Broadway, Albany, New York 12233-7011
(518) 402-9706 • **FAX:** (518) 402-9020
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Bureau Directors, Section Chiefs, Regional Hazardous Waste Remediation Engineers, Regional Spill Engineers

FROM: Dale A. Desnoyers, Director, Division of Environmental Remediation

Dale A. Desnoyers

SUBJECT: Substantive Compliance with Air Requirements

DATE: February 28, 2003

Remediation that is being conducted under Division of Environmental Remediation (DER) oversight under any of our remedial programs are exempt from obtaining air discharge permits either through a program exemption (e.g. Part 375) or a regulatory exemption (e.g. Part 201). However, all remedial projects must demonstrate that they comply with the substantiative regulations. This means that the appropriate air pollution control equipment has to be installed and that the remediation activity must not cause air pollution.

The requirements for air pollution control equipment are contained in Part 212. Part 212 contains a table that specifies the minimum degree of air cleaning required which is based on emission rate potential and environmental rating. In most instances, emissions from the remedial projects that DER staff oversee fall into the category of "Degree of Control to be Determined by the Commissioner." The position that DER has taken is that any installation with an emission rate potential exceeding 0.5 lb/hr. of total volatile organic compounds require air pollution controls. This generally encompasses all soil vapor extraction systems and thermal desorption units. Air strippers generally do not require controls.

The demonstration that an air emission source will not cause air pollution is accomplished by performing an air quality impact analysis. The Division of Air Resources (DAR) has guidance for this analysis. It is called "Guidelines for the Control of Toxic Ambient Air Contaminants" (formerly Air Guide 1) and is identified as DAR-1. This guidance outlines a process that predicts the impact on air quality from the emissions. DAR-1 contains both short term (24 hr.) and long term (annual) ambient guideline concentrations that the impact must not

exceed. Specific information regarding DAR-1 is available from the Division of Air Resources web page (http://www.dec.state.ny.us/website/dar/boss/toxics.html).

Project Managers should require adequate information to demonstrate compliance with both of these requirements. The application for a permit to construct a process, exhaust or ventilation system (formerly AIR 100 or 79-19-3) has been used to submit the emissions information in a format in which reviewers were familiar with and to insure all of the needed information was included. This form is no longer available. However, attached are relevant portions of that form which may be used for the same purpose. This format does not have to be used, but it makes review much easier (potentially expediting review) and ensures all of the needed information is submitted the first time. In addition to the emissions information, a DAR-1 analysis must be submitted. If required, the information should include a description of the monitoring schedule, a stack testing protocol and a procedure to maintain the air pollution control equipment (e.g. carbon cannister change out procedure).

If further information is required, please contact Jim Harrington at 402-9755

Attachment

Information for Determination of Compliance with Substantive Air Requirements

Site Name: Popular Hand laundry Site

Site Address: 88 Ingraham Street, Brooklyn, NY

Name and affiliation
of person submitting information: Dale Konas, PE, EnviroTrac Engineering PE PC

Description of Process: Sub-Slab Depressurization System (SSDS)

Description of Control Equipment: None

Description of Continuous Air Monitors: None

Attach a copy of a site plan showing property lines, prevailing wind direction and distance to nearest offsite receptors

Stack Information

Ground Elevation (ft.)	~13
Stack Height (ft.)	~25
Height above Structures (ft.)	5
Inside Dimensions (in.)	4
Exit Temperature (^{0}F)	~60
Exit Velocity (ft./sec.)	459
Exit Flow (acfm)	40

Emissions Information:

Contaminant	CAS Number	Hourly Emissions (lbs/hr.)	Annual Emissions (tons/year)
Cis-1,2 dichloroethylene	156-59-2	.00012	.00051
Tetrachloroethylene	127-18-4	.00019	.00085
Trichloroethylene	79-01-6	.00007	.00031
Vinyl Chloride	75-01-4	.000001	.000005

SVE Vapor Sampling Results - VCP Site No. V00170
Popular Hand Laundry Site
88 Ingraham St.
Brooklyn, NY

Sample Date August 20, 2015

Air Emission VOCs- Pounds Per Hour

Emission rates in terms of pounds per hour (lbs/hr) for VOCs are calculated using the pollutant emission rate in parts per million (ppm/dry), flow rate in dscfm (Qs), molecular weight of the pollutant (MW), 60 minutes /hour, divided by 385.3x $10E^{6}$ dscf/lb-mole @ 68 F.

$$\text{Lbs/hr} = \frac{\text{PPM x Qs x MW x 60}}{385.3\text{x } 10E^{6}}$$

Pre-Carbon Filters

Compound	MW	PPBv	PPM	Q CFM	Lbs/Hr	Lbs/Hr
Acetone	58.08	26.60	0.0266	65	1.564E-05	0.00002
Benzene	78.11	0.71	0.000708	65	5.598E-07	0.00000
Carbon Disulfide	76.14	0.83	0.000828	65	6.381E-07	0.00000
Carbon_tetrachloride	153.82	0.178	0.000178	65	2.771E-07	0.00000
Chloroform	119.38	1.41	0.00141	65	1.704E-06	0.00000
Cumene (isopropylbenzene)	120.2	1.49	0.00149	65	1.813E-06	0.00000
Cyclohexane	84.16	0.716	0.000716	65	6.099E-07	0.00000
1,4-Dichlorobenzene	147	1.56	0.00156	65	2.321E-06	0.00000
Dichlorodifluoromethane	120.91	0.582	0.000582	65	7.123E-07	0.00000
1,1-Dichloroethane	98.96	2.36	0.00236	65	2.364E-06	0.00000
cis-1,2-Dichloroethylene	96.94	118	0.118	65	1.158E-04	0.00012
trans-1,2-Dichloroethylene	96.94	11.2	0.0112	65	1.099E-05	0.00001
Ethanol	46.07	73.4	0.0734	65	3.423E-05	0.00003
Ethylbenzene	106.17	5.82	0.00582	65	6.254E-06	0.00001
4-Ethyltoluene	120.19	2.73	0.00273	65	3.321E-06	0.00000
Heptane	100.2	0.706	0.000706	65	7.160E-07	0.00000
Hexane	86.18	1.42	0.00142	65	1.239E-06	0.00000
Isopropyl alcohol	60.1	22.9	0.0229	65	1.393E-05	0.00001
Methyl ethyl ketone	72.11	1.86	0.00186	65	1.358E-06	0.00000
Methyl isobutyl ketone (MIBK)	100.16	0.654	0.000654	65	6.630E-07	0.00000
Methylene_chloride	84.93	4.41	0.00441	65	3.791E-06	0.00000
Styrene	104.15	0.508	0.000508	65	5.355E-07	0.00000
Tetrachloroethylene	165.83	116	0.116	65	1.947E-04	0.00019
Tetrahydrofuran	72.11	0.766	0.000766	65	5.591E-07	0.00000
Toluene	92.14	15.6	0.0156	65	1.455E-05	0.00001
1,2,4- trichlorobenzene	181.45	5.51	0.00551	65	1.012E-05	0.00001
1,1,1-Trichloroethane	133.4	1.33	0.00133	65	1.796E-06	0.00000
Trichloroethylene	131.39	53.3	0.0533	65	7.089E-05	0.00007
Trichlorofluoromethane	137.37	0.376	0.000376	65	5.228E-07	0.00000
1,3,5-Trimethylbenzene	120.19	1.44	0.00144	65	1.752E-06	0.00000
Vinyl_chloride	62.5	1.71	0.00171	65	1.082E-06	0.00000
m/p-Xylene	106.17	21.3	0.0213	65	2.289E-05	0.00002
o-Xylene	106.17	5.73	0.00573	65	6.158E-06	0.00001
n-Butylbenzene	134.22	0.566	0.000566	65	7.690E-07	0.00000
					Total Lbs/Hr:	**0.00055**

APPENDIX G

SUBSLAB DEPRESSURIZATION SYSTEM O&M MANUAL

Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York

Report Date:

October 2016

Prepared for:

88 Ingraham Realty Corp.
7700 Bella Verde Way
Delray Beach, FL 33446

Prepared by:

EnviroTrac Ltd.
5 Old Dock Road
Yaphank, NY 11980
631-924-3001

A Full Service Environmental Consulting and Contracting Firm

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FIGURES:

APPENDIX A

- Extraction Blower Manufacturer Instructions/Information
- Vacuum Gauge Instructions
- Alarm Specification

SYSTEM DESCRIPTION

General Description

An active sub-slab depressurization system (SSDS) has been designed and installed in order to prevent indoor air intrusion of residual PCE concentrations at 88 Ingraham Street, Brooklyn, New York. Sub-slab dry cleaner related soil impacts were removed to the maximum extent possible with a soil vapor extraction (SVE) system.

The following text describes the start up, testing and operation for the SSDS.

The SSDS uses the two (2) existing SVE wells, SV-5 and SV-6, which are constructed of two (2) inch diameter schedule 40 PVC and consist of five (5) feet of riser pipe and 15 feet of 0.02-slotted screen, located beneath the concrete slab floor within the building. The SVE well piping, which exits the front or north side of the building was piped upward and discharges approximately two (2) feet above the second story roof line. On the exterior wall of the building, a RadonAway Model HS2000E fan is attached in series to the riser piping that is vented to the rooftop via 4-inch diameter piping located away from any potential air intakes for the building. An as-built drawing of the SSD System can be seen in Figure 1.

Operating Principals

The extraction blower, when operated, is designed to induce a negative pressure via the installed depressurization pipes located beneath the building floor slab. This induced negative pressure causes any migrating soil vapors to follow the new pressure gradient toward the depressurization point(s) and to then be extracted through the system piping and to ultimately be safely discharged to the building exterior.

System Components

The major components of the SSD system consist of an extraction blower and depressurization piping below the concrete slab of the building at 88 Ingraham Street, Brooklyn, New York. The riser piping is equipped with a vacuum gauge used to monitor the applied sub-slab vacuum. An alarm warning device is connected to the riser piping and will sound when the fans are not operational. Manufacturer's manuals and cut sheet for each of the system major components can be seen in Appendix A.

OPERATING PROCEDURES

System Startup

Pre-Startup

Prior to the safe and successful startup of the SSD system it is important to verify the following items.

- Verify that the electrical service connection is switched **OFF** at the system circuit breaker located in the electrical service distribution panel. Verify that the blower power cord is unplugged from the dedicated blower power outlet. The outlet is located on the exterior wall of the building, adjacent to the SSDS blower. Prior to any repairs or modifications to the system, the electrical service should be disconnected using the proper lock out/tag out procedures, and should only be conducted by qualified personnel.

- Verify that all components are installed correctly and are in good working order, including the blowers, piping, depressurization points, and all instrumentation. Any defects or damage should be repaired or replaced prior to the startup of the system.

- Verify that all electrical connections are properly and securely connected to the SSD system components. All electrical components should be clean and free of any damage or defects. Verify that the electrical connection is of the proper voltage and power requirement for the installed blowers.

- Verify that the system discharge stack is free of any debris that might cause any excessive back pressure on the system.

System Startup

The following procedure should be followed during each startup of the SSD system and should be conducted only after the “Pre-startup” items have been completed.

1. Verify that all of the steps outlined above in the “Pre-startup” section have been successfully completed.

2. Verify that the electrical service connection is switched **ON** at the system circuit breaker located in the electrical service distribution panel.

3. Plug the blower into the electrical outlet. Take note that the blower is operating correctly by noting if there is any excessive noise and that the inlet vacuum is within the normal operating range of the installed blower. Normal operating vacuum should range from 0 - 15.0 “w.c. which can be read using the vacuum

gauges located at each extraction point. Note, if the blower is not operating correctly, unplug the blowers and make the proper repairs.

4. Once the system is operating, take note of the operating vacuum at the extraction blower using the vacuum gauge or hand held meter. This reading will be used as a baseline to determine if the system is operating correctly in the future.

System Shutdown

During the shutdown of the system the steps outlined below should be followed;

1. Unplug the blowers, the electrical outlet is located on the right side of the system. Verify that the motor has stopped. This can be confirmed by both sound and by checking that the vacuum gauges registers no vacuum in the pipe headers.

2. In the event that the system is being shut down for maintenance or repairs, this circuit breaker should be properly disconnected using the appropriate lock out / tag out procedures.

3. Verify that there is zero vacuum at the depressurization points using the installed vacuum gauges.

Maintenance

During each maintenance event the following should be noted.

<u>Blower</u>

- The blower is spinning correctly and free of any excess noise.

- The blower is free of any damage or debris.

- The blower is generating the proper amount of flow and vacuum. This can be determined by reading the installed liquid filled manometers and comparing these readings with the readings collected during system startup.

- Note: The blowers are designed to operate continuously without any routine maintenance or lubrication.

<u>Instrumentation (vacuum gauge)</u>

- Verify that the vacuum gauge is free of any damage and is properly connected to the system piping.

- Verify that vacuum gauge is registering an adequate amount of vacuum at each of the depressurization points and at each blower.

- Verify that the vacuum gauge contains the proper amount of fluid (red oil). If any of the meters require replacementadditional units can be purchased through the manufacturer listed in Appendix A.

Miscellaneous

- Verify that the discharge stack located on the building roof is free of any debris.

- Verify that all piping, depressurization points, and any other components are clean and free of any damage that may have occurred.

- Verify that the system piping is clear of any condensation that may have accumulated during operation. In the event that condensation has collected, it can be cleared by shutting down the system and letting the condensation drain. The system has been designed to allow the water to drain back to the extraction points.

In the event that any system degradation has been noted or the alarm warning device is sounding, the operator/owner should contact the landlord for assistance and/or to schedule any system maintenance.

OWNER CONTACT INFORMATION

Bushwicked, LLC
88 Ingraham Street
Brooklyn, New York 11237
Phone: 212 947-8143

EMERGENCY PROCEDURES

In the event of an emergency requiring the shut down of the system the following procedure should be followed.

1. Unplug the blower.

2. In the event that the blower power outlet cannot be reached or is inoperable, power may be disconnected directly using the circuit breaker located in the electrical distribution panel.

3. Notify the owner.

OWNER CONTACT INFORMATION

Bushwicked, LLC
88 Ingraham Street
Brooklyn, New York 11237
Phone: 212 947-8143

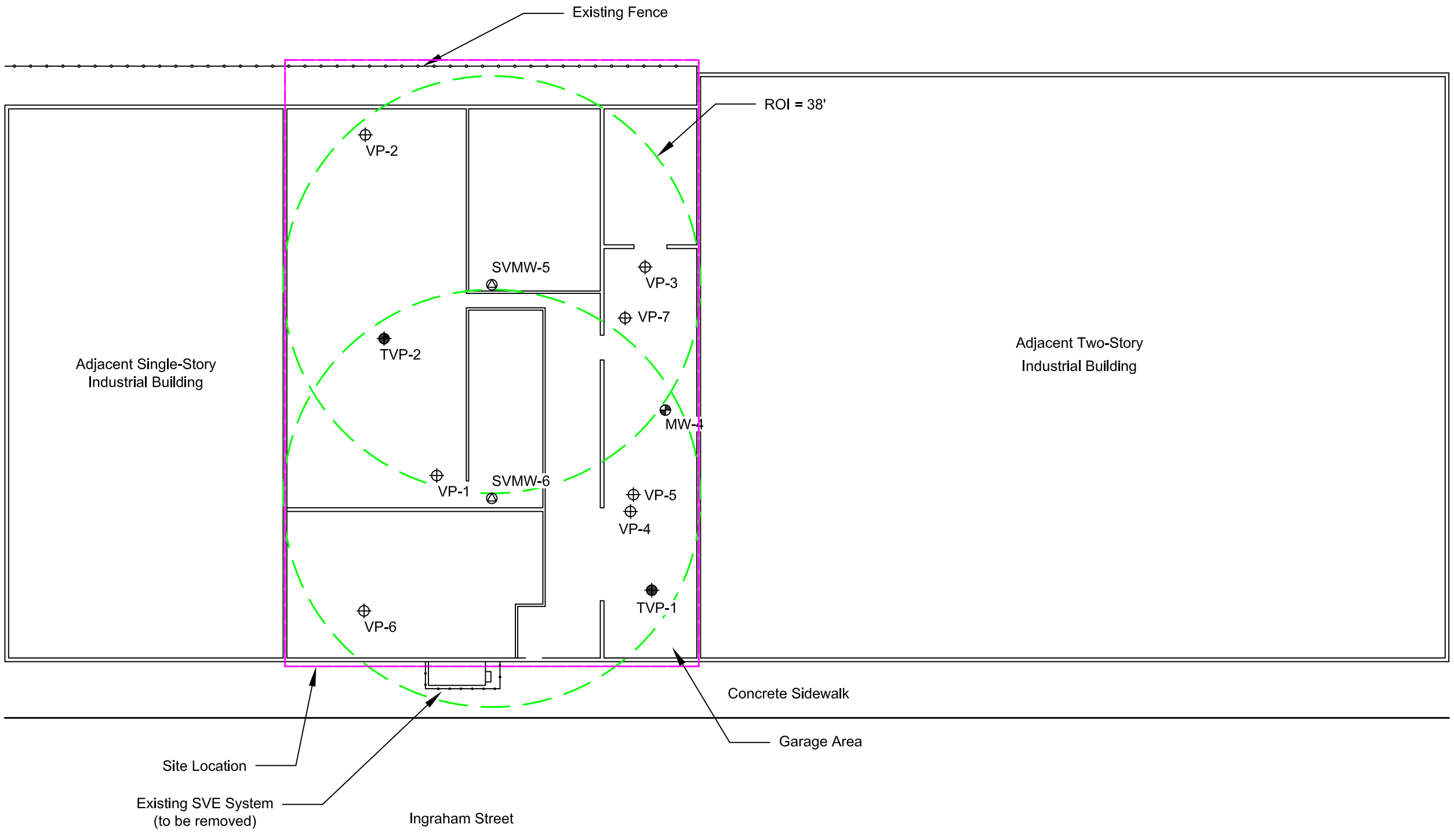
***IMPORTANT – IN THE EVENT OF A FIRE OR MEDICAL EMERGENCY, PERSONNEL SHOULD IMMEDIATELY CALL 911 FOR ASSISTANCE.**

WARRANTEES

- EnviroTrac Ltd warrantees all workmanship, construction, and operation of all equipment and materials for a period of one (1) year from the date of system completion. This warrantee does not cover any repairs of damage or component malfunctions that are not due to normal operation of the system or individual components.

- Additionally, the extraction blower is covered under the manufacturers warrantee for a period of one (1) year. Details of this warrantee can be seen in the blower literature provided in Appendix A.

FIGURES



SCALE:
0 5' 10' 15' 20'
SCALE IN FEET

LEGEND:
- Radius of Influence
- Existing Monitoring Well Location
- Existing Vapor Extraction Location
- Existing Vapor Point Location
- Temporary Vapor Point Location

DATE:	FIGURE:	DRAFTED BY:
5/25/16	1	NC/DK

MAP: Site Plan with SSDS Radius of Influence

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

EnviroTrac
Environmental Services
5 Old Dock Road
Yaphank, NY 11980
P: 631.924.3001 F: 631.924.5001

APPENDIX A

RadonAway®

The World's Leading
Radon Fan Manufacturer



HS Series

Installation & Operating Instructions

RadonAway
3 Saber Way | Ward Hill, MA 01835
www.radonaway.com

P/N IN007-REV K

10/15

RadonAway Ward Hill, MA.

HS Series Fan Installation & Operating Instructions

Please Read and Save These Instructions.

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION. DISCONNECT POWER BEFORE SERVICING FAN.

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.
2. **WARNING!** Do not use fan to pump explosive or corrosive gases.
   See Vapor Intrusion Application Note #AN001 for important information on VI applications. RadonAway.com/vapor-intrusion
3. **WARNING!** Check voltage at the fan to insure it corresponds with nameplate.
4. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.
5. **NOTICE!** There are no user serviceable parts located inside the fan unit.
   Do NOT attempt to open. Return unit to the factory for service.
6. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician.
7. **WARNING!** In the event that the fan is immersed in water, return unit to factory for service before operating.
8. **WARNING!** Do not twist or torque fan inlet or outlet piping as Leakage may result.
9. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.
10. **WARNING!** TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

    a) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.

    b) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The HS Series Fan is intended for use by trained, certified/licensed, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of the HS Series Fan. This instruction should be considered as a supplement to EPA/Radon Industry standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The HS Series Fan is designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the HS Series Fan should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F. The HS Series Fan is thermally protected such that it will shut off when the internal temperature is above 104 degrees F. Thus if the HS Series Fan is idle in an area where the ambient temperature exceeds this shut off, it will not restart until the internal temperature falls below 104 degrees F.

1.3 ACOUSTICS

The HS Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. There are, however, some considerations to be taken into account in the system design and installation. When installing the HS Series Fan above sleeping areas, select a location for mounting which is as far away as possible from those areas. Avoid mounting near doors, fold-down stairs or other uninsulated structures which may transmit sound. Insure a solid mounting for the HS Series Fan to avoid structure-borne vibration or noise.

The velocity of the outgoing air must also be considered in the overall system design. With small diameter piping, the "rushing" sound of the outlet air can be disturbing. The system design should incorporate a means to slow and quiet the outlet air. The use of the RadonAway Exhaust Muffler, p/n 24002, is strongly recommended.

1.4 GROUND WATER

Under no circumstances should water be allowed to be drawn into the inlet of the HS Series Fan as this may result in damage to the unit. The HS Series Fan should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the HS Series Fan with water in installations with occasional high water tables.

In the event that a temporary high water table results in water at or above slab level, water will be drawn into the riser pipes thus blocking air flow to the HS Series Fan. The lack of cooling air will result in the HS Series Fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, it is recommended that the HS Series Fan be disconnected until the water recedes allowing for return to normal operation.

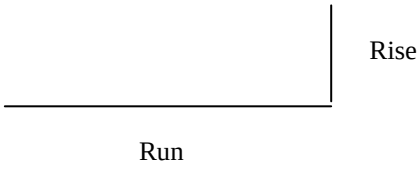
1.5 CONDENSATION & DRAINAGE

(WARNING!: Failure to provide adequate drainage for condensation can result in system failure and damage the HS Series Fan).

Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The system design must provide a means for water to drain back to a slab hole to remove the condensation.

The use of small diameter piping in a system increases the speed at which the air moves. The speed of the air can pull water uphill and at sufficient velocity it can actually move water vertically up the side walls of the pipe. This has the potential of creating a problem in the negative pressure (inlet) side piping. For HS Series Fan inlet piping, the following table provides the minimum recommended pipe diameters as well as minimum pitch under several system conditions. Use this chart to size piping for a system.

Pipe Diam.	Minimum Rise per Foot of Run*		
	@ 25 CFM	@ 50 CFM	@ 100 CFM
4"	1/32 "	3/32 "	3/8 "
3"	1/8 "	3/8 "	1 1/2 "



*Typical operational flow rates:

HS3000, or HS5000	20 - 40 CFM
HS2000	50 - 90 CFM

All exhaust piping should be 2" PVC.

1.6 SYSTEM MONITOR AND LABEL

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A Magnehelic pressure gauge is recommended for this purpose. The indicator should be mounted at least 5 feet above the slab penetration to minimize the risk of filling the gauge with water in installations with occasional high water tables. A System Label (P/N 15022) with instructions for contacting the installing contractor for service and also identifying the necessity for regular radon tests to be conducted by the building occupants, must be conspicuously placed where the occupants frequent and can see the label.

1.7 SLAB COVERAGE

The HS Series Fan can provide coverage of well over 1000 sq. ft. per slab penetration. This will, of course, depend on the sub-slab aggregate in any particular installation and the diagnostic results. In general, sand and gravel are much looser aggregates than dirt and clay. Additional suction points can be added as required. It is recommended that a small pit (2 to 10 gallons in size) be created below the slab at each suction hole.

1.8 ELECTRICAL WIRING

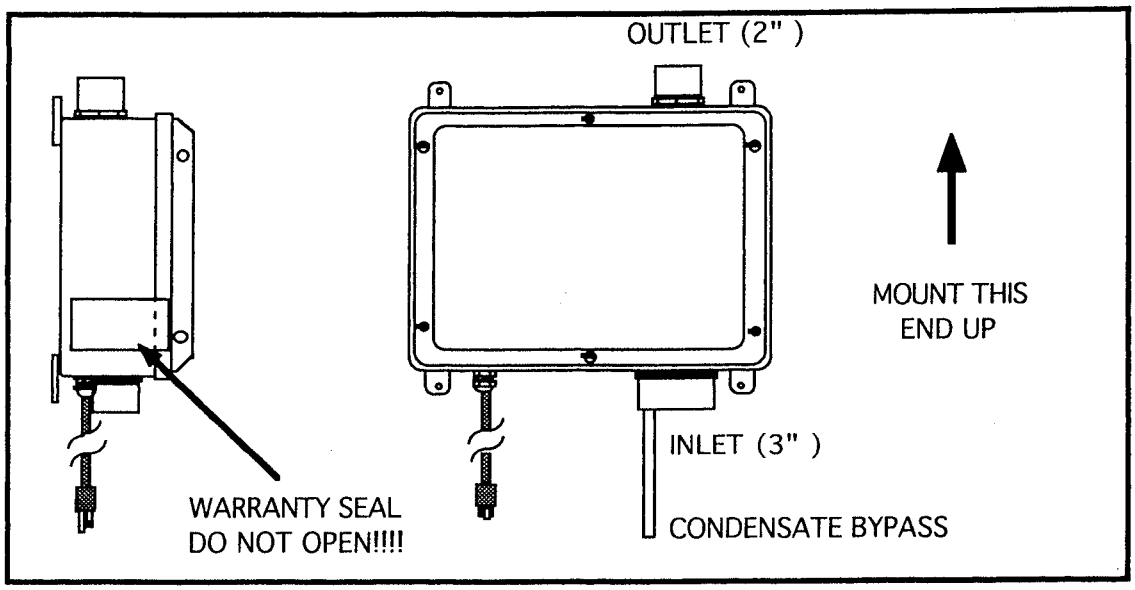
The HS Series Fan plugs into a standard 120V outlet. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a U.L. listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly caulked to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.8a ELECTRICAL BOX (optional)

The optional Electrical Box (p/n 20003) provides a weather tight box with switch for outdoor hardwire connection. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA)"National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Outdoor installations require the use of a U.L. listed watertight conduit. Ensure that all exterior electrical boxes are outdoor rated and properly caulked to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

1.9 SPEED CONTROLS

Electronic speed controls can **NOT** be used on HS Series units.



2.0 INSTALLATION

2.1 MOUNTING

Mount the HS Series Fan to the wall studs, or similar structure, in the selected location with (4) 1/4" x 1 1/2" lag screws (not provided). Insure the HS Series Fan is both plumb and level.

2.2 DUCTING CONNECTIONS

Make final ducting connection to HS Series Fan with flexible couplings. Insure all connections are tight. Do not twist or torque inlet and outlet piping on HS Series Fan or leaks may result.

2.3 VENT MUFFLER INSTALLATION

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed above the roofline at the end of the vent pipe.

2.5 OPERATION CHECKS & ANNUAL SYSTEM MAINTENANCE

____ Make final operation checks by verifying all connections are tight and leak-free.

____ Insure the HS Series Fan and all ducting is secure and vibration-free.

____ Verify system vacuum pressure with Magnehelic. Insure vacuum pressure is within normal operating range and less than the maximum recommended as shown below:

HS2000	14" WC
HS3000	21" WC
HS5000	40" WC

(Above are based on sea-level operation, at higher altitudes reduce above by about 4% per 1000 Feet.) If these are exceeded, increase number of suction points.

____ Verify Radon levels by testing to EPA protocol.

PRODUCT SPECIFICATIONS

Model	Maximum Static Suction	Typical CFM vs Static Suction WC (Recommended Operating Range)						Power* Watts @ 115 VAC
		0"	10"	15"	20"	25"	35"	
HS2000	18"	110	72	40	-	-	-	150-270
HS3000	27"	40	33	30	23	18	-	105-195
HS5000	50"	53	47	42	38	34	24	180-320

*Power consumption varies with actual load conditions

Inlet: 3.0" PVC

Outlet: 2.0" PVC

Mounting: Brackets for vertical mount

Weight: Approximately 18 lbs.

Size: Approximately 15"W x 13"H x 8"D

Minimum recommended inlet ducting (greater diameter may always be used):

HS3000, HS5000 --- 2.0" PVC Pipe

HS2000 --- Main feeder line of 3.0" or greater PVC Pipe

Branch lines (if 3 or more) may be 2.0" PVC Pipe

Outlet ducting: 2.0" PVC

Storage temperature range: 32 - 100 degrees F.

Thermally protected

Locked rotor protection

Internal Condensate Bypass

IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the HS Series Fan for shipping damage within 15 days of receipt. Notify **RadonAway® of any damages immediately**. RadonAway® is not responsible for damages incurred during shipping. However, for your benefit, RadonAway® does insure shipments.

There are no user serviceable parts inside the fan. **Do not attempt to open.** Return unit to factory for service.

Install the HS Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

Provide a copy of this instruction or comparable radon system and testing information to the building occupants after completing system installation.

WARRANTY

RadonAway® warrants that the HS Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of 90 days from the date of purchase (the "Warranty Term").

RadonAway® will replace any Fan which fails due to defects in materials or workmanship during the Warranty Term. The Fan must be returned (at Owner's cost) to the RadonAway® factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway®.

1 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION.

RadonAway® will extend the Warranty Term of the fan to one (1) year from date of purchase or fifteen (15) months from the date of manufacture, whichever is sooner, if the Fan is installed in a professionally designed and professionally installed active soil depressurization system or installed as a replacement fan in a professionally designed and professionally installed active soil depressurization system by a qualified installer. Proof of purchase and/or proof of professional installation may be required for service under this warranty. Outside the Continental United States and Canada the extended Warranty Term is limited to one (1) year from the date of manufacture.

RadonAway® is not responsible for installation, removal or delivery costs associated with this Warranty.

LIMITATION OF WARRANTY

EXCEPT AS STATED ABOVE, THE HS SERIES FANS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping costs, including insurance, to and from factory.

RadonAway® 3 Saber Way
Ward Hill, MA 01835 USA TEL (978) 521-3703
FAX (978) 521-3964
Email to: Returns@RadonAway.com

Record the following information for your records:

Serial No._____ Purchase Date_____

McMASTER-CARR. OVER 555,000 PRODUCTS
(609) 259-8900
(609) 259-3575 (fax)
nj.sales@mcmaster.com
Text 58926

Ultra-Low Vacuum Gauge

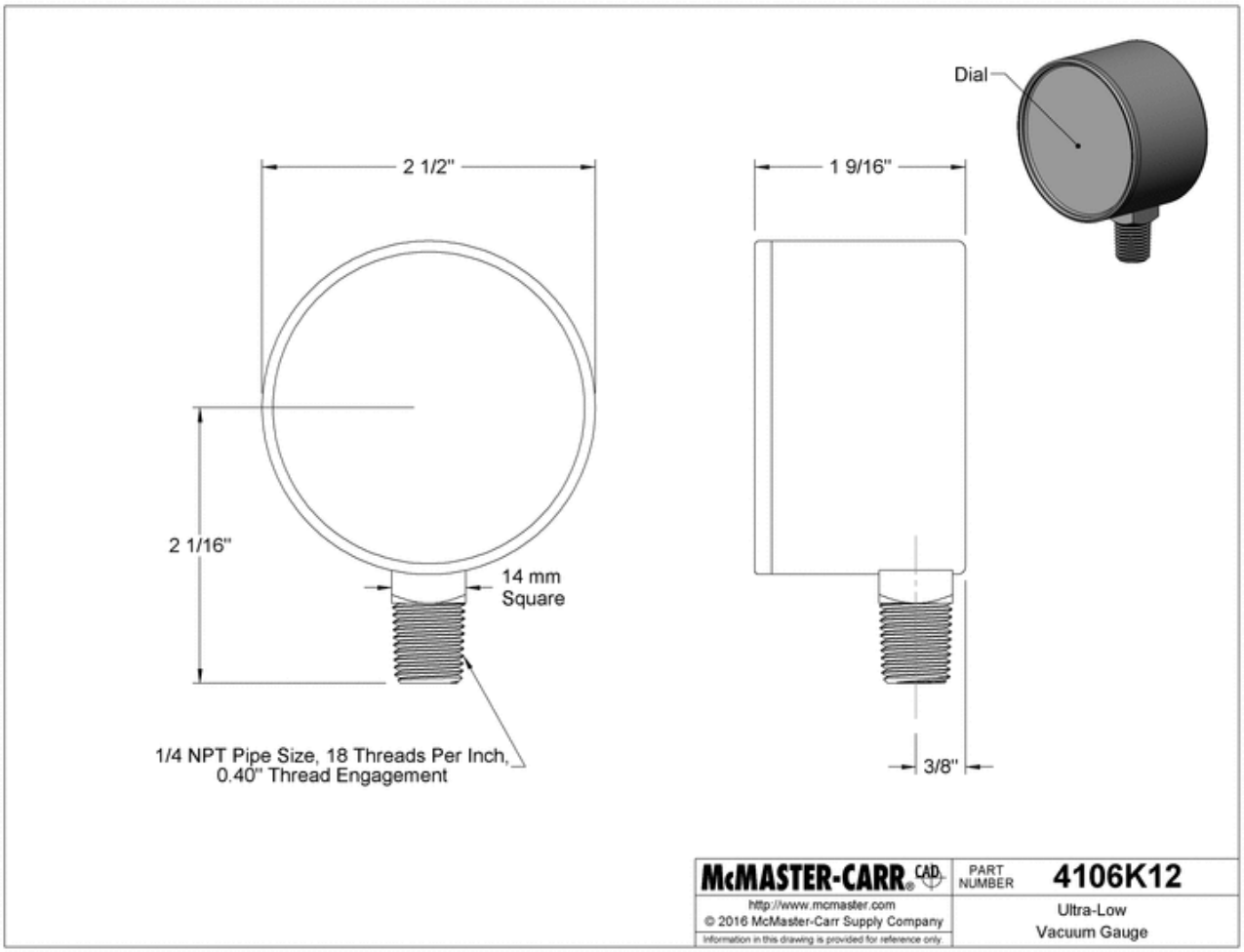
Steel Case, 2-1/2" Dial, 1/4 Male Bottom Connection

In stock
$62.08 Each
4106K1

For Use With	Air
Pipe Connection	NPT male
Connection Material	Brass
Accuracy	±1.5% full scale (not graded)
Case Material	Black-painted steel
Lens Material	Acrylic
Dial Size	2 1/2"
Pipe Size	1/4
Connection	Bottom
Graduation Marks	0.2 in. of H2O
Numeric Increments	3 in. of H2O
Vacuum Range	15" to 0 in. of h20
RoHS	Not Compliant

Accommodate applications with very low vacuum. Environment temperature range is -4° to 140° F and process temperature range is -4° to 176° F. Gauges with 2 1/2" dial have a black-painted steel case and acrylic lens.

Vacuum Range, in. of H20: 15" to 0



The information in this 3-D model is provided for reference only.

INSTALLATION & OPERATING INSTRUCTIONS
Instruction P/N IN015 Rev E
FOR *CHECKPOINT IIa*™ P/N 28001-2 & 28001-3
RADON SYSTEM ALARM

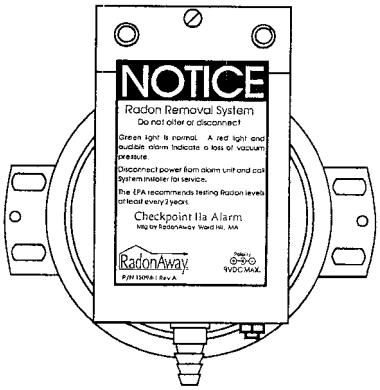
INSTALLATION INSTRUCTIONS
(WALL MOUNTING)

Select a suitable wall location near a vertical section of the suction pipe. The unit should be mounted about four or five feet above the floor and as close to the suction pipe as possible. Keep in mind that with the plug-in transformer provided, the unit must also be within six feet of a 120V receptacle. **NOTE: The Checkpoint IIa is calibrated for vertical mounting, horizontal mounting will affect switchpoint calibration.**

Drill two ¼" holes 4" apart horizontally where the unit is to be mounted.

Install the two ¼" wall anchors provided.

Hang the CHECKPOINT IIa from the two mouting holes located on the mounting bracket. Tighten the mounting screws so the unit fits snugly and securely against the wall.



Drill a 5/16" hole into the side of the vent pipe about 6" higher than the top of the unit.

Insert the vinyl tubing provided about 1" inside the suction pipe.

Cut a suitable length of vinyl tubing and attach it to the pressure switch connector on the CHECKPOINT IIa.

CALIBRATION AND OPERATION.

The CHECKPOINT IIa units are calibrated and sealed at the factory to alarm when the vacuum pressure falls below the factory setting and should not normally require field calibration. Factory Settings are:
28001-2 -.25" WC Vacuum
28001-3 -.10" WC Vacuum

To Verify Operation:

With the exhaust fan off or the pressure tubing disconnected and the CHECKPOINT IIa plugged in, both the red indicator light and the audible alarm should be on.

Turn the fan system on or connect the pressure tubing to the fan piping. The red light and the audible alarm should go off. The green light should come on.

Now turn the fan off. The red light and audible alarm should come on in about two or three seconds and the green light should go out.

WARRANTY INFORMATION

Subject to applicable consumer protection legislation, RadonAway warrants that the CHECKPOINT IIa will be free from defective material and workmanship for a period of (1) year from the date of purchase. Warranty is contingent on installation in accordance with the instructions provided. This warranty does not apply where repairs or alterations have been made or attempted by others; or the unit has been abused or misused. Warranty does not include damage in shipment unless the damage is due to the negligence of RadonAway. All other warranties, expressed or written, are not valid. To make a claim under these limited warranties, you must return the defective item to RadonAway with a copy of the purchase receipt. RadonAway is not responsible for installation or removal cost associated with this warranty. In no case is RadonAway liable beyond the repair or replacement of the defective product FOB RadonAway.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO WARRANTY OF MERCHANTIBILITY. ALL OTHER WARRANTIES, EXPRESSED OR WRITTEN, ARE NOT VALID.

For service under these warranties, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. **No returns can be accepted without an RMA.** If factory return is required, the customer assumes all shipping costs to and from factory.

Manufactured by:
RadonAway
Ward Hill, MA
(978)-521-3703

APPENDIX H

Mitigation System Installation Record

☒ Structure was sampled previously

System Information

Site No:

System ID:

Site Name: Popular Hand Laundry

Owner Name: Martin Zimmerman ☒ Owner Occupied

System Address: 88 Ingraham Street Telephone:

City: Brooklyn, NY Zip: 11237 Alt. Telephone:

Contractor Information

Installer Name: David Weber / Steve Sussman Company: EnviroTrac Ltd

Telephone: 631-924-3001

Building Conditions

Building Type: General Industrial

Slab Integrity: ○ Poor ○ Average ◉ Good ○ Excellent

Slab Penetrations: ☐ Sump ☐ Floor drain ☐ Perimeter drain ☒ Other

Describe:

Utilities: Sewer, electric and water pipe

Observed Water: ◉ Dry ○ Damp ○ Sump only ○ Standing

Describe:

System Installation

Installation Type: Sub-Slab Depressurization (Active) Date Installed: Aug 8, 2016

Slab Thickess (inches): >5 in.

Subslab Material: Sand Subslab Moisture: Dry

Number of Suction Points: 2 Number of Fans Installed: 1

	☒ Fan #1 Operating	☐ Fan #2 Operating	☐ Fan #3 Operating
Fan Model No(s):	Radon Away HS200		
Fan Serial No(s):	NA		
Final U-Tube Levels:	13"		

Additional Mitigation Elements (check all that apply):

☐ Drainjer ☐ Membrane ☐ Sealed cracks ☐ New floor ☒ Rain cap ☒ Other

Comments:

Condensation fan guard

Communication Testing

Test Method: Micromanometer Meter Type/Manufacturer: TSI VelociCalc Plus 8369A

Location	Reading/Result	Dist. From Suction Point (ft)	Passed?
Vapor Monitoring	See Attached Data Sheet		☒
Points			☐
			☐
			☐
			☐

NORTH

System Sketch
(indicate notable features, location of extraction points, and communication test holes)

Sub-Slab Depressurization Startup Data

Popular Hand Laundry Site
88 Ingraham Street, Brooklyn, NY

Startup Date: August 8, 2016
Personnel: DK

Vacuum Monitoring Point	Vacuuum Response ("H2O)	Distance From SVMW-5 (ft)	Distance From SVMW-6 (ft)	Pass (Y/N)
VP-1	0.390	35	10	Y
VP-2	0.224	35	69	Y
VP-3	0.021	28	50	Y
VP-4	0.035	48	26	Y
VP-5	0.031	45	25	Y
VP-6	0.049	79	32	Y
VP-7	0.109	25	42	Y