

**FINAL REPORT**

**Tim Bayly Property Off-Site  
Sub-Basement Ventilation System  
Construction Completion Report**

**Site No. C442043A**

**New York State Department of  
Environmental Conservation**

August 12, 2020

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# Tim Bayly Property Off-Site Sub-Basement Ventilation System Construction Completion Report

Site No. C442043A

Prepared for:

**New York State Department of  
Environmental Conservation**

I, Douglas M. Crawford, P.E., certify that I am currently a New York State registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Scope of Work – Work Assignment D007623-35 Amendment 1 was implemented and that all construction activities were completed in substantial conformance with the Division of Environmental Remediation (DER)-approved Scope of Work – Work Assignment D007623-35 Amendment 1.



A handwritten signature of Douglas M. Crawford in black ink.

Douglas M. Crawford, P.E.  
NYS P.E. License No. 66649

August 12, 2020

Date

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## LIST OF ACRONYMS

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|                   |                                                                               |
|-------------------|-------------------------------------------------------------------------------|
| %                 | Percent                                                                       |
| ASHRAE            | The American Society of Heating, Refrigeration and Air Conditioning Engineers |
| BCP               | Brownfield Cleanup Program                                                    |
| CCR               | Construction Completion Report                                                |
| COCs              | Constituents of Concern                                                       |
| CTPs              | Communication Test Points                                                     |
| CTSHs             | Communication Test Suction Holes                                              |
| DUSR              | Data Usability Summary Report                                                 |
| FAP               | Field Activities Plan                                                         |
| FPM               | Feet Per Minute                                                               |
| HASP              | Health and Safety Plan                                                        |
| HVAC              | Heating, Ventilation and Air Conditioning                                     |
| IRM               | Interim Remedial Measure                                                      |
| µg/m <sup>3</sup> | Micrograms Per Cubic Meter                                                    |
| NYSDEC            | New York State Department of Environmental Conservation                       |
| NYSDOH            | New York State Department of Health                                           |
| OBG               | O'Brien & Gere Engineers, Inc., part of Ramboll                               |
| PCE               | Tetrachloroethene                                                             |
| PVC               | Polyvinyl Chloride                                                            |
| PMIA              | Post-Mitigation Indoor Air                                                    |
| QAPP              | Quality Assurance Project Plan                                                |
| RAOs              | Remedial Action Objectives                                                    |
| SC                | Site Characterization                                                         |
| SCR               | Site Characterization Report                                                  |
| SOW               | Scope of Work                                                                 |
| SSD               | Sub-Slab Depressurization                                                     |
| SSP               | System Suction Point                                                          |
| SVI               | Soil Vapor Intrusion                                                          |
| SVS               | Sub-Basement Ventilation System                                               |

|       |                                               |
|-------|-----------------------------------------------|
| TCE   | Trichloroethene                               |
| USEPA | United States Environmental Protection Agency |
| WA    | Work Assignment                               |

## 1. INTRODUCTION

### 1.1. GENERAL

This Construction Completion Report (CCR) for the Tim Bayly Property – Off-Site was prepared by O'Brien & Gere Engineers, Inc., part of Ramboll (OBG), under contract with Parsons Engineering of New York. The CCR summarizes the installation of a sub-basement ventilation system (SVS) and subsequent sub-basement sealing and sampling results at 810 Broadway in the City of Rensselaer, Rensselaer County, New York. An off-site Site Characterization (SC) for the Tim Bayly Property – Off-Site was conducted between October 2018 and April 2019 for the New York State Department of Environmental Conservation (NYSDEC) under Engineering Services Standby Contract Work Assignment (WA) #D007623-35. The off-site study area surrounds the Tim Bayly Property (Brownfield Cleanup Program [BCP] Site) located at 800 Broadway in the City of Rensselaer, New York.<sup>1</sup> A site location map and off-site study area map are included as **Figures 1-1 and 1-2**, respectively. The off-site SC was summarized in the final Site Characterization Report (SCR) submitted to the NYSDEC on January 16, 2020 (OBG, 2020). As discussed in Section 10 of the SCR, preliminary remedial action objectives (RAOs) for indoor air and sub-slab vapor were identified for BCP Site-related constituents of concern (COCs) detected during sampling activities performed at 810 Broadway. The off-site SC confirmed BCP Site-related COCs, specifically trichloroethene (TCE) and tetrachloroethene (PCE), in soil vapor beneath the structure and indoor air at levels warranting mitigation per the New York State Department of Health (NYSDOH) Soil Vapor/Indoor Air Matrix A and Matrix B.

To address the concentration of COCs warranting mitigation identified during the off-site SC, a Vapor Mitigation Interim Remedial Measure (Vapor Mitigation IRM) was developed as an Amendment to the WA, #D007623-35.1, and subsequently submitted and approved by the NYSDEC on February 6, 2020. The objective of the Vapor Mitigation IRM was to minimize current or future risks to the public by reducing the potential for Soil Vapor Intrusion (SVI) at the property at 810 Broadway. The Scope of Work (SOW) associated with the WA consisted of the following:

- Final IRM design, scoping, and development
- IRM construction, implementation, and oversight
- Post-mitigation indoor air (PMIA) sampling to evaluate the effectiveness of the IRM
- Completion of a CCR, detailed herein, documenting the final IRM design and results

The final IRM design, construction implementation, and PMIA sampling were completed in accordance with the SOW, site-specific requirements, and the previously approved Field Activities Plan (FAP) (Parsons and OBG, 2011a), Quality Assurance Project Plan (QAPP), and the Health and Safety Plan (HASP) (Parsons and OBG, 2011b, 2011c).

### 1.2. OBJECTIVE

The objective of the SVS and sub-basement sealing was to mitigate SVI potential to the extent that indoor air concentrations of site-specific COCs related to the BCP Site are reduced below the corresponding guideline values provided in the *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2017).<sup>2</sup> The primary COCs for this project are PCE and TCE. The indoor air guideline values derived by the NYSDOH for these COCs are as follows:

<sup>1</sup> The BCP Site is being addressed separately by a Volunteer through the BCP (Site No. C442043).

<sup>2</sup> In cases where a concentration was not detected above the reporting limit, the reporting limit was used to select recommended action.

- PCE below 30 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )
- TCE below 2  $\mu\text{g}/\text{m}^3$

### 1.3. SITE BACKGROUND AND SYSTEM DESIGN

The two-story building at 810 Broadway abuts the northern boundary of the BCP Site (**Figure 1-2**). The building is currently vacant but is purportedly being redeveloped into an apartment building. The building includes a basement that encompasses the building footprint and an approximately 883 square-foot sub-basement beneath the northern half of the basement. As shown on **Table 1-1**, SVI sampling conducted at 810 Broadway in March and April 2019 revealed the presence of PCE and TCE at concentrations of 22 and 0.90 (estimated)  $\mu\text{g}/\text{m}^3$  in sub-basement sub-slab air, and concentrations of 18 and 8.5  $\mu\text{g}/\text{m}^3$  in indoor air samples from the sub-basement, respectively (OBG, 2020). The source of the PCE and TCE is attributed to prior dry-cleaning operations at the adjacent BCP Site to the south.

OBG conducted pre-design communication testing within the sub-basement of 810 Broadway on April 11, 2019 to assess if sub-slab conditions were conducive to sub-slab depressurization (SSD). Pre-design communication testing was performed to simulate depressurization conditions by applying a vacuum at a selected suction point location and measuring the distance from the suction point at which depressurization conditions were induced. The testing required that communication test suction holes (CTSHs) be drilled through the sub-basement floor and vacuum be applied using a device capable of inducing enough suction (e.g., wet/dry shop vacuum). While vacuum was applied to the CTSHs, a digital micromanometer was utilized to measure the air pressure differential at pre-drilled communication test points (CTPs). The results of the communication testing suggest that approximately half of the sub-basement was conducive to SSD. The remaining portion of the sub-basement slab is elevated (approximately 24 inches) and separated by a laid-up stone retaining wall. The elevated portion of the slab was not conducive to SSD without additional engineering measures.

As a result of the communication testing, a seal and active ventilation system was selected for the IRM in order to protect against possible future SVI. The components of this IRM consist of (1) application of spray-foam insulation to the ceiling joists above the building sub-basement to seal this space off from the overlying basement; (2) application of an intumescent coating to the exposed spray-foam; and (3) installation of an active ventilation system in the sub-basement. The seal and active ventilation system was approved by the NYSDEC and property owner on July 31, 2019 and August 1, 2019, respectively.

## 2. SUB-BASEMENT VENTILATION SYSTEM DESIGN AND INSTALLATION

### 2.1. OVERVIEW

The SVS installed in the sub-basement at 810 Broadway relies on the principle of active ventilation, a commonly used mitigation technique for SVI, which involves the inducement of air flow where SVI COCs are known to be elevated. Air flow is induced by a fan mounted on the sub-basement wall, which pulls air from the sub-basement through polyvinyl chloride (PVC) pipe via a system suction point (SSP). The air travels through the PVC piping and exhausts through the piping on the exterior of the structure above the eave of the roof.

### 2.2. VENTILATION SYSTEM INSTALLATION

The SVS was installed on March 25 and 26, 2020 following approval obtained on March 13, 2020 from the City of Rensselaer Building Department to initiate construction and electrical installation activities without building or electrical permitting. OBG installed approximately 37 linear feet of 3-inch diameter PVC pipe that extended from the SVS fan in the sub-basement, through the floor of the basement, to the exterior of the building on the north side of the structure. A vertical section of PVC pipe was secured along an approximate centerline of the north side of the building exterior and extended 1-foot above the roof of the structure. The PVC pipe was installed greater than 10 feet above ground level, a minimum of 10 feet away from any opening that is less than 2 feet below the exhaust point, and 10 feet from any adjoining or adjacent buildings or heating, ventilation and air conditioning (HVAC) intakes or supply registers per the system-specific recommendations contained in Section 4.2.2, (c)6 of *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2017). The outlet of the pipe was fitted with a rain guard. The system is equipped with a u-tube manometer located in the basement to monitor the air pressure induced by the SVS. The u-tube manometer is also used to indicate to building occupants or the property owner if the system is malfunctioning or not operating efficiently. At the request of the NYSDEC, a temperature sensor was also installed in the sub-basement; the associated digital readout is located in the basement.

Air flow is induced by a RadonAway model RP-145 fan. At the time of installation, there was no electrical supply available in the sub-basement; therefore, an electrical outlet was installed in the sub-basement in close proximity to the SVS to supply electrical power to the fan. Fan product information and operating instructions are included as **Attachment A**.

A record drawing showing the location of system components and the completion details for the SVS is provided as **Appendix A**.

### 2.3. SUB-BASEMENT SEALING

Following installation of the ventilation system, OBG contracted a construction subcontractor, Standard Insulating Co., to apply an approximate 3-inch layer of spray-foam insulation beneath the basement sub-floor, above the sub-basement. The spray-foam insulation was used to seal small openings that may provide for preferential pathways into the space above the sub-basement (i.e., the basement). An intumescent coating was applied to exposed spray-foam after application. As requested by the property owner, the construction subcontractor also installed a sealable hatch for intermittent access to the sub-basement. The spray-foam insulation, intumescent coating, and sub-basement hatch were installed on March 26, 2020. Photographs of the work activities are provided in the project photographic log as part of **Appendix B**. The spray-foam safety data sheet providing information on the spray-foam product applied is included as **Attachment B**.

### 3. SUB-BASEMENT VENTILATION SYSTEM COMMISSIONING

#### 3.1. OVERVIEW

Following installation of the sub-basement ventilation system, operation of the system was commissioned by OBG field personnel.

#### 3.2. SYSTEM COMMISSIONING

For this SVS, the sub-basement volume (air space) was approximated using sub-basement length, width, and height measurements. As a conservative measure and in general conformance with OBG protocols for other sites in New York, a target air exchange rate of 0.6 air exchanges per hour was established.<sup>3</sup> The selection of appropriate-sized diameter pipe was based upon establishing a system that will have enough air velocity to prevent dust/condensate build-up, but not have an excessive velocity which will cause whistling in the pipe. For this SVS, a target (design) velocity of 1,217 feet per minute (fpm) in a 3-inch diameter pipe was established.

Following installation OBG commissioned the SVS to test performance, document operating parameters, and to evaluate that the components were installed and operating as intended. SVS performance is defined by setting the velocity in the field to within  $\pm 10$  percent (%) of the target velocity such that the appropriate number of air exchanges are taking place. System performance was also qualitatively performed by visually inspecting the spray-foam seal and intumescent coating applied to the basement sub-floor, above the sub-basement, to ensure no cracks or small openings were present.

During commissioning, the field velocity was set to 1,205 fpm, within  $\pm 10\%$  of the target velocity. In general conformance with protocols established for the installation of radon systems, a u-tube manometer was installed in the basement. Note that the reading shown on the u-tube manometer is not necessarily an indication that the actual velocity is within  $\pm 10\%$  of the target velocity. The purpose of the u-tube manometer is to provide the owner/occupant with a visual indication that the system (fan) is operating.

Copies of the sub-basement ventilation installation and operation commissioning checklist are provided in **Appendix C**. A copy of the Mitigation System Installation Record documenting system and contractor information, building conditions, and a summary of system installation is provided in **Attachment D**. A representative copy of the installation label affixed to the system designating the NYSDEC technical support call number (1-888-459-8667) is also included in **Attachment D**.

<sup>3</sup> The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 62-2001 (Ventilation for Acceptable Indoor Air Quality), lists a guideline of 0.35 air exchanges per hour for whole house ventilation of stale/polluted air in residential homes.

## 4. POST-MITIGATION INDOOR AIR SAMPLING

### 4.1. OVERVIEW

PMIA sampling was completed at the subject property following completion and start-up of the system. The PMIA sampling was completed on April 28 and 29, 2020. The PMIA sampling was performed pursuant to the SOW, comments on the SOW provided by NYSDOH on January 27, 2020, and comments provided by NYSDEC in an e-mail correspondence on April 6, 2020. The purpose of the PMIA sampling was to provide additional quantitative assessment of the performance of the system and sub-basement sealing to verify that the Vapor Mitigation IRM was protective of human health.

### 4.2. POST-MITIGATION INDOOR AIR SAMPLE COLLECTION

PMIA samples were collected at three locations and included two basement indoor air samples, one ambient air sample, and one duplicate basement indoor air sample (**Figure 4-1**). One indoor air sample was collected from original sampling location 810B\_IA\_01 in the basement. An additional indoor air sample and associated blind duplicate sample, 810B\_IA\_04 and X\_1, were collected from a new sampling location in the basement in close proximity to the hatch providing access to the sub-basement. The ambient air sample, 810B\_OA\_01, was collected near the subject property at an upwind location. Photographs of the sampling locations are provided in **Appendix B**. The PMIA samples were collected in 6-Liter individually certified SUMMA® canisters over an approximate 24-hour sampling period. Doors and windows remained closed leading up to and during sample collection and the heating system was operated prior to and during sampling to allow for representative sample conditions that mimicked conditions during the 2020 heating season.

During sampling, OBG performed a building survey and chemical inventory of the basement to document potential VOC sources that may be detected in the analysis. The indoor air and ambient air samples were analyzed for the standard list of VOCs using United States Environmental Protection Agency (USEPA) Method TO-15 and were submitted to Eurofins TestAmerica of South Burlington, Vermont. The results of the VOC analyses performed on the air samples are summarized on **Table 4-1**. The Data Usability Summary Report (DUSR) is provided in **Attachment C**. As identified in the DUSR, the data are acceptable for use. The final pressure of the parent sample collected at 810B\_IA\_04 was at ambient conditions upon arrival at the laboratory. The target analytes in the parent sample were qualified as estimated. PCE and TCE, were not detected in the PMIA samples. Sampling forms associated with the PMIA sampling event are provided in **Appendix D**.

## 5. CONCLUSIONS

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The Vapor Mitigation IRM was completed at the subject property to mitigate SVI potential to the extent that indoor air concentrations of the site-specific COCs are reduced below the corresponding guideline values. The analytical results collected during the PMIA sampling and results of the system commissioning demonstrate that under current and reasonably anticipated future conditions, exposure to concentrations of site-specific SVI COCs, specifically PCE and TCE, has been reduced to concentrations below the corresponding guideline values provided in the *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2017). The system, sub-basement sealing, and PMIA sampling results demonstrate that the potential for human exposure to site-specific SVI COCs at the subject property has been reduced. System information and operating instructions are included as an attachment to this report. Alteration to the sub-basement configuration, system design, or operation should be communicated by the property owner to NYSDEC to ensure that changes will not impact current or future human health exposure.



## REFERENCES

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- New York State Department of Health (NYSDOH) *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006), and Updates May 2017.
- OBG, 2020. *Tim Bayly Property Off-Site Site Characterization Report Site No. C442043A*. January 16, 2020.
- Parsons and OBG, 2011a. *Field Activities Plan*. May 2011.
- Parsons and OBG, 2011b. *Generic Quality Assurance Project Plan*. May 2011.
- Parsons and OBG, 2011c. *Generic/Site-specific Health and Safety Plan*. May 2011.
- Parsons and OBG, 2020. *Schedule 1 Scope of Work Amendment 1 Remedial Investigation/Feasibility Study for the Tim Bayly Property – Off-Site Rensselaer, New York. Work Assignment #D007623-35 Amendment 1. NYSDEC Site No.: C442043A*. January 31, 2020.

## Tables

Table 1-1  
Vapor Intrusion Results - 810 Broadway

Tim Bayly Off-Site  
Rensselaer, New York

| Location ID<br>Sample ID<br>Sample Date | Outdoor Ambient<br>810B_OA_01_031119_031219<br>3/12/2019 | Indoor Air Basement<br>810B_IA_01_031119_031219<br>3/12/2019 | Sub Slab - Basement<br>810B_SS_01_031119_031219<br>3/12/2019 | NYSDOH Decision<br>Matrix <sup>a</sup> | Indoor Air First Floor<br>810B_IA_02_031119_031219<br>3/12/2019 | Indoor Air First Floor<br>X_1_031119_031219<br>3/12/2019 | Indoor Air Sub-Basement<br>810B_IA_03_031119_031219<br>3/12/2019 | Sub Slab – Sub-Basement<br>810B_SS_03_040919-041019<br>4/10/2019 | NYSDOH Decision Matrix <sup>a</sup>            | Sub Slab – Sub-Basement<br>810B_SS_03_01_041019-041119<br>4/11/2019 |
|-----------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------|
| Chemical Name                           |                                                          |                                                              |                                                              |                                        |                                                                 |                                                          |                                                                  |                                                                  |                                                |                                                                     |
| Matrix A Compounds                      |                                                          |                                                              |                                                              |                                        |                                                                 |                                                          |                                                                  |                                                                  |                                                |                                                                     |
| Trichloroethene                         | 1.1 U                                                    | 0.43 J                                                       | 0.31 J                                                       | NFA                                    | 1.1 U                                                           | 1.1 U                                                    | 8.5                                                              | 0.90 J                                                           | IDENTIFY SOURCE(S) and<br>RESAMPLE or MITIGATE | 2.2                                                                 |
| cis-1,2-Dichloroethene                  | 0.79 U                                                   | 0.79 U                                                       | 0.79 U                                                       | NFA                                    | 0.79 U                                                          | 0.79 U                                                   | 0.90                                                             | 0.79 U                                                           | NFA                                            | 2.8                                                                 |
| 1,1-Dichloroethene                      | 0.79 U                                                   | 0.79 U                                                       | 0.79 U                                                       | NFA                                    | 0.79 U                                                          | 0.79 U                                                   | 0.79 U                                                           | 0.79 U                                                           | NFA                                            | 0.79 U                                                              |
| Carbon tetrachloride                    | 0.31 J                                                   | 0.41 J                                                       | 0.26 J                                                       | NFA                                    | 0.42 J                                                          | 0.30 J                                                   | 0.37 J                                                           | 1.3 U                                                            | NFA                                            | 1.3 U                                                               |
| Matrix B Compounds                      |                                                          |                                                              |                                                              |                                        |                                                                 |                                                          |                                                                  |                                                                  |                                                |                                                                     |
| Tetrachloroethene                       | 1.4 U                                                    | 0.27 J                                                       | 12                                                           | NFA                                    | 0.23 J                                                          | 1.4 U                                                    | 18                                                               | 22                                                               | IDENTIFY SOURCE(S) and<br>RESAMPLE or MITIGATE | 2.8                                                                 |
| 1,1,1-Trichloroethane                   | 1.1 U                                                    | 1.1 U                                                        | 1.1 U                                                        | NFA                                    | 1.1 U                                                           | 1.1 U                                                    | 0.63 J                                                           | 1.1 U                                                            | NFA                                            | 0.59 J                                                              |
| Methylene chloride                      | 0.55 J                                                   | 0.57 J                                                       | 1.7 U                                                        | NFA                                    | 0.46 J                                                          | 1.4 J                                                    | 0.48 J                                                           | 0.96 J                                                           | NFA                                            | 1.7 U                                                               |
| Matrix C Compounds                      |                                                          |                                                              |                                                              |                                        |                                                                 |                                                          |                                                                  |                                                                  |                                                |                                                                     |
| Vinyl chloride                          | 0.51 U                                                   | 0.51 U                                                       | 0.51 U                                                       | NFA                                    | 0.51 U                                                          | 0.51 U                                                   | 0.51 U                                                           | 0.51 U                                                           | NFA                                            | 0.51 U                                                              |
| Other Compounds                         |                                                          |                                                              |                                                              |                                        |                                                                 |                                                          |                                                                  |                                                                  |                                                |                                                                     |
| 1,1,2,2-Tetrachloroethane               | 1.4 U                                                    | 1.4 U                                                        | 1.4 U                                                        | NA                                     | 1.4 U                                                           | 1.4 U                                                    | 1.4 U                                                            | 1.4 U                                                            | NA                                             | 1.4 U                                                               |
| 1,1,2-trichloro-1,2,2-trifluoroethane   | 0.45 J                                                   | 0.60 J                                                       | 0.44 J                                                       | NA                                     | 0.41 J                                                          | 0.42 J                                                   | 0.57 J                                                           | 1.5 U                                                            | NA                                             | 1.5 U                                                               |
| 1,1,2-Trichloroethane                   | 1.1 U                                                    | 1.1 U                                                        | 1.1 U                                                        | NA                                     | 1.1 U                                                           | 1.1 U                                                    | 1.1 U                                                            | 1.1 U                                                            | NA                                             | 1.1 U                                                               |
| 1,1-Dichloroethane                      | 0.81 U                                                   | 0.81 U                                                       | 0.81 U                                                       | NA                                     | 0.81 U                                                          | 0.81 U                                                   | 0.81 U                                                           | 0.81 U                                                           | NA                                             | 0.81 U                                                              |
| 1,2,4-Trichlorobenzene                  | 15 U                                                     | 15 U                                                         | 15 U                                                         | NA                                     | 15 U                                                            | 15 U                                                     | 15 U                                                             | 15 U                                                             | NA                                             | 15 U                                                                |
| 1,2,4-Trimethylbenzene                  | 0.98 U                                                   | 0.98 U                                                       | 0.72 J                                                       | NA                                     | 0.98 U                                                          | 0.98 U                                                   | 0.98 U                                                           | 0.98 U                                                           | NA                                             | 0.28 J                                                              |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane  | 1.4 U                                                    | 1.4 U                                                        | 1.4 U                                                        | NA                                     | 1.4 U                                                           | 1.4 U                                                    | 1.4 U                                                            | 1.4 U                                                            | NA                                             | 1.4 U                                                               |
| 1,2-Dibromoethane (EDB)                 | 1.5 U                                                    | 1.5 U                                                        | 1.5 U                                                        | NA                                     | 1.5 U                                                           | 1.5 U                                                    | 1.5 U                                                            | 1.5 U                                                            | NA                                             | 1.5 U                                                               |
| 1,2-Dichlorobenzene                     | 2.1 JH                                                   | 1.2 U                                                        | 1.2 U                                                        | NA                                     | 1.2 U                                                           | 1.2 U                                                    | 1.2 U                                                            | 1.2 U                                                            | NA                                             | 1.2 U                                                               |
| 1,2-Dichloroethane                      | 0.81 U                                                   | 0.81 U                                                       | 0.81 U                                                       | NA                                     | 0.81 U                                                          | 0.81 U                                                   | 0.81 U                                                           | 0.81 U                                                           | NA                                             | 0.81 U                                                              |
| 1,2-Dichloropropane                     | 0.92 U                                                   | 0.92                                                         | 0.92 U                                                       | NA                                     | 0.78 J                                                          | 0.42 J                                                   | 0.92 U                                                           | 0.92 U                                                           | NA                                             | 0.92 U                                                              |
| 1,3,5-Trimethylbenzene                  | 0.14 J                                                   | 0.98 U                                                       | 0.19 J                                                       | NA                                     | 0.10 J                                                          | 0.98 U                                                   | 0.98 U                                                           | 0.98 U                                                           | NA                                             | 0.98 U                                                              |
| 1,3-Dichlorobenzene                     | 1.2 U                                                    | 1.2 U                                                        | 1.2 U                                                        | NA                                     | 1.2 U                                                           | 1.2 U                                                    | 1.2 U                                                            | 1.2 U                                                            | NA                                             | 1.2 U                                                               |
| 1,4-Dichlorobenzene                     | 1.2 U                                                    | 1.2 U                                                        | 1.2 U                                                        | NA                                     | 1.2 U                                                           | 1.2 U                                                    | 1.2 U                                                            | 1.2 U                                                            | NA                                             | 1.2 U                                                               |
| 1,4-Dioxane                             | 18 U                                                     | 18 U                                                         | 18 U                                                         | NA                                     | 18 U                                                            | 18 U                                                     | 18 U                                                             | 18 U                                                             | NA                                             | 18 U                                                                |
| 2-Butanone (MEK)                        | 1.2 J                                                    | 1.9 J                                                        | 0.78 J                                                       | NA                                     | 1.5 J                                                           | 7.1                                                      | 0.54 J                                                           | 2.9 U                                                            | NA                                             | 2.9 U                                                               |
| 4-Methyl-2-pentanone (MIBK)             | 2.0 U                                                    | 2.0 U                                                        | 2.0 U                                                        | NA                                     | 2.0 U                                                           | 2.0 U                                                    | 2.0 U                                                            | 2.0 U                                                            | NA                                             | 2.0 U                                                               |
| Acetone                                 | 6.4 J                                                    | 14                                                           | 3.4 J                                                        | NA                                     | 12 J                                                            | 67                                                       | 3.1 J                                                            | 12 U                                                             | NA                                             | 6.9 J                                                               |
| Benzene                                 | 0.64 U                                                   | 0.64 U                                                       | 0.16 J                                                       | NA                                     | 0.64 U                                                          | 0.64 U                                                   | 0.64 U                                                           | 0.18 J                                                           | NA                                             | 0.14 J                                                              |
| Benzyl chloride                         | 4.1 U                                                    | 4.1 U                                                        | 4.1 U                                                        | NA                                     | 4.1 U                                                           | 4.1 U                                                    | 4.1 U                                                            | 4.1 U                                                            | NA                                             | 4.1 U                                                               |
| Bromodichloromethane                    | 1.3 U                                                    | 1.3 U                                                        | 1.3 U                                                        | NA                                     | 1.3 U                                                           | 1.3 U                                                    | 1.3 U                                                            | 1.3 U                                                            | NA                                             | 1.3 U                                                               |
| Bromoform                               | 2.1 U                                                    | 2.1 U                                                        | 2.1 U                                                        | NA                                     | 2.1 U                                                           | 2.1 U                                                    | 2.1 U                                                            | 0.87 U                                                           | NA                                             | 0.87 U                                                              |
| Bromomethane                            | 0.78 U                                                   | 0.78 U                                                       | 0.78 U                                                       | NA                                     | 0.78 U                                                          | 0.78 U                                                   | 0.78 U                                                           | 2.1 U                                                            | NA                                             | 2.1 U                                                               |
| Carbon disulfide                        | 1.6 U                                                    | 1.6 U                                                        | 0.57 J                                                       | NA                                     | 1.6 U                                                           | 1.6 U                                                    | 1.6 U                                                            | 1.6 U                                                            | NA                                             | 1.6 U                                                               |
| Chlorobenzene                           | 0.92 U                                                   | 0.92 U                                                       | 0.92 U                                                       | NA                                     | 0.92 U                                                          | 0.92 U                                                   | 0.92 U                                                           | 0.92 U                                                           | NA                                             | 0.92 U                                                              |
| Chloroethane                            | 2.1 U                                                    | 2.1 U                                                        | 2.1 U                                                        | NA                                     | 2.1 U                                                           | 2.1 U                                                    | 2.1 U                                                            | 2.1 U                                                            | NA                                             | 2.1 U                                                               |
| Chloroform                              | 0.98 U                                                   | 0.98 U                                                       | 0.98 U                                                       | NA                                     | 0.98 U                                                          | 0.98 U                                                   | 0.45 J                                                           | 1.0                                                              | NA                                             | 0.98 U                                                              |
| Chloromethane                           | 1.3                                                      | 1.3                                                          | 1.0 U                                                        | NA                                     | 1.1                                                             | 0.99 J                                                   | 0.38 J                                                           | 1.0 U                                                            | NA                                             | 1.0 UJ                                                              |
| Cis-1,3-Dichloropropene                 | 0.91 U                                                   | 0.91 U                                                       | 0.91 U                                                       | NA                                     | 0.91 U                                                          | 0.91 U                                                   | 0.91 U                                                           | 0.91 U                                                           | NA                                             | 0.91 U                                                              |
| Cyclohexane                             | 1.7 U                                                    | 1.7 U                                                        | 0.11 J                                                       | NA                                     | 0.069 J                                                         | 0.19 J                                                   | 1.7 U                                                            | 1.7 U                                                            | NA                                             | 1.7 U                                                               |
| Dibromochloromethane                    | 1.7 U                                                    | 1.7 U                                                        | 1.7 U                                                        | NA                                     | 1.7 U                                                           | 1.7 U                                                    | 1.7 U                                                            | 1.7 U                                                            | NA                                             | 1.7 U                                                               |
| Dichlorodifluoromethane                 | 2.0 J                                                    | 2.5                                                          | 1.8 J                                                        | NA                                     | 2.0 J                                                           | 1.7 J                                                    | 2.2 J                                                            | 1.9 J                                                            | NA                                             | 2.1 J                                                               |
| Ethylbenzene                            | 0.87 U                                                   | 0.22 J                                                       | 0.25 J                                                       | NA                                     | 0.19 J                                                          | 0.13 J                                                   | 0.87 U                                                           | 0.16 J                                                           | NA                                             | 0.87 U                                                              |
| Hexachlorobutadiene                     | 21 U                                                     | 21 U                                                         | 21 U                                                         | NA                                     | 21 U                                                            | 21 U                                                     | 21 U                                                             | 21 U                                                             | NA                                             | 21 U                                                                |
| Hexane                                  | 2.8 U                                                    | 2.8 U                                                        | 0.25 J                                                       | NA                                     | 2.8 U                                                           | 1.1 J                                                    | 2.8 U                                                            | 2.8 U                                                            | NA                                             | 2.8 U                                                               |
| Isopropyl alcohol                       | 0.57 J                                                   | 4.0 J                                                        | 0.39 J                                                       | NA                                     | 2.6 J                                                           | 23                                                       | 0.45 J                                                           | 12 U                                                             | NA                                             | 1.1 J                                                               |
| Isopropylbenzene                        | 3.9 U                                                    | 3.9 U                                                        | 3.9 U                                                        | NA                                     | 3.9 U                                                           | 3.9 U                                                    | 3.9 U                                                            | 3.9 U                                                            | NA                                             | 0.24 J                                                              |
| m-Xylene & p-Xylene                     | 0.43 J                                                   | 0.47 J                                                       | 3.5 U                                                        | NA                                     | 0.39 J                                                          | 0.45 J                                                   | 3.5 U                                                            | 3.5 U                                                            | NA                                             | 1.5 J                                                               |
| Methyl tert-butyl ether                 | 3.6 U                                                    | 3.6 U                                                        | 3.6 U                                                        | NA                                     | 3.6 U                                                           | 3.6 U                                                    | 3.6 U                                                            | 3.6 U                                                            | NA                                             | 3.6 U                                                               |
| Naphthalene                             | 2.6 U                                                    | 2.6 U                                                        | 2.6 U                                                        | NA                                     | 2.6 U                                                           | 2.6 U                                                    | 2.6 U                                                            | 2.6 UJ                                                           | NA                                             | 2.6 U                                                               |

Table 1-1  
Vapor Intrusion Results - 810 Broadway

Tim Bayly Off-Site  
Rensselaer, New York

| Location ID<br>Sample ID<br>Sample Date | Outdoor Ambient<br>810B_OA_01_031119_031219<br>3/12/2019 | Indoor Air Basement<br>810B_IA_01_031119_031219<br>3/12/2019 | Sub Slab - Basement<br>810B_SS_01_031119_031219<br>3/12/2019 | NYSDOH Decision<br>Matrix <sup>a</sup> | Indoor Air First Floor<br>810B_IA_02_031119_031219<br>3/12/2019 | Indoor Air First Floor<br>X_1_031119_031219<br>3/12/2019 | Indoor Air Sub-Basement<br>810B_IA_03_031119_031219<br>3/12/2019 | Sub Slab – Sub-Basement<br>810B_SS_03_040919-041019<br>4/10/2019 | NYSDOH Decision Matrix <sup>a</sup> | Sub Slab – Sub-Basement<br>810B_SS_03_01_041019-041119<br>4/11/2019 |
|-----------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------|
| Chemical Name                           |                                                          |                                                              |                                                              |                                        |                                                                 |                                                          |                                                                  |                                                                  |                                     |                                                                     |
| o-Xylene                                | 0.39 J                                                   | 0.18 J                                                       | 0.49 J                                                       | NA                                     | 0.13 J                                                          | 0.19 J                                                   | 0.87 U                                                           | 0.17 J                                                           | NA                                  | 0.16 J                                                              |
| Styrene                                 | 0.85 U                                                   | 0.17 J                                                       | 0.85 U                                                       | NA                                     | 0.14 J                                                          | 0.073 J                                                  | 0.85 U                                                           | 0.85 U                                                           | NA                                  | 0.85 U                                                              |
| Tetrahydrofuran                         | 15 U                                                     | 0.76 J                                                       | 15 U                                                         | NA                                     | 0.79 J                                                          | 1.5 J                                                    | 15 U                                                             | 15 U                                                             | NA                                  | 15 U                                                                |
| Toluene                                 | 0.31 J                                                   | 0.83                                                         | 0.73 J                                                       | NA                                     | 0.66 J                                                          | 0.74                                                     | 0.47 J                                                           | 0.28 J                                                           | NA                                  | 0.29 J                                                              |
| trans-1,2-Dichloroethene                | 0.79 U                                                   | 0.79 U                                                       | 0.79 U                                                       | NA                                     | 0.79 U                                                          | 0.79 U                                                   | 0.79 U                                                           | 0.79 U                                                           | NA                                  | 0.79 U                                                              |
| Trans-1,3-Dichloropropene               | 0.91 U                                                   | 0.91 U                                                       | 0.91 U                                                       | NA                                     | 0.91 U                                                          | 0.91 U                                                   | 0.91 U                                                           | 0.91 U                                                           | NA                                  | 0.91 U                                                              |
| Trichlorofluoromethane                  | 1.1 J                                                    | 1.2                                                          | 1.3                                                          | NA                                     | 1.1                                                             | 0.97 J                                                   | 1.4                                                              | 1.5                                                              | NA                                  | 1.5                                                                 |
| Vinyl acetate                           | 18 U                                                     | 18 U                                                         | 18 U                                                         | NA                                     | 18 U                                                            | 18 U                                                     | 18 U                                                             | 18 U                                                             | NA                                  | 18 U                                                                |
| Vinyl bromide                           | 0.87 U                                                   | 0.87 U                                                       | 0.87 U                                                       | NA                                     | 0.87 U                                                          | 0.87 U                                                   | 0.87 U                                                           | 0.78 U                                                           | NA                                  | 0.78 U                                                              |

- Notes:**
- Results are in micrograms per cubic meter (µg/m<sup>3</sup>).
  - Air samples analyzed by TestAmerica Laboratories, Inc. in Burlington, Vermont using Environmental Protection Agency (EPA) Method TO-15.
  - Analytical results validated by Vali-Data of WNY, LLC. in West Falls, New York.
  - <sup>a</sup> designates NYSDOH vapor intrusion guidance (Oct 2006 and updates to soil vapor/indoor air decision matrices A, B, and C, May 2017 recommends actions based on the combination of sub-slab and corresponding indoor air concentrations. Used for RFM-related compounds only). In cases where a concentration was not detected above the reporting limit, the reporting limit was used to select recommended action.
  - NYSDOH Decision Matrix:  
Identify Source(s) and Resample or Mitigate- NYSDOH recommends that reasonable and practical actions be taken to identify the sources(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges.  
Mitigate - Mitigation is recommended by NYSDOH to minimize current or potential exposures associated with vapor intrusion.
  - "U" designates analyte not detected.
  - "J" designates analyte detected at an estimated concentration.
  - "JH" designates analyte detected at an estimated concentration that is biased high.
  - "NA" designates not applicable.
  - "NFA" designates no further action.

**Table 4-1**  
**Vapor Intrusion Results Post-Mitigation Indoor Air Sampling - 810 Broadway**  
**Tim Bayly Off-Site**  
**Rensselaer, New York**

| Location ID<br>Sample ID<br>Sample Date | Outdoor Ambient<br>810B_OA_01_042820_042920<br>4/29/2020 | Indoor Air<br>810B_IA_01_042820_042920<br>4/29/2020 | Indoor Air<br>810B_IA_04_042820_042920<br>4/29/2020 | Indoor Air<br>X_1_042820_042920<br>4/29/2020 | NYSDOH Decision Matrix <sup>a</sup> |
|-----------------------------------------|----------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|----------------------------------------------|-------------------------------------|
| <b>Chemical Name</b>                    |                                                          |                                                     |                                                     |                                              |                                     |
| <b>Matrix A Compounds</b>               |                                                          |                                                     |                                                     |                                              |                                     |
| Trichloroethene                         | 1.1 U                                                    | 1.1 U                                               | 1.1 UJ                                              | 1.1 U                                        | NA                                  |
| cis-1,2-Dichloroethene                  | 0.79 U                                                   | 0.79 U                                              | 0.79 UJ                                             | 0.79 U                                       | NA                                  |
| 1,1-Dichloroethene                      | 0.79 U                                                   | 0.79 U                                              | 0.79 UJ                                             | 0.79 U                                       | NA                                  |
| Carbon tetrachloride                    | 1.3 U                                                    | 1.3 U                                               | 1.3 UJ                                              | 1.3 U                                        | NA                                  |
| <b>Matrix B Compounds</b>               |                                                          |                                                     |                                                     |                                              |                                     |
| Tetrachloroethene                       | 1.4 U                                                    | 1.4 U                                               | 1.4 UJ                                              | 1.4 U                                        | NA                                  |
| 1,1,1-Trichloroethane                   | 1.1 U                                                    | 1.1 U                                               | 1.1 UJ                                              | 1.1 U                                        | NA                                  |
| Methylene chloride                      | 1.7 U                                                    | 1.7 U                                               | 1.7 UJ                                              | 1.7 U                                        | NA                                  |
| <b>Matrix C Compounds</b>               |                                                          |                                                     |                                                     |                                              |                                     |
| Vinyl chloride                          | 0.51 U                                                   | 0.51 U                                              | 0.51 UJ                                             | 0.51 U                                       | NA                                  |
| <b>Other Compounds</b>                  |                                                          |                                                     |                                                     |                                              |                                     |
| 1,1,2,2-Tetrachloroethane               | 1.4 U                                                    | 1.4 U                                               | 1.4 UJ                                              | 1.4 U                                        | NA                                  |
| 1,1,2-trichloro-1,2,2-trifluoroethane   | 1.5 U                                                    | 1.5 U                                               | 1.5 UJ                                              | 1.5 U                                        | NA                                  |
| 1,1,2-Trichloroethane                   | 1.1 U                                                    | 1.1 U                                               | 1.1 UJ                                              | 1.1 U                                        | NA                                  |
| 1,1-Dichloroethane                      | 0.81 U                                                   | 0.81 U                                              | 0.81 UJ                                             | 0.81 U                                       | NA                                  |
| 1,2,4-Trichlorobenzene                  | 15 U                                                     | 15 U                                                | 15 UJ                                               | 15 U                                         | NA                                  |
| 1,2,4-Trimethylbenzene                  | 0.20 J                                                   | 0.36 J                                              | 0.98 UJ                                             | 0.50 J                                       | NA                                  |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane  | 1.4 U                                                    | 1.4 U                                               | 1.4 UJ                                              | 1.4 U                                        | NA                                  |
| 1,2-Dibromoethane (EDB)                 | 1.5 U                                                    | 1.5 U                                               | 1.5 UJ                                              | 1.5 U                                        | NA                                  |
| 1,2-Dichlorobenzene                     | 1.2 U                                                    | 1.2 U                                               | 1.2 UJ                                              | 1.2 U                                        | NA                                  |
| 1,2-Dichloroethane                      | 0.81 U                                                   | 0.81 U                                              | 0.81 UJ                                             | 0.81 U                                       | NA                                  |
| 1,2-Dichloropropane                     | 0.92 U                                                   | 0.92 U                                              | 0.92 UJ                                             | 0.92 U                                       | NA                                  |
| 1,3,5-Trimethylbenzene                  | 0.98 U                                                   | 0.98 U                                              | 0.98 UJ                                             | 0.98 U                                       | NA                                  |
| 1,3-Dichlorobenzene                     | 1.2 U                                                    | 1.2 U                                               | 1.2 UJ                                              | 1.2 U                                        | NA                                  |
| 1,4-Dichlorobenzene                     | 1.2 U                                                    | 1.2 U                                               | 1.2 UJ                                              | 1.2 U                                        | NA                                  |
| 1,4-Dioxane                             | 18 U                                                     | 18 U                                                | 18 UJ                                               | 18 U                                         | NA                                  |
| 2-Butanone (MEK)                        | 2.9 U                                                    | 1.6 J                                               | 1.8 J                                               | 2.0 J                                        | NA                                  |
| 4-Methyl-2-pentanone (MIBK)             | 2.0 U                                                    | 2.0 U                                               | 2.0 UJ                                              | 2.0 U                                        | NA                                  |
| Acetone                                 | 3.9 J                                                    | 13                                                  | 12 J                                                | 14                                           | NA                                  |
| Benzene                                 | 0.40 J                                                   | 0.21 J                                              | 0.64 UJ                                             | 0.64 U                                       | NA                                  |
| Benzyl chloride                         | 4.1 U                                                    | 4.1 U                                               | 4.1 UJ                                              | 4.1 U                                        | NA                                  |
| Bromodichloromethane                    | 1.3 U                                                    | 1.3 U                                               | 1.3 UJ                                              | 1.3 U                                        | NA                                  |
| Bromoform                               | 2.1 U                                                    | 2.1 U                                               | 2.1 UJ                                              | 2.1 U                                        | NA                                  |
| Bromomethane                            | 0.78 U                                                   | 0.78 U                                              | 0.78 UJ                                             | 0.78 U                                       | NA                                  |
| Carbon disulfide                        | 1.6 U                                                    | 1.6 U                                               | 1.6 UJ                                              | 1.6 U                                        | NA                                  |
| Chlorobenzene                           | 0.92 U                                                   | 0.92 U                                              | 0.92 UJ                                             | 0.92 U                                       | NA                                  |
| Chloroethane                            | 2.1 U                                                    | 2.1 U                                               | 2.1 UJ                                              | 2.1 U                                        | NA                                  |
| Chloroform                              | 0.98 U                                                   | 0.98 U                                              | 0.98 UJ                                             | 0.98 U                                       | NA                                  |
| Chloromethane                           | 1.1                                                      | 0.84 J                                              | 0.69 J                                              | 0.86 J                                       | NA                                  |
| Cis-1,3-Dichloropropene                 | 0.91 U                                                   | 0.91 U                                              | 0.91 UJ                                             | 0.91 U                                       | NA                                  |
| Cyclohexane                             | 1.7 U                                                    | 1.7 U                                               | 1.7 UJ                                              | 1.7 U                                        | NA                                  |
| Dibromochloromethane                    | 1.7 U                                                    | 1.7 U                                               | 1.7 UJ                                              | 1.7 U                                        | NA                                  |
| Dichlorodifluoromethane                 | 1.9 J                                                    | 1.8 J                                               | 1.8 J                                               | 1.9 J                                        | NA                                  |

**Table 4-1**  
**Vapor Intrusion Results Post-Mitigation Indoor Air Sampling - 810 Broadway**  
**Tim Bayly Off-Site**  
**Rensselaer, New York**

| Location ID<br>Sample ID<br>Sample Date | Outdoor Ambient<br>810B_OA_01_042820_042920<br>4/29/2020 | Indoor Air<br>810B_IA_01_042820_042920<br>4/29/2020 | Indoor Air<br>810B_IA_04_042820_042920<br>4/29/2020 | Indoor Air<br>X_1_042820_042920<br>4/29/2020 | NYSDOH Decision Matrix <sup>a</sup> |
|-----------------------------------------|----------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|----------------------------------------------|-------------------------------------|
| <b>Chemical Name</b>                    |                                                          |                                                     |                                                     |                                              |                                     |
| Ethylbenzene                            | 0.87 U                                                   | 0.87 U                                              | 0.87 UJ                                             | 0.87 U                                       | NA                                  |
| Hexachlorobutadiene                     | 21 U                                                     | 0.71 J                                              | 21 UJ                                               | 21 U                                         | NA                                  |
| Hexane                                  | 2.8 U                                                    | 0.37 J                                              | 0.38 J                                              | 2.0 J                                        | NA                                  |
| Isopropyl alcohol                       | 6.8 J                                                    | 1.7 J                                               | 2.8 J                                               | 39                                           | NA                                  |
| Isopropylbenzene                        | 3.9 U                                                    | 0.20 J                                              | 3.9 UJ                                              | 3.9 U                                        | NA                                  |
| m-Xylene & p-Xylene                     | 3.5 U                                                    | 0.41 J                                              | 3.5 UJ                                              | 0.29 J                                       | NA                                  |
| Methyl tert-butyl ether                 | 3.6 U                                                    | 3.6 U                                               | 3.6 UJ                                              | 3.6 U                                        | NA                                  |
| Naphthalene                             | 2.6 U                                                    | 0.19 J                                              | 2.6 UJ                                              | 2.6 U                                        | NA                                  |
| o-Xylene                                | 0.87 U                                                   | 0.87 U                                              | 0.87 UJ                                             | 0.87 U                                       | NA                                  |
| Styrene                                 | 0.85 U                                                   | 0.85 U                                              | 0.85 UJ                                             | 0.85 U                                       | NA                                  |
| Tetrahydrofuran                         | 15 U                                                     | 1.4 J                                               | 1.6 J                                               | 1.8 J                                        | NA                                  |
| Toluene                                 | 1.1                                                      | 1.2                                                 | 0.90 J                                              | 0.95                                         | NA                                  |
| trans-1,2-Dichloroethene                | 0.79 U                                                   | 0.79 U                                              | 0.79 UJ                                             | 0.79 U                                       | NA                                  |
| Trans-1,3-Dichloropropene               | 0.91 U                                                   | 0.91 U                                              | 0.91 UJ                                             | 0.91 U                                       | NA                                  |
| Trichlorofluoromethane                  | 0.88 J                                                   | 0.94 J                                              | 0.94 J                                              | 1.1 J                                        | NA                                  |
| Vinyl acetate                           | 18 U                                                     | 18 U                                                | 18 UJ                                               | 18 U                                         | NA                                  |
| Vinyl bromide                           | 0.87 U                                                   | 0.87 U                                              | 0.87 UJ                                             | 0.87 U                                       | NA                                  |

**Notes:**

- Results are in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ).
- Air samples analyzed by Eurofins TestAmerica in South Burlington, Vermont using Environmental Protection Agency (EPA) Method TO-15.
- Analytical results validated by Vali-Data of WNY, LLC. in West Falls, New York.
- "a" designates NYSDOH vapor intrusion guidance (October 2006 and updates to soil vapor/indoor air decision matrices A, B, and C, May 2017 recommends actions based on the combination of sub-slab and corresponding indoor air concentrations. Used for RFM-related compounds only). In cases where a concentration was not detected above the reporting limit, the reporting limit was used to select recommended action.
- NYSDOH Decision Matrix:  
Identify Source(s) and Resample or Mitigate - NYSDOH recommends that reasonable and practical actions be taken to identify the source(s) affecting the indoor air quality and that actions be implemented to reduce indoor air concentrations to within background ranges.  
For the purposes of using the soil vapor/indoor air decision matrices A, B, and C provided in the guidance document, no formal comparison can be made without sub-slab soil vapor data to compare with this indoor air data. The decision matrix is included for completeness.
- "U" designates analyte not detected.
- "UJ" designates analyte not detected and considered estimated.
- "J" designates analyte detected at an estimated concentration.
- "NA" designates not applicable.

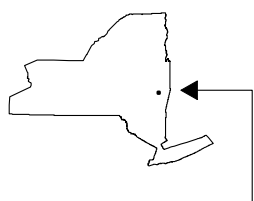
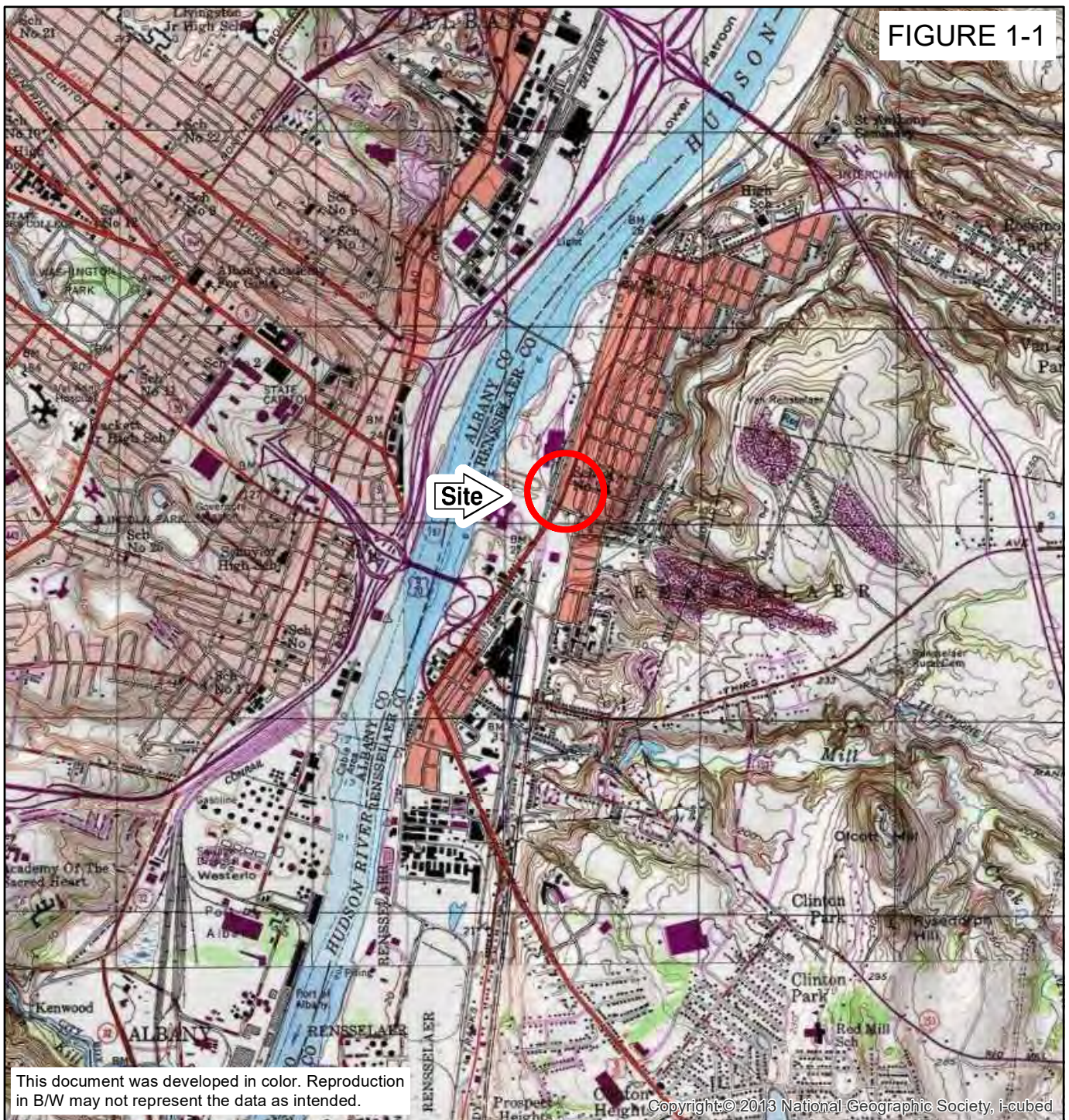


## Figures



\\syracuse\projects\Parsons-Erg\8653168940.Tim-Bayly-Off-Site\Docs\Reports\Construction Completion Report\Figures\Figure 1-1 - Site Location.mxd  
PLOTDATE: 06/19/20 GARDNEME

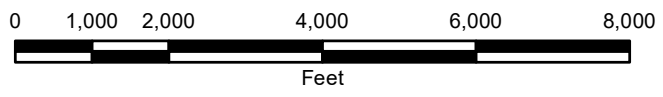
FIGURE 1-1



MAP LOCATION

# TIM BAYLY PROPERTY - OFF-SITE RENSSELAER, NEW YORK

## SITE LOCATION MAP





\\syracuse\projects\Parsons-Eng. 8653\68940. Tim-Bayly-Off-Site\Reports\Construction Completion Report\Figures\Figure 1-2 - Study Area Map.mxd

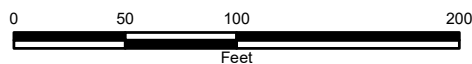
PLOTDATE: 06/19/20 GARDNEME



# TIM BAYLY PROPERTY - OFF-SITE RENSSELAER, NEW YORK

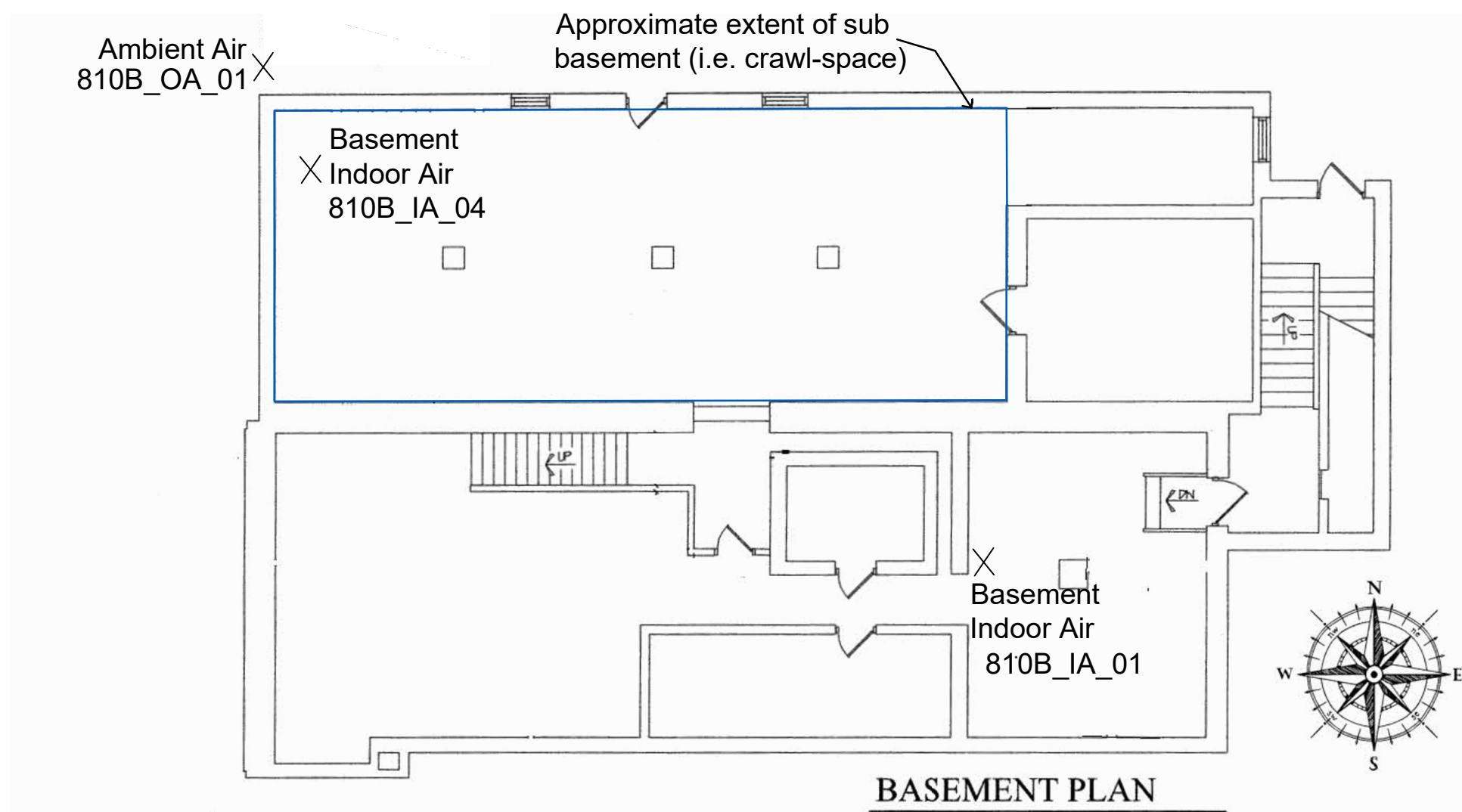
## STUDY AREA MAP

68940  
JUNE 2020



O'BRIEN & GERE ENGINEERS, INC.







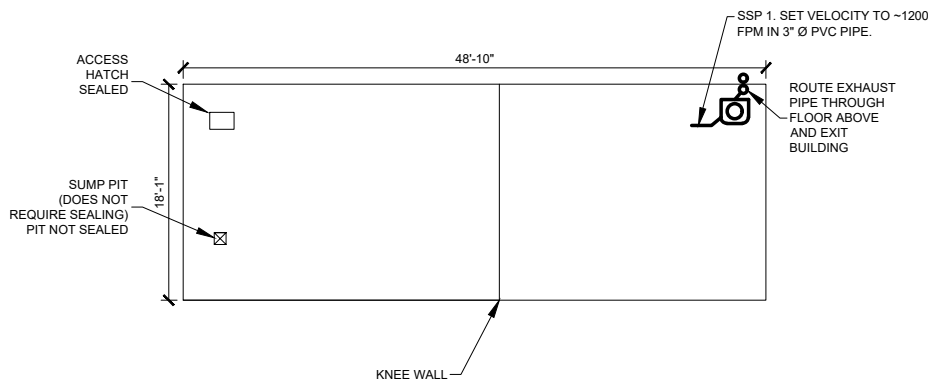
## Appendices

## Appendix A

### System Record Drawing

SAVED: 7/1/20 10:57 AM

I:\PARSONS\ENG-8653\86940-TIMBAYLY-OFF-SIDOC\REPORTS\CONSTRUCTION COMPLETION REPORT\APPENDICES\APPENDIX A\_SYSTEM CONCEPTUAL DESIGN.DWG



### SUB-BASEMENT FLOOR PLAN

SUB-BASEMENT AREA - ~883 SQ. FT.  
SUB-BASEMENT VOLUME - ~6,246 CU. FT.

#### PLAN NOTES:

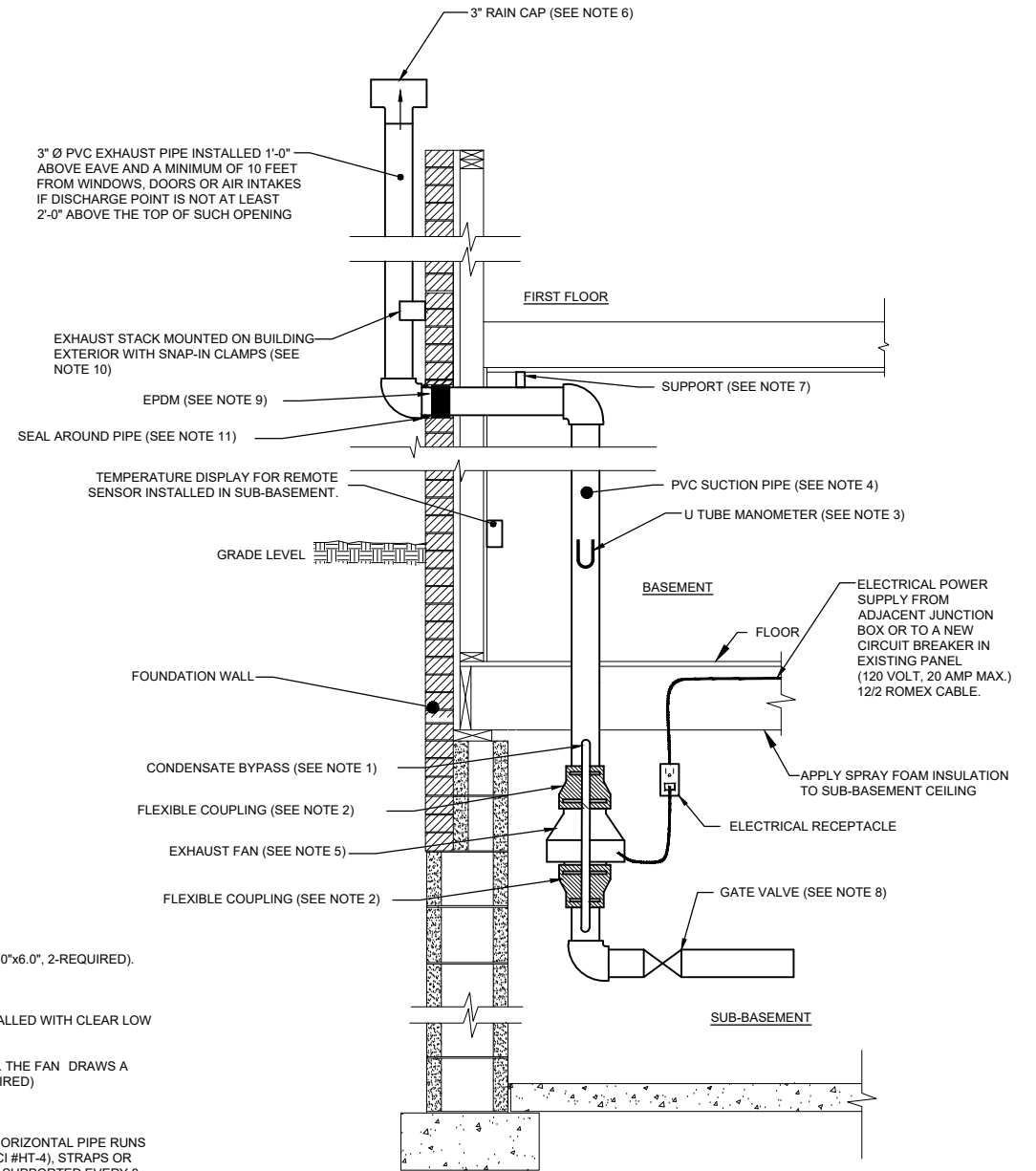
- DIMENSIONS AND INSTALLATION LOCATIONS SHOWN ON FIGURE ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
- ALL WORK TO BE IN GENERAL CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF HEALTH'S GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK.

#### LEGEND

- ☒ SUMP PIT
- EXHAUST PIPE RISER
- EXHAUST PIPE
- ⊞ SYSTEM FAN

#### SECTION NOTES:

- RCI #FG-43 FAN GUARD KIT (CONDENSATE BYPASS) OR EQUAL. (1-REQUIRED)
- RCI #B-106-44 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL, (3.0"x6.0", 2-REQUIRED).
- RCI #MU-93 MANOMETER OR EQUAL. (1-REQUIRED)
- PVC PIPE IS DUAL RATED DWV/SCH. 40 WITH DWV FITTINGS. ALL PIPING SHALL BE INSTALLED WITH CLEAR LOW VOLATILE ORGANIC COMPOUND (VOC) GLUE AND PRIMER (IPS OR HERCULES).
- RADONAWAY RP145 FAN OR EQUAL. FAN TO BE CONNECTED TO A 115-120 VAC SUPPLY. THE FAN DRAWS A MAXIMUM OF 72 WATTS. TEST LOAD CIRCUIT PRIOR TO INSTALLATION OF FAN. (1-REQUIRED)
- RCI RAIN CAP #AM03 OR EQUAL. (1-REQUIRED)
- CONTRACTOR SHALL SECURE EQUIPMENT AND PIPING TO MINIMIZE ANY MOVEMENT. HORIZONTAL PIPE RUNS SHALL BE SUPPORTED EVERY 6 FEET (MAXIMUM) OR AS REQUIRED WITH "J" HOOKS (RCI #HT-4), STRAPS OR EQUAL AND SHALL BE SLOPED TOWARD THE SUCTION. VERTICAL PIPE RUNS SHALL BE SUPPORTED EVERY 8 FEET (MAXIMUM) OR AS REQUIRED.
- VALTERRA BLADEX VALVE #6301 OR EQUAL. (1-REQUIRED)
- GEOCEL 3300 POLYURETHANE SEALANT OR EQUAL AROUND PIPE OPENING.
- RCI #SIC-03 SNAP-IN CLAMPS OR EQUAL MOUNTED TO THE EXTERIOR WALL EVERY 8 FEET (MAXIMUM) OR AS REQUIRED.
- WRAP PIPE WITH EPDM, BACKER ROD OR EQUAL WHERE PIPE PENETRATES THE BUILDING TO REDUCE VIBRATION. SEAL PENETRATION WITH GEOCEL 3300 POLYURETHANE SEALANT, EXPANDING FOAM OR EQUAL.



### TYPICAL SUB-BASEMENT SECTION

NOT TO SCALE

#### RECORD DRAWINGS

TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

O'BRIEN & GERE

By:

*Devin M. Amis*

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SCALE. DRAWING IS NOT SCALABLE IF NO SCALE BAR IS PRESENT.

|              |      |          |      |  |  |
|--------------|------|----------|------|--|--|
| IN CHARGE OF | DW   |          |      |  |  |
| DESIGNED BY  | EA   |          |      |  |  |
| CHECKED BY   | RH   |          |      |  |  |
| DRAWN BY     | EA   |          |      |  |  |
| NO.          | DATE | REVISION | INT. |  |  |

O'BRIEN & GERE, INC. OF NORTH AMERICA  
A RAMBOLL COMPANY  
SYRACUSE, NY



NYSDEC  
TIM BAYLY PROPERTY - OFFSITE

800 BROADWAY, RENSSELAER, NY

GENERAL

SUB-BASEMENT VENTILATION SYSTEM  
810 BROADWAY, RENSSELAER, NY

FILE NO.  
8653.68940

DATE  
June 2020

A

## Appendix B

### Project Photographic Log



## PROJECT PHOTOGRAPHIC LOG

|                                                                                                                                                                            |                    |                                                                                     |  |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                                                        |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                 |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>1                                                                                                                                                             | DATE:<br>3/25/2020 |  |  |                              |
| DESCRIPTION:<br><br>Completed RP-145 fan, system piping installation, support straps, and electrical installation prior to spray-foam and intumescent coating application. |                    |                                                                                     |  |                              |

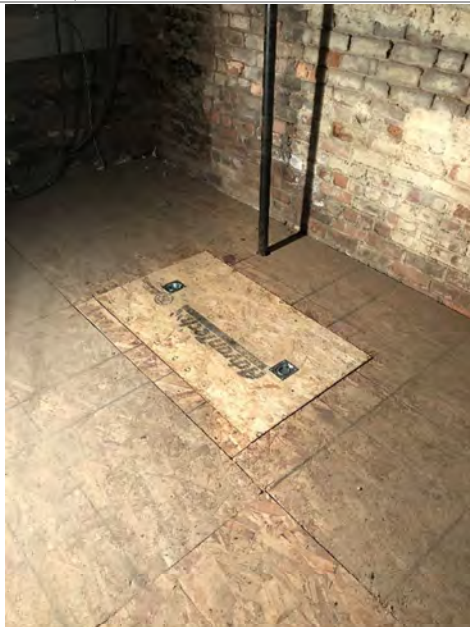
|                                                                                                                                                                     |                    |                                                                                      |  |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                                                 |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                  |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>2                                                                                                                                                      | DATE:<br>3/25/2020 |  |  |                              |
| DESCRIPTION:<br><br>Alternate view of completed RP-145 fan, system piping installation, and support straps prior to spray-foam and intumescent coating application. |                    |                                                                                      |  |                              |



|                                                               |                    |                                                                                     |  |                              |
|---------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                           |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                 |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>3                                                | DATE:<br>3/26/2020 |  |  |                              |
| DESCRIPTION:<br>Temperature sensor installed in sub-basement. |                    |                                                                                     |  |                              |

|                                                                                                                                                                                                                |                                   |                                                                                      |  |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                                                                                            |                                   | SITE LOCATION: RENSSELAER, NEW YORK                                                  |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>4                                                                                                                                                                                                 | DATE:<br>4/28/2020 –<br>4/29/2020 |  |  |                              |
| DESCRIPTION:<br><br>Vent pipe installed through basement floor joists from sub-basement plumbed through north facing wall of basement, digital thermometer, and u-tube manometer for system suction point one. |                                   |                                                                                      |  |                              |

|                                                                                                                 |                    |                                                                                   |                              |
|-----------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|------------------------------|
| CLIENT NAME: NYSDEC                                                                                             |                    | SITE LOCATION: RENSSELAER, NEW YORK                                               | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>5                                                                                                  | DATE:<br>3/26/2020 |  |                              |
| DESCRIPTION:<br><br>Bottom of sealable hatch for intermittent access into the sub-basement during installation. |                    |                                                                                   |                              |

|                                                                                          |                    |                                                                                     |                              |
|------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|------------------------------|
| CLIENT NAME: NYSDEC                                                                      |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                 | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>6                                                                           | DATE:<br>3/26/2020 |  |                              |
| DESCRIPTION:<br><br>Sealed sub-basement hatch in-place following completed installation. |                    |                                                                                     |                              |

# TIM BAYLY PROPERTY OFF-SITE | SUB-BASEMENT VENTILATION SYSTEM CONSTRUCTION COMPLETION REPORT

|                                                                                                                                                                                |                    |                                                                                   |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                                                            |                    | SITE LOCATION: RENSSELAER, NEW YORK                                               | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>7                                                                                                                                                                 | DATE:<br>3/25/2020 |  |                              |
| <b>DESCRIPTION:</b><br>Alternate view of vent pipe and support straps installed through basement floor joists from sub-basement plumbed through north facing wall of basement. |                    |                                                                                   |                              |

|                                                                                                                                               |                    |                                                                                     |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                           |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                 | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>8                                                                                                                                | DATE:<br>3/26/2020 |  |                              |
| <b>DESCRIPTION:</b><br>Completed exterior portion of sub-basement ventilation system and rain guard on north facing side of subject property. |                    |                                                                                     |                              |

# TIM BAYLY PROPERTY OFF-SITE | SUB-BASEMENT VENTILATION SYSTEM CONSTRUCTION COMPLETION REPORT

|                                                                                                                                                                 |                    |                                                                                   |  |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                                             |                    | SITE LOCATION: RENSSELAER, NEW YORK                                               |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>9                                                                                                                                                  | DATE:<br>3/26/2020 |  |  |                              |
| <b>DESCRIPTION:</b><br>Alternate view of completed exterior portion of sub-basement ventilation system and rain guard on north facing side of subject property. |                    |                                                                                   |  |                              |

|                                                                                                  |                    |                                                                                      |  |                              |
|--------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                              |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                  |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>10                                                                                  | DATE:<br>3/26/2020 |  |  |                              |
| <b>DESCRIPTION:</b><br>Completed spray-foam application and intumescent coating in sub-basement. |                    |                                                                                      |  |                              |



# TIM BAYLY PROPERTY OFF-SITE | SUB-BASEMENT VENTILATION SYSTEM CONSTRUCTION COMPLETION REPORT

|                                                                                                                    |                    |                                                                                   |  |                              |
|--------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                |                    | SITE LOCATION: RENSSELAER, NEW YORK                                               |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>11                                                                                                    | DATE:<br>3/26/2020 |  |  |                              |
| <b>DESCRIPTION:</b><br>Alternate view of completed spray-foam application and intumescent coating in sub-basement. |                    |                                                                                   |  |                              |

|                                                                                                                    |                    |                                                                                      |  |                              |
|--------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                |                    | SITE LOCATION: RENSSELAER, NEW YORK                                                  |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>12                                                                                                    | DATE:<br>3/26/2020 |  |  |                              |
| <b>DESCRIPTION:</b><br>Alternate view of completed spray-foam application and intumescent coating in sub-basement. |                    |                                                                                      |  |                              |

# TIM BAYLY PROPERTY OFF-SITE | SUB-BASEMENT VENTILATION SYSTEM CONSTRUCTION COMPLETION REPORT

|                                                                                    |                                   |                                                                                    |  |                              |
|------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                |                                   | SITE LOCATION: RENSSELAER, NEW YORK                                                |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>13                                                                    | DATE:<br>4/28/2020 –<br>4/29/2020 |  |  |                              |
| DESCRIPTION:<br><br>Outdoor ambient air sample collected from location 810B_OA_01. |                                   |                                                                                    |  |                              |

|                                                                                                                                |                                   |                                                                                      |  |                              |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                            |                                   | SITE LOCATION: RENSSELAER, NEW YORK                                                  |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>14                                                                                                                | DATE:<br>4/28/2020 –<br>4/29/2020 |  |  |                              |
| DESCRIPTION:<br><br>Indoor air sample collected from location 810B_IA_01 in basement at original indoor air sampling location. |                                   |                                                                                      |  |                              |

|                                                                                                                                                                                      |                                   |                                                                                     |  |                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------|--|------------------------------|
| CLIENT NAME: NYSDEC                                                                                                                                                                  |                                   | SITE LOCATION: RENSSELAER, NEW YORK                                                 |  | PROJECT NO.<br>68940.005.019 |
| PHOTO NO.<br>15                                                                                                                                                                      | DATE:<br>4/28/2020 –<br>4/29/2020 |  |  |                              |
| DESCRIPTION:<br><br>Indoor air sample and indoor air duplicate sample collected from location 810B_IA_04 at new sampling location in the basement near access hatch to sub-basement. |                                   |                                                                                     |  |                              |





## Appendix C

### Sub-Basement Ventilation System Installation and Operation Commissioning Checklist



## Installation and Operation Commissioning Checklist

Structure Address: 810 Broadway, Rensselaer, New York

Date of Commissioning Visit: 3/26/2020

Structure ID #: Not Applicable

Commissioning Engineer Team: Gene Knapp

### System Performance Data

#### Fan Inlet Static Pressure (vacuum)

| Fan System             | 1     | 2 | 3 | 4 | 5 |
|------------------------|-------|---|---|---|---|
| Fan Model              | RP145 |   |   |   |   |
| U-Tube Reading ("w.g.) | 0.25" |   |   |   |   |

Is each fan mounted securely? ☒ Yes ☐ No

#### SSP Static Pressure (vacuum)

| SSP# | Static Pressure ("w.g.) | Fan System |
|------|-------------------------|------------|
| 1    | 0.25"                   | RP145      |
|      |                         |            |
|      |                         |            |
|      |                         |            |
|      |                         |            |
|      |                         |            |

### Final Communication Test Results

|                               |                |
|-------------------------------|----------------|
| Communication test point      | Not Applicable |
| Manometer reading ("w.g.)     | Not Applicable |
| Distance to closest SSP (ft.) | Not Applicable |

|                               |                |
|-------------------------------|----------------|
| Communication test point      | Not Applicable |
| Manometer reading ("w.g.)     | Not Applicable |
| Distance to closest SSP (ft.) | Not Applicable |

Were all fans in operation during final communication test? ☒ Yes ☐ No ☐ NA

Were all valves locked prior to final communication test? ☒ Yes ☐ No ☐ NA

Was the pressure reading at each test point  $\leq -0.002$ "w.g.? ☐ Yes ☐ No ☒ NA

Were winter conditions simulated during test? ☐ Yes ☐ No ☒ NA

Was there precipitation during the previous 24 hours? ☐ Yes ☒ No ☐ NA

What was the apparent wind speed? ☐ Calm ☒ Light ☐ Strong ☐ NA  
3 mph

### Accessible Crawlspace Performance Inspection

Was each membrane joint and perimeter smoke tested and found to be sealed? ☐ Yes ☐ No ☒ NA

### Accessible Crawlspace Data

|                                      | Crawlspace 1 | Crawlspace 2 | Crawlspace 3 | Crawlspace 4 |
|--------------------------------------|--------------|--------------|--------------|--------------|
| SSP#                                 | 1            |              |              |              |
| Crawlspace volume (ft <sup>3</sup> ) | 6,246        |              |              |              |
| Suction pipe diameter (in.)          | 3            |              |              |              |
| Measured velocity (fpm)              | 1,205        |              |              |              |
| Flow rate out of crawlspace (cfm)    | 59.15        |              |              |              |
| Number of air exchanges              | 0.60         |              |              |              |
| Meets criteria (Yes/No)              | Yes          |              |              |              |

## Backdraft Test Results

Was commissioning backdraft test performed? ☐ Yes ☐ No ☒ NA

On what combustion appliances was a backdraft test performed? ☐ Hot Water Heater ☐ Furnace / Boiler ☐ Dryer  
Not Applicable

Is there a backdraft on any appliance? ☐ Yes ☐ No ☒ NA  
(If yes, explain)\*

Not Applicable

\*If backdraft exists, please notify the property owner.  
Owner was notified on: (date): Not Applicable

## Electrical System Installation Inspection

Are all electrical connections secure? ☒ Yes ☐ No

Are all switches locked on? ☐ Yes ☐ No ☒ NA

Electric meter # 30 330 412

## Pipe System Performance

Are all pipe runs properly supported? ☒ Yes ☐ No

Were 10% of all pipe joints smoke tested? ☒ Yes ☐ No

Are manometers installed at each suction point? ☒ Yes ☐ No

## Slab/Wall Repair Performance

Was each identified slab/wall crack repair smoke tested? ☐ Yes ☐ No ☒ NA

## Labeling Inspection

Are the appropriate labels applied in the proper locations? ☒ Yes ☐ No

## Exhaust Vents

Are all system pipe exhausts above the roof eave?

☒ Yes☐ No

At least 10 ft above ground level?

☒ Yes☐ No

At least 10 ft away from any adjoining or adjacent buildings, or structure opening or HVAC intake?

☒ Yes☐ No

## Documentation

Were digital photographs taken of post-installation conditions?

☒ Yes☐ No**Comments:**This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

## Appendix D

### Post-Mitigation Indoor Air Sampling Field Forms

**Multiple Vapor Intrusion Sampling Form**

Project # 68940.005.019

Date 04/28/20 - 04/29/20

Project Name NYSDEC - Tim Bayly Property  
Off-Site - PMIA Sampling

Collector John Gardner
**Structure Location**
810 Broadway
**Sample Locations**
Basement - at original sample location for 810B\_IA\_01

PID/FID meter ID FA00146
~~Basement - at new sample location for 810B\_IA\_04~~

Sample Duration (Intended) 24-hour
Ambient at upwind for 810B-0A-01

| Indoor Air Sample                           | Indoor Air Sample                    | Circle Sample Type: <u>Indoor Air</u>                                    |
|---------------------------------------------|--------------------------------------|--------------------------------------------------------------------------|
| Sample ID                                   | Sample ID                            | SS-DUP <u>Ambient</u> IA-DUP                                             |
| Sample ID <u>810B-IA-01-042820-042920</u>   | Sample ID _____                      | Sample ID <u>810B-0A-01-042820-042920</u>                                |
| Canister ID <u>3205</u>                     | Canister ID _____                    | Canister ID <u>2689</u>                                                  |
| Flow Controller ID <u>4203</u>              | Flow Controller ID _____             | Flow Controller ID <u>4176</u>                                           |
| Date/Time start <u>042820/1030</u>          | Date/Time start _____                | Date/Time start <u>042820/1040</u>                                       |
| Date/Time end <u>042920/1030</u>            | Date/Time end _____                  | Date/Time end <u>042920/1040</u>                                         |
| Gauge prior to start <u>-1</u>              | Gauge prior to start _____           | Gauge prior to start <u>-1</u>                                           |
| Start press. (Hg") <u>-31</u>               | Start press. (Hg") _____             | Start press. (Hg") <u>-31</u>                                            |
| End press. (Hg") <u>-8</u>                  | End press. (Hg") _____               | End press. (Hg") <u>-9</u>                                               |
| Complete all that apply:                    | Complete all that apply:             | Complete all that apply:                                                 |
| Air temperature (°F) <u>65°</u>             | Air temperature (°F) _____           | Air temperature (°F) <u>60°</u>                                          |
| PID/FID reading (ppb) <u>0</u>              | PID/FID reading (ppb) _____          | PID/FID reading (ppb) <u>0</u>                                           |
| in. tubing used <u>NA RDH</u>               | in. tubing used _____                | in. tubing used <u>NA RDH</u>                                            |
| Tubing purged? <u>NA 06/23/20</u>           | Tubing purged? _____                 | Tubing purged? <u>NA 06/23/20</u>                                        |
| For indoor location:                        | For indoor location:                 | For outdoor location:                                                    |
| Noticeable odor <u>no</u>                   | Noticeable odor _____                | Noticeable odor <u>no</u>                                                |
| Intake height above floor (in) <u>48.5"</u> | Floor slab depth _____               | distance to road <u>15'</u>                                              |
| Floor surface type <u>concrete</u>          | Intake height above floor (in) _____ | Intake height above ground level (in) <u>38"</u>                         |
| Room <u>basement</u>                        | Floor surface type _____             | distance to closest building (degrees) <u>~ 360 degrees</u>              |
| Story/level <u>basement</u>                 | Room _____                           | distance to closest building (feet) <u>38"</u> <u>~3.2' RDH 06/23/20</u> |
| Story/level _____                           | Story/level _____                    |                                                                          |

Building Survey / Chemical Inventory Form Completed?

Yes Yes

Photographs Taken?

Yes

Comments: Ambient Sample collected on sidewalk. Vehicle and Pedestrian Traffic observed during sample collection.

Analytical method required

TCL VOCs USEPA Method TO-15



**Multiple Vapor Intrusion Sampling Form**

Project # 68940.005.019

Date 04/28/20 - 04/29/20

Project Name NYSDEC - Tim Bayly Property  
Off-Site - PMIA Sampling

Collector John Gardner

Structure Location

810 Broadway

PID/FID meter ID FA00146

Sample Duration (Intended) 24-hour

Sample Locations

~~Basement - at original sample location for 810B IA\_01~~

Basement - at new sample location for 810B IA\_04

Basement - Dup X-1-042820-042920

JFG

04/28/20

| Indoor Air Sample                         |             | Indoor Air Sample              |             | Circle Sample Type: <u>Indoor Air</u>            |               |
|-------------------------------------------|-------------|--------------------------------|-------------|--------------------------------------------------|---------------|
| Sample ID                                 | Canister ID | Sample ID                      | Canister ID | SS-DUP                                           | Ambient       |
| <u>810B-IA-04-042820</u>                  | <u>5060</u> |                                |             |                                                  | <u>IA-DUP</u> |
| Flow Controller ID <u>3742</u>            |             | Flow Controller ID             |             | Sample ID <u>X-L042820-042920</u>                |               |
| Date/Time start <u>042820/1200</u>        |             | Date/Time start                |             | Canister ID <u>4908</u>                          |               |
| Date/Time end <u>042920/0850</u>          |             | Date/Time end                  |             | Flow Controller ID <u>3443</u>                   |               |
| Gauge prior to start <u>-2</u>            |             | Gauge prior to start           |             | Date/Time start <u>042820/042920 1200</u>        |               |
| Start press. (Hg") <u>-30</u>             |             | Start press. (Hg")             |             | Date/Time end <u>042920/0850</u>                 |               |
| End press. (Hg") <u>-4</u>                |             | End press. (Hg")               |             | Gauge prior to start <u>1</u>                    |               |
|                                           |             |                                |             | Start press. (Hg") <u>-31</u>                    |               |
|                                           |             |                                |             | End press. (Hg") <u>-10</u>                      |               |
| Complete all that apply:                  |             | Complete all that apply:       |             | Complete all that apply:                         |               |
| Air temperature (°F) <u>62°</u>           |             | Air temperature (°F)           |             | Air temperature (°F) <u>62°</u>                  |               |
| PID/FID reading (ppb) <u>0</u>            |             | PID/FID reading (ppb)          |             | PID/FID reading (ppb) <u>0</u>                   |               |
| in. tubing used <u>NA</u> NA RDH          |             | in. tubing used                |             | in. tubing used <u>NA</u> NA RDH                 |               |
| Tubing purged? <u>NA</u> 06/23/20         |             | Tubing purged?                 |             | Tubing purged? <u>NA</u> 06/23/20                |               |
| For indoor location:                      |             | For indoor location:           |             | For outdoor location:                            |               |
| Noticeable odor <u>no</u>                 |             | Noticeable odor                |             | Noticeable odor <u>no</u>                        |               |
| Intake height above floor (in) <u>42"</u> |             | Floor slab depth               |             | distance to road <u>NA</u>                       |               |
| Floor surface type <u>OSB wood</u>        |             | Intake height above floor (in) |             | Intake height above ground level (in) <u>42"</u> |               |
| Room <u>basement</u>                      |             | Floor surface type             |             | distance to closest building (degrees) <u>NA</u> |               |
| Story/level <u>basement</u>               |             | Room                           |             | distance to closest building (feet) <u>0</u>     |               |
|                                           |             | Story/level                    |             |                                                  |               |

Building Survey / Chemical Inventory Form Completed?

Yes Yes

Photographs Taken?

Yes

Comments: Parent Sample ran fast. Gauge read -4 upon arrival @ 8:40 am. Gauge did not return to -2 position after closing valve.

Analytical method required

TCL VOCs USEPA Method TO-15

## Attachments



## Attachment A

### Fan Specifications and Operating Instructions

# RP Series

## Radon Mitigation Fans

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

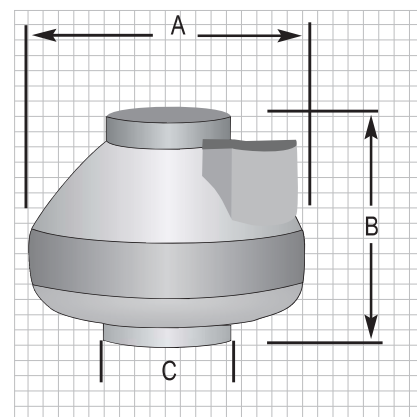
### Features:

- ♦ Five-year hassle-free warranty
- ♦ Quiet and attractive
- ♦ Thermally protected
- ♦ Motorized impeller
- ♦ ETL Listed - for indoor or outdoor use
- ♦ Meets all electrical code requirements
- ♦ Rated for commercial and residential use



| Model | Watts   | Max. Pressure "WC | Typical CFM vs. Static Pressure WC |     |      |      |      |       |       |    |
|-------|---------|-------------------|------------------------------------|-----|------|------|------|-------|-------|----|
|       |         |                   | 0"                                 | .5" | 1.0" | 1.5" | 2.0" | A"    | B"    | C" |
| RP140 | 14-20   | 0.8               | 134                                | 68  | -    | -    | -    | 9.7   | 7.9   | 4  |
| RP145 | 37-71   | 2.1               | 173                                | 132 | 94   | 55   | 11   | 9.7   | 7.9   | 4  |
| RP260 | 52-72   | 1.8               | 275                                | 180 | 105  | 20   | -    | 11.8  | 9.9   | 6  |
| RP265 | 86-140  | 2.5               | 327                                | 260 | 207  | 139  | 57   | 11.8  | 9.9   | 6  |
| RP380 | 103-156 | 2.3               | 510                                | 393 | 268  | 165  | 35   | 13.41 | 10.53 | 8  |

Choice of model is dependent on building characteristics including sub-slab materials and should be made by a radon professional.

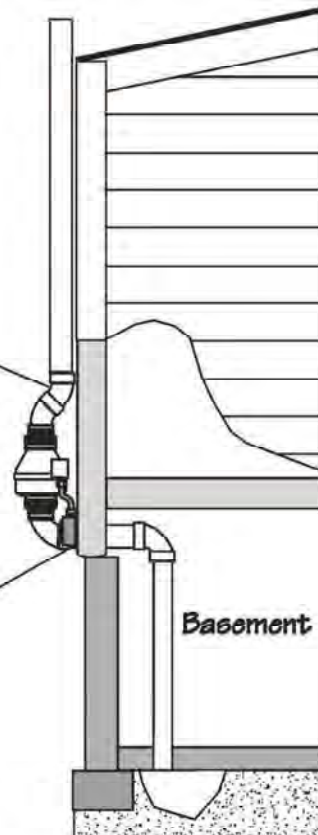
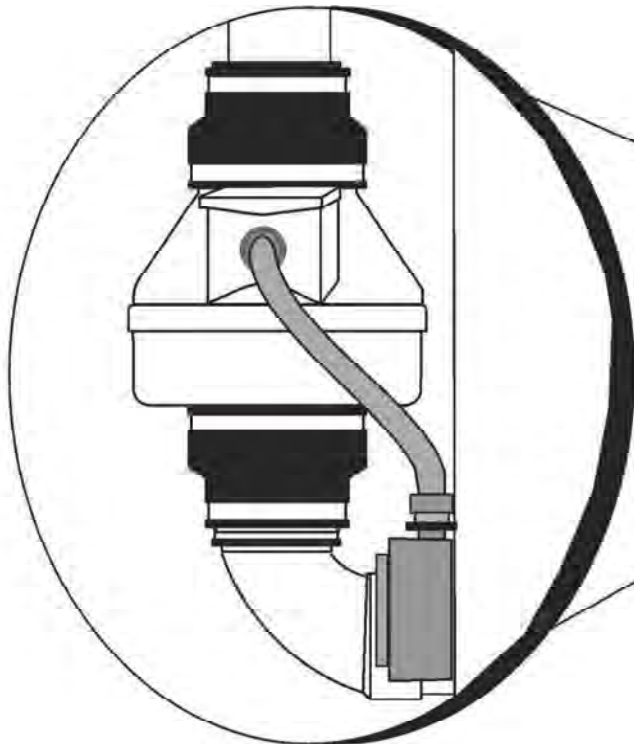


**For Further Information Contact:**

# RP Series Installation Instructions

By

RadonAway™



Spruce Environmental Technologies, Inc.  
Ward Hill, MA P/N IN020 Rev J





## Series Fan Installation Instructions

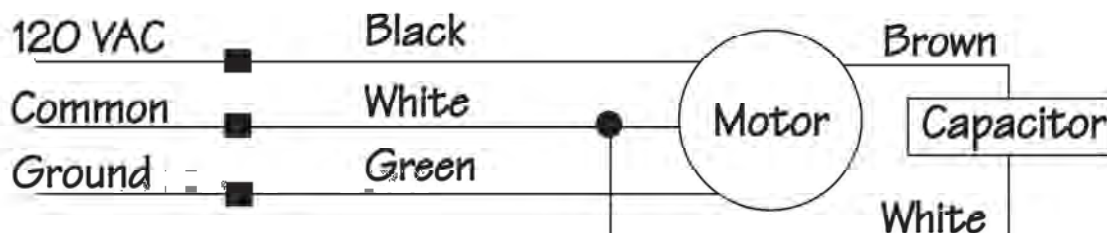
### Please Read and Save These Instructions.

**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.
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!** 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.

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### DynaVac RP Series Fan Wiring Diagram







## INSTALLATION INSTRUCTIONS IN020 Rev I

### DynaVac - RP Series

RP140 p/n 23029-1

RP145 p/n 23030-1

RP260 p/n 23032-1

RP265 p/n 23033-1

RP380 p/n 28208

## 1.0 SYSTEM DESIGN CONSIDERATIONS

### 1.1 INTRODUCTION

The DynaVac RP Series Radon Fans are intended for use by trained, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of a DynaVac Fan. This instruction should be considered as a supplement to EPA 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 RP Series Fans are 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 fan should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F.

### 1.3 ACOUSTICS

The RP Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. The velocity of the outgoing air should be considered in the overall system design. In some cases the "rushing" sound of the outlet air may be disturbing. In these instances, the use of a RadonAway Exhaust Muffler is recommended.

### 1.4 GROUND WATER

In the event that a temporary high water table results in water at or above slab level, water may be drawn into the riser pipes thus blocking air flow to the RP Series Fan. The lack of cooling air may result in the 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 fan be turned off until the water recedes allowing for return to normal operation.

### 1.5 SLAB COVERAGE

The RP Series Fan can provide coverage up to 2000+ sq. ft. per slab penetration. This will primarily depend on the sub-slab material in any particular installation. In general, the tighter the material, the smaller the area covered per penetration. Appropriate selection of the RP Series Fan best suited for the sub-slab material can improve the slab coverage. The RP140/145/155 are best suited for general purpose use. The RP260 can be used where additional airflow is required and the RP265/380 is best suited for large slab, high airflow applications. Additional suction points can be added as required. It is recommended that a small pit (5 to 10 gallons in size) be created below the slab at each suction hole.



## 1.6 CONDENSATION & DRAINAGE

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 RP Series Fan **MUST** be mounted vertically plumb and level, with the outlet pointing up for proper drainage through the fan. Avoid mounting the fan in any orientation that will allow water to accumulate inside the fan housing. The RP Series Fans are **NOT** suitable for underground burial.

For RP Series Fan piping, the following table provides the minimum recommended pipe diameter and pitch under several system conditions.

| Pipe Dia. | Minimum Rise per Ft of Run* |         |          |          |          |
|-----------|-----------------------------|---------|----------|----------|----------|
|           | @25 CFM                     | @50 CFM | @100 CFM | @200 CFM | @300 CFM |
| 6"        | -                           | 3/16    | 1/4      | 3/8      | 3/4      |
| 4"        | 1/8                         | 1/4     | 3/8      | 2 3/8    | -        |
| 3"        | 1/4                         | 3/8     | 1 1/2    | -        | -        |

\*Typical RP1xx/2xx Series Fan operational flow rate is 25 - 90 CFM on 3" and 4" pipe.  
(For more precision, determine flow rate by measuring Static Pressure, in WC, and correlate pressure to flow in the performance chart in the addendum.)

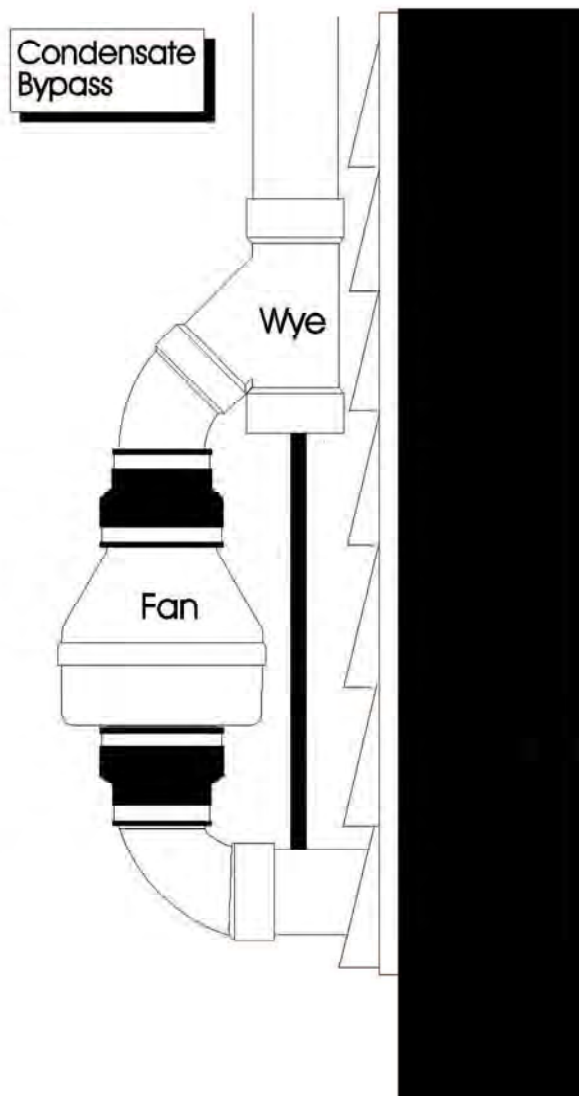


Under some circumstances in an outdoor installation a condensate bypass should be installed in the outlet ducting as shown. This may be particularly true in cold climate installations which require long lengths of outlet ducting or where the outlet ducting is likely to produce large amounts of condensation because of high soil moisture or outlet duct material. Schedule 20 piping and other thin-walled plastic ducting and Aluminum downspout will normally produce much more condensation than Schedule 40 piping.

The bypass is constructed with a 45 degree Wye fitting at the bottom of the outlet stack. The bottom of the Wye is capped and fitted with a tube that connects to the inlet piping or other drain. The condensation produced in the outlet stack is collected in the Wye fitting and drained through the bypass tube. The bypass tubing may be insulated to prevent freezing.

## 1.7 "SYSTEM ON" INDICATOR

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A manometer, such as a U-Tube, or a vacuum alarm is recommended for this purpose.



## 1.8 ELECTRICAL WIRING

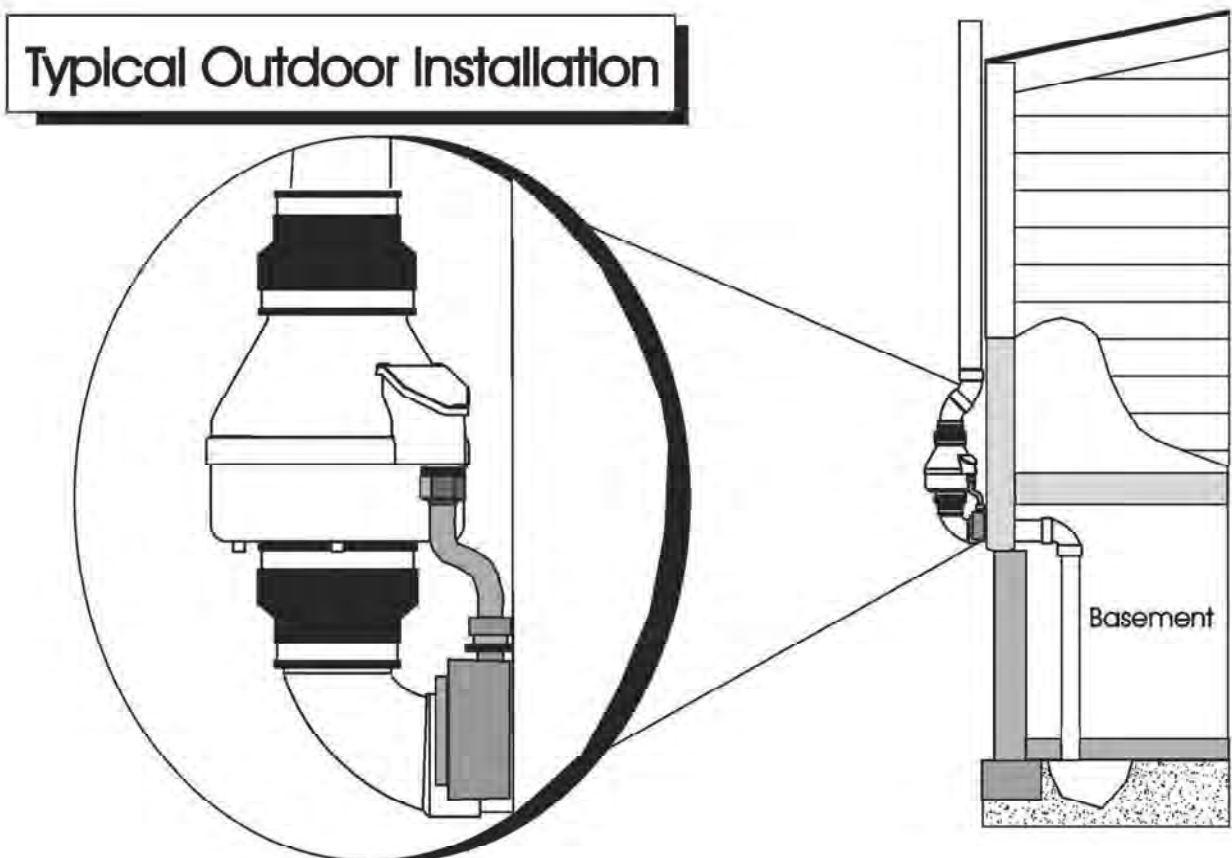
The RP Series Fans operate on standard 120V 60 Hz. AC. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA) National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must 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 sealed to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box.

## 1.9 SPEED CONTROLS

The RP Series Fans are rated for use with electronic speed controls ,however , they are generally not recommended.

## 2.0 INSTALLATION

The RP Series Fan can be mounted indoors or outdoors. (It is suggested that EPA recommendations be followed in choosing the fan location.) The RP Series Fan may be mounted directly on the system piping or fastened to a supporting structure by means of optional mounting bracket.





## 2.1 MOUNTING

Mount the RP Series Fan vertically with outlet up. Insure the unit is plumb and level. When mounting directly on the system piping assure that the fan does not contact any building surface to avoid vibration noise.

## 2.2 MOUNTING BRACKET (optional)

The RP Series fan may be optionally secured with the RadonAway P/N 25007-2 (25033 for RP385) mounting bracket. Foam or rubber grommets may also be used between the bracket and mounting surface for vibration isolation.

## 2.3 SYSTEM PIPING

Complete piping run, using flexible couplings as means of disconnect for servicing the unit and vibration isolation.

## 2.4 ELECTRICAL CONNECTION

Connect wiring with wire nuts provided, observing proper connections(See Section 1.8):

| Fan Wire | Connection |
|----------|------------|
| Green    | Ground     |
| Black    | AC Hot     |
| White    | AC Common  |

## 2.5 VENT MUFLER (optional)

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

## 2.6 OPERATION CHECKS

\_\_\_\_\_ **Verify** all connections are tight and **leak-free**.

\_\_\_\_\_ **Insure** the RP Series Fan and all ducting is secure and vibration-free.

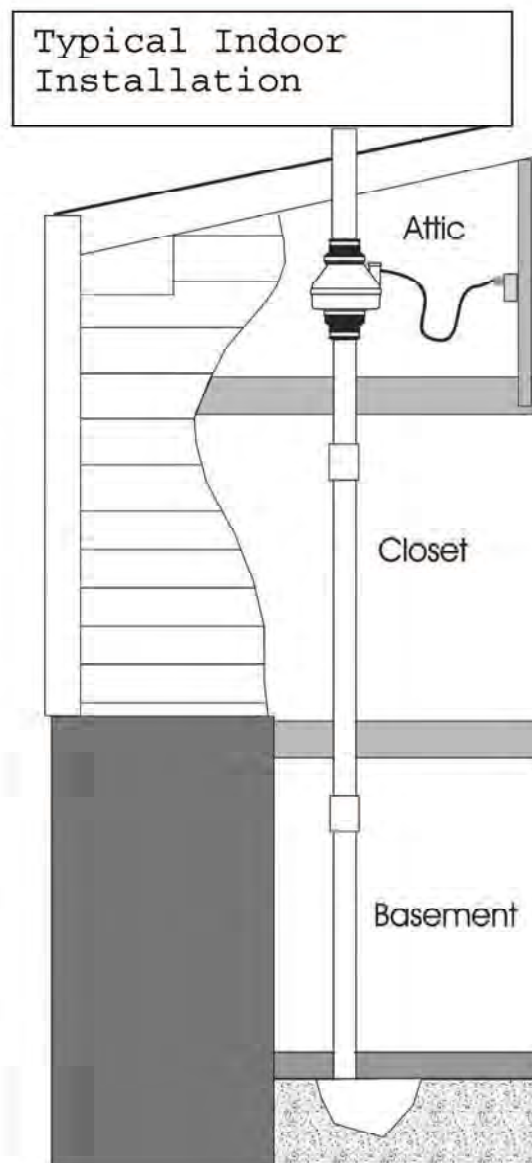
\_\_\_\_\_ **Verify** system vacuum pressure with manometer. **Insure** vacuum pressure is **less than** maximum recommended operating pressure

*(Based on sea-level operation, at higher altitudes reduce by about 4% per 1000 Feet.)*

*(Further reduce Maximum Operating Pressure by 10% for High Temperature environments)*

*See Product Specifications. If this is exceeded, increase the number of suction points.*

\_\_\_\_\_ **Verify Radon levels by testing to EPA protocol.**



## RP SERIES PRODUCT SPECIFICATIONS

The following chart shows fan performance for the RP Series Fan:

| Typical CFM Vs Static Pressure "WC |     |      |     |      |      |       |      |       |      |
|------------------------------------|-----|------|-----|------|------|-------|------|-------|------|
|                                    | 0"  | .25" | .5" | .75" | 1.0" | 1.25" | 1.5" | 1.75" | 2.0" |
| RP140                              | 135 | 103  | 70  | 14   | -    | -     | -    | -     | -    |
| RP145                              | 166 | 146  | 126 | 104  | 82   | 61    | 41   | 21    | 3    |
| RP260                              | 272 | 220  | 176 | 138  | 103  | 57    | 13   | -     | -    |
| RP265                              | 334 | 291  | 247 | 210  | 176  | 142   | 116  | 87    | 52   |
| RP380*                             | 497 | 401  | 353 | 281  | 220  | 176   | 130  | 80    | 38   |

\* Tested with 6" inlet and discharge pipe.

| Power Consumption<br>120 VAC, 60Hz 1.5 Amp Maximum |          |       | Maximum Recommended<br>Operating Pressure* (Sea Level Operation)** |           |
|----------------------------------------------------|----------|-------|--------------------------------------------------------------------|-----------|
| RP140                                              | 17 - 21  | watts | RP140                                                              | 0.8" W.C. |
| RP145                                              | 41 - 72  | watts | RP145                                                              | 1.7" W.C. |
| RP260                                              | 52 - 72  | watts | RP260                                                              | 1.5" W.C. |
| RP265                                              | 91 - 129 | watts | RP265                                                              | 2.2" W.C. |
| RP380                                              | 95 - 152 | watts | RP380                                                              | 2.0" W.C. |

\*Reduce by 10% for High Temperature Operation

\*\*Reduce by 4% per 1000 feet of altitude

|       | Size                  | Weight    | Inlet/Outlet                                |
|-------|-----------------------|-----------|---------------------------------------------|
| RP140 | 8.5H" x 9.7" Dia.     | 5.5 lbs.  | 4.5" OD (4.0" PVC Sched 40 size compatible) |
| RP145 | 8.5H" x 9.7" Dia.     | 5.5 lbs.  | 4.5" OD (4.0" PVC Sched 40 size compatible) |
| RP155 | 8.5H" x 9.7" Dia.     | 5.5 lbs.  | 5.0" OD                                     |
| RP260 | 8.6H" x 11.75" Dia.   | 5.5 lbs.  | 6.0" OD                                     |
| RP265 | 8.6H" x 11.75" Dia.   | 6.5 lbs.  | 6.0" OD                                     |
| RP380 | 10.53H" x 13.41" Dia. | 11.5 lbs. | 8.0" OD                                     |

**Recommended ducting:** 3" or 4" RP1xx/2xx, 6" RP380, Schedule 20/40 PVC Pipe

**Mounting:** Mount on the duct pipe or with optional mounting bracket.

**Storage temperature range:** 32 - 100 degrees F.

**Normal operating temperature range:** -20 - 120 degrees F.

**Maximum inlet air temperature:** 80 degrees F.

**Continuous Duty**

**Class B Insulation**

**Thermally protected**

**3000 RPM**

**Rated for Indoor or Outdoor Use**





## IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the GP/XP/XR/RP 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 GP/XP/XR/RP Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

### WARRANTY

Subject to any applicable consumer protection legislation, RadonAway warrants that the GPX01/XP/XR/RP 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. 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.

### 5 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION

RadonAway will extend the Warranty Term of the fan to 5 years from date of manufacture if the Fan is installed in a professionally designed and professionally installed radon system or installed as a replacement fan in a professionally designed and professionally installed radon system. 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.

**EXCEPT AS STATED ABOVE, THE GPX01/XP/XR/RP 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 cost to and from factory.

RadonAway  
3 Saber Way  
Ward Hill, MA 01835  
TEL. (978) 521-3703  
FAX (978) 521-3964

Record the following information for your records:

Serial No. \_\_\_\_\_  
Purchase Date \_\_\_\_\_



## Attachment B

### Safety Data Sheet Spray-Foam Product

# Finished Foam

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

Date of issue: 24/01/2013

Revision date: 24/01/2013

Version: 1.0

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Substance  
 Trade name : Finished Foam  
 CAS No. : 9009-54-5  
 Formula : Unspecified  
 Product group : Trade product

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Main use category : Industrial use  
 Industrial/Professional use spec. : Insulation foams  
 Industrial.  
 For professional use only.

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Lapolla Industries, Inc.  
 15402 Vantage Parkway East, Ste. 322  
 77032 Houston, Texas  
 T +1 281 219 4100

#### 1.4. Emergency telephone number

Emergency number : +1 281 219 4100  
 (business hours)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

#### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

other hazards which do not result in classification : overexposure to dust that is generated during cutting and fitting may produce some discomfort and gastrointestinal disturbances but symptoms are reversible and usually disappear when exposure stops.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Name : Finished Foam  
 CAS No. : 9009-54-5  
 EC no : Not available yet  
 EC index no : Not available yet

| Name         | Product identifier  | %   | Classification according to Directive 67/548/EEC |
|--------------|---------------------|-----|--------------------------------------------------|
| Polyurethane | (CAS No.) 9009-54-5 | 100 | Not classified                                   |

# Finished Foam

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

| Name         | Product identifier  | %   | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--------------|---------------------|-----|-----------------------------------------------------------------|
| Polyurethane | (CAS No.) 9009-54-5 | 100 | Not classified                                                  |

Full text of R-, H- and EUH-phrases: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                       |                                                                                                                                                                  |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First-aid measures after inhalation   | : Assure fresh air breathing. Allow the victim to rest. If you feel unwell, seek medical attention.                                                              |
| First-aid measures after skin contact | : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Seek medical attention if irritation develops. |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.                                                         |
| First-aid measures after ingestion    | : Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice. |

### 4.2. Most important symptoms and effects, both acute and delayed

|                                      |                                                                                            |
|--------------------------------------|--------------------------------------------------------------------------------------------|
| Symptoms/injuries                    | : Not expected to present a significant hazard under anticipated conditions of normal use. |
| Symptoms/injuries after skin contact | : Direct contact with product may cause physical skin irritation.                          |
| Symptoms/injuries after eye contact  | : May cause physical irritation upon direct contact.                                       |

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

|                                |                                                        |
|--------------------------------|--------------------------------------------------------|
| Suitable extinguishing media:  | : Foam. Dry powder. Carbon dioxide. Water spray. Sand. |
| Unsuitable extinguishing media | : Not identified.                                      |

### 5.2. Special hazards arising from the substance or mixture

|                  |                                                                                                                                                                                                                                                                                                                |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire hazard      | : Moderate fire hazard when exposed to heat and flames. On combustion forms: Emits toxic fumes under fire conditions. low molecular weight hydrocarbons. carbon oxides (CO and CO2). Hydrogen cyanide (hydrocyanic acid). Ether. In case of burning without sufficient oxygen a black dense smoke is released. |
| Explosion hazard | : not explosive.                                                                                                                                                                                                                                                                                               |

### 5.3. Advice for firefighters

|                                       |                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------|
| Protective equipment for firefighters | : Do not enter fire area without proper protective equipment, including respiratory protection. |
|---------------------------------------|-------------------------------------------------------------------------------------------------|

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

|                      |                                   |
|----------------------|-----------------------------------|
| Emergency procedures | : Evacuate unnecessary personnel. |
|----------------------|-----------------------------------|

#### 6.1.2. For emergency responders

|                      |                                              |
|----------------------|----------------------------------------------|
| Protective equipment | : Equip cleanup crew with proper protection. |
| Emergency procedures | : Ventilate area.                            |

### 6.2. Environmental precautions

No additional information available

### 6.3. Methods and material for containment and cleaning up

|                         |                                |
|-------------------------|--------------------------------|
| Methods for cleaning up | : Minimize generation of dust. |
|-------------------------|--------------------------------|

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

|                               |                                                                                                                                                             |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling | : Where excessive dust may result, wear approved mask. Do not breathe dust. Avoid generation of dust.                                                       |
| Hygiene measures              | : Wash contaminated clothing prior to re-use. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practices. |

### 7.2. Conditions for safe storage, including any incompatibilities

|                     |                                                                 |
|---------------------|-----------------------------------------------------------------|
| Technical measures: | : Provide adequate ventilation to minimize dust concentrations. |
|---------------------|-----------------------------------------------------------------|

# Finished Foam

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

Storage condition(s) : No special measures required.

### 7.3. Specific end use(s)

refer to section 1.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation to minimize exposure to dust.

Personal protective equipment : Gloves. Protective goggles. Dust formation: dust mask.



Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear long sleeves.

Respiratory protection : Use care during processing (cutting, sawing, etc.) to minimize generation of dust. Wear dust mask in case of dust formation.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                            |                                                   |
|--------------------------------------------|---------------------------------------------------|
| Physical state                             | : Solid                                           |
| Appearance                                 | : Blocks.                                         |
| Colour                                     | : Not identified.                                 |
| odour                                      | : Not specified.                                  |
| Odour threshold                            | : No data available                               |
| pH                                         | : No data available                               |
| Relative evaporation rate (butylacetate=1) | : No data available                               |
| Melting point                              | : No data available                               |
| Freezing point                             | : No data available                               |
| Boiling point                              | : No data available                               |
| Flash point                                | : No data available                               |
| Self ignition temperature                  | : No data available                               |
| Decomposition temperature                  | : No data available                               |
| Flammability (solid, gas)                  | : Non flammable.                                  |
| Vapour pressure                            | : No data available                               |
| Relative vapour density at 20 °C           | : No data available                               |
| Relative density                           | : 0.032 g/cm <sup>3</sup> (2 lb/ft <sup>3</sup> ) |
| Solubility                                 | : None in water                                   |
| Log Pow                                    | : No data available                               |
| Log Kow                                    | : No data available                               |
| Viscosity, kinematic                       | : No data available                               |
| Viscosity, dynamic                         | : No data available                               |
| Explosive properties                       | : No data available                               |
| Oxidising properties                       | : No data available                               |
| Explosive limits                           | : No data available                               |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable at normal conditions.

### 10.3. Possibility of hazardous reactions

Chemically inert substance.

# Finished Foam

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

### 10.4. Conditions to avoid

Avoid high temperature (> 150 °C), heat, open flames and ignition sources.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

On thermal combustion form: fume. Carbon monoxide. Carbon dioxide. low molecular weight hydrocarbons. Emits toxic fumes under fire conditions. Hydrogen cyanide. ketone.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                                                     |                                                                                                                         |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Acute toxicity                                      | : Not classified                                                                                                        |
| Skin corrosion/irritation                           | : May cause physical irritation upon direct contact<br>Based on available data, the classification criteria are not met |
| Serious eye damage/irritation                       | : May cause physical irritation upon direct contact<br>Based on available data, the classification criteria are not met |
| Respiratory or skin sensitisation                   | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Germ cell mutagenicity                              | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Carcinogenicity                                     | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Reproductive toxicity                               | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Specific target organ toxicity (single exposure)    | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Specific target organ toxicity (repeated exposure)  | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Aspiration hazard                                   | : Not classified<br>Based on available data, the classification criteria are not met                                    |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met.                                                     |

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

#### Finished Foam (9009-54-5)

|                               |                  |
|-------------------------------|------------------|
| Persistence and degradability | Not established. |
|-------------------------------|------------------|

### 12.3. Bioaccumulative potential

#### Finished Foam (9009-54-5)

|                           |                  |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

#### Finished Foam (9009-54-5)

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

### 12.6. Other adverse effects

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                |                                                                           |
|--------------------------------|---------------------------------------------------------------------------|
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials      | : Avoid release to the environment.                                       |



# Finished Foam

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

### SECTION 14: Transport information

In accordance with ADR / RID / ADN / IMDG / ICAO / IATA

#### 14.1. UN number

No dangerous good in sense of transport regulations.

#### 14.2. UN proper shipping name

Not applicable

#### 14.3. Transport hazard class(es)

Not applicable

#### 14.4. Packing group

Not applicable

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Special precautions for user

##### 14.6.1. Overland transport

No additional information available

##### 14.6.2. Transport by sea

No additional information available

##### 14.6.3. Air transport

No additional information available

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Contains no REACH candidate substance

Other regulations, restrictions and prohibition regulations : Compliance with following regulations: Directive 1999/45/EC as amended. Directive 67/548/EEC as amended. Regulation (EC) 1272/2008 as amended. Regulation (EC) 1907/2006 as amended.

##### 15.1.2. National regulations

No additional information available

#### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

### SECTION 16: Other information

Indication of changes:

Revision - See : \*.

Sources of Key data : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Abbreviations and acronyms : CAS - Chemical Abstracts Service. CSR - Chemical Safety Report. vPvB - Very Persistent and Very Bioaccumulative. PBT - Persistent, Bioaccumulative and Toxic substance.

Other information : None.

SDS EU (REACH Annex II)

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## Attachment C

### Data Usability Summary Report

# **Data Usability Summary Report**

Vali-Data of WNY, LLC  
1514 Davis Rd.  
West Falls, NY 14170

Parsons/Tim Bayly  
Eurofins SDG# 200-53531-1  
May 18, 2020  
Revised; May 26, 2020  
Sampling date: 4/28/2020 and 4/29/2020

Prepared by:

Jodi Zimmerman, B.S.  
Vali-Data of WNY, LLC  
1514 Davis Rd.  
West Falls, NY 14170

Parsons/Tim Bayly  
SDG #200-53531-1

## **DELIVERABLES**

This Data Usability Summary Report (DUSR) was prepared by evaluating the analytical data package for O'Brien and Gere Engineers, Inc., part of Ramboll, project Parsons/Tim Bayly, Eurofins (TestAmerica), SDG #200-53531-1, submitted to Vali-Data of WNY, LLC on May 14, 2020. This DUSR has been prepared in general compliance with USEPA National Functional Guidelines (SOP NO. HW-31, revision 6) and NYSDEC Analytical Services Protocols. The laboratory performed the analysis using Compendium of Methods for the Determination of Toxic Organic Compounds, Compendium Method TO-15, January 1999.

## **VOLATILE ORGANIC COMPOUNDS**

The following items/criteria were reviewed for this report:

- Data Completeness
- Narrative and Data Reporting Forms
- Chain-of-Custody and Traffic Reports
- Holding Times
- Internal Standard (IS) Area Performance
- Method Blank
- Trip Blank
- Field Duplicate Sample Precision
- Laboratory Control Samples
- MS/MSD
- Compound Quantitation
- Initial Calibration
- Continuing Calibration
- GC/MS Tuning
- Canister Certification Blanks

The items listed above were technically in compliance with the method and SOP criteria with the exceptions discussed in the text below. The data have been reviewed according to the procedures outlined above and qualified accordingly.

## **OVERALL EVALUATION OF DATA AND POTENTIAL USABILITY ISSUES**

The data are acceptable for use but are qualified below in Laboratory Control Samples and Compound Quantitation.

## **DATA COMPLETENESS**

All criteria were met.

**NARRATIVE AND DATA REPORTING FORMS**

All criteria were met except data was not reported to 3 significant figures. This does not affect the usability of the data.

**CHAIN-OF-CUSTODY AND TRAFFIC REPORTS**

All criteria were met.

**HOLDING TIMES**

All criteria were met.

**INTERNAL STANDARD (IS)**

All criteria were met.

**METHOD BLANK**

All criteria were met.

**TRIP BLANKS**

No trip blank was acquired.

**FIELD DUPLICATE SAMPLE PRECISION**

All criteria were met except m&p-Xylene and 1,2,4-Trimethylbenzene were detected in X\_1\_042820\_042920 but were not detected in 810B\_IA\_04\_042820\_042920.

**LABORATORY CONTROL SAMPLES**

All criteria were met except the %Rec of Benzyl Chloride and Bromoform were outside USEPA QC limits, high in LCS 200-154570/3. These target analytes should be qualified as estimated in the associated samples in which they were detected.

**MS/MSD**

No MS/MSD was acquired.

**COMPOUND QUANTITATION**

All criteria were met except the final pressure in 810B\_IA\_04\_042820\_042920 was 0 mmHg. All target analytes in this sample should be qualified as estimated.

**INITIAL CALIBRATION**

All criteria were met.

**CONTINUING CALIBRATION**

All criteria were met.

**GC/MS TUNING**

All criteria were met.



# **CANISTER CERTIFICATION BLANKS**

All criteria were met.



**Attachment D**

**Mitigation System  
Installation Record and  
Label**

# Mitigation System Installation Record

☒ Structure was sampled previously

### System Information

System ID:

Owner Name: David Buchanan

System Address: 810 Broadway

City: Rensselaer

Zip: 12144

Site No: C442043A

Site Name: Tim Bayly Property Off-Site

☐ Owner Occupied

Telephone: 518-258-9443

Alt. Telephone: 1-888-459-8667

Contractor Information

Installer Name: Gene Knapp

Telephone: 607-240-7764

Company: Ramboll

### Building Conditions

Building Type: Multi-Unit Residence

Slab Integrity: ☒ Poor ☐ Average ☐ Good ☐ Excellent

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

Describe: Former bank built circa 1910 with a stairwell added circa 1970 currently under redevelopment to multi-unit apartment building. Building currently consists of an unfinished dirt/concrete sub-basement with a retaining wall and sump consisting of brick and laid-up stone walls accessible via a crawlspace, basement with a gas fired boiler, and first and second floor. Warm air is vented through the heating system into the first floor. The building is partially insulated.

Observed water: ☒ Dry ☐ Damp ☐ Sump only ☐ Standing

Describe:

### System Installation

Installation Type: Other

Date Installed: Mar 26, 2020

Slab Thickness: <3 in.

Subslab Moisture: Dry

Number of Suction Points: 1

Number of Fans Installed: 1

☒ Fan #1 Operating ☐ Fan #2 Operating ☐ Fan #3 Operating

Fan Model No(s): RP145

Fan Serial No(s): 356591

Final U-Tube Levels: 0.25"

Additional Mitigation Elements (check all that apply): ☐ Drainjer ☒ Membrane ☐ Sealed Cracks ☐ New Floor ☒ Rain Cap ☐ Other

Comments: Active system venting sub-basement crawl-space. Spray foam subcontractor applied approximate 3-inch thick layer of spray foam with intumescent coating to exposed spray foam beneath the basement sub-floor, above the sub-basement, to seal small openings into the space above the sub-basement (basement). Ramboll installed a rain cap over the system exhaust piping secured to the exterior of the structure to prevent exterior moisture infiltration into the system. No communication testing required. Active ventilation system installed above slab in sub-basement. Velocity in accessible crawlspace set to 1,205 feet per minute with an air exchange rate of approximately 0.6 air changes per hour.

### Communication Testing

Test Method:

Meter Type/Manufacturer:

Not Applicable

| Location       | Reading/Result | Dist. From Suction Point (ft) | Passed? |
|----------------|----------------|-------------------------------|---------|
| Not Applicable | Not Applicable | Not Applicable                |         |
|                |                |                               |         |
|                |                |                               |         |
|                |                |                               |         |

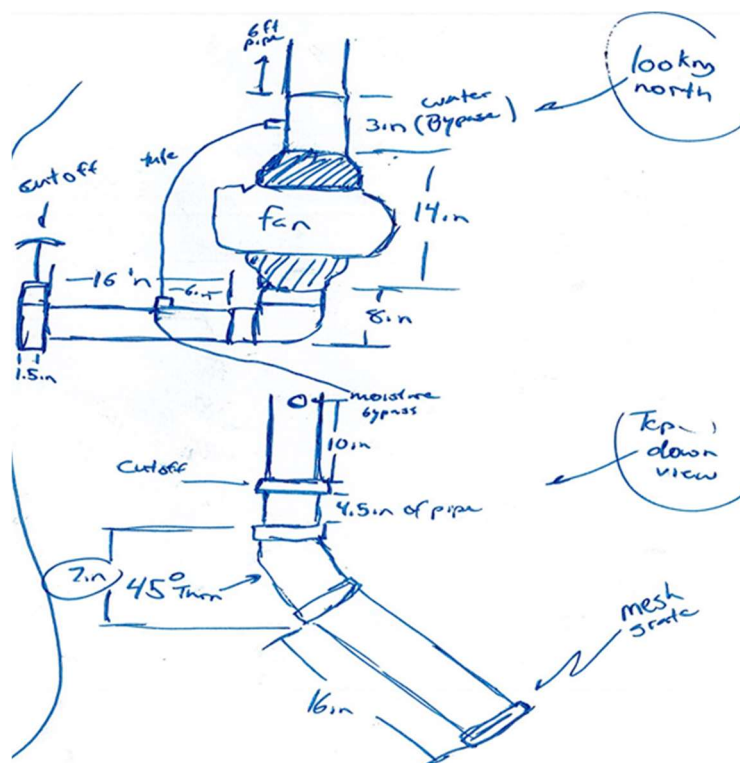
System Sketch

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

North

## SYSTEM MITIGATION INSTALLATION SKETCH 810 BROADWAY

Project name **Tim Bayly Property Off-Site 810 Broadway Interim Remedial Measure**  
 Recipient **NYSDEC**  
 Version **[1]**  
 Date **March 31, 2020**





## ATTENTION

Soil vapor mitigation system in operation. Do not alter or disconnect. This monitor measures differential pressure or vacuum provided by the system.

This is a component of the soil vapor mitigation system. **If all gauges are at zero, or, if for any other reason you believe that the system is not working properly, call:**

**New York State Department of  
Environmental Conservation  
Toll-Free at:**

**1-888-459-8667**

---

**for service or inspection.**

Date

Date of Installation . . . . . March 26, 2020

Date of Maintenance/Inspection . . . . . \_\_\_\_\_

Date of Maintenance/Inspection . . . . . \_\_\_\_\_

Date of Maintenance/Inspection . . . . . \_\_\_\_\_



## ATTENTION

Soil vapor mitigation system in operation. Do not alter or disconnect. This monitor measures differential pressure or vacuum provided by the system.

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**New York State Department of  
Environmental Conservation  
Toll-Free at:**

**1-888-459-8667**

---

**for service or inspection.**

Date

Date of Installation . . . . . March 26, 2020

Date of Maintenance/Inspection . . . . . \_\_\_\_\_

Date of Maintenance/Inspection . . . . . \_\_\_\_\_

Date of Maintenance/Inspection . . . . . \_\_\_\_\_